PALMDALE

a place to call home

CITY COUNCIL MEETING
CITY COUNCIL CHAMBERS
38300 SIERRA HIGHWAY
SUITE B
PALMDALE, CA 93550
WEDNESDAY, SEPTEMBER 21, 2022
5:00 PM
7:00 PM
www.cityofpalmdale.org

WELCOME

The Council Chamber is open for in-person public comment and seating. The Mayor and/or one or more members of the City Council may participate virtually in this meeting.

How to observe the meeting virtually:

1. Spectrum local access Channel 27
2. Online live webcast at www.cityofpalmdale.org.

How to Submit Public Comments:

VERBAL PUBLIC COMMENT DURING THE MEETING – ZOOM Number: US: +1 669 444 9171 Webinar ID: 850 5223 5176 Passcode: 298227

Webinar attendee link https://us06web.zoom.us/j/85052235176?pwd=MnZ0NWdTaDdMaHIvVm1GWE5VVUlvdz09.

Verbal comments must be limited to three (3) minutes.

Public comments submitted will become part of the official meeting record.

The safety and well-being of employees and the public remains the City's top priority. The City of Palmdale appreciates your patience and understanding during these challenging times.

The City Council is making every effort to follow the spirit and intent of the Brown Act and other applicable laws regulating the conduct of public meetings in order to maximize transparency and public access.

In accordance with the Americans with Disabilities Act of 1990, if you require a disability-related modification or accommodation to participate in this meeting, please contact the City Clerk's Office at (661) 267-5151 at least 72 hours prior to the meeting.

If you require oral Spanish translation, please contact the City Clerk's Office at (661) 267-5151 at least 72 hours prior to the meeting.

Your courtesy is requested to help our meetings run smoothly. If you'll be kind enough to follow these simple rules, we can make the best possible use of your time and ours:

- Please refrain from public displays or outbursts, such as unsolicited applause, comments, cheering, foul language or obscenities.
- Any disruptive activities that substantially interfere with the ability of the City Council to carry out its meeting will not be permitted and offenders will be asked to leave the meeting.
- Please turn off/mute your cell phones and mobile devices.

5:00 P.M.

1. **CALL MEETINGS TO ORDER**

2. **ROLL CALL**
   MAYOR HOFBAUER, MAYOR PRO TEM LOA,
   COUNCILMEMBERS CARRILLO, BISHOP, BETTENCOURT

3. **PUBLIC COMMENTS ON CLOSED SESSION ITEMS**
   The public is invited to comment on any closed session item listed below. Please submit a Speaker's Form to the City Clerk **BEFORE** this portion of the meeting begins. Each person addressing the Council is customarily given up to three minutes to speak (with double the time allotted to non-English speakers using a translator). The amount of time authorized may be adjusted by the chair. If you wish to provide information to the Council, please present the City Clerk with 7 copies. Otherwise, your materials will simply be added to the administrative record. If you are attending the meeting by phone, please press *9 to "raise your hand." If attending by personal computer, please click the "raise your hand" button. Press *6 to un-mute yourself, state your name and begin speaking.

4. **PRESENTATION BY CITY ATTORNEY**

4.1 CONFERENCE WITH LEGAL COUNSEL—EXISTING LITIGATION
Ricci v. City of Palmdale, et al.
Los Angeles County Superior Court
Case No. 22STCV01269
This closed session is being held pursuant to the authority of California Government Code Section 54956.9(d)(1).

4.2 CONFERENCE WITH LEGAL COUNSEL - EXISTING LITIGATION
Shanae Smith, Patricia Nevarez and Michael "Mike" Behen vs. City of Palmdale, et al.
Los Angeles County Superior Court
Case No. 22STCV18219
This closed session is being held pursuant to the authority of California Government Code Section 54956.9(d)(1).

4.3 CONFERENCE WITH LEGAL COUNSEL—EXISTING LITIGATION
Government Code Section 54956.9(d)(1)
Name of case: John J. Murphy v. City of Palmdale
Los Angeles County Superior Court Case Number: 22STCV22544
Related City Claim Number: 2022-007

4.4 CONFERENCE WITH LEGAL COUNSEL - EXISTING LITIGATION
Leona Valley Town Council vs. City of Palmdale, et al.
Los Angeles County Superior Court
Case No. 22STCP01932
This closed session is being held pursuant to the authority of California Government Code Section 54956.9(d)(1)

4.5 CONFERENCE WITH LEGAL COUNSEL—EXISTING LITIGATION
Ricky Thorstensen v. City of Palmdale, et al.
Los Angeles County Superior Court
Case No. 22STCV29463
This closed session is being held pursuant to the authority of California Government Code Section 54956.9(d)(1).

5. **ANNOUNCEMENT BY CITY ATTORNEY**

6. **ADJOURN CLOSED SESSION MEETING**

7:00 P.M.

7. **PLEDGE OF ALLEGIANCE AND MOMENT OF SILENCE IN HONOR OF OUR TROOPS**

8. **WAIVER OF FULL READING OF RESOLUTION(S) and ORDINANCE(S)**
Staff Recommendation: Move to waive full reading of the Resolution (s) and/or Ordinance(s) to be considered and voted on at this meeting.

9. **PUBLIC COMMENTS ON LISTED AGENDA ITEMS (EXCLUDING PUBLIC HEARINGS)**
You may address the Council once per meeting during Public Comments. This portion of the public comment is on any item listed on the agenda, excluding public hearings (if any). Public comment on public hearing items (if any) will be heard when that matter is considered. To address the Council regarding an item on the agenda, please fill out a Speaker's Form and submit it to the City Clerk **BEFORE** the Mayor announces the item. Each person addressing the Council is customarily given up to three minutes to speak (with double the time allotted to non-English speakers using a translator). The amount of time authorized may be adjusted by the chair. If you wish to provide information to the Council, please present the City Clerk with 7 copies. Otherwise, your materials will simply be added to the administrative record. If you are attending the meeting by phone, please press *9 to "raise your hand." If attending by personal computer, please click the "raise your hand" button. Press *6 to un-mute yourself, state your name and begin speaking.

10. **CONSENT CALENDAR**
All matters listed under the Consent Calendar will be enacted by one motion unless an item(s) is pulled by Council, in which case the item(s) will be removed from the Calendar and will be considered separately following this portion of the Agenda.

10.1 Notice of Completion - Accept completed project with MLC Constructors, Inc. for PN 712, Maintenance Yard Improvements. (Staff Reference: Acting Director of Public Works Glidden)
Staff Report PN 712 - NOC 8-3-22 (LG).docx
NOC PN 712.doc

10.2 Approve Final Parcel Map No. 73299 located on Trade Center Drive, 300 feet south of the intersection of Trade Center Drive and Technology Drive. (Staff Reference: Acting Director of Public Works Glidden)

092122, PM 73299 - Staff Report.docx
PM 73299.pdf

10.3 Approve Consultant Agreement with MNS Engineers, Inc. for engineering design and surveying services for PN 867, Columbia Way (Ave M) and 20th Street East/Site 2 Road Traffic Signal Modification/Left Turn Phasing/Roadway Improvements and PN 868, Columbia Way(Ave M) and 30th Street East Traffic Signal Modification/Left Turn Phasing, in the amount of $153,651. (Staff Reference: Acting Director of Public Works Glidden)

PN_867_and_868_Staff_Report_-_Award_Design.docx
Copy Agreement Signed by Consultant.pdf

10.4 Adopt Resolution Nos. CC 2022-099, CC 2022-100, CC 2022-101, and CC 2022-102. (Staff Reference: Director of Finance Samson)

Resolution No. CC-2022-099, a Resolution of the City Council of the City of Palmdale declaring its intention to establish a Community Facilities District and to authorize the levy of special taxes therein - Ritter Ranch Maintenance Services

Resolution No. CC-2022-100, a Resolution of the City Council of the City of Palmdale declaring its intention to establish a Community Facilities District and to authorize the levy of special taxes therein - Ritter Ranch Phase 1 Public Facilities

Resolution No. CC-2022-101, a Resolution of the City Council of the City of Palmdale declaring its intention to incur bonded indebtedness of the proposed Community Facilities District No. 2022-3 (Ritter Ranch Phase 1 Public Facilities)

Resolution No. CC-2022-102, a Resolution of the City Council of the City of Palmdale determining that the Special Tax shall cease to be levied on certain parcels located within the City of Palmdale Community Facilities District No. 93-1 (Ritter Ranch)

01._Staff_Report_CFD_Formation_9.21.2022.docx
02. Boundary Map CFD 2022-2 (Ritter Ranch Maintenance Services).pdf
03. Boundary Map CFD 2022-3 (Ritter Ranch Phase 1 Public Facilities).pdf
04. Reso 2022-099 IntentEstab J18322.docx
05. Reso 2022-100 IntentEstab J18324.docx
06. Reso 2022-101 IntentIncur J18325.docx
07. Reso 2022-102 DetermCeaseSpTx J18502.docx

10.5 Approve First Amendment with FirstCarbon Solutions and increase total amount by $243,200, not to exceed amount of $472,500 to perform ongoing environmental planning and permitting efforts. (Staff Reference: Director of Economic and Community Development Garibay)

Staff_Report_First_Carbon_Solution_A-7959_First_Amendment.docx
A-7959 FirstCarbon Solutions Executed.pdf

A -7959 FirstCarbon Solutions - First Amendment

10.6 Adopt Resolution No. CC 2022-104 a Resolution of the City Council of the City of Palmdale, to repeal and replace Resolution No CC 2016-085 with Resolution No. CC 2022-104, which adopts the updated Local Hazard Mitigation Plan for the City of Palmdale for 2021-2026. (Staff Reference: Acting Director of Public Works Glidden)

SR Resolution CC 2022-104.docx
Resolution CC 2022-104.docx
2021 Palmdale LHMP (APA).pdf

11. PUBLIC HEARING

11.1 Public Hearing and Review of Proposed Resolution Nos. CC 2022-096 and CC 2022-097 for adoption. (Staff Reference: Economic and Community Development Director Garibay - Presented by Planning Manager Taggart and Senior Planner Magaña)

RESOLUTION NO. CC 2022-096, A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF PALMDALE APPROVING GENERAL PLAN AMENDMENT 20-003, RE-ADOPTING THE CALIFORNIA DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT APPROVED 2021-2029 HOUSING ELEMENT, CERTIFYING PROGRAM ENVIRONMENTAL IMPACT REPORT 22-002 (SCH#2021060494) AND ADOPTING A STATEMENT OF OVERRIDING CONSIDERATIONS

RESOLUTION NO. CC 2022-097, A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF PALMDALE DISCOURAGING GENERAL PLAN AMENDMENTS FOR 18 MONTHS FOLLOWING ADOPTION OF THE GENERAL PLAN

GPA_20-003_Staff_Report_FINAL (1).docx
Resolution No. CC 2022-096 FINAL.doc
Resolution No. CC 2022-097 FINAL.docx
EXHIBIT I.pdf
EXHIBIT II.pdf
EXHIBIT III.pdf
EXHIBIT IV.pdf
EXHIBIT V.pdf

12. NEW BUSINESS

12.1 Adopt Resolution No. CC 2022-103, a Resolution of the City Council of the City of Palmdale, California, establishing the Norms and Procedures for the Council's Conduct of Public Business. (Staff Reference: Interim City Manager Perez, and Interim City Attorney Porter)

SR Conduct of Public Business.docx
CC 2022-103.docx

13. **PUBLIC COMMENTS ON NON-AGENDA ITEMS**
    This portion of the Agenda allows an individual the opportunity to address the Council on any subject within the City's subject matter jurisdiction not on the Agenda. Under state legislation, in general, no action can be taken on items not specifically referenced on the Agenda, but may offer suggestions on how your concerns may best be resolved. To address the Council regarding a non-agenda item, please fill out a Speaker's Form and submit it to the City Clerk **BEFORE** the Mayor announces the item. Each person addressing the Council is customarily given up to three minutes to speak (with double the time allotted to non-English speakers using a translator). The amount of time authorized may be adjusted by the chair. If you wish to provide information to the Council, please present the City Clerk with 7 copies. Otherwise, your materials will simply be added to the administrative record. If you are attending the meeting by phone, please press *9 to "raise your hand." If attending by personal computer, please click the "raise your hand" button. Press *6 to un-mute yourself, state your name and begin speaking.

14. **CITY MANAGER'S REPORT**

15. **ADJOURNMENT**

City Council Staff Report

DATE: **SEPTEMBER 21, 2022**

TO: **HONORABLE MAYOR AND CITY COUNCIL**

FROM: **PUBLIC WORKS DEPARTMENT**
CAPITAL IMPROVEMENT PROGRAM DIVISION

DISTRICT: **2**

SUBJECT: **NOTICE OF COMPLETION – ACCEPT COMPLETED PROJECT WITH MLC CONSTRUCTORS, INC. FOR PN. 712, MAINTENANCE YARD IMPROVEMENTS.**

ISSUE

Notice of Completion - Accept completed project with MLC Constructors, Inc. for PN. 712, Maintenance Yard Improvements.

RECOMMENDATION

Staff recommends that the City Council:

1. Accept completed project with MLC Constructors, Inc. for PN. 712, Maintenance Yard Improvements; and
2. Authorize the Interim City Manager or her designee to execute and file a Notice of Completion.

BACKGROUND

Project No. 712, City Maintenance Yard Improvements, carried out the construction of a new vehicle wash station at the City Maintenance Yard. The new wash station is a replacement for the previous uncovered, concrete wash racks. In addition to the wash station, the project also included installation of a pre-manufactured metal fuel-island canopy which covers the existing fuel pumps, relocation of a clarifier, installation of a fuel flowmeter station and overflow manhole, construction of a surface drainage system, and replacement of ±35,000-sf of deteriorated asphalt and concrete pavements.

DISCUSSION

All construction work for this project has been completed. To release funds being held as retention (five percent of each progress payment), it is necessary for the City Council to accept the project and for a Notice of Completion to be filed.

FISCAL IMPACT

The project budget was funded through Sewer Maintenance Funds which have been allocated in Account No. U0005254-724525. The original construction contract amount for this project was $1,499,900.00 and the final construction cost was $1,594,850.51, which represents a 10% increase. This increase is due to additional concrete paving requested by the Maintenance Department, and the change in the flooring material due to unavailability of the original material. Thirty-five (35) days after the Notice of Completion is filed, retention will be released.

STRATEGIC PLAN

Goal III: Invest in infrastructure to improve community livability.

C. Plan and maintain safe and attractive neighborhoods, streets, facilities, and public spaces with exciting programming that promotes active fun for everyone.

Prepared by:	Lynn Glidden, Acting Public Works Director
Certified as to availability of Funds:	Janelle Samson, Director of Finance
Approved by:	Ronda Perez, Interim City Manager
Approved as to form:	Scott E. Porter, Interim City Attorney

ATTACHMENTS

Notice of Completion

RECORDING REQUESTED BY:

CITY OF PALMDALE

WHEN RECORDED MAIL TO:

CITY OF PALMDALE
OFFICE OF THE CITY CLERK
38300 Sierra Highway, Suite C
Palmdale, CA 93550

Space Above This Line for Recorder's Use

NOTICE OF COMPLETION

Notice pursuant to Civil Code Section 3093, is hereby given that:

1. The undersigned is owner or corporate officer of the interest or estate stated below in the property hereinafter described.
2. The full name of the owner is City of Palmdale, a Municipal Corporation.
3. The full address of the owner is 38300 Sierra Highway, Palmdale, CA 93550.
4. The nature of interest or estate of the owner is: Fee (Maintenance Yard Improvements).
5. A work of improvement on the property hereinafter described was completed on **August 24, 2022**
6. The work done was: "Maintenance Yard Improvements, PN-712".
7. The name of the Contractor for such work of improvement: MLC Constructors, Inc.
8. The property on which said work of improvement was completed is in the City of Palmdale, State of California, and is described as **City Facility improvement**.
9. The address of said property is: 39110 3rd St E, Palmdale, CA 93550.

Dated: September 21, 2022

City of Palmdale

Lynn Glidden, Interim Director of Public Works

VERIFICATION

I, the undersigned, say: I am the Director of Public Works, the declarant of the foregoing notice of completion; I have read the said notice of completion and know the contents thereof; the same is true of my own knowledge. I declare under penalty of perjury that the foregoing is true and correct.

Executed on September 21, 2022, in the City of Palmdale, California.

Lynn Glidden, Interim Director of Public Works

City Council Staff Report

DATE: **SEPTEMBER 21, 2022**

TO: **HONORABLE MAYOR AND CITY COUNCIL**

FROM: **PUBLIC WORKS DEPARTMENT**
ENGINEERING DIVISION

DISTRICT: **1**

SUBJECT: **APPROVE FINAL PARCEL MAP NO. 73299 LOCATED ON TRADE CENTER DRIVE, 300 FEET SOUTH OF THE INTERSECTION OF TRADE CENTER DRIVE AND TECHNOLOGY DRIVE**

ISSUE

Approve Final Parcel Map No. 73299 located on Trade Center Drive, 300 feet south of the intersection of Trade Center Drive and Technology Drive

RECOMMENDATION

Staff recommends that the City Council approve Final Parcel Map No. 73299 and authorize the City Clerk to execute the City Clerk's Statement and Special Assessment Statement and authorizes the Acting City Surveyor to execute the City Surveyor's Statement. The map will then be filed with the County Recorder.

BACKGROUND

Final Parcel Map No. 73299 is a 6.89-acre subdivision, legally creating two (2) commercial parcels. All proposed parcel sizes and dimensions comply with the City's Zoning Ordinance. The subject property is located on Trade Center Drive, 300 Feet south of the intersection of Trade Center Drive and Technology Drive. The applicant for this final parcel map is RBL Palmdale Center, LLC, A California Limited Liability Company. This Tentative Parcel Map was entitled by the Planning Commission on December 13, 2018, by Resolution No. PC 2018-037.

This final parcel map is consistent with the tentative parcel map and all final map conditions of approval have been met. The Acting City Land Surveyor has reviewed the final map for technical accuracy and verifies it is in compliant with the State Subdivision Map Act.

FISCAL IMPACT

There is no fiscal impact associated with this action.

STRATEGIC PLAN

Goal III: Invest in infrastructure to improve community livability.

A. Plan and maintain safe and attractive neighborhoods, streets, facilities, and public spaces with exciting programming that promotes active fun for everyone.

Prepared by:	Lynn Glidden, Acting Director of Public Works
Certified as to availability of Funds:	Janelle Samson, Director of Finance
Approved by:	Ronda Perez, Interim City Manager
Approved as to form:	Scott E. Porter, Interim City Attorney

ATTACHMENT

1. Final Parcel Map No. 73299

PARCEL MAP NO.73299

IN THE CITY OF PALMDALE, COUNTY OF LOS ANGELES, STATE OF CALIFORNIA,
BEING A SUBDIVISION OF LOT 20 OF TRACT NO. 49556 AS PER MAP RECORDED IN BOOK 1179
PAGES 15 THROUGH 20, INCLUSIVE OF MAPS,
IN THE OFFICE OF THE COUNTY RECORDER OF SAID COUNTY

TENTATIVE MAP EXPIRES 6-25-2023
ELIAS CHAIJ L.S. 8908

2 PARCELS ***6.89 ACRES***

OWNER'S STATEMENT

WE HEREBY STATE THAT WE ARE THE OWNERS OF OR ARE INTERESTED IN THE LANDS INCLUDED WITHIN THE SUBDIVISION SHOWN ON THIS MAP WITHIN THE DISTINCTIVE BORDER LINES, AND WE CONSENT TO THE PREPARATION AND FILING OF SAID MAP AND SUBDIVISION.

WE FURTHER STATE THAT, EXCEPT AS SHOWN ON THIS MAP, WE KNOW OF NO EASEMENT OR STRUCTURE EXISTING WITHIN THE EASEMENTS HEREIN OFFERED FOR DEDICATION TO THE PUBLIC, OTHER THAN PUBLICLY OWNED WATER LINES, SEWERS, OR STORM DRAINS, THAT WE WILL GRANT NO RIGHT OR INTEREST WITHIN THE BOUNDARIES OF SAID EASEMENTS OFFERED TO THE PUBLIC, EXCEPT WHERE SUCH RIGHT OR INTEREST IS EXPRESSLY MADE SUBJECT TO SAID EASEMENTS.

RBL PALMDALE CENTER, LLC, A CALIFORNIA LIMITED LIABILITY COMPANY

BY: ITS MANAGER RBL PALMDALE CENTER, MANAGER LLC, A CALIFORNIA LIMITED LIABILITY COMPANY

_____ _____

DATE ARI BLUM – AUTHORIZED SIGNATORY

NOTARY ACKNOWLEDGMENT

A NOTARY PUBLIC OR OTHER OFFICER COMPLETING THIS CERTIFICATE VERIFIES ONLY THE IDENTITY OF THE INDIVIDUAL WHO SIGNED THE DOCUMENT TO WHICH CERTIFICATE IS ATTACHED, AND NOT THE TRUTHFULNESS, ACCURACY, OR VALIDITY OF THAT DOCUMENT.

STATE OF CALIFORNIA
COUNTY OF LOS ANGELES } SS:

ON _____, BEFORE ME, _____, A NOTARY PUBLIC OR OTHER OFFICER COMPLETING THIS CERTIFICATE, PERSONALLY APPEARED_____ WHO PROVED TO ME ON THE BASIS OF SATISFACTORY EVIDENCE TO BE THE PERSON(S) WHOSE NAME(S) IS/ARE SUBSCRIBED TO THE WITHIN INSTRUMENT AND ACKNOWLEDGED TO ME THAT HE/SHE/THEY EXECUTED THE SAME IN HIS/HER/THEIR CAPACITY(IES), AND THAT BY HIS/HER/THEIR SIGNATURE(S) ON THE INSTRUMENT THE PERSON(S), OR THE ENTITY UPON BEHALF OF WHICH THE PERSON(S) ACTED, EXECUTED THE INSTRUMENT.

I CERTIFY UNDER PENALTY OF PERJURY UNDER THE LAW OF THE STATE OF CALIFORNIA, THAT THE FOREGOING PARAGRAPH IS TRUE AND CORRECT.

WITNESS MY HAND ----------

SIGNATURE _____

MY COMMISSION EXPIRES _____

COMMISSION NO. _____

MY PRINCIPAL PLACE OF BUSINESS IS IN LOS ANGELES COUNTY.

NOTARY SEAL NOT REQUIRED PER GOVERNMENT CODE 66436

DEUTSCHE BANK TRUST COMPANY AMERICAS AS TRUSTEE

UNDER DEED OF TRUST RECORDED JUNE 01, 2015 AS INSTRUMENT NUMBER 20150633895

_____ _____

DATE CHRIS P. BRADSHAW – ASSISTANT MANAGER CONSULTANT

NOTARY ACKNOWLEDGMENT

A NOTARY PUBLIC OR OTHER OFFICER COMPLETING THIS CERTIFICATE VERIFIES ONLY THE IDENTITY OF THE INDIVIDUAL WHO SIGNED THE DOCUMENT TO WHICH CERTIFICATE IS ATTACHED, AND NOT THE TRUTHFULNESS, ACCURACY, OR VALIDITY OF THAT DOCUMENT.

STATE OF CALIFORNIA
COUNTY OF LOS ANGELES } SS:

ON _____, BEFORE ME, _____, A NOTARY PUBLIC OR OTHER OFFICER COMPLETING THIS CERTIFICATE, PERSONALLY APPEARED_____ WHO PROVED TO ME ON THE BASIS OF SATISFACTORY EVIDENCE TO BE THE PERSON(S) WHOSE NAME(S) IS/ARE SUBSCRIBED TO THE WITHIN INSTRUMENT AND ACKNOWLEDGED TO ME THAT HE/SHE/THEY EXECUTED THE SAME IN HIS/HER/THEIR CAPACITY(IES), AND THAT BY HIS/HER/THEIR SIGNATURE(S) ON THE INSTRUMENT THE PERSON(S), OR THE ENTITY UPON BEHALF OF WHICH THE PERSON(S) ACTED, EXECUTED THE INSTRUMENT.

I CERTIFY UNDER PENALTY OF PERJURY UNDER THE LAW OF THE STATE OF CALIFORNIA, THAT THE FOREGOING PARAGRAPH IS TRUE AND CORRECT.

WITNESS MY HAND ----------

SIGNATURE _____

MY COMMISSION EXPIRES _____

COMMISSION NO. _____

MY PRINCIPAL PLACE OF BUSINESS IS IN LOS ANGELES COUNTY.

NOTARY SEAL NOT REQUIRED PER GOVERNMENT CODE 66436

SIGNATURE OMISSION NOTES

THE SIGNATURE OF SOUTHERN CALIFORNIA EDISON COMPANY, A CORPORATION HOLDER OF AN EASEMENT FOR PUBLIC UTILITIES, RECORDED JANUARY 10, 2008, AS INSTRUMENT NO. 20080054479, OFFICIAL RECORDS, HAVE BEEN OMITTED UNDER THE PROVISIONS OF SECTION 66436(a) (3)(A)(i–viii) OF THE SUBDIVISION MAP ACT, THEIR INTEREST IS SUCH THAT IT CANNOT RIPEN INTO A FEE TITLE, AND SAID SIGNATURES ARE NOT REQUIRED BY THE LOCAL AGENCY.

THE SIGNATURE OF LOS ANGELES COUNTY WATERWORKS DISTRICT NO. 40, ANTELOPE VALLEY, HOLDER OF AN EASEMENT FOR WATER PIPELINES AND APPURTENANCE AND INGESS/EGRESS PURPOSES AND THE RIGHT TO CONSTRUCT, MAINTAIN, OPERATE AND USE THE SAME, RECORDED JUNE 11, 2008, AS INSTRUMENT NO. 20081035020, OFFICIAL RECORDS, HAVE BEEN OMITTED UNDER THE PROVISIONS OF SECTION 66436(a) (3)(A)(i–viii) OF THE SUBDIVISION MAP ACT, THEIR INTEREST IS SUCH THAT IT CANNOT RIPEN INTO A FEE TITLE, AND SAID SIGNATURES ARE NOT REQUIRED BY THE LOCAL AGENCY.

THE SIGNATURE OF MARVIN E. RUBIN AND ETHEL RUBIN, HUSBAND AND WIFE, AND WILLIAM ROBERTS AND IRENE ROBERTS, HUSBAND AND WIFE, HOLDER OF AN INTEREST IN, OR RIGHTS TO MINERALS, WHICH MAY INCLUDE BUT WHICH MAY NOT BE LIMITED TO OIL, GAS, OR OTHER HYDROCARBON SUBSTANCES, RECORDED JUNE 4, 1964 AS INSTRUMENTS NO. 1900 IN BOOK D2496, PAGE 593, OF OFFICIAL RECORDS HAVE BEEN OMITTED UNDER THE PROVISIONS OF SECTION 66436(a) (3)(C) OF THE SUBDIVISION MAP ACT, THEIR INTEREST IS SUCH THAT IT CANNOT RIPEN INTO A FEE TITLE, AND SAID SIGNATURES ARE NOT REQUIRED BY THE LOCAL AGENCY.

THE SIGNATURE OF HOWARD B. PARSONS AND LUTIE C. PARSONS, HOLDER OF AN INTEREST IN, OR RIGHTS TO MINERALS, WHICH MAY INCLUDE BUT WHICH MAY NOT BE LIMITED TO OIL, GAS, OR OTHER HYDROCARBON SUBSTANCES, RECORDED AUGUST 14, 1956 IN BOOK 52013, PAGE 253, OF OFFICIAL RECORDS HAVE BEEN OMITTED UNDER THE PROVISIONS OF SECTION 66436(a) (3)(C) OF THE SUBDIVISION MAP ACT, THEIR INTEREST IS SUCH THAT IT CANNOT RIPEN INTO A FEE TITLE, AND SAID SIGNATURES ARE NOT REQUIRED BY THE LOCAL AGENCY.

SURVEYOR'S STATEMENT

THIS MAP WAS PREPARED BY ME OR UNDER MY DIRECTION AND IS BASED UPON A FIELD SURVEY IN CONFORMANCE WITH THE REQUIREMENTS OF THE SUBDIVISION MAP ACT AND LOCAL ORDINANCE AT THE REQUEST OF THE PALMDALE CORPORATE CENTER I, LLC, ON FEBRUARY 23, 2015. I HEREBY STATE THAT THIS FINAL MAP SUBSTANTIALLY CONFORMS TO THE CONDITIONALLY APPROVED TENTATIVE MAP, THAT THE MONUMENTS OF THE CHARACTER AND LOCATIONS SHOWN HEREON ARE IN PLACE OR WILL BE IN PLACE WITHIN TWENTY–FOUR MONTHS FROM THE FILING DATE OF THIS MAP; THAT SAID MONUMENTS ARE SUFFICIENT TO ENABLE THE SURVEY TO BE RETRACED AND THAT TIE NOTES TO ALL CENTERLINE MONUMENTS SHOWN AS "TO BE SET" WILL BE ON FILE IN THE OFFICE OF THE CITY ENGINEER WITHIN TWENTY–FOUR MONTHS FROM THE FILING DATE SHOWN HEREON.

_____ _____

DATE ELIAS CHAIJ LS 8908
REGISTRATION EXPIRES: 9/30/22

PROFESSIONAL LAND SURVEYOR
ELIAS CHAIJ
L.S. 8908
STATE OF CALIFORNIA

CITY SURVEYORS STATEMENT

I HEREBY STATE THAT I HAVE EXAMINED THIS MAP, THAT IT CONFORMS SUBSTANTIALLY TO THE TENTATIVE MAP AND ALL APPROVED ALTERATIONS THEREOF; THAT ALL PROVISIONS OF APPLICABLE STATE LAW AND SUBDIVISION ORDINANCE OF THE CITY OF PALMDALE APPLICABLE AT THE TIME OF THE APPROVAL OF THE TENTATIVE MAP HAVE BEEN COMPLIED WITH; AND THAT I AM SATISFIED THAT THIS MAP IS TECHNICALLY CORRECT.

_____ _____

DATE FREDERICK R. JONES JR.
ACTING CITY SURVEYOR

LICENSED LAND SURVEYOR
FREDERICK R. JONES JR.
L.S. 5458
STATE OF CALIFORNIA

CITY CLERK'S STATEMENT

I, SHANAE S. SMITH, CITY CLERK OF THE CITY OF PALMDALE, DO HEREBY STATE THAT THIS MAP WAS PRESENTED FOR APPROVAL TO THE CITY OF PALMDALE CITY COUNCIL AT A REGULAR MEETING THEREOF, HELD ON THE ___ DAY OF _____, 2022, AND THAT THEREUPON SAID COUNCIL DID, BY AND ORDER DULY PASSED AND ENTERED, APPROVE SAID MAP.

_____ _____

DATE SHANAE S.. SMITH
CITY CLERK, CITY OF PALMDALE

SPECIAL ASSESSMENTS STATEMENT

I HEREBY STATE THAT ALL SPECIAL ASSESSMENTS LEVIED UNDER THE JURISDICTION OF THE CITY OF PALMDALE TO WHICH THE LAND INCLUDED IN THE WITHIN SUBDIVISION OR ANY PART THEREOF IS SUBJECT, AND WHICH MAY BE PAID IN FULL, HAVE BEEN PAID IN FULL.

_____ _____

DATE SHANAE S. SMITH
CITY CLERK – CITY OF PALMDALE

BASIS OF BEARINGS NOTE

THE BEARINGS SHOWN HEREON ARE BASED ON THE BEARING OF NORTH 89°55'05" WEST OF THE NORTH LINE OF THE OF THE SOUTHWEST QUARTER OF SECTION 22, T. 6 N., R. 12 W., SBM (THE CENTERLINE OF AVENUE P–8) AS SHOWN ON TRACT MAP NO. 49556, FILED IN BOOK 1179 PAGES 15 TO 20, OF MAPS, IN THE CITY OF PALMDALE, COUNTY OF LOS ANGELES, STATE OF CALIFORNIA.

SOILS REPORT NOTE

IN ACCORDANCE WITH THE PROVISION OF SECTION 66434.5 OF THE SUBDIVISION MAP ACT, A SOILS REPORT WAS PREPARED FOR LOT 20, TRACT 49566 BY EARTH SYSTEMS OF SOUTHERN CALIFORNIA, INC., UPDATED ON JANUARY 17, 2007 AND IS ON FILE IN THE OFFICE OF THE CITY ENGINEER.

MONUMENT NOTE

A) 2" O.D. IRON PIPE TAGGED LS 8908, TO BE SET, AS SHOWN ON MAP, FLUSH.

B) SPIKE AND WASHER TAGGED LS 8908, TO BE SET DOWN 0.04' AT ALL STREET INTERSECTIONS, BEGINNING OF CURVES AND END OF CURVES.

C) LEAD, TACK AND TAG LS 8908, TO BE SET ON TOP OF CURB AT ALL LOT LINE PROLONGATION, EXCEPT AS NOTED HEREON.

LOS ANGELES COUNTY TAX CERTIFICATES

I HEREBY CERTIFY THAT ALL CERTIFICATES HAVE BEEN FILED AND DEPOSITS HAVE BEEN MADE THAT ARE REQUIRED UNDER THE PROVISIONS OF SECTION 66492 AND 66493 OF THE SUBDIVISION MAP ACT.

EXECUTIVE OFFICER, BOARD OF SUPERVISORS OF THE COUNTY OF LOS ANGELES, STATE OF CALIFORNIA.

BY: _____ _____
DEPUTY DATE

I HEREBY CERTIFY THAT SECURITY IN THE AMOUNT OF $ _____ HAS BEEN FILED WITH THE EXECUTIVE OFFICER, BOARD OF SUPERVISORS OF THE COUNTY OF LOS ANGELES AS SECURITY FOR THE PAYMENT OF TAXES AND SPECIAL ASSESSMENTS COLLECTED AS TAXES ON THE LAND SHOWN ON MAP OF PARCEL MAP NO. 73299 AS REQUIRED BY LAW.

EXECUTIVE OFFICER, BOARD OF SUPERVISORS OF THE COUNTY OF LOS ANGELES, STATE OF CALIFORNIA.

BY: _____ _____
DEPUTY DATE

SCALE: 1" = 60'

SHEET 2 OF 2 SHEETS

PARCEL MAP NO.73299

IN THE CITY OF PALMDALE
COUNTY OF LOS ANGELES , STATE OF CALIFORNIA

ELIAS CHAIJ L.S. 8908

"PRELIMINARY"

ALL DIMENSIONS ARE MEASURED AND RECORD
RECORD DATA PER TRACT NO. 49556
MB 1179, PAGES 15–20

AVENUE P–8

N89°55'05"W (BASIS OF BEARINGS) 669.32'

FD. S&W TAGGED LS 6307 PER TRACT NO. 49556, MB 1179/15–20 ACCEPTED AS INTERSECTION

NORTH LINE OF THE SW 1/4

FD. S&W TAGGED RCE 19233 PER TRACT NO. 46586, MB 1145/52–57 ACCEPTED AS CL INTERSECTION

NOT A PART
PARCEL 1
PM NO. 26759
PMB 331/59–60

NOT A PART
PARCEL 2
PM NO. 26759
PMB 331/59–60

NORTH LINE S 1/2, NE 1/4, NW 1/4, SW 1/4
SEC. 22, T6N, R12W, S.B.M.
ESTABLISHED BY RECORD BEARING AND DISTANCE
PER TRACT NO. 49556, MB 1179/15–20

N 89°55'14" W 669.21'

332.63'

332.59'

N 00°38'19" W

FITS RECORD DISTANCE ALONG TRADE CENTER DRIVE PER TRACT NO. 49556, MB 1179/15–20

NOT A PART
LOT 22
TRACT NO. 49556
MB 1179, PAGES 15–20

NOT A PART
S 1/2 OF NW 1/4 OF NW 1/4 OF
SW 1/4 OF SEC. 22, T6N, R12W, SBM
INSTRUMENT NO. 05–0167623

ESTABLISHED FROM REC. BEARING AND DISTANCE PER TRACT NO. 49556, MB 1179/15–20

N 00°39'24" W 665.26'

332.63'

WEST LINE E 1/2, NW 1/4, SW 1/4 SEC. 22, T6N, R12W, S.B.M.

20' WIDE EASEMENT OF W.F. BRADLEY FOR INGRESS & EGRESS PURPOSES, PER O.R.D. 1511–909, REC. FEB. 14, 1962.

298.35'

330.86'

28' 26'

20'

L6 L7 L8 C5

N65°27'39"W (RAD)

EASEMENT TO L.A.C. WATERWORKS FOR WATER PIPELINES, AND INGRESS–EGRESS PER INSTR. NO. 2008–1035020

57.36' 25' 42.50' 10' 36'

80' 40' 40'

827.94'

1330.38'

479.00'

346.34'

N 00°38'19" W

PARCEL 2
130,310 SF.
2.99 AC.

PARCEL 1
169,858 SF.
3.90 AC.

26' 38'

495.35'

DRIVE

CENTER

TRADE

NOT A PART
LOT 18
TRACT NO. 49556
MB 1179, PAGES 15–20

NOT A PART
LOT 21
TRACT NO. 49556
MB 1179, PAGES 15–20

N 19°19'21"W 176.74' (RADIAL)

ESTABLISHED FROM FD. MON'S

FD. 2" I.P. TAGGED LS 7669 PER PM NO. 64921, PMB 352/92–93 ACCEPTED AS INTERSECTION

L5 N89°21'41"E (RAD) C4 L4 L3

C1 171.81' N 89°21'41" E 492.35'

L9 320.54'

6' 6'

59.00'

FD. 2" I.P. TAGGED LS 7669 PER PM NO. 64921, PMB 352/92–93 ACCEPTED AS PARCEL CORNER

ESTABLISHED BY RECORD BEARING AND DISTANCE PER TRACT NO. 49556, MB 1179/15–20

6' EASEMENT TO S.C.E. FOR PUBLIC UTILITIES PURPOSES, PER INSTR. NO. 2008–0054479

ESTABLISHED BY RECORD BEARING AND DISTANCE PER TRACT NO. 49556, MB 1179/15–20

EASEMENT TO L.A.C. WATERWORKS FOR WATER PIPELINES, AND INGRESS–EGRESS PER INSTR. NO. 2008–1035020

NOT A PART
LOT 19
TRACT NO. 49556
MB 1179, PAGES 15–20

C2 L1 C3 L2

EAST LINE W 1/2, SW 1/4 SEC. 22, T6N, R12W, S.B.M.

SCALE: 1"=60'

FD. S&W TAGGED LS 6307 PER TRACT NO. 49556, MB 1179/15–20 ACCEPTED AS CL INTERSECTION

AUTO CENTER DRIVE

LEGEND

- INDICATES THE BOUNDARY OF LAND BEING SUBDIVIDED BY THIS MAP.
- INDICATES FOUND MONUMENT AS NOTED
- INDICATES FOUND NAIL AND TIN FLUSH ON CENTERLINE ACCEPTED IN LIEU OF S&W TAGGED LS 6307
- INDICATES 1" I.P. OR L&T TAGGED LS 8908 TO BE SET
- INDICATES NEW PARCEL LINES
- INDICATES CENTERLINE
- INDICATES EXISTING RIGHT OF WAY
- Ⓐ RECIPROCAL INGRESS AND EGRESS EASEMENT, TO BE RESERVED IN SEPARATE DOCUMENTS
- Ⓑ RECIPROCAL UTILITIES EASEMENT, TO BE RESERVED IN SEPARATE DOCUMENTS

CURVE DATA TABLE			
CURVE	LENGTH	RADIUS	DELTA
C1	81.52	250.00	18°41'02"
C2	100.00	500.00	11°27'34"
C3	100.00	500.00	11°27'34"
C4	15.71	10.00	90°00'00"
C5	21.73	19.00	65°32'24"

LINE TABLE		
LINE	LENGTH	BEARING
L1	101.00'	N10°49'15"E
L2	190.00'	N00°38'19"W
L3	44.59'	N23°44'14"W
L4	10.00'	N89°21'41"E
L5	3.00'	N90°00'00"W
L6	1.81'	N90°00'00"W
L7	10.34'	N89°58'13"W
L8	53.98'	N00°01'51"E
L9	21.00'	N00°38'19"W

City Council Staff Report

DATE: **SEPTEMBER 21, 2022**

TO: **HONORABLE MAYOR AND CITY COUNCIL**

FROM: **PUBLIC WORKS DEPARTMENT**
CAPITAL IMPROVEMENT PROGRAM DIVISION

DISTRICT: **1**

SUBJECT: **APPROVE CONSULTANT AGREEMENT WITH MNS ENGINEERS, INC. FOR ENGINEERING DESIGN AND SURVEYING SERVICES FOR PN 867, COLUMBIA WAY (AVE M) AND 20TH STREET EAST/SITE 2 ROAD TRAFFIC SIGNAL MODIFICATION/LEFT TURN PHASING/ROADWAY IMPROVEMENTS AND PN 868, COLUMBIA WAY (AVE M) AND 30TH STREET EAST TRAFFIC SIGNAL MODIFICATION/LEFT TURN PHASING, IN THE AMOUNT OF $153,651.**

ISSUE

Approve Consultant Agreement with MNS Engineers, Inc. for engineering design and surveying services for PN 867, Columbia Way (Ave M) and 20th Street East/Site 2 Road Traffic Signal Modification/Left Turn Phasing/Roadway Improvements and PN 868, Columbia way (Ave M) and 30th Street East Traffic Signal Modification/Left Turn Phasing, in the amount of $153,651.

RECOMMENDATION

Staff recommends that the City Council:

1. Approve Consultant Agreement with MNS Engineers, Inc. for engineering design and surveying services for PN 867, Columbia Way (Ave M) and 20th Street East/Site 2 Road Traffic Signal Modification/Left turn Phasing/Roadway Improvements and PN 868, Columbia way (Ave M) and 30th Street East Traffic Signal Modification/Left turn Phasing; and

2. Authorize the Interim City Manager or her designee to execute Agreement No. A-8039, with MNS Engineers, Inc., including minimal and/or non-substantive changes.

BACKGROUND

The City of Palmdale owns and maintains traffic signals along Columbia Way (Avenue M) at 20th Street East, Site 2 Road, and 30th Street East. These traffic signals require upgrades to meet current ADA accessibility standards, modification of existing traffic signals by replacing current permissive left-turns with protected left-turn phasing to

improve safety by reducing accidents involving left-turning vehicles and accommodate heavy left-turn movements (e.g., east bound left turn at 20th Street East), and widen 20th Street East to add a southbound left turn lane at Columbia Way (Avenue M), and modify curb ramps to meet current ADA accessibility standards

DISCUSSION

On July 7, 2022, the City solicited Requests for Proposals (RFPs) from five (5) current on-call design engineering firms to provide engineering and surveying services for the design of Columbia Way (Avenue M) and 20th Street East/Site 2 Road Traffic Signal Modification/Left Turn Phasing/Roadway Widening (PN 867) and Columbia Way (Avenue M) and 30th Street East Traffic Signal Modification/Left Turn Phasing (PN 868). On August 8, 2022, the City received proposals from three (3) engineering firms: JT Engineering (Agua Dulce), Jacobs (Ontario) and MNS Engineers, Inc. (Thousand Oaks).

After evaluation of proposals received, staff ranked MNS Engineers, Inc. as the most qualified firm to provide engineering design and surveying services based on their understanding of the project, capability to perform the work, experience with similar projects, and proposed fee.

The scope of engineering design and surveying services will include but not necessarily be limited to the following:

- Roadway Widening on 20th Street East to add a south-bound left turn lane
- Modify the existing traffic signals by replacing the current permissive left-turns with protected left-turn phasing on all directions of Avenue M (Columbia Way), 20th Street East, Site 2 Road, and 30th Street East;
- Replace existing signal poles and mast arms with new poles and mast arms as required for new signal phasing operation;
- Modify signing and striping as required for new signal phasing operation;
- Upgrade signal heads with higher visibility features;
- Installation of video detection system and loops;
- Install bicycle detection, pedestrian push button, and other miscellaneous upgrades;
- Construct new or modify existing curb ramps to meet current ADA accessibility standards;
- Repair or replace asphalt pavement and construct concrete valley gutter;
- Roadway drainage and landscaping improvements, as needed;
- Pothole all new signal pole locations before completing the traffic signal design.

FISCAL IMPACT

The design of Columbia Way (Avenue M) and 20th Street East/Site 2 Road Traffic Signal Modification/Left Turn Phasing/Roadway Widening (PN 867) and Columbia Way (Avenue M) and 30th Street East Traffic Signal Modification/Left Turn Phasing (PN 868) will be funded through Measure M funds in Account No. T0127209-724525. The fiscal impact and remaining account balance can be seen in the following table.

SCOPE OF WORK	COST
PN 867 & 868 - Design and Construction Documents	$153,651
Administration (Project Management)	$ 46,349
Total Cost:	**$200,000**

Account Number	Starting Balance	Remaining Balance
T0127209-724525	$500,000	$300,000

STRATEGIC PLAN

Goal III: Invest in infrastructure to improve community livability.

C. Plan and maintain safe and attractive neighborhoods, streets, facilities, and public spaces with exciting programming that promotes active fun for everyone.

Prepared by:	Lynn Glidden, Acting Director of Public Works
Certified as to availability of Funds:	Janelle Samson, Director of Finance
Approved by:	Ronda Perez, Interim City Manager
Approved as to form:	Scott E. Porter, Interim City Attorney

ATTACHMENTS

Agreement No. A-8039

AGREEMENT NO. A-8039
CONTRACT FOR DESIGN PROFESSIONAL SERVICES
BETWEEN THE CITY OF PALMDALE AND MNS ENGINEERS, INC.

THIS CONTRACT FOR DESIGN PROFESSIONAL SERVICES ("Contract" herein) is made and entered into this 21st day of September, 2022 by and between the City of Palmdale a public body corporate and politic, (hereinafter called "CITY") and MNS ENGINEERS, INC. (hereinafter called "PROJECT DESIGNER").

RECITALS

WHEREAS, City desires to engage PROJECT DESIGNER to perform certain technical and professional services, as provided herein, in connection with that certain project identified as Columbia Way (Ave M) and 20th Street East/Site 2 Road Traffic Signal Modification/Left Turn Phasing/Roadway Improvements (PN 867) and Columbia Way (Ave M) and 30th Street East Traffic Signal Modification/Left Turn Phasing (PN 868).

WHEREAS, PROJECT DESIGNER represents that PROJECT DESIGNER has the expertise and is qualified to perform the services described in this Contract and is duly registered under the laws of the State of California.

WHEREAS, PROJECT DESIGNER desires to accept such engagement.

NOW, THEREFORE, the parties agree as follows:

1 DESCRIPTION OF WORK

1.1 The City hereby engages PROJECT DESIGNER, and PROJECT DESIGNER accepts such engagement, to perform the following design professional services in a manner satisfactory to CITY:

Project designer shall provide traffic signal and roadway improvement plans at the intersections of Avenue M (Columbia Way) at 20th Street East and Site 2 Road, and Avenue M (Columbia Way) and 30th Street East. The project will widen 20th Street East to add a southbound left turn lane, upgrade traffic signals, update signing and striping for new improvements, add curb ramps and provide ADA access across street and repair or replace asphalt pavement. All work will be done within the City's existing Right of Way.

TASK 1.0 – Project Meetings
Project Designer shall conduct a kickoff meeting with City staff to confirm the project goals. Project Designer will attend up to 3 project (teleconference) meetings and prepare meeting minutes.

TASK 2.0 – Preliminary Engineering
2.1 Field Review / Data Collection

Project Designer shall perform a field review of the project site to confirm existing conditions. We will request and review available record drawings and traffic studies within the project area.

2.2 Utility Research and Potholing

A. Project Designer shall perform a field review and research available public records for both public and franchise utilities to determine their locations and plot the location of known existing utilities, including but not limited to water, wastewater, storm drain, electric, gas, telecommunication, cable TV and fiber optic cable. Project Designer shall use DigAlert to provide a listing of providers and contacts for notification. Project Designer shall prepare and send an official first notice regarding the proposed project to the utility providers within the project limits. Upon completion of the design plans, Project Designer shall prepare a second notice for review of the proposed improvements and a request for relocation plans as necessary. A utility coordination spreadsheet will be prepared that will list and track the utility coordination efforts. Utility relocation design is not part of our scope of work. Project Designer shall coordinate with Southern California Edison for any electrical service connection and/or modifications to existing electrical services.

B. Project Designer shall mark out the proposed potholing locations. Project Designer's Subconsultant (C Below, Inc.) will pothole at location of proposed traffic signal poles to the depth of signal foundation design, as well as at the location of underground utilities at potential conflict locations to determine their horizontal and vertical location for clearance and connection points. Up to ten (10) potholes at 20th Street East and six (6) at 30th Street East. It is assumed that twelve (12) potholes that are not in the pavement will be sand backfilled and permanent surface patched. The four (4) potholes that are within the roadway will be slurry filled and hot AC patched. Project Designer's Subconsultant (C Below, Inc.) will obtain a no fee City encroachment permit and prepare a traffic control plan per the California Manual on Uniform Traffic Control Devices (CA MUTCD) for City's review and approval.

C. Project Designer/C Below Inc. shall will obtain a permission or encroachment permit from Plant 42/US Gov't property for potholing work (if necessary).

2.3 Survey and Mapping

Project Designer shall perform field surveying and mapping in support of the roadway improvements identified in the RFP along Columbia Way (Avenue M) and 20th Street and 30th Street. Project Designer shall establish new control on a local basis of bearings and tie to the NAVD88 vertical datum based on local benchmarks. The survey mapping will extend a 1,000' northerly, 700' westerly, and 1,000' easterly from the 20th Street East/Columbia Way intersection and 700' northerly, 700' westerly, 700' easterly and 100' south from the 30th Street East/Columbia Way intersection. The survey mapping will include the following items: hardscape, structures, walls, fences, trees, signage, striping and any observable utilities. Project Designer shall

prepare a topographic/utility base map in AutoCAD at a scale of 1" = 20' with 1' contour intervals. In addition, Project Designer shall retrace the centerline and right of way boundaries within the project limits. The boundary retracement will be based upon field monumentation and record map information. Assumption: This scope of work does not include the cost of acquiring title reports. Any additional right of way documents not of public record will need to be provided by City.

TASK 3.0 – Final Design
3.1 Prepare 50%, 90% and 100% Final Plans. Project Designer shall shall prepare 50% street improvement plans. The following sheets are anticipated: • Title Sheet • Typical Section • Demolition and Utility Disposition Plan (Double stacked) – 1" = 40' scale • Columbia Way (Avenue M) Street Plan and Profile at 20th Street East - 1" = 40' Scale) • Columbia Way (Avenue M) Street Plan and Profile at 30th Street East - 1" = 40' Scale • 20th Street West Street Plan and Profile - 1" = 40' Scale • Signing and Striping Plan (Double stacked) - 1" = 40' Scale • Traffic Signal Modification Plan (Pole Layout) at 20th Street East - 1" = 20' scale • Traffic Signal Modification Plan (Pole Layout) at 30th Street East - 1" = 20' scale

Upon receipt of the City's 50% comments, Project Designer shall update the 50% plans and prepare the following plans: • Construction Details - 8 curb ramps, median improvements and box culvert extension (2 Sheets) • Traffic Signal Modification Plans with Pole, Equipment and Conductor Schedules and Phase Diagram

Upon receipt of the City's 90% comments, Project Designer shall prepare the 100% final plans. Improvements will be designed to stay within existing City right of way and will include: • Re-stripe all the roadway legs to match all the distances being surveyed. • Traffic signal modifications to add left-turn phasing, removal and existing poles, installation of new poles and mast arms, new conduits, upgrade of signal heads with higher visibility features, installation of video detection system, bike detection, pedestrian push button, and other miscellaneous upgrades • Traffic signal phasing will be based on existing City traffic volumes, studies and/or counts.

It is assumed that the widening of 20th Street East will occur on east side of the street; therefore, the existing SCE poles and drainage improvements on the west side of 20th Street will not be impacted. It is anticipated that storm drain improvements to be limited to extending the existing concrete culvert at the northwest corner if needed.

Roadway widening pavement structural section will be based on the City's minimum pavement section for this classification of roadway. Pavement rehabilitation will be based visual inspection of the roadway. Landscape improvements are not anticipated.

All plan sizes shall be 24" X 36", ink on mylar and signed and stamped by a Civil

Engineer registered in the state of California. Final drawings will be submitted via an approved electronic data interchange method in both PDF and AutoCAD 2022 formats.

3.2 Prepare 90% and 100% Final Specifications
Project Designer shall prepare draft specifications including the bid proposal at the 90% phase and update and submit the final specifications at the 100% final phase. Final specifications will be submitted via an approved electronic data interchange method in both PDF and Word formats.

3.3 Prepare Construction Cost Estimate
Project Designer shall prepare a 50% construction cost estimate and update the estimate for the 90% and 100% final phase. Final construction cost estimate shall be submitted via an approved electronic data interchange method in both PDF and Excel formats.

TASK 4.0 – Bid Phase Support
Project Designer shall perform bid support services, including addressing questions submitted by interested bidders and issuing the appropriate clarifications and/or recommendations.

Task 5.0 – Construction Design Support

Project Designer shall provide design support services during the construction phase.
5.1 Project Designer shall attend the pre-construction meeting and up to four construction meetings. Project Designer shall perform the periodic field visit and final project inspection field walk after the construction meetings. Total of five (5) meetings/visits.
5.2 Project Designer shall review up to 15 submittals and shop drawings.
5.3 Project Designer shall respond to up to 15 contractor's Requests for Information (RFIs).
5.4 Project Designer shall review proposed change orders and draft change order language as requested by the City.
5.5 Project Designer shall prepare an as-built record drawing set based on red-line markups and review record of changes that occur during the construction phase and verify that red-lined plans reflect changes that occur during construction.

1.2 Project deliverables shall be reviewed and approved by CITY to determine acceptable completion. CITY shall have the right to review and inspect the work during the course of its performance at such times as may be specified by CITY.

1.3 PROJECT DESIGNER shall not accept any change of scope, or change in contract provisions, unless issued in writing, as a contract change order or amendment and signed by CITY. Any extensions of time must be mutually agreed upon in writing and executed by both parties.

1.4 CITY shall provide to PROJECT DESIGNER, without charge, all data, program information, including reports, records, maps, and other information, now in CITY's possession, which may facilitate the timely performance of the work.

2 CITY PROJECT MANAGER

To provide the design professional services required by this Contract, PROJECT DESIGNER shall act under the authority and approval of a Project Manager appointed by the Director of Public Works/designee. The City Project Manager will oversee the work under this Contract, assist PROJECT DESIGNER with any necessary information, audit billings, and approve payments. PROJECT DESIGNER shall channel reports, deliverables and special requests through the City Project Manager.

3 PROJECT DESIGNER'S KEY PERSONNEL

PROJECT DESIGNER's Team and Key Personnel are as follows:

Michael Ip, PE, QSD, Project Manager (MNS)
Sam Potts, PE, QSD/QSP, Project Engineer (MNS)
Shane Sobecki, PLS, EIT, Principal Surveyor (MNS)
Thomas Wheat, PE, TE, Traffic Signal Engineer, TJW Engineering, Inc. (TJW)
C Below, Inc. - Utility Potholing

This Design Professional Services Contract has been awarded to PROJECT DESIGNER based on its representation that those personnel and subcontractors listed above will perform the portions of the work listed above. PROJECT DESIGNER shall not deviate nor substitute any of these team members without prior written approval by CITY.

4 COMMENCEMENT AND COMPLETION OF WORK

The execution of this Contract by the parties does not constitute an authorization to proceed. The services of PROJECT DESIGNER shall commence when CITY, acting by and through its Project Manager, has issued an Authorization to Proceed. PROJECT DESIGNER shall complete all the work described in Section 1 and submit final deliverables within One Hundred Eighty (180) Calendar days following PROJECT DESIGNER's receipt of Authorization to Proceed. PROJECT DESIGNER shall have no claim for compensation for any services or work, which has not been authorized by CITY's Authorization to Proceed.

5 TAXES

5.1 PROJECT DESIGNER shall pay all sales, consumer, use, and other similar taxes required to be paid by PROJECT DESIGNER in accordance with state and local laws.

5.2 PROJECT DESIGNER is an independent contractor and shall have no power or authority to incur any debt, obligation, or liability on behalf of CITY. No person employed by PROJECT DESIGNER or acting on its behalf, in connection with this Contract shall be considered the Agent or employee of CITY.

5.3 PROJECT DESIGNER shall be required to obtain a current City of Palmdale business license, as required by the Palmdale Municipal Code, before an Authorization to Proceed is issued.

6 PATENT FEES AND ROYALTIES

PROJECT DESIGNER shall pay all license fees and royalties and assume all costs incident to the use, in the performance of the work or the incorporation in the work of any invention, design, process, product or device which is the subject of patent rights or copyrights held by others. If a particular invention, design, process, product or device is specified by CITY for use in the performance of the work and if, to the actual knowledge of CITY, its use is subject to patent rights or copyrights calling for the payment of any license fee or royalty to others, the existence of such rights shall be disclosed by CITY in the contract documents. PROJECT DESIGNER shall indemnify and hold harmless CITY and anyone directly or indirectly employed by CITY from and against all claims, damages, losses and expenses (including attorneys' fees) arising out of any infringement of patent rights or copyrights incident to the use in the performance of the work, or resulting from the incorporation in the work of any invention, design, process, product or device not specified by CITY, and shall defend all such claims in connection with any alleged infringement of such rights.

7 STANDARDS OF PERFORMANCE

7.1 PROJECT DESIGNER shall be responsible for the completeness and accuracy of its services and work and documents resulting there from, and CITY shall not be responsible for discovering deficiencies therein. PROJECT DESIGNER shall correct any such deficiencies or errors without additional compensation and without cost to CITY, except to the extent any such deficiency is directly attributable to deficiencies in CITY-furnished information.

7.2 PROJECT DESIGNER shall be familiar with CITY's Standard Details and Specifications and other relevant CITY regulations. PROJECT DESIGNER shall ensure there are no conflicts among the Contract Documents including, but not limited to, the CITY's Standard Specifications and Special Provisions for Construction Contracts, the plans and specifications prepared by PROJECT DESIGNER, any standard details or specifications incorporated therein by reference, and the Construction Contract.

8 PROJECT DESIGNER'S PERSONNEL

8.1 All services required under this Contract shall be performed by PROJECT DESIGNER, or under PROJECT DESIGNER's direct supervision, and all personnel

shall possess the qualifications, permits and licenses required by State and local law to perform such services.

8.2 PROJECT DESIGNER shall be solely responsible for the satisfactory work performance of all personnel engaged in performing services required by this Contract, and compliance with all reasonable performance standards established by CITY.

8.3 PROJECT DESIGNER shall be responsible for payment of all PROJECT DESIGNER's employees' and subcontractor's wages and benefits and shall comply with all requirements pertaining to the employer's liability, workers' compensation, unemployment insurance, and Social Security.

8.4 PROJECT DESIGNER shall indemnify and hold harmless CITY, and its respective officers, agents and employees from and against all claims, demands, damages or costs arising from PROJECT DESIGNER's acts or omissions with respect to any liability, damages, claims, costs and expenses of any nature arising from alleged violations of personnel practices.

8.5 PROJECT DESIGNER shall pay, if required by applicable law, not less than the general prevailing hourly wage rates, as determined by the Director of the Department of Industrial Relations pursuant to the California Labor Code, for each craft, classification, or type of worker needed to perform the Contract. Copies of the prevailing rate of per diem wages are on file in the office of the Director of Public Works.

9 COMPENSATION

9.1 For all of work and services including the various phases of tasks as described in Section 1, Scope of Services, CITY shall pay to PROJECT DESIGNER an amount not to exceed the sum of One Hundred Fifty-Three Thousand Six Hundred

Fifty One dollars ($153651.00), as follows:

MNS Engineers, Inc. - Team Resource Estimate
Columbia Way and 20th Street East and 30th Street East Intersection Improvements - City Project Nos. 867 & 868

	MNS Engineers Team											Other Resources			Summary	
	Principal Engineer	Senior Project Engineer	Project Engineer	Senior CADD Technician	Assistant Engineer	Principal Surveyor	Associate Project Surveyor	Surveying CADD Tech	Party Chief	Chain Person	MNS Resource Hours	MNS Resource Costs	T.J.W. Engineering	C Below	Reimbursable Expenses	Grand Total	Task Total
Task Description	$247	$191	$175	$139	$144	$232	$149	$140	$160	$139							
Task 1 - Project Meetings (3)	4		4								8	$1,688				$1,688	$1,688
Task 2 - Preliminary Engineering																	
1. Field Review/Data Collection	2		4								6	$1,194				$1,194	
2.1 Utility Research/Coordination	6		20								26	$4,982			$300	$5,282	
2.2 Utility Potholing (16 Total; 4 Slurry & Hot Patched)	1		4								5	$947		$30,803		$31,750	
2.3 Plant 42/US Gov Coordination	1		4								5	$947				$947	
3. Survey and Mapping						22	20	32	40	40	154	$24,812				$24,812	$63,986
Task 3 - Final Design																	
1. Prepare 50%, 90% and 100% Final Plans																	
Title Sheet	1		2	8							11	$1,709			$25	$1,734	
Typical Sections	2		4	10							16	$2,584			$25	$2,609	
Demolition & Utility Disposition Plan - Obl Stacked	4	1	8	20							33	$5,359			$50	$5,409	
Columbia Way at 20th St East - Plan and Profile	3	1	8	12							24	$4,000			$25	$4,025	
Columbia Way at 30th St East - Plan and Profile	3	1	8	8							18	$3,094			$25	$3,119	
20th St East - Plan and Profile	4	1	20	10							35	$5,969			$25	$6,094	
Construction Details	4	1	12		24						41	$6,735			$50	$6,785	
Signing and Striping Plan - Obl stacked	4	1	8		20						33	$5,459			$50	$5,509	
Traffic Signal Plan											0	$0	$23,000		$50	$23,050	
2. Specifications	4	1	12								17	$3,279	$1,150			$4,429	
3. Construction Cost Estimate	4	1	8	12							25	$4,247	$1,150			$5,397	$68,150
Task 4 - Bid Phase Support	2		4								6	$1,194				$1,194	$1,194
Task 5 - Construction Design Support																	
1. Construction Meetings/Field Visit/Final Walk (5)	4		10								14	$2,738				$2,738	
2. Submittal Reviews (up to 15)	6		15								21	$4,107	$863			$4,970	
3. RFI Responses (up to 15)	6		15								21	$4,107	$863			$4,970	
4. Change Order Assistance	4		12								16	$3,088				$3,088	
5. Record Drawings	1		2	8							11	$1,709	$1,150			$2,859	$18,624
Total Staff Hours	70	8	182	88	44	22	20	32	40	40	546 Hours	$94,048	$28,179	$30,803	$625	$153,651	$153,651
Total Staff Costs	$17,290	$1,528	$31,850	$12,232	$6,336	$5,104	$2,980	$4,766	$6,400	$5,560							

PROJECT DESIGNER shall perform no work in excess of the total contract price without prior approval of CITY. Total contract price includes expenses related to travel to and from CITY to meet with City and to appear before City Council or any other board or commission of CITY.

9.2 An application and certification for payment form must be submitted to CITY which shall include the following: a clear, detailed invoice reflecting hours being billed for, a summary sheet showing percentage of work completed to date, amount/percent billed to date and current status of all tasks within the project; any/all backup documentation supporting the above items. Work schedule updates must also be included in the monthly progress payment requests.

9.3 PROJECT DESIGNER shall maintain adequate records and shall permit inspection and audit by CITY of PROJECT DESIGNER's charges under this Contract. PROJECT DESIGNER shall make such records available to CITY during normal business hours upon reasonable notice. Nothing herein shall convert such records into public records, and they will be available only to CITY and any specified public agencies. Such records shall be maintained by PROJECT DESIGNER for one (1) year following completion of the work under this Contract unless a longer period of time is required by state or federal law, in which event PROJECT DESIGNER shall retain its records for the time required by such laws.

9.4 No payment made hereunder by CITY to PROJECT DESIGNER, shall be construed as an acceptance by CITY of any work or materials, nor as evidence of satisfactory performance by PROJECT DESIGNER of its obligations under this Contract.

10 INDEMNIFICATION

PROJECT DESIGNER agrees to indemnify, defend and hold harmless CITY, and its respective officers, agents and employees, from and against all claims, losses, obligations, or liabilities which arise out of, pertain to, or relate to PROJECT DESIGNER'S negligence, recklessness, or willful misconduct under this Contract.

11 INSURANCE

11.1 PROJECT DESIGNER, at its expense, shall maintain in effect at all times during the performance of work under this Contract not less than the following coverage and limits of insurance, which shall be maintained with insurers listed "A" or better in the Best's Insurance Guide and authorized to do business in the State of California. **Proof of Insurance, as identified in Section 11.8, must be reviewed, and accepted by the City Attorney**.

11.1.1 Workers' Compensation and Employer's Liability
- Workers' Compensation -- coverage as required by the State of California
- Employer's Liability -- $1,000,000.00 each accident
  $1,000,000.00 policy limit bodily injury
  $1,000,000.00 each employee bodily injury by disease

11.1.2 Professional Liability (Errors & Omissions) Insurance*
- $2,000,000 limit on a per occurrence basis

11.1.3 Commercial General Liability
- $2,000,000.00 limit on per occurrence basis
- $4,000,000.00 general aggregate limit

11.1.4 Commercial Automobile Liability
- $2,000,000.00 combined single limit including owned, non-owned and hired automobile coverage

11.2 All of PROJECT DESIGNER's policies shall contain an endorsement providing that written notice shall be given to CITY at least thirty (30) calendar days prior to termination, cancellation or reduction of coverage in the policy.

11.3 Policies providing for bodily injury and property damage coverage shall contain the following:

A. An endorsement extending coverage to the City as an additional insured, in the same manner as the named insured, as respects liability arising out of the performance of any work under the Contract. Such insurance shall be primary insurance, as respects the interest of the City, and any other insurance

maintained by the City shall be considered excess coverage and not contributing insurance with the insurance required hereunder. The Certificate and endorsements shall state that: "The City of Palmdale, City of Palmdale in its capacity as the Successor Agency to the CRA, Palmdale Civic Authority, Housing Authority, Industrial Development Authority, Airport Authority, their officers, agents, employees and volunteers are named as additional insured".

B. "Severability of Interest" clause.

11.4 Promptly on execution of this Contract, and prior to commencement of any work, PROJECT DESIGNER shall deliver to CITY certificates of insurance and endorsements to all required policies demonstrating that PROJECT DESIGNER has the required coverage and showing the required named insureds. Within five (5) days of written request from CITY, PROJECT DESIGNER shall deliver to CITY full and complete copies of all insurance policies required by this Contract.

11.5 The requirements as to the types and limits of insurance to be maintained by PROJECT DESIGNER are not intended to and shall not in any manner limit or qualify PROJECT DESIGNER's liabilities and obligations under this Contract.

11.6 Any policy or policies of insurance that PROJECT DESIGNER elects to carry as insurance against loss or damage to its equipment and tools or other personal property used in the performance of this Contract shall include a provision waiving the insurer's right of subrogation against CITY.

11.7 All insurance coverages must be maintained throughout the duration of this Contract.

11.8 Acceptable Proof of Insurance:

11.8.1 ACORD Certificate of Insurance listing all coverages, limits, deductibles and insureds; and endorsements for all applicable coverages if agent has authority to issue it; Additional insured Form CG20101185 or CG20100707 and CG20370704 or equivalent must be provided for general liability coverage. Additional insured form CA0001 must be provided for automobile liability coverage.

11.8.2 Agents must confirm that policy endorsements have been ordered from the respective insurance companies. Upon issuance, policy endorsements listing all insurers must be submitted to the City Attorney.

11.8.3 *When professional (E&O) liability coverage is provided on a "claims made basis", PROJECT DESIGNER will continue to renew the insurance for a period of five (5) years after this Agreement expires or is terminated. Such insurance will have the same coverage and limits as the policy that was in effect during the term of this Agreement, and will cover PROJECT DESIGNER, or its officers, employees, or agents during the time this Agreement was in effect.

11.9 Notwithstanding any other provision of this Contract, CITY may immediately terminate this Contract if, at any time PROJECT DESIGNER fails to maintain the required insurance for any period of time or fails to comply with any of the insurance requirements listed above.

11.10 CONTRACTOR shall require any and all subcontractor's working on its behalf to provide insurance coverages and limits that are based on the scope of work and nature of risk being performed by the subcontractor. Any and all subcontractors working on behalf of CONTRACTOR shall be subject to all other insurance requirements that are stated herein.

Any deviation in this requirement will be CONTRACTOR's sole risk. CONTRACTOR's insurance requirements in Section 11 will not be impacted and/or limited by such deviation.

12 TERMINATION WITHOUT CAUSE

City reserves the right to terminate this Contract or any part thereof for its sole convenience with fifteen (15) days written notice. In the event of such termination, PROJECT DESIGNER shall immediately stop all work hereunder, and shall immediately cause any of its suppliers and sub-consultants to cease such work. PROJECT DESIGNER shall also surrender to CITY all finished or unfinished documents or programs and other materials, which shall be City's property. As compensation in full for services performed to the date of such termination, the PROJECT DESIGNER shall receive an amount equal to the value of the work completed as of the termination date in accordance with the fee schedule or as negotiated between the parties. In no event shall the amount payable upon termination exceed the total maximum compensation provided for in this Contract.

13 TERMINATION FOR CAUSE

13.1 If the City determines that the PROJECT DESIGNER has failed to supply an adequate working force, or to provide services of proper quality, or has failed in any other respect to satisfactorily perform the services specified in this Contract, the City shall give written notice to the PROJECT DESIGNER specifying all defaults to be remedied within thirty (30) days. Such notice shall set forth the basis for the City's dissatisfaction and suggest corrective measures. If, after thirty days, the PROJECT DESIGNER has failed to implement the corrective measures, the City may elect to terminate this Contract, in whole or in part.

13.2 In the event the City terminates this Contract in whole or in part as provided herein above, the City may procure, upon such terms and in such manner, as it may deem appropriate, services similar to those terminated.

13.3 If this Contract is terminated as provided above, the City may require the PROJECT DESIGNER to provide all finished or unfinished documents, data, studies, software, drawings, maps, photographs, reports, etc., prepared by the PROJECT

DESIGNER. Upon such termination, the PROJECT DESIGNER shall be paid an amount equal to the value of the services provided and work performed as of the date of termination. Such payment by the City may take into consideration the costs associated with hiring another PROJECT DESIGNER to complete the services. In the event no new PROJECT DESIGNER is employed, the PROJECT DESIGNER shall be paid an amount equal to the value of the work performed. In ascertaining the value of the work performed up to the date of termination, consideration shall be given to both completed work and work in progress, to complete and incomplete drawings, and to other documents when such are delivered to CITY, and to authorized reimbursement expenses.

The above is in addition to any other remedies available by law or equity to the City.

13.4 If, after notice of termination of the Contract under the provisions of this Section 13, it is determined, for any reason, that the PROJECT DESIGNER was not in default, or that the default was excusable, then the rights and obligations of the parties shall be the same as if the notice of termination had been issued pursuant to Section 12.

14 DISPUTE RESOLUTION

All claims, disputes, and other matters in question between CITY and PROJECT DESIGNER arising out of, or relating to this Contract, or the breach thereof shall, to the extent reasonably feasible, be resolved through good faith negotiations between the parties.

15 OWNERSHIP OF DOCUMENTS

All documents, including, but not limited to, tracings, drawings, plans, specifications, original mylars, estimates, field notes, investigations, design analysis and studies which are prepared in the performance of this Contract are to be, and remain the property of, CITY. PROJECT DESIGNER shall furnish CITY, upon its request, originals or reproducible or electronic copies of technical specifications and of all other documents listed above. PROJECT DESIGNER shall endorse, by his professional seal, all plans and data furnished by him.

16 RE-USE OF DOCUMENTS

The parties agree the documents, drawings, specifications, and designs, although the property of CITY, are prepared for a specific project and are not intended nor represented by PROJECT DESIGNER to be suitable for re-use for any other project. Any reuse without written verification or adaptation by PROJECT DESIGNER for the specific purpose intended will be at CITY's sole risk and without liability or legal exposure to PROJECT DESIGNER.

17 SUBCONTRACTING, DELEGATION AND ASSIGNMENT

17.1 PROJECT DESIGNER shall not delegate, subcontract or assign its duties or rights hereunder, either in whole or in part, without the prior written consent of CITY; provided, however, that claims for money due or to become due to PROJECT DESIGNER from CITY under this Contract may be assigned to a bank, trust company or other financial institution without such approval. Any proposed delegation, assignment or subcontract shall provide a description of the services covered, identification of the proposed assignee, delegee or subcontractor, and an explanation of why and how the same was selected, including the degree of competition involved. Any proposed agreement with an assignee, delegee or subcontractor shall include the following:

A. The amount involved, together with PROJECT DESIGNER's analysis of such cost or price; and

B. A provision requiring that any subsequent modification or amendment shall be subject to the prior written consent of CITY.

C. The requirement to hire only those persons authorized by federal law to work in the United States.

17.2 Any assignment, delegation or subcontract shall be made in the name of PROJECT DESIGNER and shall not bind or purport to bind CITY and shall not release PROJECT DESIGNER from any obligations under this Contract including, but not limited to, the duty to properly supervise and coordinate the work of employees, assignees, delegees and subcontractors. No such assignment, delegation or subcontract shall result in any increase in the amount of total compensation payable to PROJECT DESIGNER under this Contract.

18 NON-DISCRIMINATION AND EQUAL EMPLOYMENT OPPORTUNITY

18.1 In performance of this Contract, PROJECT DESIGNER shall not discriminate against any employee, subcontractor, or applicant for employment because of sex, color, race, religion, ancestry, national origin, disability, medical condition, marital status, sexual orientation, or age. PROJECT DESIGNER will take affirmative action to ensure that applicants are employed, and that employees are treated during employment, without regard to their race, color, religion, ancestry, sex, national origin, handicap, or age. Affirmative action relating to employment shall include, but not be limited to the following: employment, upgrading, demotion or transfer; recruitment; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship.

18.2 The provisions of subsection 18.1 above shall be included in all solicitations or advertisements placed by or on behalf of PROJECT DESIGNER for personnel to perform any services under this Contract. CITY shall have access to all documents, data and records of PROJECT DESIGNER and its subcontractors for purposes of determining compliance with the equal employment opportunity and non-

discrimination provisions of this Section, and all applicable provisions of Executive Order No. 11246 which is incorporated herein by this reference. A copy of Executive Order No. 11246 is available for inspection at, and on file with, the Palmdale City Clerk's Office.

19 FINANCIAL INTEREST CERTIFICATION

19.1 PROJECT DESIGNER warrants that no person has been employed or retained to solicit or secure this Contract upon an agreement or understanding for a commission, percentage, brokerage or contingent fee; and that no officer or employee of the CITY has any interest, financially or otherwise, in PROJECT DESIGNER's firm.

19.2 For breach or violation of this warranty, CITY shall have the right to annul this Contract without liability, or at its discretion to deduct from the Contract Price or consideration, the full amount of such commission, percentage, brokerage or contingent fee.

20 CONFLICT OF INTEREST

20.1 PROJECT DESIGNER stipulates that its officers and employees do not now have a conflict of interest and it further agrees for itself, its officers and its employees that it will not contract for or accept employment for the performance of any work or services with any individual business, corporation or government unit that would create a conflict of interest in the performance of its obligations pursuant to this Contract or which would cause PROJECT DESIGNER to be "financial interested" (as provided in California Government Code Section 1090 et seq. or 87100 et seq.) in any contract or decision made by CITY on any matter.

20.2 PROJECT DESIGNER shall not employ any City official or employee to perform any work required pursuant to this Contract.

20.3 If PROJECT DESIGNER is a registered professional engineer or licensed land surveyor and the scope of work requires PROJECT DESIGNER's recommendation of the actual formula to spread the costs of an assessment district's improvements, then PROJECT DESIGNER shall not participate in making that recommendation if the additional elements set forth in Government Code section 87100.1(c) apply. Those additional elements are: (1) PROJECT DESIGNER has received income of $250 or more for professional services in connection with any parcel included in the benefit assessment district within 12 months prior to the creation of the district; and (2) the district includes other parcels in addition to those parcels for which PROJECT DESIGNER received the income. In the event a conflict of interest does arise in that context, City shall select a different PROJECT DESIGNER to recommend the actual formula to spread the costs of the assessment district's improvements and the costs of such services shall be deducted from the compensation to be paid to PROJECT DESIGNER.

20.4 To the extent required by the City Manager/designee, PROJECT DESIGNER shall complete and file with the City Clerk a Form 700 Statement of Economic Interests disclosing any reportable property interests, income, gifts, investments, or business positions.

21 COMPLIANCE WITH LAW

21.1 PROJECT DESIGNER shall comply with all state and federal laws, including but not limited to, the requirement to hire only those persons authorized by federal law to work in the United States. If PROJECT DESIGNER uses any subcontractors to complete this Contract, this same requirement shall be included in all subcontracts and strictly enforced by PROJECT DESIGNER.

21.2 The law of the state of California shall govern this Contract. The venue of any legal action, either formal or informal, shall be the County of Los Angeles.

22 NOTICES

Any notice required under this Contract shall be in writing, addressed to the appropriate party at its address on the signature page and given personally or by registered or certified mail postage prepaid, or by a commercial courier service. All notices shall be effective upon the date of receipt.

23 ENTIRE CONTRACT AND AMENDMENTS

23.1 This Contract is the complete agreement between the parties and supersedes all prior proposals, agreements, and understandings between the parties and may not be modified or terminated orally.

23.2 No attempted waiver of any of the provisions hereof, nor any modification in the nature, extent or duration of the work to be performed by PROJECT DESIGNER hereunder, shall be binding unless in writing and signed by the party against whom the same is sought to be enforced.

23.3 The failure of any party to enforce against another party any provision of this Contract shall not constitute a waiver of that party's right to enforce such a provision at a later time, and shall not serve to vary the terms of this Contract.

24 ATTORNEY'S FEES

If any action at law or in equity is brought to enforce or interpret any provisions of this Contract, the prevailing party in such action shall be entitled to reasonable attorney's fees, costs and necessary disbursements, in addition to such other relief as may be sought and awarded.

In Witness Whereof, the parties hereto have caused this Contract to be executed and attested by their respective officers thereunto duly authorized.

CITY OF PALMDALE:

Ronda Perez Date
Interim City Manager

MNS ENGINEERS, INC.:

8-22-22

Shawn Kowalewski Date
Vice President

ADDRESS FOR NOTICE:
CITY OF PALMDALE
38250 Sierra Highway
Palmdale, CA 93550

ADDRESS FOR NOTICE:
MNS ENGINEERS, INC.
100 E. Thousand Oaks Blvd., Suite 105,
Thousand Oaks, CA 91360

APPROVE AS TO FORM:

Scott E. Porter
Interim City Attorney

ATTEST:

Shanae S. Smith
City Clerk

ATTEST: If Corporation

Secretary

City Council Staff Report

DATE: **SEPTEMBER 21, 2022**

TO: **HONORABLE MAYOR AND CITY COUNCIL**

FROM: **CITY MANAGER'S OFFICE – FINANCE DIVISION**

DISTRICT: **ALL**

SUBJECT: **ADOPT RESOLUTION NO. CC-2022-99, A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF PALMDALE DECLARING ITS INTENTION TO ESTABLISH A COMMUNITY FACILITIES DISTRICT AND TO AUTHORIZE THE LEVY OF SPECIAL TAXES THEREIN - RITTER RANCH MAINTENANCE SERVICES, ADOPT RESOLUTION NO. CC-2022-100, A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF PALMDALE DECLARING ITS INTENTION TO ESTABLISH A COMMUNITY FACILITIES DISTRICT AND TO AUTHORIZE THE LEVY OF SPECIAL TAXES THEREIN - RITTER RANCH PHASE 1 PUBLIC FACILITIES, ADOPT RESOLUTION NO. CC-2022-101, A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF PALMDALE DECLARING ITS INTENTION TO INCUR BONDED INDEBTEDNESS OF THE PROPOSED COMMUNITY FACILITIES DISTRICT NO. 2022-3 (RITTER RANCH PHASE 1 PUBLIC FACILITIES) AND ADOPT RESOLUTION NO. CC-2022-102, A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF PALMDALE DETERMINING THAT THE SPECIAL TAX SHALL CEASE TO BE LEVIED ON CERTAIN PARCELS LOCATED WITHIN THE CITY OF PALMDALE COMMUNITY FACILITIES DISTRICT NO. 93-1 (RITTER RANCH).**

ISSUE

Adopt Resolution No. CC 2022-099, a Resolution of the City Council of the City of Palmdale declaring its intention to establish a Community Facilities District and to authorize the levy of special taxes therein - Ritter Ranch Maintenance Services.

Adopt Resolution No. CC 2022-100, a Resolution of the City Council of the City of Palmdale declaring its intention to establish a Community Facilities District and to authorize the levy of special taxes therein - Ritter Ranch Phase 1 Public Facilities.

Adopt Resolution No. CC 2022-101 a Resolution of the City Council of the City of Palmdale declaring its intention to incur bonded indebtedness of the proposed Community Facilities District No. 2022-3 (Ritter Ranch Phase 1 Public Facilities).

Adopt Resolution No. CC 2022-102, a Resolution of the City Council of the City of Palmdale determining that the Special Tax shall cease to be levied on certain parcels located within the City of Palmdale Community Facilities District No. 93-1 (Ritter Ranch).

RECOMMENDATION

Staff recommends that the City Council:

1. Adopt Resolution No. CC 2022-099 declaring the City's intention to establish a Community Facilities District and to authorize the levy of special taxes therein - Ritter Ranch Maintenance Services.

2. Adopt Resolution No. CC 2022-100 declaring the City's intention to establish a Community Facilities District and to authorize the levy of special taxes therein - Ritter Ranch Phase 1 Public Facilities.

3. Adopt Resolution No. CC 2022-101 declaring the City's intention to incur bonded indebtedness of the proposed Community Facilities District No. 2022-3 (Ritter Ranch Phase 1 Public Facilities).

4. Adopt Resolution No. CC 2022-102 determining that the Special Tax shall cease to be levied on certain parcels located within the City of Palmdale Community Facilities District No. 93-1 (Ritter Ranch).

BACKGROUND

In connection with the proposed master planned development of an area known as Ritter Ranch ("Project"), the City formed City of Palmdale Community Facilities District 93-1 ("CFD 93-1") to finance certain public facilities for the Project. The City issued Special Tax Bonds for CFD 93-1 in 1995 for that purpose ("93-1 Bonds"). The outstanding 93-1 Bonds were purchased by Preston Hollow Capital, LLC ("PHC") in 2018. In 2020, PHC acquired the property within CFD 93-1 and transferred the land to RdR Development Holdings, LLC ("RdR"), a limited liability company for which PHC is the sole member. Collectively, PHC and RdR are referred to as the RdR Parties. PHC continues to own the 93-1 Bonds and RdR continues to own the property within CFD 93-1.

In response to requests by RdR Parties, on September 1, 2020, the City Council adopted a resolution approving certain actions related to the Project, including a deferral of 93-1 Bonds bond payments and an agreement with PHC to pay costs of the City related to the development, and approved agreements with consultants to assist the City with matters related to proposed agreements and land use approvals for the Project and the 93-1 Bonds.

The RdR Parties are now prepared to proceed with development of the first phase of the Project, encompassing 1,180 residential units ("Phase 1"). They have requested the formation of a new community facilities district for the Phase 1 property to fund public

infrastructure and improvements necessary for the development of the Project and to refinance a portion of the 93-1 Bonds, the removal of the Phase 1 property from CFD 93-1 and elimination of the CFD 93-1 special tax levy on the Phase 1 property.

DISCUSSION

Special Tax Rates – Facilities and Maintenance Services

Staff, the RdR Parties and the City's bond counsel, municipal advisor and special tax consultant have been negotiating terms for formation of a new Phase 1 community facilities district ("CFD 2022-3") to pay for public facilities and a second overlapping community facilities district ("CFD 2022-2") to pay for certain public services.

The special taxes to be levied in CFD 2022-2 are meant to fund the negative fiscal impact to the City to provide public safety services for the Phase 1 property when developed, as well as incorporate existing City property tax assessments for parks, street lighting and drainage. This is consistent with the method used in the recently formed City-wide maintenance and services CFD 2022-1 for new development ("CFD 2022-1"), eliminating individual assessments for various purposes and combining them into one consolidated special tax. This tax rate is initially set at $1,067 per year for single-family homes and $993 per year for each unit for multi-family homes (townhomes and clustered homes). The initial special tax rates (starting in Fiscal Year 2023-24) were established pursuant to a Fiscal Impact Analysis commissioned by the City and prepared by NBS Government Finance Group, the City's regular special tax consultant. The public safety component special tax rate is $673 initially and the remaining $394 is consistent with the existing assessments to be levied on developed property for the maintenance of streetlights, parks and drainage and related administrative costs.

The special tax rates for CFD 2022-3 to pay for public facilities and refinance 93-1 Bonds are designed so that the total property tax burden on each dwelling unit will not exceed 2% of the assessed value of such property. This tax burden incorporates all ad valorem taxes - the 1% general levy and any school, college or AVEK general obligation bond tax levy – as well as any special assessments or fees included on the property tax bill. These additional special assessments will also include the special taxes for CFD 2022-2.

The 2% limit is initially measured by the expected base sales price of each dwelling unit. To calculate the maximum CFD 2022-3 tax rates, the City commissioned a Price Point Study ("PPS") to determine a reasonable sales price for each unit type proposed for Phase 1. This includes single family detached homes on lots ranging from 5,000 to 7,000 square feet expected to be developed in Phase 1A (553 dwelling units) and single family detached homes on 5,000 square foot lots, clustered homes and townhomes in Phase 1B (627 dwelling units).

Based on 2% of the sales price, all other taxes and assessments were deducted (including the proposed homes new CFD 2022-2 special tax) to arrive at the limit of amount available for CFD 2022-3 special taxes. These limits were then incorporated into the Rate and Method of Apportionment of Special Tax ("RMA") for CFD 2022-3, the document that governs how special taxes will be levied on property within the new CFD 2022-3 going forward. The special taxes are scaled in proportion to the home/lot size and range from $2,352 for the smallest townhome to $4,809 for the largest single-family homes on the largest lots.

In the event that the market price of the homes declines before new CFD 2022-3 special tax bonds ("CFD 2022-3 Bonds") can be sold, the RMA provides that the City can commission a new PPS and reduce the maximum tax rates to stay within the 2% limit at the time the CFD 2022-3 Bonds are issued.

The 2% limit exceeds the City's current 1.8% limit contained in its Local Goals and Policies for Community Facilities District - Residential Property ("Goals and Policies") adopted May 26, 2004. The City may waive this 1.8% limit contained in the Goals and Policies.

The RdR Parties have requested a maximum 40-year term for any issue of CFD 2022-3 Bonds, and an escalation of the maximum tax rates by 2% per year for a period of 15 years rates (starting in Fiscal Year 2023-24). These terms, including the 2% limit on the maximum tax rate, were deemed reasonable given the amount of investment by the RdR Parties to date and the amount required to continue to move Phase 1 property forward to development and sale of homes to individual homeowners.

The CFD 2022-2 annual special tax for maintenance and public safety services also includes an annual inflation factor similar to the formula contained in the recently formed City-wide maintenance and services CFD 2022-1, and, like CFD 2022-1, is in effect in perpetuity. CFD 2022-2 also contains a provision that, subsequent to any final payment of CFD 2022-3 Bonds, if the Phase 1 homeowners association is not fulfilling its obligation to maintain landscaping along major arterials in the Project, CFD 2022-2 can increase its annual special tax levies for this purpose, up to the amount that was being levied for debt service in CFD 2022-3.

Formation Proceedings

The process to form both CFD 2022-2 and CFD 2022-3 starts with RdR filing a petition with the City requesting that the City Council undertake the proceedings to form each CFD and to levy the special tax to provide funding for facilities or services, as the case may be. Each petition includes a request that the City hold a special election to authorize the special taxes and to establish an appropriations limit for the CFD, using mailed or hand-delivered ballots to be opened and canvassed and the results certified at the same meeting of the City Council as the public hearings for the CFDs are to be

held. The petition for CFD 2022-3 also contains a request that issuance of bonds be authorized for CFD 2022-3. RdR filed the petitions on September 2, 2022.

With the petitions received, the City Council can consider adopting resolutions declaring its intention ("ROI") to establish each CFD and levy a special tax in each CFD.

The ROI for CFD 2022-2 includes a description of the services to be provided (Exhibit A to Resolution No. CC-2022-099), provides for approval of the boundaries as shown on a map of CFD 2022-2 (Attachment 1) and the Rate and Method of Apportionment of Special Taxes which details the manner in which special taxes may be levied on property to be included within CFD 2022-2 (Exhibit B to Resolution No. CC-2022-099).

The ROI for CFD 2022-3 includes a description of the facilities to be funded (Exhibit A to Resolution No. CC-2022-100), provides for approval of the boundaries as shown on a map of CFD 2022-3 (Attachment 2) and RMA which details the manner in which special taxes may be levied on property to be included within CFD 2022-3 (Exhibit B to Resolution No. CC-2022-100). The ROI for CFD 2022-3 includes the waiver of the 1.8% maximum overall tax rate and it also authorizes the City Manager to enter into joint community facilities agreements with other public entities that may eventually own some of the facilities financed with special tax bonds of CFD 2022-3 described below. The RMA also provides that the special tax can be levied for up to 60 years (Fiscal Year 2083-84) if needed to pay debt service on CFD 2022-3 Bonds and other CFD costs.

Further, because special tax bonds are anticipated to be issued for CFD 2022-3 in the future, the City Council will also consider adopting a resolution declaring its intention to incur bonded indebtedness for CFD 2022-3 ("Resolution to Incur Bonded Indebtedness for CFD 2022-3"). The Resolution to Incur Bonded Indebtedness for CFD 2022-3 establishes a maximum bonded indebtedness of $75,000,000 for CFD 2022-3 for the purpose of financing public facilities and refinancing a portion of the 93-1 Bonds, and a term of any CFD 2022-3 Bond issue not to exceed 40 years from the date of issuance.

Each ROI and the Resolution to Incur Bonded Indebtedness for CFD 2022-3 sets a time and place for a public hearing on the establishment of each CFD, which is proposed to be October 24, 2022, at 6 pm, and describes the voting procedures for a special election on the formation of the CFDs. Each ROI directs the Public Works Director to prepare a separate report with a description of the facilities or services, as the case may be, and an estimate of the cost of financing the facilities or providing services, as the case may be, as well as the incidental expenses in connection therewith, including with respect to CFD 2022-3 costs of the proposed bond financing, any administration costs and all other related costs.

Finally, the City Council will consider a resolution to approve a form of Notice of Cancellation of Special Tax (Exhibit A to Resolution No. CC-2022-102) and authorize the City Clerk to record such notice with the County Recorder, which will cease the

special tax levy of CFD 93-1 on the property within CFD 2022-3. This cancellation of the CFD 93-1 special tax will eliminate duplicating the special tax levy on Phase 1 property for both the original CFD 93-1 and the new CFD 2022-3. The authorized special taxes in CFD 93-1 on the property to remain in CFD 93-1 are sufficient to repay the outstanding 93-1 Bonds. PHC, as the owner of the 93-1 Bonds, has consented to the cessation of the levy of CFD 93-1 special taxes on the property in Phase 1 that secure the repayment of the 93-1 Bonds.

Future Actions

On October 24, 2022, the City Council will conduct the public hearings described above, a hold special election for CFD 2022-2 and a special election for CFD 2022-3, and take related actions required to complete the formation of CFD 2022-2 and CFD 2022-3.

FISCAL IMPACT

Formation Costs - The costs of formation of CFD 2022-2 and CFD 2022-3, including any legal, financial or staff costs, is being funded from monies deposited by PHC with the City for that purpose. There is no fiscal impact to the City's General Fund.

CFD 2022-2 - Special taxes levied on developed homes within CFD 2022-2 will provide funding for City public safety, street lighting, parks and drainage serving the 1,180 proposed dwelling units within Phase 1. Special taxes will begin to be levied on each dwelling unit when building permits are issued for such dwelling unit. Development is expected to occur over several years. The Fiscal Year 2022-23 tax rate would generate approximately $800,000 for public safety and $450,000 for maintenance costs for the total 1,180 dwelling units (in today's dollars). The larger portion of the cost of providing for public safety for the new development will be funded from development-generated revenues, such as property tax, sales tax and franchise fees, while the special tax is intended to fund the balance of costs not covered by such revenues.

An annual escalation factor has been included in the CFD 2022-2 special tax rate to keep up with inflation of costs of services and maintenance to be provided. CFD 2022-2 also provides for additional special tax to be levied once the CFD 2022-3 special tax terminates, in order to provide for additional landscaping costs on major arterial roads in the Ritter Ranch in the event such costs are not being funded by the homeowner's association for Phase 1 properties.

CFD 2022-3 - Special taxes levied on undeveloped property or developed homes within CFD 2022-3 will finance public facilities necessary to proceed with the proposed residential development of 1,180 new dwelling units. The special tax levied in CFD 2022-3 has no fiscal impact on the City. The CFD 2022-3 Bonds will not be issued to fund public facilities or refinance the 93-1 Bonds until the value of property in CFD 2022-3 and other factors support the issuance in accordance with the City's Goals and

Policies. The issuance of any CFD 2022-3 Bonds will, in any event, be the subject of a future City Council resolution.

STRATEGIC PLAN

Goal III: Invest in infrastructure to improve community livability.

A. Seek innovative, cost effective, customer focused methods of service delivery.
C. Invest in staff and other human resource strategies to attract and retain a highly qualified, diverse, and creative workforce.

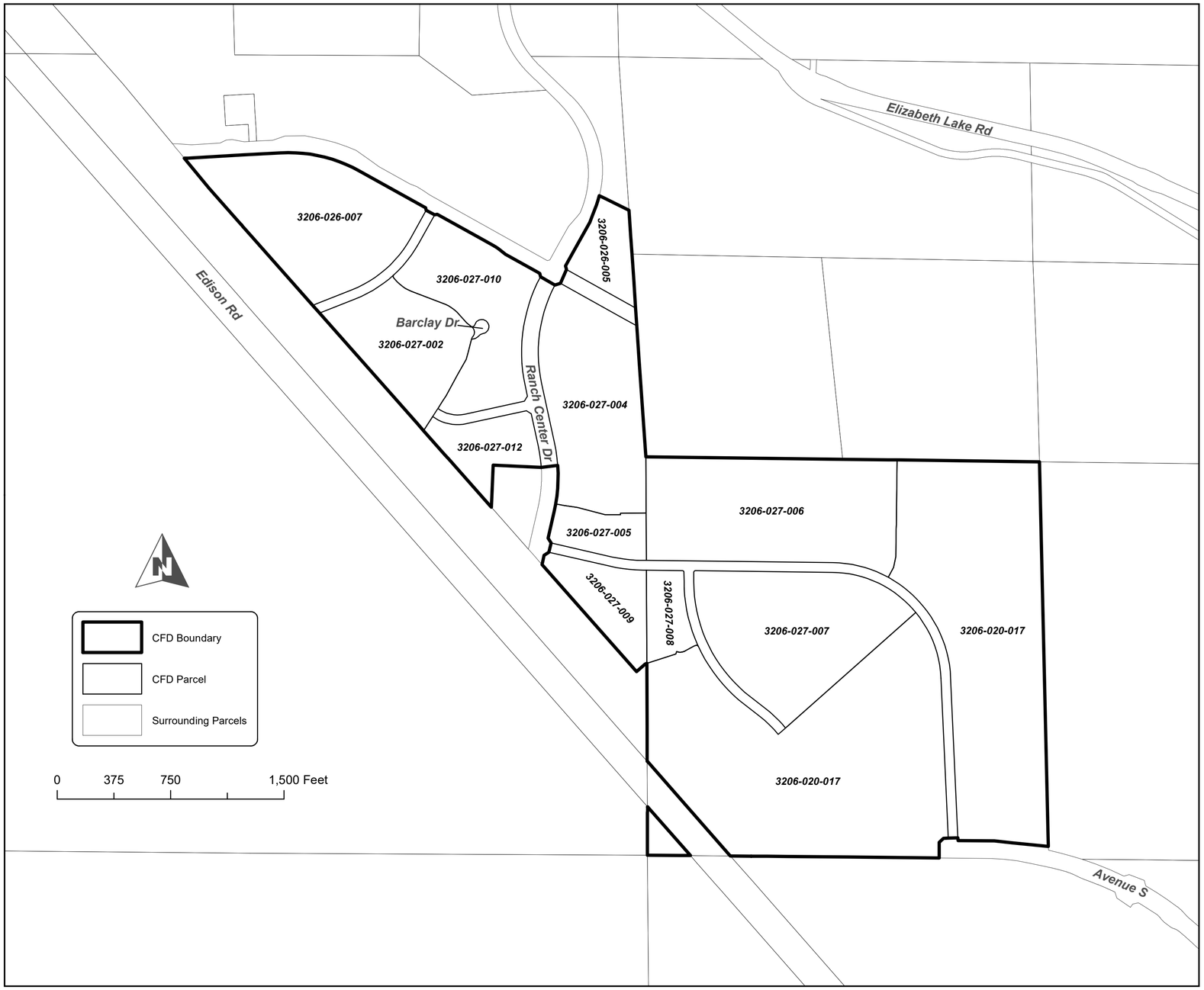
Prepared by:	Janelle Samson, Director of Finance
Certified as to availability of Funds:	Janelle Samson, Director of Finance
Approved by:	Ronda Perez, Interim City Manager
Approved as to form:	Scott E. Porter, Interim City Attorney

ATTACHMENTS

1. Boundary Map for CFD 2022-2
2. Boundary Map for CFD 2022-3
3. Resolution 2022-099
4. Resolution 2022-100
5. Resolution 2022-101
6. Resolution 2022-102

MAP OF PROPOSED BOUNDARIES OF THE CITY OF PALMDALE COMMUNITY FACILITIES DISTRICT NO. 2022-2 (RITTER RANCH MAINTENANCE SERVICES)

CITY OF PALMDALE
COUNTY OF LOS ANGELES
STATE OF CALIFORNIA



FILED IN THE OFFICE OF THE CITY CLERK OF THE CITY OF PALMDALE THIS _____ DAY OF _____, 20__.

_____
CITY CLERK

I HEREBY CERTIFY THAT THE WITHIN MAP SHOWING PROPOSED BOUNDARIES OF THE CITY OF PALMDALE COMMUNITY FACILITIES DISTRICT NO. 2022-2 (RITTER RANCH MAINTENANCE SERVICES), COUNTY OF LOS ANGELES, STATE OF CALIFORNIA, WAS APPROVED BY THE CITY COUNCIL OF THE CITY OF PALMDALE, AT A MEETING THEREOF, HELD ON THE _____ DAY OF _____, 20__, BY ITS RESOLUTION NO._____.

_____
CITY CLERK

FILED THIS _____ DAY OF _____, 20__, AT THE HOUR OF _____ O'CLOCK __.M., IN BOOK _____ OF MAPS OF ASSESSMENT AND COMMUNITY FACILITIES DISTRICTS, AT PAGE _____ IN THE OFFICE OF THE COUNTY RECORDER IN THE COUNTY OF LOS ANGELES, STATE OF CALIFORNIA.

_____
COUNTY RECORDER,
COUNTY OF LOS ANGELES

FOR PARTICULARS OF THE LINES AND DIMENSIONS OF ASSESSOR PARCELS, REFERENCE IS MADE TO THE MAPS OF THE ASSESSOR, COUNTY OF LOS ANGELES, STATE OF CALIFORNIA.

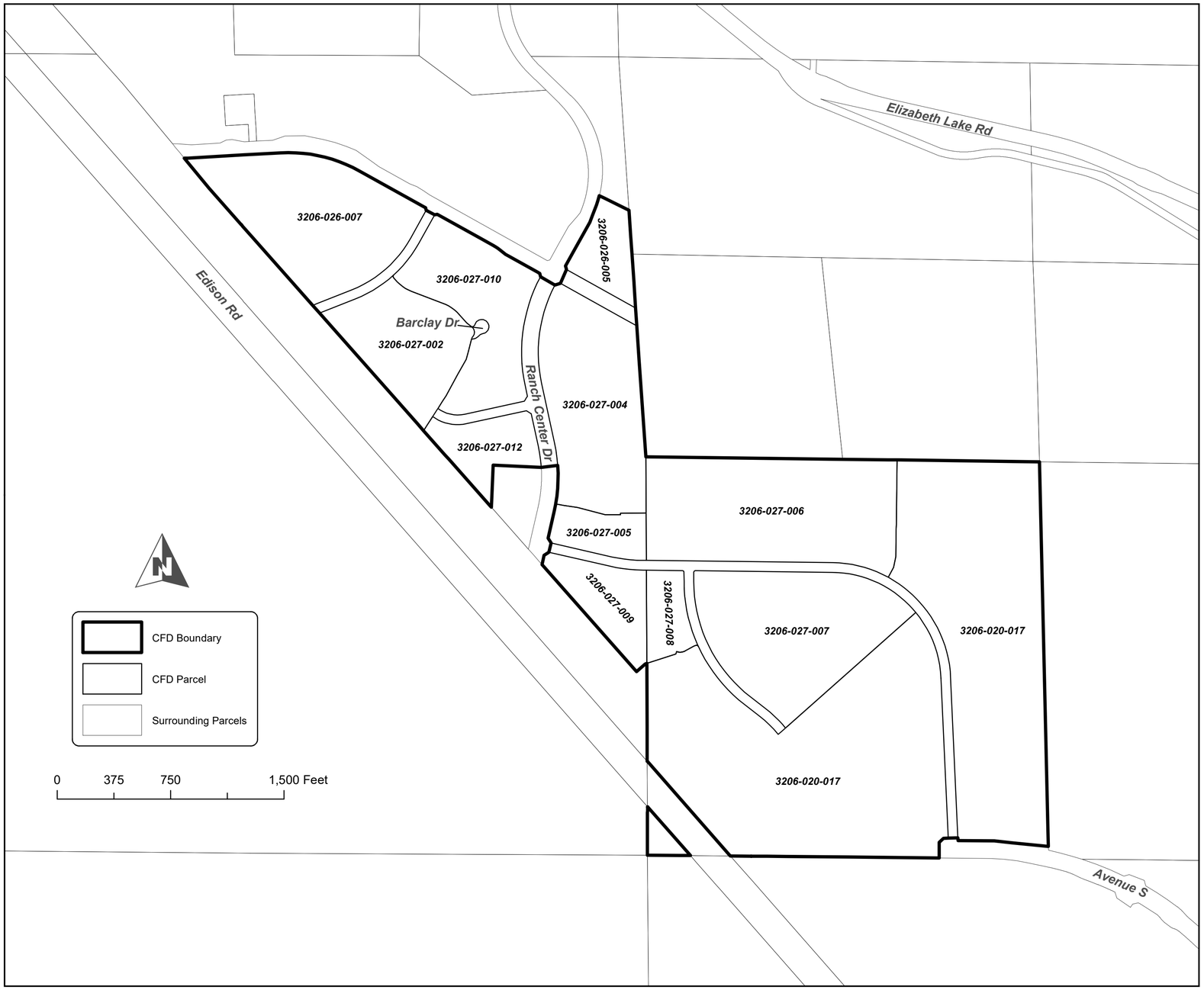


Source: Los Angeles County GIS
Geographic Coordinate Reference: GCS North American 1983
Projection: NAD 1983 StatePlane California V FIPS 0405 Feet

NBS

MAP OF PROPOSED BOUNDARIES OF THE CITY OF PALMDALE COMMUNITY FACILITIES DISTRICT NO. 2022-3 (RITTER RANCH PHASE 1 PUBLIC FACILITIES)

CITY OF PALMDALE
COUNTY OF LOS ANGELES
STATE OF CALIFORNIA



FILED IN THE OFFICE OF THE CITY CLERK OF THE CITY OF PALMDALE THIS _____ DAY OF _____, 20__.

_____
CITY CLERK

I HEREBY CERTIFY THAT THE WITHIN MAP SHOWING PROPOSED BOUNDARIES OF THE CITY OF PALMDALE COMMUNITY FACILITIES DISTRICT NO. 2022-3 (RITTER RANCH PHASE 1 PUBLIC FACILITIES), COUNTY OF LOS ANGELES, STATE OF CALIFORNIA, WAS APPROVED BY THE CITY COUNCIL OF THE CITY OF PALMDALE, AT A MEETING THEREOF, HELD ON THE _____ DAY OF _____, 20__, BY ITS RESOLUTION NO._____.

_____
CITY CLERK

FILED THIS _____ DAY OF _____, 20__, AT THE HOUR OF _____ O'CLOCK __.M., IN BOOK _____ OF MAPS OF ASSESSMENT AND COMMUNITY FACILITIES DISTRICTS, AT PAGE _____ IN THE OFFICE OF THE COUNTY RECORDER IN THE COUNTY OF LOS ANGELES, STATE OF CALIFORNIA.

_____
COUNTY RECORDER,
COUNTY OF LOS ANGELES

FOR PARTICULARS OF THE LINES AND DIMENSIONS OF ASSESSOR PARCELS, REFERENCE IS MADE TO THE MAPS OF THE ASSESSOR, COUNTY OF LOS ANGELES, STATE OF CALIFORNIA.



Source: Los Angeles County GIS
Geographic Coordinate Reference: GCS North American 1983
Projection: NAD 1983 StatePlane California V FIPS 0405 Feet

CITY OF PALMDALE
COUNTY OF LOS ANGELES, CALIFORNIA
RESOLUTION NO. CC 2022-099

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF PALMDALE DECLARING ITS INTENTION TO ESTABLISH A COMMUNITY FACILITIES DISTRICT AND TO AUTHORIZE THE LEVY OF SPECIAL TAXES THEREIN – RITTER RANCH MAINTENANCE SERVICES

WHEREAS, under the Mello-Roos Community Facilities Act of 1982, constituting Section 53311 et seq. of the California Government Code (the "Code"), the City Council may commence proceedings for the establishment of a community facilities district; and

WHEREAS, RdR Development Holdings, LLC has submitted to the City of Palmdale (the "City") a Petition (Including Waivers) (the "Petition") requesting that the City Council conduct proceedings under the Code to create a community facilities district to be designated "City of Palmdale Community Facilities District No. 2022-2 (Ritter Ranch Maintenance Services)" (the "District"); and

WHEREAS, under the Code, the City Council is the legislative body for the proposed District and is empowered with the authority to establish the District and levy special taxes on property within the District; and

WHEREAS, the City Council now desires to proceed with the actions necessary to consider the formation of the District.

NOW, THEREFORE, BE IT RESOLVED, DETERMINED AND ORDERED by the City Council of the City of Palmdale as follows:

Section 1. The City Council proposes to begin the proceedings necessary to form the District pursuant to the Code. Receipt by the City of the Petition is hereby acknowledged.

Section 2. The name proposed for the District is "City of Palmdale Community Facilities District No. 2022-2 (Ritter Ranch Maintenance Services)."

Section 3. The proposed boundaries of the District are as shown on the map of the District on file with the City Clerk, which boundaries are hereby preliminarily approved and to which map reference is hereby made for further particulars. The City Clerk is hereby directed to record, or cause to be recorded, the map of the boundaries of the District in the office of the Los Angeles County Recorder within fifteen days of the date of adoption of this Resolution.

Section 4. The types of maintenance services and related administrative expenses proposed to be funded by the District (collectively referred to in this

Resolution as the "Services") are as described in Exhibit A hereto, which Exhibit is by this reference incorporated herein. The City Council acknowledges that the Services will be in addition to those currently provided in the territory of the proposed District, and will not supplant services already available within the territory of the proposed District.

The City Council hereby expresses its opinion that the public interest will not be served by allowing property owners to enter into contracts as contemplated by Section 53329.5(a) of the Code, and does not intend to let property owners avail themselves of the actions otherwise permitted by said Section 53329.5(a).

Section 5. Except to the extent that funds are otherwise available to the District to pay for the Services and the administrative expenses of the District, a special tax sufficient to pay such costs, secured by recordation of a continuing lien against all non-exempt real property in the District, will be levied annually on property located within the District and collected in the same manner as ordinary ad valorem property taxes or in such other manner as the City Council or its designee shall determine, including direct billing of the affected property owners. The proposed rate and method of apportionment of the special tax among the parcels of real property within the District, in sufficient detail to allow each landowner within the proposed District to estimate the maximum amount such owner will have to pay, is described in Exhibit B attached hereto which Exhibit is by this reference incorporated herein.

On May 26, 2004, the City Council adopted Resolution No. 2004-168 adopting Local Goals and Policies for Community Facilities Districts – Residential Property (the "Goals and Policies"). Section VII of the Goals and Policies provides, in part, that the total projected property tax levels (including ad valorem taxes, any maintenance, landscaping or other impositions on the land in a community facilities district and other similar annual government charges levied on parcels in a community facilities district) shall not exceed 1.8% of the estimated sales prices of the homes to be constructed in the community facilities district. Given the need for extensive infrastructure improvements for the development of the property in the District and the need to allow for special tax levies sufficient to repay bonded indebtedness expected to be incurred to finance the improvements, the City Council hereby waives the 1.8% limitation otherwise applicable to the proposed special taxes to be levied on property in the District. In addition, the City Council hereby finds that the provisions of Section 53313.6, 53313.7 and 53313.9 of the Code (relating to adjustments to ad valorem property taxes and schools financed by a community facilities district), are inapplicable to the District.

Section 6. The levy of said proposed special tax shall be subject to the approval of the qualified electors of the District at a special election. The proposed voting procedure shall be by mailed or hand-delivered ballot among the landowners in the proposed District, with each owner having one vote for each acre or portion of an acre such owner owns in the District.

Section 7. Except as may otherwise be provided by law or the rate and method of apportionment of special taxes for the District, all lands owned by any public entity,

including the United States, the State of California and/or the City, or any departments or political subdivisions thereof, shall be omitted from the levy of the special tax to be made to cover the costs of the Services and costs of administering the District to the extent, and only to the extent, such land is described as not subject to the special tax levy in the rate and method of apportionment of special tax set forth in Exhibit B hereto.

Section 8. The Director of Public Works, as the officer of the City having responsibility for matters related to the Services, is hereby directed to study the proposed District and to make, or cause to be made, and file with the City Clerk a report in writing, presenting the following:

(a) A brief description of the Services.

(b) An estimate of the cost of providing the Services, including the incidental expenses in connection therewith, including any administration costs and all other related costs.

The report shall be made a part of the record of the public hearing provided for below.

Section 9. Monday, October 24, 2022, at 6:00 p.m. or as soon thereafter as the matter may be heard, in the regular meeting place of the City Council, Council Chambers, City Hall, 38300 Sierra Highway, Suite B, Palmdale, California, are hereby appointed and fixed as the time and place when and where the City Council, as legislative body for the District, will conduct a public hearing on the establishment of the District and consider and finally determine whether the public interest, convenience and necessity require the formation of the District and the levy of said special tax.

Section 10. The City Clerk is hereby directed to cause notice of the public hearing to be given by publication one time in a newspaper published in the area of the District. The publication of the notice shall be completed at least seven days before the date herein set for the public hearing. The notice shall be substantially in the form of Exhibit C hereto.

Section 11. This Resolution shall take effect upon its adoption.

PASSED, APPROVED and ADOPTED this 21st day of September, 2022.

Approved as to form:

Steven D. Hofbauer, Mayor

ATTEST:

Scott E. Porter
Interim City Attorney

Shanae S. Smith, City Clerk

I, Shanae S. Smith, City Clerk of Palmdale, California, do hereby certify that the foregoing resolution was duly passed, approved, and adopted by the City Council of the City of Palmdale at a regular meeting of said Council held on the 21st day of September, 2022 by the following roll call vote:

AYES: _____

NOES: _____

ABSTAIN: _____ ABSENT: _____

Date: _____

Shanae S. Smith, City Clerk

16007.49:J18322
9/8/22

EXHIBIT A

DESCRIPTION OF SERVICES ELIGIBLE TO BE FINANCED BY THE DISTRICT

MAINTENANCE SERVICES:
The maintenance services eligible to be funded, in whole or in part, by the community facilities district (the "District") include all direct and incidental costs related to providing the following:

- Maintenance and lighting of streets, roadways, parks, parkways, trails and open space.
- Flood and storm protection services.
- Police protection, fire protection and suppression services and ambulance and paramedic services.
- Maintenance and irrigation of landscaping in public rights of way.

The District may fund any of the following related to the services described above: obtaining, constructing, furnishing, operating and maintaining equipment, apparatus or facilities, paying the salaries and benefits of personnel (including but not limited to maintenance workers, patrol guards and other personnel), and for payment of other related expenses (including but not limited to employee benefit expenses and an allocation of general overhead expenses), payment of insurance costs and other related expenses and the provision of reserves for repairs and replacements and for the future provision of services and capital replacements.

Any services to be funded by the District must be in addition to those provided in the territory of the District before the District was created, and may not supplant services already available within that territory when the District is created. It is expected that the services will be provided by the City of Palmdale (the "City"), either with its own employees or by contract with third parties, or any combination thereof.

ADMINISTRATIVE EXPENSES:
The administrative expenses to be funded by the District include the direct and indirect expenses incurred by the City in carrying out its duties with respect to the District (including, but not limited to, the levy and collection of the special taxes) including the fees and expenses of attorneys, any fees of the City related to the District or the collection of special taxes, an allocable share of the salaries of any City staff directly related thereto and a proportionate amount of the City's general administrative overhead related thereto, any amounts paid by the City from its general fund with respect to the District or the services authorized to be financed by the District, and expenses incurred by the City in undertaking action to foreclose on properties for which the payment of special taxes is delinquent, and all other costs and expenses of the City in any way related to the District.

OTHER:
The incidental expenses that may be funded by the District include, in addition to the administrative expenses identified above, the payment or reimbursement to the City of all costs associated with the establishment of the District and any property annexed to the District.

EXHIBIT B

RATE AND METHOD OF APPORTIONMENT OF SPECIAL TAXES
FOR CITY OF PALMDALE
COMMUNITY FACILITIES DISTRICT NO. 2022-2
(RITTER RANCH MAINTENANCE SERVICES)

A Special Tax, as hereinafter defined, shall be levied and collected in the City of Palmdale Community Facilities District No. 2022-2 (Ritter Ranch Maintenance Services) ("CFD No. 2022-2") each Fiscal Year commencing in Fiscal Year 2023/24, in an amount determined by the application of the procedures below. All Taxable Property, as hereinafter defined, unless exempted by law or by the provisions hereof, shall be taxed for the purposes, to the extent and in the manner herein provided.

A. DEFINITIONS

The terms hereinafter set forth have the following meaning:

"Accessory Dwelling Unit" or "ADU" means all Assessor's Parcels of Residential Property for which a building permit(s) has been issued for an "Accessory Dwelling Unit" as defined in California Government Code Section 65852.2(j)(1), as may be amended from time to time, that is accessory to a primary Unit. The ADU may be located on the same Assessor's Parcel as the primary Unit that is the primary Unit or on a separate Assessor's Parcel. For purposes of clarification, where an ADU and primary Unit are on the same Assessor's Parcel, the ADU located on such Assessor's Parcel is considered a separate Unit from the primary Unit on such Assessor's Parcel for purposes of the Special Tax. Should an Assessor's Parcel contain only an ADU, such Assessor's Parcel will be taxed as an ADU Unit only.

"Acre" or "Acreage" means the land area of an Assessor's Parcel as shown on an Assessor's Parcel Map. In the event that the Assessor's Parcel Map shows no acreage, the Acreage for any Assessor's Parcel may be determined by the CFD Administrator based upon, in the CFD Administrator's discretion, the applicable condominium plan, final map, parcel map, Assessor's Data or by using available spatial data and GIS.

"Act" means the Mello-Roos Community Facilities Act of 1982, as amended, being Chapter 2.5 of Part 1, Division 2 of Title 5 of the Government Code of the State.

"Administrative Expenses" means the actual or reasonably estimated costs directly related to the administration of CFD No. 2022-2 including, but not limited to, the following: the costs of computing the Annual Special Tax Requirement and the annual Special Tax and of preparing the annual Special Tax collection schedules and the City's annual administration fees and third party expenses; the costs of collecting the Special Tax, including any charges levied by the County Auditor's Office, Tax Collector's Office or Treasurer's Office; the costs of the City or designee in complying with the disclosure requirements of the California Government Code (including the Act), including public inquiries regarding the Special Tax; the costs of the City or designee related to an appeal of the Special Tax; and the costs of commencing and pursuing to completion any action arising from any delinquent Special Tax in CFD No. 2022-2. Administrative Expenses shall also include any other amounts incurred by the City or CFD No. 2022-2 in connection with the administration of CFD No.

2022-2, and amounts estimated or advanced by the City or CFD No. 2022-2 for any other administrative purposes, including, but not limited to, attorney's fees.

"Annual Services Costs" means the respective annual amounts determined by the CFD Administrator as reasonably needed to fund the Authorized Services authorized to be funded by CFD No. 2022-2 for the applicable yearly period.

"Annual Special Tax Requirement" means that amount with respect to CFD No. 2022-2 determined by the CFD Administrator as required in any Fiscal Year to pay: (1) the Administrative Expenses, (2) the Annual Services Costs, and (3) the amount required to establish or replenish any reserve or replacement fund established in connection with CFD No. 2022-2, and (4) an amount equal to reasonably anticipated delinquencies in the payment of the annual Special Tax based on the delinquency rate for any Special Tax levied in the previous Fiscal Year (or as projected by the CFD Administrator for the first Fiscal Year's Special Tax levy). In and following the Transition Year, the Annual Special Tax Requirement shall also include the Contingent Special Tax Requirement.

"Assessor's Data" means the property characteristic data compiled and maintained by the County Assessor for each Assessor's Parcel, including, but not limited to, Assessor's Parcel Number, Acreage, and Units.

"Assessor's Parcel" or "Parcel" means a lot or parcel shown in an Assessor's Parcel Map with an assigned Assessor's Parcel Number.

"Assessor's Parcel Map" means an official map of the Assessor of the County designating parcels by Assessor's Parcel Number.

"Assessor's Parcel Number" or "APN" means, with respect to an Assessor's Parcel, that number assigned to such Assessor's Parcel by the County Assessor for purposes of identification.

"Authorized Services" means the services authorized to be funded as indicated in the resolution of intention, in whole or in part, by CFD No. 2022-2.

"Building Permit" means a permit issued by the City for new construction of a residential or non-residential building on an Assessor's Parcel.

"Building Square Feet" or "BSF" means all of the square footage of living area within the perimeter of a residential structure, not including any carport, walkway, garage, overhang, patio, enclosed patio, or similar area. The determination of Building Square Feet shall be made by reference to the building permit(s) issued for such residential dwelling unit. In the event that the building permit does not show Building Square Feet, other records of the City or Assessor's Data shall be used as determined by the CFD Administrator.

"CFD Administrator" means an official of the City, or designee thereof, responsible for determining the Annual Special Tax Requirement (including the Annual Services Costs) and providing for the levy and collection of the Special Taxes.

"CFD No. 2022-2" means the City of Palmdale Community Facilities District No. 2022-2 (Ritter Ranch Maintenance Services).

"CFD No. 2022-3" means City of Palmdale Community Facilities District No. 2022-3 (Ritter Ranch Phase 1 Public Facilities), established by the City Council pursuant to the Act.

"CFD No. 2022-3 Bonds" means bonds or other Debt (as defined in section 53317 of the Act), whether in one or more series, issued or assumed by or on behalf of the City for CFD No. 2022-3 under the Act, and secured by pledge of the Special Taxes.

"City" means the City of Palmdale, California.

"City Council" means the City Council of the City, acting as the legislative body of CFD No. 2022-2.

"Contingent Services" means those Authorized Services to be provided initially by a POA, but that may be provided by the City or contractor(s) of the City should the POA request or the City determine that the POA is unable to provide the Contingent Services to the City's standards or pay for the costs of such services.

"Contingent Special Tax" means that amount levied in each Fiscal Year on each Assessor's Parcel of Taxable Property to fund the Contingent Special Tax Requirement.

"Contingent Special Tax Requirement" means that amount as required in any Fiscal Year if the POA is unable to provide the Contingent Services to the City's standards or pay for the costs of Contingent Services incurred or otherwise payable.

"County" means the County of Los Angeles, California.

"County Assessor" means the County Assessor of the County.

"Developed Property" means, in any Fiscal Year, all Taxable Property in CFD No. 2022-2 for which a Building Permit for new construction was issued by the City prior to March 1 of the preceding Fiscal Year.

"Exempt Property" means all Assessors' Parcels within the boundary of CFD No. 2022-2 which are exempt from the Special Tax pursuant to Section E below.

"Fiscal Year" means the period starting July 1 and ending on the following June 30.

"GIS" or "Geographic Information System" means a system designed to capture, store, manipulate, analyze, manage, and present spatial or geographic data.

"Land Use Class" means any of the classes listed in Table 1 and Table 2.

"Maximum Special Tax" means the Maximum Special Tax, determined in accordance with Section C below, that can be levied in any Fiscal Year on any Assessor's Parcel of Taxable Property.

"Maximum Contingent Special Tax" means the Maximum Contingent Special Tax, determined in accordance with Section C below, that can be levied in any Fiscal Year on any Assessor's Parcel of Taxable Property.

"Non-Residential Property" means, in any Fiscal Year all Assessor's Parcels of Developed Property for which a building permit(s) was issued for a structure intended for non-residential use.

"Open Space Property" means property within the boundaries of CFD No. 2022-2 which (i) has been designated with specific boundaries and Acreage on a final subdivision map as open space, (ii) has been irrevocably offered for dedication as open space to the federal government, the State, the County, the City, or any other public agency, or (iii) is encumbered by an easement or other restriction required by the City limiting the use of such property to open space.

"Property Owner's Association" or "POA" means any duly constituted property owner's association. As used in this definition, a Property Owner's Association includes any home-owner's association, condominium owner's association, master or sub-association or non-residential owner's association.

"Property Owner's Association Property" means any property within the boundaries of CFD No. 2022-2 which is (a) owned by a Property Owner's Association or (b) designated with specific boundaries and acreage on a final subdivision map as Property Owner Association Property.

"Proportionately" means, for Developed Property, that the ratio of the actual Special Tax levy to the Maximum Special Tax is equal for Developed Property. For Undeveloped Property, "Proportionately" means that the ratio of the actual Special Tax levy per Acre to the Maximum Special Tax per Acre is equal for Undeveloped Property. The Contingent Special Tax shall also be levied such that the ratio of the actual Contingent Special Tax Levy to the Maximum Contingent Special Tax is equal for Developed Property and Undeveloped Property respectively.

"Public Property" means any property within the boundaries of CFD No. 2022-2 which (i) is owned by a public agency, (ii) has been irrevocably offered for dedication to a public agency, or (iii) is designated with specific boundaries and Acreage on a final subdivision map as property which will be owned by a public agency. For purposes of this definition, a public agency includes the federal government, the State, the County, the City, school districts, or any other governmental agency.

"Rate and Method of Apportionment" means this Rate and Method of Apportionment of Special Taxes for CFD No. 2022-2.

"Residential Property" means all Assessor's Parcels of Developed Property for which a Building Permit has been issued for purposes of constructing one or more residential Units.

"Ritter Ranch Specific Plan" means Specific Plan 89-02 approved by the City on March 3, 1992 by Ordinance No. 964, as amended on October 11, 1995 by Ordinance No. 1076 (Specific Plan Amendment 95-1-RR).

"Single Family Residential Attached Property" means all Assessor's Parcels of Residential Property for which a building permit(s) has been issued for (i) an attached residential structure or (ii) property with a single family attached designation according to the Ritter Ranch Specific Plan including detached and paired townhomes.

"Single Family Residential Detached Property" means all Assessor's Parcels of Residential Property for which a building permit(s) has been issued for a detached residential structure intended as a single primary Unit.

"Special Tax(es)" means the annual special tax to be levied in each Fiscal Year on each Assessor's Parcel of Taxable Property to fund the Annual Special Tax Requirement.

"State" means the State of California.

"Tax Escalation Factor" means on July 1 of each Fiscal Year, commencing on July 1, 2024, the Maximum Special Tax as shown in Section C shall be increased by a minimum of two percent (2%) to a maximum of six percent (6%), determined by the CFD Administrator on an annual basis as needed to increase the Maximum Special Tax to satisfy the Special Tax Requirement for the succeeding and future Fiscal Years.

"Taxable Property" means all the Assessor's Parcels within the boundaries of CFD No. 2022-2 that are not exempt from the Special Tax pursuant to law or Section E below.

"Transition Event" means the earlier of (i) Fiscal Year 2084/85 or (ii) the Fiscal Year when the CFD Administrator determines that both of the following events have occurred (i) all CFD No. 2022-3 Bonds secured by the levy and collection of the Special Tax in CFD No. 2022-1 have been fully repaid or are no longer outstanding and the City determines that no additional Bonds are to be issued, and (ii) all Administrative Expenses from prior Fiscal Years have been paid or reimbursed to the District.

"Transition Year" means the Fiscal Year in which the CFD Administrator determines that the Transition Event occurred in the prior Fiscal Year.

"Undeveloped Property" means all the Assessor's Parcels of Taxable Property within the boundaries of CFD No. 2022-2 that are not classified as Developed Property.

"Unit" means (i) for Single Family Residential Property, an individual single family detached residential unit, (ii) for Multi-Family Residential Property, a townhome, condominium, apartment, or other residential dwelling unit, including each separate living area within a half-plex, duplex, triplex, fourplex, or other residential structure, and (iii) and ADU. The number of Units assigned to each Assessor's Parcel may be determined by (i) referencing Assessor's Data, (ii) site surveys and physical unit counts, and/or (iii) other research by the CFD Administrator.

"Welfare Exempt Property" means, in any Fiscal Year, all Parcels within the boundaries of CFD No. 2022-2 that (a) have been granted a welfare exemption by the County under subdivision (g) of Section 214 of the Revenue and Taxation Code indicated in the Assessor's Data finalized as of January 1 of the previous Fiscal Year, and (b) are exempt from the Special Tax pursuant to Section 53340(c) of the Act.

B. DETERMINATION OF TAXABLE PARCELS

Each Fiscal Year, the CFD Administrator shall determine the Assessor's Parcel Numbers for all Taxable Property within CFD No. 2022-2 for the then-current Fiscal Year. To the extent a Parcel or Parcels of Taxable Property are subdivided, consolidated, or otherwise reconfigured, the Maximum Special Tax shall be assigned to the new Assessor's ParcelnNumbers pursuant to Section C. The CFD Administrator shall also determine: (i) which Parcels are Developed Property and Undeveloped Property; (ii) the number of Units or Acreage each Parcel contains; (iii) the property type, i.e., Single Family Residential Attached Property, Single Family Residential Detached Property, Accessory

Dwelling Unit, Non-Residential Property; and (iv) the Annual Special Tax Requirement for the Fiscal Year.

C. MAXIMUM ANNUAL SPECIAL TAX RATE

1. The Maximum Special Tax for each Assessor's Parcel of Taxable Property shall be assigned according to the following table prior to the Transition Year.

TABLE 1
MAXIMUM SPECIAL TAX
FISCAL YEAR 2023/24

Land Use Class	Description	Maximum Special Tax Rate	Per
1	Single Family Residential Detached Property	$1,067.00	Unit
2	Single Family Residential Attached Property	$993.00	Unit
3	Accessory Dwelling Units	See Below	Unit
4	Undeveloped Property	$9,295.00	Acre

The Maximum Special Tax for an Accessory Dwelling Unit shall be calculated as a percentage of the Maximum Special Tax for the primary Unit the ADU is accessory to, based on Building Square Footage. For example, if a primary Unit in Land Use Class 1 of 2,000 BSF has an ADU of 800 BSF, the Maximum for the ADU Special Tax shall be calculated by the following steps:

1. 800 BSF / 2,000 BSF = 0.40 or 40%
2. $1,067 Maximum Special Tax per Unit x 40% = $426.80 Maximum Special Tax for such ADU

On July 1 of each Fiscal Year, commencing on July 1, 2024, the Maximum Special Tax shall be increased by an amount equal to the Tax Escalation Factor.

2. The Maximum Special Tax for each Assessor's Parcel of Taxable Property shall be assigned according to the following table in and following the Transition Year.

TABLE 2
MAXIMUM CONTINGENT SPECIAL TAX
FISCAL YEAR 2023/24

Land Use Class	Description	Maximum Contingent Special Tax Rate	Per
1	Single Family Residential Detached Property	$3,125	Unit
2	Single Family Residential Attached Property	$2,352	Unit

3	Accessory Dwelling Units	See Below	Unit
4	Undeveloped Property	$22,531	Acre

The Maximum Contingent Special Tax for an Accessory Dwelling Unit shall be calculated as a percentage of the Maximum Contingent Special Tax for the primary Unit the ADU is accessory to, based on Building Square Footage. For example, if a primary Unit in Land Use Class 1 of 2,000 BSF has an ADU of 800 BSF, the Maximum Contingent Special Tax for the ADU shall be calculated by the following steps:

1. 800 BSF / 2,000 BSF = 0.40 or 40%
2. $1,067 Maximum Contingent Special Tax per Unit x 40% = $426.80 Maximum Contingent Special Tax for such ADU

On July 1 of each Fiscal Year, commencing on July 1, 2024, the Maximum Contingent Special Tax shall be increased by an amount equal to the Tax Escalation Factor.

In some instances, an Assessor's Parcel of Developed Property may contain more than one Land Use Class. The Special Tax levied on an Assessor's Parcel shall be the sum of the Special Tax for all Land Use Classes located on that Assessor's Parcel.

D. METHOD OF APPORTIONMENT OF THE SPECIAL TAX

All Taxable Property shall be subject to an annual Special Tax defined as follows.

The Special Tax shall be levied each Fiscal Year as calculated by the CFD Administrator. The Annual Special Tax Requirement shall be apportioned to each Parcel within CFD No. 2022-2 by the method shown below.

First: Determine the Annual Special Tax Requirement.

Second: Levy the Special Tax on each Parcel of Developed Property, Proportionately, up to the applicable Maximum Special Tax and Maximum Contingent Special Tax.

Third: If additional monies are needed to satisfy the Annual Special Tax Requirement after the second step has been completed, the Special Tax shall be levied on each Parcel of Undeveloped Property, Proportionately, up to the applicable Maximum Special Tax and Maximum Contingent Special Tax.

Notwithstanding the foregoing, under no circumstances will the Special Tax on any Assessor's Parcel used for private residential purposes be increased by more than 10% as a consequence of delinquency or default by the owner of any other Assessor's Parcel within CFD No. 2022-2.

E. EXEMPTIONS

Notwithstanding any other provision of this Rate and Method of Apportionment, no Special Tax shall be levied on Property Owner's Association Property, Assessor's Parcels with public or utility easements making impractical their utilization for any use other than the purposes set forth in the easement, or Public Property, except as otherwise provided in Sections 53317.3, 53317.5, and 53340.1 of the Act.

No Special Tax shall be levied on any Assessor's Parcel in any Fiscal Year in which such Assessor's Parcel is classified as Welfare Exempt Property.

F. APPEAL OF SPECIAL TAX LEVY

Any property owner may file a written appeal of the Special Tax with the CFD Administrator claiming that the amount or application of the Special Tax is not correct with respect to one or more specific Assessor's Parcels. The appeal must be filed not later than one calendar year after having paid the Special Tax that is disputed, and the appellant must be current in all payments of the Special Taxes theretofore levied on the Assessor's Parcel(s). In addition, during the term of the appeal process, all Special Tax levied must be paid for the subject Assessor's Parcel(s) prior to delinquency.

The appeal must specify the reasons why the appellant claims the Special Tax is in error. The CFD Administrator shall review the appeal, meet with the appellant if the CFD Administrator deems necessary, and advise the appellant of its determination.

If the property owner disagrees with the CFD Administrator's decision relative to the appeal, the owner may then file a written appeal with the City Council whose subsequent decision shall be final and binding on all interested parties. If the decision of the CFD Administrator or subsequent decision by the City requires the Special Tax to be modified or changed in favor of the property owner, then an adjustment shall be made to credit future Special Taxes.

This procedure shall be exclusive and its exhaustion by any property owner shall be a condition precedent to filing any legal action by such owner.

G. INTERPRETATION OF RATE AND METHOD OF APPORTIONMENT

The City may, by resolution or ordinance, interpret, clarify and/or revise this Rate and Method of Apportionment to correct any inconsistency, vagueness, or ambiguity as it relates to the Special Taxes, method of apportionment, the classification of Assessor's Parcels, or any definition used herein, as long as such correction does not materially affect the levy and collection of Special Taxes on any Assessor's Parcel. In addition, the interpretation and application of any section of this document shall be at the CFD Administrator's discretion.

H. MANNER AND DURATION OF SPECIAL TAX

The Special Tax shall be collected in the same manner and at the same time as ordinary ad valorem property taxes, provided that the CFD Administrator may directly bill the Special Tax, may collect the Special Tax at a different time or in a different manner if needed to meet the financial obligations of CFD No. 2022-2.

A Special Tax shall be levied commencing in Fiscal Year 2023/24 to the extent necessary to satisfy the Annual Special Tax Requirement and/or Contingent Special Tax Requirement (commencing with the Transition Year) and shall be levied each Fiscal Year thereafter for as long as required to satisfy the Annual Special Tax Requirement and/or Contingent Special Tax Requirement.

I. PREPAYMENT OF SPECIAL TAX

The Special Tax may not be prepaid.

EXHIBIT C

NOTICE OF PUBLIC HEARING

Notice is hereby given that on September 21, 2022, the City Council of the City of Palmdale adopted Resolution No. CC 2022-099 entitled "A Resolution of the City Council of the City of Palmdale Declaring Its Intention to Establish a Community Facilities District and to Authorize the Levy of Special Taxes Therein – Ritter Ranch Maintenance Services" (the "Resolution of Intention"). Pursuant to the Resolution of Intention and Section 53311 and following of the California Government Code (the "Code"), notice is hereby given that the City Council will conduct a public hearing on Monday, October 24, 2022 at 6:00 p.m. or as soon thereafter as practicable, in the City Council Chambers located in City Hall, 38300 Sierra Highway, Suite B, Palmdale, California, to consider the following:

INTENT TO FORM
CITY OF PALMDALE
COMMUNITY FACILITIES DISTRICT NO 2022-2
(RITTER RANCH MAINTENANCE SERVICES)

In the Resolution of Intention, the City Council declared its intention to form the City of Palmdale Community Facilities District No. 2022-2 (Ritter Ranch Maintenance Services) to finance certain maintenance services, as identified in Exhibit A to the Resolution of Intention (the "Services"). The proposed boundaries of the community facilities district were identified, and the Resolution of Intention identified a proposed special tax to be levied on real property to be included in the community facilities district to pay for costs of the Services and related administrative costs.

In the Resolution of Intention, the City Council provided that the levy of the special tax will be subject to a mailed ballot election among the landowners in the community facilities district. The City Council ordered the Director of Public Works to prepare a report on the community facilities district, and the City Council called for a public hearing on the community facilities district.

At the hearing, the testimony of all interested persons or taxpayers for or against the establishment of the community facilities district, the extent of the community facilities district or the furnishing of specified types of Services will be heard. Any person interested may file a protest in writing with the City Clerk. If fifty percent or more of the registered voters, or six registered voters, whichever is more, residing in the territory proposed to be included in the community facilities district, or the owners of one-half or more of the area of land in the territory proposed to be included in the community facilities district and not exempt from the special tax file written protests against the establishment of the community facilities district and the protests are not withdrawn to reduce the value of the protests to less than a majority, the City Council will take no further action to establish the community facilities district or authorize the special taxes for a period of one year from the date of the decision of the City Council, and if the majority protests of the registered voters or the landowners are only against the furnishing of a type or types of Services, or against levying

a specified special tax, those types of Services, or the specified special tax, will be eliminated from the proceedings to form the community facilities district.

Any person interested in these matters is invited to present testimony either for or against the above item. If you challenge the proposed action in court, you may be limited to raising only those issues you or someone else raised at the public hearing described in this notice or in written correspondence delivered to the City Clerk at or prior to the public hearing.

Members of the public who wish to present testimony at the public hearing may do so (a) by providing written comments to the City Clerk at least 48 hours prior to the Council meeting, (b) by being present at the public hearing, or (c) by using the following internet link or phone number:

- https://us06web.zoom.us/j/84656089590?pwd=b3ZCNzVDalIrUWhnZ1lUdURHWVVvdz09
- Phone Number: US: +1 669 444 9171
- Webinar ID: 846 5608 9590
- Passcode: 507411
    - Please press *9 to “Raise Your Hand” and wait for the host to ask you to unmute yourself.
    - Press *6 to unmute your microphone.
    - Please state your name and city of residence for the record and begin

In accordance with the Americans with Disabilities Act of 1990, if you require a disability-related modification or accommodation to participate in this meeting, please contact the City Clerk’s Office at (661) 267-5151 at least 72 hours prior to the meeting. If you require oral Spanish translation, please contact the City Clerk’s Office at (661) 267-5151 at least 72 hours prior to the meeting.

/s/ Shanae S. Smith
City Clerk,
City of Palmdale

CITY OF PALMDALE
COUNTY OF LOS ANGELES, CALIFORNIA
RESOLUTION NO. CC 2022-100

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF PALMDALE DECLARING ITS INTENTION TO ESTABLISH A COMMUNITY FACILITIES DISTRICT AND TO AUTHORIZE THE LEVY OF SPECIAL TAXES THEREIN – RITTER RANCH PHASE 1 PUBLIC FACILITIES

WHEREAS, under the Mello-Roos Community Facilities Act of 1982, constituting Section 53311 et seq. of the California Government Code (the "Code"), the City Council may commence proceedings for the establishment of a community facilities district; and

WHEREAS, RdR Development Holdings, LLC has submitted to the City of Palmdale (the "City") a Petition (Including Waivers) (the "Petition") requesting that the City Council conduct proceedings under the Code to create a community facilities district to be designated "City of Palmdale Community Facilities District No. 2022-3 (Ritter Ranch Phase 1 Public Facilities)" (the "District"); and

WHEREAS, under the Code, the City Council is the legislative body for the proposed District and is empowered with the authority to establish the District and levy special taxes on property within the District; and

WHEREAS, the City Council now desires to proceed with the actions necessary to consider the formation of the District.

NOW, THEREFORE, BE IT RESOLVED, DETERMINED AND ORDERED by the City Council of the City of Palmdale as follows:

Section 1. The City Council proposes to begin the proceedings necessary to form the District pursuant to the Code. Receipt by the City of the Petition is hereby acknowledged.

Section 2. The name proposed for the District is "City of Palmdale Community Facilities District No. 2022-3 (Ritter Ranch Phase 1 Public Facilities)."

Section 3. The proposed boundaries of the District are as shown on the map of the District on file with the City Clerk, which boundaries are hereby preliminarily approved and to which map reference is hereby made for further particulars. The City Clerk is hereby directed to record, or cause to be recorded, the map of the boundaries of the District in the office of the Los Angeles County Recorder within fifteen days of the date of adoption of this Resolution.

Section 4. The types of public facilities to be financed in whole or in part by the District (collectively referred to in this Resolution as the "Facilities") are as described in

Exhibit A hereto, which Exhibit is by this reference incorporated herein. The acting City Manager is hereby authorized and directed to enter into joint community facilities agreements with any other public entities that will own and/or operate any of the Facilities as required by Section 53316.2 of the Code, such agreements to be in a form approved by the acting City Manager upon consultation with the City Attorney and Bond Counsel.

The City Council hereby expresses its opinion that the public interest will not be served by allowing property owners to enter into contracts as contemplated by Section 53329.5(a) of the Code, and does not intend to let property owners avail themselves of the actions otherwise permitted by said Section 53329.5(a).

Section 5. Except to the extent that funds are otherwise available to the District to finance the Facilities and/or pay the principal and interest as it becomes due on bonds issued by the City for the District, as well as to pay the administrative expenses of the District, a special tax sufficient to pay such costs, secured by recordation of a continuing lien against all non-exempt real property in the District, will be levied annually on property located within the District and collected in the same manner as ordinary ad valorem property taxes or in such other manner as the City Council or its designee shall determine, including direct billing of the affected property owners. The proposed rate and method of apportionment of the special tax among the parcels of real property within the District, in sufficient detail to allow each landowner within the proposed District to estimate the maximum amount such owner will have to pay, is described in Exhibit B attached hereto which Exhibit is by this reference incorporated herein.

On May 26, 2004, the City Council adopted Resolution No. 2004-168 adopting Local Goals and Policies for Community Facilities Districts – Residential Property (the "Goals and Policies"). Section VII of the Goals and Policies provides, in part, that the total projected property tax levels (including ad valorem taxes, any maintenance, landscaping or other impositions on the land in a community facilities district and other similar annual government charges levied on parcels in a community facilities district) shall not exceed 1.8% of the estimated sales prices of the homes to be constructed in the community facilities district. Given the need for extensive infrastructure improvements for the development of the property in the District and the need to allow for special tax levies sufficient to repay bonded indebtedness expected to be incurred to finance the improvements, the City Council hereby waives the 1.8% limitation otherwise applicable to the proposed special taxes to be levied on property in the District. In addition, the City Council hereby finds that the provisions of Section 53313.6, 53313.7 and 53313.9 of the Code (relating to adjustments to ad valorem property taxes and schools financed by a community facilities district), are inapplicable to the District.

Section 6. It is the intention of the City Council acting as the legislative body for the District to cause bonds of the City to be issued for the District pursuant to the Code to finance costs of the Facilities. Said bonds shall be in one or more series in the aggregate principal amount of not to exceed $75,000,000, and each issue of such bonds shall bear interest payable semi-annually or in such other manner as the City

Council shall determine, at a rate not to exceed the maximum rate of interest as may be authorized by applicable law at the time of sale of each respective series of such bonds, and each series of the bonds shall mature not to exceed 40 years from the date of the issuance thereof.

Section 7. The City Council reserves to itself the right and authority to allow any interested owner of property in the District, subject to the provisions of Section 53344.1 of the Code and such other conditions as it may otherwise impose, and any applicable prepayment penalties as prescribed in the indenture or fiscal agent agreement for any bonds of the City for the District, to tender to the Finance Director of the City in full payment or part payment of any installment of special taxes or the interest or penalties thereon which may be due or delinquent, but for which a bill has been received, any bond or other obligation secured thereby, in the manner described in Section 53344.1 of the Code.

Section 8. The levy of said proposed special tax shall be subject to the approval of the qualified electors of the District at a special election. The proposed voting procedure shall be by mailed or hand-delivered ballot among the landowners in the proposed District, with each owner having one vote for each acre or portion of an acre such owner owns in the District.

Section 9. Except as may otherwise be provided by law or the rate and method of apportionment of special taxes for the District, all lands owned by any public entity, including the United States, the State of California and/or the City, or any departments or political subdivisions thereof, shall be omitted from the levy of the special tax for the District to the extent, and only to the extent, such land is described as not subject to the special tax levy in the rate and method of apportionment of special tax set forth in Exhibit B hereto.

Section 10. The Director of Public Works, as the officer of the City having responsibility for matters related to the Facilities, is hereby directed to study the proposed District and to make, or cause to be made, and file with the City Clerk a report in writing, presenting the following:

(a) A brief description of the Facilities by type.

(b) An estimate of the fair and reasonable cost of financing the Facilities, including the cost of incidental expenses in connection therewith, and the costs of the proposed bond financing and all other related costs as provided in Section 53345.3 of the Code.

The report shall be made a part of the record of the public hearing provided for below.

Section 11. Monday, October 24, 2022, at 6:00 p.m. or as soon thereafter as the matter may be heard, in the regular meeting place of the City Council, Council

Chambers, City Hall, 38300 Sierra Highway, Suite B, Palmdale, California, are hereby appointed and fixed as the time and place when and where the City Council, as legislative body for the District, will conduct a public hearing on the establishment of the District and consider and finally determine whether the public interest, convenience and necessity require the formation of the District and the levy of said special tax.

Section 12. The City Clerk is hereby directed to cause notice of the public hearing to be given by publication one time in a newspaper published in the area of the District. The publication of the notice shall be completed at least seven days before the date herein set for the public hearing. The notice shall be substantially in the form of Exhibit C hereto.

Section 13. This Resolution shall take effect upon its adoption.

PASSED, APPROVED and ADOPTED this 21st day of September, 2022.

Approved as to form:

Steven D. Hofbauer, Mayor

ATTEST:

Scott E. Porter
Interim City Attorney

Shanae S. Smith, City Clerk

I, Shanae S. Smith, City Clerk of Palmdale, California, do hereby certify that the foregoing resolution was duly passed, approved, and adopted by the City Council of the City of Palmdale at a regular meeting of said Council held on the 21st day of September, 2022 by the following roll call vote:

AYES: _____

NOES: _____

ABSTAIN: _____ ABSENT: _____

Date: _____

Shanae S. Smith, City Clerk

EXHIBIT A

DESCRIPTION OF FACILITIES ELIGIBLE TO BE FINANCED BY THE DISTRICT

FACILITIES

The District shall be eligible to finance all or a portion of the costs of the following:

- Domestic water facilities, including but not limited to construction and installation of water distribution, treatment and storage facilities, pumpstations, irrigation lines and related appurtenances.
- Street improvements, including but not limited to construction and installation of streets, curbs, gutters, medians, traffic signals, street signs, street lights, entry monuments and appurtenances.
- Sanitary sewer facilities, including but not limited to construction and installation of sewer lines and related appurtenances.
- Storm control facilities, including but not limited to pipes, basins and treatment facilities.
- Installation of landscaping and related irrigation improvements in public rights of way, construction and development of parks, parkways and trails and installation of walls and fencing in public rights of way and related appurtenances.
- Recreational facilities, including fixtures and equipment.
- Water system improvements to be designated by the Los Angeles County Waterworks District No. 40 and the Antelope Valley – East Kern Water Agency otherwise to be financed with annexation and capital facilities fees and connection charges related to improvements to be constructed in the Ritter Ranch development.
- Flood control facilities related to the downstream flood control project identified as the Amargosa Recharge Facility that otherwise would be financed with capital facilities fees, connection charges or other permit fees.
- Fire control and suppression facilities, including buildings and related facilities that otherwise would be financed with capital facilities fees, connection charges or other permit fees.
- Sanitation district facilities, including sewer treatment, collection, transmission and reclamation facilities, sewer collection lines, wastewater treatment facilities, reclaimed water facilities, treated wastewater facilities and related and appurtenant facilities, and land, rights-of-way and easements necessary for any of such facilities, which facilities otherwise would be financed with capital facilities fees, connection charges or other permit fees.

The facilities eligible to be financed shall include the costs of design, engineering and planning, the costs of any environmental or other studies, surveys or reports, the cost of any required environmental mitigation, erosion control, grading, soils testing, permits, plan check

and inspection fees, insurance, legal and related overhead costs, coordination and supervision, City of Palmdale staff and consultant costs, and any other costs or appurtenances related to any of the public improvements to be financed or any of the foregoing.

OTHER

The District may also finance any of the following:

1. Bond related expenses, including underwriters discount, appraisal and absorption study costs, reserve fund, capitalized interest, financial advisor, special tax consultant, bond counsel and underwriters' counsel fees and expenses, landowner counsel fees and expenses, official statement printing, and all other incidental expenses.

2. Administrative fees of the City and the Bond trustee or fiscal agent related to the District and the Bonds.

3. Reimbursement of costs related to the formation of the District advanced by the City, any landowner in the District, or any party related to any of the foregoing, as well as reimbursement of any costs advanced by the City, any landowner in the District or any party related to any of the foregoing, for facilities or other purposes or costs of the District.

EXHIBIT B

RATE AND METHOD OF APPORTIONMENT OF SPECIAL TAXES
FOR CITY OF PALMDALE
COMMUNITY FACILITIES DISTRICT NO. 2022-3
(RITTER RANCH PHASE 1 PUBLIC FACILITIES)

A Special Tax, as hereinafter defined, shall be levied and collected in the City of Palmdale Community Facilities District No. 2022-3 (Ritter Ranch Phase 1 Public Facilities) ("CFD No. 2022-3") each Fiscal Year commencing in Fiscal Year 2023/24, in an amount determined by the application of the procedures below. All Taxable Property, as hereinafter defined, unless exempted by law or by the provisions hereof, shall be taxed for the purposes, to the extent and in the manner herein provided.

A. DEFINITIONS

The terms hereinafter set forth have the following meaning:

"Accessory Dwelling Unit" or "ADU" means all Assessor's Parcels of Residential Property for which a building permit(s) has been issued for an "Accessory Dwelling Unit" as defined in California Government Code Section 65852.2(j)(1), as may be amended from time to time, that is accessory to a primary Unit. The ADU may be located on the same Assessor's Parcel as the primary Unit that is the primary Unit or on a separate Assessor's Parcel. For purposes of clarification, where an ADU and primary Unit are on the same Assessor's Parcel, the ADU located on such Assessor's Parcel is considered a separate Unit from the primary Unit on such Assessor's Parcel for purposes of the Special Tax. Should an Assessor's Parcel contain only an ADU, such Assessor's Parcel will be taxed as an ADU Unit only.

"Acre" or "Acreage" means the land area of an Assessor's Parcel as shown on an Assessor's Parcel Map. In the event that the Assessor's Parcel Map shows no acreage, the Acreage for any Assessor's Parcel may be determined by the CFD Administrator based upon, in the CFD Administrator's discretion, the applicable condominium plan, final map, parcel map, Assessor's Data or by using available spatial data and GIS.

"Act" means the Mello-Roos Community Facilities Act of 1982, as amended, being Chapter 2.5 of Part 1, Division 2 of Title 5 of the Government Code of the State.

"Administrative Expenses" means the actual or reasonably estimated costs directly related to the administration of CFD No. 2022-3 including, but not limited to, the following: the costs of any paying agents/fiscal agents/trustees related to CFD No. 2022-3 Bond payments (including the fees and expenses of related counsel); the costs of computing the Annual Special Tax Requirement, the Special Taxes and of preparing the collection schedules for the Special Taxes; the costs of collecting the Special Taxes, including any charges levied by the County Auditor's Office, County Tax Collector's Office or County Treasurer's Office; the costs of the City or designee in complying with the disclosure requirements associated with applicable federal and state securities laws, or otherwise related to CFD No. 2022-3 or CFD No. 2022-3 Bonds; the City's annual administration fees and third party expenses; costs of responding to public inquiries regarding the Special Taxes; the costs of the City or designee related to an appeal of the Special Tax or interpretation of this Rate and Method of Apportionment of Special Taxes; amounts needed to pay any required arbitrage rebate to the federal government related to CFD No. 2022-3 Bonds; the costs

associated with the release of funds from any escrow account; and the costs of commencing and pursuing to completion any foreclosure action arising from delinquent Special Taxes in CFD No. 2022-3. Administrative Expenses shall also include amounts estimated or advanced by the City or CFD No. 2022-3 for any other administrative purposes of CFD No. 2022-3.

"Annual Special Tax Requirement" means that amount required in any Fiscal Year for CFD No. 2022-3 to (1) pay Debt Service on all Outstanding CFD No. 2022-3 Bonds due in the Debt Year that commences in such Fiscal Year; (2) pay debt service on bonds expected to be issued by CFD No. 2022-3 due in the Debt Year that commences in such Fiscal Year; (3) Administrative Expenses; (4) provide any amount required to establish or replenish a reserve fund in connection with any CFD No. 2022-3 Bonds; (5) provide an amount equal to reasonably anticipated Special Tax delinquencies based on the delinquency rate for Special Taxes levied in the previous Fiscal Year as determined by the CFD Administrator, as limited by the Act, and without duplicating any amounts described in clauses (3) or (4). The amounts referred to in clauses (1) through (5) of the preceding sentence may be reduced in any Fiscal Year (in the City's sole discretion) by (i) surplus balances in funds and accounts for CFD No. 2022-3 Bonds to the extent that such balances are available to apply against Debt Service pursuant to the Indenture, (ii) proceeds from the collection of penalties associated with delinquent Special Tax, and (iii) any other revenues available to pay Debt Service on the Outstanding CFD No. 2022-3 Bonds or other indebtedness as determined by the CFD Administrator.

"Assessor's Data" means the property characteristic data compiled and maintained by the County Assessor for each Assessor's Parcel, including, but not limited to, Assessor's Parcel Number, Acreage, Building Square Footage, Lot Square Footage and Units.

"Assessor's Parcel" or "Parcel" means a lot or parcel shown in an Assessor's Parcel Map with an assigned Assessor's Parcel Number.

"Assessor's Parcel Map" means an official map of the County Assessor designating parcels by Assessor's Parcel Number.

"Assessor's Parcel Number" or "APN" means, with respect to an Assessor's Parcel, that number assigned to such Assessor's Parcel by the County for purposes of identification.

"Assigned Special Tax" means the Assigned Special Tax determined in accordance with Section C below, that can be levied in any Fiscal Year on any Assessor's Parcel of Taxable Property.

"Backup Special Tax" means the Backup Special Tax applicable to each Assessor's Parcel of Developed Property, as determined in accordance with the applicable subsection of Section C below.

"Building Permit" means a permit issued by the City for new construction of a residential or non-residential building on an Assessor's Parcel.

"Building Square Feet" or "BSF" means all of the square footage of living area within the perimeter of a residential structure, not including any carport, walkway, garage, overhang, patio, enclosed patio, or similar area. The determination of Building Square Feet shall be made by reference to the building permit(s) issued for such residential dwelling unit. In the event that the building permit does not show

Building Square Feet, other records of the City or Assessor's Data shall be used as determined by the CFD Administrator.

"CFD Administrator" means an official of the City, or designee thereof, responsible for determining the Annual Special Tax Requirement, and otherwise providing for the levy and collection of the Special Taxes.

"CFD No. 2022-3" means City of Palmdale Community Facilities District No. 2022-3 (Ritter Ranch Phase 1 Public Facilities), established by the City Council pursuant to the Act.

"CFD No. 2022-3 Bonds" means bonds or other Debt (as defined in section 53317 of the Act), whether in one or more series, issued or assumed by or on behalf of the City for CFD No. 2022-3 under the Act, and secured by pledge of the Special Taxes.

"City" means the City of Palmdale, California.

"City Council" means the City Council of the City, acting as the legislative body of CFD No. 2022-3.

"County" means the County of Los Angeles, California.

"Debt Service" means for each Debt Year, the total amount of principal and interest due on any Outstanding CFD No. 2022-3 Bonds.

"Debt Year" means the twelve (12) month period ending on the second debt service payment date of each calendar year.

"Developed Property" means, in any Fiscal Year, all Taxable Property in CFD No. 2022-3 for which a Building Permit for new construction was issued by the City prior to March 1 of the preceding Fiscal Year.

"Exempt Property" means all property located within the boundaries of CFD No. 2022-3 which is exempt from the Special Tax pursuant to Section E below.

"Final Map Property" means, in any Fiscal Year, all Taxable Property, exclusive of Developed Property, Taxable Property Owner Association Property, and Taxable Public Property, for which a Final Subdivision Map has recorded prior to January 1 of the preceding Fiscal Year.

"Final Subdivision Map" means a final subdivision map, parcel map or lot line adjustment, approved by the City pursuant to the Subdivision Map Act (California Government Code Section 66410 *et seq.)* or recordation of a condominium plan pursuant to California Civil Code 4285, that creates individual lots for which Building Permits may be issued without further subdivision of such property.

"Fiscal Year" means the period starting July 1 and ending on the following June 30.

"GIS" or "Geographic Information System" means a system designed to capture, store, manipulate, analyze, manage, and present spatial or geographic data.

"Indenture" means the indenture, fiscal agent agreement, resolution, or other instrument pursuant to which CFD No. 2022-3 Bonds are issued, as modified, amended, and/or supplemented from time to time, and any instrument replacing or supplementing the same.

"Land Use Class" means any of the classes listed in Table 1.

"Lot Square Feet" or "LSF" means, for any Assessor's Parcel, the Acreage divided by 43,560.

"Maximum Special Tax" means the Maximum Special Tax, determined in accordance with Section C below, that can be levied in any Fiscal Year on any Assessor's Parcel of Taxable Property.

"Non-Residential Property" means, in any Fiscal Year all Assessor's Parcels of Developed Property for which a building permit(s) was issued for a structure intended for non-residential use.

"Open Space Property" means property within the boundaries of CFD No. 2022-3 which (i) has been designated with specific boundaries and Acreage on a final subdivision map as open space, (ii) has been irrevocably offered for dedication as open space to the federal government, the State, the County, the City, or any other public agency, or (iii) is encumbered by an easement or other restriction required by the City limiting the use of such property to open space.

"Outstanding CFD No. 2022-3 Bonds" means all CFD No. 2022-3 Bonds which are outstanding under and in accordance with the provisions of the Indenture.

"Property Owner's Association" or "POA" means any duly constituted property owner's association. As used in this definition, a Property Owner's Association includes any home-owner's association, condominium owner's association, master or sub-association or non-residential owner's association.

"Property Owner's Association Property" means any property within the boundaries of CFD No. 2022-3 which is (a) owned by a Property Owner's Association or (b) designated with specific boundaries and acreage on a final subdivision map as Property Owner Association Property.

"Proportionately" means, for Developed Property, that the ratio of the actual Special Tax levy to the Assigned Special Tax or the Backup Special Tax is equal. For Final Map Property, "Proportionately" means that the ratio of the actual Special Tax Levy to the Assigned Special Tax or the Backup Special Tax is equal. For Undeveloped Property, "Proportionately" means that the ratio of the actual Special Tax levy per Acre to the Maximum Special Tax per Acre is equal.

"Public Property" means any property within the boundaries of CFD No. 2022-3 which (i) is owned by a public agency, (ii) has been irrevocably offered for dedication to a public agency, or (iii) is designated with specific boundaries and Acreage on a final subdivision map as property which will be owned by a public agency. For purposes of this definition, a public agency includes the federal government, the State, the County, the City, school districts, or any other governmental agency.

"Rate and Method of Apportionment" means this Rate and Method of Apportionment of Special Taxes for CFD No. 2022-3.

"Residential Property" means all Assessor's Parcels of Developed Property for which a Building Permit has been issued for purposes of constructing one or more residential Units.

"Ritter Ranch Specific Plan" means Specific Plan 89-02 approved by the City on March 3, 1992 by Ordinance No. 964, as amended on October 11, 1995 by Ordinance No. 1076 (Specific Plan Amendment 95-1-RR).

"Single Family Residential Attached Property" means all Assessor's Parcels of Residential Property for which a building permit(s) has been issued for (i) an attached residential structure or (ii) property with a

single family attached designation according to the Ritter Ranch Specific Plan including detached and paired townhomes.

"Single Family Residential Detached Property" means all Assessor's Parcels of Residential Property for which a building permit(s) has been issued for a detached residential structure intended as a single primary Unit.

"Special Tax(es)" means the special tax or special taxes to be levied in each Fiscal Year on each Assessor's Parcel of Taxable Property within CFD No. 2022-3 to fund the Annual Special Tax Requirement.

"State" means the State of California.

"Taxable Property" means all the Assessor's Parcels within the boundaries of CFD No. 2022-3 that are not exempt from the Special Tax pursuant to law or Section E below.

"Taxable Property Owner Association Property" means all Assessors Parcels of Property Owner Association Property that are not exempt pursuant to Section E herein.

"Taxable Public Property" means all Assessors Parcels of Public Property that are not exempt pursuant to Section E herein.

"Trustee" means the trustee or fiscal agent or paying agent acting as such under the applicable Indenture.

"Undeveloped Property" means, for each Fiscal Year, all Taxable Property not classified as Developed Property, Final Map Property, Taxable Property Owner Association Property, or Taxable Public Property.

"Unit" means (i) for Single Family Residential Attached Property, an individual single family attached residential unit or property with a single family attached designation according to the Ritter Ranch Specific Plan, (ii) for Single Family Residential Detached Property, an individual single family detached residential unit. The number of Units assigned to each Assessor's Parcel may be determined by (i) referencing Assessor's Data, (ii) site surveys and physical unit counts, and/or (iii) other research by the CFD Administrator.

"Welfare Exempt Property" means, in any Fiscal Year, all Parcels within the boundaries of CFD No. 2022-3 that (a) have been granted a welfare exemption by the County under subdivision (g) of Section 214 of the Revenue and Taxation Code indicated in the Assessor's Data finalized as of January 1 of the previous Fiscal Year, and (b) are exempt from the Special Tax pursuant to Section 53340(c) of the Act. Pursuant to Section 53340(c) of the Act, after the issuance of the first series of CFD No. 2022-3 Bonds, as applicable, any Assessor's Parcels that received a welfare exemption under subdivision (g) of Section 214 of the Revenue and Taxation Code shall not be classified as Welfare Exempt Property and will be subject to the Special Tax.

B. ASSIGNMENT TO LAND USE CATEGORIES

Each Fiscal Year, the CFD Administrator shall determine the Assessor's Parcel Numbers for all Taxable Property within CFD No. 2022-3 for the then-current Fiscal Year. To the extent a Parcel or Parcels of Taxable Property are subdivided, consolidated, or otherwise reconfigured, the Maximum Special Tax shall be assigned to the new Assessor's Parcels Numbers pursuant to Section C. The CFD Administrator shall also determine: (i) which Parcels are Developed Property, Final Map Property, Undeveloped Property,

Taxable Property Owner Association Property and Taxable Public Property; (ii) the number of Units or Acreage each Parcel contains; (iii) the property type, i.e., Single Family Residential Attached Property, Single Family Residential Detached Property, Accessory Dwelling Unit, Non-Residential Property, etc.; and (iv) the Annual Special Tax Requirement for the Fiscal Year. The Assigned Special Tax for Single Family Residential Attached Property shall be based on the number of Units on such Assessor's Parcel and the Building Square Feet of the Units located on such Assessor's Parcel. The Assigned Special Tax for Single Family Detached Property shall be based on the number of Units on such Assessor's Parcel, the Building Square Feet of the Units located on such Assessor's Parcel, and the Lot Square Feet of such Assessor's Parcel. The Assigned Special Tax for Non-Residential Property, Taxable Property Owner Association Property and Taxable Public Property shall be based on the Acreage of the Assessor's Parcel.

C. MAXIMUM SPECIAL TAX RATES

1. Developed Property

The Maximum Special Tax for each Assessor's Parcel of Developed Property shall be the greater of (i) the amount derived by application of the Assigned Special Tax or (ii) the amount derived by application of the Backup Special Tax.

a. Assigned Special Tax

The Assigned Special Tax for each Assessor's Parcel of Developed Property is shown in Table 1.

TABLE 1
ASSIGNED SPECIAL TAX FOR DEVELOPED PROPERTY
FISCAL YEAR 2023/24

Land Use Class	Description	Building Square Feet	Lot Square Feet	Assigned Special Tax
1-A	Single Family Attached Property	>= 1,900 BSF	N/A	$2,762 per Unit
2-A	Single Family Attached Property	< 1,900 BSF	N/A	$2,352 per Unit
1-B	Single Family Detached Property	> 2,600 BSF	< 5,000 LSF	$3,671 per Unit
2-B	Single Family Detached Property	2,300 - 2,600 BSF	< 5,000 LSF	$3,398 per Unit
3-B	Single Family Detached Property	< 2,300 BSF	< 5,000 LSF	$3,125 per Unit
1-C	Single Family Detached Property	> 3,300 BSF	5,000 - 6,000 LSF	$4,468 per Unit
2-C	Single Family Detached Property	3,000 - 3,300 BSF	5,000 - 6,000 LSF	$4,195 per Unit
3-C	Single Family Detached Property	< 3,000 BSF	5,000 - 6,000 LSF	$3,922 per Unit
1-D	Single Family Detached Property	>= 3,300 BSF	> 6,000 LSF	$4,809 per Unit
2-D	Single Family Detached Property	< 3,300 BSF	> 6,000 LSF	$4,400 per Unit

1-E	Accessory Dwelling Unit	N/A	N/A	See below
2-E	Non-Residential Property	N/A	N/A	$22,531 per Acre

The Assigned Special Tax for an Accessory Dwelling Unit shall be calculated as a percentage of the Assigned Special Tax for the primary Unit the ADU is accessory to, based on Building Square Footage. For example, if a primary Unit in Land Use Class 1-A of 2,000 BSF has an ADU of 800 BSF, the Assigned Special Tax for the ADU shall be calculated by the following steps:

1. 800 BSF / 2,000 BSF = 0.40 or 40%
2. $2,762 Assigned Special Tax per Unit x 40% = $1,104.80 Assigned Special Tax for such ADU

b. Backup Special Tax

The Fiscal Year 2023-2024 aggregate Backup Special Tax attributable to property within a Final Subdivision Map will equal $22,531 multiplied by the Acreage of all Taxable Property located within such Final Subdivision Map, excluding Acreage associated with current or expected Taxable Public Property and Taxable Property Owner Association Property.

The Backup Special Tax for each Assessor's Parcel of Residential Property in a Final Subdivision Map shall be computed by dividing the aggregate Backup Special Tax attributable to all Assessor's Parcels of Taxable Property for which building permits for residential construction have or may be issued, as determined in the preceding paragraph, by the number of such Assessor's Parcels (i.e., the number of residential lots).

Notwithstanding the foregoing, if all or any portion of a Final Subdivision Map is subsequently changed or modified, then the Backup Special Tax for each Assessor's Parcel of Residential Property in such Final Subdivision Map, or the portion thereof that is changed or modified, shall be a rate per Acre calculated as follows:

1. Determine the total Backup Special Taxes anticipated to apply to the changed or modified portion of the Final Subdivision Map prior to the change or modification.
2. Divide the amount determined pursuant to paragraph 1 above by the total Acreage of Residential Property excluding Taxable Public Property and Taxable Property Owner Association Property which is ultimately expected to exist in such changed or modified Final Subdivision Map area, as reasonably determined by the CFD Administrator.

The result is the Backup Special Tax per Acre which shall be applicable to all Assessor's Parcels of Residential Property in such changed or modified Final Subdivision Map.

c. Increase in the Assigned Special Tax and Backup Special Tax

On each July 1, commencing on July 1, 2024 and ending on 2038/39, the Assigned Special Tax and the Backup Special Tax for Developed Property and Final Map Property shall be increased by an amount equal to two percent (2%) of the amount in effect for the previous Fiscal Year.

d. Multiple Land Use Classes

In some instances, an Assessor's Parcel of Developed Property may contain more than one Land Use Class. The Special Tax levied on an Assessor's Parcel shall be the sum of the Special Tax for all Land Use Classes located on that Assessor's Parcel.

2. Final Map Property, Undeveloped Property, Taxable Property Owner Association Property, and Taxable Public Property

a. Maximum Special Tax

The Maximum Special Tax for each Assessor's Parcel of Final Map Property, Undeveloped Property, Taxable Property Owner Association Property, and Taxable Public Property shall be $22,531 per Acre in Fiscal Year 2023/24.

b. Increase in the Maximum Special Tax

On each July 1, commencing on July 1, 2024 and ending on 2038/39, the Maximum Special Tax for Final Map Property, Undeveloped Property, Taxable Property Owner Association Property, and Taxable Public Property shall be increased by an amount equal to two percent (2%) of the amount in effect for the previous Fiscal Year.

D. METHOD OF APPORTIONMENT OF THE SPECIAL TAXES

Commencing with Fiscal Year 2023/24 and for each following Fiscal Year, the CFD Administrator shall determine the Annual Special Tax Requirement and shall levy the Special Tax until the amount of the Special Tax levied equals the Annual Special Tax Requirement. The Special Tax shall be levied each Fiscal Year as follows:

First: The Special Tax shall be levied Proportionately on each Assessor's Parcel of Developed Property at a rate up to 100% of the applicable Assigned Special Tax to satisfy the Annual Special Tax Requirement.

Second: If additional monies are needed to satisfy the Annual Special Tax Requirement after the first step has been completed, the Special Tax shall be levied Proportionately on each Assessor's Parcel of Final Map Property at a rate up to 100% of the Maximum Special Tax for Final Map Property to satisfy the Annual Special Tax Requirement.

Third: If additional monies are needed to satisfy the Annual Special Tax Requirement after the second step has been completed, the Special Tax shall be levied Proportionately on each Assessor's Parcel of Undeveloped Property at a rate up to 100% of the Maximum Special Tax for Undeveloped Property to satisfy the Annual Special Tax Requirement.

Fourth: If additional monies are needed to satisfy the Annual Special Tax Requirement after the first three steps have been completed, then the levy of the Special Tax on each Assessor's Parcel of Developed Property whose Maximum Special Tax is determined through the application of the Backup Special Tax shall be increased in equal percentages from the applicable Assigned Special Tax up to 100% of the Maximum Special Tax for each such Assessor's Parcel to satisfy the Annual Special Tax Requirement.

Fifth: If additional monies are needed to satisfy the Annual Special Tax Requirement after the first four

steps have been completed, the Special Tax shall be levied on each Assessor's Parcel of Taxable Property Owner Association Property at a rate up to 100% of the Maximum Special Tax for Taxable Property Owner Association Property to satisfy the Annual Special Tax Requirement.

Sixth: If additional monies are needed to satisfy the Annual Special Tax Requirement after the first five steps have been completed, then the Special Tax shall be levied Proportionately on all Taxable Public Property at a rate up to 100% of the Maximum Special Tax for Taxable Public Property to satisfy the Annual Special Tax Requirement.

E. EXEMPTIONS

1. No Special Tax shall be levied on up to 35.20 Acres of Property Owner Association Property, and up to 120.70 Acres of Public Property. Tax-exempt status will be assigned by the CFD Administrator in the chronological order in which property becomes Property Owner Association Property, or Public Property.
2. Property Owner Association Property, that is not exempt from the Special Tax under this section, or pursuant to the Act, shall be classified as Taxable Property Owner Association Property. Taxable Property Owner Association Property shall be subject to the levy of the Special Tax and shall be taxed Proportionately as part of the fifth step in Section D above, at up to 100% of the applicable Maximum Special Tax for Taxable Property Owner Association Property.
3. Public Property, that is not exempt from the Special Tax under this section, or pursuant to the Act, shall be classified as Taxable Public Property. Taxable Public Property shall be subject to the levy of the Special Tax and shall be taxed Proportionately as part of the sixth step in Section D above, at up to 100% of the applicable Maximum Special Tax for Taxable Public Property.
4. No Special Tax shall be levied on any Assessor's Parcel in any Fiscal Year in which such Assessor's Parcel is classified as Welfare Exempt Property.

F. APPEAL OF SPECIAL TAX LEVY

Any property owner may file a written appeal of the Special Tax with the CFD Administrator claiming that the amount or application of the Special Tax is not correct with respect to one or more specific Assessor's Parcels. The appeal must be filed not later than one calendar year after having paid the Special Tax that is disputed, and the appellant must be current in all payments of the Special Taxes theretofore levied on the Assessor's Parcel(s). In addition, during the term of the appeal process, all Special Tax levied must be paid for the subject Assessor's Parcel(s) prior to delinquency.

The appeal must specify the reasons why the appellant claims the Special Tax is in error. The CFD Administrator shall review the appeal, meet with the appellant if the CFD Administrator deems necessary, and advise the appellant of its determination.

If the property owner disagrees with the CFD Administrator's decision relative to the appeal, the owner may then file a written appeal with the City Council whose subsequent decision shall be final and binding on all interested parties. If the decision of the CFD Administrator or subsequent decision by the City requires the Special Tax to be modified or changed in favor of the property owner, then an adjustment shall be made to credit future Special Taxes.

This procedure shall be exclusive and its exhaustion by any property owner shall be a condition precedent to filing any legal action by such owner.

G. INTERPRETATION OF RATE AND METHOD OF APPORTIONMENT

The City may, by resolution or ordinance, interpret, clarify and/or revise this Rate and Method of Apportionment to correct any inconsistency, vagueness, or ambiguity as it relates to the Special Taxes, method of apportionment, classification of Assessor's Parcels, or any definition used herein, as long as once CFD No. 2022-3 Bonds have been issued such correction does not materially adversely affect the levy and collection of Special Taxes on any Assessor's Parcel needed to repay the CFD No. 2022-3 Bonds. In addition, the interpretation and application of any section of this document shall be at the CFD Administrator's discretion.

H. MANNER OF COLLECTION

The Special Taxes shall be collected in the same manner and at the same time as ordinary ad valorem property taxes, provided, that the CFD Administrator may directly bill the Special Tax, may collect the Special Tax at a different time or in a different manner if needed to meet the financial obligations of CFD No. 2022-3. The City may covenant to foreclose and may actually foreclose or cause an action for foreclosure to be prosecuted in respect of Assessor's Parcels of Taxable Property that are delinquent in the payment of the Special Tax.

I. PREPAYMENT OF SPECIAL TAX

The following definitions apply to this Section I:

"Authorized Facilities" means the public facilities authorized to be financed, in whole or in part, by CFD No. 2022-3.

"Buildout" means the state of maximum development of CFD No. 2022-3 and any property annexed thereto, based on plans and anticipated development.

"CFD Public Facilities Cost" means $66.1 million for CFD No. 2022-3, expressed in 2022 dollars, which shall increase by the annual percentage change in the Construction Inflation Index on July 1, 2023 and on each July 1 thereafter, or such lower number as (i) shall be determined by the CFD Administrator as sufficient to provide the public facilities to be provided by CFD No. 2022-3 under the authorized bonding program for CFD No. 2022-3, or (ii) shall be determined by the City Council concurrently with a covenant that it will not issue any more Bonds to be supported by Special Taxes levied under this Rate and Method of Apportionment as described in Section D.

"Construction Inflation Index" means the annual percentage change in the Engineering News-Record Building Cost Index for the City of Los Angeles, measured as of the calendar year which ends in the previous Fiscal Year, but not less than zero percent. In the event this index ceases to be published, the Construction Inflation Index shall be another index as determined by the City that is reasonably comparable to the Engineering News-Record Building Cost Index for the City of Los Angeles.

"Future Facilities Costs" means, as of the date of prepayment, the CFD Public Facilities Costs minus the proceeds of any Previously Issued CFD No. 2022-3 Bonds which were, at the time of issuance, available to the City for Authorized Facilities.

"Previously Issued CFD No. 2022-3 Bonds" means all Outstanding CFD No. 2022-3 Bonds that have been issued by CFD No. 2022-3 prior to the date of prepayment.

1. Prepayment in Full

The Special Tax obligation of an Assessor's Parcel of Developed Property, Taxable Public Property, Final Map Property, or Undeveloped Property for which a Building Permit has been issued, may be prepaid and permanently satisfied as described herein; provided that there are no delinquent installments of the Special Tax with respect to such Assessor's Parcel at the time of prepayment. An owner of an Assessor's Parcel intending to prepay the Special Tax obligation shall provide the CFD Administrator with written notice of intent to prepay. Within 45 days of receipt of such written notice, the CFD Administrator shall notify such owner of the prepayment amount for such Assessor's Parcel. Prepayment must be made not less than 75 days prior to the next occurring date that notice of redemption of Outstanding CFD No. 2022-3 Bonds, if any. Proceeds of such prepayment may be given to the Trustee pursuant to the Indenture. If a prepayment is made prior to the issuance of CFD No. 2022-3 Bonds, the Redemption Premium, Interest Amount, Reserve Fund Credit and Capitalized Interest Credit as calculated below, shall be zero. The CFD Administrator may charge the property owner requesting a prepayment calculation a fee for providing this service.

The Special Tax Prepayment Amount (defined below) shall be calculated as summarized below (capitalized terms as defined below):

	Bond Redemption Amount	
	Plus	Future Facilities Amount
	plus	Redemption Premium
	plus	Interest Amount
	plus	Administrative Fees and Expenses
	less	Reserve Fund Credit
	less	Capitalized Interest Credit
Total:	equals	Special Tax Prepayment Amount

As of the proposed date of prepayment, the Special Tax Prepayment Amount (defined below) shall be calculated by the CFD Administrator as follows:

Step Number:

1. Confirm that no Special Tax delinquency apply to such Assessor's Parcel, and if delinquencies are applicable compute all amounts due, including interest and penalties.

2. For Assessor's Parcels of Developed Property and Taxable Public Property compute the Assigned Special Tax and Backup Special Tax. For Assessor's Parcels of Final Map Property, and Undeveloped Property to be prepaid, compute the Assigned Special Tax and Backup Special Tax

for that Assessor's Parcel as though it was already designated as Developed Property, based upon the building permits issued for that Assessor's Parcel.

3. a. Divide the Assigned Special Tax computed pursuant to Step 2 by the total estimated Assigned Special Tax for CFD No. 2022-3 based on the Developed Property Special Tax which could be charged in the current Fiscal Year on all expected development through Buildout of CFD No. 2022-

   b. Divide the Backup Special Tax computed pursuant to Step 2 by the total estimated Backup Special Tax for CFD No. 2022-3 based on the Developed Property Special Tax which could be charged in the current Fiscal Year on all expected development through Buildout of CFD No. 2022-

   c. Determine which quotient computed pursuant to Step 3.a or 3.b is larger (the "Maximum Special Tax Percentage").

4. Multiply the Maximum Special Tax Percentage by the Outstanding CFD No. 2022-3 Bonds to compute the principal amount of Outstanding CFD No. 2022-3 Bonds to be redeemed (the *"Bond Redemption Amount"*).

5. Compute the Future Facilities Costs.

6. Multiply the Maximum Special Tax Percentage by the total Future Facilities Costs to compute the Future Facilities amount to be prepaid (the *"Future Facilities Amount"*).

7. Multiply the Bond Redemption Amount computed pursuant to Step 4 by the applicable redemption premium, if any, on the Outstanding CFD No. 2022-3 Bonds to be redeemed (the "*Redemption Premium*") determined by reference to the Indenture.

8. Compute the amount needed to pay interest on the Bond Redemption Amount from the first bond interest and/or principal payment date following the current Fiscal Year until the earliest redemption date for the Outstanding CFD No. 2022-3 Bonds (the "*Interest Amount*").

9. Verify the administrative fees and expenses, including the costs of computation of the prepayment, the costs to invest the prepayment proceeds, the costs of redeeming the Outstanding CFD No. 2022-3 Bonds, and the costs of recording any notices to evidence the prepayment and the redemption (the "*Administrative Fees and Expenses*").

10. If reserve funds for the Outstanding CFD No. 2022-3 Bonds held under the Indenture, if any, are at or above 100% of the then reserve requirement (as required by the Indenture) on the prepayment date, a reserve fund credit shall be calculated as a reduction in the applicable reserve requirement for the Outstanding CFD No. 2022-3 Bonds to be redeemed pursuant to the prepayment (the "*Reserve Fund Credit*"). No Reserve Fund Credit shall be granted if reserve funds are below 100% of the applicable reserve requirement on the prepayment date or if the Reserve Fund is satisfied by a credit instrument rather than cash funded.

11. If any capitalized interest for the Outstanding CFD No. 2022-3 Bonds will not have been expended at the time of the first interest and/or principal payment following the current Fiscal Year, a capitalized interest credit shall be calculated by multiplying the Maximum Special Tax Percentage by the expected balance in the capitalized interest fund after such first interest and/or principal

payment (the "Capitalized Interest Credit").

12. The Special Tax prepayment is equal to the sum of the amounts computed pursuant to Steps 4, 6, 7, 8 and 9 less the amount computed pursuant to Steps 10 and 11 (the " *Prepayment Amount*").

13. From the Prepayment Amount, the amounts computed pursuant to Step 6 shall be used by the City to pay for Future Facilities Costs. The amounts computed pursuant to Steps 4, 6, 7 and 8 shall be deposited into the appropriate fund as established under the Indenture and be used to redeem Outstanding CFD No. 2022-3 Bonds or make Debt Service payments. The amount computed pursuant to Step 9 shall be retained by the City for the payment of Administrative Fees and Expenses.

The Special Tax Prepayment Amount may be sufficient to redeem other than a $5,000 increment of Outstanding CFD No. 2022-3 Bonds. In such cases, the increment above $5,000 or integral multiple thereof will be retained in the appropriate fund established under the Indenture to be used with the next prepayment of Outstanding CFD No. 2022-3 Bonds or to make Debt Service payments.

Current year Special Taxes that are not yet paid will remain outstanding and will be collected in the manner billed. With respect to any Assessor's Parcel that is prepaid, the CFD Administrator shall cause a suitable notice to be recorded in compliance with the Act to indicate the prepayment of the Special Tax and the obligation of such Assessor's Parcel satisfied.

Notwithstanding the foregoing, no prepayment will be allowed unless the Maximum Special Tax that may be levied on Taxable Property both prior to and after the proposed prepayment is at least 1.1 times the maximum annual Debt Service on all Outstanding CFD No. 2022-3 Bonds plus annual Administrative Expenses, as reasonably estimated by the CFD Administrator.

2. Prepayment in Part

The Special Tax may be partially prepaid, provided that a partial prepayment may be made only after all authorized CFD No. 2022-3 Bonds have been issued and only for Assessor's Parcels of Developed Property, Final Map Property, Taxable Public Property and Undeveloped Property for which a Building Permit has been issued and only if there are no delinquent Annual Special Taxes with respect to such Assessor's Parcel at the time of partial prepayment. The amount of the prepayment shall be calculated as in Section I.1; except that a partial prepayment shall be calculated by the CFD Administrator according to the following formula:

$$PP = P_E \times F.$$

These terms have the following meaning:

PP = the partial prepayment
P_E = the Special Tax Prepayment Amount calculated according to Section I.1
F = the Maximum Special Tax Percentage

The Special Tax partial prepayment amount must be sufficient to redeem at least a $5,000 increment of Bonds.

The owner of any Assessor's Parcel who desires such partial prepayment shall notify the CFD Administrator of such owner's intent to partially prepay the Special Tax and the percentage by which the Special Tax shall be prepaid. The CFD Administrator shall provide the owner with a statement of the amount required for the partial prepayment of the Special Tax for an Assessor's Parcel within 45 days of the request and may charge a fee for providing this service. With respect to any Assessor's Parcel that is partially prepaid, the CFD Administrator shall (i) distribute the prepayment funds remitted according to Section I.1, and (ii) indicate in the records of CFD No. 2022-3 that there has been a partial prepayment of the Special Tax and that a portion of the Special Tax with respect to such Assessor's Parcel, equal to the outstanding percentage (1.00 - F) of the remaining Maximum Special Tax, shall continue to be levied on such Assessor's Parcel pursuant to Section D.

J. SPECIAL TAX REDUCTION

The following definitions apply to this Section J:

"Issuance Date" means the date a bond purchase contract related to the sale of the CFD No. 2022-3 Bonds is entered into between the purchaser of the CFD No. 2022-3 Bonds and CFD No. 2022-3.

"Plan Type" means a discrete residential plan type (generally consisting of residential dwelling units that share a common product type (e.g., detached, condominium) and that have nearly identical amounts of living area) that is constructed or expected to be constructed within CFD No. 2022-3 as identified in the Price Point Study.

"Price Point Consultant" means any consultant or firm of such consultants selected by the City that (a) has substantial experience in performing price point studies for residential units within community facilities districts or otherwise estimating or confirming pricing for residential units in community facilities districts, (b) has recognized expertise in analyzing economic and real estate data that relates to the pricing of residential units in community facilities districts, (c) is in fact independent and not under the control of CFD No. 2022-3 or the City, (d) does not have any substantial interest, direct or indirect, with or in (i) CFD 2022-3, (ii) the City, (iii) any owner of real property in CFD No. 2022-3, or (iv) any real property in CFD No. 2022-3, and (e) is not connected with CFD No. 2022-3 or the City as an officer or employee thereof, but who may be regularly retained to make reports to CFD No. 2022-3 or the City.

"Price Point Study" means a price point study or a letter updating a previous price point study prepared by the Price Point Consultant which (a) sets forth the Plan Types constructed or expected to be constructed within CFD No. 2022-3, (b) sets forth the estimated number of constructed and expected residential dwelling units for each Plan Type, (c) sets forth such Price Point Consultant's estimate of the Price Point for each Plan Type and (d) uses a date for establishing such Price Points that is no earlier than 30 days and no later than 180 days prior to the date the Price Point Study is delivered to the CFD Administrator pursuant to Section C herein.

"Total Effective Tax Rate" means, for a Plan Type, the quotient of (a) the Total Tax Burden for such Plan Type divided by (b) the Price Point for such Plan Type, converted to a percentage.

"Total Tax Burden" means, for any Unit of Single Family Residential Property, the sum of the Assigned

Special Tax, together with ad valorem property taxes, special assessments, special taxes for any overlapping community facilities district, and any other taxes, fees and charges, and excluding services charges such as sewer and trash, which are collected by the County via property tax bills and which are payable from and secured by the property, assuming such Unit of Single Family Residential Property has been completed, sold and subject to such levies and impositions.

Special Tax Reduction Calculation

Prior to the issuance of the first series of CFD No. 2022-3 Bonds, the following steps shall be taken for each Land Use Class of Residential Property in CFD No. 2022-3:

1. At least 30 days prior to the expected Issuance Date of the first series of CFD No. 2022-3 Bonds, CFD No. 2022-3 shall cause a Price Point Study to be delivered to the CFD Administrator.
2. As soon as practicable after receipt of the Price Point Study, the CFD Administrator shall calculate the Total Tax Burden and Total Effective Tax Rate for each Plan Type.
3. Separately, for each Land Use Class of Residential Property, the CFD Administrator shall determine whether or not the Total Effective Tax Rate for all Plan Types in a Land Use Class is less than or equal to 2.00%.
    a. If the Total Effective Tax Rate for all Plan Types in a Lands Use Class is less than or equal to 2.00%, then there shall be no change in the Assigned Special Tax for such Land Use Class.
    b. If the Total Effective Tax Rate for any Plan Type in a Land Use Class is greater than 2.00%, the CFD Administrator shall calculate a revised Assigned Special Tax for such Land Use Class which revised Assigned Special Tax shall be the highest amount (rounded to the nearest whole dollar) that will not cause the Total Effective Tax Rate for any Plan Type in such Land Use Class to exceed 2.00%.
    c. For each Land Use Class group (i.e., A, B, C or D) as shown in Table 1, if the revised Assigned Special Tax amounts result in a situation in which the Assigned Special Tax for a particular Land Use Class of Residential Property would be less than the Assigned Special Tax for the numerical Land Use Class of Residential Property directly above it for such Land Use Class (e.g., the Assigned Special Tax for Land Use Class 1-B is less than the Assigned Special Tax for Land Use Class 2-B), then the Assigned Special Tax for the higher numbered Land Use Class shall be revised to be equal to the Assigned Special Tax for the lower numbered Land Use Class (i.e., the Assigned Special Tax for Land Use Class 2-B shall be revised to be equal to the updated Assigned Special Tax for Land Use Class 1-B).
4. If the Assigned Special Tax for any Land Use Class is revised pursuant to step 3.b. or 3.c. above, the CFD Administrator shall calculate a revised Backup Special Tax for all property. The revised Backup Special Tax per Acre shall be an amount (rounded to the nearest whole dollar) equal to the Backup Special Tax per Acre as set forth in Section C above, reduced by a percentage equal to the weighted average percentage reduction in the Assigned Special Taxes for all Land Use Classes of Residential Property resulting from the calculations in steps 3.a. through 3.c. above. The weighted average percentage will be calculated by taking the sum of the products of the number of units constructed or expected to be constructed in each Land Use Class multiplied by the percentage change in the Assigned Special Tax (pursuant to step 3.b. or 3.c. above) for each Land

Use Class (or 0 for Land Use Classes that are not changing). This amount is then divided by the total number of units constructed or expected to be constructed and converted to a percentage.

5. If the Assigned Special Tax for any Land Use Class is revised pursuant to step 3.b. or 3.c. above, the CFD Administrator shall prepare and execute a Certificate of Reduction in Special Taxes substantially in the form of Attachment A hereto and shall deliver such Certificate of Reduction in Special Taxes to CFD No. 2022-3. The Certificate of Reduction in Special Taxes shall be completed for all Land Use Classes and shall set forth, as applicable, either (i) the reduced Assigned Special Tax for a Land Use Class as calculated pursuant to step 3.b. or 3.c., or (ii) the Assigned Special Tax as identified in Table 1 in Section C for a Land Use Class that was not revised as determined pursuant to step 3.a.; as well as either (i) the revised Backup Special Tax as calculated pursuant to step 4, or (ii) the Backup Special Tax as identified in in Section C.1.(b) that was not revised as determined pursuant to step 4.

6. If the Issuance Date of the first series of CFD No. 2022-3 Bonds is within 120 days of the date of receipt of the Price Point Study by the CFD Administrator, CFD No. 2022-3 shall execute the acknowledgement on such Certificate of Reduction in Special Taxes, dated as of the closing date of such Bonds, and upon the closing of such first series of Bonds, the Assigned Special Tax for each Land Use Class and the Backup Special Tax shall be, for all purposes, as set forth in such Certificate of Reduction in Special Taxes. If the Issuance Date of the first series of Bonds is not within 120 days of the date of receipt of the Price Point Study by the CFD Administrator, such Certificate of Reduction in Special Taxes shall not be acknowledged by CFD No. 2022-3 and shall, as of such date, be void and of no further force and effect. In such case, if subsequently a first series of CFD No. 2022-3 Bonds is expected to be issued, at least 30 days prior to the expected Issuance Date of such first series of CFD No. 2022-3 Bonds, the CFD Administrator shall cause a new Price Point Study to be delivered to the CFD Administrator and, following such delivery, steps 2 through 5 of this section shall be performed based on such new Price Point Study.

7. As soon as practicable after the execution by CFD No. 2022-3 of the acknowledgement on the Certificate of Reduction in Special Taxes, CFD No. 2022-3 shall cause to be recorded in the records of the County Recorder an Amended Notice of Special Tax Lien for CFD No. 2022-3 reflecting the Assigned Special Taxes and the Backup Special Tax set forth in such Certificate of Reduction in Special Taxes.

8. If the Assigned Special Tax is not required to be changed for any Land Use Class based on the calculations performed under step 3 above, there shall be no reduction in the Maximum Special Tax, and no Certificate of Reduction in Special Taxes shall be required. However, the CFD Administrator shall prepare and deliver to CFD No. 2022-3 a Certificate of No Reduction in Special Taxes substantially in the form of Attachment B hereto dated as of the closing date of the first series of Bonds that states that the calculations required pursuant to this Section J have been made and that no changes to the Maximum Special Tax are necessary.

CFD No. 2022-3 and the CFD Administrator shall take no further actions under this Section J upon the earlier to occur of the following: (i) the execution of the acknowledgement by CFD No. 2022-3 on a Certificate of

Reduction in Special Taxes pursuant to step 6; or (ii) the delivery by the CFD Administrator of a Certificate of No Reduction in Special Taxes pursuant to step 8.

K. TERM

The Special Tax shall be levied and collected as needed to fund the Annual Special Tax Requirement for up to 60 years from the initial levy of the Special Tax. In any event no Special Tax shall be levied for CFD. No. 2022-3 after the 2083/84 Fiscal Year.

ATTACHMENT
A

CERTIFICATE OF REDUCTION IN SPECIAL TAXES

COMMUNITY FACILITIES DISTRICT NO. 2022-3

1. Pursuant to Section J of the Rate and Method of Apportionment of Special Taxes attached to the Notice of Special Tax Lien recorded in the Official Records of the County of Los Angeles as Document No. _____ on the _____ day of ___, 20__, the CFD Administrator hereby reduces the Maximum Special Tax for Developed Property for [certain or all] Land Use Classes within CFD No. 2022-3.

2. The calculations made pursuant to Section J were based upon a Price Point Study that was received by the CFD Administrator on _____.

3 . Table A-1 below shows the Assigned Special Tax for each Land Use Class after such reduction:

Table A-1
Reduced Assigned Special Taxes for Developed Property

Fiscal Year _____

Land Use Class	Description	Building Square Feet	Lot Square Feet	Assigned Special Tax
1-A	Single Family Attached Property	>= 1,900 BSF	N/A	$____ per unit
2-A	Single Family Attached Property	< 1,900 BSF	N/A	$____ per unit
1-B	Single Family Detached Property	> 2,600 BSF	< 5,000 LSF	$____ per unit
2-B	Single Family Detached Property	2,300 - 2,600 BSF	< 5,000 LSF	$____ per unit
3-B	Single Family Detached Property	< 2,300 BSF	< 5,000 LSF	$____ per unit
1-C	Single Family Detached Property	> 3,300 BSF	5,000 - 6,000 LSF	$____ per unit
2-C	Single Family Detached Property	3,000 - 3,300 BSF	5,000 - 6,000 LSF	$____ per unit
3-C	Single Family Detached Property	< 3,000 BSF	5,000 - 6,000 LSF	$____ per unit
1-D	Single Family Detached Property	>= 3,300 BSF	> 6,000 LSF	$____ per unit
2-D	Single Family Detached Property	< 3,300 BSF	> 6,000 LSF	$____ per unit
1-E	Accessory Dwelling Unit	N/A	N/A	See Below
2-E	Non-Residential Property	N/A	N/A	$____ per Acre

The Assigned Special Tax for an Accessory Dwelling Unit shall be calculated as a percentage of the Assigned Special Tax for the primary Unit the ADU is accessory to, based on Building Square Footage. For example, if a primary Unit in Land Use Class 1-A of 2,000 BSF has an ADU of 800 BSF,

the Assigned Special Tax for the ADU shall be calculated by the following steps:

a. 800 BSF / 2,000 BSF = 0.40 or 40%
b. $_____ Assigned Special Tax per Unit x 40% = $_____ Assigned Special Tax for such ADU

4. The Backup Special Tax for each Assessor's Parcel of Developed Property in CFD No. 2022-3 shall be equal to $_____ after such reduction.

5. The Maximum Special Tax for each Assessor's Parcel of Final Map Property and Undeveloped Property in CFD No. 2022-3 shall be $____ per Acre.

6. Upon execution of the certificate by the City, the CFD Administrator shall cause an amended notice of special tax lien for CFD No. 2022-3 to be recorded reflecting the modifications set forth herein.

7. By execution hereof, the undersigned acknowledges, on behalf of the City and CFD No. 2022-3, receipt of this certificate and modification of the Rate and Method of Apportionment of Special Taxes as set forth in this certificate.

Submitted

CFD ADMINISTRATOR

By: _____ Date: _____

Community Facilities District No. 2022-3 of the City of Palmdale

By: _____ Date as of : ---------- -----
[closing date of Bonds]

ATTACHMENT B

CERTIFICATE OF NO REDUCTION IN SPECIAL TAXES

COMMUNITY FACILITIES DISTRICT NO. 2022-3

1. All calculations required pursuant to Section J of the Rate and Method of Apportionment have been made based upon a Price Point Study that was received by the CFD Administrator on _____.

2. Total Effective Tax Rate for all Plan Types in all Land Use Classes in all Zones is less than or equal to 2.00%.

3. The Maximum Special Tax for Developed Property within CFD No. 2022-3, including the Assigned Special Taxes set forth in Sections C.1.(a) and the Backup Special Tax set forth in Section C.1.(b) of the Rate and Method of Apportionment, shall remain in effect and not be reduced.

Submitted

CFD ADMINISTRATOR

By: _____ Date as of: _____
[closing date of Bonds]

EXHIBIT C

NOTICE OF PUBLIC HEARING

Notice is hereby given that on September 21, 2022, the City Council of the City of Palmdale adopted Resolution No. CC 2022-100 entitled "A Resolution of the City Council of the City of Palmdale Declaring Its Intention to Establish a Community Facilities District and to Authorize the Levy of Special Taxes Therein – Ritter Ranch Phase 1 Public Facilities" (the "Resolution of Intention"). Pursuant to the Resolution of Intention and Section 53311 and following of the California Government Code (the "Code"), notice is hereby given that the City Council will conduct a public hearing on Monday, October 24, 2022 at 6:00 p.m. or as soon thereafter as practicable, in the City Council Chambers located in City Hall, 38300 Sierra Highway, Suite B, Palmdale, California, to consider the following:

INTENT TO FORM
CITY OF PALMDALE
COMMUNITY FACILITIES DISTRICT NO 2022-3
(RITTER RANCH PHASE 1 PUBLIC FACILITIES)

In the Resolution of Intention, the City Council declared its intention to form the City of Palmdale Community Facilities District No. 2022-3 (Ritter Ranch Phase 1 Public Facilities) to finance costs of certain public facilities, as identified in Exhibit A to the Resolution of Intention (the "Facilities"). The proposed boundaries of the community facilities district were identified, and the Resolution of Intention identified a proposed special tax to be levied on real property to be included in the community facilities district to pay for costs of the Facilities and for debt service on bonds to be issued, in a principal amount not to exceed $75,000,000, to finance costs of the Facilities, and to pay related administrative costs.

In the Resolution of Intention, the City Council provided that the levy of the special tax will be subject to a mailed ballot election among the landowners in the community facilities district. The City Council ordered the Director of Public Works to prepare a report on the community facilities district, and the City Council called for a public hearing on the community facilities district. The Resolution of Intention also authorized the acting City Manager to enter into a joint community facilities agreement with any public agency, other than the City, that will own or operate any of the Facilities.

At the hearing, the testimony of all interested persons or taxpayers for or against the establishment of the community facilities district, the extent of the community facilities district or the furnishing of specified types of Facilities will be heard. Any person interested may file a protest in writing with the City Clerk. If fifty percent or more of the registered voters, or six registered voters, whichever is more, residing in the territory proposed to be included in the community facilities district, or the owners of one-half or more of the area of land in the territory proposed to be included in the community facilities district and not exempt from the special tax file written protests against the establishment of the community facilities district and the protests are not withdrawn to reduce the value of the protests to less than a majority, the City Council will take no further action to establish the community facilities district or authorize the special taxes for a period of one year from the date of the

decision of the City Council, and if the majority protests of the registered voters or the landowners are only against the furnishing of a type or types of Facilities, or against levying a specified special tax, those types of Facilities, or the specified special tax, will be eliminated from the proceedings to form the community facilities district.

Any person interested in these matters is invited to present testimony either for or against the above item. If you challenge the proposed action in court, you may be limited to raising only those issues you or someone else raised at the public hearing described in this notice or in written correspondence delivered to the City Clerk at or prior to the public hearing.

Members of the public who wish to present testimony at the public hearing may do so (a) by providing written comments to the City Clerk at least 48 hours prior to the Council meeting, (b) by being present at the public hearing, or (c) by using the following internet link or phone number:

- https://us06web.zoom.us/j/84656089590?pwd=b3ZCNzVDalIrUWhnZ1lUdURHWVVvdz09
- Phone Number: US: +1 669 444 9171
- Webinar ID: 846 5608 9590
- Passcode: 507411
    - Please press *9 to “Raise Your Hand” and wait for the host to ask you to unmute yourself.
    - Press *6 to unmute your microphone.
    - Please state your name and city of residence for the record and begin

In accordance with the Americans with Disabilities Act of 1990, if you require a disability-related modification or accommodation to participate in this meeting, please contact the City Clerk’s Office at (661) 267-5151 at least 72 hours prior to the meeting. If you require oral Spanish translation, please contact the City Clerk’s Office at (661) 267-5151 at least 72 hours prior to the meeting.

/s/ Shanae S. Smith
City Clerk,
City of Palmdale

CITY OF PALMDALE
COUNTY OF LOS ANGELES, CALIFORNIA
RESOLUTION NO. CC 2022-101

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF PALMDALE DECLARING ITS INTENTION TO INCUR BONDED INDEBTEDNESS OF THE PROPOSED COMMUNITY FACILITIES DISTRICT NO. 2022-3 (RITTER RANCH PHASE 1 PUBLIC FACILITIES)

WHEREAS, the City Council has this date adopted its Resolution No. 100 entitled "A Resolution of the City Council of the City of Palmdale Declaring Its Intention to Establish a Community Facilities District and to Authorize the Levy of Special Taxes Therein – Ritter Ranch Phase 1 Public Facilities," stating its intention to form the City of Palmdale Community Facilities District No. 2022-3 (Ritter Ranch Phase 1 Public Facilities) (the "District"), pursuant to Chapter 2.5 of Part 1 of Division 2 of Title 5, commencing at Section 53311, of the California Government Code (the "Act"), for the purpose of financing all or a portion of the costs of certain public facilities (the "Facilities"), as further provided in said Resolution; and

WHEREAS, in order to finance the Facilities the City Council finds that it is necessary to incur bonded indebtedness in the maximum amount of $75,000,000 for the District.

NOW, THEREFORE, BE IT RESOLVED, DETERMINED AND ORDERED by the City Council of the City of Palmdale as follows:

Section 1. It is necessary to incur bonded indebtedness within the boundaries of the proposed District in the maximum amount of $75,000,000.

Section 2. The bonded indebtedness is proposed to be incurred for the purpose of financing costs of the Facilities, including all costs incidental to or connected with the accomplishment of said financing, as permitted by Section 53345.3 of the Act.

Section 3. The City Council, acting as legislative body for the District, intends to authorize the issuance and sale of bonds of the City for the District in one or more series pursuant to the Act, with each series of the bonds to bear interest payable semi-annually or in such other manner as the City Council shall determine, at a rate not to exceed the maximum rate of interest as may be authorized by applicable law at the time of sale of the respective series of such bonds, and maturing not to exceed 40 years from the date of the issuance of the respective series of said bonds.

Section 4. Monday, October 24, 2022, at 6:00 p.m. or as soon thereafter as the matter may be heard, in the regular meeting place of the City Council, Council Chambers, City Hall, 38300 Sierra Highway, Suite B, Palmdale, California, are hereby appointed and fixed as the time and place when and where this City Council, as legislative body for the District, will conduct a public hearing on the proposed debt issuance and consider and

finally determine whether the public interest, convenience and necessity require the issuance of bonds of the City for the District.

Section 5. The City Clerk is hereby directed to cause notice of the public hearing to be given by publication one time in a newspaper published in the area of the District. The publication of the notice shall be completed at least seven days before the date herein set for the public hearing. The notice shall be substantially in the form of Exhibit A hereto.

Section 6. This Resolution shall take effect upon its adoption.

PASSED, APPROVED and ADOPTED this 21st day of September, 2022.

Approved as to form:

Steven D. Hofbauer, Mayor

ATTEST:

Scott E. Porter
Interim City Attorney

Shanae S. Smith, City Clerk

I, Shanae S. Smith, City Clerk of Palmdale, California, do hereby certify that the foregoing resolution was duly passed, approved, and adopted by the City Council of the City of Palmdale at a regular meeting of said Council held on the 21st day of September, 2022 by the following roll call vote:

AYES: _____

NOES: _____

ABSTAIN: _____ ABSENT: _____

Date: _____

Shanae S. Smith, City Clerk

16007.48:J18325
9/8/22

EXHIBIT A

NOTICE OF PUBLIC HEARING

Notice is hereby given that on September 21, 2022, the City Council of the City of Palmdale adopted Resolution No. CC 2022-101 entitled "A Resolution of the City Council of the City of Palmdale Declaring Its Intention to Incur Bonded Indebtedness of the Proposed Community Facilities District No. 2022-3 (Ritter Ranch Phase 1 Public Facilities)" (the "Resolution of Intention to Incur Indebtedness"). Pursuant to the Resolution of Intention to Incur Indebtedness and Section 53311 and following of the California Government Code (the "Code"), notice is hereby given that the City Council will conduct a public hearing on Monday, October 24, 2022 at 6:00 p.m. or as soon thereafter as practicable, in the City Council Chambers located in City Hall, 38300 Sierra Highway, Suite B, Palmdale, California, to consider the following:

INTENT TO INCUR INDEBTEDNESS FOR THE
CITY OF PALMDALE
COMMUNITY FACILITIES DISTRICT NO 2022-3
(RITTER RANCH PHASE 1 PUBLIC FACILITIES)

In the Resolution of Intention to Incur Indebtedness, the City Council declared its intention to authorize the issuance and sale of bonds in the maximum principal amount of $75,000,000 for the City of Palmdale Community Facilities District No. 2022-3 (Ritter Ranch Phase 1 Public Facilities) (the "District") to finance costs of certain public facilities. The testimony of all interested persons, including all persons owning property in the District, for or against the proposed debt issuance of the City for the District will be heard at the public hearing.

Any person interested in these matters is invited to present testimony either for or against the above item. If you challenge the proposed action in court, you may be limited to raising only those issues you or someone else raised at the public hearing described in this notice or in written correspondence delivered to the City Clerk at or prior to the public hearing.

Members of the public who wish to present testimony at the public hearing may do so (a) by providing written comments to the City Clerk at least 48 hours prior to the Council meeting, (b) by being present at the public hearing, or (c) by using the following internet link or phone number:

- https://us06web.zoom.us/j/84656089590?pwd=b3ZCNzVDalIrUWhnZ1lUdURHWVVvdz09
- Phone Number: US: +1 669 444 9171
- Webinar ID: 846 5608 9590
- Passcode: 507411
    - Please press *9 to "Raise Your Hand" and wait for the host to ask you to unmute yourself.
    - Press *6 to unmute your microphone.
    - Please state your name and city of residence for the record and begin

In accordance with the Americans with Disabilities Act of 1990, if you require a disability-related modification or accommodation to participate in this meeting, please contact the City

Clerk's Office at (661) 267-5151 at least 72 hours prior to the meeting. If you require oral Spanish translation, please contact the City Clerk's Office at (661) 267-5151 at least 72 hours prior to the meeting.

/s/ Shanae S. Smith
City Clerk,
City of Palmdale

CITY COUNCIL
CITY OF PALMDALE, CALIFORNIA
RESOLUTION NO. CC 2022-102

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF PALMDALE DETERMINING THAT THE SPECIAL TAX SHALL CEASE TO BE LEVIED ON CERTAIN PARCELS LOCATED WITHIN THE CITY OF PALMDALE COMMUNITY FACILITIES DISTRICT NO. 93-1 (RITTER RANCH)

WHEREAS, this City Council has formed the City of Palmdale Community Facilities District No. 93-1 (Ritter Ranch) (the "District") and has authorized the levy of special taxes on property within the District pursuant to the Mello-Roos Community Facilities Act of 1982, constituting Section 53311 and following of the California Government Code; and

WHEREAS, RdR Development Holdings, LLC (the "Property Owner") is undertaking actions to develop the property identified as Phase 1A and Phase 1B (the "Phase 1A and 1B Property") located in the District; and

WHEREAS, to enhance the value of Phase 1A and 1B Property and to further its prospective development, the Property Owner has submitted a Petition to the City Council requesting that the City Council determine, in its capacity as legislative body for the District, that the special tax authorized to be levied on property in the District cease to be levied on the Phase 1A and 1B Property so that the lien recorded on the Phase 1A and 1B Property securing the payment of the special taxes can be extinguished; and

WHEREAS, the City Council has been advised that the maximum annual special tax authorized to be levied on the property in the District, not including the Phase 1A and 1B Property, is more than adequate to provide sufficient funds to repay the remaining outstanding special tax bonds (the "Bonds") issued by the City for the District and the ongoing administrative expenses of the District; and

WHEREAS, the sole owner of the Bonds, Preston Hollow Capital, LLC, has provided its written consent to the cessation of the levy of special taxes on the Phase 1A and 1B Property; and

WHEREAS, the City Council now desires to take the necessary actions to cease the levy of special taxes for the District on the Phase 1A and 1B Property and to extinguish the special tax lien securing the repayment of the special taxes that will no longer be levied.

NOW THEREFORE, BE IT RESOLVED, DETERMINED AND ORDERED by the City Council of the City of Palmdale as follows:

Section 1. The City Council, in its capacity as the legislative body for the District, hereby determines that the special tax authorized to be levied by the City for the District shall cease to be levied on the Phase 1A and 1B Property, as identified in Attachment A to the form of Notice of Cancellation attached as Exhibit A hereto.

Section 2. The City Council hereby approves the form of Notice of Cancellation of Special Tax attached as Exhibit A to this Resolution, and hereby authorizes and directs the City Clerk to record the Notice of Cancellation of Special Tax in such form in the Los Angeles County Recorder's Office.

Section 3. This Resolution shall take effect upon its adoption.

PASSED, APPROVED and ADOPTED this 21st day of September, 2022.

Approved as to form:

Steven D. Hofbauer, Mayor

ATTEST:

Scott E. Porter
Interim City Attorney

Shanae S. Smith, City Clerk

I, Shanae S. Smith, City Clerk of Palmdale, California, do hereby certify that the foregoing resolution was duly passed, approved, and adopted by the City Council of the City of Palmdale at a regular meeting of said Council held on the 21st day of September, 2022 by the following roll call vote:

AYES: _____

NOES: _____

ABSTAIN: _____ ABSENT: _____

Date: _____

Shanae S. Smith, City Clerk

16007.48/49:J18502
9/8/22

EXHIBIT A

RECORDING REQUESTED BY:
City Clerk, City of Palmdale
38300 Sierra Highway Suite C
Palmdale, California 93550

WHEN RECORDED RETURN TO:
RdR Development Holdings, LLC
1717 Main Street, Suite 3900
Dallas, Texas 75201
Attention: General Counsel

NOTICE OF CESSATION OF SPECIAL TAX

CITY OF PALMDALE
COMMUNITY FACILITIES DISTRICT NO. 93-1
(RITTER RANCH)

The City of Palmdale (the "City"), County of Los Angeles, State of California, with respect to the City of Palmdale Community Facilities District No. 93-1 (Ritter Ranch) (the "District"), hereby gives notice that:

1. The City Council of the City has established the District under the provision of the Mello-Roos Community Facilities Act of 1982, as amended, constituting Sections 53311 et seq. of the California Government Code.

2. On September 21, 2022, the City Council of the City, acting as the legislative body of the District, adopted a resolution determining that special taxes shall cease to be levied for the District on those specific Los Angeles County Assessor's Parcel identified in Attachment A hereto (collectively, the "Released Parcels") and directed the City Clerk to record this Notice of Cessation of Special Tax in the Office of the Los Angeles County Recorder.

3. The obligation of the Released Parcels to pay the special taxes authorized to be levied on property in the District has ceased and the lien imposed by the Amended and Restated Notice of Special Tax Lien recorded on March 27, 2014 as document no. 20140311807 in the records of the County Recorder of Los Angeles County, State of California, as amended by the First Amendment to Notice of Special Tax Lien recorded on September 21, 2016 as document no. 20161148547 in the records of the County Recorder of Los Angeles County, State of California, is extinguished as to the Released Parcels.

4. The map of the boundaries of the District was recorded in Book 179 of Maps of Assessment and Community Facilities Districts at Page 79, in the office of the County Recorder for the County of Los Angeles, State of California.

Dated: _____, 2022

By: _____
Shanae S. Smith, City Clerk,
City of Palmdale

ATTACHMENT A

CITY OF PALMDALE
COMMUNITY FACILITIES DISTRICT NO. 93-1
(RITTER RANCH)

LOS ANGELES COUNTY ASSESSOR'S PARCEL NUMBERS AND
OWNER OF LAND OF RELEASED PARCELS

Owners of Land	Los Angeles County Assessor's Parcel Nos.
RdR Development Holdings, LLC 1717 Main Street, Suite 3900 Dallas, Texas 75201	3206-020-017 3206-026-005 3206-026-007 3206-027-002 3206-027-004 3206-027-005 3206-027-006 3206-027-007 3206-027-008 3206-027-009 3206-027-010 3206-027-012

City Council Staff Report

DATE: **SEPTEMBER 21, 2022**

TO: **HONORABLE MAYOR AND CITY COUNCIL**

FROM: **ECONOMIC AND COMMUNITY DEVELOPMENT DEPARTMENT PLANNING DIVISION**

DISTRICT: **ALL**

SUBJECT: **APPROVE FIRST AMENDMENT WITH FIRSTCARBON SOLUTIONS AND INCREASE TOTAL AMOUNT BY $243,200, NOT TO EXCEED THE AMOUNT OF $472,500 TO PERFORM ONGOING ENVIRONMENTAL PLANNING AND PERMITTING EFFORTS**

ISSUE

Approve First Amendment with FirstCarbon Solutions and increase total amount by $243,200, not to exceed the amount of $472,500 to perform ongoing environmental planning and permitting efforts.

RECOMMENDATION

Staff recommends that City Council:

1. Approve First Amendment to the Contract for Consultant Services Agreement No. A-7959 with FirstCarbon Solutions;

2. Authorize the City Manager or her designee to prepare and execute all necessary documents; and,

3. Authorize budget appropriations from the General Fund Unappropriated Fund Balance in the amount of $472,500.

BACKGROUND

On June 15, 2022, the City Council approved Agreement No. A-7959 with FirstCarbon Solutions to prepare and apply for an Incidental Take Permit (ITP) with the State of California Department of Fish and Wildlife (CDFW) for a new industrial development project located on the southeast corner of Avenue M and 10th Street West. Additionally, a Lake and Streambed Alteration (LSA) Agreement is required along with a Regional Water Quality Control Board (RWQCB) Waste Discharge Requirement application. The City anticipated taking over the previously submitted application, however, the CDFW is requiring that a new application be submitted.

DISCUSSION

Over the past month, FirstCarbon Solutions has worked closely with the City and CDFW to coordinate the permits and applications necessary for a new development project on the southeast corner of Avenue M and 10th Street West. CDFW is now requiring additional work to be performed including updates to environmental surveys, reports, and applications. This additional work was not included in the original scope of work attached to Agreement No. A-7959. The amendment considers the additional work being required by CDFW.

FirstCarbon Solutions has intimate knowledge of the site and understands the remaining items needed to complete the permitting process. Due to the time sensitive nature of the environmental permits and surveys, staff recommends amending agreement A-7959 with FirstCarbon Solutions to update the scope of work and fee schedule associated with new requirements. This will allow the City to obtain the necessary ITP permit, LSA Agreement and RWQCB approvals and permits to meet the conditions of the Purchase and Sale Agreement and close escrow. Although the City will be paying the cost to obtain the permits, the City will be reimbursed for the entire cost to secure the permits once the property closes escrow.

FISCAL IMPACT

$472,500; the contract amendment shall not exceed $472,500 and will be appropriated from General Fund unappropriated fund balance and budgeted in account 10161101-721960. The City will be reimbursed for 100% of the costs incurred once the property closes escrow, per Agreement No. A-7348.

STRATEGIC PLAN

Goal IV: Maintain a desirable community where everyone wants to live, work and play

A. Provide inclusive access to a variety of supportive services that build a resilient and healthy community.

Prepared by:	Zach Glynn, Management Analyst I
Certified as to availability of Funds:	Janelle Samson, Director of Finance
Approved by:	Ronda Perez, Interim City Manager
Approved as to form:	Scott E. Porter, Interim City Attorney

ATTACHMENTS

1. Consultant Services Agreement A-7959 with FirstCarbon Solutions
2. First Amendment to Consultant Services Agreement A-7959 with FirstCarbon Solutions

ORIGINAL

AGREEMENT NO. A-7959
CONTRACT FOR CONSULTANT SERVICES
BETWEEN THE CITY OF PALMDALE AND FIRSTCARBON SOLUTIONS (FCS)

THIS CONTRACT FOR CONSULTANT SERVICES ("Contract" herein) is made and entered into this 31 day of May, 2022 by and between the City of Palmdale a public body corporate and politic, (hereinafter called "CITY") and FIRSTCARBON SOLUTIONS (FCS) (hereinafter called "CONSULTANT").

RECITALS

WHEREAS, City desires to engage CONSULTANT to provide certain consultant services; and

WHEREAS, CONSULTANT represents that CONSULTANT has the expertise and is qualified to perform the services described in this Contract. And, if required, is duly registered under the laws of the State of California; and

WHEREAS, CONSULTANT desires to accept such engagement.

NOW, THEREFORE, the parties agree as follows:

1 DESCRIPTION OF WORK

1.1 The City hereby engages CONSULTANT, and CONSULTANT accepts such engagement, to provide the following services:

SCOPE OF WORK FOR ONGOING PERMITTING AND PRECONSTRUCTION PLANNING

Task 1: Protocol Breeding Season Burrowing Owl Survey and Report

Under this task, FCS will conduct protocol breeding season surveys for burrowing owl. Surveys will be conducted per California Department of Fish and Wildlife (CDFW 2012) protocol, which includes a minimum of four visits spaced throughout the breeding season for the species. FCS will sample the latter half of the breeding season, between late May and late July. FCS biologists will map burrows during the first visit and search for burrowing owls at those burrows in subsequent visits. Any burrowing owls or occupied burrows detected during the surveys will be recorded using a sub-meter GPS unit. The survey results will be summarized in a report per CDFW (2012) protocol and will be submitted to CDFW within 30 days of the conclusion of the surveys.

Assumptions

- FCS assumes that CDFW will accept the results of the survey with a partial sampling of the burrowing owl breeding season.

Task 2: Burrowing Owl Mitigation and Monitoring Plan

Burrowing owls have previously occupied the site and CDFW will likely require that the project Applicant submit a Burrowing Owl Mitigation and Monitoring Plan. The plan would summarize the biology of the western burrow owl, occurrence of burrowing owls on the project site, and measures to implement during the construction phase of the proposed

project that would minimize impacts to burrowing owls. The Burrowing Owl Mitigation and Monitoring Plan would be submitted to CDFW for review. FCS assumes one round of comments to be addressed upon finalization of the document. Should further rounds of revisions be requested, it would be accomplished as an additional service not included in this Scope of Work.

Task 3: Protocol Rare Plant Survey and Report

Under this task, FCS Lead Biologist will conduct focused rare plant surveys for target rare plant species that could potentially occur on-site. Surveys will be conducted during the blooming period for each potentially occurring rare plant survey, to the extent possible. A total of three site visits will be conducted between late May and late June to sample the latter half of the flowering period for target species. Each visit will include visits to nearby reference populations. FCS biologists will map any populations observed on the project site with a sub-meter GPS unit. The survey results will be summarized in a report per CDFW (2018) protocol and will be submitted to CDFW within 30 days of the conclusion of the surveys.

Assumptions

- FCS assumes that CDFW will accept the results of the survey with a partial sampling of the blooming period of target plant species.

Task 4: Crotch's Bumblebee Survey and Report

At the request of CDFW, FCS Lead Biologist will conduct focused surveys for Crotch's bumblebee. This will include documentation of insect pollinators during surveys spaced throughout the spring and summer blooming period. FCS will conduct a minimum of three surveys that span the blooming period for potential host species. FCS will document the results of the survey in a report that will be submitted to CDFW within 30 days of the conclusion of the surveys.

Assumptions

- FCS assumes that CDFW will accept the results of the survey with a partial sampling of the blooming period of host plant species.

Task 5: Protocol Swainson's Hawk Survey and Report

Under this task and following the request of CDFW, FCS will conduct protocol surveys for Swainson's hawks. Surveys will be conducted per CDFW (2010) protocol, which includes a minimum of six visits spaced throughout the breeding season for the species. FCS previously conducted a visit during Period I (January through March 30). FCS will conduct up to three additional visits during Period III (May 1-30) and three visits during Period IV (June 1 through July 15). During the surveys, FCS biologists will search for and map any Swainson's hawk nests on or within 5 miles of the project site. The survey results will be summarized in a report per CDFW (2010) protocol and will be submitted to CDFW within 30 days of the conclusion of the surveys.

Assumptions

- FCS assumes that CDFW will accept the results of the survey with a partial sampling of the Swainson's hawk breeding season.

Task 6. Joshua Tree Preservation Plan

FCS anticipates that CDFW will require a Joshua Tree Preservation Plan to be prepared to support the Incidental Take Permit application. FCS would revise the existing Joshua Tree Preservation Plan

previously approved by the City of Palmdale to include additional details for conservation of Joshua trees on the project, including methods for transplanting Joshua trees and monitoring their survival. This assumes minor revisions to the report. Should extensive revisions be needed due to the change in conservation status of the Joshua trees, a change order will be submitted.

Task 7: Habitat Restoration Plan (for CDFW ITP)

FCS anticipates that CDFW will require a Habitat Restoration Plan to be prepared to support the Incidental Take Permit and Section 1602 Lake and Streambed Alteration Agreement applications. The plan would address previously disturbed areas within on-site preservation areas as well as proposed transplant locations, and identified watering routes anticipated for transplantation efforts.

Task 8: Invasive Species Management Plan

FCS will prepare an Invasive Species Management Plan, as requested by CDFW, to support the Incidental Take Permit application. Under this task, biologists would collect additional data from the field identifying any invasive plant populations and distributions in on-site preservation areas. The Plan would include measures to ensure that novel non-native invasive weed species and Argentine Ants (collectively, pests) are not introduced into the Project Area or proliferate as a result of Covered Activities, which would include activities during the operation and maintenance phase. The Plan would also address pests that include, but are not limited to, those species within and surrounding the Project Area; those posing a threat to the Covered Species and desert plant communities; and those in the California Invasive Plant Council Invasive Plant Inventory (CalIPC Inventory). The Plan would address sources of pest introduction and establishment; measures to minimize the potential for pests to enter and/or proliferate in the Project Area; methods to identify and eradicate weeds; and Best Management Practices to avoid and minimize adverse effects of control methods on the natural environment. Furthermore, the Plan would address the application and use of pesticides, herbicides and rodenticides in the Project Area.

Task 9: Mohave Ground Squirrel Mortality Reduction and Translocation Plan

FCS will prepare a Mohave Ground Squirrel (MGS) Mortality Reduction and Translocation Plan, as requested by CDFW, to be prepared to support the Incidental Take Permit application. The MGS Mortality Reduction and Translocation Plan would include, but not be limited to, trapping methodology; timing, description of the burrow excavation methods; release location(s); release methods (i.e., soft release, hard release, or some other method); and identification of a wildlife rehabilitation center or veterinary facility for injured animals.

Task 10: Special-Status Species Relocation Plan

FCS anticipates that CDFW will require a Special-status Species Relocation Plan be prepared to support the Incidental Take Permit application. The Plan would address protection measures for special-status species that could occur on the project site and are not addressed in other plans (western Joshua tree, Mohave ground squirrel, and burrowing owl are covered in other plans). This would include translocation, relocation, or other mitigation measures for rare plants and special-status wildlife. The Plan would be submitted to CDFW at least 30 days prior to the start of ground-disturbing construction activities.

Task 11: GIS Support for Field Implementation

Under this task, our GIS specialist will develop data collection forms and structures for accessing the GIS database from the field using phone-based applications. These apps, called Field Maps and Survey123, will allow FCS Biologists to navigate to previously recorded resources and make updates, as needed, as well as to record new resources, establish buffers around sensitive resources, and establishing boundaries around the on-site preservation area. New data will be collected as part of the ongoing surveys outline in the above tasks. Our GIS staff will create and manage the Arc GIS database which will also be utilized during the construction phase of the project.

Task 12: GIS Products and Analyses

Under this task, our GIS specialist will create GIS products and analyses for special-status species survey reports and plans requested by CDFW, as detailed in Tasks 1-10 above. This task does not include amendments to any previously prepared exhibits (for example exhibits associated with the ITP, LSAA, and WDR applications), rather this includes new exhibits to accompany new plans and survey reports.

Task 13: Amend Incidental Take Permit Application

To account for a new site plan with a new applicant, FCS will amend a third Incidental Take Permit (ITP) application within the CDFW Environmental Permit Information Management System (EPIMS) portal. Under this task, an FCS biologist will update information to the new applicant and replace the existing site plan. This also involves close coordination with the California Department Fish and Wildlife (CDFW) reviewing staff assigned to the permit application to ensure that they have a thorough understanding of the changes upon submittal. In addition, FCS biologist will conduct an onsite visit with CDFW staff, as requested, during processing of the ITP application to be available to answer questions.

Assumptions

- FCS assumes that the Project Applicant will provide a written statement to be provided to CDFW along with the amended application that acknowledges that no substantial changes have been altered to the site plan and that the extent of impacts remain the same as previously analyzed.
- FCS has an understanding that the project elements will not be altered from the previous project. Any alterations to the project design, infiltration basins and hydrology, temporary or permanent impacts, avoidance, minimization, and or mitigation measures due to new or unanticipated impacts, will require a change order.

- The amendment filing fees shall be included in the applications pursuant to the CDFW's most recent filing fees (based on project costs and/or total impact).
- Application fees will be provided by the Project Applicant.

Task 14: Amend CDFW Section 1602 Streambed Alteration Agreement Application

To account for a new site plan with a new applicant, our team will amend the Section 1602 Streambed Alteration Agreement application in the EPIMS portal for resubmittal to the CDFW. This task includes, but is not limited to, the updating of necessary state agency forms, new site plan, and new project applicant information. Similarly, this task also involves close coordination with the CDFW reviewing staff assigned to the permit application to ensure that they have a thorough understanding of the minimal changes upon submittal.

Assumptions

- FCS assumes that the Project Applicant will provide a written statement to be provided to CDFW along with the amended application that acknowledges that no substantial changes have been altered to the site plan and that the extent of impacts remain the same as previously analyzed. FCS has an understanding that the project elements will not be altered from the previous project. Any alterations to the project design, infiltration basins and hydrology, temporary or permanent impacts, avoidance, minimization, and or mitigation measures due to new or unanticipated impacts, will require a change order.
- The amendment filing fees shall be included in the applications pursuant to the CDFW's most recent filing fees (based on project costs and/or total impact); application fees will be provided by the Project Applicant.

Task 15: Amend Regional Water Quality Control Board Application

To account for a new site plan with a new applicant, our team will amend the Regional Board Report of Waste Discharge application. This task includes, but is not limited to, the updating of necessary forms, new site plan, and new project applicant information. Similarly, this task also involves close coordination with the Regional Board reviewing staff assigned to the permit application to ensure that they have a thorough understanding of the minimal changes upon submittal.

Assumptions

- FCS assumes that the Project Applicant will provide a written statement to be provided to CDFW along with the amended application that acknowledges that no substantial changes have been altered to the site plan and that the extent of impacts remain the same as previously analyzed. FCS has an understanding that the project elements will not be altered from the previous project. Any alterations to the project design, infiltration basins and hydrology, temporary or permanent impacts, avoidance, minimization, and or mitigation measures due to new or unanticipated impacts, will require a change order.

- The amendment filing fees shall be included in the application pursuant to the Regional Boards' most recent filing fees (based on project costs and/or total impact); application fees will be provided by the Project Applicant.

Task 16: Regional Water Quality Control Board Alternatives Analysis

At the request of RWQCB, our team will prepare an Alternatives Analysis to include with the RWQCB Permit Application. The analysis will be a written letter report that follows the guidelines in the 2020 State Water Resources Control Board Draft Guidance for the State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State. The Alternatives Analysis will be prepared in coordination with the RWQCB and will incorporate alternatives discussed with the board and with the Project Applicant.

Task 17: Habitat Restoration Plan (for RWQCB WDR)

At the request of RWQCB, our team will prepare a written Habitat Restoration Plan to include with the amended RWQCB WDR application. The plan will be prepared according to Draft Guidance for the State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State. The plan will detail the compensatory mitigation requirements for the project and outline how those requirements will be met by the Project Applicant. The plan will include existing mitigation and restoration efforts associated with the project ITP when applicable.

Task 18: Regulatory Approval Processing

Once the amended CDFW and RWQCB regulatory applications are submitted, our team will continue to provide services for the processing of those respective permits (assuming an Approved Jurisdictional Determination and acceptance of no substantial changes with the site plan) with RWQCB and CDFW. The processing shall include required correspondence or telephone calls between the reviewing staff related to the permit or points of clarification and coordination with the Project Applicant, as necessary.

Typically, agency comments are responded to via email and telephone response to comments per each application package. Should additional time for coordination be required, the Project Applicant will be notified, and work will continue on an approved contract augmentation.

Task 19: Regulatory Permitting Meetings

Our team will conduct a weekly regulatory permitting meeting to discuss status and updates. This task assumes hours for our entire project team including FCS management and FCS biologist as well as our regulatory specialists to attend (assumes four hours per month for four months). Our team may attend additional meetings on a time-and-material basis, under separate authorization.

Task 20: Worker Environmental Awareness Program

FCS will prepare a Worker Environmental Awareness Program (WEAP) PowerPoint presentation that would be utilized to provide training to all construction crews and contractors prior to the start of work on the proposed project. FCS will develop the WEAP training, which will include a review of the covered species and other sensitive resources that

could exist in the project site, the locations of sensitive biological resources, their legal status and protections, and measures to be implemented for avoidance of these sensitive resources.

Task 21: Ongoing Project Management and Coordination

FCS project management team would immediately begin coordinating with the City and Applicant Team on field surveys, plans to be prepared, and conducting preconstruction focused project management activities. These day-to-day activities would be completed with an emphasis on closely working with City staff, Project Applicant, General Contractor, and internal Project Team regarding upcoming preconstruction planning activities as well as ongoing technical and environmental documents requested by the regulators.

Task 22: Team Meetings

Under this task, FCS is anticipating regular meetings with the City of Palmdale, Applicant Team, and the internal Project Team associated with the change in applicant and new site plan. This task assumes hours incurred for key project personnel, including but not limited to project director, project manager, assistant project manager, and senior biologists.

CONSULTANT shall perform and complete all such work and services in a manner satisfactory to CITY.

1.2 Project deliverables shall be reviewed and approved by CITY to determine acceptable completion. CITY shall have the right to review and inspect the work during the course of its performance at such times as may be specified by CITY.

1.3 CONSULTANT shall not accept any change of scope, or change in contract provisions, unless issued in writing, as a contract change order or amendment and signed by CITY. Any extensions of time must be mutually agreed upon in writing and executed by both parties.

1.4 CITY shall provide to CONSULTANT, without charge, all data, program information, including reports, records, maps, and other information, now in CITY's possession, which may facilitate the timely performance of the work.

2 CITY PROJECT MANAGER

To provide the services required by this Contract, CONSULTANT shall act under the authority and approval of a Project Manager appointed by CITY. The City Project Manager will oversee the work under this Contract, assist CONSULTANT with any necessary information, audit billings, and approve payments. CONSULTANT shall channel reports, deliverables and special requests through the City Project Manager.

3 CONSULTANT'S KEY PERSONNEL

CONSULTANT's Team and Key Personnel are as follows:

Jason Brandman - Vice President/Director, Angela Wolfe - Project Manager

This Consultant Services Contract has been awarded to CONSULTANT based on its representation that those personnel and subcontractors listed above will perform the portions

of the work listed herein. CONSULTANT shall not deviate nor substitute any of these team members without prior written approval by CITY.

4 CONTRACT TERM

The term of this contract is ONE (1) years, commencing on June 15, 2022.

5 TAXES

5.1 CONSULTANT shall pay all sales, consumer, use, and other similar taxes required to be paid by CONSULTANT in accordance with state and local laws.

5.2 CONSULTANT is an independent contractor and shall have no power or authority to incur any debt, obligation or liability on behalf of CITY. No person employed by CONSULTANT or acting on its behalf, in connection with this Contract shall be considered the Agent or employee of CITY.

5.3 CONSULTANT shall be required to obtain a current City of Palmdale business license, as required by the Palmdale Municipal Code, before an Authorization to Proceed is issued.

6 PATENT FEES AND ROYALTIES

CONSULTANT shall pay all license fees and royalties and assume all costs incident to the use, in the performance of the work or the incorporation in the work of any invention, design, process, product or device which is the subject of patent rights or copyrights held by others. If a particular invention, design, process, product or device is specified by CITY for use in the performance of the work and if, to the actual knowledge of CITY, its use is subject to patent rights or copyrights calling for the payment of any license fee or royalty to others, the existence of such rights shall be disclosed by CITY in the contract documents. CONSULTANT shall indemnify and hold harmless CITY and anyone directly or indirectly employed by CITY from and against all claims, damages, losses and expenses (including attorneys' fees) arising out of any infringement of patent rights or copyrights incident to the use in the performance of the work, or resulting from the incorporation in the work of any invention, design, process, product or device not specified by CITY, and shall defend all such claims in connection with any alleged infringement of such rights.

7 STANDARDS OF PERFORMANCE

CONSULTANT shall be responsible for the completeness and accuracy of its services and work and documents resulting there from, and CITY shall not be responsible for discovering deficiencies therein. CONSULTANT shall correct any such deficiencies or errors without additional compensation and without cost to CITY, except to the extent any such deficiency is directly attributable to deficiencies in CITY-furnished information.

8 CONSULTANT'S PERSONNEL

8.1 All services required under this Contract shall be performed by CONSULTANT, or under CONSULTANT'S direct supervision, and all personnel shall possess the qualifications, permits and licenses required by State and local law to perform such services.

8.2 CONSULTANT shall be solely responsible for the satisfactory work performance of all personnel engaged in performing services required by this Contract, and compliance with all reasonable performance standards established by CITY.

8.3 CONSULTANT shall be responsible for payment of all CONSULTANT's employees' and subcontractor's wages and benefits and shall comply with all requirements pertaining to the employer's liability, workers' compensation, unemployment insurance, and Social Security.

8.4 CONSULTANT shall indemnify and hold harmless CITY, and its respective officers, agents and employees from and against all claims, demands, damages or costs arising from CONSULTANT's acts or omissions with respect to any liability, damages, claims, costs and expenses of any nature arising from alleged violations of personnel practices.

9 COMPENSATION

9.1 For all of work and services including the various phases of tasks as described in Section 1, CITY shall pay to CONSULTANT an amount not to exceed the sum of Two Hundred Twenty Nine Thousand Three Hundred dollars ($229300), payable as follows:

[CONTINUED ON NEXT PAGE]

Task	Fees
Task 1: Protocol Breeding Season Burrowing Owl Survey and Report	$16,800
Task 2: Burrowing Owl Mitigation and Monitoring Plan	$4,800
Task 3: Protocol Rare Plant Survey and Report	$3,800
Task 4: Crotch's Bumblebee Survey and Report	$13,100
Task 5: Protocol Swainson's Hawk Survey and Report	$19,400
Task 6: Joshua Tree Preservation Plan	$5,700
Task 7: Habitat Restoration Plan (for CDFW ITP)	$10,600
Task 8: Invasive Species Management Plan	$14,200
Task 9: Mohave Ground Squirrel Mortality Reduction and Translocation Plan	$14,800
Task 10: Special-Status Species Relocation Plan	$10,500
Task 11: GIS Support for Field Implementation	$11,000
Task 12: GIS Products and Analyses	$19,200
Task 13: Amend Incidental Take Permit Application	$8,900
Task 14: Amend CDFW Section 1602 Streambed Alteration Agreement Application	$9,600
Task 15: Amend Regional Water Quality Control Board Application	$7,400
Task 16: Regional Water Quality Control Board Alternatives Analysis	$8,500
Task 17: Habitat Restoration Plan (For RWQCB WDR)	$4,400
Task 18: Regulatory Approval Processing	$15,000
Task 19: Regulatory Permitting Meetings	$9,000
Task 20: Worker Environmental Awareness Program	$7,600

Task 21: Ongoing Project Management and Coordination	$8,500
Task 22: Team Meetings	$5,000
Directs	$1,500
Total Change Order	$229,300

The Contract Price is CONSULTANT'S estimate of its charges for all the services, including all labor, equipment, material, subcontractor, and reimbursable costs, to be provided under this Agreement. Progress payments shall be made on a time and material basis. Final payment shall be made upon completion of all services and City acceptance of all deliverables, not-to-exceed the Contract Price.

9.2 CONSULTANT shall perform no work in excess of the total contract price without prior written approval of CITY. Total contract price includes expenses related to travel to and from CITY to meet with City and to appear, if so required, before City Council or any other board or commission of CITY.

9.3 CONSULTANT shall maintain adequate records and shall permit inspection and audit by CITY of CONSULTANT's charges under this Contract. CONSULTANT shall make such records available to CITY during normal business hours upon reasonable notice. Nothing herein shall convert such records into public records, and they will be available only to CITY and any specified public agencies. Such records shall be maintained by CONSULTANT for one (1) year following completion of the work under this Contract unless a longer period of time is required by state or federal law, in which event CONSULTANT shall retain its records for the time required by such laws.

9.4 No payment made hereunder by CITY to CONSULTANT, shall be construed as an acceptance by CITY of any work or materials, nor as evidence of satisfactory performance by CONSULTANT of its obligations under this Contract.

10 INDEMNIFICATION

To the fullest extent permitted by law, CONSULTANT and any contractors or subcontractors working on its behalf agree to indemnify CITY, its officers, employees, agents and elected and appointed boards (hereinafter "Indemnified Parties") for any loss, claim, demand, cause of action, cost, expense, damage, obligation or liability which arises out of or is in any way connected with the performance of any work under this agreement, including any acts or omissions, willful misconduct or negligent conduct, whether active or passive, on the part of CONSULTANT, its contractors or subcontractors, and regardless of any acts, omissions or negligence (whether active or passive) of any person or entity indemnified hereunder. At their own expense, CONSULTANT and, as applicable, any contractors or subcontractors working on its behalf, shall defend any suit, claim or action against the Indemnified Parties founded upon such loss, claim, demand, cause of action, cost, expense, damage, obligation or

liability. CONSULTANT shall ensure that the contract of any contractor or subcontractor working under this agreement contain an indemnity agreement, requiring the contractor or subcontractor to indemnify and defend the Indemnified Parties pursuant the terms set forth above. CONSULTANT shall indemnify the Indemnified Parties, and save it harmless from any and all loss, damage, costs, expenses and attorney's fees suffered or incurred on account of any breach of the aforesaid obligations and covenants, and any other provision or covenant of this agreement.

11 INSURANCE

11.1 CONSULTANT, at its expense, shall maintain in effect at all times during the performance of work under this Contract not less than the following coverage and limits of insurance, which shall be maintained with insurers listed "A" or better in the Best's Insurance Guide and authorized to do business in the State of California. **Proof of Insurance, as identified in Section 11.8, must be reviewed and accepted by the City Attorney**.

11.1.1 Workers' Compensation and Employer's Liability

- Workers' Compensation—coverage as required by the State of California
- Employer's Liability:
  $1,000,000.00 each accident
  $1,000,000.00 policy limit bodily injury
  $1,000,000.00 each employee bodily injury by disease

11.1.2 Professional Liability (Errors & Omissions) Insurance*

- $2,000,000 limit on a per occurrence basis

11.1.3 Commercial General Liability

- $1,000,000.00 limit on a per occurrence basis
- $2,000,000.00 general aggregate limit

11.1.4 Commercial Automobile Liability

- $1,000,000.00 combined single limit including owned, non-owned and hired automobile coverage

11.2 All of CONSULTANT's policies shall contain an endorsement providing that written notice shall be given to CITY at least thirty- (30) calendar days prior to termination, cancellation or reduction of coverage in the policy.

11.3 Policies providing for bodily injury and property damage coverage shall contain the following:

A. An endorsement extending coverage to the CITY as an additional insured, in the same manner as the named insured, as respects liability arising out of the performance of any work under the Contract. Such insurance shall be primary insurance, as respects the interest of the CITY, and any other insurance maintained by the CITY shall be considered excess coverage and not contributing insurance with the insurance required hereunder. The certificate and endorsements shall state: "The City of Palmdale, the Successor Agency of the Community Redevelopment Agency of the City of Palmdale, Palmdale Civic Authority, Industrial Development Authority of

the City of Palmdale, Palmdale Airport Authority, their officers, agents, employees and volunteers are named as additional insureds."

B. "Severability of Interest" clause.

11.4 Promptly on execution of this Contract, and prior to commencement of any work, CONSULTANT shall deliver to CITY certificates of insurance and endorsements to all required policies demonstrating that CONSULTANT has the required coverage and showing the required named insureds. Within five (5) days of written request from CITY, CONSULTANT shall deliver to CITY full and complete copies of all insurance policies required by this Contract.

11.5 The requirements as to the types and limits of insurance to be maintained by CONSULTANT are not intended to and shall not in any manner limit or qualify CONSULTANT's liabilities and obligations under this Contract.

11.6 Any policy or policies of insurance that CONSULTANT elects to carry as insurance against loss or damage to its equipment and tools or other personal property used in the performance of this Contract shall include a provision waiving the insurer's right of subrogation against CITY.

11.7 All insurance coverage must be maintained throughout the duration of this Contract.

11.8 Acceptable Proof of Insurance:

11.8.1 ACORD Certificate of Insurance listing all coverages, limits, deductibles and insureds; and endorsements for all applicable coverages if agent has authority to issue it. Additional insured Form CG20101185 or CG20100707 and CG20370704 or equivalent must be provided for general liability coverage. Additional insured form CA0001 must be provided for automobile liability coverage.

11.8.2 Agents must confirm that policy endorsements have been ordered from the respective insurance companies. Upon issuance, policy endorsements listing all insurers must be submitted to the City Attorney.

11.8.3 *When professional (E&O) liability coverage is provided on a "claims made basis", CONSULTANT will continue to renew the insurance for a period of five (5) years after this Agreement expires or is terminated. Such insurance will have the same coverage and limits as the policy that was in effect during the term of this Agreement, and will cover CONSULTANT, or its officers, employees, or agents during the time this Agreement was in effect.

11.9 Notwithstanding any other provision of this Contract, CITY may immediately terminate this Contract if, at any time CONSULTANT fails to maintain the required insurance for any period of time or fails to comply with any of the insurance requirements listed above.

12 TERMINATION WITHOUT CAUSE

CITY reserves the right to terminate this Contract or any part thereof for its sole convenience with fifteen (15) days written notice. In the event of such termination, CONSULTANT shall immediately stop all work hereunder, and shall immediately cause any of its suppliers and

sub-consultants to cease such work. CONSULTANT shall also surrender to CITY all finished or unfinished documents or programs and other materials, which shall be City's property. As compensation in full for services performed to the date of such termination, the CONSULTANT shall receive an amount equal to the value of the work completed as of the termination date in accordance with the fee schedule or as negotiated between the parties. In no event shall the amount payable upon termination exceed the total maximum compensation provided for in this Contract.

13 TERMINATION FOR CAUSE

13.1 If the CITY determines that the CONSULTANT has failed to supply an adequate working force, or to provide services of proper quality, or has failed in any other respect to satisfactorily perform the services specified in this Contract, the CITY shall give written notice to the CONSULTANT specifying all defaults to be remedied within thirty (30) days. Such notice shall set forth the basis for the CITY's dissatisfaction and suggest corrective measures. If, after thirty (30) days, the CONSULTANT has failed to implement the corrective measures, the CITY may elect to terminate this Contract, in whole or in part.

13.2 In the event the CITY terminates this Contract in whole or in part as provided herein above, the CITY may procure, upon such terms and in such manner, as it may deem appropriate, services similar to those terminated.

13.3 If this Contract is terminated as provided above, the City may require the CONSULTANT to provide all finished or unfinished documents, data, studies, software, drawings, maps, photographs, reports, etc., prepared by the CONSULTANT. Upon such termination, the CONSULTANT shall be paid an amount equal to the value of the services provided and work performed as of the date of termination. Such payment by the City may take into consideration the costs associated with hiring another CONSULTANT to complete the services. In the event no new CONSULTANT is employed, the CONSULTANT shall be paid an amount equal to the value of the work performed. In ascertaining the value of the work performed up to the date of termination, consideration shall be given to both completed work and work in progress, to complete and incomplete documents when such are delivered to CITY, and to authorized reimbursement expenses.

The above is in addition to any other remedies available by law or equity to the CITY.

13.4 If, after notice of termination of the Contract under the provisions of this Section 13, it is determined, for any reason, that CONSULTANT was not in default, or that the default was excusable, then the rights and obligations of the parties shall be the same as if the notice of termination had been issued pursuant to Section 12.

14 DISPUTE RESOLUTION

All claims, disputes, and other matters in question between CITY and CONSULTANT arising out of, or relating to this Contract, or the breach thereof shall, to the extent reasonably feasible, be resolved through good faith negotiations between the parties.

15 OWNERSHIP OF DOCUMENTS

All documents, including, but not limited to, research, field notes, investigations, analysis, and studies which are prepared in the performance of this Contract are to be, and remain the

property of CITY. CONSULTANT shall furnish CITY, upon its request, originals or reproducible or electronic copies of reports, studies and of all other documents listed above.

16 SUBCONTRACTING, DELEGATION AND ASSIGNMENT

16.1 CONSULTANT shall not delegate, subcontract or assign its duties or rights hereunder, either in whole or in part, without the prior written consent of CITY; provided, however, that claims for money due or to become due to CONSULTANT from CITY under this Contract may be assigned to a bank, trust company or other financial institution without such approval. Any proposed delegation, assignment or subcontract shall provide a description of the services covered, identification of the proposed assignee, delegates or subcontractor, and an explanation of why and how the same was selected, including the degree of competition involved. Any proposed agreement with an assignee, delegates or subcontractor shall include the following:

A. The amount involved, together with CONSULTANT's analysis of such cost or price; and

B. A provision requiring that any subsequent modification or amendment shall be subject to the prior written consent of CITY; and

C. The requirement to hire only those persons authorized by federal law to work in the United States.

16.2 Any assignment, delegation or subcontract shall be made in the name of CONSULTANT and shall not bind or purport to bind CITY and shall not release CONSULTANT from any obligations under this Contract including, but not limited to, the duty to properly supervise and coordinate the work of employees, assignees, delegates and subcontractors. No such assignment, delegation or subcontract shall result in any increase in the amount of total compensation payable to CONSULTANT under this Contract.

17 NON-DISCRIMINATION AND EQUAL EMPLOYMENT OPPORTUNITY

17.1 In performance of this Contract, CONSULTANT shall not discriminate against any employee, subcontractor, or applicant for employment because of sex, color, race, religion, ancestry, national origin, disability, medical condition, marital status, sexual orientation, or age. CONSULTANT will take affirmative action to ensure that applicants are employed, and that employees are treated during employment, without regard to their sex, color, race, religion, ancestry, national origin, disability, medical condition, marital status, sexual orientation or age. Affirmative action relating to employment shall include, but not be limited to the following: employment, upgrading, demotion or transfer; recruitment; layoff or termination; rates of pay or other forms of compensation; and selection for training, including apprenticeship.

17.2 The provisions of subsection 17.1 above shall be included in all solicitations or advertisements placed by or on behalf of CONSULTANT for personnel to perform any services under this Contract. CITY shall have access to all documents, data and records of CONSULTANT and its subcontractors for purposes of determining compliance with the equal employment opportunity and non-discrimination provisions of this Section, and all applicable provisions of Executive Order No. 11246 which is incorporated herein by this reference. A

copy of Executive Order No. 11246 is available for inspection at, and on file with, the Palmdale City Clerk's Office.

18 FINANCIAL INTEREST CERTIFICATION

18.1 CONSULTANT warrants that no person has been employed or retained to solicit or secure this Contract upon an agreement or understanding for a commission, percentage, brokerage or contingent fee; and that no officer or employee of the CITY has any interest, financially or otherwise, in CONSULTANT's firm.

18.2 For breach or violation of this warranty, CITY shall have the right to annul this Contract without liability, or at its discretion to deduct from the Contract Price or consideration, the full amount of such commission, percentage, brokerage or contingent fee.

19 CONFLICT OF INTEREST

19.1 CONSULTANT stipulates that its officers and employees do not now have a conflict of interest and it further agrees for itself, its officers and its employees that it will not contract for or accept employment for the performance of any work or services with any individual business, corporation or government unit that would create a conflict of interest in the performance of its obligations pursuant to this Contract or which would cause CONSULTANT to be "financial interested" (as provided in California Government Code Section 1090 et seq. or 87100 et seq.) in any contract or decision made by CITY on any matter.

19.2 CONSULTANT shall not employ any Housing Authority/City official or employee to perform any work required pursuant to this Contract.

19.3 If CONSULTANT is a registered professional engineer or licensed land surveyor and the scope of work requires CONSULTANT'S recommendation of the actual formula to spread the costs of an assessment district's improvements, then CONSULTANT shall not participate in making that recommendation if the additional elements set forth in Government Code section 87100.1(c) apply. Those additional elements are: (1) CONSULTANT has received income of $250 or more for professional services in connection with any parcel included in the benefit assessment district within twelve (12) months prior to the creation of the district; and (2) the district includes other parcels in addition to those parcels for which CONSULTANT received the income. In the event a conflict of interest does arise in that context, CITY shall select a different CONSULTANT to recommend the actual formula to spread the costs of the assessment district's improvements and the costs of such services shall be deducted from the compensation to be paid to CONSULTANT.

19.4 To the extent required by the City Manager/designee, CONSULTANT shall complete and file with the City Clerk a Form 700 Statement of Economic Interests disclosing any reportable property interests, income, gifts, investments, or business positions.

20 COMPLIANCE WITH LAW

20.1 CONSULTANT shall comply with all state and federal laws, including but not limited to, the requirement to hire only those persons authorized by federal law to work in the United States. If CONSULTANT uses any subcontractors to complete this Contract, this same requirement shall be included in all subcontracts and strictly enforced by CONSULTANT.

20.2 The law of the state of California shall govern this Contract. The venue of any legal action, either formal or informal, shall be the County of Los Angeles.

21 NOTICES

Any notice required under this Contract shall be in writing, addressed to the appropriate party at its address on the signature page and given personally or by registered or certified mail postage prepaid, or by a commercial courier service. All notices shall be effective upon the date of receipt.

22 ENTIRE CONTRACT AND AMENDMENTS

22.1 This Contract is the complete agreement between the parties and supersedes all prior proposals, agreements, and understandings between the parties and may not be modified or terminated orally.

22.2 No attempted waiver of any of the provisions hereof, nor any modification in the nature, extent or duration of the work to be performed by CONSULTANT hereunder, shall be binding unless in writing and signed by the party against whom the same is sought to be enforced.

22.3 The failure of any party to enforce against another party any provision of this Contract shall not constitute a waiver of that party's right to enforce such a provision at a later time, and shall not serve to vary the terms of this Contract.

23 ATTORNEY'S FEES

If any action at law or in equity is brought to enforce or interpret any provisions of this Contract, the prevailing party in such action shall be entitled to reasonable attorney's fees, costs and necessary disbursements, in addition to such other relief as may be sought and awarded.

In Witness Whereof, the parties hereto have caused this Contract to be executed and attested by their respective officers thereunto duly authorized.

CITY OF PALMDALE:

Ronda Perez 7/19/2022

Ronda Perez Date
Interim City Manager

ADDRESS FOR NOTICE:
CITY OF PALMDALE
38300 Sierra Highway, Suite A
Palmdale, CA 93550

FIRSTCARBON SOLUTIONS (FCS):

C. Patrick Schultz Date
COO

ADDRESS FOR NOTICE:
FIRSTCARBON SOLUTIONS (FCS)
967 Kendall Drive, #A-537
San Bernardino, CA 92407

APPROVE AS TO FORM:

Scott E. Porter
Acting City Attorney

ATTEST:

for Rachelle Scott, DCC

Shanae S. Smith
City Clerk

ATTEST: If Corporation

Secretary

23 ATTORNEY'S FEES

If any action at law or in equity is brought to enforce or interpret any provisions of this Contract, the prevailing party in such action shall be entitled to reasonable attorney's fees, costs and necessary disbursements, in addition to such other relief as may be sought and awarded.

In Witness Whereof, the parties hereto have caused this Contract to be executed and attested by their respective officers thereunto duly authorized.

CITY OF PALMDALE:

Ronda Perez Date
Interim City Manager

ADDRESS FOR NOTICE:
CITY OF PALMDALE
38300 Sierra Highway, Suite A
Palmdale, CA 93550

FIRSTCARBON SOLUTIONS (FCS):

C. Patrick Schultz Date
COO

ADDRESS FOR NOTICE:
FIRSTCARBON SOLUTIONS (FCS)
967 Kendall Drive, #A-537
San Bernardino, CA 92407

APPROVE AS TO FORM:

Scott E. Porter
Acting City Attorney

ATTEST:

Shanae S. Smith
City Clerk

ATTEST: If Corporation

Secretary

FCSINTE-01 MCCOWANA

CERTIFICATE OF LIABILITY INSURANCE

DATE (MM/DD/YYYY) 5/31/2022

THIS CERTIFICATE IS ISSUED AS A MATTER OF INFORMATION ONLY AND CONFERS NO RIGHTS UPON THE CERTIFICATE HOLDER. THIS CERTIFICATE DOES NOT AFFIRMATIVELY OR NEGATIVELY AMEND, EXTEND OR ALTER THE COVERAGE AFFORDED BY THE POLICIES BELOW. THIS CERTIFICATE OF INSURANCE DOES NOT CONSTITUTE A CONTRACT BETWEEN THE ISSUING INSURER(S), AUTHORIZED REPRESENTATIVE OR PRODUCER, AND THE CERTIFICATE HOLDER.

IMPORTANT: If the certificate holder is an ADDITIONAL INSURED, the policy(ies) must have ADDITIONAL INSURED provisions or be endorsed. If SUBROGATION IS WAIVED, subject to the terms and conditions of the policy, certain policies may require an endorsement. A statement on this certificate does not confer rights to the certificate holder in lieu of such endorsement(s).

PRODUCER License # 0E67768
IOA Insurance Services
4370 La Jolla Village Drive
Suite 600
San Diego, CA 92122

CONTACT NAME: Dana Schwartz
PHONE (A/C, No, Ext): (619) 574-6223 50203 FAX (A/C, No): (619) 574-6288
E-MAIL ADDRESS: Dana.Schwartz@ioausa.com

INSURER(S) AFFORDING COVERAGE	NAIC #
INSURER A : RLI Insurance Company	13056
INSURER B : Hudson Insurance Company	25054
INSURER C :	
INSURER D :	
INSURER E :	
INSURER F :	

INSURED
FCS International, Inc.
250 Commerce, Suite 250
Irvine, CA 92602

COVERAGES **CERTIFICATE NUMBER:** **REVISION NUMBER:**

THIS IS TO CERTIFY THAT THE POLICIES OF INSURANCE LISTED BELOW HAVE BEEN ISSUED TO THE INSURED NAMED ABOVE FOR THE POLICY PERIOD INDICATED. NOTWITHSTANDING ANY REQUIREMENT, TERM OR CONDITION OF ANY CONTRACT OR OTHER DOCUMENT WITH RESPECT TO WHICH THIS CERTIFICATE MAY BE ISSUED OR MAY PERTAIN, THE INSURANCE AFFORDED BY THE POLICIES DESCRIBED HEREIN IS SUBJECT TO ALL THE TERMS, EXCLUSIONS AND CONDITIONS OF SUCH POLICIES. LIMITS SHOWN MAY HAVE BEEN REDUCED BY PAID CLAIMS.

INSR LTR	TYPE OF INSURANCE	ADDL INSD	SUBR WVD	POLICY NUMBER	POLICY EFF (MM/DD/YYYY)	POLICY EXP (MM/DD/YYYY)	LIMITS	
A	X COMMERCIAL GENERAL LIABILITY						EACH OCCURRENCE	$ 1,000,000
	CLAIMS-MADE X OCCUR	X	X	PSB0008629	1/1/2022	1/1/2023	DAMAGE TO RENTED PREMISES (Ea occurrence)	$ 1,000,000
	X Cont Liab/Sev of Int						MED EXP (Any one person)	$ 10,000
							PERSONAL & ADV INJURY	$ 1,000,000
	GEN'L AGGREGATE LIMIT APPLIES PER:						GENERAL AGGREGATE	$ 2,000,000
	POLICY X PRO-JECT LOC						PRODUCTS - COMP/OP AGG	$ 2,000,000
	OTHER:							$
A	AUTOMOBILE LIABILITY						COMBINED SINGLE LIMIT (Ea accident)	$ 1,000,000
	ANY AUTO						BODILY INJURY (Per person)	$
	OWNED AUTOS ONLY / SCHEDULED AUTOS	X		PSA0002832	1/1/2022	1/1/2023	BODILY INJURY (Per accident)	$
	X HIRED AUTOS ONLY / X NON-OWNED AUTOS ONLY						PROPERTY DAMAGE (Per accident)	$
	X No Co. Owned Autos							$
A	UMBRELLA LIAB X OCCUR						EACH OCCURRENCE	$ 5,000,000
	X EXCESS LIAB CLAIMS-MADE			PSE0004283	1/1/2022	1/1/2023	AGGREGATE	$ 5,000,000
	DED X RETENTION $ 0							$
A	WORKERS COMPENSATION AND EMPLOYERS' LIABILITY Y/N						X PER STATUTE OTH-ER	
	ANY PROPRIETOR/PARTNER/EXECUTIVE OFFICER/MEMBER EXCLUDED? (Mandatory in NH)	N/A	X	PSW0004799	1/1/2022	1/1/2023	E.L. EACH ACCIDENT	$ 1,000,000
	If yes, describe under DESCRIPTION OF OPERATIONS below						E.L. DISEASE - EA EMPLOYEE	$ 1,000,000
							E.L. DISEASE - POLICY LIMIT	$ 1,000,000
B	Professional Liab.			PRB 06 19 113097	1/1/2022	1/1/2023	Per Claim	2,000,000
B	Ded.: $50k Per Claim			PRB 06 19 113097	1/1/2022	1/1/2023	Aggregate	2,000,000

DESCRIPTION OF OPERATIONS / LOCATIONS / VEHICLES (ACORD 101, Additional Remarks Schedule, may be attached if more space is required)
Re: Former Amazon Property (10th Street West and West Avenue M / Columbia Way (APN's: 3128-015-900 and -902))

The City of Palmdale, the Successor Agency of the Community Redevelopment Agency of the City of Palmdale, Palmdale Civic Authority, Industrial Development Authority of the City of Palmdale, Palmdale Airport Authority, their officers, agents, employees and volunteersare Additional Insureds with respect to General and Auto Liability per the attached endorsements as required by written contract. Insurance is Primary and Non-Contributory. Waiver of Subrogation applies to General Liability and Workers' Compensation.

30 Days Notice of Cancellation with 10 Days Notice for Non-Payment of Premium in accordance with the policy provisions.

CERTIFICATE HOLDER

City of Palmdale
Department of Economic and Community Development
38250 Sierra Highway
Palmdale, CA 93550

CANCELLATION

SHOULD ANY OF THE ABOVE DESCRIBED POLICIES BE CANCELLED BEFORE THE EXPIRATION DATE THEREOF, NOTICE WILL BE DELIVERED IN ACCORDANCE WITH THE POLICY PROVISIONS.

AUTHORIZED REPRESENTATIVE
Carla Hall

© 1988-2015 ACORD CORPORATION. All rights reserved.
The ACORD name and logo are registered marks of ACORD

THIS ENDORSEMENT CHANGES THE POLICY. PLEASE READ IT CAREFULLY.

RLIPack® FOR PROFESSIONALS BLANKET ADDITIONAL INSURED ENDORSEMENT

This endorsement modifies insurance provided under the following:

BUSINESSOWNERS COVERAGE FORM - SECTION II – LIABILITY

1. **C. WHO IS AN INSURED** is amended to include as an additional insured any person or organization that you agree in a contract or agreement requiring insurance to include as an additional insured on this policy, but only with respect to liability for "bodily injury", "property damage" or "personal and advertising injury" caused in whole or in part by you or those acting on your behalf:
   a. In the performance of your ongoing operations;
   b. In connection with premises owned by or rented to you; or
   c. In connection with "your work" and included within the "product-completed operations hazard".
2. The insurance provided to the additional insured by this endorsement is limited as follows:
   a. This insurance does not apply on any basis to any person or organization for which coverage as an additional insured specifically is added by another endorsement to this policy.
   b. This insurance does not apply to the rendering of or failure to render any "professional services".
   c. This endorsement does not increase any of the limits of insurance stated in **D. Liability And Medical Expenses Limits of Insurance**.
3. The following is added to **SECTION III H.2. Other Insurance – COMMON POLICY CONDITIONS (BUT APPLICABLE ONLY TO SECTION II – LIABILITY)**

   However, if you specifically agree in a contract or agreement that the insurance provided to an additional insured under this policy must apply on a primary basis, or a primary and non-contributory basis, this insurance is primary to other insurance that is available to such additional insured which covers such additional insured as a named insured, and we will not share with that other insurance, provided that:
   a. The "bodily injury" or "property damage" for which coverage is sought occurs after you have entered into that contract or agreement; or
   b. The "personal and advertising injury" for which coverage is sought arises out of an offense committed after you have entered into that contract or agreement.
4. The following is added to **SECTION III K. 2. Transfer of Rights of Recovery Against Others to Us – COMMON POLICY CONDITIONS (BUT APPLICABLE TO ONLY TO SECTION II – LIABILITY)**

   We waive any rights of recovery we may have against any person or organization because of payments we make for "bodily injury", "property damage" or "personal and advertising injury" arising out of "your work" performed by you, or on your behalf, under a contract or agreement with that person or organization. We waive these rights only where you have agreed to do so as part of a contract or agreement with such person or organization entered into by you before the "bodily injury" or "property damage" occurs, or the "personal and advertising injury" offense is committed.

ALL OTHER TERMS AND CONDITIONS OF THIS POLICY REMAIN UNCHANGED.

Named Insured: FCS International, Inc.
Policy Number: PSA0002832

BUSINESS AUTO COVERAGE FORM

A. Broad Form Named Insured

The following is added to the **SECTION II – COVERED AUTOS LIABILITY COVERAGE,** Paragraph **A.1. Who Is An Insured** Provision:

Any business entity newly acquired or formed by you during the policy period, provided you own fifty percent (50%) or more of the business entity and the business entity is not separately insured for Bus-iness Auto Coverage. Coverage is extended up to a maximum of one hundred eighty (180) days following the acquisition or formation of the business entity.

This provision does not apply to any person or organization for which coverage is excluded by endorsement.

B. Employees As Insureds

The following is added to the **SECTION II – COVERED AUTOS LIABILITY COVERAGE,** Paragraph **A.1. Who Is An Insured** Provision:

Any "employee" of yours is an "insured" while using a covered "auto" you don't own, hire or borrow in your business or your personal affairs.

C. Blanket Additional Insured

The following is added to the **SECTION II – COVERED AUTOS LIABILITY COVERAGE,** Paragraph **A.1. Who Is An Insured** Provision:

Any person or organization that you are required to include as an additional insured on this coverage form in a contract or agreement that is executed by you before the "bodily injury" or "property damage" occurs is an "insured" for liability coverage, but only for damages to which this insurance applies and only to the extent that person or organization qualifies as an "insured" under the Who Is An Insured provision contained in **SECTION II – COVERED AUTOS LIABILITY COVERAGE.**

The insurance provided to the additional insured will be on a primary and non-contributory basis to the additional insured's own business auto coverage if you are required to do so in a contract or agreement that is executed by you before the "bodily injury" or "property damage" occurs.

D. Blanket Waiver Of Subrogation

The following is added to the **SECTION IV – BUSINESS AUTO CONDITIONS, A. Loss Conditions, 5. Transfer Of Rights Of Recovery Against Others To Us:**

We waive any right of recovery we may have against any person or organization to the extent required of you by a contract executed prior to any "accident" or "loss", provided that the "accident" or "loss" arises out of the operations contemplated by such contract. The waiver applies only to the person or organization designated in such contract.

E. Employee Hired Autos

1. The following is added to the **SECTION II – COVERED AUTOS LIABILITY COVERAGE,** Paragraph **A.1. Who Is An Insured** Provision:

   An "employee" of yours is an "insured" while operating an "auto" hired or rented under a contract or agreement in that "employee's" name, with your permission, while performing duties related to the conduct of your business.

2. Changes In General Conditions:

   Paragraph **5.b.** of the **Other Insurance** Condition in the **BUSINESS AUTO CONDITIONS** is deleted and replaced with the following:

   b. For Hired Auto Physical Damage Coverage, the following are deemed to be covered "autos" you own:

      (1) Any covered "auto" you lease, hire, rent or borrow; and

      (2) Any covered "auto" hired or rented by your "employee" under a contract in that individual "employee's" name, with your permission, while performing duties related to the conduct of your business. However, any "auto" that is leased, hired, rented or borrowed with a driver is not a covered "auto".

F. Fellow Employee Coverage

SECTION II – COVERED AUTOS LIABILITY COVERAGE, Exclusion B.5. does not apply if you have workers compensation insurance in-force covering all of your employees.

G. Auto Loan Lease Gap Coverage

SECTION III – PHYSICAL DAMAGE COVERAGE, C. Limit Of Insurance, is amended by the addition of the following:

In the event of a total "loss" to a covered "auto" shown in the Schedule of Declarations, we will pay any unpaid amount due on the lease or loan for a covered "auto", less:

1. The amount paid under the **PHYSICAL DAMAGE COVERAGE** section of the policy; and
2. Any:
   a. Overdue lease/loan payments at the time of the "loss";

WAIVER OF OUR RIGHT TO RECOVER FROM OTHERS ENDORSEMENT–CALIFORNIA

We have the right to recover our payments from anyone liable for an injury covered by this policy. We will not enforce our right against the person or organization named in the Schedule. (This agreement applies only to the extent that you perform work under a written contract that requires you to obtain this agreement from us.)

You must maintain payroll records accurately segregating the remuneration of your employees while engaged in the work described in the Schedule.

The additional premium for this endorsement shall be 2% of the California workers' compensation premium otherwise due on such remuneration.

Schedule

Person or Organization	Job Description
All persons or organizations that are party to a contract that requires you to obtain this agreement, provided you executed the contract before the loss.	Jobs performed for any person or organization that you have agreed with in a written contract to provide this agreement.

This endorsement changes the policy to which it is attached and is effective on the date issued unless otherwise stated.
(The information below is required only when this endorsement is issued subsequent to preparation of the policy.)

Named Insured: FCS International, Inc.
Policy Number: PSW0004799
Insurance Company: RLI Insurance Company

©1998 by the Workers' Compensation Insurance Rating Bureau of California. All rights reserved.

1ST AMENDMENT TO AGREEMENT A-7959
BETWEEN THE CITY OF PALMDALE AND FIRSTCARBON SOLUTIONS (FCS)

This 1st Amendment to Agreement No. A-7959 (“Agreement”) between the City of Palmdale and FIRSTCARBON SOLUTIONS (FCS) is made and entered into this ___ day of September, 2022 by and between the City of Palmdale (hereinafter called “CITY”) and FIRSTCARBON SOLUTIONS (FCS) (hereinafter called "CONSULTANT").

WHEREAS, on May 31, 2022, the CITY and CONSULTANT entered into an agreement for CONSULTANT to provide Ongoing Permitting and Preconstruction Planning Services (“Agreement”).

WHEREAS, CITY has determined that additional services are required of CONSULTANT and this amendment amends the Agreement to add the additional services and to increase the compensation. .

NOW THEREFORE, the parties agree as follows:

1. Section 1 - Description of Work, of the Agreement is hereby amended to add additional Scope of Work as follows:

"CONSULTANT" shall complete the following:

Task 1: Project Initiation

FCS will develop an initial data needs list, coordinate with the Applicant Team, and mobilize the Project Team. The FCS management team will attend one virtual kickoff meeting with the Applicant Team to receive the requested project-related information, discuss project plans, identify any data gaps, coordinate critical path activities, and ensure that the proposed deliverable schedule is consistent with the overall project timeline. FCS will be prepared to discuss key issues of environmental concern related to the project and identify data gaps and data needs for purposes of the environmental analysis.

Task 2: Prepare Comprehensive Project Description

Using the information obtained at the kickoff meeting, FCS will prepare a comprehensive Project Description for the Applicant’s review and approval that clearly describes and illustrates the proposed development activity, and other pertinent information. The approved Project Description will form the basis for evaluating the project in the biological reports and permit applications. The Project Description will include all of the information required to define the project for purposes of CEQA, including a clear explanation of the development components of the proposed project, a description of the construction and operational activities

associated with the project, and clearly illustrated project primary components displayed in exhibits based in Geographic Information Systems (GIS).

The Draft Project Description will be submitted to the Applicant for review and approval prior to the development of the biological reports and permit applications. This Scope of Work assumes that the Applicant will provide focused changes/revisions and clear direction on the Administrative Draft Project Description and will approve the Project Description once FCS has incorporated these changes. Any changes to the Project Description made after the Applicant has issued their approval and work on biological reports and permit applications has been initiated will require a budget augmentation and may extend the project schedule.

Deliverables

- Electronic version (via email) of the Administrative Draft Project Description in Word format.
- Electronic version (via email) of the Final Project Description in Word format.

Task 3: Biological Studies and Surveys

Subtask 3.1: Biological Resources Assessment

FCS will prepare a Biological Resources Assessment (BRA) report for the proposed project which include the following:

Literature Review

FCS will review and appropriately incorporate the following background data into the BRA:

- Existing documentation and studies of the biological resources within the immediate project vicinity;
- The Federal Register listing package for each federally listed endangered or threatened species potentially occurring on-site;
- Literature pertaining to habitat requirements of special-status species potentially occurring on- site, including California Wildlife Habitat Relationships;
- The CDFW lists of state-regulated plants and animals;
- California Natural Diversity Data Base (CNDDB) and California Native Plant Society Electronic Inventory (CNPSEI) information regarding special-status species potentially occurring on-site; • City of Palmdale General Plan; and
- City of Palmdale Joshua Tree and Native Desert Vegetation Preservation Ordinance

Field Survey

FCS Biologists will survey the approximately 113.75-acre project site to document the existing biological conditions. This will include mapping vegetation communities, land uses, and wildlife habitats on the project site and within its 500-foot buffer, mapping individual Joshua trees (Yucca brevifo/ia), and mapping and identifying burrows that may be occupied by special-status species.

Mapping of Vegetation Communities, Land Uses, and Wildlife Habitats

FCS Biologists will survey the project site and scan adjacent areas within 500 feet of the project boundary using binoculars to map vegetation communities, land uses, and potential wildlife habitats (such as nesting areas of wildlife movement corridors). This portion of the initial field survey will evaluate the potential for wildlife and other potentially sensitive biological resources to occur within and adjacent to the project site. Sensitive biological resources include any plants, animals, habitats, wetlands or other waters, or communities considered rare, endangered, threatened, sensitive, or otherwise unique by government agencies (e.g., CDFW and United States Fish and Wildlife Service [USFWS]) or recognized conservation organizations (e.g., CNPS). General locations of sensitive biological resources identified during the survey will be mapped. The potential presence of any special-status plant or animal or any sensitive habitat or communities within the project site will be determined and mapped.

Biological Resources Assessment Report

The results of the field survey and background research will be documented in a BRA Report, which will evaluate the potential of the project site to support sensitive biological resources, describe the existing biological conditions on-site, provide a list of special status-species considered in the assessment and their potential for occurrence, and recommend additional surveys and/or avoidance, minimization, and mitigation measures, if/as appropriate.

Deliverables

- Electronic version (via email) of the Draft Biological Resources Assessment report in PDF format.
- Electronic version (via email) of the Final Biological Resources Assessment report in PDF format.

Assumptions

• Access and permission to enter the above-described project area must be granted to FCS in writing prior to field surveys.
• FCS is not responsible for delays due to conditions or circumstances outside of FCS control, such as (but not limited to) COVID-19 mandates, weather, site conditions (i.e., prohibited access, unsafe conditions, flooding), fire, etc.
• Should any species-specific focused surveys outside of those scoped below be required following the BRA update, a scope and budget amendment would be needed.
• The impact analysis will be based on one set of plans provided by the Applicant.
• Up to one round of revisions to the Biological Resources Assessment shall be provided based on comments provided by the Applicant.

Subtask 3.2: Protocol-Level Desert Tortoise Survey and Report

In accordance with the guidelines outlined in the United States Fish and Wildlife Service survey protocol,1 FCS Biologists will conduct a pedestrian survey for desert tortoises on the project site. The survey will follow the Small Project Surveys guidance, which require transects spaced at 10 meters to search for tortoises and their sign (e.g., burrows, tracks, scat, drinking depressions, mating rings, carcasses). Though this survey may be performed at any time of year, we recommend that they be performed in September 2022 due to expedited scheduling.

Deliverable

• Electronic version (via email) of the Desert Tortoise Survey Report in PDF format.

Subtask 3.3: Protocol-Level Burrowing Owl Surveys

Non-Breeding Season Surveys

In accordance with the guidelines and protocol outlined in the Staff Report on Burrowing Owl Mitigation, State of California Natural Resources Agency, Department of Fish and Wildlife Guidelines,2 non-breeding season burrowing owl surveys will be conducted within suitable habitat on the project site and within its 500-foot {150 meter) buffer. Four survey visits will be conducted with between August 31 and February 1). FCS will conduct the non-breeding season surveys between September 2022 and January 2023.

The initial survey will take a total of 2 days to complete and will consist primarily of documenting burrows within the survey area. Survey transects will be spaced to allow

100 percent visual coverage of the ground surface, with no more than 20 meters between transect center lines. Subsequent surveys will consist of searches for burrowing owls, with a concentration on burrows that were identified in the initial survey. These surveys will be conducted during times of day (within two hours of dawn and dusk) and during appropriate weather conditions for viewing burrowing owls. The locations of any burrows or burrowing owls observed on the site will be documented using GPS technology. A report detailing the results of the breeding season survey will be prepared and submitted to the client.

Deliverable

• Electronic version (via email) of the Non-Breeding Season Burrowing Owl Survey Report in PDF format.

Subtask 3.4: Protocol Rare Plant Survey and Report

An FCS qualified Botanist will conduct focused rare plant surveys for rare plant species with a potential to occur on-site. Surveys will be conducted during the blooming period for these targeted rare plants. A total of three site visits will be conducted, depending on the timing of flowering of species this year. Per the CDFW 2018 rare plant survey protocol, FCS Biologists will visit nearby reference populations of targeted species to verify that each species is in bloom and detectable. Any rare plant populations observed on the project site will be recorded with a sub-meter GPS unit. FCS anticipates that the rare plant surveys will be conducted between April 2023 and June 2023.

The survey results will be summarized in a biological letter report. The letter report will detail the survey dates, times and results of the focused surveys, and provide minimization, avoidance, or mitigation efforts to reduce potential impacts to species. The report will include summary graphics, as needed, to detail the location and size of any rare plants observed on-site.

Deliverable

• Electronic version (via email) of the Rare Plant Survey Report in PDF format.

Subtask 3.5: Joshua Tree Survey

FCS Biologists will conduct a western Joshua tree inventory across the project site. During this effort, FCS will record the locations of western Joshua trees using GPS technology, and evaluate the size (trunk and height), the number of forks, branches,

flower panicles, reproductive status, and health of each western Joshua tree (i.e., herbivore, insect infestation, structural integrity, missing bark, and general declining health). The evaluations will aid in assessments of transplantability. This task assumes 40 person days.

Subtask 3.6: Joshua Transplantation Plan

FCS will prepare a Joshua Tree Transplantation Plan, in support and as an appendix to the Incidental Take Permit Application. This plan will synthesize the data collected during the western Joshua Tree inventory, provide a description of the preservation areas designed as part of the project design, and provide a plan for transplantation of western Joshua trees into the on-site preservation areas. This plan will include detailed exhibits showing the Joshua Tree preservation areas and planned transplant locations.

Deliverable

• Electronic version (via email) of the Joshua Tree Transplantation Plan in PDF format.

Subtask 3.7: Joshua Tree Take Permitting for Incidental Take Permit Application

In September 2020, the California Fish and Game Commission voted to provide temporary (1 year) protected status under to western Joshua trees while the CDFW considered listing the species as Threatened under the California Endangered Species Act (CESA). The Fish and Game Commission recently extended the evaluation period until October 2022 to allow the CDFW sufficient time to consider the potential listing. During this period, western Joshua trees are protected under the California Endangered Species Act. Accordingly, a Section 2081{b) Incidental Take Permit (ITP) will be required for project impacts to on-site western Joshua trees. Additional agency coordination may also be needed to address the presence of other State-listed species recorded on the project site. FCS will coordinate with the City and the Applicant prior to contacting any agency on their behalf. FCS will not discuss project specifics with agency personnel without expressed consent from the City and the Applicant. An approved CEQA document is required prior to applying for the Incidental Take Permit, as issuance of Permit by the CDFW is considered a discretionary action as defined in Title 14 of the California Code of Regulations, Section 15357, under CEQA.

Initial CDFW Coordination

Prior to initiating an initial consultation with the CDFW, FCS will compile data

collected in the field regarding the number and health of western Joshua trees recorded on the project site, as well as acreage of habitat that supports the species. FCS will then conduct an initial consultation with the CDFW to determine their requirements for the Incidental Take Permit application for the proposed project. FCS will coordinate with the City and the Applicant prior to contacting any agency on their behalf. FCS will not discuss project specifics with agency personnel without expressed consent from the City and the Applicant.

2081(b) Incidental Take Permit Application

After determining project specific CDFW requirements for obtaining an Incidental Take Permit for Joshua trees on-site, FCS will prepare an Application for the permit. The Application will include Applicant information, Project Description, an analysis of potential take and impacts to western Joshua trees, proposed measures to minimize and fully mitigate the impacts of the proposed taking, a proposed plan to monitor compliance with the minimization and mitigation measures and the effectiveness of the measures, a description of the funding sources and the level of funding available for implementation of the minimization and mitigation measures, and documentation of CEQA compliance. The Application will also include a Joshua Tree Preservation Plan as an appendix that provides a summary of current project conditions, proposed take of Joshua trees, on-site conservation (if possible), and proposed mitigation such as transplantation or fees paid to a mitigation fund or bank for Joshua trees. Proposed measures to minimize and fully mitigate the impacts of the proposed Joshua Tree taking will reflect those in the BRA and other minor modification submittal documents. Appropriate mitigation, including the need for Joshua Tree relocation services, will be drawn from the BRA and the outcome of coordination with the CDFW as part of the preparation of the Incidental Take Permit Application.

Deliverable

- Submittal of the of the ITP Application to CDFW.

Subtask 3.8: Jurisdictional Delineation and Permitting

Subtask 3.8.1: Jurisdictional Delineation

As a subconsultant to FCS, South Environmental (South) will conduct a jurisdictional delineation on the property according to the 1987 Corps of Engineers Wetlands Delineation Manual and Arid West Supplement. The delineation will be conducted on foot in the areas shown in the attached Applicant’s site plan and will record the edge of jurisdictional areas using a sub-meter accuracy Trimble GPS. The limits of the jurisdiction of the US Army Corps of Engineers (USACE), the RWQCB, and the CDFW will be delineated, and Wetland Determination Datasheets and Ordinary High

Water Mark Datasheets will be used as applicable to assess and characterize the aquatic features on the site.

Subtask 3.8.2: Jurisdictional Delineation Report

South will prepare a written report describing the proposed projects and background, the methods and results of the delineation, and a description of impacts to jurisdictional resources. The report will be completed according to CDFW, USACE Los Angeles District, and RWQCB guidelines and requirements, and will include the acreages and jurisdictional boundaries for each of the pertinent agencies.

Deliverable

- Electronic version (via email) of the Jurisdictional Delineation Report in PDF format.

Subtask 3.8.3: Regional Water Quality Control Board and California Department of Fish and Wildlife Permit Application Packages

South will complete a Lake and Streambed Alteration Notification application package for the proposed project via the CDFW online Environmental Permit Information Management System. In addition, South will prepare and submit permit packages for CWA Section 404/401 to the USACE and the RWQCB as necessary. The applications will include the necessary reports (i.e., Jurisdictional Delineation Report and the BRA), photos, figures, and other materials submitted as attachments to the permit applications. Prior to submittal, South will review the proposed mitigation in the BRA to determine if it is sufficient to satisfy the CDFW, USACE, and RWQCB requirements. Recommendations for updates will be made to get the mitigation in line with the agency expectations if necessary.

Deliverable

- Submittal of the of the 404/401 Application to RWQCB.
- Submittal of the 1602 Streambed Alteration Agreement to CDFW.

Subtask 3.8.4: Habitat Restoration Plan for Regional Water Quality Control Board

If necessary, South will prepare a written Habitat Restoration Plan to include with the RWQCB WDR application. The need for this plan will be apparent after coordination and discussion with the RWQCB. The plan will be prepared according to Draft Guidance for the State Wetland Definition and Procedures for Discharges of Dredged

or Fill Material to Waters of the State. The plan will detail the compensatory mitigation requirements for the project and outline how those requirements will be met by the Applicant. The plan will include existing mitigation and restoration efforts associated with the project ITP when applicable.

Deliverable

• Electronic version (via email) of the Habitat Restoration Plan in PDF format.

Subtask 3.9: Mobile Data Collection Application and Database Management

Subtask 3.9.1: ArcGIS Online Database

As a subconsultant to FCS, South staff would develop a comprehensive database to a more cloud-based format in ArcGIS. Base files would including the site plan and topographic layers to be provided by the Applicant's engineer. This would become a master database inclusive of all GIS survey data collected in the field. This task includes effort for GIS, technical manager coordination, and QA/QC reviews.

Subtask 3.9.2: GIS Products and Analyses

Under this task, South will create GIS products (mapping exhibits) to support FCS survey reports and plans, that will utilize the data that was collected using the GIS products. This task includes preparation of exhibits to support the Biological Resources Assessment, Joshua Tree and Native Desert Vegetation Preservation Plan, Desert Tortoise Survey, Non-Breeding Season Burrowing Owl and Breeding Season Burrowing Owl Surveys, Habitat Restoration Plan, Invasive Species Management Plan, Joshua Tree Avoidance and Protection Plan, Special-status Species Relocation Plan, Protocol Rare Plant Report, Crotch's Bumblebee Report, and Swainson's Hawk Report as applicable. South assumes up to 50 maps, figures, or other similar exhibits as well as 5-hours of analysis associated with acreage calculations, buffers, or other spatial data tabulation and management tasks. A total of 60 hours is included in this task. Should additional effort be needed to complete these exhibits, an amendment to the contract may be warranted to accommodate the need for additional GIS products and analyses.

Task 4: Regulatory Approval Processing and Coordination

Post-Application Agency Consultation

FCS will work with CDFW to ensure timely processing and approval of the 2081(b) Incidental Take Permit. This will include phone conferences and other communications to verify that CDFW has received a complete application and to determine whether additional information is needed to facilitate processing and approval of the Application. FCS assumes that any fees associated with the Incidental Take Permit Application and mitigation for Joshua trees will be the responsibility of the Applicant.

Once the amended CDFW and RWQCB regulatory applications are submitted, our team will continue to provide services for the processing of those respective permits (assuming an Approved Jurisdictional Determination and acceptance of no substantial changes with the site plan) with RWQCB and CDFW. The processing shall include required correspondence or telephone calls between the reviewing staff related to the permit or points of clarification and coordination with the City and the Applicant, as necessary. Typically, agency comments are responded to via email and telephone response to comments per each application package. Should additional time for coordination be required, the City will be notified, and work will continue on an approved contract augmentation.

Our team will conduct a weekly internal regulatory permitting meeting to discuss status and updates. This task assumes hours for our entire project team including FCS management and FCS biologist as well as our regulatory specialists to attend (assumes two hours per month for eight months). Our team may attend additional meetings on a time-and-material basis, under separate authorization.

Task 5: Field Equipment for Preconstruction Surveys

Under this task, FCS is seeking funds to purchase equipment and tools needed to conduct upcoming surveys for western Joshua tree, desert tortoise, and burrowing owl. The equipment and tools needed include, but are not limited to tree calipers, spotting scope, stakes, shovels, and marking paint, etc. This also includes Geode or Trimble R1 GPS units to support the data collection and survey effort. The units will achieve a minimum of one-meter accuracy for data collection and will typically have considerably better accuracy than that.

Assumptions

• Two GPS units for a total of 2-weeks (10 field days) is assumed and additional days can be added on at a cost of $200/week per unit.

Task 6: Meeting Attendance

Under this task, FCS anticipates regular meetings with the City of Palmdale, IDS and Project Team, and the internal Project Team associated with minor site plan modification. This task assumes two hours per month for a total of eight months for key project personnel, including but not limited to project director, project manager, and/or senior biologists. FCS may attend additional virtual meetings on a time-and-material basis, under separate authorization.

Task 7: Project Management and Coordination

FCS is firmly committed to developing and maintaining close working relationships with the City and the Applicant. Emphasis on communication, as well as involvement of FCS Directors and Senior Staff in all projects, results in performance that satisfies project objectives, government requirements, and project needs. Communication is key to a successful project. FCS will place top priority on working as a partner with City staff, the Applicant and other Project Team members, as necessary, during environmental processing of the project. We will help anticipate controversial issues, devise solutions, and provide expert environmental compliance consultation. Understanding the City's and Applicant's objectives and ensuring they are reflected in the environmental review and analyses are key aspects of our approach. This Scope of Work assumes regular interaction with the City and the Applicant, as necessary, and requires frequent information sharing among Project Team members. This task assumes 100 hours of staff time.

Tasks Outside the Scope of Work Below are tasks FCS has identified as being outside of its Scope of Work for the proposed project.

Filing Fees

• The City and/or Applicant is responsible for payment of application fees or other potential mitigation fees associated with permitting and entitlement processing.

2. Section 9 – Compensation of the Agreement is hereby amended as follows: The compensation identified in Section 9.1 - is increased by Two-Hundred Forty-Three Thousand Two-Hundred dollars ($243,200), for a not to exceed the amount of Four-Hundred Twenty-Five Thousand Five-Hundred dollars ($472,500).

The following shall be added to Section 9.1 – Fee Schedule:

FCS has prepared the following budget identifying the costs of each task.

Task	Fees
Task 1: Project Initiation	$2,600
Task 2: Prepare Comprehensive Project Description	$4,400
Task 3: Biological Studies and Surveys	-
Subtask 3.1: Biological Resources Assessment	$15,800
Subtask 3.2: Protocol-Level Desert Tortoise Survey and Report	$10,300
Subtask 3.3: Protocol-Level Burrowing Owl Surveys and Reports	$16,800
Subtask 3.4: Protocol-Level Rare Plant Survey and Report	$12,900
Subtask 3.5: Joshua Tree Survey	$45,600
Subtask 3.6: Joshua Tree Transplantation Plan	$11,900

Task	Fees
Subtask 3.7: Joshua Tree Take Permitting for Incidental Take Permit Application	$19,800
Subtask 3.8: Jurisdictional Delineation and Permitting	-
Subtask 3.8.1: Jurisdictional Delineation	$3,600
Subtask 3.8.2: Jurisdictional Delineation Report	$8,000
Subtask 3.8.3: RWQCB and CDFW Permit Application Packages	$21,900
Subtask 3.8.4: Habitat Restoration Plan for RWQCB	$6,200
Subtask 3.9: Mobile Data Collection Application and Database Management	-
Subtask 3.9.1: ArcGIS Online Database	$5,700
Subtask 3.9.2: GIS Products and Analyses	$13,300
Task 4: Regulatory Approval Processing and Coordination	$9,500
Task 5: Field Equipment for Preconstruction Surveys	$9,300
Task 6: Meeting Attendance	$8,300
Task 7: Project Management and Coordination	$17,900
Total FCS Professional Service Fee	$243,200

3. All other terms and conditions of the Agreement shall remain in full force and effect.

In Witness Whereof, the parties hereto have caused this Contract to be executed and attested by their respective officers thereunto duly authorized.

CITY OF PALMDALE:

Ronda Perez Date
Interim City Manager

ADDRESS FOR NOTICE:
CITY OF PALMDALE
38300 Sierra Highway, Suite A
Palmdale, CA 93550

APPROVE AS TO FORM:

Scott E. Porter
Interim City Attorney

ATTEST:

Shanae S. Smith
City Clerk

FIRSTCARBON SOLUTIONS (FCS):

C. Patrick Schultz Date
COO

ADDRESS FOR NOTICE:
FIRSTCARBON SOLUTIONS (FCS)
967 Kendall Drive, #A-537
San Bernardino, CA 92407

ATTEST: If Corporation

Secretary

City Council Staff Report

DATE: **SEPTEMBER 21, 2022**

TO: **HONORABLE MAYOR AND CITY COUNCIL**

FROM: **PUBLIC WORKS**
CAPITAL IMPROVEMENT PROGRAM DIVISION

DISTRICT: **ALL**

SUBJECT: **ADOPT RESOLUTION NO. CC 2022-104, A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF PALMDALE TO REPEAL AND REPLACE RESOLUTION NO. CC 2016-085 WITH RESOLUTION NO. CC 2022-104, WHICH ADOPTS THE UPDATED LOCAL HAZARD MITIGATION PLAN FOR THE CITY OF PALMDALE FOR 2021-2026**

ISSUE

Adopt Resolution No. CC 2022-104, a Resolution of the City Council of the City of Palmdale to repeal and replace Resolution No. CC 2016-085 with Resolution No. 2022-104, which adopts the updated Local Hazard Mitigation Plan for the City of Palmdale for 2021-2026.

RECOMMENDATION

Staff recommends that the City Council adopt Resolution No. CC 2022-104.

BACKGROUND

Local hazard mitigation plans are investment strategies that communities develop to identify hazards, assess risks and vulnerabilities, and develop mitigation strategies that can be funded using a wide range of resources. Every five years, the mitigation plan needs to be reviewed and updated, as circumstances may change (e.g., disasters, effects of climate change, increased areas of development within hazard prone areas, or other impacts from changing population and demographics). All these affect the risk profile, and changes in staff and local leadership may also change the mitigation strategy and priorities. As stated in 44 CFR § 201.6(d)(3), “a local jurisdiction must review and revise its plan to reflect changes in development, progress in local mitigation efforts, and changes in priorities, and resubmit it for approval within 5 years in order to continue to be eligible for mitigation project grant funding.”.

Staff last updated the Local Hazard Mitigation Plan in 2016, which City Council adopted under Resolution 2016-085.

DISCUSSION

As required by FEMA and the code of federal regulations, staff has updated the local hazard mitigation plan for its 2021-2026 life cycle. A consultant was procured using a competitive bidding process on the City's electronic bid management system, PlanetBids™. Interwest Consulting Group was selected as the most qualified Consultant and has completed the plan update, including direct coordination with the California Office of Emergency Services (CalOES) and an "Approvable Pending Adoption" (APA) designation from the Federal Emergency Management Agency (FEMA).

The "Approvable Pending Adoption (APA)" status is used when jurisdictions submit the final draft of a local hazard mitigation plan for review prior to formal jurisdictional adoption. The APA status allows FEMA to communicate that the plan has met all requirements and is ready for adoption. It is important to note that APA is not the same as having an approved plan. To reach approval, all participating jurisdictions must adopt the plan in accordance with local regulations.

FISCAL IMPACT

There is no fiscal impact to the City as a result of this action, as the adoption of the Plan does not commit the City to future expenditures. The Plan is a prerequisite for obtaining certain grant funds made available under Federal Emergency Management Agency (FEMA) Pre-Disaster Mitigation programs and federal disaster funding. The future implementation of the Plan will require the expenditure of funds, but that amount is yet to be determined.

STRATEGIC PLAN

Goal I: Maintain effective public safety and protection for life, property, and the environment.

B. Be prepared to protect life, property, and the environment in the event of catastrophic disasters and emergencies.

Prepared by:	Lynn Glidden, Acting Director of Public Works
Certified as to availability of Funds:	Janelle Samson, Director of Finance
Approved by:	Ronda Perez, Interim City Manager
Approved as to form:	Scott E. Porter, Interim City Attorney

ATTACHMENTS

1. Resolution No. CC 2022-104
2. Local Hazard Mitigation Plan 2021-2026

CITY COUNCIL
CITY OF PALMDALE, CALIFORNIA
RESOLUTION NO. CC 2022-104

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF PALMDALE, TO REPEAL AND REPLACE RESOLUTION NO. CC 2016-085 WITH RESOLUTION NO. CC 2022-104, WHICH ADOPTS THE UPDATED LOCAL HAZARD MITIGATION PLAN FOR THE CITY OF PALMDALE FOR 2021-2026

WHEREAS, the City of Palmdale adopted Resolution No. CC 2016-085 on November 2, 2016, to adopt the Local Hazard Mitigation Plan and every five years the plan needs to be updated. The 2021-2026 plans have incorporated comments from both the State of California Emergency Services and FEMA; and

WHEREAS*,* the City of Palmdale has experienced damage from flooding, earthquakes, fires, resulting in loss of property, loss of life, economic hardship, and threats to the public health and safety; and

WHEREAS*,* the City of Palmdale is committed to increasing the disaster resistance of the infrastructure, health, housing, economy, government services, education, environment, and land use systems in the City of Palmdale; and

WHEREAS*,* the City of Palmdale's current Updated Local Hazard Mitigation Plan, incorporating comments from the State of California Emergency Services and FEMA, recommends many hazard mitigation actions that will protect the people and property affected by the natural hazards that face the City of Palmdale; and

WHEREAS, the City of Palmdale's current Updated Local Hazard Mitigation Plan of 2021-2026, attached herein as Exhibit A, has been developed by city staff, representatives of various county and local governmental agencies, the public and other stakeholder organizations; and

WHEREAS, the federal Disaster Mitigation Act of 2000 requires all cities, counties and special districts to have adopted a Local Hazard Mitigation Plan to receive disaster mitigation funding from FEMA and update the document every five (5) years.

NOW THEREFORE, THE CITY COUNCIL DOES HEREBY RESOLVE, FIND, DETERMINE, AND OREDER AS FOLLOWS:

SECTION 1. The City of Palmdale's Updated Local Hazard Mitigation Plan for 2021-2026 is hereby adopted.

SECTION 2. The City Council hereby directs the City Clerk to submit a certified copy of this Resolution to the Los Angeles County Recorder for recordation.

SECTION 3. The City Clerk shall certify to the adoption of this resolution.

PASSED, APPROVED and **ADOPTED** this _____ day of _____, _____.

_____
Steven D. Hofbauer, Mayor

Approved as to form:

ATTEST:

_____
Scott E. Porter
Interim City Attorney

_____
Shanae S. Smith, City Clerk

I, Shanae S. Smith, City Clerk of Palmdale, California, do hereby certify that the foregoing resolution was duly passed, approved, and adopted by the City Council of the City of Palmdale at a regular meeting of said Council held on the _____ day of _____, 20___ by the following roll call vote:

AYES: _____

NOES:_____

ABSTAIN:_____ABSENT:_____

Date: _____ _____
Shanae S. Smith, City Clerk

Public Works Department
38250 Sierra Highway
Palmdale, CA 93550
661-267-5300
661-267-5292 (fax)

www.cityofpalmdale.org

LOCAL HAZARD MITIGATION PLAN

September 30, 2021 (update per FEMA Comments)
(5-year update 2022-2027)

CITY OF PALMDALE
LOCAL HAZARD MITIGATION PLAN
2022 – 2027 UPDATE

TABLE OF CONTENTS

SECTION **PAGE**

Adoption Resolution.....Under cover
Title Page 1
Table of Contents 2
Acknowledgements 7
Executive Summary.....8

SECTION ONE – BACKGROUND & COMMUNITY PROFILES
1.1 Definition of Hazard Mitigation 11
1.2 Why Develop a Hazard Mitigation Plan 12
1.3 Purpose of the Plan.....16
1.4 General Planning Requirements in California.....16
1.5 Community Profile 17
1.6 Public Services and Infrastructure 20

SECTION TWO – PLANNING PROCESS
2.1 Overview of Planning Process.....27
2.2 Composition and Participation of the Planning Team.....28
2.3 Incorporation of Existing Plans, Studies, and Technical Information 31
2.4 Public and Shareholder Involvement.....33
2.5 Local Capabilities and Resources..... 37

SECTION THREE – RISK ASSESSMENT
3.1 Risk Assessment Process.....40
3.2 Inventorying Assets.....40
3.3 Assessing Vulnerability and Estimating Potential Losses 45
3.4 Analyzing Development Trends 48
3.5 Identifying Hazards 55
3.6 Profiling Hazards 56

3.6.1 **Earthquake** 57
Previous Occurrences 61
Probability of Future Events 65
Climate Change Impacts 71
Vulnerability Assessment.....71
Estimating Potential Losses 72

3.6.2 **Floods, Dam Failure, and Inundation Hazards** 76
Previous Occurrences 81
Probability of Future Events 82
Climate Change Impacts 83

Vulnerability Assessment 83
Estimating Potential Losses 85

3.6.3 Wildfire Hazards/Brush Fires 86
Previous Occurrences 86
Probability of Future Events 93
Climate Change Impacts 94
Vulnerability Assessment 96
Estimating Potential Losses 97

3.6.4 Transportation Accident/Hazmat Spill 98
Previous Occurrences 99
Probability of Future Events 99
Climate Change Impacts 100
Vulnerability Assessment 102
Estimating Potential Losses 106

3.6.5 Drought 109
Previous Occurrences 111
Probability of Future Events 111
Climate Change Impacts 112
Vulnerability Assessment 112
Estimating Potential Losses 112

3.6.6 Severe Weather 114
Previous Occurrences 115
Previous Occurrences: Wind 117
Probability of Future Events: Wind 118
Previous Occurrences: Heat 119
Probability of Future Events: Heat 119
Climate Change Impacts 120
Vulnerability Assessment 120
Estimating Potential Losses 120

3.6.7 Power/Utility Failure 122
Previous Occurrences 123
Probability of Future Events 124
Climate Change Impacts 124
Vulnerability Assessment 124
Estimating Potential Losses 125

3.6.8 Infectious Disease/Pandemic 126
Previous Occurrences 126
Probability of Future Events 128

Climate Change Impacts..... 129
Vulnerability Assessment..... 129
Estimating Potential Losses..... 130

SECTION FOUR: MITIGATION STRATEGY

4.1 Local Capabilities.....133
4.1.1 Plans, Programs, Policies and Ordinances Supporting Mitigation 133
4.1.2 Administrative and Technical Mitigation Capabilities 135
4.2 City of Palmdale Hazard Mitigation Goals and Objectives 138
4.3 Setting New Hazard Mitigation Goals.....140
4.4 City of Palmdale Hazard Mitigation Goals & Objectives..... 140
4.5 Selecting and Prioritizing Hazard Mitigation Measures.....142
4.6 2022 Updated Mitigation Actions.....144
4.6.1 Property Protection 150
4.6.2 Public Education and Awareness.....152
4.6.3 Natural Resource Protection 157
4.6.4 Emergency Services 160
4.6.5 Structural Projects 171

SECTION FIVE – PLAN MAINTENANCE PROCEDURES

5.1 Monitoring and Evaluation 181
5.2 Plan Implementation 182
5.3 Continued Public Involvement.....183
5.4 Plan Maintenance 183
5.5 Coordinating Mitigation Planning Activities 183
5.6 Assurances 184

APPENDIX

A City Organization Charts 186
B Hazard Mitigation Planning Survey, Planning Meetings, & Agendas 195
C HAZUS Report and Maps..... 230
D Planning Resources Directory..... 253
E Federal Acronyms 267
F Glossary 273

LIST OF TABLES

1.1 Fastest Growing Cities in LA County 18
2.1 Technical and Administrative Capabilities.....37
3.1 Facility Asset Values 42
3.2 Critical Infrastructure 43
3.3 Facility Essential/Critical Building Asset Value 46
3.4 Risk Assessment Summary Table 47
3.5 Hazard Mitigation for Future Development of Specific Plans 50
3.6 Earthquake Magnitude 62

3.7 Major San Andreas Fault Activity 66
3.8 Fault Magnitudes 66
3.9 Key Infrastructure in Alquist Priolo EQ Zone 67
3.10 HAZUS Casualty Estimates 73
3.11 HAZUS Transportation System Economic Losses Estimate 74
3.12 HAZUS Utility System Economic Losses Estimate 75
3.13 HAZUS Building Related Economic Losses Estimate 75
3.14 Reducing Risk from Reasonably Foreseeable Flooding 78
3.15 Disaster Incidents.... 82
3.16 Key Assets in Dam Inundation Zones.... 85
3.17 Twenty Deadliest Wildfires in California.... 91
3.18 Twenty Largest Wildfires in California.... 92
3.19 Twenty Most Destructive Wildfires in California.... 93
3.20 Key Assets in Wildland Fire Hazard Zone.... 97
3.21 Pipeline Incident Summary 102
3.22 Truck Volumes.... 105
3.23 Collisions Involving HAZMAT Spills.... 106
3.24 Palmer Drought Severity Index (PDSI) Classification 111
3.25 National Weather Service HeatRisk Forecast 114
3.26 Beaufort Scale 115
3.27 Types of Infrastructure Interdependency Failure 122
3.28 Level of Community Transmission 126
4.1 Administrative and Technical Resources.... 135
4.2 Legal and Regulatory Resources.... 137
4.3 2022 Mitigation Action Prioritization.... 146

LIST OF FIGURES

3.1 Earthquake Fault Types....57
3.2 San Andreas Fault 65
3.3 Flash Flood 76
3.4 Atmospheric River Magnitudes 77
3.5 Flooding during October 2015 storm 78
3.6 Fire in Palmdale 93
3.7 Average Number of Hazardous Material Spills Per Month by County 108
3.8 US Drought Monitor California 109
3.9 Santa Ana Winds 116
3.10 Heat Related Deaths and Illnesses 119
3.11 Infrastructure Interdependencies 123

LIST OF MAPS

3.1 Administration and Landmarks....44
3.2 Land Use....53
3.3 Zoning....54
3.4 Earthquake Shaking Potential....64

3.5 Seismic Activity **69**
3.6 Soils, Liquefaction, and Landslide Zones **70**
3.7 Flood Plain **80**
3.7(A) Dam Inundation **81**
3.8 Very High Fire Severity Zone **89**
3.9 Wildland Fire Hazards **95**
3.10 Truck Routes **101**
3.11 Plant 42 ..... **104**
3.12 HAZMAT Sites and Facilities **107**
3.13 2000 Census Tracts **121**

Note: Full size scalable maps are available for viewing by appointment at the City of Palmdale Public Works Department.

ACKNOWLEDGEMENT

We would like to thank the Los Angeles County Office of Emergency Management which provided information utilized by the City of Palmdale in preparing this Local Hazard Mitigation Plan (LHMP). The City is grateful to the County of Los Angeles and the City of Palmdale Hazard Mitigation Steering Committee and Community Partners/Task Force for their contributions to this project.

SPECIAL THANKS AND ACKNOWLEDGMENTS

Special thanks to Nick Godin, Capital Improvement Program Manager, with the City of Palmdale Public Works Department, and project manager for the LHMP update, and John Mlynar, City of Palmdale Public Information Officer with the Administrative Services Department, for their Steering Committee leadership roles and their contributions to this LHMP and public outreach efforts.

MAPPING

We extend our acknowledgement and special thanks to Jim Deyo, City of Palmdale Traffic/GIS Department, for his collaboration and GIS Mapping contributions to this LHMP.

We would also like to thank the Governor's Office of Emergency Services ("OES") for providing some of the maps included in this LHMP and for providing the Earthquake HAZUS Report and associated maps utilized in this LHMP.

Note: Care was taken in the creation of the maps utilized in this LHMP, which are provided "as is." The City cannot accept any responsibility for any errors, omissions, or positional accuracy, and therefore, there are no warranties that accompany these maps. In no way do these maps represent or constitute a land survey. Users are cautioned to field verify information before making any decisions.

EXECUTIVE SUMMARY

The City of Palmdale's Local Hazard Mitigation Plan (LHMP) recognizes that natural and man-made disasters can result in the loss of life and property, economic and social societal setbacks, and the degradation of the environment. It also recognizes that local governments are charged with the responsibility of protecting their residents from danger and harm. In keeping with this responsibility, the City of Palmdale (City) has established a number of plans, policies, programs, and ordinances. They are intended to provide protection to its citizens by reducing the levels of risks people, property and the environment are subject to from natural and technological/man-made hazards within the City (and its neighboring communities).

As recognized in the Palmdale General Plan,

> *"Some degree of risk is inevitable since natural disasters cannot be predicted with certainty and because the knowledge and technology to control man-made risks is constantly evolving. Since the total elimination of risk is not possible, public safety is relative to the degree of risk that people find tolerable. The value of life and property and the environment becomes a yardstick for tolerance and the need for governmental action."* (Source: City of Palmdale, 1993 General Plan, Safety Element, p.S-1)

The protection of these community values is reflected in the goals and objectives contained in this LHMP.

This LHMP serves several different needs:

- Provides the platform for the integration of hazard mitigation strategies into the day-to-day policies, practices, and programs of the City of Palmdale.
- Includes a local and regional appraisal of the risk and vulnerability from natural hazards to the city's assets, critical facilities, infrastructure, economy, and population.
- Evaluates local capabilities to respond to and recover from major disasters.
- Ensures Palmdale's Mitigation Plan goals and objectives are compatible with existing hazard mitigation elements within Palmdale's General Plan and Emergency Operations Plan.
- Will result in the identification of prioritized, cost effective mitigation actions and projects to address identified vulnerabilities.
- Will conform to all guidance from the Federal government's Office of Homeland Security – Federal Emergency Management Agency (FEMA) and the State of California's Governor's Office of Emergency Services (OES), thereby qualifying the City of Palmdale for all manner of federal mitigation grant programs.

The "Local Hazard Mitigation Planning Process" ensures that once the LHMP is developed, it will become a living document that is consistent with the goals and objectives expressed in the City of Palmdale's General Plan and Emergency Operations Plan.

The City of Palmdale has also reached out to neighboring jurisdictions, inviting their participation in the planning process. The City has established a Hazard Mitigation Steering Committee and Local Hazard Mitigation Planning Task Force whose members understand that their role is ongoing and not limited to preparing this LHMP. These groups are the City's insurance that the annual and 5-year reviews of this LHMP will capture any new initiatives, accomplishments or significant mitigation actions taken by the City.

SECTION ONE

BACKGROUND

&

COMMUNITY PROFILE

SECTION ONE – BACKGROUND & COMMUNITY PROFILE

1.1 Definition of Hazard Mitigation

FEMA defines hazard mitigation as:

> *"…any sustainable action that reduces or eliminates the long-term risk to people and property from future disasters." (Source: https://www.fema.gov/grants/mitigation, 2021)*

Section 323 of Disaster Mitigation Act 2000 amended the Stafford Act (Public Law 93-288) to give more responsibility to local government for pre-disaster mitigation actions that will reduce or eliminate damage to lives and property in future disasters. The law reiterates its emphasis on minimum standards, and requires, as a condition of receiving federal disaster assistance:

> *"… that any repair and reconstruction shall be done in accordance with the minimum standards of safety, decency and sanitation, and in accordance with applicable codes, specifications, and standards".* (Source: https://www.fema.gov/sites/default/files/2020-03/stafford-act_2019.pdf, 2019*)*

Federal law requires that local jurisdictions have an approved LHMP as a condition for receiving both pre-disaster and post-disaster hazard mitigation grants. It also requires that the state or local government recipients of federal assistance evaluate the natural hazards of the area in which the assistance is to be used and take action to mitigate them, including safe land use and construction practices.

To be effective, hazard mitigation actions must be taken in advance of a disaster. After disaster strikes, mitigation opportunities exist only during recovery and even those opportunities can be limited by the absence of advance planning. Nevertheless, the immediate post-disaster period does present special opportunities for mitigation.

Hazard mitigation includes such activities as:

- Hardening structures and facilities at risk using structural and non-structural means;
- Identifying hazard-prone areas and developing standards for prohibited or restricted use and development;
- Adoption of disaster resistant ordinances and regulations;
- Fuel reduction in forests and high fire hazard areas:
- Habitat restoration in streams; and,
- Storage of excess runoff.

Hazard Mitigation may occur during any phase of a threat, emergency, or disaster. Mitigation can and may take place during the *preparedness* (before), *response* (during), and *recovery* (after) phases.

For example, in locations with active earthquake faults, it is known that older "soft story" apartment buildings do not meet the current code requirements intended to provide life safety for all concerned. By pre-identifying the locations of these buildings (Preparedness) it provides opportunity for local first responders (Response) to familiarize themselves with these high-risk facilities. It also provides the opportunity to retrofit the building (Mitigation) to comply with minimum standards for life safety. Improved building performance at the time of disaster will improve the ability of the residents, owners, and the community to address other immediate needs (Response) and facilitate an orderly recovery (Recovery).

1.2 Why Develop a Local Hazard Mitigation Plan?

The Disaster Mitigation Act – 2000 (DMA 2000) regulations establish a process for producing a community based LHMP that considers all-natural hazards. The Palmdale LHMP emphasizes natural hazards and also includes man-made and technological hazards to the extent that these are deemed critical. The LHMP will demonstrate that proposed mitigation actions are based on a sound planning process that accounts for the inherent risks to, and capabilities of, the community. Per DMA 2000 requirements, this LHMP will at a minimum address or include the following general items:

- Initial Coordination and Capability Assessment
- Public Involvement
- Planning, Research, and Documentation
- Agency Coordination
- Hazard Identification
- Risk Assessment
- Goals and Objectives
- Mitigation Strategy
- Plan Adoption
- Submittal to State OES and FEMA
- Plan Implementation and Maintenance

The City of Palmdale adopted a Local Hazard Mitigation Plan in 2004, followed by updates in 2009 and 2016. This LHMP will be evaluated annually to determine progress and/or effectiveness of mitigation projects and programs. Updates will document the success of mitigation actions in reducing damage to lives, property, and the environment. Model projects that can be replicated by other jurisdictions will be encouraged. Documentation of losses avoided is critical if policy decision makers are expected to understand the cost effectiveness of mitigation actions.

The progress of the City's mitigation strategy will be monitored, and goals and objectives reviewed to address current conditions and anticipate future changes. The City will hold annual meetings, establish protocols, make recommendations, review and approve draft plans, coordinate with department heads and monitor progress on grants.

The overall effectiveness of the locally based hazard mitigation programs can be seen in the results of disasters over the years. California is arguably the most disaster-prone state in the

nation with a combination of significant hazards and the nation's largest population. Contrasting the results of like events nationwide and worldwide demonstrates the state's effectiveness in minimizing losses.

This LHMP recognizes the risk from natural hazards on people, property, and the environment and prescribes prioritized mitigation actions that can reduce or eliminate the threat to lives and property in the future. Mitigation of the impacts from disasters will yield savings to individuals and both the public and private sectors in the form of avoided losses in the future. Implementation of the City of Palmdale's hazard mitigation actions will break the repetition of the Preparedness – Response – Recovery disaster cycle.

This LHMP provides a set of action items to reduce risk from natural hazards through education and outreach programs and to foster the development of partnerships, and implementation of preventative activities such as post disaster repair and reconstruction standards, pre-established post disaster sheltering facilities, commercial business post-disaster start-up locations and land use programs that restrict and control development in areas subject to damage from natural hazards.

NATURAL HAZARD LAND USE POLICY IN CALIFORNIA

Planning for impacts from natural hazards has historically been a requirement to survive in California. Fires, floods, earthquakes, landslides, volcanoes, freezes, severe storms, and tsunamis ravage parts of the California landscape on a regular basis, and always have. In addition, cultural and environmental resources abound and are directly linked to the economic wellbeing of California. Planning to protect these assets should be an integral element of any governmental agency's land use planning program. All California cities and counties have General Plans and the implementing ordinances that are required to comply with the statewide planning regulations.

The continuing challenge faced by local officials and state government is to keep the network of local plans effective in responding to the changing conditions and needs of California's diverse communities, particularly in light of the very active seismic region.

This is particularly true in the case of planning for natural hazards where communities must balance development pressures with the nature and extent of hazards.

Planning for natural hazards means that local plans must include inventories, policies, and ordinances to guide development in hazard areas. These inventories should include the compendium of hazards facing the community, the built environment at risk, the personal property that may be damaged by hazard events and most of all, the people who live in the shadow of these hazards.

SUPPORT FOR NATURAL HAZARD MITIGATION

The primary responsibility for development and implementation of risk reduction strategies and policies lies with local jurisdictions. Local jurisdictions, however, are not alone. Partners and resources also exist at the regional, state, and federal levels of government. Numerous California state agencies have a role in natural hazards and natural hazard mitigation, as outlined below.

FEDERAL LAW

Federal legislation has historically provided funding for disaster relief, recovery, and some hazard mitigation planning. DMA 2000 (Public Law 106-390) reinforces the importance of mitigation planning and emphasizes planning for disasters before they occur and establishes a pre-disaster hazard mitigation program and includes new requirements for the national post-disaster Hazard Mitigation Grant Program (HMGP).

Section 322 of DMA 2000 specifically addresses mitigation planning at the state and local levels and identifies requirements that allow HMGP funds to be used for planning activities and increases the amount of HMGP funds available to states that have developed a comprehensive, enhanced mitigation plan prior to a disaster. State, tribal, and local jurisdictions must have an approved mitigation plan in place that demonstrates proposed mitigation measures that are based on a sound planning process accounting for the risk to and the capabilities of the individual communities, prior to receiving post-disaster HMGP funds or permanent repair monies under Public Assistance.

STATE LAW

Several statutes and executive orders are relevant to disaster mitigation planning in California. Among the most important are:

- California Earthquake Hazards Reduction Act of 1986 – established coordinated program to implement new and expanded activities to significantly reduce earthquake threats.
- Health & Safety Code Sec. 19211 – requires bracing of water heaters.
- Health & Safety Code Sec. 19181 – requires the installation of earthquake sensitive gas shutoff devices in buildings open to the public.
- Public Resources Code Sec. 2621, et seq. (Alquist-Priolo Earthquake Fault Zoning Act) – requires jurisdictions to establish rules and regulations prohibiting the development of structures intended for human habitation across the trace of active faults.

In addition, the state has instituted a number of programs related to disaster mitigation. These include:

- Caltrans Seismic Retrofit Program – requires critical structures, such as bridges, to meet the latest seismic safety standards.
- California Earthquake Authority: California Residential Mitigation Program – provides grants for homeowners to brace the house to its foundation.
- National Flood Insurance Program (administered by the Department of Water Resources) – intended to share risk through flood insurance and reduce development in floodplains.
- Office of Planning and Research general plan guidelines documents – intended to provide guidance and basic requirements for jurisdictions to implement goals and policies related to safety.

STATE AGENCIES

There are several state agencies with responsibility for hazard mitigation activities, all participate as core agencies on the State Hazard Mitigation Team (SHMT).

The SHMT assisted in the promulgation of the first State of California Multi-Hazard Mitigation Plan (CMHMP), approves updates to the current plan, and recommends mitigation actions for implementation by state and local government. The core membership of the SHMT includes state agencies that deal with fire, water resources, forestry, emergency services, transportation, conservation, and more, including:

- The *Governor's Office of Emergency Services (OES)* is responsible for disaster mitigation, preparedness, response, recovery, and the administration of federal funds after a major disaster declaration; is the caretaker for the State Multi-hazard Mitigation Plan; and Chairs the State Hazard Mitigation Team.
- The Southern *California Earthquake Center (SCEC)* gathers information about earthquakes, integrates this information on earthquake phenomena, and communicates it to end-users and the general public to increase earthquake awareness, reduce economic losses, and save lives.
- The *California Division of Forestry (CDF)* is responsible for all aspects of wildland fire protection on private, and state lands, and administers forest practices regulations, including landslide mitigation, on non-federal lands.
- The *California Geologic Society (CGS)* is responsible for geologic hazard characterization, public education, the development of partnerships aimed at reducing risk, and exceptions (based on science-based refinement of tsunami inundation zone delineation) to state mandated tsunami zone restrictions.
- The *California Division of Water Resources (DWR)* plans, designs, constructs, operates, and maintains the State Water Project; regulates dams, provides flood protection, and assists in emergency management. It also educates the public, and serves local water needs by providing technical assistance.

RELATIONSHIP OF THIS LHMP TO STATE & COUNTY HAZARD MITIGATION PLANS

The State of California has a solid record of legislation, commissions, executive orders, regulations, codes and standards, task forces, programs, policies, and planning requirements that provide the underpinning for the CMHMP and local hazard mitigation plans.

Those state agencies responsible for managing the response to and recovery from the impacts of fires, floods, landslides, and earthquakes, have participated for 15 years with OES in the development of single disaster hazard mitigation plans in response to federal requirements for disaster assistance. The hazard profiles established by these agencies and expressed in the 2018 State of California Hazard Mitigation Plan provide the underpinning for both the 2019 County of Los Angeles All Hazards Plan and the Palmdale LHMP.

The task force and steering committee will review all the goals and objectives adopted by the state, review priorities chosen, identify mitigation actions recommended by the state plan,

identify items addressed in the table of contents, and reference state sources of information as needed.

1.3 Purpose of this LHMP

The purpose of this LHMP is to integrate hazard mitigation strategies into the day-to-day activities and programs of the City of Palmdale.

As the costs of damage from natural disasters have continued to increase, the community and the local decision-making body realizes the importance of identifying effective ways to reduce vulnerability to, and losses from, disasters. An LHMP assists a community in reducing impacts from hazards by recognizing its vulnerability in relation to its risk, identifying resources, creating an orderly data collection process, and developing strategies for risk reduction, while helping to guide and coordinate mitigation activities throughout the community involved.

The resources and information within the LHMP are as follows:

- Establish a basis for coordination and collaboration among agencies and the public;
- Assist in the integration of mitigation goals and objectives with other City Plans;
- Identify existing, and prioritize future, mitigation projects;
- Assist in meeting the requirements of federal mitigation programs; and
- Create the foundation for future LHMP updates and maintenance.

In addition, this LHMP is designed to ensure that in the course of preparing for, responding to, or recovering from natural and man-made hazards, the long-term values of the community are not compromised.

If there is damage to lives and/or property, from any event that is catastrophic to the City or surrounding community, this LHMP provides the City with a framework by which the impacts of the event may be mitigated against in the most cost and resource-effective manner possible.

1.4 General Planning Requirements in California

All California cities and counties have General Plans and implementing ordinances that are required to comply with statewide planning regulations. State law requires each city and county to adopt a General Plan. The General Plan is the master document that governs land use and development within a community.

State law gives cities and counties wide latitude in formatting a General Plan. However, every General Plan must satisfy fundamental content requirements. These requirements or mandatory elements include land use, transportation, housing, open space, conservation, noise, safety, air quality, and environmental justice.

No one element of the General Plan has greater legal status or importance over any other. Rather, when complete, the General Plan should serve as an integrated, internally consistent, and compatible statement of local policies. In recognition of local differences, State law empowers local governments to tailor the General Plan to locally relevant issues. Optional elements may also be adopted to reflect local conditions and interests more fully.

Planning for natural hazards calls for local plans to include inventories, policies, and ordinances to guide development in hazard areas. These inventories should include the compendium of hazards facing the community, the built environment at risk, the personal property that is vulnerable to damage, and most of all the people who live with these hazards.

California is a "home rule" state. That is, local government (Cities and Counties) have the authority to dictate public policy and must meet certain minimum codes and standards, or general planning laws, but they have options that include the adoption of standards that are more rigorous than those of the state or federal government.

SPECIFIC PLANS

A specific plan is a tool for the systematic implementation of the General Plan. It effectively establishes a link between implementing policies of the general plan including those related to public safety and hazard mitigation, and the individual development proposals in a defined area. A specific plan may be as general as setting forth broad policy concepts, or as detailed as providing direction to every facet of development from the type, location, and intensity of uses to the design and capacity of infrastructure; from the resources used to finance public improvements and the design guidelines of a subdivision.

A specific plan may encompass a large development (such as Ritter Ranch, at over 10,000 acres the largest Specific Plan in Palmdale) or much smaller areas that are connected by a physical or economic feature the jurisdiction wishes to preserve.

The adoption of a specific plan is a legislative act similar to adoption of a general plan or zoning ordinance. Therefore, specific plans may be subjected to voter initiative and referenda.

1.5 Community Profile

History

Over 100 years ago, when land in the Antelope Valley sold for fifty cents an acre, a group of Swiss and German families migrated from the Midwest and named their new community "Palmenthal."

Today Palmdale is one of the fastest growing cities in California. Affordable housing, excellent schools, and over 300 days a year of smog-free blue sky contribute to Palmdale's "A place to call home" lifestyle. Palmdale is an upper-middle class community, with a median household income of $62,865 in 2019. Despite its growth, Palmdale continues to cherish the values of a family-oriented community while enjoying all of the conveniences provided by its rapidly expanding commercial sector.

Palmdale was the first city within the Antelope Valley, incorporated August 24, 1962. Palmdale is a general law City governed under the council/manager form of local government. The mayor is elected every two years for a two-year term. Also, every two years, two of the four council members are elected to serve four-year terms.

Recent Growth

Recent population growth has been spurred by the availability of affordable housing, Palmdale's proximity to major employment centers, and by annexation as well. Palmdale had 116,670 in the 2000 census. This number increased to 152,750 in the 2010 census, and to 155,079 in the 2019 census. The following Growth Chart outlines the growth rates for Los Angeles County. These exceptional growth rates, particularly for the Antelope Valley communities are tied economically to the ribbons of Highways 14 and 138 – portions of which are vulnerable to potential damage from earthquake induced ground shaking, flooding, and fires.

Table 1.1 – Fastest Growing Cities in Los Angeles County (Population of 50,000 or more)

City	2019 Census estimate	2010 Census	2000 Census	Increase 2010-2019	Increase 2000-2010
Palmdale	155,079	152,750	116,670	1.52%	30.92%
Lancaster	157,601	156,633	118,718	0.62%	31.94%
Santa Clarita	212,979	173,320	151,088	22.88%	14.7%

Source: United States Census

Location/Economy

Palmdale is located in the southern region of the Antelope Valley, in the western portion of the Mojave Desert. It is approximately 60 miles northeast of downtown Los Angeles, off State Highway 14 (commonly known as the Antelope Valley Freeway).

Palmdale is north of Soledad Canyon and the San Gabriel Mountains, with sections of the Sierra Pelona Range bordering on the southwest. The city is bounded on the north by the City of Lancaster, and the Angeles National Forest to the west. Rural unincorporated county areas, characterized by a number of desert buttes, extend eastward from the Planning Area.

Palmdale city limits cover 105.10 square miles, with an additional 69.1 square miles of unincorporated lands falling under Palmdale's Sphere of Influence (SOI). The City of Los Angeles is 498.29 square miles and lies approximately 60 miles southwest of Palmdale, along with 88 other cities and 13+ million people in the San Fernando Valley and Los Angeles Basin. Its closest neighbor is the City of Lancaster, located to the north of Palmdale.

The largest local employers in the city are within the defense industry consisting of Lockheed-Martin, Northrop Grumman, Boeing, NASA, and U. S. Air Force Plant 42.

The Antelope Valley communities, principally Palmdale and Lancaster, are isolated geographically. A significantly large number of commuters leave the Antelope Valley for employment centers in Los Angeles and the San Fernando Valley, commuting. 40-60 miles via automobile and (to a much lesser extent) rail to work in the San Fernando Valley and Los Angeles basin.

The risk of a significant disaster interrupting transportation, communication and utility assets and services makes it incumbent for these communities to prepare locally for the possibility of both local and regional impacts from disaster.

Topography/Climate/Hydrology

The city ranges in altitude from 2,450 feet to 2,700 feet with the surrounding mountains rising up to 4,000 feet above sea level. The topography varies from almost flat with occasional drainages and sand dunes on the valley floor to steep foothill and mountain areas on the south.

The San Andreas Fault traverses the Planning Area parallel to and just north of the mountains. Junipers, Western, Joshua trees, and desert chaparral are found in scattered areas throughout the city.

The climate is characteristic of this region of the Mojave Desert. The mountain ranges block cool, moist coastal air and create hot, dry summers, and cold winters. Seasonal rains (thunderstorms) are common, but creeks are dry during much of the year. Average temperatures range from 34 degrees (F) in January to 98 degrees (F) in July. Annual rainfall ranges from 0.05 to 1.84 inches, and occasional snow can be expected during winter.

Natural drainage channels, including Amargosa and Anaverde Creeks and Little Rock and Big Rock Washes run generally north and northeast across the Planning Area toward the Rosamond and Rogers dry lakes.

Potential for Disasters

If a significant regional earthquake occurs, Palmdale will be affected. The event would either inflict severe damage locally or inflict widespread damage to portions of the San Fernando Valley and Los Angeles Basin. Palmdale should be prepared to house and shelter significant portions of its own population or significant portions of those regional victims who may be trying to find a safe place to stay. These actions are consistent with the “Safe” community theme, being a good neighbor, and working toward a safe and resilient community that is prepared for disaster.

This becomes an important planning consideration in light of the potential disruption or damage to highways, metro-rail, and other infrastructure in the event of a serious earthquake, flood, fire, or terrorist attack. Palmdale has a robust disaster history and has participated in Major Federal Flood and Earthquake Disaster Declarations in 1992, 1993, 1994, 1995, 1998, 2005, and 2017. Historically, the 7.9 Fort Tejon Earthquake in 1857 and the Owens Valley Earthquake in 1872 established a benchmark for the Antelope Valley and are evidence of the tremendously damaging potential of earthquakes in this region.

1.6 Public Services and Infrastructure

In the following sections, existing public services in Palmdale are described and analyzed with respect to present conditions, mitigation actions taken in the past, and anticipated needs for future mitigation actions, based on vulnerabilities and potential losses. The City's infrastructure system includes the following components:

1. City Services
2. Water treatment and distribution
3. Water Supply
4. Water Quality
5. Sewer service
6. Storm drainage and flood control
7. Law Enforcement
8. Fire protection and prevention
9. Electric power
10. Natural gas
11. Solid waste disposal
12. Schools
13. Hospitals and medical facilities
14. The California State Water Project

CITY SERVICES

The City's Neighborhood Services Department provides services that help keep Palmdale's residents and businesses safe. The Neighborhood Services Department is responsible for coordinating the City's emergency operations planning, preparedness, and implementation. In addition, the office oversees the student drug education program, Neighborhood and Business Watch programs, crime prevention and community-based policing efforts, graffiti abatement, and parking enforcement programs. Law enforcement services are provided by contract with the Los Angeles County Sheriff's Department. Fire and emergency response are provided by the Los Angeles County Fire Department.

WATER TREATMENT AND DISTRIBUTION SERVICE

Water Supply

Residents who live within the boundaries of the Palmdale Water District receive their water from one of three sources or a combination of these three sources: the California Aqueduct (California State Water Project), Little Rock Dam, and water wells.

The California State Water Project conveys water from the Feather River and the Lake Oroville Reservoir in Northern California to areas in Southern California that do not have adequate local sources. The District is entitled to take 21,300 acre feet, or 5.6 billion gallons, of water each year from the aqueduct into Palmdale Lake where it is stored for eventual use. This water is then treated at the District's water treatment plant for distribution to the public.

Another source of surface water is supplied by the reservoir created by Littlerock Dam. Littlerock Dam was originally built in 1922 and was recently renovated to increase the storage capacity of the reservoir to 3,500 acre feet, or 1.1 billion gallons, of water. Littlerock Dam reservoir is fed by natural run-off from snowpacks in the local mountains and from rainfall. The water is then transferred from Littlerock reservoir to Palmdale Lake. After entering Palmdale Lake, this water is treated at the District's water treatment plant for distribution.

A third source of water for the District's customers is through the District's water wells pumping ground water. A well is drilled, a pump installed, and then the water is pumped from as deep as 550 feet from the earth's natural underground aquifer. This water is then treated with chlorine and placed into the District's distribution system. Well water makes up approximately 40% of the District's annual production. In drought conditions well water production may increase up to 50-60% to offset the lack of available surface water.

If long-term availability of imported water from the State is reduced, Palmdale will become more reliant on local groundwater sources. Continued over drafting of groundwater resources could escalate extraction costs for groundwater. Ensuring an adequate supply of water, given projected growth rates and the potential for drought conditions, may require the City to adopt and enforce water conservation measures.

Water Quality

Government regulations deal with the provision of safe drinking water, as well as adequate water supply. The Palmdale Water District Public Health Goal (PHG) Report compares the District's drinking water quality with Public Health Goal (PHGs) adopted by California's EPA's Office of Environmental Health Hazard Assessment (OEHHA) and with Maximum Contaminant Level Goals (MCLGs) adopted by the USEPA. Presently, groundwater generally meets federal and state standards. A few wells in the rural communities adjacent to Palmdale have been found to contain high amounts of nitrates due to septic tank leakage. The potential for local groundwater contamination has long been a concern of residents and may increase as more development utilizing septic systems occurs.

SEWER SERVICE

The Los Angeles County Sanitation District Nos. 14 and 20 provide sewer service in the City. District 20 serves the City's urban core and the northeastern portion of the Planning Area, while District 14 serves the northwestern portion of the Planning Area, Quartz Hill, Lancaster, and private sewage haulers. The USAF Plant 42 sewer system drains to District No. 14.

STORM DRAINAGE AND FLOOD CONTROL

The six major existing drainage courses in the City's Planning Area are Amargosa Creek, Anaverde Creek, Little Rock Wash, Big Rock Wash, Pearland Watershed, and Portal Ridge Watershed. Most drainage courses in Palmdale are unimproved, which allows storm water to overflow into adjacent flat areas, contributing to sheet flow. The Rosamond and Rogers dry lakes serve as final destinations of water runoff in the Antelope Valley.

Although widespread flooding has not occurred in Palmdale, localized flooding has occurred when rainfall is heavy and prolonged.

The City's 1996 Master Drainage Plan provides a long-term solution to localized flooding. Retention and detention basins, pipes, and channels are being, and have been constructed throughout the city to protect existing and future development from flooding. Approximately $330 million worth of City improvements are proposed under the Master Drainage Plan.

Funding for construction of Master Drainage Plan facilities will come from a variety of sources as specified by the City's Capital Improvements Program, including special assessment districts and drainage impact fees collected from new developments. Depending on the future rate of development, it could take an additional 10 to 15 years to fully implement the Master Drainage Plan. New development increases impervious surface area and decreases the rate at which runoff percolates into the ground, thus increasing storm runoff to low-lying areas. As an interim flood control measure, the City requires individual development projects to provide onsite flood detention facilities within their projects to capture storm runoff and prevent flows from exceeding the capacity of downstream facilities.

Culverts that carry surface runoff have been constructed at road crossings, and road shoulders have been graded to allow water to flow north toward the valley floor where it can percolate and aid groundwater recharge. In some areas, lined channels safely carry runoff down hillsides, preventing erosion by running water. Unlined channels allow runoff flow to percolate, decreasing the volume of storm water carried to the dry lakebeds north of the area.

Storm drainage facilities in the city consist of both natural and lined channels. In addition to allowing groundwater recharge, natural drainage channels can support significant biological communities. However, these unimproved channels can pose a threat to life and property due to the possibility of intermittent floods. A balance between resource protection and public safety must be achieved. Factors influencing decisions on drainage improvements include the cost of improvements and the availability of funding to implement them, land use regulations (low density zoning and lot coverage limits), and the potential of flood hazard areas for uses compatible with periodic flooding (recreation).

LAW ENFORCEMENT

The City of Palmdale receives police law enforcement services under contract with the Los Angeles County Sheriff's Department. The unincorporated areas surrounding the City receive law enforcement services from the Sheriff's Department and traffic enforcement services from the California Highway Patrol (CHP). Each agency provides backup for the other. An independent sheriff sub-station in Palmdale was established in early 1992. A new state-of-the-art sheriff's station, located in Palmdale on Sierra Highway and Avenue Q, opened to the public in July 2006.

FIRE PROTECTION AND PREVENTION

Fire protection services for Palmdale are provided by the Los Angeles County Fire Department. Fire protection services are financed through property tax assessments.

Stations 24, 37, 136, 114, 131, and station 93, the Battalion Headquarters at Massari Park are currently located within the Palmdale Planning Area. There are four additional stations (Station 84, 129, 92 and 117) that serve the outlying areas.

The Los Angeles County Fire Department also receives mutual aid from the U.S. Forest Service. As a part of the Los Angeles County Fire Department, all manpower and resources of the Department back up the fire stations in Palmdale. Fire protection needs in the Planning Area will be met by the entire department's resources, if needed, regardless of the number of firefighters and equipment stationed in the Palmdale area.

The fire prevention office located in Lancaster is responsible for reviewing new development applications and building permits to ensure that new construction projects adhere to fire code requirements. The State Responsibility Areas (SRA) land requirements for fire safety in construction include the use of fire-retardant materials, water storage tanks, fire hydrants, sprinkler systems, fire alarms, signage, defensible space, and fire escapes. Fire code requirements vary according to the type of use and construction materials employed. Additionally, fire protection requires a ready source of water for firefighting uses. Fire suppression water flow requirements are calculated together with domestic requirements, to ensure adequate availability of water to meet both domestic and emergency needs.

Staffs from individual fire stations within the area conduct onsite inspections of new construction, as well as annual inspections of existing structures, to ensure compliance with the fire code. Additionally, the fire protection office conducts information programs for the community on fire awareness and protection.

In order to adequately serve the growing population, additional fire stations will be required. New fire stations will be located in the areas with the greatest amount of development, as the need for additional fire service is determined by the Los Angeles County Fire Department. There is one fire station proposed for the Ritter Ranch area and a second station within the City Ranch area, along with fire suppression personnel and equipment. Future expansions of fire protection facilities will be coordinated with the Los Angeles County Fire Department.

ELECTRIC POWER

The Southern California Edison Company (SCE) provides electricity to the Antelope Valley, part of a service area that extends to Bishop on the north, Nevada on the east, Orange County on the south, and Santa Barbara on the west.

SCE provides electric service to 835 cities and communities. SCE serves 4.6 million customer accounts, including 285,000 commercial, industrial, and non-profit customers in these areas of central and Southern California.

NATURAL GAS

The Southern California Gas Company provides natural gas to most areas in Southern California, including the Antelope Valley. The City of Palmdale is within the boundaries of the Foothill distribution division and the North Basin transmission division; the company serves domestic and commercial uses in the Palmdale area.

SOLID WASTE DISPOSAL

Residential solid waste disposal in the City is provided through a franchise contract with Waste Management; the Antelope Valley Landfill is used (located at 1200 W. City Ranch Road in Palmdale). The franchise agreement sets residential pick-up rates and establishes standards for service.

SCHOOLS

The elementary school, high school, and college districts serving Palmdale are independent agencies, each governed by a Board of Trustees. The Palmdale School District, the East Side Union School District, the West Side Union School District, Lancaster School District, Keppel Union School District, Acton-Agua Dulce School District, the Antelope Valley Union High School District, and the Antelope Valley Community College District serve the Palmdale Planning Area.

The Palmdale School District serves the central developed core of the City. The district has more than 60 school sites, serving over 51,000 students.

HOSPITAL FACILITIES

The City of Palmdale is served by two large hospitals, Palmdale Regional Medical Center (PRMC) and the Antelope Valley Medical Center (AVMC).

Palmdale Regional Medical Center is located at 38600 Medical Center Drive in Palmdale and currently serves a 318 square mile area and has 184 beds with an additional 50 beds that will be added once the hospital's expansion project is completed. PRMC employs approximately 900 people, including 400 active medical staff.

Antelope Valley Medical Center is located at 1600 West Avenue J in Lancaster. It is a district facility serving a 1,586 square mile area and serves an average of 220,000 patients annually. AVMC has 383 beds with approximately 2,300 employees, 450 volunteers, and more than 650 physicians on staff.

THE CALIFORNIA STATE WATER PROJECT

An important factor affecting hazard mitigation planning in Palmdale is the location of the California Aqueduct which is immediately adjacent to the city.

The California State Water Project (SWP) is a water storage and delivery system of reservoirs, aqueducts, power plants, and pumping plants. Its main purpose is to store water and distribute it to twenty-nine (29) urban and agricultural water suppliers in Northern California, the San Francisco Bay Area, the San Joaquin Valley, the Central Coast, and Southern California. Of the contracted water supply, 70 percent goes to urban users and 30 percent goes to agricultural users.

Maintained and operated by the State Department of Water Resources (DWR), the SWP makes deliveries to two-thirds of California's population. Other purposes of the SWP are to improve water quality in the Sacramento-San Joaquin Delta, control Feather River floodwaters, provide recreation, and enhance fish and wildlife.

This significant State resource crosses the San Andreas Fault within the jurisdictional boundary of the City of Palmdale, just north of the DWR pumping station and reservoir and Highway 14. This choke point of critical resources is the poster child for vulnerability, and the assets at risk are significant to local and statewide interests.

SECTION TWO

PLANNING PROCESS

SECTION TWO – PLANNING PROCESS

Requirement §201.6(b): *In order to develop a more comprehensive approach to reducing the effects of natural disasters, the planning process* ***shall*** *include:*

(1) An opportunity for the public to comment on the plan during the drafting stage and prior to plan approval;

(2) An opportunity for neighboring communities, local and regional agencies involved in hazard mitigation activities, and agencies that have the authority to regulate development, as well as businesses, academia and other private and non-profit interests to be involved in the planning process; and

(3) Review and incorporation, if appropriate, of existing plans, studies, reports, and technical information.

Requirement §201.6I (1): *The plan* ***shall*** *document the planning process used to develop the plan, including how it was prepared, who was involved in the process, and how the public was involved.*

2.1 Overview of Planning Process

The City began the initial process in 2004 to prepare an LHMP. The first LHMP was adopted in 2009 and updated in 2016. The City released a Request For Proposals from qualified firms to update the LHMP on December 16, 2020. The Public Works Department had the responsibility for coordinating the LHMP development along with an outside consultant. The Steering Committee was comprised to oversee the planning process. A Local Hazard Mitigation Planning Task Force was formed to provide broad-based input from neighboring jurisdictions, private sector organizations, and other stakeholders. The role of the Task Force was to provide input at all stages of plan development, to recommend goals and objectives, to recommend mitigation priorities, and to review the draft plan at critical junctures.

The City of Palmdale's Steering Committee and Task Force reconvened to prepare the 2022 update for their LHMP. The Planning Process, outlined in the sections below, documents the changes to the planning process that have taken place since the 2004 inception of this LHMP and since the 2016 adoption of the updated LHMP. Significant updates to this LHMP include:

- New members and additional agencies/departments on the Mitigation Team;
- An online public survey (which replaced in-person meetings due to restrictions resulting from the COVID-19 pandemic);
- Modifications to identified hazards and hazard rankings, including pandemic as a new hazard and identifying how climate change may change the characteristics of existing hazards;
- Updated historical hazard information and GIS data included in hazard profiles;
- Updated asset inventory and replacement values included in the vulnerability assessment; and,
- Updated capabilities assessment, mitigation strategy and plan maintenance efforts.

The process of developing the City's LHMP can be divided into the following steps:

- **Step 1: Composition and Participation of the Planning Team (Steering Committee and Task Force)**
- **Step 2: Incorporate Existing Plans, and Coordinate with Planning Team**
- **Step 3: Engaging the Public**
- **Step 4: Identify Hazards, Assess Risks, and Identify Goals**
- **Step 5: Draft the Mitigation Action Plan**
- **Step 6: Adopt the Plan**
- **Step 7: Implement the Plan**

2.2 Composition and Participation of the Planning Team

A Steering Committee composed of City staff representing key City departments oversaw the planning process, provided a mechanism for coordination among city departments, provided technical and informational input into the LHMP, and developed recommendations for management and/or City Council approval. The following pages contain membership lists for the Local Hazard Mitigation Planning Steering Committee and Task Force. While the Departments and agencies still reside on the committees, the representatives from these departments have changed.

The LHMP Update steering committee kickoff meeting occurred on February 10, 2021. The attendees were able to review the departments that were involved in the original preparation and identified representatives from outsides agencies that could be invited to be members of the LHMP Update Task Force. Throughout the process the teams met to review the program and provide updates. The team also reviewed and provided input on the community survey, the list of identifying the hazards, asset inventory etc. The updated committee members for the 2022 update are as follows:

CITY OF PALMDALE LHMP STEERING COMMITTEE (AS OF 2021)

Finance:

Sharon Williams – Purchasing Agent

Angie Perez – Risk Management

Development Services: Planning/Engineering & Building & Safety:

Mark Berg – Acting Building Official

Bill Padilla – City Engineer

Megan Taggart – Planning Manager

Parks and Recreation:

Keri Smith –Director of Parks & Recreation

Neighborhood Services:

Mike Miller – Director of Neighborhood Services

Public Works:

Chuck Hefferman – Director of Public Works

Lynn Glidden – Deputy Director of Public Works

Nick Godin – Capital Improvement Program Manager

Jim Deyo – GIS Coordinator

Administrative Services:

J.J. Murphy – City Manager

John Mlynar – Public Information Officer

Community Partner LHMP Task Force (AS OF 2021)

CONTACT	AGENCY/INSTITUTION/COMPANY	EMAIL
Utilities		
Russell Saul	AT&T	rs3472@att.com
Caleb King	Level 3 Communications	caleb.king@level3.com
Robert Santos	Crown Castle Fiber	robert.santos@crowncastle.com
Sean Goodson	Crown Castle Fiber	sean.goodson@crowncastle.com
Lewis Odrozo	Frontier Communications	lewis.odrozo@ftr.com
Bob Rothgery	Charter Spectrum	bob.rothgery@charter.com
Tim Bruce	Southern California Gas	tbruce@semprautilities.com
Kevin Kuennen	Southern California Gas	kkuennen@semprautilities.com
Christopher Vidal	Palmdale Water District	cvidal@palmdalewater.org
Sean Douglass	Southern California Edison	sean.douglass@sce.com
Michael Bjorge	Southern California Edison	michael.bjorge@sce.com
Lindsay Gross	LA County Public Works (Water Works Division)	lgross@lapdw.org
Big Hua	LA County Public Works (Water Works Division)	bhua@lapdw.org
Fire/Police/Hospital		
Carmen Mackey	LA County Fire	cmackey@fire.lacounty.gov
Gerald Cosey	LA County Fire	gerald.cosey@fire.lacounty.gov
Tom Stuckey	LA County Fire	tom.stuckey@fire.lacounty.gov
Monique Mischeaux	California Highway Patrol	mmischeaux@chp.ca.gov
Kawika Feltman	Antelope Valley Hospital	david.feltman@avhosptial.org

Barbara Mariscal	American Red Cross	Barbara.mariscal2@redcross.org
School Districts		
Jan Mederma	Antelope Valley Union High School District	jmedema@avhsd.org
Julie Ferebee	Palmdale School District	jlferebee@palmdalesd.org
Nikki Skelton	Westside Union School District	n.skelton@westside.k12.ca.us
Yolanda McCauley	Acton-Agua Dulce School District	ymccauley@aadusd.k12.ca.us
Shannon Robinson	East Side Union School District	srobinson@eastsideusd.org
Kathleen Sanchez	Keppel Union School District	kasanchez@keppel.k12.ca.us
Penny Baker	Lancaster School District	bakerp@lancsd.org

SCHEDULE OF STEERING COMMITTEE MEETINGS

The Steering Committee conducted weekly video conference meetings during the first two months of coordination, then bi-weekly, starting at the end of April, and moved primarily to email communications during the drafting period of the LHMP update. The list below outlines steering committee meeting dates and topics:

- February 10, 2021: Kick-off meeting with staff
- February 17, 2021: Update to Steering Committee and Task Force contacts
- February 24,2021: Request for related City documents, and style templates
- March 3, 2021: Review of article for posting in the Antelope Valley Times
- March 10, 2021: Review of draft Public Survey
- March 17, 2021: Discussion to introduce LHMP at Council hearing in April
- March 24, 2021: Discuss critical facilities
- April 7, 2021: Discuss preparation of magazine article
- April 14, 2021: Review of Power Point presentation for Council meeting
- April 21, 2021: Review of census tracts to use for HAZUS report
- May 5, 2021: Discuss coordination of Task Force questions and outreach via email due COVID-19
- May 19, 2021: Discussion of FEMA Review Tool crosswalk and review of meeting with General Plan update consultants

- June 2, 2021: Discuss current CIP and other plan documents
- June 16, 2021: Discuss survey results
- June 30, 2021: Discuss update to hazard maps
- July 7, 2021: Update to scheduled timeline for completion and adoption of LHMP
- July 14, 2021: Review of existing mitigation actions and plan to update
- July 28, 2021: Additional review of mitigation action updates
- August 11, 2021: Discuss City comments on draft LHMP and preparation for public review

2.3 Review and Incorporation of Existing Plans, Studies, and Technical Information

The planning process began with a review of existing literature on risk assessment, hazard identification, and mitigation planning. This included, but was not limited to, material produced by FEMA and OES.

FEMA

Getting Started: Building Support for Mitigation Planning; Understanding Your Risks: Identifying Hazards and Estimating Losses; Developing the Mitigation Plan: Identifying Mitigation Actions and Implementation Strategies

OES

Disaster Recovery and Mitigation Handbook

FEMA guidebooks provided direction to the planning process, helped in assessing risks and vulnerabilities, and served as templates for developing the initial LHMP and updates to the LHMP. In addition, the requirements of the National Incident Management System (NIMS) and the California Standardized Emergency Management System (SEMS) were reviewed in the light of the mitigation planning process. Federal, county, and state agency produced fire, earthquake, and flood histories and projections were reviewed. Other pertinent literature on natural hazards and a diverse group of websites were reviewed for historical hazard data and vulnerability assessments.

The “Crosswalk” reference document developed by FEMA for the review and approval of local mitigation plans was used to ensure that the City of Palmdale LHMP included all of the required elements. Current hazard mitigation activities were identified and evaluated by the Planning Team. The evaluation of current activities allowed those activities to be reviewed in relation to the City’s hazard risk assessment, which in turn, identified those hazards that required additional or initial mitigation activities. Mitigation options for each hazard were then identified, analyzed, and prioritized. These options or alternatives became the core of the City’s action plan.

Ongoing Hazard Planning

Since its incorporation, the City of Palmdale has taken an aggressive approach to identify and mitigate natural and human caused hazards. There are several local ordinances which affect or promote disaster mitigation, preparedness, response, and recovery. Specifically, there are ordinances that govern development in hazard prone areas that specify mitigation measures to be taken during and after land development activities.

Palmdale is currently undertaking an update to the General Plan and the update efforts for both the General Plan and LHMP have been coordinated to ensure the inclusion of safety measures and hazard mitigation that are consistent across these guiding documents.

The City also adopted a detailed Emergency Operations Plan in 2012 for response to various emergency and disaster situations. The Emergency Operations Plan was developed in coordination with Los Angeles County Sheriff and Fire departments, which provide public safety services in Palmdale, under contract with the City and refers to the Palmdale LHMP that was adopted in 2009 for the purpose of identifying threats to the community. When the EOP is next updated, it will be revised to reference the most recently adopted LHMP.

These documents were a rich source of information, data, goals and policies, and were utilized extensively in the preparation of the LHMP. Some of the Mitigation Actions identified in Section 4 of this LHMP are drawn from the Master Drainage Plan and the Ten-Year Capital Improvement Plan. In addition, various other information sources were used for information during plan development. The following is a partial list of information sources used:

- City of Palmdale General Plan 1993 (Comprehensive General Plan 2045 Update in process with tentative adoption in spring of 2022)
- Drainage Master Plan (adopted in 1996)
- Emergency Operations Plan
- County of Los Angeles All Hazard Mitigation Plan (2019)
- City of Palmdale Hazardous Waste Plan
- 10-year Capital Improvement Plan (CIP) (adopted in 2018)
- 1996 Hazard Threat Analysis (1996)
- State of California Multi-hazard Mitigation Plan (2018)

Hazard mitigation plans for current or proposed land development activities are reflected in the City of Palmdale specific plans. A total of 12 approved specific plans are currently active, ranging from plans recently “built out” to those still in pre-development stages. By use of the specific plan process the City has been able to ensure that potential hazards are identified, and mitigation measures are in place prior to granting entitlements. **Table 3.5** lists the Specific Plans, and the mitigation measures they incorporate.

In addition, hazard mitigation plans developed by other agencies including Southern California Edison, Los Angeles County Fire Department and Los Angeles County Sheriff’s Department are included by reference.

2.4 Public and Stakeholder Involvement

The following outlines the schedule to involve the public and other stakeholders into the LHMP Update process:

- The steering committee agreed upon a planning process/public outreach method. A public outreach online survey would be used for the 2022 update. A review process of this survey was undertaken and comments and/or changes were subsequently made.
- The committee also reviewed the hazards listed in the 2016 document and added pandemic to the list of hazards.
- An article was posted in the Antelope Valley Times on March 26, 2021, highlighting the LHMP and providing information and a link to the LHMP survey, which was provided in English and Spanish.
- A public meeting to introduce the LHMP to the City Council was held on April 20, 2021. No members of the public attended the meeting. The presentation was given by City staff and Interwest Consulting Group staff, which resulted in a discussion about Palmdale's proximity to the San Andreas Fault Line, drought, fires, and evacuation planning. (See Appendix B).
- Email correspondence with Task Force agency members began in the last week of March with correspondence continuing through July of 2021.
- An article was published in the Antelope Valley Times on March 26, 2021, announcing the close of the public survey on May 31, 2021. In total, 554 surveys were completed in English and 16 surveys were completed in Spanish.

ONLINE PUBLIC SURVEY

To better understand the community's understanding and concerns regarding natural hazards and local response, the City solicited input from the community in the form of an online survey to determine:

- How the community prioritizes hazards facing the City of Palmdale.
- Actions the City and community can take to reduce future damage from natural hazards.
- How local government officials can better communicate natural hazard risks to the public.

The survey included 12 questions and a comment section created to identify the respondent's connection with City of Palmdale, familiarity with previous natural hazard events, preparedness for future natural hazards, and opportunities to create a community more resilient to natural hazards.

To ensure the community had ample opportunities to provide input, the City promoted the survey using the following methods:

- City website – The City placed a link to the survey in a prominent location on the City's website homepage, ensuring all website visitors were aware of the opportunity.
- Press Release – The City distributed a press release initiating participation in the survey and a public meeting. Social Media post including a brief video from the Palmdale

Minute with information about the LHMP survey. Two additional press releases announced the one month count down to the end of the survey, and the final winner of the gift card following the end of the survey.

- A City Council presentation introducing the Local Hazard Mitigation and the importance of maintaining an up-to-date version of this LHMP. The presentation included information about the survey.
- Email to all City employees – An email reminder was sent to all City employees encouraging them to participate in the survey and to share the survey with other interested parties.
- Hard Copy surveys – The City provided paper (hard) copies of the survey at counters of City department offices including City Hall.

Outreach materials used to promote the public survey can be found in Appendix B.

RESULTS

The following summary highlights the key responses and findings of the survey. These survey results help to inform staff of community concerns.

COMMUNITY INTEREST

The City received responses to the survey from 570 individuals (554 in English, and 16 in Spanish). The community outreach effort for this LHMP update was much more successful than the previous efforts to engage the community. The previous update only received 37 responses, most of which were employees of the City and other local government agencies.

More than 80% of survey respondents indicated they lived and/or worked in the city, compared to only 16.7% of local respondents from the previous update, providing a much better representation of the concerns of Palmdale residents.

LEVEL OF CONCERN

Respondents were asked to review the city's likely natural hazards and rate their level of concern on a scale from not concerned, not very concerned, neutral, somewhat concerned, to very concerned, for each local hazard. While there was not much difference between respondents, most indicated the highest levels of concern regarding earthquakes, wildland brushfires, power/utility failure, and pandemic which may have been temporarily inflated due to the fact that the worldwide COVID-19 pandemic was still ongoing at the time the survey was released. Lowest levels of concern include flood, dam failure and inundation hazards, and transportation accident/hazardous materials spills.

ACTIONS TO PREPARE

The results of the survey indicate that many respondents have taken actions to reduce damage from a local hazard. Approximately 70% of respondents have prepared for local hazards by talking with family members about what to do in case of a disaster or emergency, purchasing homeowners/renters' insurance, preparing a "Disaster Supply Kit" (extra food, water, batteries,

medications, first aid, etc.), or developing a "Household/Family Emergency Plan in order to decide what everyone would do in the event of a disaster.

Far fewer respondents had purchased flood insurance, floodproofed their place of residence, installed retrofits such as high impact windows or doors, or fire-resistant siding, roofing, or window screens, attended meetings or received written information on natural disaster or emergency preparedness.

LOCAL GOVERNMENT EFFORTS TO REDUCE HAZARDS

Respondents were asked to provide input as to the most important things the local government can do to help the community be more prepared for a disaster by ranking them as very important somewhat important, neutral, not very important or not important. Those efforts include:

- Protecting private property
- Protecting critical facilities (hospitals, fire stations, etc.)
- Preventing development in hazard areas
- Protecting the natural environment
- Protecting historical/cultural landmarks, museums, etc.
- Promoting cooperation among public and private organizations and citizens
- Protecting and reducing damage to utilities
- Strengthening emergency services (police, fire, ambulance)
- Protecting major employers
- Protecting small businesses
- Protecting K-12 schools
- Protecting Colleges/Universities

Very few participants found any of these efforts to be not important or not very important. Respondents ranked protecting critical facilities as the most important priority for local government, followed by protecting private property, strengthening emergency services, protecting K-12 schools, protecting small business, protecting and reducing damage to utilities, protecting the natural environment, protecting colleges and universities, promoting cooperation among public and private organizations and citizens, protecting historical/cultural land marks, preventing development in hazard areas, and lastly, protecting major employers.

COMMUNITY ASSETS

Respondents were asked to determine the importance of protecting the following community assets for planning for local hazards. Below depicts the community's priorities ranked from very important, somewhat important, neutral, not very important, or not important:

- Human: Loss of life and/or injuries

- Infrastructure: Damage or loss of bridges, utilities, schools, etc.
- Governance: Ability to maintain order and/or provide public amenities and services
- Economic: Business closures and/or job losses
- Environmental: Damage or loss of forests, rangeland, waterways, etc.
- Cultural Historic: Damage or loss of libraries, museums, fairgrounds, etc.

Respondents prioritized human life as the most important community asset, followed by infrastructure, governance, economic interests, environment, and cultural-historic assets.

OVERVIEW

In reviewing the 570 survey responses from the community, several preliminary themes or opportunities have been identified below:

Actions to Prepare

While many members of the community have taken small actions to prevent damage to their home in the event of a natural hazard, only a small portion have completed larger structural items to prevent damage. The City may consider developing and implementing programs to support risk reduction activities by property owners. Using the data available as a result of the risk assessment in this LHMP, the City is able to identify areas and structures with a higher risk or exposure to the identified hazards.

Awareness of Neighbor Needs

Neighborhood events such as the annual community block parties are an opportunity for the City to support greater community interaction which can increase awareness of neighbors needs in the event of an emergency.

Community or Workplace Awareness

In many cases, respondents were unaware or unsure of the hazards that may affect the community or their workplace and policies that may be in place to help respond to a natural disaster. The City can help to increase community awareness through wider promotion or participation in workshops or resources available to the community that have already been prepared by the City or volunteer organizations. The City may increase business owners' awareness of risk by providing emergency planning support, continuity of operations planning support, and potentially hosting seminars for the business community to learn about the hazard risks.

PUBLIC REVIEW PERIOD

The draft 2022 LHMP was released for public review from November 1 to November 30, 2021. The release of the public draft LHMP was promoted through a variety of means including:

- Press Release to local media
- City of Palmdale Website
- Facebook pages of the City of Palmdale

- Hard copy at City Facilities

The public review period of the draft LHMP concluded in November 2021. The public, and City staff provided comments and questions on the draft LHMP. No comments were received from the public, stakeholders, neighboring communities, or local and regional agencies. Because no comments were received during the public review period, the survey was the primary resource for incorporation of public feedback into the prioritization of mitigation actions.

2.5 Local Capabilities and Resources

Various City departments, state and county agencies, local public and private utilities, and other service providers have designated technical staff to assist in plan development by providing information, reviewing technical drafts, and serving on the Local Hazard Mitigation Planning Task Force. In addition, the City obtained the services of an experienced technical consultant to provide support throughout the mitigation planning process.

The technical resources that can be used in Palmdale's overall mitigation effort include several types of equipment, GIS and other software, and most importantly, personnel. Several staff have been trained and/or certified in mitigation concepts, firefighting, hazardous materials response and containment, first aid, CPR, and emergency management. Individual staff members have backgrounds in land development, land use planning, land management, environmental planning, risk management, security, facilities operations, and grant writing.

Table 2.1 shows the technical and administrative capacity that the City of Palmdale can bring to bear on the planning, development, implementation, and management of mitigation actions/projects. Many mitigation projects are listed in the City of Palmdale's 10-year Capital Improvement Project which is updated annually.

Table 2.1 – Technical and Administrative Capabilities

Resource	Staff	Consultant/Contractor
Planner(s) or engineer(s) with knowledge of land development and land management practices	√	
Professionals trained in construction practices related to buildings and/or infrastructure	√	
Professionals trained in facilities management and operations	√	
Planner(s) or engineer(s) with an understanding of natural and/or manmade hazards	√	√
Planner(s) or engineer(s) with experience developing and managing mitigation projects and/or recovery projects	√	√
Environmental Planner		√
Professionals trained in assessing and/or mitigating against man-made hazards; professionals with risk assessment expertise	√	√

Construction project managers	√	As needed
Fiscal and Budget Management	√	
Personnel with GIS expertise	√	As needed
Grant Writer	√	√
Administrative & Operational Support	√	

Financial support for Palmdale's mitigation activities is available from both FEMA and OES. There are several local financial resources that are also potentially available for implementation of proposed mitigation projects. Those sources include, but are not limited to:

- Gas Tax
- Propositions A & C Funds
- Traffic Impact Funds
- Amargosa Drainage Plan Fund
- Anaverde Drainage Plan Fund
- Portal Ridge Drainage Plan Fund
- Pearland Drainage Plan Fund
- City's General Funds
- Public Facility Funds
- Federal Grants

For charts reflecting the City of Palmdale's organizational structure, reference **Appendix A**.

SECTION THREE

RISK ASSESSMENT

SECTION THREE – RISK ASSESSMENT

3.1 Risk Assessment Process

INTRODUCTION

As indicated previously, the LHMP process includes four broad tasks:

- **Organize Resources**
- **Assess Risks**
- **Develop LHMP**
- **Implement the LHMP and Monitor Progress**

A risk assessment requires the collection and analysis of hazard-related data, allowing local communities to identify and prioritize appropriate mitigation actions that will reduce losses from potential hazards. The information gathered during the process can serve as a basis for emergency management planning, as a justification for preparedness related expenditures, and as a foundation for mitigation actions and recovery policy decisions. The data from the risk assessment is the framework that the City of Palmdale will use to develop and prioritize mitigation strategies and actions, in the hope of reducing risk and vulnerability from future hazard events.

The risk assessment process followed the methodology described in the FEMA publication "*Understanding Your Risks – Identifying Hazards and Estimating Losses,"* and it was based on a five-step process:

- Identifying Hazards
- Profiling Hazards
- Inventorying Assets
- Assessing Vulnerability/Estimating Losses
- Analyzing Development Trends

3.2 Inventorying Assets

CITY-OWNED ASSETS

Developing a meaningful risk assessment requires developing an inventory of the number and value of city-owned assets. With this information, the City can establish priorities for hazard mitigation actions and determine the best courses of action to protect city-owned resources. It is also necessary to identify all city-owned resources in order to determine which facilities may be at risk from various hazards.

Arriving at appropriate asset values is not just simply determining value. Since many structures may have been built or acquired several years ago, it is important to determine the replacement values for structures that could be destroyed or damaged in the event of a natural or human-caused disaster. In addition to replacement values, the value of contents must also be estimated.

Lastly, should a facility require replacement or major repairs, the cost of temporary space and/or buildings must also be factored into the total cost.

As part of developing the LHMP, City staff conducted a complete inventory of city-owned facilities and developed estimates of replacement value, contents, and displacement costs. Estimated replacement values are based on appraisals, historic and current construction costs, current and estimated costs of new facilities, and insured values. The completed 2021 asset inventory appears as **Table 3.1** on the following page.

PRIVATELY-OWNED ASSETS

A complete inventory and detailed cost analysis of all privately-owned structures and facilities in the City of Palmdale area are beyond the scope of this LHMP. However, based on generally available data, “order of magnitude” estimates are possible. To estimate the potential losses to private property associated with earthquake events, a computer model called HAZUS, which was developed by the Federal Emergency Management Administration, was utilized. This model estimates losses to infrastructure and public and private structures, which are discussed later in this section. A detailed HAZUS report is included as Appendix C.

Table 3.1 City of Palmdale Facility Asset Values

Category & Asset	Total Value
Civic Center	
City Hall- Administration	$2,298,429
Civic Center Park	$62,068
Community Programs and Human Resources	$1,620,709
Computer Equipment	$7,811,035
Cultural Center	$6,253,108
Development Services Building	$10,903,201
Former Public Safety Office	$1,778,785
Library	$6,691,176
Parks & Rec Building	$963,256
Rental Properties (Chambers of Commerce)	$351,252
Senior Center - Legacy Commons	$4,138,663
Traffic Operations Center	$2,087,635
Public Works	
City Infrastructure	$11,972,192
Maintenance Yard	$4,538,602
Transit Infrastructure	$1,987,570
Parks	
Anaverde	$108,690
Arnie Quinonez	$108,690
Courson	$4,825,596
Desert Sands	$2,368,028
Domenic Massari	$644,214
Dry Town	$17,160,820
Foothill	$136,198
Joe Davies Heritage Airpark	$5,874,687
Joshua Hills	$108,690
Manzanita	$136,198
Marie Kerr	$13,275,336
McAdams	$896,596
Pelona Vista	$859,821
Yellen	$103,447
Misc	
Airport Terminal Building	$1,372,482
Boulders at the Lake	$1,629,610
Boulders at the Ranch	$2,308,707
Boulders at the Ranch II	$1,065,109
Hammack Activity Center	$6,101,376
Misc Resources	$13,520,432
Palmdale Playhouse	$3,169,455
Public Art	$150,586
Records Center - Storage	$139,487
SAVES Building	$2,024,924
Storage	$4,705,383
Work Source Consortium	$3,692,296
Rentals	
Apartments	$10,391,245
Single-Family Homes	$1,702,123
Neighborhood Houses	
Gabriel's House	$171,062
Manzanita House	$171,062
Neighborhood House #2	$192,596
Yucca	$355,905
Total:	**$162,928,532**

Working with City staff, the Task Force developed an inventory of critical infrastructure and facilities. Critical infrastructure and facilities fall into two categories: (1) facilities and infrastructure required to respond and recover from a natural or human-caused disaster, including fire and police stations, hospitals, evacuation centers, etc., and (2) infrastructure/facilities that deserve special attention. This category of infrastructure includes such things as the California Aqueduct, Palmdale Airport/Plant 42, gas pipelines, and high-voltage electrical transmission lines.

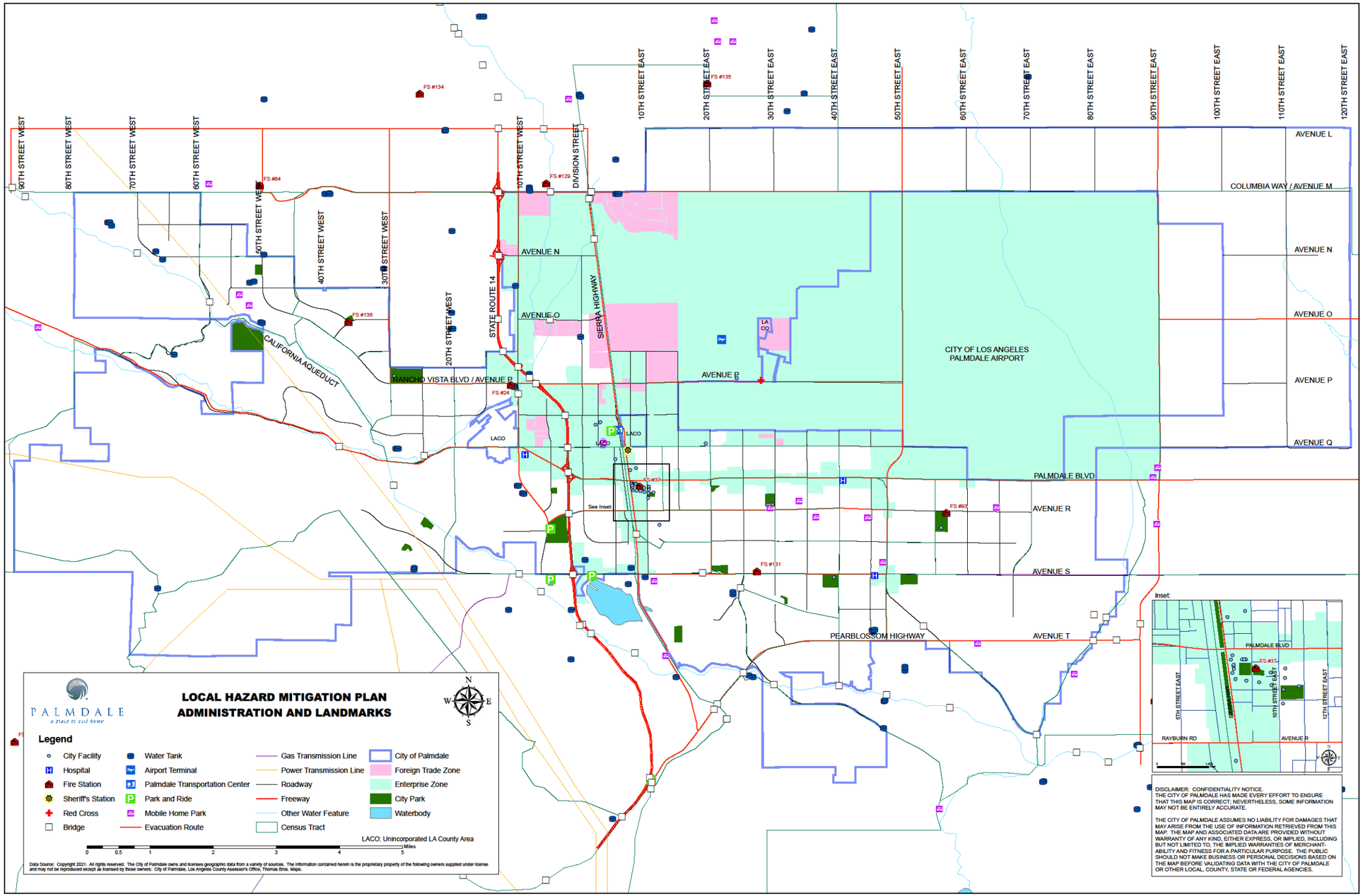
The purpose of identifying critical infrastructure and facilities is to note those community assets that are threatened by specific hazards and should receive priority in the implementation of mitigation measures. Critical infrastructure identified by the Task Force includes:

Table 3.2 City of Palmdale Critical Infrastructure

Category #1 (Facilities and infrastructure required to respond and recover from a natural or human-caused disaster)	**Category #2** (Infrastructure/facilities that deserve special attention)
• City of Palmdale Sheriff Department & substations • City of Palmdale Fire Departments/Stations (5) • Kaiser Permanent Urgent Care Facility • Palmdale Regional Medical Center • City of Palmdale EOC (Administration, Development Services buildings, Marie Kerr Recreation Center)	• California Aqueduct • Palmdale Plant 42 • Palmdale Airport • High Pressure Gas Line along Avenue S (From 14 Freeway to 47th Street East) • Edwards Air Force Base • Palmdale Water District- water storage tanks, water treatment plants

The locations of critical infrastructure are identified on the following **Map 3.1"Administration and Landmarks"**, created by the City of Palmdale's GIS Section.

Map 3.1 City of Palmdale Administration and Landmarks



3.3 Assessing Vulnerability & Estimating Potential Losses

Requirement §201.6(c)(2)(ii):

*[The risk assessment **shall** include a] description of the jurisdiction's vulnerability to the hazards described in paragraph(c)(2)(i) of this section. This description **shall** include an overall summary of each hazard and its impact on the community.*

Requirement §201.6(c)(2)(ii)(A):

*The plan **should** describe vulnerability in terms of the types and numbers of existing and future buildings, infrastructure, and critical facilities located in the identified hazard area ….*

Requirement §201.6(c)(2)(ii)(B):

*[The plan **should** describe vulnerability in terms of an] estimate of the potential dollar losses to vulnerable structures identified in paragraph (c)(2)(i)(A) of this section and a description of the methodology used to prepare the estimate ….*

RequiremI§201.6(c)(2)(ii)(C):

*[The plan **should** describe vulnerability in terms of] providing a general description of land uses and development trends within the community so that mitigation options can be considered in future land decisions….*

OVERVIEW

This section includes: 1) a description of the City's critical and essential facilities and infrastructure and 2) an estimate of the potential dollar losses to vulnerable structures. Hazard-specific vulnerability assessments and estimates of potential losses are provided in **Section 3.6**.

KEY ASSETS – CRITICAL AND ESSENTIAL FACILITIES AND INFRASTRUCTURE

The 2016 LHMP update included the addition of clearly identified critical and essential facilities. With the 2022 update, the Steering Committee reviewed, confirmed, or updated those key assets in consultation with the City's Risk Manager. **Table 3.4** provides an updated list of Key Assets. The replacement value is the insured amount of the asset, including contents. These represent the total potential loss value for each facility. This list of assets and replacement values will be reviewed and updated as necessary during the next LHMP update.

Some assets are relied upon as part of critical response activities, while others are considered essential to the operations and viability of the City. Those which are part of critical response activities as identified by the City's Emergency Operations Plan and GIS mapping of critical services are denoted as critical in the following table. The remaining assets are identified as essential. This designation prioritizes critical assets over essential assets for risk reduction and resiliency measures, while acknowledging that all of these assets are important to the City of Palmdale.

Table 3.3 – Critical and Essential Facilities

FACILITY	ADDRESS	PRIORITY
Civic		
City Hall	38300 Sierra Highway	Critical
Administration	Suite A	Critical
City Clerk, Finance, Council Chamber	Suites B, C, D	Critical
Computer Services	Suite D	Critical
Human Resources & LACO Fire Inspection	823 Avenue Q-9 A & B	Essential
Development Services Building	38250 Sierra Highway	Critical
Legacy Commons (Senior Center)	930 Avenue Q-9	Critical
Public Works Maintenance Facility	39110 3rd Street East	Essential
Work Source Center	38510 Sierra Highway	Essential
Main Library	700 East Palmdale Boulevard	Essential
Hospitals		
Palmdale Regional	38600 Medical Way	Critical
Police/Fire		
LA County Sheriff		Critical
LA County Fire Stations		Critical
Infrastructure		
Palmdale Transportation Center	39000 Clock Tower Plaza Drive	Critical
Metrolink, UPRR Railroad		Essential
Evacuation Route Roads		Critical
State Highway 14 & 138		Critical
Other City-Owned Roads		Essential
Fiber Optic Network		Essential
High Pressure Gas Line along Avenue S	SR 14to 47th East	Critical
Palmdale Plant 42		Essential
Littlerock Dam		Essential
Lake Palmdale		Essential
Community		
Pelona Vista Park	37800 Tierra Subida Avenue	Essential
Marie Kerr Park-Recreation Center	2723 Rancho Vista Boulevard	Critical
Oasis Park Recreation Center	3850-A Avenue S	Essential
Dry Town Park	3850-E Avenue S	Essential
SAVES Building	1002 Avenue Q-12	Essential
Desert Sands Recreational Building	39117 3rd Street East	Essential
Chimbole Cultural Center	38350 Sierra Highway	Essential
Red Cross Facility	2715E Avenue P	Essential
Potable Water/Waste Water		
Pelona Vista Park Sewer Pump Station	37720 Tierra Subida Avenue	Essential
Sewer System Infrastructure		Essential
Storm Drain Systems		Essential
Water System Infrastructure		Essential
Palmdale Water District Storage Tank, Water Treatment Plants		Essential
Schools		
Palmdale High School	2137 E Avenue R	Essential
Palmtree Elementary	326 E Avenue R	Essential
Tumbleweed Elementary	1100 East Avenue R-4	Essential
Desert Rose Elementary	37730 27th Street East	Essential
Mesquite Elementary	37622 33rd Street East	Essential
Manzanita Elementary	38620 33rd Street East	Essential
Highland High School	39055 25th Street West	Essential
Summerwind	39360 Summerwind	Essential
Ocotillo	38737 Ocotillo School Drive	Essential
Joshua Hills	3030 Fairfield Avenue	Essential
Barrel Springs	3636 Ponderosa Way	Essential
Cimmaron	36940 45th Street East	Essential
Buena Vista	37005 Hillcrest Drive	Essential

Table 3.4 Risk Assessment Summary

Summary of Key Assets Located in Known Hazard Areas

Asset Name/Key Infrastructure	Priority	Earthquake	Liquefaction – very low probability	Wildland Fire	Flood/Dam Failure
SR 14	Critical	X			
City Park a–d Rides (3 - close proximity)	Essential	X		X	
Water tanks (approx. 6)	Critical	X			
All City Facilities – Map 3.10	Critical	X			
Palmdale Transportation Ctr	Critical	X			X
Railroad – 2 miles	Critical	X			X
Civic Center Area	Critical/ Essential	X			X
5 Fire Stations	Critical	X		X	X
Red Cross Building	Essential	X			X
Palmdale Highschool	Essential	X			X
Desert Rose Elementary	Essential	X			X
Mesquite Elementary	Essential	X			X
Manzanita Elementary	Essential	X			X
Essential Roads (10 miles)	Essential	X			X
Highland Highschool	Essential	X		X	
Summerwind	Essential	X		X	
Ocotillo	Essential	X		X	
Anaverde	Essential	X		X	
Palmtree	Essential	X		X	
Joshua Hill	Essential	X		X	
Barrel Springs	Essential	X		X	
Buena Vista	Essential	X		X	
Cimarron	Essential	X		X	

Tumbleweed	Essential	X		X	
Marie Kerr Park – Recreation Facility (EOC)	Critical	X		X	
Pelona Vista Park	Essential	X		X	

VULNERABILITY ASSESSMENT METHODOLOGY

The City's key assets were overlaid with the known hazard areas using GIS to determine which assets are located within each hazard area. Staff reviewed the overlay of key assets from a visual analysis and since it was a manual process these overlay maps were not created. GIS data used to compile and map the City's key assets were collected from the City's Geographic Information Services group. This department also provided hazard area data for wildfire and flood. Hazard area and key asset overlays were conducted for earthquake, liquefaction, wildfire, flood, and landslide. Key assets vulnerable to various hazards are presented in **Table 3.3.** Available replacement values for the key assets that fall within a hazard area are tallied in **Table 3.4** to provide the total estimated potential losses to each hazard. Please note that the actual losses will depend on the type and extent of the hazard event.

Adverse weather has the potential to affect the entire city. Drought, freeze, and fog do not inflict physical damage on the City's key assets; however, windstorms, hail, tornadoes, and thunderstorms can pose a threat, and, therefore, all facilities listed in **Table 3.3** could potentially be susceptible to damage from these hazard events. The City maintains a map of facilities that store hazardous materials as well as hazardous substance facilities and is able to use GIS to evaluate the key assets located in close proximity to these facilities to determine their vulnerability. For security, the map and specific facilities at risk to hazardous material spills are not presented in this LHMP.

3.4 Analyzing Development Trends

Requirement §201.6(c)(2)(ii)(C):

*[The plan **should** describe vulnerability in terms of] providing a general description of land uses and development trends within the community so that mitigation options can be considered in future land use decisions.*

The vulnerability analysis should include a general assessment of the development trends for a community. Prior development patterns should be assessed in the light of historic hazard events. This allows the identification of problematic zoning or land-use planning decisions. Current zoning or land-use plans can be overlain with the hazard profile maps developed earlier in the planning process, to identify future areas of hazard exposure. Possible changes or revisions to the zoning and land-use plans can then be recommended to mitigate against development of potentially dangerous or hazard prone areas" See **Map" 3.2** "Land Use" and **3.3** "Zoning" for current City of Palmdale information.

THE GENERAL PLAN

California Law requires each city to adopt a general plan for the physical development of the city and the surrounding planning area. The General Plan expresses the community's goals and embodies public policy relative to the distribution of future land uses. The general plan must contain nine mandatory elements -- land use, housing, circulation, conservation, open space, noise, safety, air quality, and environmental justice.

The City's General Plan has been periodically updated so that it is current with emerging trends and issues and was last comprehensively updated in 1993. Palmdale is in the process of updating the General Plan and expects to complete the update in 2022.

The goal of the General Plan Safety Element is to reduce the potential risk of death, injuries, property damage, and economic and social dislocation resulting from hazards such as fires, floods, earthquakes, and landslides. The Safety Element addresses fire safety standards, evacuation routes, water supplies, and clearance around structures. The Safety Element of the City of Palmdale General Plan includes specific policies designed to promote land use patterns and development in a manner that minimizes hazard threats. The General Plan policies address developed land, redevelopment areas, and new development.

Areas subject to inundation and/or flood hazards are shown in the City's General Plan. Prior to approval of any development application in these areas, a detailed hydrology report is required. It must detail the project specific flood hazard mitigation requirements. In most cases, drainage control facilities such as debris/detention basins, concrete, or earthen channels, bioswales and culverts, pipes and street gutters, are incorporated into projects. This infrastructure is meant to safely convey stormwater flows generated by a 25-year storm through developed areas and into natural drainages and creek channels. In some areas, natural channels are designated as open space and left undeveloped, or they are developed with uses, which are minimally affected by inundation such as sand and gravel quarries. These open areas allow storm flows to pass through Palmdale to dry lakebeds to the north without causing substantial damage to life or property.

In addition, the Land Use Element of the General Plan promotes infill developments. Implementation of this policy could foster a more continuous and cohesive pattern of urban development within the City core area.

The General Plan land use map, which includes Specific Plans, has taken into account flood hazard areas and development types and densities are specified as described above. The City is committed in providing continual updates to the flood control facilities to provide a high level of safety.

SPECIFIC PLANS

A significant portion of new development planned in the City of Palmdale will occur in areas within or adjacent to "Very High Threat" and "Extreme Threat" wildland fire hazard areas. The City has taken a number of steps to mitigate the hazards associated with development in these areas.

The primary tool utilized by the City to ensure that appropriate mitigation measures are identified and implemented is the Specific Plan Process. The City has utilized this process almost exclusively

to guide and control the development of large tracts of land. Under this process, the developer is required to perform an in-depth analysis of potential hazards and to develop and implement mitigation measures to reduce the threats of property damage, injury, and loss of life. A review of the planning and environmental documents related to these specific plans indicates that the City and developers have taken care to identify hazard areas and to plan/implement appropriate mitigation measures. Among the mitigation measures adopted are:

- Community design, i.e., locating vulnerable development outside hazard areas
- Fire-resistant landscaping
- Building and density restrictions
- Building material specifications
- Buffer zones

Development within the City has dispersed residential neighborhoods over a wide area, leaving vacant areas surrounded by new development. This scattered development pattern makes efficient use of the regional infrastructure difficult and increases costs of serving each unit. The City's General Plan encourages infill development that utilizes existing infrastructure and discourages continued leapfrog development away from the City center into outlying rural areas. Development pressures to urbanize in rural areas are expected to continue, due to lower land costs in these areas. The City's view is that development should support itself, with no negative impact upon services being provided to existing City residents. The policies under this objective should apply to long-term maintenance and operation of public facilities, as well as to capital costs.

A total of 12 approved specific plans are currently active, ranging from plans recently “built out” to those still in pre-development stages. By use of the specific plan process the City has been able to ensure that potential hazards are identified and mitigation measures in place prior to granting entitlements. **Table 3.5** lists each of the approved specific plans and identifies the hazards applicable to that plan as well as required mitigation measures.

Table 3.5 - Hazard Mitigation for Future Development of Specific Plans

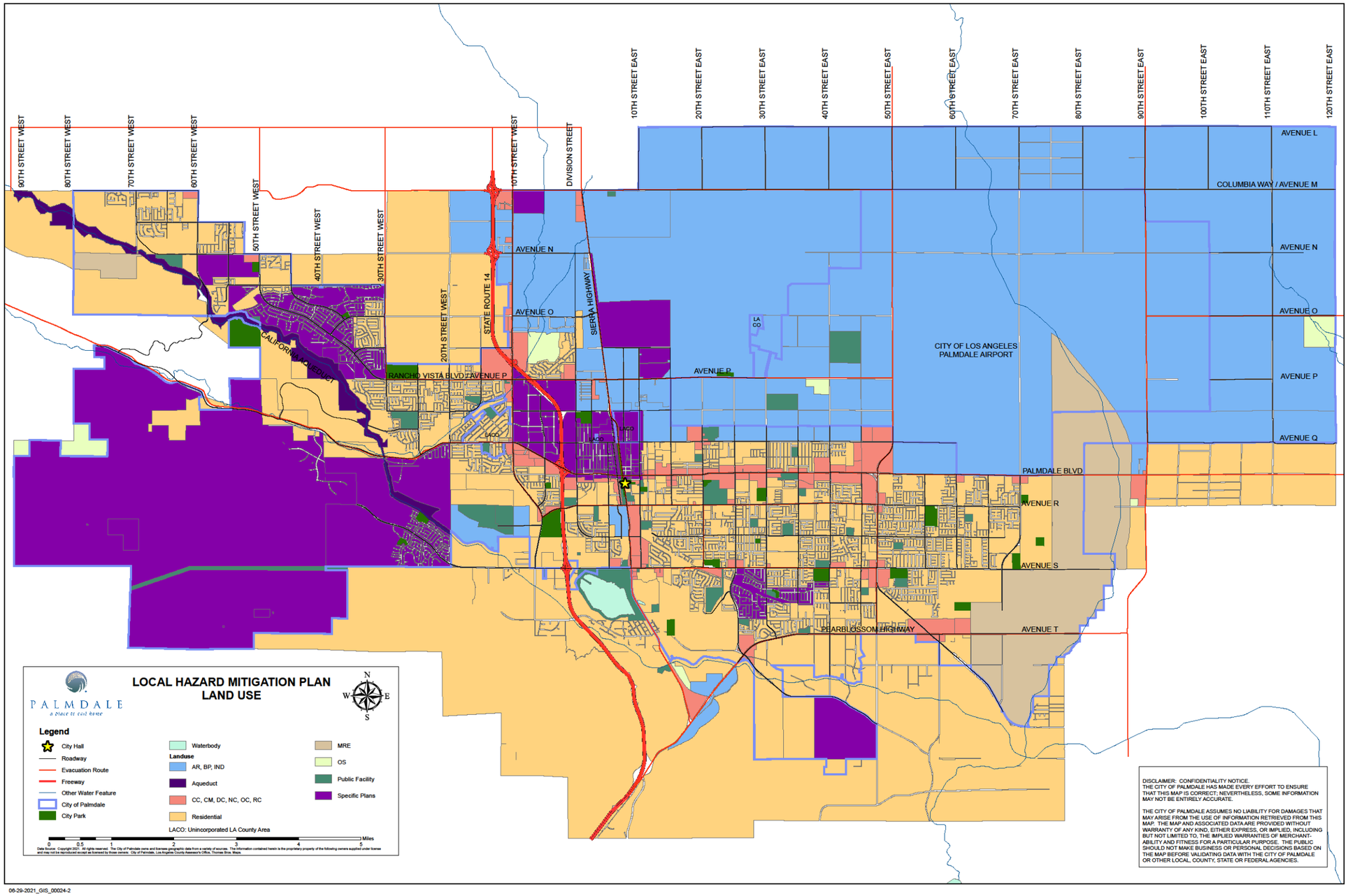
HAZARD MITIGATION FOR FUTURE DEVELOPMENT City of Palmdale Specific Plans				
Specific Plan	**Location**	**Land Use**	**Hazard Areas**	**Mitigation Actions**
Antelope Valley Business Park	120 Acres east of SR-14, so. of Ave. M, no. of Ave. N	Commercial, Industrial, Business Park	100 yr. Flood Zone	Amargosa Creek channel improvements
Antelope Valley Auto Center	78 Acres west of SR 14 and Ave. Q	Auto sales and service	None	N/A
City Ranch (Anaverde)	1,985 acres east of SR 14, south of Elizabeth Lake Rd	Residential, open space, recreation,	Alquist-Priolo	Compliance with General Plan and municipal codes

		commercial, public uses	High voltage power lines Calif. Aqueduct Rupture Brush fire 100 yr. Flood Zone	Fuel modification zones Elevated building pads Building setbacks Restricted building zones Critical facility siting
Foothill Ranch (College Park) 1	540 Acres so. of Pearblossom Hwy, SE of Barrel Springs Rd., 47th St. East	Mixed use residential, open space, commercial, educational	Alquist-Priolo	Foothill (College Park)
Hillside Residential 1	223 acres in northwest Palmdale	Residential	None	N/A
Joshua Hills 2	435 acres bounded by 25th St. on the west, Ave. S on the north, and 40th St. on the east	Residential, open space, commercial, public facilities	Alquist –Priolo Gas pipelines	Construction prohibitions
Lockheed Plant 10	Approx. 674 acres bounded on north and east by USAF Plant 42, west by SPRR, and south by Ave. P and Lockheed Way	Office, Industrial	APZ Alquist-Priolo 100 yr. Flood Zone Haz. Mat. Storage	Compliance with AICUZ Land use restrictions Height restrictions Retention and flood control basins
Palmdale Business Park Center	632 acres bounded on east and south by USAF Plant 42, north by Ave. M, SPRR on west	Commercial, recreational	100 yr. Flood Zone (minimal)	Drainage improvements
Palmdale Trade and Commerce Center 3	756 acres in central Palmdale	Mixed use, commercial, public, industrial	100 yr Flood Zone 500 yr Flood Zone AICUZ restricted AP Zone	Compliance with General Plan, Flood, AICUZ, and AP requirements. Compliance with Federal and State seismic requirements.
Palmdale Transit Area Specific Plan 3 & 4	746 acres, east of the Antelope Valley Freeway between Technology Drive and Palmdale Boulevard. 110 acres of the plan are located in unincorporated areas of the County.	Mixed use, commercial, residential, industrial, public, open space	100 yr Flood Zone, 500 yr Flood Zone, AICUZ restricted AP Zone	Compliance with General Plan, California High Speed Rail Authority (SCRRA), Avenue Q Feasibility Land Use Framework Plan, Palmdale TOD Overlay Zone Land Use Framework Plan (TOD3), High Desert Corridor (HDC), Brightline High Speed Rail, Palmdale

				Downtown Revitalization Plan, Metrolink SCORE
Palmdale Transit Village 4	110 acres bounded between Tech Blvd to the north, SR-14 to the west, East Ave Q-9 to south, and 10th St East to the east	Residential, commercial	Accidental Potential Zone II – Air Force Plant 42	Compliance with General Plan, California High Speed Rail Authority (SCRRA), Business Plan, and Metrolink SCORE (Southern California Optimized Rail Expansion)
Rancho Vista	1,379 acres west of 30th Street, south of Ave. N-8	Residential, open space, commercial	None	N/A
Ritter Ranch	10,625 acres, approximately 4 miles west of SR 14, south of Elizabeth Lake Rd.	Residential, open space, schools, commercial, recreational	Alquist-Priolo 100 yr Flood Zone High voltage power lines Brush fires Liquefaction	Structural setback zones Compliance with General Plan Restricted use zones Fuel modification plan Special Foundation areas

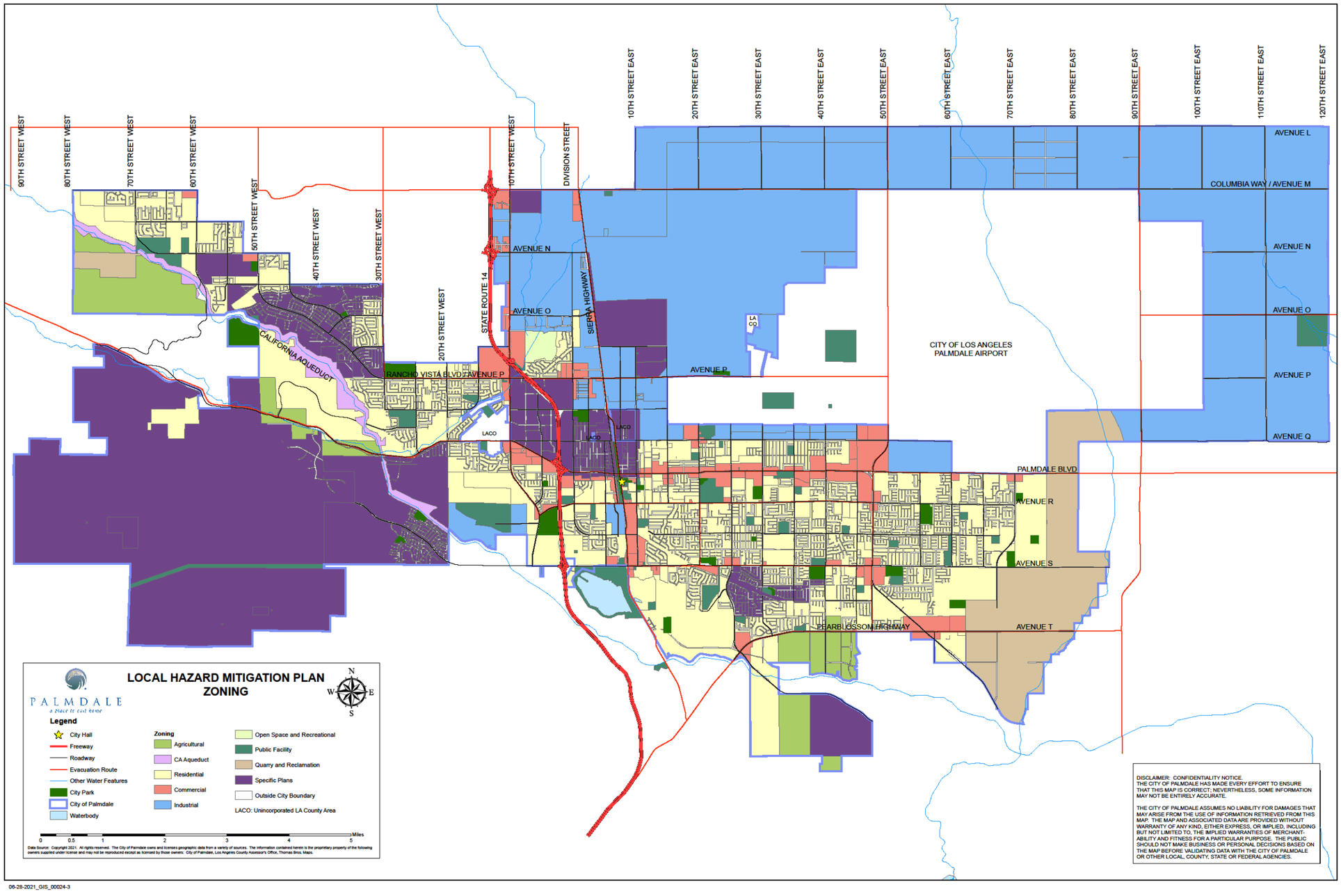
1. Planned for dissolution under the General Plan 2045 update.
2. Specific Plan largely built out and planned for dissolution under General Plan 2045 update.
3. Approximately 121.5 acres to be moved from Palmdale Trade and Commerce Center Specific Plan to the Palmdale Transit Area Specific Plan.
4. Palmdale Transit Village Plan replaced by Palmdale Transit Area Specific Plan.

Map 3.2 City of Palmdale Land Use



06-29-2021_GIS_00024-2

Map 3.3 City of Palmdale Zoning



3.5 Identifying Hazards

RISK ASSESSMENT RESEARCH, DOCUMENT REVIEW, AND PLANNING SURVEY

At the first meeting of the Steering Committee for the 5-year update, the team reviewed the hazards that were addressed in the 2016 LHMP. The team determined that these hazards were still applicable for the area and included a new hazard: infectious disease/pandemic. The team reviewed existing literature, technical data, and maps produced by the California Department of Forestry (CDF), the CDF Fire and Resource Assessment Program, OES, and FEMA, as well as City of Palmdale generated maps and documents, emergency operations plan, and the *Los Angeles County Multi-Jurisdictional Hazard Mitigation Plan*.

Newspaper articles, journals, climatic data, development trends, and watershed information were examined, as well as documents produced for the City by specialized engineering and environmental analysis firms. Documents included, but were not limited to, Environmental Impact Reports, Environmental Assessments, reports on soil stabilization, the 5-year CIP, the General Plan Update and specific development plans, and the reports relating to the environmental impacts of proposed projects.

The *State of California Multi-Hazard Mitigation Plan* was also reviewed. As appropriate, information from these sources has been incorporated into this LHMP. In particular, hazard and risk assessment information generated by Los Angeles County and information produced by federal, state, or local agencies, including graphics, have been used to support the risk assessment narrative. Specific sources of information include, but are not limited to:

- CALTRANS;
- California Geological Survey;
- FEMA Flood Insurance Rate Map;
- Southern California Earthquake Data Center;
- California Department of Fish and Game;
- California Department of Forestry (CDF);
- CDF Fire and Resource Assessment Program;
- FEMA Hazards Website;
- National Oceanic & Atmospheric Administration (NOAA);
- Other similar sources.

Technological hazards, such as those created by man-made conditions or originating within the human environment (bioterrorism, hazardous material spills, e.g.), were also considered. Technological hazards frequently have a significant impact on a localized area and are highly unpredictable.

In addition to research into existing materials, a community planning and perceived hazards survey instrument (Reference **Appendix B**) was distributed to City employees, the general community, and other agencies. The survey asked individuals about the types of disasters they

felt were the greatest threat to the City of Palmdale and what the City's mitigation planning priorities should be.

The consensus of City staff, the community, state and federal agencies, and all other interested stakeholders is that EARTHQUAKES, and the disaster events that are linked to them, pose the greatest threat to the City of Palmdale.

The community's perception of risk, which is sometimes not connected to empirical evidence, is discussed at length in the section detailing the results of the community planning survey.

LISTING OF HAZARDS

Natural and human-caused hazards that pose significant threats to the City have been identified through research and consultation of the Safety Element of the General Plan and the County's mitigation plan, and in collaboration with the public, the City of Palmdale, and the Hazard Mitigation Task Force and Mitigation Steering Committee. Those hazards that pose the highest risk and have the highest probability of occurring are profiled in this LHMP.

The list of hazards discussed within this LHMP includes:

- Earthquakes and Earthquake Related Hazards
- Floods, Dam Failure and Inundation
- Wildfires/Wildland Urban Interface Fires
- Transportation Accident/Hazmat Spill
- Drought
- Severe Weather
- Power/Utility Failure
- Infectious Disease/Pandemic

As an update from the previous LHMP, climate change impacts are now considered for each of the above-listed hazards.

Mitigation against the impacts of these identified hazards forms the basis of the City's mitigation strategy.

3.6 Profiling Hazards

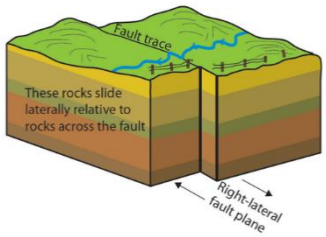
Requirement §201.6(c)(2)(i):

*[The risk assessment shall include a] description of the location and extent of all-natural hazards that can affect the jurisdiction. The plan **shall** include information on previous occurrences of hazard events and on the probability of future hazard events.*

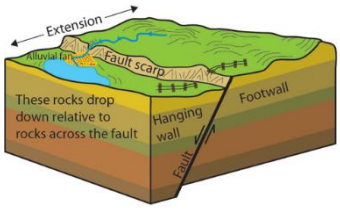
The following hazard profiles are not presented in any particular order or rank of importance.

3.6.1 EARTHQUAKE

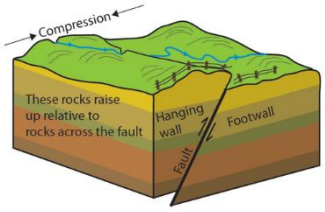
An earthquake is the ground shaking caused by the sudden movement of rock along a fracture in the Earth's brittle outer layer. This sudden slip, referred to as faulting, releases waves of energy that radiate outward in all directions from the area of initial movement. Most faulting and associated earthquakes occur in response to temperature-driven movements of rock that is deep inside the Earth. This slow movement pushes and pulls against the Earth's outer layer.



Strike-slip faulting



Normal faulting



Reverse and thrust faulting

Figure 3.1 Earthquake Fault Type

CAUSES OF EARTHQUAKES IN SOUTHERN CALIFORNIA

Earthquakes are caused by earth movement along a fault. Movement can be horizontal along the fault line ("strike slip") or vertically ("dip slip"). Typical fault movements are illustrated to the right:

A fault is a fracture along between blocks of the earth's crust where either side moves relative to the other along a parallel plane to the fracture.

Strike-slip faults are vertical or almost vertical rifts where the earth's plates move mostly horizontally. 'rom the observers' perspective, if the opposite block looking across the fault moves to the right, the slip style is called a right lateral fault; if the block moves left, the shift is called a left lateral fault.

Dip-slip faults are slanted fractures where the blocks mostly shift vertically. If the earth above an inclined fault moves down, the fault is called a normal fault, but when the rock above the fault moves up, the fault is called a reverse fault. Thrust faults have a reverse fault with a dip of 45 ° or less.

EXTENT: HOW ARE EARTHQUAKES MEASURED?

Magnitude:

Earthquake size or magnitude can be determined using an instrument called a seismograph. This instrument measures the movement of the Earth's surface by recording the radiating earthquake waves. Each whole number magnitude increase represents a ten-fold increase in the up and down motion recorded by the seismograph. An M = 6 earthquake causes 10 times the recorded motion of an M = 5 and 100 times the motion of an M = 4 earthquake. The magnitude may be used to calculate the amount of energy released by the earthquake. Each whole number increase in magnitude corresponds to an energy increase of about 32 times the lower magnitude value. An M = 6 earthquake releases about 30 times the energy of a M = 5 and nearly 1,000 times the energy of a M = 4 earthquake.

As earthquakes increase in size, the movement of the earth in response to the earthquake waves saturates. That is, the ground motion no longer increases in a way directly related to the increased size of the earthquake. A different method of determining magnitude based on the number of factors, such as area of slip, is used to calculate the size of earthquakes generally greater than M = 8.

Intensity:

Earthquake size may also be determined using a subjective scale of observed damage. This method was used before the installation of seismographs and before the development of the Richter Magnitude Scale. An example is the Modified Mercalli Intensity (MMI) Scale first published in 1931. Defining the intensity of an earthquake is similar to describing the brightness of a light bulb at a particular location in a room. What is observed depends not only on the light bulb's "magnitude" as measured by the number of watts, but also on the characteristics at any particular location that might affect the light's brightness.

Similarly, the intensity of damage observed at a specific building depends upon a number of factors, such as the earthquake's magnitude, distance from the fault generating the earthquake, type of geologic materials underneath the building, type of building construction, age of construction, and other attributes. Over time the MMI scale has been modified to address changes in building types. All these possible variations in damage result in a single earthquake being capable of producing intensities ranging from *not felt at a particular location* (MMI = I) to *causing catastrophic damage* (MMI = XII) at another place. Historical records generally list an earthquake's maximum observed intensity and the size of the area in which the earthquake was felt.

EARTHQUAKE RELATED HAZARDS

The greatest damage caused by earthquakes results from ground shaking. Ground shaking results from seismic waves generated by the earthquake. Seismic waves travel under and on the earth's surface, causing ground motion, or *shaking*.

Ground Shaking:

Ground shaking is the motion felt on the earth's surface caused by seismic waves generated by the earthquake. It is the primary cause of earthquake damage. The strength of the ground shaking depends on the magnitude of the earthquake, the type of fault, and the distance from the Earthquake epicenter. Buildings on poorly consolidated, compacted, or sandy soils will typically see more damage than buildings on consolidated soils and bedrock.

In addition to damage caused by ground shaking, earthquakes also cause, directly or indirectly, secondary hazards. These include.

Liquefaction:

Liquefaction results when ground shaking causes wet, loose soils to become liquefied. As a result, buildings and other structures on these soils lose their support and may partially or entirely collapse.

Induced Landslides:

The ground shaking associated with earthquakes may cause landslides in unstable hillside or mountainous areas. Landslides pose a hazard to persons and structures of all types in the impacted area.

Amplification:

Soil and soft sedimentary rocks near the earth's surface can modify ground shaking caused by earthquakes. One of these modifications is amplification. Amplification increases the magnitude of the seismic waves generated by the earthquake. The amount of amplification is influenced by the thickness of geologic materials and their physical properties. Buildings and structures on soft and unconsolidated soils can face greater risk. Amplification can also occur in areas with deep sediment filled basins and on ridge tops.

Fires:

Ground shaking may break gas lines, cause electrical lines to fall or short, and bring normally contained flames (such as furnaces and water heaters) into contact with combustible material, resulting in fires.

EARTHQUAKE DAMAGE

Earthquakes shake the ground in all directions. Because of this multi-directional shaking, the structural and nonstructural elements of a building must be specially designed to resist earthquake forces in a variety of directions. Structural and nonstructural elements of a building that are not secured to resist expected up and down and side-to-side earthquake shaking pose a hazard to building occupants.

Structural Damage:

The structural elements of a building must be designed and constructed to support heavy weights under the force of gravity. Structural elements of newer Palmdale public buildings generally have sufficient strength to prevent collapse due to vertical earthquake motions. However, special earthquake-resistant design is often needed to strengthen structural elements to resist lateral or side-to-side earthquake motions.

Nonstructural Damage:

Nonstructural elements can be vulnerable to damage from both vertical and lateral earthquake motions. When an earthquake shakes a building, the result can be:

- **Distortion and damage** to nonstructural elements, such as windows, partition walls, and elevators, caused as the shape of the building deforms in response to earthquake shaking.
- **Sliding and overturning** of bookshelves, file cabinets, mechanical equipment, and many other types of furnishings and equipment.
- **Falling of items** from counters, desks, and shelves.

- **Swaying and shaking of suspended elements** such as piping and light fixtures resulting in breaks, leaks, and falls.

Earthquake-resistant design of nonstructural elements was generally not a major concern in local or national building codes before 1980. Even in the most recent building codes, only a few nonstructural elements must be designed to resist earthquake damage. Therefore, the nonstructural elements in most buildings in the United States remain vulnerable to damage during earthquake shaking.

BENEFITS OF STRENGTHENING NONSTRUCTURAL ELEMENTS

Securing nonstructural elements improves the safety and security of the community during an earthquake emergency:

- Improves safety to individuals; reduces injuries and casualties;
- Helps maintain safe and clear exit ways for evacuation and building access;
- Reduces dangerous chemical spills, fires, and gas leaks;
- Improves the likelihood of using the facility following a damaging earthquake event; and
- Improves the likelihood of continuity of business operations following a significant earthquake.

Examples of securing nonstructural elements and their potential benefits:

- Bookshelves and file cabinets attached to walls reduce damage and improve the safety of exit routes;
- Locked storage rooms and secured equipment discourage theft;
- Safety film on glass provides increased safety in the event of a damaging earthquake, a bomb blast, accidents, and similar incidents. Glass safety films may also be tinted to improve energy conservation;
- Anchored vending machines prevent casualties caused by overturning during an earthquake or if shaken by users; and
- Earthquake strapping water heaters can reduce incidents of gas leaks, fire, explosion, and water damage.

Ancillary benefits:

- City staff and community members who inventory building areas for nonstructural earthquake hazards will also be learning skills that will enable them to make their homes and businesses safer.
- The inventory promotes teamwork among the community and helps team members become more familiar with building areas.

Securing nonstructural elements tends to foster recovery:

- Repair of earthquake induced damage to nonstructural elements can cost millions of dollars and keep facilities and businesses closed even when no structural damage has occurred.

Previous Occurrences

Earthquake events constitute the most likely serious hazard facing the City of Palmdale. Since 1769, the Southern California Region has experienced 40 recorded earthquakes of magnitude 5.0 or greater (see **Table 3.6** below). The region is crisscrossed by dozens of earthquake faults, the largest being the San Andreas. Among the other faults in the region are the Newport-Inglewood, Charnock (considered part of the Newport-Inglewood fault zone), Whittier, Chatsworth, Elsinore, Hollywood, Los Alamitos, and Palos Verdes. In addition to known faults, there are potentially dozens of faults below the surface that have not yet been charted. For example, the Whittier Narrows earthquake of 1987 occurred along a previously uncharted fault. More recently, the 1994 Northridge Earthquake was caused by an unknown thrust fault.

In 2019, two major earthquakes - a 6.4 on July 4 followed b– a 7.1 on July 6 - occurred in Ridgecrest in neighboring Kern County, approximately 75 miles from the City of Palmdale. These were two of the largest earthquakes recorded in Southern California, with shaking felt into Northern California, Arizona, and Nevada. According to the USGS and CEA, estimated damages totaled over $1 billion.

Table 3.6 – Earthquake Magnitude

Southern California Region Earthquakes with a Magnitude 5.0 or Greater			
1769	Los Angeles Basin – M6.0	1925	Santa Barbara – M6.8
1800	San Diego Region – M6.3	1933	Long Beach – M6.4
1812	Wrightwood – M7.5	1941	Carpinteria – M5.5
1812	Santa Barbara Channel – M7.2	1952	Kern County – M7.5
1827	Los Angeles Region – M5.5	1954	W. of Wheeler Ridge – M6.4
1855	Los Angeles Region – M6.0	1971	San Fernando – M6.6
1857	Fort Tejon – M7.9	1973	Point Mugu – M5.3
1858	San Bernardino Region – M6.0	1986	North Palm Springs – M5.6
1862	San Diego Region – M5.9	1987	Whittier Narrows – M5.9
1892	San Jacinto or Elsinore Fault – M6.3	1992	Landers – M7.3
1893	Pico Canyon – M5.7	1992	Big Bear – M6.5
1894	Lytle Creek Region – M6.0	1994	Northridge – M6.7
1894	E. of San Diego – M5.7	1999	Hector Mine – M7.1
1899	Lytle Creek Region – M5.7	2008	Chino Hills – M5.4
1899	San Jacinto and Hemet – M6.6	2014	La Habra – M5.1
1907	San Bernardino Region – M5.3	2014	South Napa – M6.0
1910	Glen Ivy Hot Springs – M5.5	2016	Borrego Springs – M5.2
1916	Tejon Pass Region – M6.1	2019	Ridgecrest (1 of 2) – M6.4
1918	San Jacinto – M6.8	2019	Ridgecrest (2 of 2) – M7.1
1923	San Bernardino Region – M6.3	2019 2020	Ridgecrest aftershocks; At least six occurrences greater than M5.0, less than M6.0
		202	Lone Pin e – M5.8

Sources: Southern California Earthquake Data Center (SCEDC) Website, accessed June 2021.
Southern California Seismic Network Website, accessed June 2021

1994 Northridge Earthquake

Perhaps the most destructive earthquake in the recorded history of Southern California was the Northridge earthquake, which occurred on January 17th, 1994. Striking at 4:31 in the morning, the quake measured 6.7 on the Richter Scale, and shook all of Southern California, Fifty-seven people lost their lives as a result of the quake, and more than 1,500 were seriously injured. More than 4,000 buildings were severely damaged and over 11,000 buildings suffered moderate damage. Severe damage occurred to structures as far as Santa Monica, and several freeways were also severely damaged, including catastrophic failure of freeway bridges on the 10 and 14 freeways. The Santa Monica Mountains rose 15 inches in a matter of minutes.

EARTHQUAKES IN CALIFORNIA

An earthquake large enough to cause moderate damage to structures – those of magnitude 5.5 or larger – occurs in California three or four times a year. The 1987 Whittier Narrows earthquake (M6), caused by a buried thrust fault, was responsible for hundreds of millions of dollars in property damage. More recently, the San Simeon earthquake (M6.5) hit an area six miles northeast of San Simeon on December 22, 2003.

Once every two to three years, a strong earthquake (M6 to M6.9), strikes somewhere in the state. An earthquake of this size, such as the 1994 Northridge Earthquake (M6.7) or the 1983 Coalinga Earthquake (M6.5) is capable of causing major damage if the epicenter is near a densely populated area.

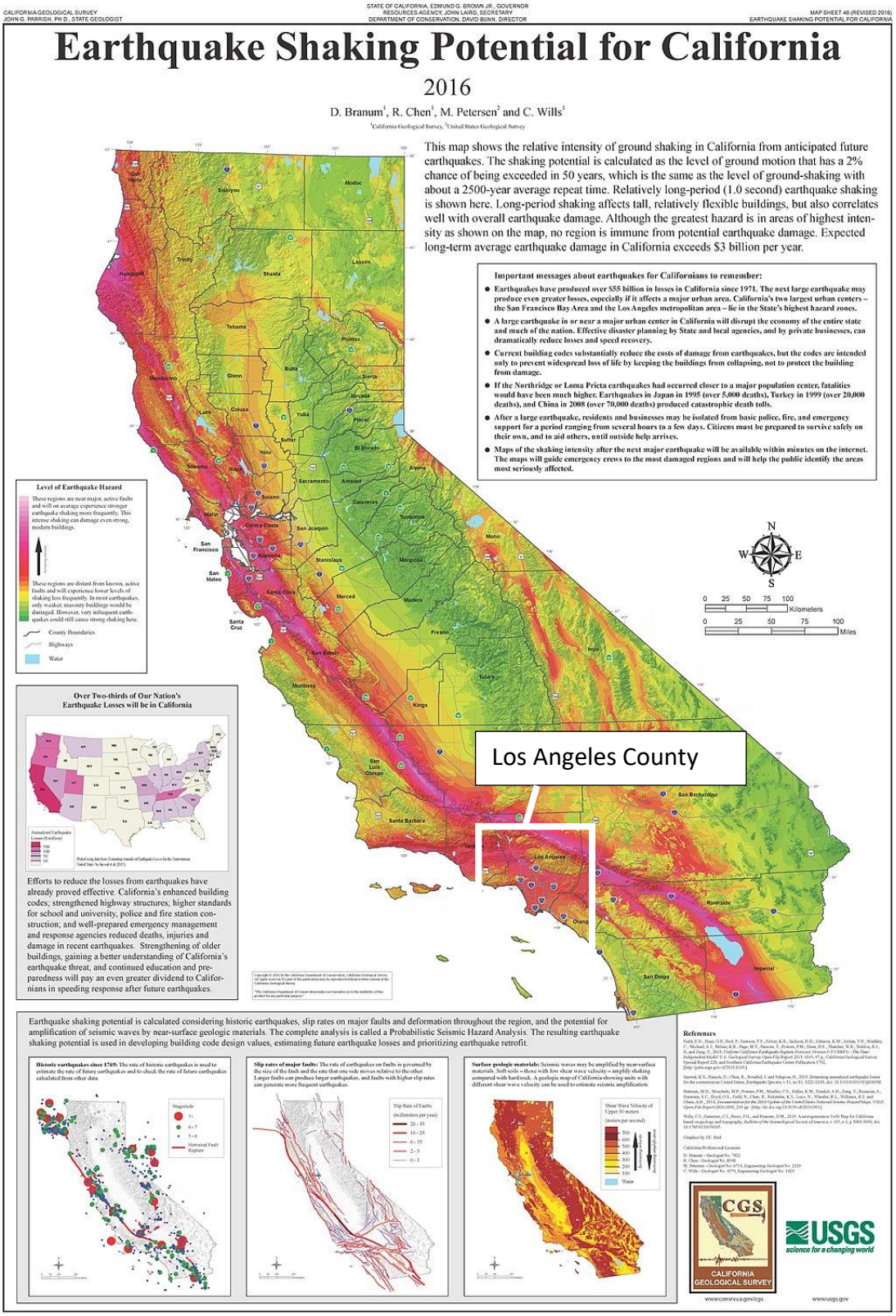
Major earthquakes (M7 to M7.9) occur in California about once every ten years. The two largest earthquakes in California, the 1857 Fort Tejon Earthquake and the famous 1906 San Francisco Earthquake were similar in magnitude (M7.9 and M7.8) and resulted from movement along the San Andreas Fault. Earthquakes of this size (M7.7 to M7.9) can cause more extensive damage over a larger area than the M7.1 to M7.4 earthquakes that have struck California is recent decades.

Since seismologists started recording and measuring earthquakes, there have been tens of thousands of recorded earthquakes in Southern California, most with a magnitude below three. No community in Southern California is beyond the reach of a damaging earthquake.

While the well-known San Andreas Fault is capable of producing an earthquake over magnitude 8 on the Richter scale, there are many faults in the Southern California area that are capable of producing earthquakes in the 6 to 7 magnitude range. These faults have the potential to cause greater damage in the area due to their proximity to highly dense, built-up urban areas. A 6.0 magnitude quake along the Newport-Inglewood fault, for example, could cause more death, injury, and destruction in the urban area than an 8.0 quake on the San Andreas, due to the greater distance of the San Andreas from the urban core. While scores of quakes occur in the region in a typical year, most are measured 3.0 and under on the Richter scale, causing little or no damage. Many smaller quakes go virtually unnoticed except for detection by scientific instrumentation.

Map 3.4, on the following page, indicates the earthquake shaking potential for the state of California. All of Los Angeles County (highlighted) lies within areas that are near major active faults. These areas experience stronger shaking, more often.

Map 3.4 – Earthquake Shaking Potential



Probability of Future Events



Figure 3.2 San Andreas Fault

The probability that, sooner or later, the City of Palmdale will suffer a major seismic event is virtually 100%, as described in the Safety Element of the City's General Plan.

The City of Palmdale and the Planning Area are located in a seismically active region. The dominant seismic feature affecting the City is the San Andreas Fault which traverses the southernmost portion of the Planning Area. The San Andreas Fault is the boundary where the North American plate and the Pacific plate meet. Relative movement of the plates along this boundary causes earthquakes. This fault is considered one of the most dangerous in the state in terms of destructive potential. The San Andreas Fault extends over 600 miles from the Salton Sea, northwest toward the Pacific Ocean at Point Arena. Two of the three largest (8.0+ Richter) earthquakes in the state have occurred along the San Andreas Fault: the 1906 San Francisco earthquake that caused 21-foot offsets and the 1857 Fort Tejon earthquake. **Table 3.7** lists earthquake activity on the resulting Modified Mercalli intensity from the San Andreas Fault. Intensity measures the amount of ground shaking caused by an earthquake. An intensity value is assigned by the amount of damage to structures, changes in the earth's surface, and personal accounts.

In addition, several fault traces branch off from the primary fault within the San Andreas Rift Zone. The major fault traces for the San Andreas system in the Palmdale area are the Cemetery Fault, the Nadeau Fault, and the Littlerock Fault. All three faults are active splays of the San Andreas Fault. Thus, movement on the San Andreas Fault may activate one or all of these subsidiary faults. The Nadeau, Cemetery, and Littlerock fault traces are located in Palmdale.

Other splays of the San Andreas Fault which are found in Palmdale are the Powerline Fault and the eastern end of the Clearwater Fault.

In addition to the San Andreas Fault system, other principal faults that could produce damaging earthquakes in the Palmdale area are the Sierra Madre-San Fernando, Garlock, Owens Valley, and White Wolf faults. Their maximum probable magnitudes are listed in **Table 3-8**. A maximum probable earthquake is the largest event expected to occur within 100 years. The Sierra Madre Fault is located at the base of the San Gabriel Mountains approximately 20 miles south of the Planning Area. The Garlock and White Wolf faults are northeast-trending faults located 30 to 60 miles, respectively, northwest of the Planning Area. The Owens Valley fault is 60 miles to the northeast and runs north south. A number of other faults located in the Southern California region could be responsible for earthquakes that would affect the city; although no major damage is expected to occur. (Tables on the following page were excerpted from the Safety Element of the City's General Plan.)

TABLE 3.7 MAJOR SAN ANDREAS FAULT ACTIVITY

Date	Magnitude	Modified Mercalli Intensity	Location
1838	7.0	X - Comparable to 1906 earthquake	San Francisco
1857	7.9	IX+ - Buildings and large trees thrown down	Fort Tejon
1858	6.1	IX+ - Damage to building frames and foundations	San Francisco
1868	7.0	IX+ - Many buildings wrecked badly damaged. 30 killed	Hayward Fault
1890	6.8		So. Santa Cruz Mountains
1899	6.7	VIII - Brick buildings badly damaged. 6 killed.	San Jacinto Fault
1906	7.7	XI - Great earthquake and fire. 700 killed. Greatest damage on poorly filled land. 6.5-meter horizontal slip.	San Francisco
1916	6.0+		Tejon Pass
1922	6.5	IX - Damage to masonry buildings and reservoir. Ground cracking.	Cholame Valley
1934	6.0	VIII - $41 million damage. 120 killed	Parkfield
1989*	7.1	VIII - Localized freeway and bridge collapse. 63 killed.	San Francisco/Bay Area
2004	6.0		Parkfield

**Southern Santa Cruz Mountain segment of the San Andreas Fault.*

Source: California Department of Mines and Geology, Fault Map of California and Earthquake Hazards in the Los Angeles Region; Hill et al., 1979; Topazada et al 1981, 1982; Jennings 1975

TABLE 3.8 FAULT MAGNITUDES

Fault	Maximum Probable Magnitude (Moment)*	Recurrence Interval (Years)
San Andreas	8.0+	50-200
Sierra Madre-San Francisco	6.6	50-200
Garlock	7.5	500-700
Owens Valley	7.4	850-900
White Wolf	7.2	300

**The Moment Magnitude is preferred to the Richter Magnitude for earthquakes larger than 6M. As the magnitude surpasses 6.5M (Richter), all events begin to take on the same magnitude values. The Moment Magnitude keeps its integrity and delineates the different values greater than 6.5M.*

Source: California Department of Mines and Geology Preliminary Report #13, C. W. Jennings; Los Angeles County Seismic Safety Element.

ALQUIST-PRIOLO EARTHQUAKE ZONE

As shown in **Map 3.5**, the Alquist Priolo Earthquake zone runs in an east/west direction across the southerly side of the City of Palmdale. This zone portrays the region in which a fault investigation must be conducted as a condition for a permit to construct certain buildings, pursuant to CA Public Resources Code Section 2621 et seq. While no critical or essential facilities fall within this zone, some key infrastructure does fall within this area. State Route 14, the City's lifeline to southern California could be jeopardized during the event of an earthquake. **Table 3.9** identifies the infrastructure located within the Alquist Priolo Zone of Required Investigation.

Table 3.9 Key Infrastructure in Alquist Priolo Earthquake Zone

Key Infrastructure
SR 14
City Park and Rides (3 – close proximity)
67Water Tanks (approx. 6)
Water Treatment Plant

No community in Southern California is immune from earthquake hazards. Even earthquakes that occur many miles away can cause local damage depending upon the characteristics of structures, soil types and conditions, and other factors. Regardless, the San Andreas Fault clearly poses the greatest natural threat to the City of Palmdale.

The following analysis evaluates the City's vulnerability to a major seismic event from three perspectives: a general assessment of likely damage to structures, loss of life, and personal injuries; an analysis of potential losses to city facilities; and an analysis of potential losses to critical facilities and infrastructure.

The City of Palmdale would experience ground shaking as a result of a major seismic event on the San Andreas Fault. The extent and magnitude of ground shaking are shown on the following maps which were prepared by the City's GIS Section**: Map 3.5**"'Seismic Activity" identifies the earthquake shaking probability of 10% in 50 years by shaking intensity expressed as spectral acceleration at one second frequency in units of gravity. **Map 3.6** "Soils, Liquefaction and Landslide Zones" identifies soil types and potential liquefaction and landslide zones in the Palmdale area.

It is seen on **Map 3.5** that about 85% of the entire City of Palmdale boundaries would show an 80-175% g seismic shaking. All City facilities would be affected along with major infrastructure. Refer to **Table 3.9** for facilities affected and cost involved. With regards to soils, liquefaction, and landslide zones, the majority of soils within Palmdale vary from rock to very dense soil/soft rock to stiff soil. There is a very low likelihood of liquefaction and landslides happening.

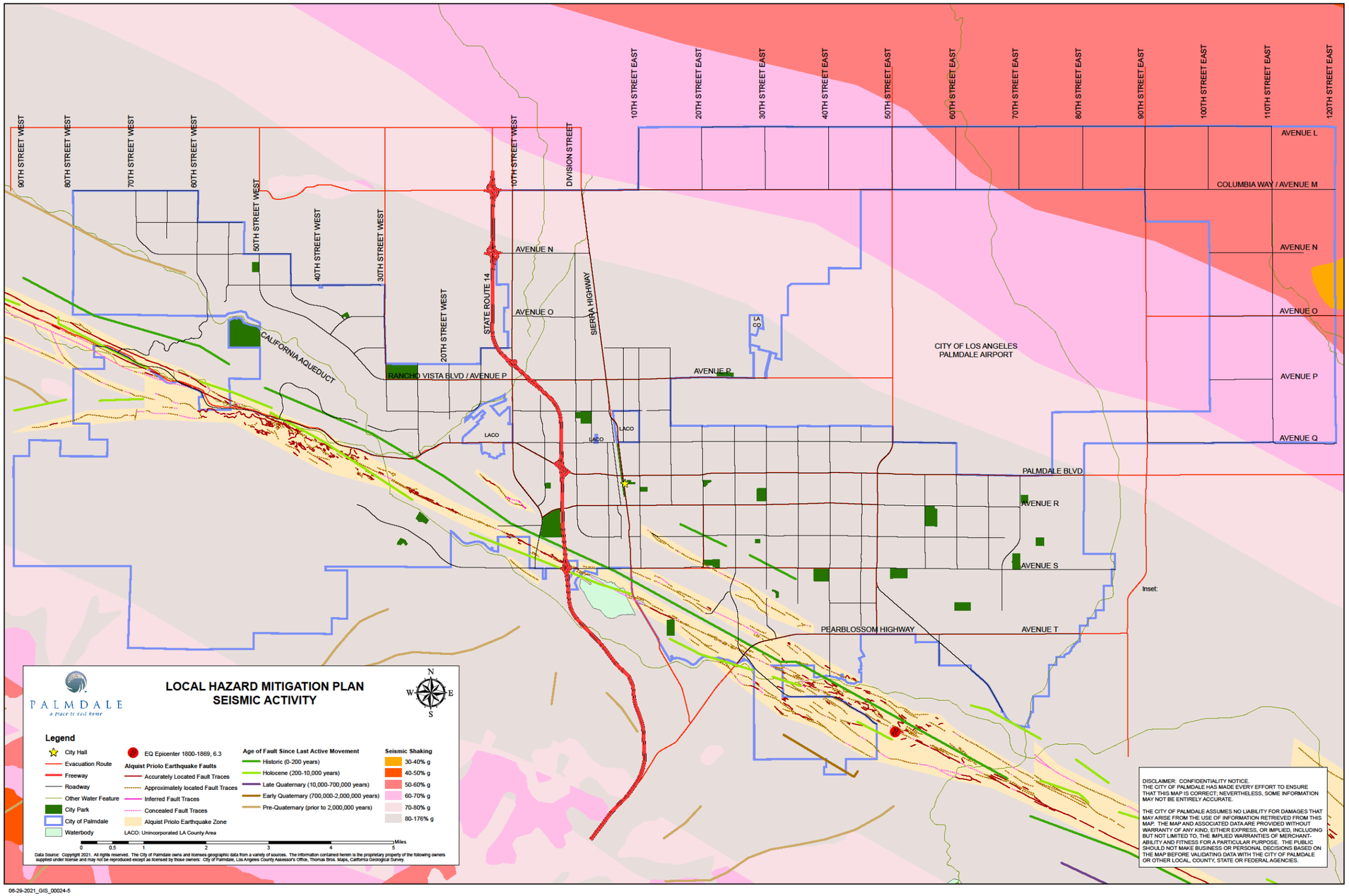
Estimating potential losses involves assessing the damage, injuries, and financial costs likely to be sustained in a geographic area over a given period of time. This level of analysis involves using mathematical models. The two measurable components of any risk analysis are magnitude of the harm that may result and the likelihood of the harm occurring. Describing vulnerability in terms of dollar losses provides the community and the state with a common framework with which to measure the effects of hazards on assets.

Factors included in assessing earthquake risk include population distribution in the hazard area, the frequency of earthquake events, landslide susceptibility, soil saturation, buildings, infrastructure, and local capability. These types of analysis can generate estimates of the damages to the regions due to an earthquake event in a specific location. The FEMA-approved HAZUS loss estimation software was developed in conjunction with the National Institute of Building Sciences (NIBS). The HAZUS estimates include economic loss, building damage, casualties, and shelter needs. In addition, the HAZUS analysis produced estimates of losses to critical facilities, such as bridges, fire stations, police stations, etc.

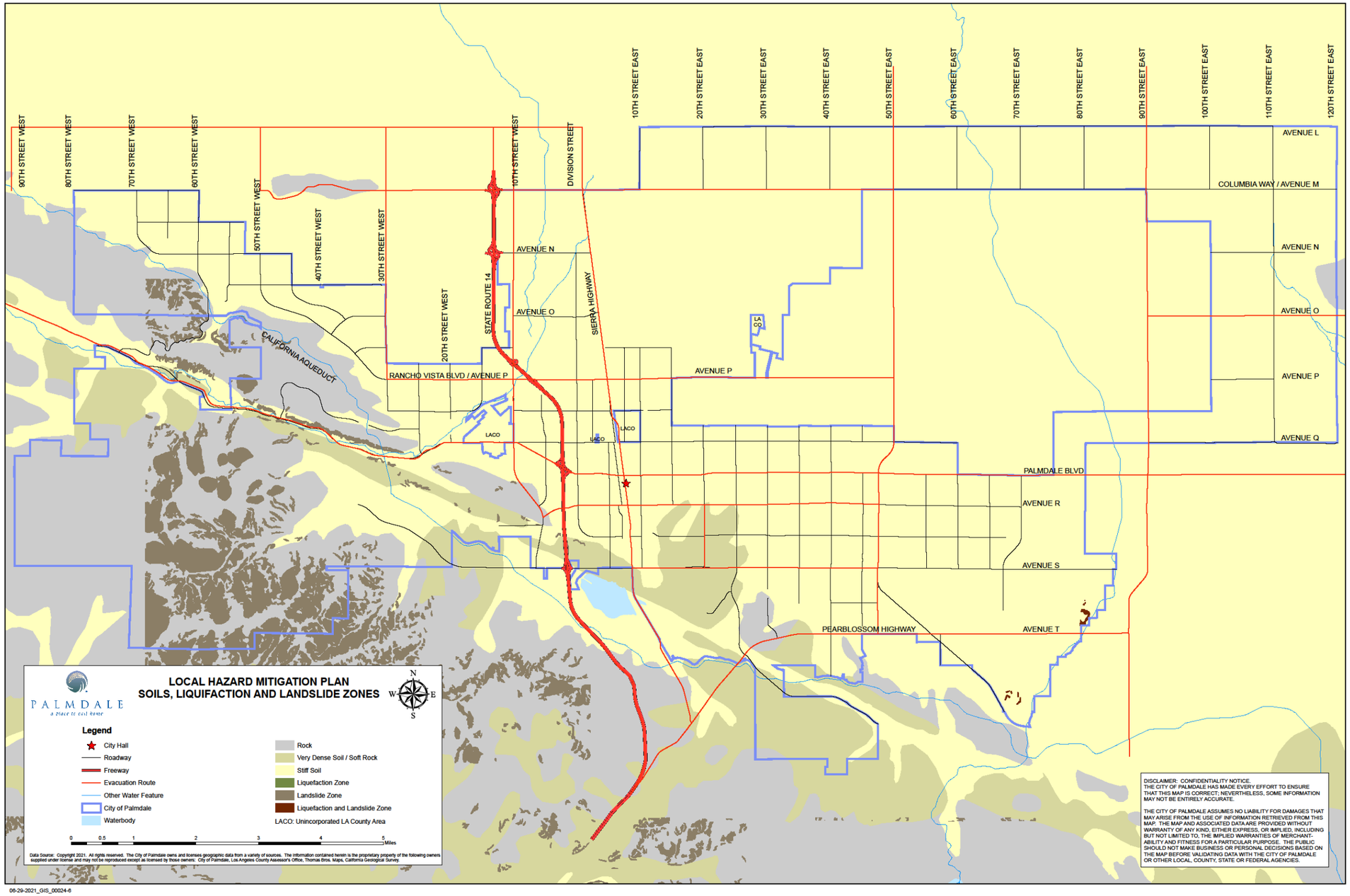
The HAZUS analysis provided in **Appendix C** evaluates the City's vulnerability to a major seismic event: a general assessment of likely damage to structures, loss of life, and personal injuries; an analysis of potential losses to city facilities; and an analysis of potential losses to critical facilities and infrastructure.

Damages from a large earthquake in urbanized areas of Southern California are likely to run into billions of dollars. Although California building codes are some of the most stringent in the world, tens of thousands of older building stock exists not built to current code. California has enacted laws requiring the retrofit of unreinforced masonry buildings, and laws limiting construction of buildings within a specified distance from a known fault based on occupancy, etc. Structural and non-structural retrofits are both effective life safety mitigation actions to reduce risk to lives and property.

Map 3.5 – Seismic Activity



Map 3.6 – City of Palmdale Soils, Liquefaction and Landslide Zones



Climate Change Impacts

Scientists are currently studying the impacts of climate change on seismic activity. While increased temperatures are not linked to an increased risk of earthquake occurrence, scientists are currently studying the seismic consequences of water and how climate change may factor into such phenomena as drought (Source: https://climate.nasa.gov/news/2926/can-climate-affect-earthquakes-or-are-the-connections-shaky/). Furthermore, climate change may amplify the secondary effects of earthquakes, including increasing temperatures which could intensify fire risks, or contribute to drought which in turn dries out vegetation and affects available water supply, which could further constrain firefighting efforts during fires caused by an earthquake. Droughts exacerbated by climate change can also lead to subsidence, that could intensify damage resulting from an earthquake.

Vulnerability Assessment

A major seismic event on the San Andreas Fault could cause considerable damage to critical facilities and infrastructure. The following assessment of potential damage is excerpted, in part, from the City of Palmdale Emergency Operations Plan:

DAM AND FLOOD CONTROL CHANNELS

Ground movement from an earthquake may cause the rupture of dams in Palmdale. Rupture of the Lake Palmdale Dam or the Littlerock Dam may result in area flooding.

Aside from dam failure and subsequent flooding, a seismic water wave may occur at Lake Palmdale. The wave could run up the slope and overtop the dam. A reflection of the wave on return is unlikely. The wave volume above the dam would not be substantial enough to cause damaging floods (approximately 1 acre-foot). Flooding over the downstream of the dam would not cause damage to the existing rockfill, as it was designed to withstand it. The Sheriff's Department is responsible for notification and evacuation procedures in the event of dam failure.

FIRE OPERATIONS

There are six fire stations located in the city, Station Nos. 24, 37, 136, 114, 131, and station 93, the Battalion Headquarters at Massari Park.

HIGHWAYS AND BRIDGES

The Antelope Valley Freeway would be closed by failure of one or more overpasses, rockfalls, and fault rupture. All secondary mountain roads between the high desert and the urban areas to the south would be closed until cleared of rockfalls and slides. The Antelope Valley Freeway (SR-14) is the main access route between the Antelope Valley and the urban areas of Los Angeles. This route would be closed for at least 72 hours. Secondary routes paralleling SR-14 between Santa Clarita and Palmdale should be examined for possible utilization as an alternative to the freeway, including Sierra Highway and Soledad Canyon Road.

Sierra Highway would be closed between Pearblossom Highway and Avenue S and Pearblossom Highway (SR-138) would be closed between Sierra Highway and Route 138 due to major damage resulting from fault rupture. Both routes would be closed for over 72 hours. SR-138 would be

closed from SR-14 to Interstate 15 by damage and roadway obstructions. This route would be closed for at least 72 hours. If bridges did fail and/or collapse, the city could be split into west and east halves, each cut off from the other.

NATURAL GAS

Two 30-inch natural gas transmission pipelines are operated along Avenue S. These pipelines come up from Newhall where the gas is pressurized and metered, then sent to Palmdale. Fault ruptures would sever the imported natural gas supplies from the San Joaquin Valley that cross the fault near Tejon Pass. The two 30-inch gas lines that run along Avenue S and cross the fault south of Palmdale could also be impacted. These lines would be shut off automatically by Southern California Gas.

RAILROADS

The Southern Pacific rail lines crossing the San Andreas Fault near Palmdale would suffer major damage and may be closed for over 72 hours. Other lines, from Acton to Lancaster, would be disrupted due to intense ground shaking. Also, rail lines from Palmdale to Interstate 15 in the east would be disrupted due to track displacement and settlement of bridge-approach fills.

WATER SUPPLY

A catastrophic earthquake would cause major damage to both the California Aqueduct and Lake Palmdale, which are primary sources of water for Palmdale. The major reservoirs storing imported water may not be able to deliver water due to damage to downstream transmission facilities. It is expected that residents would have to use conservation measures, and daily water usage would be reduced by approximately 50 percent.

Estimating Potential Losses

Estimates of potential losses were calculated using the Federal Emergency Management Administration HAZUS model. Using information on geology, soils, the history of past events, population data, structure types and characteristics, and inventories of infrastructure, HAZUS produces estimates of property damage, personal injury, and fatalities. The model also produces estimates of economic losses.

For the purposes of this study the three HAZUS scenarios were evaluated based on a M6.7 seismic event on the San Andreas Fault. The three time periods evaluated were: daytime, nighttime, and commute time. Human casualties, in particular, vary according to time of day. For example, a nighttime event would be unlikely to cause significant casualties at schools. An event occurring during daytime would find many commuting residents at their jobs in Los Angeles and the San Fernando Valley. A major earthquake occurring during commute hours would find thousands of commuters on the freeways.

Summary results of the HAZUS scenarios evaluated for this LHMP are presented on the following page, followed by economic loss estimates for transportation systems, utility systems, and building related losses. For further detailed information, a full detailed copy of the HAZUS model results for all three scenarios appears in **Appendix C**.

Table 3.10 HAZUS Casualty Estimates

		Level 1	Level 2	Level 3	Level 4
2 AM	Commercial	10.69	3.01	0.48	0.95
	Commuting	0.05	0.06	0.11	0.02
	Educational	0.00	0.00	0.00	0.00
	Hotels	0.00	0.00	0.00	0.00
	Industrial	17.38	4.72	0.69	1.35
	Other-Residential	148.96	35.53	3.56	6.59
	Single Family	159.80	22.16	1.08	1.89
	Total	**337**	**65**	**6**	**11**
2 PM	Commercial	644.98	181.36	28.96	56.83
	Commuting	0.44	0.58	0.99	0.19
	Educational	278.30	77.47	12.57	24.59
	Hotels	0.00	0.00	0.00	0.00
	Industrial	127.96	34.71	5.08	9.84
	Other-Residential	34.80	8.37	0.88	1.61
	Single Family	35.45	4.97	0.28	0.42
	Total	**1,122**	**307**	**49**	**93**
5 PM	Commercial	465.27	130.56	20.93	40.57
	Commuting	6.75	8.85	15.12	2.92
	Educational	22.41	6.24	1.01	1.98
	Hotels	0.00	0.00	0.00	0.00
	Industrial	79.98	21.70	3.18	6.15
	Other-Residential	54.95	13.18	1.37	2.49
	Single Family	61.64	8.66	0.49	0.73
	Total	**691**	**189**	**42**	**55**

Table 3.11 HAZUS Transportation System Economic Losses Estimate (Millions of Dollars)

System	Component	Inventory Value	Economic Loss	Loss Ratio (%)
Highway	Segments	2364.6559	0.0000	0.00
	Bridges	98.2216	11.4822	11.69
	Tunnels	0.0000	0.0000	0.00
	Subtotal	**2462.8775**	**11.4822**	
Railways	Segments	132.3697	0.0000	0.00
	Bridges	40.0448	3.5553	8.88
	Tunnels	0.0000	0.0000	0.00
	Facilities	0.0000	0.0000	0.00
	Subtotal	**172.4145**	**3.5553**	
Light Rail	Segments	41.5904	0.0000	0.00
	Bridges	0.0000	0.0000	0.00
	Tunnels	0.0000	0.0000	0.00
	Facilities	0.0000	0.0000	0.00
	Subtotal	**41.5904**	**0.0000**	
Bus	Facilities	1.8306	0.7517	41.06
	Subtotal	**1.8306**	**0.7517**	
Ferry	Facilities	0.0000	0.0000	0.00
	Subtotal	**0.0000**	**0.0000**	
Port	Facilities	0.0000	0.0000	0.00
	Subtotal	**0.0000**	**0.0000**	
Airport	Facilities	14.4161	4.0880	28.36
	Runways	456.5705	0.0000	0.00
	Subtotal	**470.9866**	**4.0880**	
	Total	**3,149.70**	**19.88**	

Table 3.12 HAZUS Utility System Economic Losses Estimate (Millions of Dollars)

System	Component	Inventory Value	Economic Loss	Loss Ratio (%)
Potable Water	Pipelines	0.0000	0.0000	0.00
	Facilities	0.0000	0.0000	0.00
	Distribution Lines	35.4311	3.7314	10.53
	Subtotal	**35.4311**	**3.7314**	
Waste Water	Pipelines	0.0000	0.0000	0.00
	Facilities	0.0000	0.0000	0.00
	Distribution Lines	21.2586	1.8744	8.82
	Subtotal	**21.2586**	**1.8744**	
Natural Gas	Pipelines	35.0997	0.0000	0.00
	Facilities	0.0000	0.0000	0.00
	Distribution Lines	14.1724	0.6421	4.53
	Subtotal	**49.2721**	**0.6421**	
Oil Systems	Pipelines	0.0000	0.0000	0.00
	Facilities	0.0000	0.0000	0.00
	Subtotal	**0.0000**	**0.0000**	
Electrical Power	Facilities	199.0800	30.0043	15.07
	Subtotal	**199.0800**	**30.0043**	
Communication	Facilities	0.0000	0.0000	0.00
	Subtotal	**0.0000**	**0.0000**	
	Total	**305.04**	**36.25**	

Table 3.13 HAZUS – Building Related Economic Losses Estimate (Millions of Dollars)

Category	Area	Single Family	Other Residential	Commercial	Industrial	Others	Total
Income Losses							
	Wage	0.0000	1.4878	33.7369	0.5257	1.2732	37.0236
	Capital-Related	0.0000	0.6348	30.3480	0.3009	0.3860	31.6697
	Rental	18.8033	8.4719	16.5401	0.1566	0.6310	44.6029
	Relocation	68.3571	11.0591	23.9363	1.0218	5.9695	110.3438
	Subtotal	**87.1604**	**21.6536**	**104.5613**	**2.0050**	**8.2597**	**223.6400**
Capital Stock Losses							
	Structural	122.0324	27.4644	43.7616	3.9631	8.7495	205.9710
	Non_Structural	663.3415	140.4543	138.8491	14.6816	27.3220	984.6485
	Content	235.4067	33.2096	64.8364	8.7016	13.2932	355.4475
	Inventory	0.0000	0.0000	1.5343	1.2808	0.1549	2.9700
	Subtotal	**1020.7806**	**201.1283**	**248.9814**	**28.6271**	**49.5196**	**1549.0370**
	Total	**1107.94**	**222.78**	**353.54**	**30.63**	**57.78**	**1772.68**

3.6.2 FLOODS, DAM FAILURE, AND INUNDATION

The City of Palmdale and the surrounding planning area are subject to potential flooding from the following causes:

- Overflow of underground drainage channels/detention basins into low-lying areas as a result of heavy rainfall ("Sheet flow")
- Inundation resulting from dam failure (Little Rock Dam and Lake Palmdale, see map)
- Inundation due to a break in the California Aqueduct, see map

Flood plains seem to be changing and, in most cases, growing. Areas of the City within the 100-year flood zone are shown on **Map 3.7**. Better technology (mapping and modeling) and better data has yielded a better understanding of what is happening. In other words, it is not that the flood plain is changing necessarily. Rather, it is our understanding of where the flood plain is located that is changing. Palmdale's Flood Insurance Rate Maps were last updated in September 2008.



Figure 3.3: Flash Flood

Conventional reality dictates that some solutions designed to protect certain areas create problems for other areas. Therefore, there is a need to create integrated solutions combining "tools" that work together. In 2002, the State of California Floodplain Task Force chose the term "reasonably foreseeable flood" to identify potential flood threats, (see **Table 3.14**).

EXTENT AND LOCATION

The extent of flood events are determined by measuring the probability that the level of discharge, or the volume of water flow in a geographical are at a given time will be matched or exceeded in a specific year. The discharge probability is multiplied by 100 to determine the flood frequency. Probability of occurrence at varying discharge levels is determined using historic flood records. An event known as an annual flood, or 100-year discharge that has a 1 percent chance of occurring or being exceeded in a one-year period, is the greatest flood event expected to occur within that same time frame. The 100-year flood zone, also known as the special flood hazard area (SFHA) is commonly mapped to show the extent and depth of flooding based on discharge probabilities, as shown on **Map 3.7**. Potential flood damage is estimated from the discharge probabilities which predict the elevation of water that will result from the discharge level in a given area.

ATMOSPHERIC RIVERS

According to the National Oceanic and Atmospheric Administration, an atmospheric river is defined as a "relatively long, narrow region in the atmosphere – like rivers in the sky – that transport most of the water vapor outside the tropics." Although atmospheric rivers have the potential to provide beneficial rain or snow that is crucial to the water supply, they can also contain large amounts of water vapor and can cause extreme rainfall and floods by stalling over watersheds vulnerable to flooding. **Figure 3.4** illustrates the magnitude classification for atmospheric rivers from Category 1, a relatively weak system that is mostly beneficial, through Category 5, that is exceptionally strong and mostly hazardous with the potential to disrupt travel, induce mudslides and cause catastrophic damage to life and property.

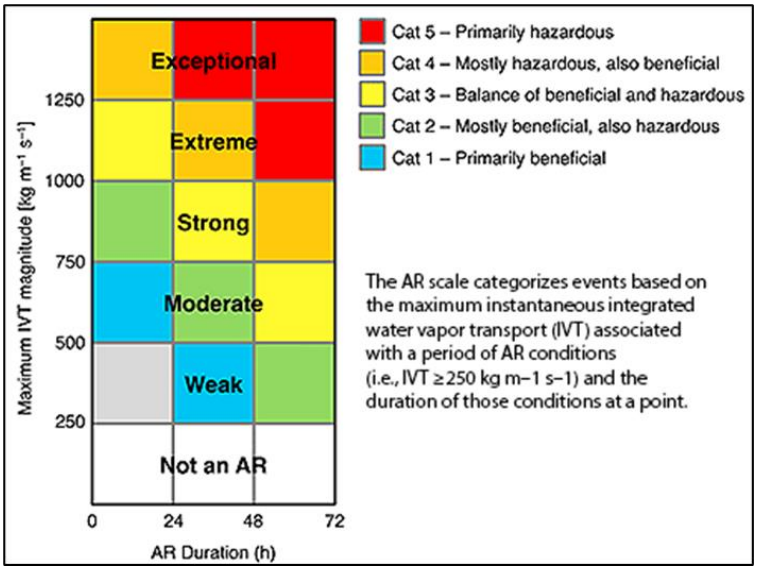


Figure 3.4 Atmospheric River Magnitudes

***EL NINO* CONDITION**

El Nino is the name given to one of several major ocean-atmosphere conditions that influence weather patterns in Southern California. Increases in the surface temperature of the eastern Pacific equatorial sector correlate with a southward shift of the northern hemisphere jet stream. *El Nino* conditions are thought to be a significant factor contributing to inter-annual variations in rainfall in the region, with unusually wet periods occurring during *El Nino* conditions, followed by unusually dry years. The phenomenon is not totally predictable but on average occurs once every four years. A typical *El Nino* condition lasts about 18 months.

URBAN FLOODING

Southern California has historically experienced very heavy rains during an El Nino condition. The part of an El Nino condition that impacted southern California is referred to as the Southern Oscillation which is an irregular "see-saw" in which atmospheric pressure and wind patterns shift across the Pacific.

The El Nino storm track affects the location of jet streams, which are a major factor in producing winter weather patterns at mid-latitudes. Instead of coming ashore in the Pacific Northwest as usual, the southern jet stream hits California, carrying moisture and storms. In general, the effect of El Nino on Southern California is increased rainfall with accompanying floods, landslides, and coastal erosion.

THUNDERSTORMS

Thunderstorms occur relatively infrequently in the basin (estimated average of 4.1 days per year in downtown Los Angeles) but can cause significant property damage, personal injury and loss of life.



Figure 3.5 Flooding during the October 2015 storm

The Antelope Valley receives sporadic summer thunderstorms. On occasion, these thunderstorms are influenced by tropical weather patterns creating the potential for significant short-term, intense rainfall. Flood hazards, property damage from gusting winds, and power outages occur during and/or following the most intense storms. A storm event occurred in July 2015, caused by thunderstorms that generated flash flooding as well as mud and debris flows and resulted in over two feet of water across Pearblossom Highway. The most recent event, October 15, 2015, produced large hail, heavy rain, and flash flooding as well as significant mud and debris flows and one death.

Table 3.14 – Reducing Risks from Reasonably Foreseeable Flooding

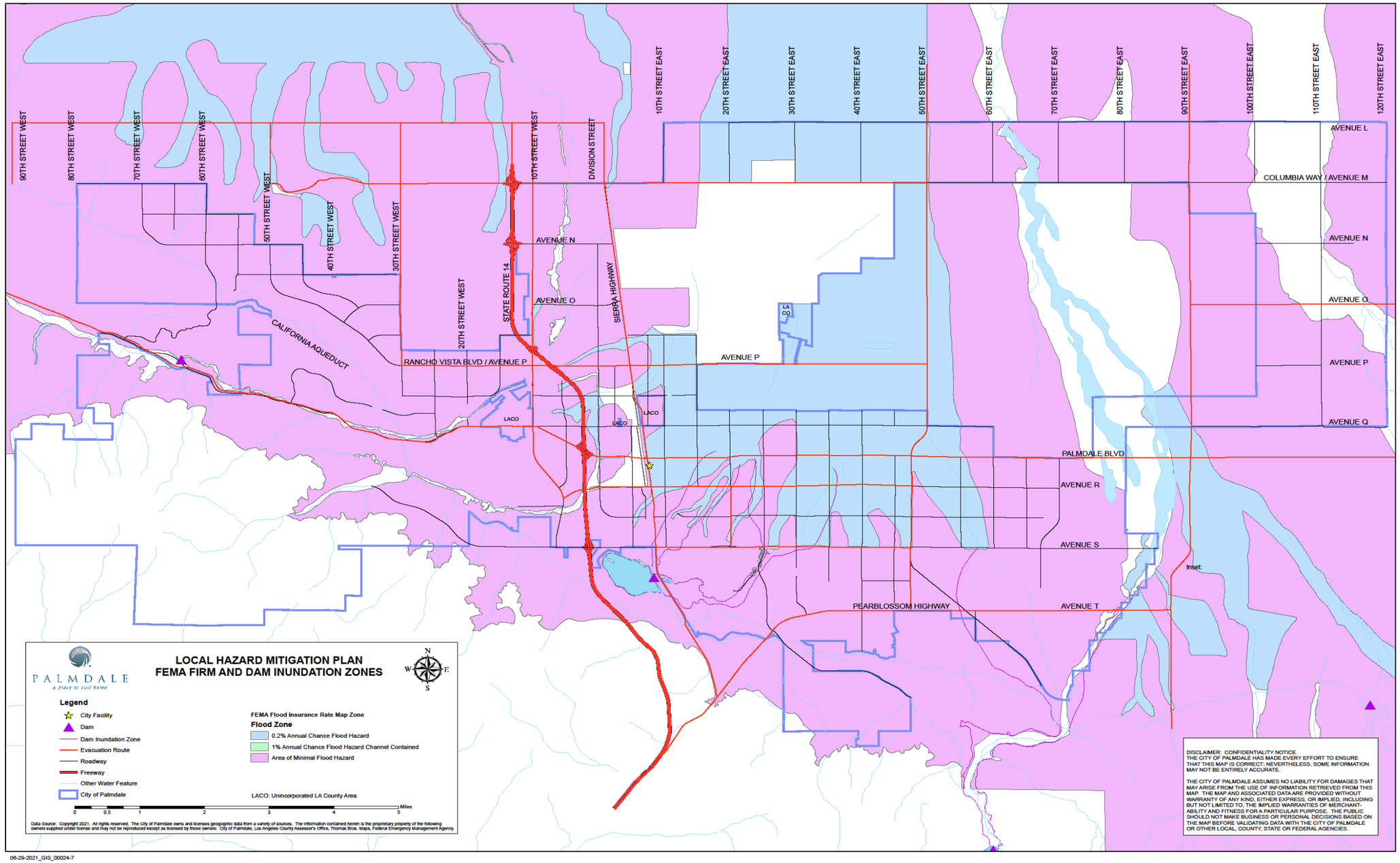
Action	Description
Awareness Floodplain Mapping	The State should expand its Awareness Floodplain Mapping Program for use by local governments and the public.
Future Build-Out Mapping	Local and State agencies preparing floodplain maps should consider current and future planned development.
Watershed-Based Mapping	Wherever practical, floodplain maps should be prepared on a watershed basis.
Geographic Information System (GIS)-Based Flood Maps	Local, State and federal agencies should create, develop, produce, and disseminate compatible GIS based flood maps.
Alluvial Fan Floodplains	Priority for alluvial fan floodplain mapping should be given to those alluvial fan floodplains being considered for development. The State should convene an alluvial fan task force to review information on alluvial fan floodplains, determine future research needs, and develop recommendations specific to alluvial fan floodplain management.
Stream Gauging and Monitoring	DWR and other agencies should sponsor projects in cooperation with the United States Geological Survey (USGS) to install real time gauges in priority locations throughout California.

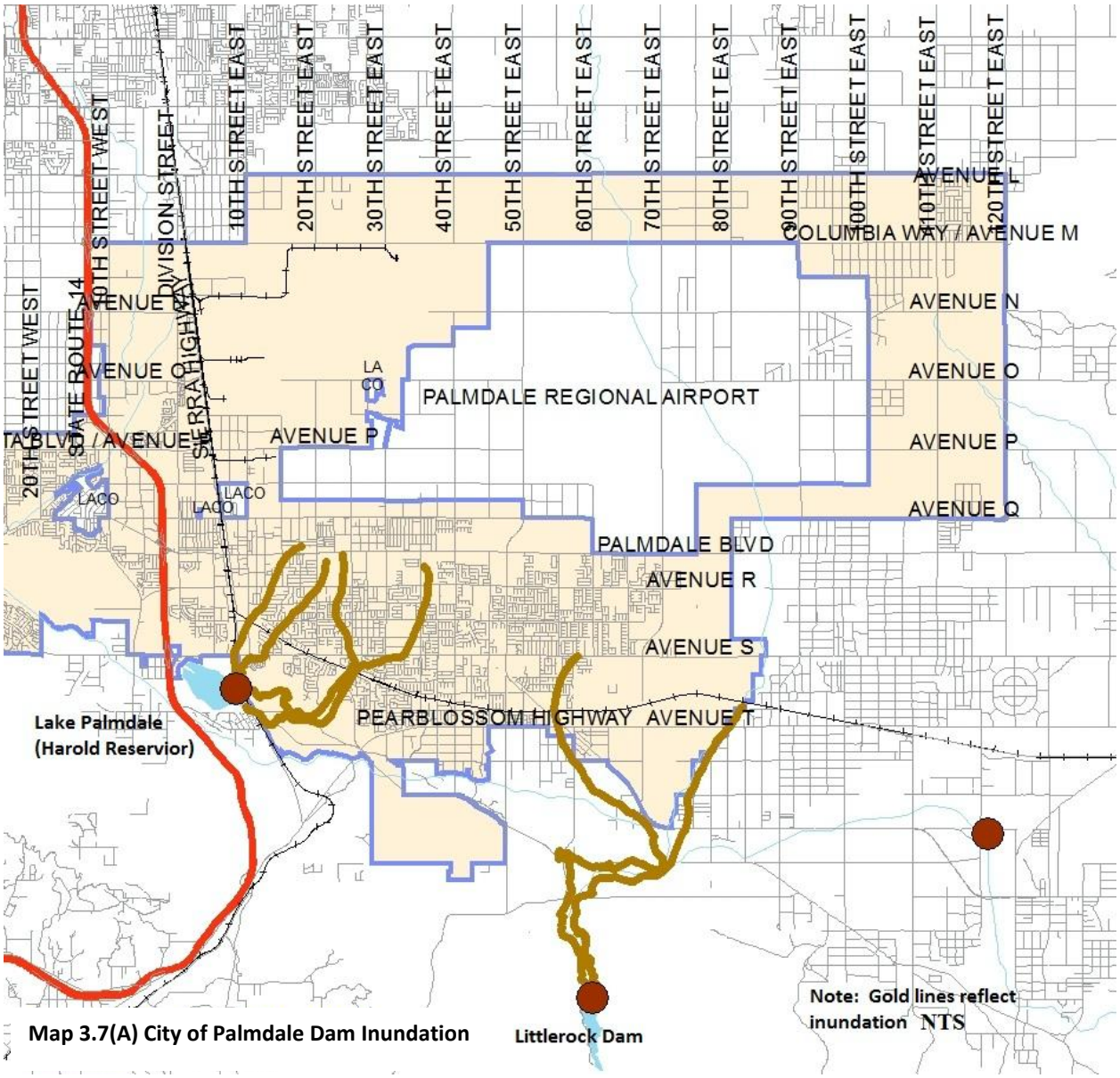
Repetitive Losses	Local agencies should work with the OES and DWR to identify repeatedly flooded structures and inform qualifying residents of voluntary programs to prevent future flood loss.
Flood Warning and Local Community Flood Response Programs	The State should increase assistance to local agencies to improve flood-warning programs for specific watersheds.
Flood Insurance Rate Map Issues	Decision-makers should gather information and data beyond Flood Insurance Rate Maps to better assess reasonably foreseeable floods.
Exceeding Minimum Flood Insurance Requirements	Local communities should be encouraged to require new and substantially improved buildings to set their lowest floor elevations to at least one foot above the NFIP base flood elevation, thus factoring in the effect of full build-out of the watershed.
Executive Order	The Governor's 1977 Executive Order should be updated to direct State agencies to meet or exceed NFIP standards for State facilities.
State Model Hazard Mitigation Plan	DWR, OES, and other agencies should incorporate floodplain management measures into the State Model Hazard Mitigation Plan that will meet the FEMA requirements.
Multi-hazard Mapping	OES should coordinate with other hazard mapping efforts to develop GIS-based multi-hazard advisory maps and distribute them to local governments and the public.
State Building Codes	Ensure that the California Building Standards Code meets, at a minimum, NFIP requirements. Ensure that other State codes applicable to public buildings meet, at a minimum, NFIP requirements. Ensure that any local code adoptions or amendments and any development approvals meet, at a minimum, NFIP requirements.

Since the first LHMP in 2009, the City of Palmdale has created an "Emergency Services Notification System – See **Table 4.1**" that is implemented when a hazardous event may take place, including flooding events. Continued efforts are being made with the State to make sure that flooding information is up to date for its citizens and visitors.

Map 3.7 on the following page, prepared by the City of Palmdale GIS Department, depicts areas in the Palmdale vicinity subject to flooding.

Map 3.7 – City of Palmdale Flood Plain





Map 3.7(A) City of Palmdale Dam Inundation

Previous Occurrences

For the purposes of this LHMP, we have listed only those flood incidents for which FEMA provided repair/recovery funding and a recent event that did not receive FEMA funding. We have concentrated on those incidents that have occurred within the past 15 years.

Table 3.15 City of Palmdale Disaster Incidents

Disaster Number*	Month/Year	Reason
DR-1577-CA	12/04-1/05	Severe storms, flooding, debris flows, and mudslide
DR-1585-CA	2/05	Severe storms, flooding, landslides, and mud and debris flows
CA-00241**	10/15	Severe rain, flooding and debris flows
DR-4305-CA	1/17	Severe winter storms, flooding, and mudslides
DR-4353-CA	12/17-1/18	Wildfires, flooding, mudflows, and debris flows

**The disaster number is assigned by FEMA or the State of California, as applicable.*
***This incident was an Administrative declaration for the State of CA; declaration made 11/17/15*

The major causes of flooding over the past decade have been heavy winter rains and the accompanying high velocity flows within watercourses and the storm drainage infrastructure. Damages have included roadway and shoulder washouts, culvert inlet damage, retention basin damage, and sediment basin overload (as well as minor damage to private property.)

In January & February 2005, the high winds and heavy rains caused severe damage upstream of the Amargosa Creek arch culvert inlet, including the riprap-sided drainage channel, concrete inlet structure, and sediment basin, and the Avenue O retention basin. Also damaged were several roadside dirt shoulders, two (2) dirt roads, and three (3) asphalt road sections. As this incident was declared by the State, federal funding assistance was provided to repair damage and provide mitigation measures.

Average annual rainfall in the City of Palmdale is negligible, averaging 7.4 inches per year. Due to the lack of rain, major flooding events have not occurred. However, in October 2015, a severe thunderstorm and rain/hail microburst caused intense flooding and mud damage to the Westside of Palmdale, including one (1) fatality. This incident was not declared an emergency by the State and to date the City of Palmdale has encumbered approximately $1.5 million worth of debris removal and repair of damaged structures.

Probability of Future Events

Given the flood history of Los Angeles County, the Antelope Valley, and the City of Palmdale, it is almost certain that there will be flooding events similar to those that have occurred in the recent past. The probability of future events is increased because it is reasonable to assume that commercial and residential development will continue. Development increases runoff volume and may affect on-site detention effectiveness and downstream channel capacity. Any encroachment into the flood plain reduces flood storage and restricts conveyance when it is needed the most.

The City has made a concentrated effort to mitigate against circumstances contributing to flooding, using such tools as ordinances governing development in flood hazard areas. It also plans to implement mitigation actions to prevent repeated flooding of specific roadways and intersections. These actions are discussed in more detail in Section 4 of this LHMP.

Climate Change Impacts

The IPCC (Intergovernmental Panel on Climate Change) has indicated that climate change has detectably influenced several of the water-related variables that contribute to floods, such as rainfall and snowmelt. While climate change may not induce floods directly, it exacerbates many of the factors that do, such as heavier precipitation, and could create increased flooding when events occur.

Vulnerability Assessment

Periodically Southern California is subject to unusually heavy rainfall from tropical storms flowing in from the Pacific Ocean. Severe tropical storms are associated with *El Nino* conditions, i.e., increased Pacific Ocean surface water temperatures. (A more detailed discussion of tropical storms and other severe weather events is contained in the "Severe Weather" section of this document.)

As a result of heavy rains sheet flow occurs along major drainages and adjoining areas on scattered sites. Areas with flood hazards are the natural drainage channels of Amargosa Creek, Anaverde Creek, Little Rock Wash, and Big Rock Wash. Flat plains and natural depressions are also subject to possible flooding.

- **Amargosa Creek** collects runoff from the northern face of the Sierra Pelona Mountains and the southern slope of both Portal and Ritter ridges. It begins at the mouth of the San Francisquito Canyon, travels the length of Leona Valley, and enters Palmdale along Elizabeth Lake Road, in the vicinity of the intersection of 25th Street West and Elizabeth Lake Road.
- **Anaverde Creek** collects runoff from the Sierra Pelona Range and drains easterly through the Antelope Valley. The creek then flows north along Sierra Highway into USAF Plant 42.
- **Little Rock Wash** collects runoff from the San Gabriel Mountains in Little Rock Canyon and travels just west of Littlerock through the east side of Palmdale in a northerly direction.
- **Big Rock Wash** collects runoff from the San Gabriel Mountains in Pallett and Big Rock creeks. Traveling north from Holcomb Ridge through Pearblossom, it is divided by the Alpine, Lovejoy and Piute Buttes and merges at Avenue E.
- **Pearland Watershed** upstream is divided into five subareas that drain toward Lake Palmdale, through Soledad Siphon to the proposed Barrel Springs Basin, the planned S-37 Detention Basin, the proposed Hunt Canyon Detention Basin, the 45th Street East and SPRR, the existing R-55 Basin at Dominic Massari Park, and to Avenue Q. The downstream Pearland Watershed is divided into three subareas that drain to the L-37 Basin, proposed L-45 and L-50 Basins.
- **Portal Ridge Watershed** drains the areas between 140th Street West and 17th Street West, confluences with Fairmount Wash near Avenue H west of the Antelope Valley Freeway.

Urban development reduces the total ground absorption area by creating impermeable surfaces (structures, pavement, and streets). Excess storm runoff- increased by the presence of impermeable surfaces- flows from developed areas, contributes to compromised storm drains, and results in localized street flooding. Moreover, developed areas generate irrigation water runoff from landscaping that may channel nuisance water flow into nearby undeveloped areas and street gutters.

The amount and frequency of rain varies, and although floodwaters may be diverted, the lack of a completed regional drainage system will continue to result in local flooding problems. The City has a Drainage Master Plan adopted in 1996. It was expected to take approximately 20 years to complete construction of the entire system, according to the City of Palmdale Engineering Division. The 2021-2022 City budget includes an update to the Drainage Master Plan. The DMP addresses storm water runoff from higher slopes and existing and future developments. The Los Angeles County Department of Public Works has completed and adopted the Antelope Valley Comprehensive Plan of Flood Control and Water Conservation (June 1987), which is currently being implemented in the unincorporated portions of the Antelope Valley. The storm drainage section of the Public Services Element of that DMP discusses flood hazards in more detail and is incorporated by inference.

Earthquake faults create vertical barriers to groundwater that may result in shallow groundwater conditions. They may also limit the amount of water that can percolate into the subsurface, thus increasing the amount, velocity, and erosive capacity of storm water runoff on hillsides.

Surface rupture and ground shaking from earthquakes may result in rupture of the Palmdale and Littlerock Dams, causing flooding. Floodwaters could be as deep as 50 feet immediately downstream of the Littlerock Dam. Failure of the Littlerock Dam would result in the inundation of a 300-foot-wide area for 0.25 mile north of the dam. Along this length, the water depth would vary from 50 to 15 feet. Ten minutes after failure, the floodwater would veer eastward for 800 feet to Avenue U where the depth would be reduced to 10 feet. Trending north from Avenue U, the water would eventually dissipate so that the depth is no longer a risk to downstream developments.

In addition to dam failure and subsequent flooding, a seismic event could cause a water wave, or seiche, to occur at Lake Palmdale, which could potentially overtop the dam. The design report for the dam considers a reflection of the wave on return unlikely. Also, wave volume above the dam would not be substantial (approximately 1 acre-foot) and would not result in damaging floods. Overpour on the downstream side of the dam will not cause any damage by erosion as the existing rockfill was designed to withstand it. The Sheriff's Department is responsible for notification and local evacuation in the event of dam failure.

In the event of a large magnitude local earthquake on the San Andreas Fault, some portions of the California Aqueduct are likely to fail. The east branch of the aqueduct is highly vulnerable to widespread damage from ground shaking hazards because it closely parallels the San Andreas Fault for over 62.4 miles. Moreover, the east branch crosses the fault at several locations near Palmdale (Leona Siphon and Barrel Springs) which are susceptible to surface rupture hazards. The Department of Water Resources (DWR) has installed flood control gates to mitigate any structural failure. By closing the gates upstream, the section of the Aqueduct in the Planning Area

will be isolated and will not receive water. Aqueduct water present during failure will be diverted to pools that serve as detention basins.

The Aqueduct crosses the fault at Leona Siphon and Barrel Springs. The extent and rate of inundation is difficult to predict since the amount of water in the Aqueduct varies between seasons and years. Various factors which affect the size and extent of flooding include structural failure of the Aqueduct and pools while the Aqueduct is operating at full capacity, adjacent pools outside the Planning Area draining, and emergency power failure which could result in the Aqueduct gates not closing fast enough.

Map 3.7, prepared by the City of Palmdale GIS Department, depicts those areas in the Palmdale most vulnerable to flooding/inundation.

Estimating Potential Losses

Building on data from the hazard identification and vulnerability assessment, a risk analysis should include two components: (1) the population and property at risk from a flooding event; and (2) the frequency and severity of the flooding event itself.

Table 3.16 identifies the infrastructure located in the FEMA Firm and Dam Inundation Zones.

Table 3.16 Key Assets in Dam Inundation Zones

Flood Zone	Key Infrastructure
A - 100 Year Flood Plain	Palmdale Transportation Ctr
	Railroad – 2 miles
	Maintenance Warehouse
Dam Inundation Flood Plain	Civic Center Area
	5 Fire Stations
	Red Cross Building
	Palmdale Highschool
	Desert Rose Elementary
	Mesquite Elementary
	Manzanita Elementary
	Essential Roads (10 miles)

3.6.3 WILDFIRE/BRUSH FIRES

A wildfire is "any instance of uncontrolled burning in grasslands, brush, or woodlands," whereas “uncontrolled burning within a forested area” is a forest fire. The distinction is important mainly to clarify that wildfire do occur in non-forested areas, which most typifies Palmdale.

Hazards Secondary to Wildfire/Forest Fire:

- Landslides, mudslides, more intense water run-off (potential long-term hazard)
- Deadfall of scorched trees (potential long-term hazard)
- Ignition source for flammable and explosive materials
- Smoke and particulates reduce air quality – trouble especially for people with respiratory ailments
- Volatilized hazardous waste – toxic clouds or plumes
- Damaged infrastructure, such as roads, water supply pipes, sewers, which presents possible health and safety risks

URBAN/WILDLAND INTERFACE

The urban/wildland interface is the area or areas where houses and non-residential structures such as businesses, public buildings, and utility stations encroach on an undeveloped, natural resource area. The interface may be better described as the places where houses and other structures are up against and amidst trees, brush, and grassy areas, whether or not residents consider these areas wild."

EXTENT AND LOCATION

California Government Code Section 51175 – 51189 requires that local agencies designate very high fire hazard severity zones within the jurisdiction. Mapping of Very High Fire Hazard Severity Zones (VHFHSZ) is developed using models of potential fuels over a 30–50-year time horizon and their associated expected fire behavior and expected burn probabilities to quantify the likelihood and nature of vegetation fire exposure to buildings. **Map 3.8** identifies the southwest portion of Palmdale as being located in a VHFHSZ. Although, the area is largely undeveloped, it is encroaching on residential neighborhoods and has the potential to support future development. If this area is developed in the future, the impacts of fire on life and property will increase and the City will need to consider the appropriate mitigation strategies to reduce these hazard risks.

Previous Occurrences

Historically, wildfires have been a recurring feature of the California ecosystem. Naturally occurring wildfires play an important role in renewing and revitalizing woodland, scrub, and brush areas, especially in the mountain and foothill areas. While historical wildfires resulted in short-term damage to flora, fauna, soils, and water quality, loss of life and economic damage were minimized due to the lack of urbanization and the sparse population. With the influx of immigration into California in the 19th Century, that began to change.

“Written documents reveal that during the 19th century human settlement of southern California altered the fire regime of coastal California by increasing the fire frequency. This

was an era of very limited fire suppression, and yet like today, large crown fires covering tens of thousands of acres were not uncommon. One of the largest fires in Los Angeles County (60,000 acres) occurred in 1878, and the largest fire in Orange County's history, in 1889, was over half a million acres."

(Source: http://www.usgs.gov/public/press/public_affairs/press_releases/pr1805m.html)

With California's increasing urbanization, especially as urban development has encroached on foothill and mountainous areas, the hazards associated with wildfires have increased dramatically. Wildfires now constitute one of the most dangerous threats to life and property in the state, (see **Map 3.8**).

2003 SOUTHERN CALIFORNIA FIRES

The fall of 2003 marked the most destructive wildfire season to date in California history. In a ten-day period, 12 separate fires raged across Southern California in Los Angeles, Riverside, San Bernardino, San Diego, and Ventura counties. The massive "Cedar Fire" in San Diego County consumed 2,800 homes and burned over a quarter of a million acres.

2007 SOUTHERN CALIFORNIA FIRES

In late October 2007, Southern California experienced an unusually severe fire weather event characterized by intense, dry, gusty Santa Ana winds. This weather event drove a series of destructive wildfires that took a devastating toll on people, property, natural resources, and infrastructure. Although some fires burned into early November, the heaviest damage occurred during the first three days of the siege when the winds were the strongest. During this siege, 17 people lost their lives, ten were killed by the fires outright, three were killed while evacuating, four died from other fire siege related causes, and 140 firefighters and an unknown number of civilians were injured. A total of 3,069 homes and other buildings were destroyed, and hundreds more were damaged. Hundreds of thousands of people were evacuated at the height of the siege.

The fires burned over half a million acres, including populated areas, wildlife habitats and watersheds. Portions of the electrical power distribution network, telecommunications systems, and even some community water sources were destroyed. Transportation was disrupted over a large area for several days, including numerous road closures. Both the Governor of California and the President of the United States personally toured the ongoing fires. Governor Schwarzenegger proclaimed a state of emergency in seven counties before the end of the first day. President Bush quickly declared a major disaster. While the total impact of the 2007 fire siege was less than the disastrous fires of 2003, it was unquestionably one of the most devastating wildfire events in the history of California. (Source: http://www.fire.ca.gov/fire_protection/downloads/siege/2007/Overview_Introduction.pdf)

2017-2020 SOUTHERN CALIFORNIA FIRES

In terms of property damage, 2017 was the most destructive wildfire season on record in California at the time. Throughout 2017, the fires destroyed or damaged more than 10,000 structures in the state (destroyed 9,470, damaged 810), a higher tally than the previous nine

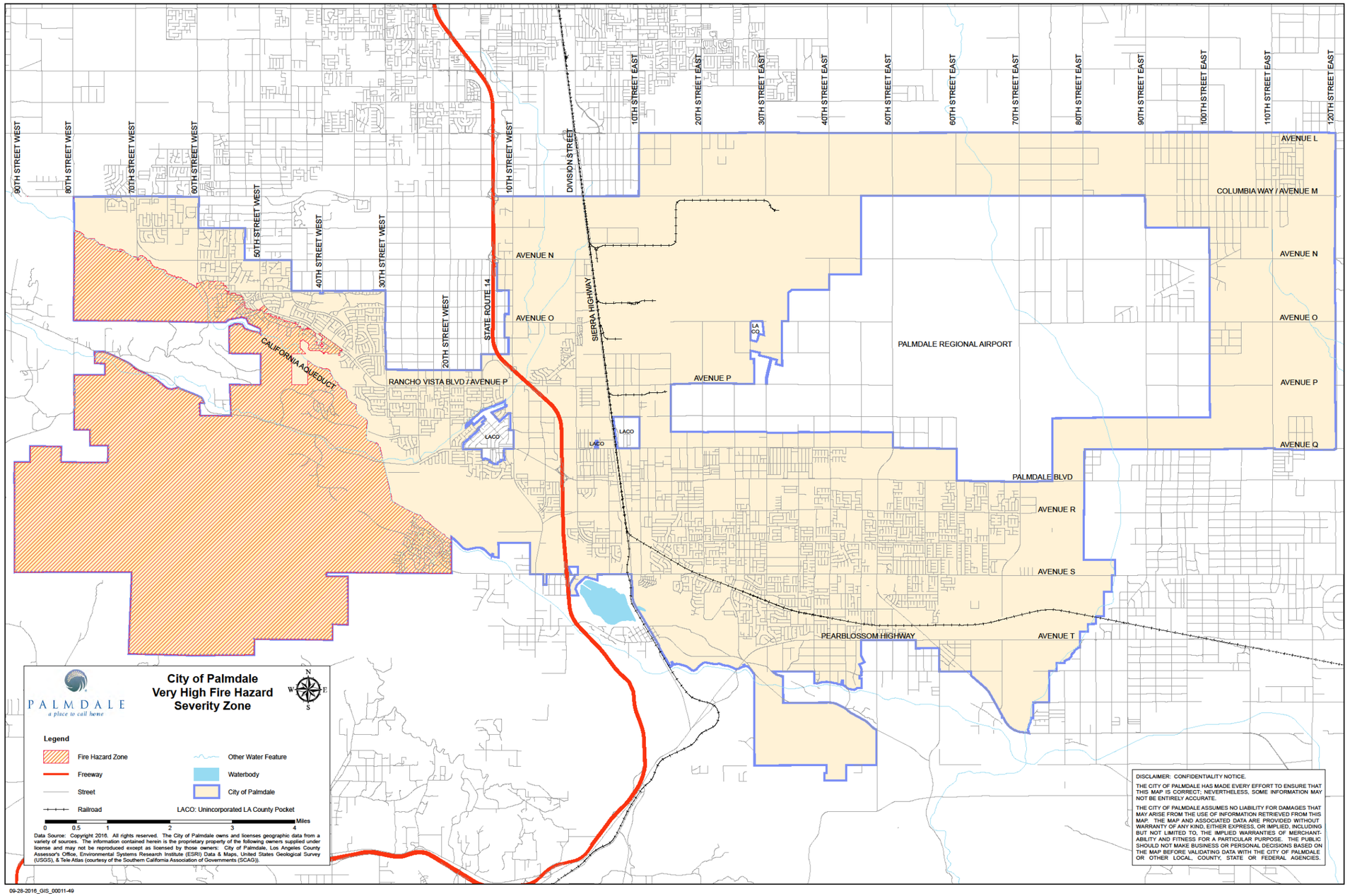
years combined. In total 9,133 fires burned 1,248,606 acres. In December 2017, strong Santa Ana winds triggered a new round of wildfires, including the massive Thomas Fire in Ventura County. At the time, the Thomas Fire was California's largest modern wildfire, which has since been surpassed by the Mendocino Complex's Ranch Fire in 2018. The December 2017 fires forced over 230,000 people to evacuate. 2017 will be remembered as a year of extremes. It was the third-warmest year on record for the United States, and it was the second hottest in California, bringing to the surface the question of long-term climate change and its contribution to the 2017 California fires. The hotter temperatures dry out vegetation, making them easier to burn, predisposing vulnerable regions like California to more wildfires in the coming decades as temperatures continue to rise and rainfall continues to decline. (Source: https://www.fire.ca.gov/incidents/2017/)

The 2018 wildfire season was the deadliest and most destructive wildfire season on record in California, with a total of over 7,500 fires burning an area of over 1,670,000 acres. In mid-July to August 2018, a series of large wildfires erupted across California, mostly in the northern part of the state. In November 2018, another round of large, destructive fires launched including the Woolsey Fire in Los Angeles and Ventura counties and the Camp Fire in Butte County, which killed at least 85 people. (Source: https://www.fire.ca.gov/incidents/2018/)

While 2019 was a relatively mild fire season, it should be noted that Pacific Gas & Electric, Southern California Edison, and San Diego Gas & electric preemptively shut off power to 800,000 electrical customers to reduce the risk of wildfires by preventing electrical arcing in high winds from their above-ground power lines. (Source: https://www.fire.ca.gov/incidents/2019/)

The 2020 California wildfire season was characterized by a record-setting year of wildfires that burned across the state. As of the end of the year, nearly 10,000 fires had burned over 4.2 million acres, more than 4% of the state’s roughly 100 million acres of land, making 2020 the largest wildfire season recorded in California’s modern history. (Source: https://www.fire.ca.gov/incidents/2020/)

Map 3.8 – City of Palmdale Very High Fire Hazard Severity Zone



The most dangerous wildfires occur in “urban interface” areas, i.e., areas where development encroaches on woodland and/or brush land areas. There are three categories of interface fire: The **classic** wildland/urban and suburban development presses up against open expanses of wildland area; the **mixed** wildland/urban interface is characterized by isolated homes, subdivisions, and small communities situated predominately in wildland settings; and the **occluded** wildland/urban interface exists where islands of wildland vegetation occur inside a largely urbanized area. (Source: Michael e. Martinet, “Wildland/Urban Interface Fire Hazards in Southern California”, 2004)

Although the City of Palmdale has not been part of a major fire event during the reporting period, it should be noted that all three categories of urban/wildland occur within the planning area of the City of Palmdale and there has been two major fire events that have affected the outlying areas of the Antelope Valley. The Powerhouse fire, May 2013, burned 30,274 acres in the Antelope Valley as well as the Los Angeles County mountains. Another fire event occurred in July 2010, the Crown Fire. This fire was located west of the City of Palmdale in the Leona Valley area, northern LA County high desert, and would be considered a mixed wildland/urban interface. The fire burned more than 14,000 acres, destroyed 10 structures and damaged 6 homes.

Tables 3.17, **3.18** and **3.19** on the following pages list the twenty deadliest wildfires in California by deaths, the twenty largest wildfires occurring in California by acres burned and the twenty most destructive California wildfires by structures burned, respectively.

Map 3.9 classifies geographic areas according to the degree of threat from wildland fires, ranging from “Little to No Threat” to “Extreme Threat”. Most of the City of Palmdale lies within the “Moderate Threat” area. Just east and west of the proposed Palmdale Regional Airport and USAF Plant 42 are areas designated “High Threat.” The southern and western foothills of the City are designated “Very High Threat,” and the mountainous area in the far southwestern corner of the City is designated “Extreme Threat”.

The City of Palmdale GIS Section has prepared a fire hazard map of the Palmdale area, **Map 3.9** Wildland Fire Hazards".

Table 3.17 Twenty Deadliest Wildfires in California (to 2020)

Top 20 Deadliest California Wildfires

	FIRE NAME *(CAUSE)*	DATE	COUNTY	ACRES	*STRUCTURES*	DEATHS
1	**CAMP FIRE** *(Powerlines)*	November 2018	Butte	153,336	18,804	85
2	**GRIFFITH PARK** *(Unknown)*	October 1933	Los Angeles	47	0	29
3	**TUNNEL - Oakland Hills** *(Rekindle)*	October 1991	Alameda	1,600	2,900	25
4	**TUBBS** *(Electrical)*	October 2017	Napa & Sonoma	36,807	5,643	22
5	**NORTH COMPLEX** *(Under Investigation)**	August 2020	Butte, Plumas, & Yuba	318,935	2,352	15
6	**CEDAR** *(Human Related)*	October 2003	San Diego	273,246	2,820	15
7	**RATTLESNAKE** *(Arson)*	July 1953	Glenn	1,340	0	15
8	**LOOP** *(Unknown)*	November 1966	Los Angeles	2,028	0	12
9	**HAUSER CREEK** *(Human Related)*	October 1943	San Diego	13,145	0	11
10	**INAJA** *(Human Related)*	November 1956	San Diego	43,904	0	11
11	**IRON ALPS COMPLEX** *(Lightning)*	August 2008	Trinity	105,855	10	10
12	**REDWOOD VALLEY** *(Power Lines)*	October 2017	Mendocino	36,523	544	9
13	**HARRIS** *(Undetermined)*	October 2007	San Diego	90,440	548	8
14	**CANYON** *(Unknown)*	August 1968	Los Angeles	22,197	0	8
15	**CARR** *(Human Related)*	July 2018	Shasta County, Trinity	229,651	1,614	8
16	**LNU Lightning Complex** *(Under Investigation)**	August 2020	Napa, Solano, Sonoma, Yolo, Lake, & Colusa	363,220	1,491	6
17	**ATLAS** *(Powerline)*	October 2017	Napa & Solano	51,624	781	6
18	**OLD** *(Human Related)*	October 2003	San Bernardino	91,281	1,003	6
19	**DECKER** *(Vehicle)*	August 1959	Riverside	1,425	1	6
20	**HACIENDA** *(Unknown)*	September 1955	Los Angeles	1,150	0	6

** Fires with the same death count are listed my most recent. Several fires have had 4 fatalties, but only the most recent are listed.
***This list does not include fire jurisdiction. These are the Top 20 regardless of whether they were state, federal, or local responsibility.
* Numbers not final

4/28/2021

Table 3.18 Twenty Largest Fires in California (to 2020)

Top 20 Largest California Wildfires

	FIRE NAME (CAUSE)	DATE	COUNTY	ACRES	STRUCTURES	DEATHS
1	**AUGUST COMPLEX** *(Under Investigation)**	August 2020	Mendocino, Humboldt, Trinity, Tehama, Glenn, Lake, & Colusa	**1,032,648**	935	1
2	**MENDOCINO COMPLEX** *(Under Investigation)*	July 2018	Colusa, Lake, Mendocino & Glenn	**459,123**	280	1
3	**SCU LIGHTNING COMPLEX** *(Under Investigation)**	August 2020	Stanislaus, Santa Clara, Alameda, Contra Costa, & San Joaquin	**396,624**	222	0
4	**CREEK FIRE** *(Under Investigation)**	September 2020	Fresno & Madera	**379,895**	853	0
5	**LNU LIGHTNING COMPLEX** *(Under Investigation)**	August 2020	Napa, Solano, Sonoma, Yolo, Lake, & Colusa	**363,220**	1,491	6
6	**NORTH COMPLEX** *(Under Investigation)**	August 2020	Butte, Plumas & Yuba	**318,935**	2,352	15
7	**THOMAS** *(Powerlines)*	December 2017	Ventura & Santa Barbara	**281,893**	1,063	2
8	**CEDAR** *(Human Related)*	October 2003	San Diego	**273,246**	2,820	15
9	**RUSH** *(Lightning)*	August 2012	Lassen	**271,911 CA / 43,666 NV**	0	0
10	**RIM** *(Human Related)*	August 2013	Tuolumne	**257,314**	112	0
11	**ZACA** *(Human Related)*	July 2007	Santa Barbara	**240,207**	1	0
12	**CARR** *(Human Related)*	July 2018	Shasta County & Trinity	**229,651**	1,614	8
13	**MATILIJA** *(Undetermined)*	September 1932	Ventura	**220,000**	0	0
14	**WITCH** *(Powerlines)*	October 2007	San Diego	**197,990**	1,650	2
15	**KLAMATH THEATER COMPLEX** *(Lightning)*	June 2008	Siskiyou	**192,038**	0	2
16	**MARBLE CONE** *(Lightning)*	July 1977	Monterey	**177,866**	0	0
17	**LAGUNA** *(Powerlines)*	September 1970	San Diego	**175,425**	382	5
18	**SQF COMPLEX** *(Lightning)*	August 2020	Tulare	**170,384**	228	0
19	**BASIN COMPLEX** *(Lightning)*	June 2008	Monterey	**162,818**	58	0
20	**DAY FIRE** *(Human Related)*	September 2006	Ventura	**162,702**	11	0

There is no doubt that there were fires with significant acreage burned in years prior to 1932, but those records are less reliable, and this list is meant to give an overview of the large fires in more recent times.
This list does not include fire jurisdiction. These are the Top 20 regardless of whether they were state, federal, or local responsibility.
*Numbers not final.

4/28/2021

Table 3.19 Twenty Most Destructive Fires in California (to 2020)

Top 20 Most Destructive California Wildfires

	FIRE NAME *(CAUSE)*	DATE	COUNTY	ACRES	*STRUCTURES*	DEATHS
1	**CAMP FIRE** *(Powerlines)*	November 2018	Butte	153,336	18,804	85
2	**TUBBS** *(Electrical)*	October 2017	Napa & Sonoma	36,807	5,636	22
3	**TUNNEL - Oakland Hills** *(Rekindle)*	October 1991	Alameda	1,600	2,900	25
4	**CEDAR** *(Human Related)*	October 2003	San Diego	273,246	2,820	15
5	**NORTH COMPLEX** *(Under Investigation)**	August, 2020	Butte, Plumas, & Yuba	318,935	2,352	15
6	**VALLEY** *(Electrical)*	September 2015	Lake, Napa & Sonoma	76,067	1,955	4
7	**WITCH** *(Powerlines)*	October 2007	San Diego	197,990	1,650	2
8	**WOOLSEY** *(Under Investigation)*	November 2018	Ventura	96,949	1,643	3
9	**CARR** *(Human Related)*	July 2018	Shasta County, Trinity	229,651	1,614	8
10	**GLASS FIRE** *(Under Investigation)**	September 2020	Napa & Sonoma	67,484	1,520	0
11	**LNU LIGHTNING COMPLEX** *(Under Investigation)**	August 2020	Napa, Solano, Sonoma, Yolo, Lake, & Colusa	363,220	1,491	6
12	**CZU LIGHTNING COMPLEX** *(Lightning)*	August 2020	Santa Cruz, San Mateo	86,509	1,490	1
13	**NUNS** *(Powerline)*	October 2017	Sonoma	54,382	1,355	3
14	**THOMAS** *(Powerline)*	December 2017	Ventura & Santa Barbara	281,893	1,063	2
15	**OLD** *(Human Related)*	October 2003	San Bernardino	91,281	1,003	6
16	**JONES** *(Undetermined)*	October 1999	Shasta	26,200	954	1
17	**AUGUST COMPLEX** *(Under Investigation)**	August 2020	Mendocino, Humboldt, Trinity, Tehama, Glenn, Lake, & Colusa	1,032,648	935	1
18	**BUTTE** *(Powerlines)*	September 2015	Amador & Calaveras	70,868	921	2
19	**CREEK FIRE** *(Under Investigation)**	September 2020	Fresno & Madera	379,895	856	0
20	**ATLAS** *(Powerline)*	October 2017	Napa & Solano	51,624	783	6

"Structures" include homes, outbuildings (barns, garages, sheds, etc) and commercial properties destroyed.
This list does not include fire jurisdiction. These are the Top 20 regardless of whether they were state, federal, or local responsibility.
*Numbers not final

4/28/2021

Probability of Future Events

Considering the drought situation, and the compounded effects of climate change, the risk of wildfires and/or urban wildland interface fires in the future is high and will probably continue to rise. The area around Plant 42 and Palmdale Regional Airport is considered a high threat due to the possibility of airplane failures and/or military equipment failure. The foothills surrounding the Palmdale area are considered "Very High Threat" due to the possibility of lightning events that may occur during the summer and fall season and due to the drought, plant material is extremely dry. The chance of a wildfire occurring is measured using an index of



Figure 3.6 Fire in Palmdale

"expected fire frequency." The potential of a fire event to cause change is based on the measure of "potential fire behavior." Together these two measures comprise the "fire threat."

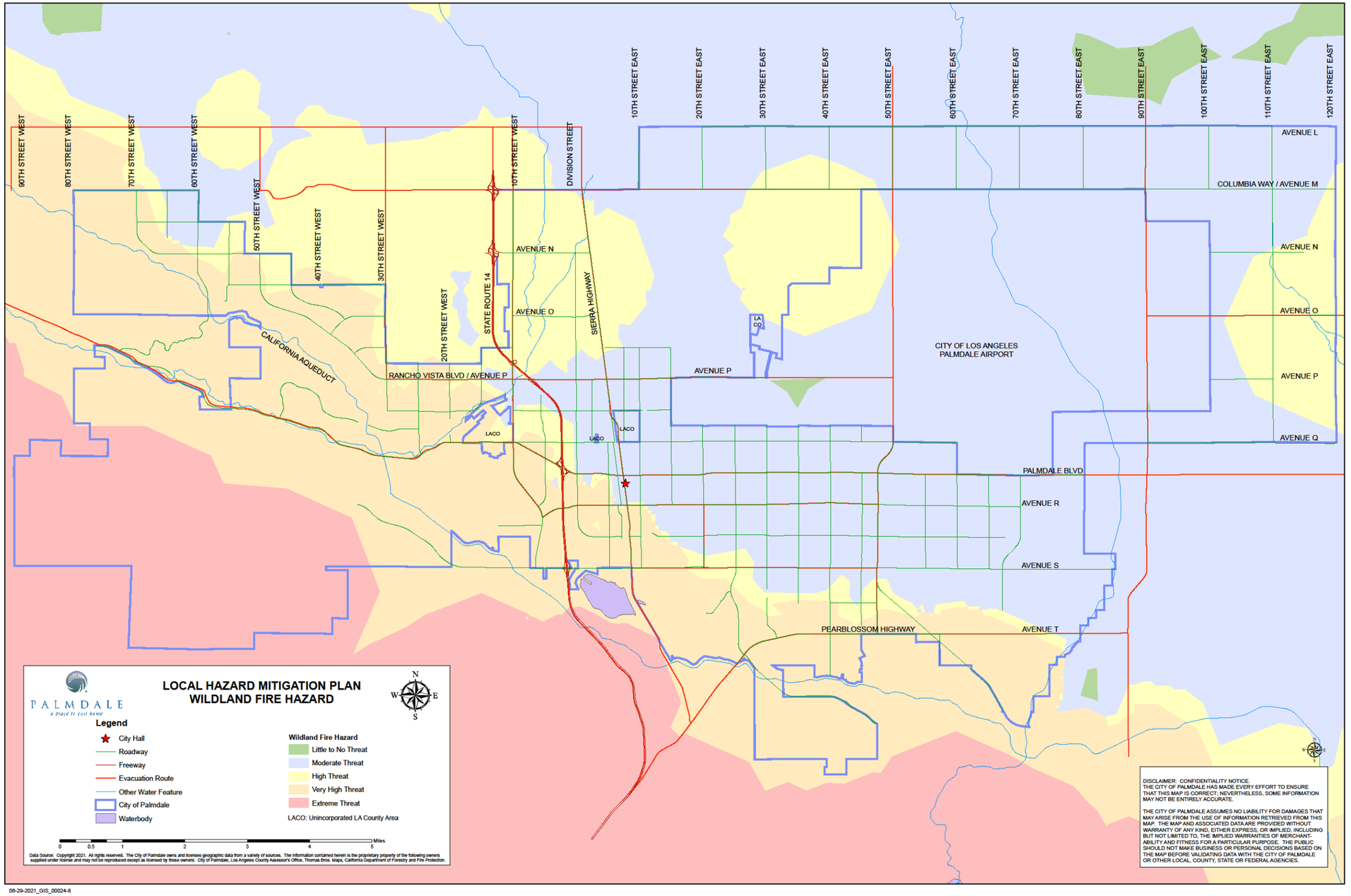
The risk and probability of a wildfire and/or wildland urban interface fire is reflected in statistics that indicate a consistently increasing structure loss from wildland fires (Martin and Sapsis, 1994). The risk is predominantly associated with Wildland-Urban Interface (WUI) areas. As noted previously, all three categories of urban/wildland fires occur within the planning area of the City of Palmdale.

Climate Change Impacts

Climate change is increasing the frequency and severity of wildfires in California. Since 1950, the area burned by California wildfires each year has been increasing, as spring and summer temperatures have warmed, and spring snowmelt has occurred earlier. During the recent "hotter" drought, unusually warm temperatures intensified the effects of very low precipitation and snowpack, creating conditions for extreme, high severity wildfires that spread rapidly. Of the 20 largest fires in California's history, eight have occurred in the past three years (since 2017). The 2020 August Complex Fire is now the largest recorded wildfire in California, surpassing the 2018 Mendocino Complex Fire. [1]

[1] Note: As of the preparation of this report, the Dixie Fire in Northern California has surpassed the August Complex Fire to become the largest in the state's history. As of August 25, 2021, CalFIRE reported more than 735,000 acres burned across five counties. Source: https://www.fire.ca.gov/incidents/2021/7/14/dixie-fire/

Map 3.9 City of Palmdale Wildland Fire Hazards



Vulnerability Assessment

As noted in the previous section, the City of Palmdale and the surrounding planning area are at considerable risk of wildfire. As stated in the Safety Element of the City's General Plan:

Wildfires occur on mountains, hillsides, and grasslands. The speed and extent of their spread depends on the area's vegetation, climate, and slope. In the Planning Area, native vegetation types such as chaparral and grassland provide the fuel that allows fire to spread easily across large tracts of land. These plant species are capable of regeneration after a fire, making periodic wildfires a natural part of the ecology of these areas. The hot, dry climate of the Antelope Valley keeps the grass dry and readily combustible. The Santa Ana winds can spread fires into adjacent areas. Steep slopes bring grass and brush within reach of upward flames while impeding the access of firefighting equipment. Within Palmdale, wildfire hazards exist within the southern and western portions of the Planning area.

The fire season in the Palmdale Planning Area occurs roughly from September to November, when the Santa Ana winds blow. If rains are minimal, grass may dry as early as May and brush as early as July. From December to April, in the rainy season, wildfires rarely occur.

In addition to natural causes, wildfires may be started by various human-related methods including carelessly used matches, cigarettes discarded in the brush, the lack of spark arrestors on off-road vehicles, target ricochets, and arson.

As indicated previously, most of the City of Palmdale lies within the "Moderate Threat" area. Just east and west of the proposed Palmdale Regional Airport/USAF Plant 42 are areas designated "High Threat". The southern and western foothills of the city are designated "Very High Threat", and the mountainous area in the far southwestern corner of the City is designated "Extreme Threat". **(See Map 3.9)**

A recent fire, the Crown Fire, occurred in July and August 2010, southwest of Palmdale in Los Angeles County, burning approximately 14,000 acres and at one point jumped the California Aqueduct and threatened homes in the Rancho Vista subdivision.

Those facilities that are most vulnerable which are located in Very High Threat fire zones include a proposed fire station and future Elementary, Middle, and High Schools, as well as existing schools such as Highland, Cottonwood, Esperanza, Joe Walker, Rancho Vista (Quartz Hill area), Summerwind, Octotillo, Anaverde, Palmtree, Joshua Hills, Barrel Springs, Buena Vista, Cimarron, and Tumbleweed.

City facilities that are most vulnerable include Tejon Park, Pelona Vista Park, Joshua Ranch Park, Manzanita Park, Marie Kerr Park, Hillside Park, and Rancho Vista Park as well as libraries, future maintenance facility satellites, and future Westside parks.

Cultural and environmental resources occurring in the Very High Fire Hazard Zone include future Warnack Nature Park, Ritter Ranch Open Space, significant Ecological areas, and various prehistoric archaeological and paleontological sites. As development continues to occur in the Ritter Ranch and City Ranch areas, parks, schools, community buildings, and other cultural facilities will be constructed in the areas currently designated as Very High Fire Hazard. However, the development of these areas with urban uses will eliminate existing chaparral, grass, and other

fuels, which could reduce the overall fire hazard in these areas. Fuel reduction and landscape modifications surrounding the new development will further reduce this hazard.

The environmental resources within Very High Fire hazard areas existed prior to the establishment of the community; they have persisted through previous wildfires. No specific measures are required to protect these resources. The natural vegetation communities are, in many cases, fire dependent. Mechanical or chemical fuel reductions in proximity to urban areas are the only measures required in the open space areas.

Estimating Potential Losses

Modeling and mapping programs use several factors to determine the communities "base hazard factor." Components evaluated are: Topographical location, characteristics, and fuels; site/building construction and design; site/region fuel profile (landscaping); defensible space; accessibility; fire protection response and availability of water. The use of Geographic Information Systems (GIS) technology allows for further integration of fuels, weather, and topography data for predicting fire behavior, watershed evaluation, mitigation strategies, and hazard mapping.

Table 3.20 identifies the infrastructure located in the Wildland Fire Hazard.

Table 3.20 Key Assets in Wildland Fire Hazard Zones

–Very High Threat – Schools	Highland Highschool
	Summerwind
	Ocotillo
	Anaverde
	Palmtree
	Joshua Hill
	Barrel Springs
	Buena Vista
	Cimarron
	Tumbleweed
City Facilities	Marie Kerr Park – Recreation Facility (EOC)
	Pelona Vista Park
	3 fire stations

3.6.4 TRANSPORTATION ACCIDENT/HAZMAT SPILL

The City of Palmdale faces significant threats from transportation accidents. Palmdale is located at a critical "choke point" for a number of transportation facilities. Due to the city's geography, and the limited number of access corridors, a serious transportation accident has the potential to cause death, personal injury, and property damage in the immediate area, and in addition, cause substantial economic and social damage if there was an extended closure of critical transportation arteries.

Possible accidents which could occur and cause substantial damage include:

- Major highway accident on SR 14 or SR 138 resulting in extended closure.
- Aircraft accident related to USAF Plant 42
- Rupture of 36" gas pipelines traversing the city. This could result in fire and explosion, and/or release of large quantities of hazardous materials. Railway accident (Metrolink or freight).

Due to the City's strategic position as an entry/exit point for the Greater Los Angeles Basin, there is a high probability that a major transportation accident would also involve the release of hazardous materials.

As of the 2016, the City of Palmdale has not had a major transportation accident or a hazardous material spill. The figure on the following page indicates the average number of spills per month involving hazardous materials per county. Los Angeles County has one of the highest averages, which would appear to be correlated to population and economic activity.

EXTENT: SEVERITY OF HAZMAT RELEASE INCIDENT

According to the National Fire Protection Association, HAZMAT release incidents can be categorized by three levels of severity:

- A **Level 1 incident** "involves hazardous materials that can be contained, extinguished, and/or abated using immediately available public sector responders having jurisdiction."

  Level 1 incidents present little risk to the environment and to public health with containment and cleanup.

- A **Level 2 incident** involves "hazardous materials beyond the capabilities of the first responders on the scene and could be beyond the capabilities of the public sector responders having jurisdiction."

  These incidents can pose immediate and long-term risk to the environment and public health and may need state- or federal-level level emergency assistance.

- A **Level 3 incident** involves hazardous materials "beyond the capabilities of a single state or regional response team and requires additional assistance."

  These incidents generally pose extreme, immediate, or long-term risk to the environment and public health.

Previous Occurrences and the Potential for Future Events

There is a detailed discussion about past events and the probable risk of future events in the discussion on assessing vulnerability and estimating losses, later in this Section. The discussion explores the possibility of several types of transportation accidents and/or incidents involving the release of hazardous materials.

Because of the tremendous volume of commercial and private vehicle traffic in and out of Los Angeles County and the Palmdale area specifically, the potential for a disastrous transportation related event always exists. Combine a transportation accident with the release of a hazardous material and you have an event that can affect a large number of people or a large area. According to the Department of Transportation (CALTRANS), there were a total of 3,606 fatal vehicle accidents in California in 2019 (the highest in the nation), with the highest number being in LA County. **Figure 3.5** illustrates the average number of hazardous materials spills per month by county. The County of Los Angeles experiences an average of 226 to 250 hazardous materials spills per month.

MAJOR TRANSPORTATION ROUTES AND PIPELINES IN PALMDALE

Much of the land area of the City of Palmdale lies near or adjacent to major transportation corridors; a substantial portion of the population also resides in proximity to these corridors.

State Highway 14 (Antelope Valley Freeway) bisects the city on a north-south axis. SR 14 is heavily used by trucks bringing goods into and out of the Los Angeles Basin. According to the Southern California Association of Governments, 5.54 % of traffic on the freeway includes heavy duty vehicles. It is estimated that this percentage will increase to 13-17% by the year 2030.

State Highway 138 intersects with SR 14 near the center of the city and proceeds east and south east through the City. SR 14 is frequently used as a “bypass” by traffic going to or from the Inland Empire.

Union Pacific/BNSF Railway runs north-south through the City, approximately one (1) mile east of SR 14. The freight railway transports a wide variety of cargo, including hazardous and flammable materials.

Metrolink commuter trains share the Union Pacific right-of-way through the city.

USAF Plant 42/Palmdale Regional Airport runway approach/departure paths cross the city in east west (runway 07-25) and southwest-to-northeast (runway 04-22) direction over heavily populated areas.

Large (36 inch) Natural Gas Pipelines cross the southern portion of the city in an east-west direction along Avenue S.

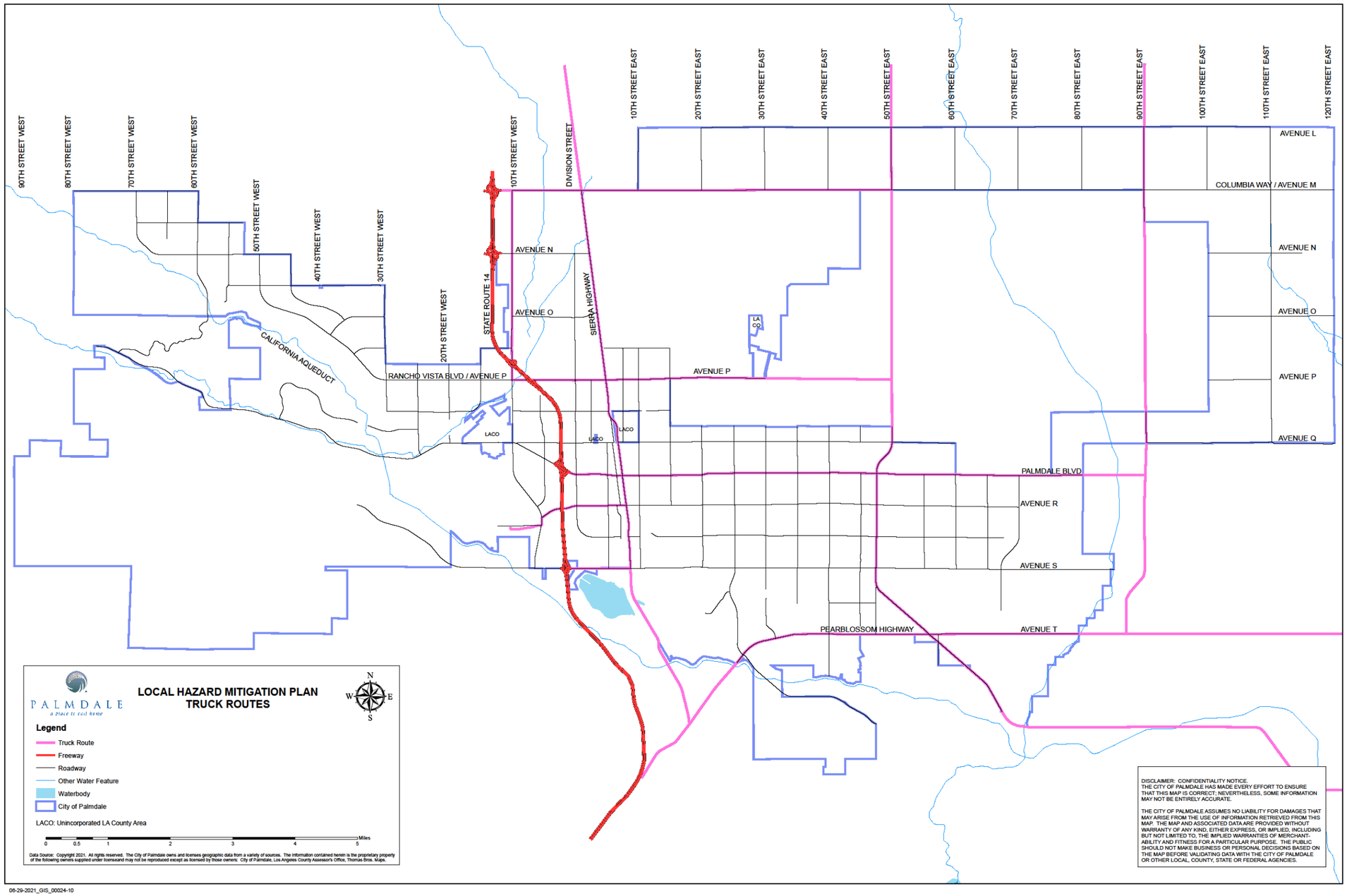
Major Arterials running both north-south and east-west throughout the city carry large volumes of traffic, including heavy duty trucks.

Major transportation areas are shown on **Map 3.10, 3.11,** and HAZ MAT facilities are shown on **Map 3.12.**

Climate Change Impacts

Climate change may indirectly contribute to the frequency of transportation accidents and HAZMAT spills due to the acceleration of severe weather events which contribute to vehicular accident occurrences.

Map 3.10 – City of Palmdale Truck Routes



Vulnerability Assessment

As with other accidents, transportation accidents and hazardous materials spills are unpredictable events. The damage and loss of life associated with a particular event depends upon the confluence of circumstances surrounding the specific occurrence.

For example, the severity of a Metrolink accident in Glendale, California on January 26, 2005, was substantially increased by two chance occurrences – another Metrolink train was traveling in the opposite direction on an adjacent track just as the accident occurred, and there was a freight train parked at an adjacent siding at the exact location where the Metrolink train derailed. As a result, in addition to experiencing derailment due to collision with a vehicle parked on the track, the train also collided with two other trains.

Assessment of risks to life and property associated with transportation accidents is an inexact science based on historical and local vulnerability rather than on statistical models. Despite the unpredictability of transportation accidents, application of preventive measures and mitigation actions can reduce, if not eliminate, personal injury, loss of life, and property damage. The following analysis examines potential risks to the city for each of the identified hazards.

PIPELINE RUPTURE/ACCIDENT

Table below from the National Transportation Safety Administration, Office of Pipeline Safety, summarizes transmission pipeline accidents in the California from 2011 through 2020. "Transmission Operators" include operators of high-capacity pipelines that deliver from terminal to terminal, as opposed to "Distribution Operators" who distribute from terminals to homes and businesses. The large gas lines in the Avenue S corridor are classified as transmission lines.

Table 3.21 Office of Pipeline Safety Natural Gas Pipeline Operators Incident Summary Statistics by Year 2011-2020
For the State of California Transmission Operators

Year	No. of Incidents	Fatalities	Injuries	Cost
2011	36	0	0	$12,925,484
2012	43	3	1	$7,622,071
2013	37	0	0	$13,371,951
2014	59	2	2	$35,442,868
2015	48	4	17	$161,207,864
2016	45	0	1	$29,992,895
2017	50	0	3	$34,251,818
2018	38	0	8	$331,942,230
2019	33	1	1	$7,083,269
2020	30	0	0	$9,905,164
Total	**419**	**10**	**33**	**$643,745,614**

RAILWAY ACCIDENT

The Federal Railroad Administration (FRA), Office of Safety Analysis maintains and publishes railroad safety information by railroad, and by state (www.safetydata.fra.dot.gov/officeofsafety). According to the FRA, there were a total of 1,884 train accidents in Los Angeles County between January 2012 and June 2021. Of these, 152 were derailments, 109 accidents were due to human error, and 44 were due to faulty track.

Freight railroad accidents can present serious risks, especially when release or potential release of hazardous materials represents serious risks to the community. However, passenger operations may also present serious risks. Metrolink operates 16 trains per day (weekdays) on the line connecting the Antelope Valley with the Los Angeles Basin. These commuter trains operate along the same right-of-way as BNSF freight traffic, on adjacent tracks. Commuter trains operate at relatively high speeds (up to 55 mph) and may carry as many as 200 passengers. In addition, a passenger train derailment has the potential to affect trains on adjacent tracks, and the surrounding community.

AVIATION ACCIDENT

While very rare, aviation accidents in built-up urban areas can cause substantial personal injury, property damage and loss of life on the ground, in addition to passenger and crew injuries/fatalities. The majority of aircraft accidents involve take-offs or landings.

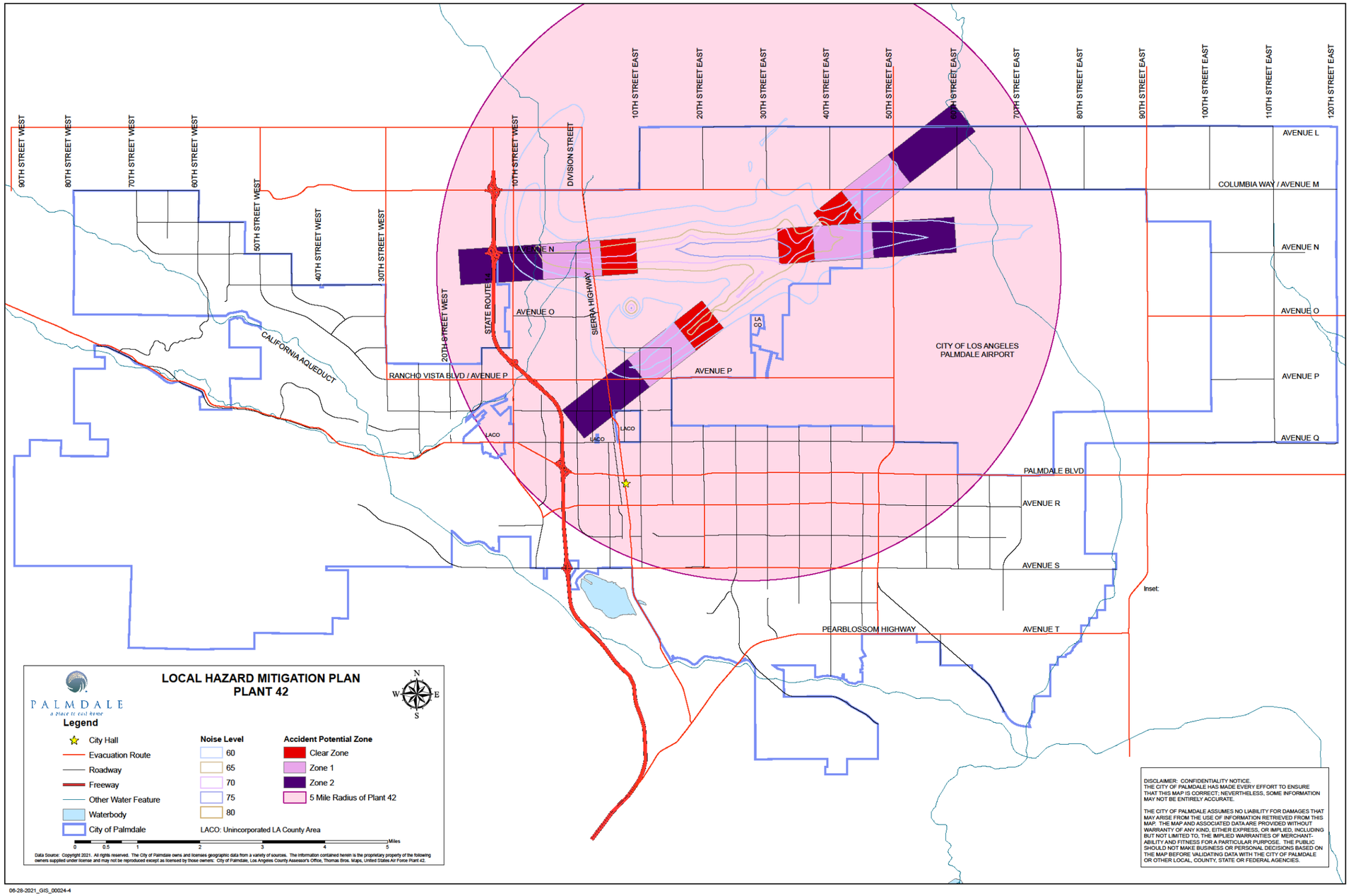
Palmdale is home to USAF Plant 42/Palmdale Regional Airport, located in the northeastern sector of the city. The airport consists of two runways, 07-25, which runs roughly east-to-west, and 04-22 which runs roughly in a southwest-to-northeast direction. Approach and departure paths for both runways are over relatively densely populated areas of the city to the east and southeast of the airport, including both existing and proposed new development

Operations at the airport are currently limited to military use. The Palmdale Regional Airport could potentially serve a broad geographic area consisting of the Antelope Valley (Palmdale and Lancaster) and portions of western Ventura, northern San Bernardino, and southern Kern Counties.

The Palmdale Regional Airport hosted commercial air carrier operations from 1991 until 1997 when they were discontinued due to dwindling passengers. Service was reinstituted in late 2004 and then eliminated in 2008.

Considering current and historical information, a major aviation disaster event is highly unlikely. However, given the potential severity of such an event, it cannot be discounted as a potential hazard to the community.

Map 3.11 – City of Palmdale Plant 42



HIGHWAY ACCIDENTS

The City of Palmdale is traversed by two state highways; SR 14, the Antelope Valley Freeway, bisects the city in a north-south direction, and SR 138, known as Pearblossom Highway, goes through the heart of the city, from the intersection with SR 14, proceeding east and southeast toward San Bernardino County. Both routes, especially SR 14, carry heavy traffic volumes of inter-city traffic. SR 14 constitutes the primary link – and the only freeway link - between the Antelope Valley and the Los Angeles Basin to the south, and Kern County and the High Desert on the north.

In addition, several major arterials also carry heavy traffic loads. These include the Sierra Highway which runs north and south roughly parallel to SR 14, and Avenue S, Avenue P, and Palmdale Blvd. which run in an east-west direction.

The threats posed to the city by these facilities are two-fold:

1. A major accident on SR 14 resulting in closure of the freeway would virtually cut off the city from vehicular access to the north or to the south, causing significant economic and social damage.

2. A truck accident occurring on SR 14, SR 138, or any of the City's major arterials involving release of hazardous materials could result is serious personal injury, property damage, and loss of life.

As truck accidents, with or without hazardous material involved, pose the most significant risk to the city compared to other transportation accidents, this analysis will focus on potential truck accident hazards.

Truck traffic volumes on both of the state highways that traverse the city are significant and growing. According to data provided by the Southern California Association of Governments (SCAG), the regional transportation planning agency, truck volumes will grow significantly as population and employment increase in the Antelope Valley. SCAG's projections are shown in **Table 3.22** below (SR 14 north of Palmdale Blvd, SR 138 south of Avenue S):

Table 3.22 Truck Volumes

CURRENT AND PROJECTED TRUCK VOLUMES (Average Daily – Both Directions)				
	2000	**2005**	**2020**	**2030**
SR 14	8067	8305	10,517	12,076
SR 138	1457	1544	2545	2738

Source: Southern California Association of Governments

These projections were used for the 2020 Regional Transportation Plan (RTP). However, other studies suggest that these numbers may be low. The North County Combined Highway Corridors Study completed for the Los Angeles County Metropolitan Transportation Authority (LACMTA)

by Parsons and released as a draft in July 2002, estimates that substantial increases in truck traffic are likely to result from major planned developments outside the City of Palmdale. These include the proposed Centennial Ranch (23,000 housing units, 30,000 jobs); Newhall Ranch (20,885 housing units, 18,800 jobs) and the Southern California Logistics Airport, and other logistics facilities in Southern California.

The principal hazard associated with truck traffic is an accident that involves the release of hazardous materials posing threats to the surrounding community from fire, explosion, or exposure to toxic chemicals.

According to data provided by the California Highway Patrol, the number of collisions involving a HAZMAT spill for the years 2015 - mid-June 2021 in the greater Antelope Valley are included in the table below:

Table 3.23 Collisions Involving HAZMAT Spills in Antelope Valley

Number of Collisions Involving a HAZMAT Spill	
2015	**1**
2016	**3**
2017	**3**
2018	**5**
2019	**3**
2020	**8**
2021 (to June)	**4**

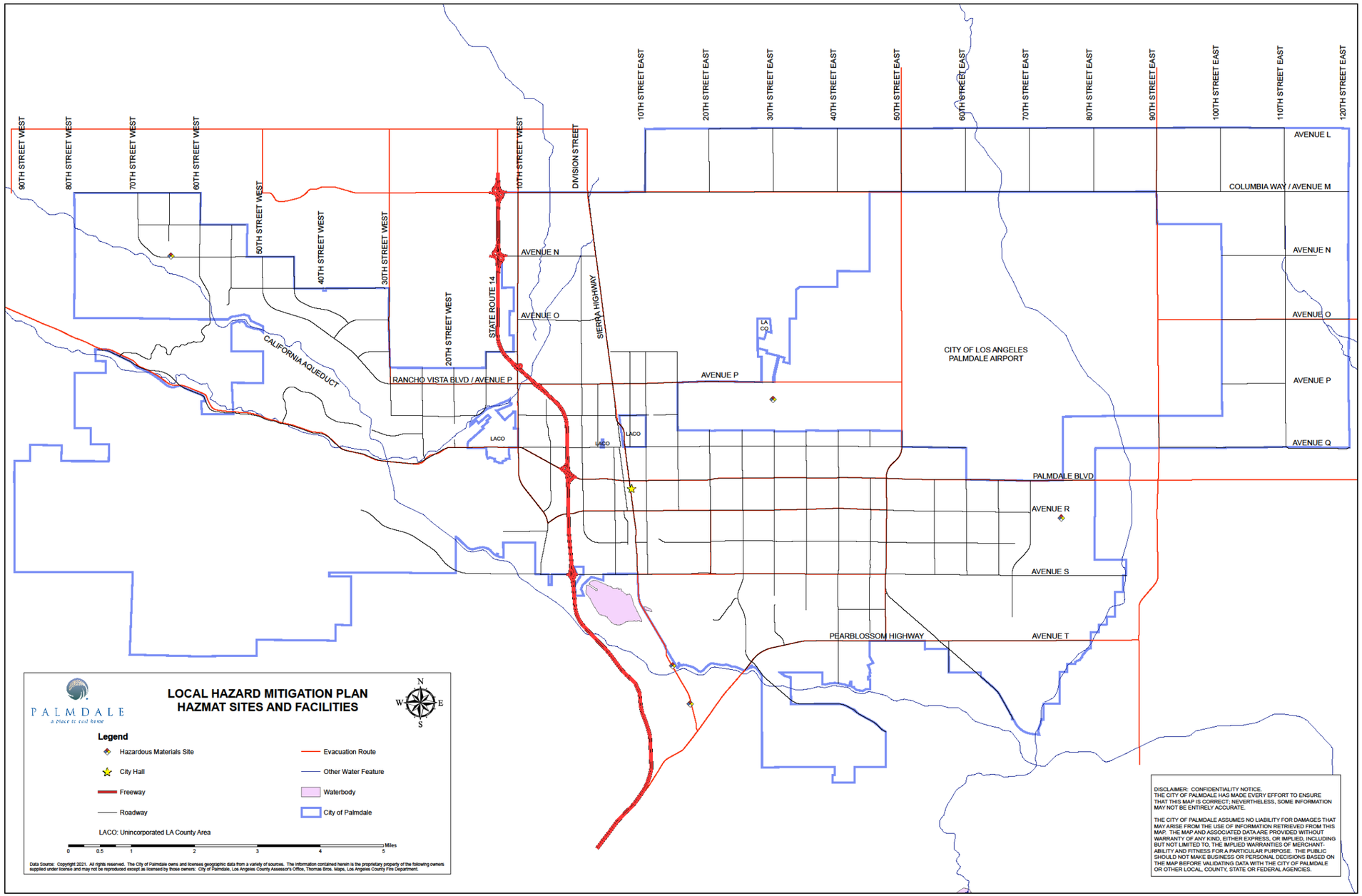
Map 3.12, on the following page details the location of hazardous material sites and facilities within the City of Palmdale. Los Angeles County is one of the areas within California that experiences a high number of hazardous materials spills each year; see **Figure 3.5.**

Estimating Potential Losses

Because of the unpredictability of the time, location, and severity of potential transportation accidents, it is extremely difficult to estimate potential losses with any degree of confidence.

As of current, the City of Palmdale has not identified the critical facilities within a ¼ mile “band” on each side of major highways and arterials with their replacement values list. This is identified as a potential project for this HMP cycle.

Map 3.12 – City of Palmdale HAZMAT Sites and Facilities



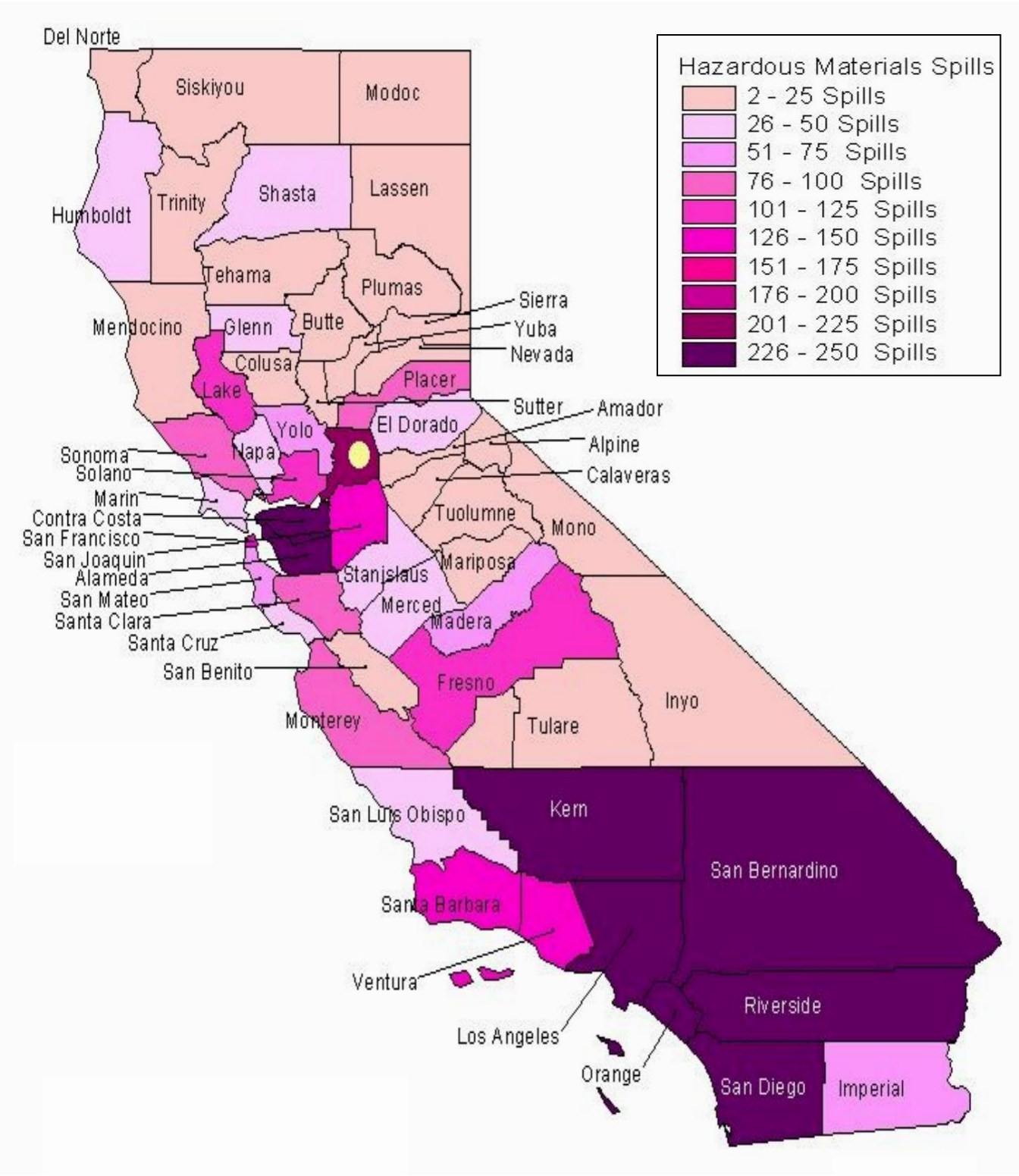


Figure 3.7 Average Number of Hazardous Material Spills Per Month by County

3.6.5 DROUGHT

According to the, USGS, drought is a period of drier-than-normal conditions that results in water-related problems. All of Southern California is susceptible to drought, and the City of Palmdale is no exception. When droughts occur in Southern California, the entire City is impacted.

Precipitation (rain or snow) falls in uneven patterns across the country. The amount of precipitation at a particular location varies from year to year, but over a period of years, the average amount is fairly constant. When rainfall is less than normal for several weeks, months, or years, the flow of streams and rivers declines, water levels in lakes and reservoirs fall, and the depth to water in wells increases. If dry weather persists and water-supply problems develop, the dry period can become a drought.

Unlike most other natural hazards, drought is not a sudden, catastrophic occurrence. Droughts occur over several years. In fact, it is almost impossible to tell when a drought begins and often difficult to determine when it ends.

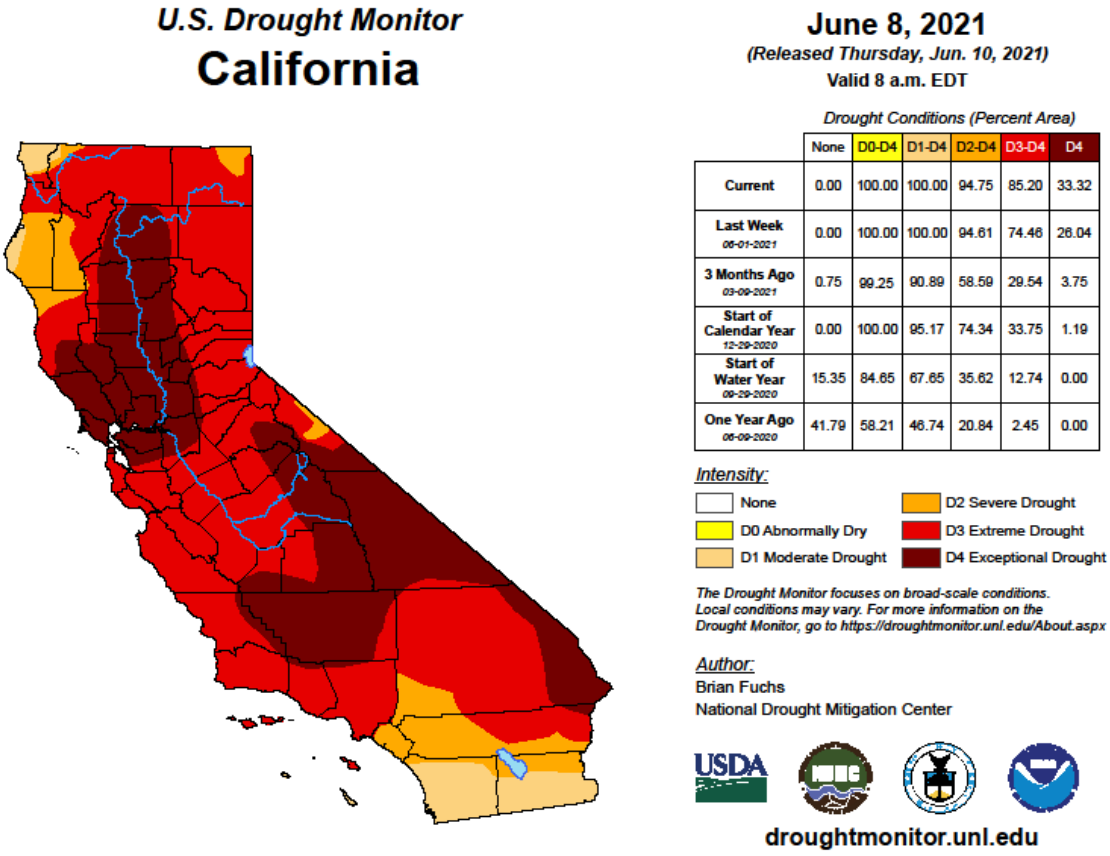


Figure 3.8 U.S. Drought Monitor-California

Droughts may be measured by a number of indicators, including:

- Levels of precipitation
- Soil conditions (moisture)
- Temperature

There are four ways in which droughts can be viewed:

METEOROLOGICAL

A measure of departure of precipitation from normal. Due to climatic differences, what may be considered a drought in one location of the country might not be a drought in another location.

AGRICULTURAL

Refers to a situation where the amount of moisture in the soil no longer meets the needs of a particular crop.

HYDROLOGICAL

Occurs when surface and subsurface water supplies are below normal.

ANNUAL INDICATORS

The California Department of Water Resources uses three indicators to evaluate water conditions in California. These are Snowpack, Precipitation, and Reservoir Storage as percentages of the annual average.

The impacts of drought may be defined as direct and indirect. Direct impacts include reduction in crop yields, livestock losses, and reservoir depletion. Direct effects also include damage/destruction of natural flora and fauna. Wetlands may also be damaged or reduced in extent. Indirect impacts include economic damage (loss of income to farmers, increased cost of water supplies due to increased cost to water purveyors); social (increased stress and negative effects on health); and environmental (degradation or water quality, increased susceptibility to disease). In terms of economic impacts, droughts are the costliest of natural disasters in the United States. According to the National Oceanic and Atmospheric Administration (NOAA) "Drought does not always offer the same immediate and dramatic visuals associated with events such as hurricanes and tornadoes, but it still has a huge price tag. In fact, droughts rank second in types of phenomena associated with billion-dollar weather disasters during the past three decades." (Source: https://www.ncdc.noaa.gov/news/drought-monitoring-economic-environmental-and-social-impacts).

LOCATION AND EXTENT - DROUGHT

The entire City of Palmdale is subject to drought conditions. In addition to the indicators above, drought can be measured using the Palmer Drought Severity Index (PDSI), which is calculated based on precipitation, temperature data, and available water content of soil.

Table 3.24 Palmer Drought Severity Index (PDSI) Classification

PDSI Classification	
4.0 or more	Extremely Wet
3.0 to 3.99	Very Wet
2.0 to 2.99	Moderately Wet
1.0 to 1.99	Slightly Wet
0.5 to 0.99	Incipient Wet Spell
0.49 to -0.49	Near Normal
-0.5 to -0.99	Incipient Dry Spell
-1.0 to -1.99	Mild Drought
-2.0 to -2.99	Moderate Drought
-3.0 to -3.99	Severe Drought
-4.0 or less	Extreme Drought

Droughts may also exacerbate the effects of other natural events. The reduction in natural vegetation in hillside areas due to drought may significantly increase the risk of mudslides or landslides during periods of wet weather. Dry vegetation resulting from drought increases both the risk and the potential severity of wildfires.

Previous Occurrences

The first major recorded drought in California occurred between 1928-1934. Another major drought occurred between 1987-1992.

More recently, between 2012-2016, California experienced another round of significant drought which resulted in well-documented agricultural, physical, and environmental impacts. On January 17, 2014, California State Governor Jerry Brown declared a drought state of emergency. On April 2, 2017, Governor Brown lifted the drought emergency, but declared that California must continue water conservation efforts.

As of May 18, 2021, 93% of the Southwest and California was in drought, with 38% of this region in exceptional (D4) Drought, the highest level. Twelve months prior, most of the West was drought-free, but drought conditions began developing around May 2020. High temperatures and very low rainfall totals through spring and summer of 2020 set new records across the Southwest, and the combination of extremely low soil moisture leading into winter and snow drought through winter means that run-off in the spring of 2021 has been very low. Most reservoir levels in California and Southwest are below or much below normal. Reservoir levels and forecasts are alarming.

Probability of Future Events

Considering the history of the Antelope Valley and Palmdale's location on the edge of the Mojave Desert, the current existing drought conditions in the region as a whole, and the accelerating effects of climate change, the City is likely to deal with the effects of drought in the future.

While not very likely to result in direct personal injury or loss of life, drought conditions could result in extensive economic damage. In addition, drought conditions increase the potential for damage from mudslides and brushfires, which could result in loss of life. Indirect impacts of droughts that that are not quantified, but can be anticipated in future events, include:

- Injury and loss of life
- Disruption of and damage to public infrastructure
- Significant economic impact (jobs, sales, tax revenue) upon the community
- Negative impact on commercial and residential property values
- Fire Damage
- Economic cost of Forest Management

Climate Change Impacts

Climate change can affect the potential for droughts to occur. As average temperatures have risen because of climate change, the Earth's water cycle has sped up through an increase in the rate of evaporation from soil and transpiration from plants. An increase in evapotranspiration makes more water available in the air for precipitation, but contributes to drying over some land areas, leaving less moisture in the soil. As the climate continues to change, many historically wet areas are likely to experience increased precipitation and increased risk of flooding, while historically dry areas are likely to experience less precipitation and increased risk of drought.

Vulnerability Assessment

Located on the edge of the Mojave Desert, the City of Palmdale is vulnerable to the effects of drought. While unlikely to result in personal injury or loss of life, drought conditions could result in extensive economic damage. In addition, drought conditions increase the potential for damage from wildfires and, later on, mudslides, which could result in loss of life.

The Antelope Valley has a limited amount of water to begin with being a high desert community. This fact, coupled with a rapidly increasing population and decreasing water table levels is cause for concern. The level of dependency on the water supplied by the California Aqueduct is increasing. Local water supplies remain static at best and more often are being depleted faster than they can recover. Pollution of wells and subsurface pools has mandated importation of water, along with the infrastructure required to capture and deliver it. As water is used more efficiently (drip systems and water saver products), monitored better (water meters) – there is a reduction in wasted water and water purveyors are able to meet new demands. As demand rises and supply decreases, costs of water service at all levels must go up. Increased revenues foster additional water development, and the cycle starts anew.

Estimating Potential Losses

Because drought is not a sudden, catastrophic occurrence and often occurs over several years, it is difficult to estimate potential losses with any certainty. When the effects of drought also include the destruction of flora and fauna, there is an esoteric value that is not translatable into dollars. Across the United States, the cost of losses due to drought averages about 9.6 billion per occurrence. Losses can include reduction in crop yields and loss of livestock, reservoir depletion, wetlands degradation, etc. Other losses include loss of income, increased cost of water, and

degradation of water quality. According to the National Oceanic and Atmospheric Administration (NOAA), in terms of economic impacts, aside from tropical cyclones, droughts are the costliest natural disasters in the United States in terms of average event cost.

Mitigation of the Impacts of Drought

Mitigation of the effects of drought is often costly and difficult to implement. Among the measures that may be taken to reduce the adverse effects of drought are:

- Development of irrigation systems in drought-prone areas
- Inter-basin water transfer agreements
- Crop and soil management programs
- Zeroscape landscape in urban areas
- Development of water storage and reclamation projects
- Moratoriums on new development/growth
- Ordinance 1362 – Water efficient landscaping requirement to include recent updates to state law (approved October 2008)

3.6.6 SEVERE WEATHER: HEAT AND WIND

Southern California enjoys a relatively mild, temperate climate. However, the entire city is susceptible severe weather episodes, particularly heat and wind events. According to the National Weather Service, between July 30, 2004, and December 31, 2020, Los Angeles County experienced:

- 4 Extreme Heat events
- 319 Strong Wind events
- 7 Tornado events

EXTENT: SEVERITY OF WEATHER-RELATED INCIDENTS

Of the weather-related events that affect Palmdale, heat, and wind are the biggest threats to life and property in the city. The metrics used to calculate the severity and extent of heat and wind are described below.

HEAT

The National Weather Service has developed the experimental HeatRisk forecast system to address heat risk and allow for preparation for upcoming heat events. The HeatRisk forecast considers maximum temperatures, minimum temperatures, climatology, historical records (both highs and lows), early season heat waves or unusual events, and duration of heat to assign advisory levels of concern for a particular geographical location. A lead time of 12 – 24 hours is given for Advisory Levels orange and red, and 24 – 48 hours for Advisory Levels red and magenta. Forecasts are given for a seven-day period.

Table 3.25: National Weather Service HeatRisk Forecast

HeatRisk Values	Risk of Heat Effects	Level of Heat Concern
When the HeatRisk is this value:	…the risk of heat effects are:	…as symbolized by this color:
0	**Very Low**	**Green**
1	**Low**	**Yellow**
2	**Medium**	**Orange**
3	**High**	**Red**
4	**Very High**	**Magenta**

The Advisory Levels are defined as follows:

- **Green** - **Level 0**: No elevated risk
- **Yellow** - **Level 1**: Low risk for those extremely sensitive to heat, especially those without effective cooling and/or adequate–hydration
- **Orange** - **Level 2**: Moderate risk for those who are sensitive to heat, especially those without effective cooling and/or adequate hydration

- **Red** - **Level 3**: High risk for much of the population especially those who are heat sensitive and those without effective cooling and/or adequate hydration
- **Magenta - Level 4**: Very high risk for entire population due to long duration heat, with little to no relief overnight.

WIND

Various scales for estimating the potential damage caused by various wind speeds have been developed. The Beaufort Scale developed by Sir Francis Beaufort in 1805 is commonly used and illustrates the effects that varying wind speeds can have on sea swells and structures.

Table 3.26 Beaufort Scale

Beaufort Force	Speed (MHP)	Wind Description – Effects on Land
0	< 1	Calm - Smoke rises vertically
1	1 – 3	Light - Air Ripples–look like scales - Smoke drift shows direction of wind, but wind vanes do not
2	4—– 7	Light Breeze - Wind vanes move; Leaves rustle; Wind can be felt
3	8 —–12	Gentle Breeze - Leaves and small twigs move constantly; Small, light flags are extended
4	13 – 18	Moderate Breeze - Wind lifts dust and loose paper; Small branches move
5	19 – 24	Fresh Breeze - Small trees with leaves begin to move
6	25–31	Strong Breeze - Large branches move; Telegraph wires whistle; Hard to hold umbrellas
7	32 – 38	Near Gale - Whole trees move; Resistance felt walking into win–
8	39 – 46	Gale - Twigs and small branches break off trees; Difficult to walk
10	55 – 63	Storm - Trees broken or uprooted; Considerable structural damage
11	64–73	Violent Storm - Seldom experienced inland; Considerable structural damage
12	> 74	Hurricane - Widespread damage. Very rarely experienced on land.

Previous Occurrences:

TORNADOS

While tornados have caused significant property damage, there is no record of a fatality directly resulting from a tornado in the area. As many of the tornados that occur in the region begin as waterspouts in Santa Monica Bay, the occurrence of tornadoes in the Antelope Valley is extremely rare.

MICRO-BURSTS

Unlike tornados, micro-bursts are strong damaging winds that strike the ground and often give the impression a tornado has struck. They frequently occur during intense thunderstorms. The

origin of a microburst is downward moving air from a thunderstorm's core. But unlike a tornado, they affect only a rather small area. On October 15, 2015, a freak storm hit Palmdale and produced large hail, heavy rain, flash flooding as well as significant mud and debris flows and one death.

SANTA ANA WINDS

Santa Ana winds are generally defined as warm, dry winds that blow down from the East or northeast into the basins; see **Figure 3.8**. These winds are usually strongest in the valley and canyon areas near the mountains and usually occur in the fall and winter. Santa Ana winds often blow with exceptional speed in some areas. The term "Santa Ana" winds are generally used for wind conditions exceeding 30 miles per hour (25 knots). Typically, Santa Ana winds blow in the 40 – 55 mile per hour range, but may gust up to 90 mph.

The complex topography of Southern California, combined with various atmospheric conditions, creates numerous scenarios that can cause widespread or isolated Santa Ana events. Commonly Santa Ana winds develop when a region of high pressure builds over the high plateau east of the Sierra Mountains and west of the Rock mountains. Clockwise circulation around the center of a high-pressure area forces air down the slope from the high plateau. The air warms as it descends toward the California coast due to heating of the air caused by compression. This heating of the air as it is compressed provides the primary source of warming. The air is dry since it originated in the desert, and its moisture will continue to dissipate as it is heated.

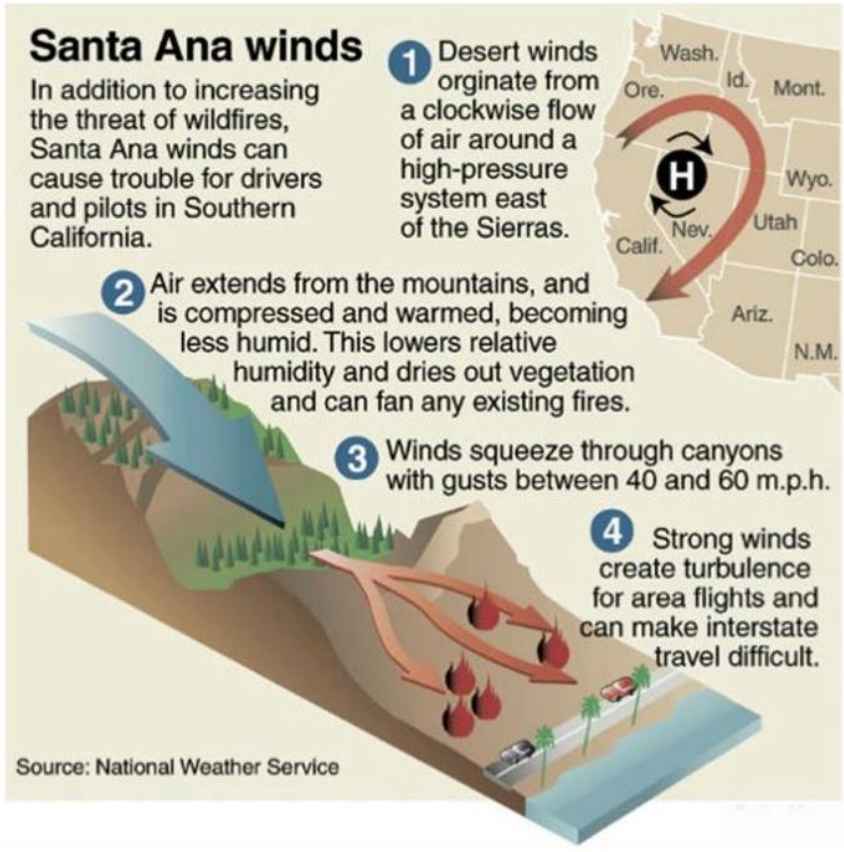


Figure 3.9 Santa Ana Winds

Santa Ana winds commonly occur between October and February with December having the highest frequency of events. Summer events are rare. Santa Ana Winds may cause damage such as downed power lines, blown over trees, and blown debris. Typical Santa Ana wind conditions are depicted in the figure at the end of this section. California Department of Forestry and Fire Protection (CDF) maintain Remote Automated Weather Stations (RAWS) throughout Southern California. "Red Flag" Warning days

are declared when Santa Ana conditions prevail. The public announcements and increased visibility heighten readiness, activate neighborhood awareness, and increase citizen involvement.

Since 2009, the National Center for Environmental Information has reported 24 events of high wind in the Antelope Valley and Palmdale area, not all related to Santa Ana Winds.

PREVIOUS OCCURRENCES: WIND

Date	Magnitude (MPH)	Deaths/ Injuries	Event Summary
1/10/09	72	0/0	The combination of strong surface high pressure over the Great Basin and a ridge aloft produced strong and gusty Santa Ana winds across Ventura and Los Angeles counties. Across the higher terrain, wind gusts as high as 73 MPH were reported.
3/7/11	71	0/0	Strong northwest to north winds developed across sections of Southwestern California. The strongest winds occurred in the mountains of Los Angeles and Ventura counties, the Antelope Valley and the Santa Clarita Valley. Sustained winds as high as 59 MPH were reported along with gusts as high as 76 MPH.
12/1/11	67	0/0	On December 1st, a strong north to northeast wind event, which developed on November 30th, Widespread wind gusts between 60 and 70 MPH were reported across the mountains of Ventura county as well as the mountains and valleys of Los Angeles county through December 1st. Widespread power outages were reported, especially across the San Gabriel Valley where over 350,000 residents lost power. In the city of Pasadena, significant wind damage was reported with at least 42 buildings red-tagged due to wind damage. Along with the power outages, numerous trees were uprooted or severely damaged from La Canada-Flintridge to Monrovia.
4/8/13	79	0/0	An extended northerly wind event developed across Southwestern California. The combination of strong northerly (offshore) pressure gradient and strong winds above the surface produced northerly wind gusts between 65 and 85 MPH across sections of Ventura and Los Angeles counties.

3/28/16	50	0/28	Mountain wave activity produced winds in excess of 50 mph that generated a dust storm with near zero visibility along Highway 247 in Lucerne Valley. A multicar pileup ensued, involving more than a dozen vehicles, and injuring 28 people.
10/27/19	50-70	0/5	After the Tick Fire burned 4,600 acres in the Los Angeles Region, the Santa Ana Winds which fueled the fire brought winds as fast as 50-70 MPH. Five firefighting personal suffered minor injuries.

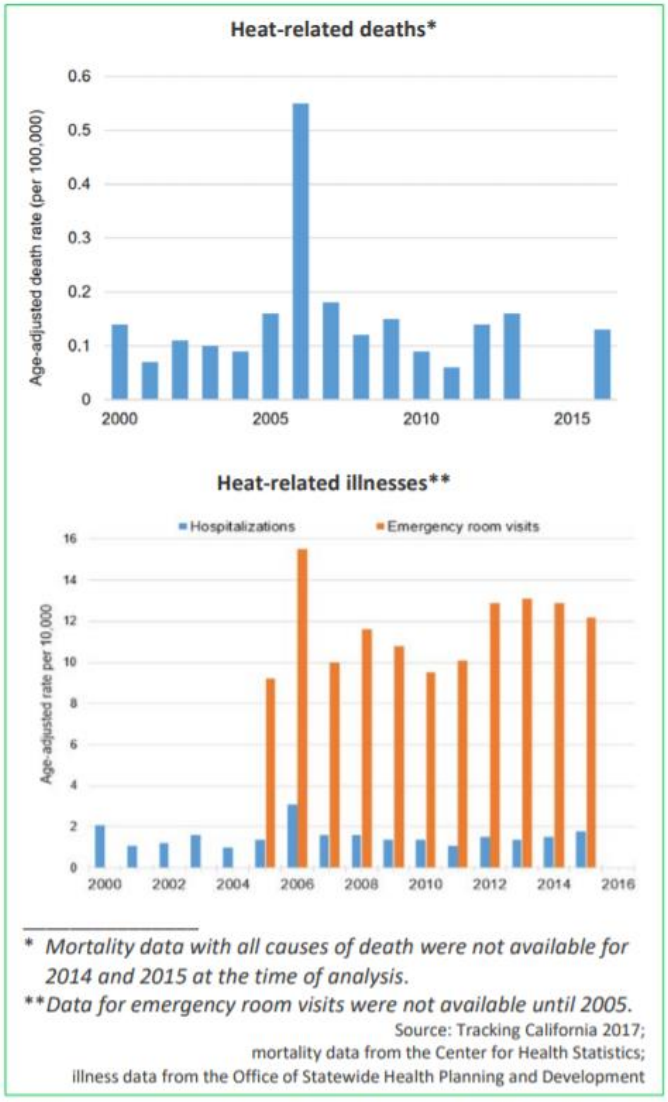
Probability of Future Events: Wind

It is near certain that the City of Palmdale will experience severe weather conditions in the near and distant future. Weather patterns in the region are strongly influenced by periodic *El Nino* conditions. The area is also subject to annual Santa Ana wind conditions, which can generate winds up to 90 miles per hour. While individual severe weather events are usually not as catastrophic as earthquakes, their relative frequency poses a significant threat to life and property in the City of Palmdale. Due to the seasonal nature of severe wind events, the entire planning area is subject to damaging winds on an annual basis.

HIGH TEMPERATURES

Generally Southern California is considered to have a Mediterranean type of climate. However, the area occasionally experiences very high temperatures. High temperature extremes are especially pronounced in the Antelope Valley. High temperatures may cause significant economic damage due to loss of crops and livestock, workers sent home, and temporary closure of schools. Very high temperatures in August 1997 contributed to five deaths. Heat-related illness and death tends to be underreported and vary depending on annual conditions. In 2006, California experienced a prolonged heat wave resulting in a high number of heat-related illness and deaths, shown on Figure 3.9. During what is referred to as California's fire season, high temperatures may impede firefighting efforts and increase the severity of wildfires.

Figure 3.10
Heat-related Deaths and Illnesses



* *Mortality data with all causes of death were not available for 2014 and 2015 at the time of analysis.*
***Data for emergency room visits were not available until 2005.*
Source: Tracking California 2017;
mortality data from the Center for Health Statistics;
illness data from the Office of Statewide Health Planning and Development

PAST OCCURRENCES: HEAT

- The July 2006 heat wave in California caused the death of at least 136 people over a 13-day period.
- The September 2007 heat wave in the Los Angeles area resulted in 18 heat related deaths.
- July 2018 was characterized by higher-than-normal temperatures across the globe. Los Angeles set a new record for the highest monthly minimum nighttime temperature of 79 degrees Fahrenheit.
- The September 2020 heat wave in Southern California resulted in at least one heat-related death with temperatures reaching 121°Fahrenheit and contributed to multiple wildfires across the State.

Probability of Future Events: Heat

It is near certain that the City of Palmdale will experience severe weather conditions in the near and distant future. Weather patterns in the region are strongly influenced by periodic *El Nino* conditions. The area is also subject to annual Santa Ana wind conditions, which can generate winds up to 90 miles per hour. While individual severe weather events are usually not as catastrophic as earthquakes, their relative frequency poses a significant threat to life and

property in the City of Palmdale. Severe heat conditions regularly affect the Antelope Valley. High temperatures are nearly always in excess of 90° F between the months of June and September. As a result, the population is subjected to an extended period where outdoor activity can lead to a variety of heat related ailments including heat stroke, heat cramps, and fatigue. It is estimated that the local health care providers, Palmdale Regional Medical Center (PRMC) and the Antelope Valley Medical Center (AVMC), treat multiple cases of heat-related illness per year in the Antelope Valley. Sever wind and heat related events are a common occurrence in Palmdale and can be expected to occur with greater frequency due to climate change impacts in the region.

Climate Change Impacts

Rising global average temperature is associated with widespread changes in weather patterns. Scientific studies indicate that extreme weather events such as heat waves and large storms are likely to become more frequent or more intense with human-induced climate change.

Vulnerability Assessment

Severe weather poses a potential hazard to City citizens, facilities, and personnel. Property damage, personal injury, and loss of life may occur as a direct or indirect result of severe weather events. Specific vulnerabilities include:

- Wind-caused damage to City structures
- Damage caused by secondary events, such as blown over trees, flying debris, etc.
- Personal injury or death resulting from structure damage, downed power lines, etc. on City property
- Personal injury or death on City streets and sidewalks.
- Damage to utilities and other infrastructure

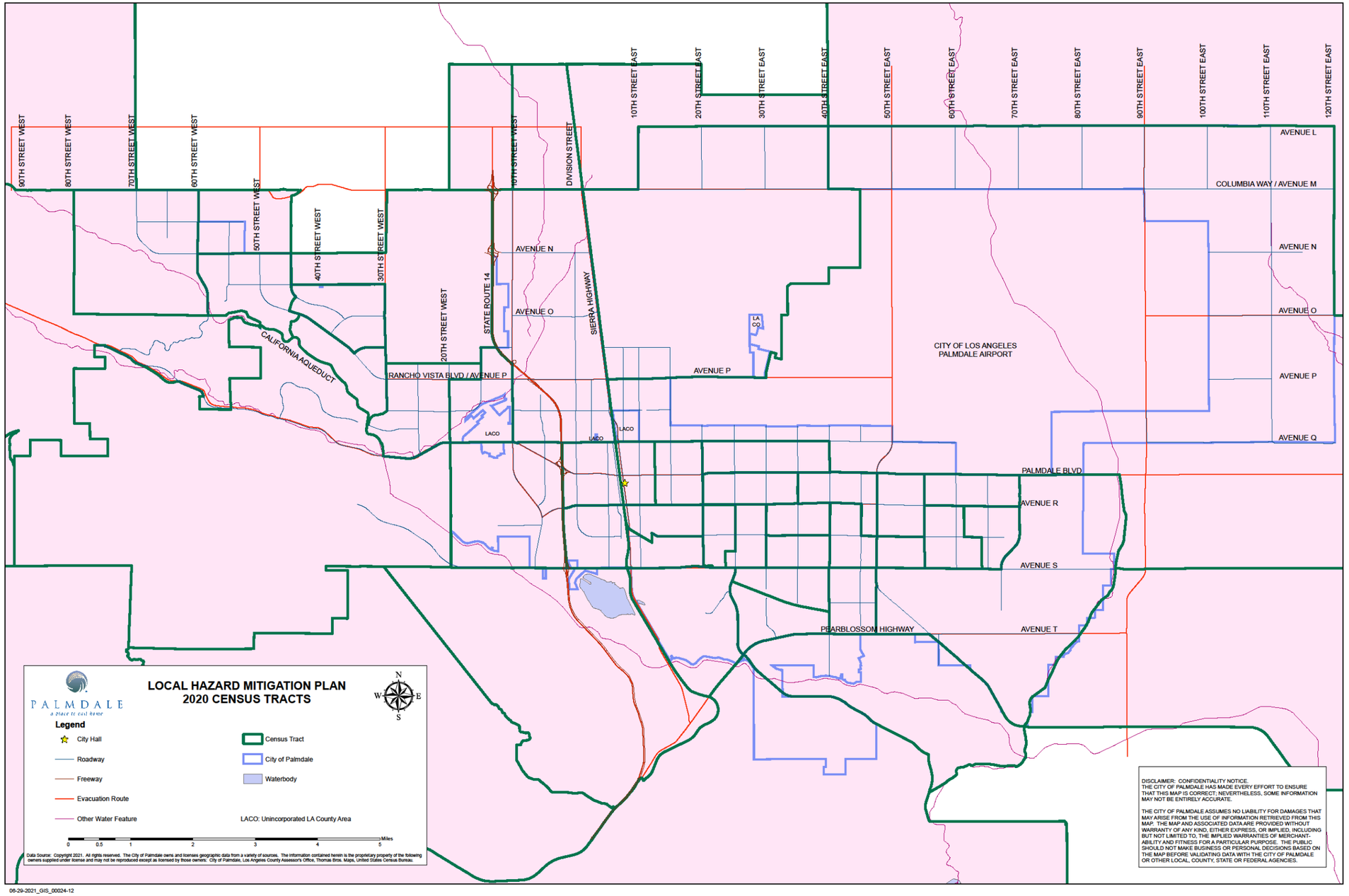
Estimating Potential Losses

While no single event is likely to cause complete loss of all City facilities, any facility is vulnerable to partial damage or complete destruction due to a Severe Weather event; the values of City facilities are listed in **Table 3.3.**

Because of the variety and severity of events involving severe weather, it is difficult to estimate the potential losses that might occur.

Map 3.13, prepared by the City of Palmdale GIS Section, identifies the census track boundaries that are used by the City to calculate the costs associated with recovery from severe weather events.

Map 3.13 – City of Palmdale Census Tracts



3.6.7 POWER/UTILITY FAILURE

Power outages are a region-wide problem in Los Angeles County. It is not unusual to experience several outages a year. In the past, outages have ranged between a few minutes to several days in some areas of Los Angeles County. Power/Utility failures can occur anywhere in the city that is connected to these services.

Power failures of longer durations are usually caused by natural events that damage or disrupt large areas of the power transmission and/or distribution systems. Some of the causes of longer duration power failures have been severe winter storms, often accompanied by high winds. Another cause is high-pressure induced windstorms, which can last from 3 to 5 days and disrupt the power distribution system. Vehicular accidents involving power poles or transmission lines and trees falling on transmission lines are often the causes of localized outages of shorter duration.

Those individuals or facilities at greatest risk from loss of power are the elderly, home health care patients, health care facilities, emergency services providers/facilities, and similar entities.

EXTENT: INTERDEPENDENCE OF UTILITY SYSTEMS

Because utility systems and other infrastructures are interdependent, it's difficult to calculate the extent of an interruption to one system due to a natural hazard, but **Table 3-27** below, we can identify types of failures that occur because of the interdependence of infrastructures. Figure 3-27 also illustrates how utilities are connected to government services, emergency services, banking and financing, transportation, and communication further complicating calculating the extent of a power/utility failure.

Table 3.27 Types of Infrastructure Interdependency Failure

Failure Type	Description
Cascading	A disruption in one infrastructure causes disruption in a second infrastructure; for example, a loss of energy causes a wastewater treatment plant to shut down.
Escalating	A disruption in one infrastructure exacerbates an independent disruption of a second infrastructure; for example, the time it takes for restoring banking services is prolonged because telecommunications lines and signals are not available.
Common Cause	A disruption of two or more infrastructures at the same time is the result of a common cause; for example, a tornado simultaneously adversely impacts the availability of electric power, petroleum, clean water and telecommunications.

Source: James P. Peerenboom, Ronald E. Fisher, "Analyzing Cross-Sector Int^{er}dependencies,"40th Annual Hawaii International Conference on System Sciences (HICSS'07), 2007 http://www.computer.org/portal/web/csdl/doi?doc=doi/10.1109/HICSS.2007.78.

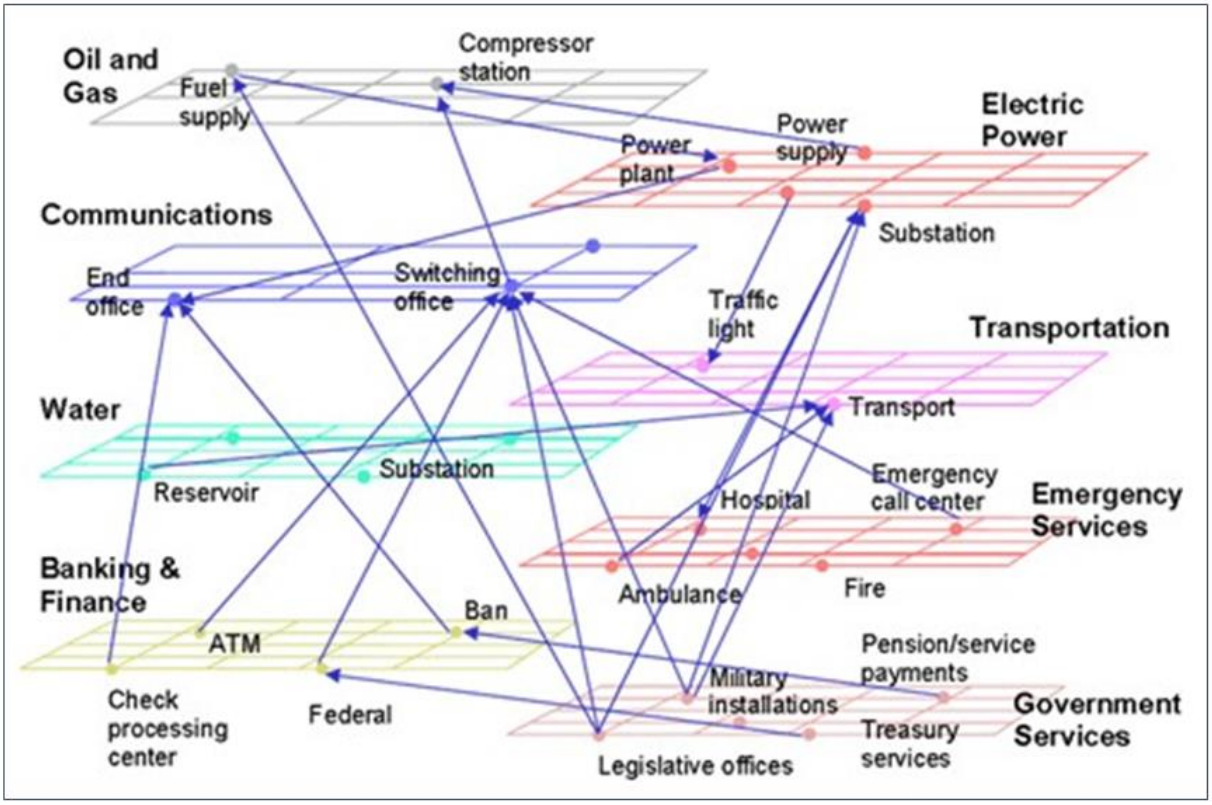


Figure 3.11 Infrastructure Interdependencies

Previous Occurrences

Energy disruptions on a small scale have occurred on a regular basis, including localized power failures due to downed utility poles and faulty or failed equipment

In October 2019, power outages impacted areas of west Palmdale, Agua Dulce, Acton, and Tehachapi and surrounding areas.

Two major items related to power and utility reliability that have come to light since the prior HMP reporting period that impact California as a whole, including the Southern California region, that are particularly noteworthy are described below.

PLANNED BLACKOUTS AS A WILDFIRE PREVENTION METHOD

Antelope Valley is served by SCE and is located within District 36 of the North Coast Region. In late 2018, Southern California Edison (SCE) implemented proactive de-energization knows as Public Safety Power Shutoffs (PSPS). This is an operational protocol that SCE implements under extreme weather conditions in order to minimize the threat of wildfires.

ROLLING BLACKOUTS OF AUGUST 2020 DUE TO LACK OF ENERGY SUPPLY

In August 2020, the California Independent Service Operator (CAISO) initiated rotating outages which resulted in 492,000 customers experiencing rolling blackouts on August 14 and another 321,000 customers being affected on August 15.

Following these incidents, the Governor's office ordered a "Root Cause Analysis" to be conducted. A preliminary report was prepared on October 6, 2020, by the California Independent System Operator (CAISO), California Public Utilities Commission (CPUC), and California Energy Commission (CEC) and a final report was released on January 13, 2021.

The reports listed three major factors that led to rotating outages, the first of which was the climate change-induced extreme heat wave across the western United States which resulted in demand for electricity exceeding existing electricity resource adequacy and planning targets. From August 14 through 19, 2020, the Western United States as a whole experienced an extreme heat storm, with temperatures 10-20 degrees above normal. During this period, California experienced four out of the five hottest August days since 1985; August 15 was the hottest and August 14 was the third hottest. This heat event was the equivalent of the hottest year of 35. The only other period on record with a similar heat wave was July 21–25, 2006, which included three days above the highest temperature in August 2020.

Probability of Future Events

There is always the possibility that equipment will fail, and as Los Angeles County and Palmdale continue to grow and be subject to weather cycles that place high demands on power, the probability of future power failures/outages is high. It is apparent that wildfire threats and climate change will continue to have an impact on power/utility reliability in the foreseeable future.

Climate Change Impacts

As referenced above in the Root Cause Analysis report on the regional August 2020 rolling blackouts, climate change-induced extreme heat waves across the western United States resulted in demand for electricity exceeding existing electricity resource adequacy and planning targets. This demand put a strain on the grid and resulted in loss of power to millions of customers in California. While climate change is not directly impacting power/utility failure, it has clear implications for extreme weather and wildfires which can both threaten the reliability of power supply.

Vulnerability Assessment

Power/utility failure/outages can pose a potential hazard to the residents, assets/facilities, and personnel of the City. Property damage, personal injury, and at the extreme, loss of life may occur as a direct or indirect result of a power/utility failure. The risk to City facilities is reduced by the capacity for back-up power at several buildings. At the present time, the following facilities have stationary back-up power capacity:

- Development Services Building
- City Administration
- The Playhouse
- Maintenance Facility
- Pelona Vista Park (back-up power for sanitary sewer lift station only)
- Marie Kerr Park Recreation Center
- Legacy Commons – Senior Center

There are the obvious risks of power loss to critical infrastructure buildings such as health care facilities (hospitals, convalescent facilities, nursing homes, etc.), and fire and life-safety facilities. However, power failure can also compromise public utilities, such as water and wastewater treatment plants. To mitigate possible public health and safety impacts due to a loss of power, the Los Angeles County Water Division recommends that all water companies with pressurized systems and all sewer companies install backup generators. This will ensure system integrity in times of power loss.

Estimating Potential Losses

Unfortunately, it is extremely difficult to estimate potential losses because of the diverse nature and potential complexity of this hazard. Southern California Edison has suggested that a formula could be developed by a city, county or region that would allow an order of magnitude estimate of loss. The formula would have to include a significant amount of demographic and economic information, as well as the particular entity's history with power/utility failure. At the present time, City staff does not have the resources necessary to collect the data and develop the predictive model.

It is certainly safe to assume, however, that several areas of the private economy of the city can suffer losses if a power failure exists for more than a few hours. The magnitude of the loss is dependent on the breadth and duration of the failure.

3.6.8 INFECTIOUS DISEASE/PANDEMIC

This LHMP is being prepared in 2021, during a worldwide pandemic created by the COVID-19 virus. As of August 28, 2021, there have been approximately 38.7 million cases and 636,838 deaths in the United States alone attributed to the virus, which has sparked nationwide stay-at-home orders, shuttered schools, caused severe economic distress, stressed the medical system, and taken a toll on the nation's physical, psychological, and economic well-being. More about the current pandemic is covered further below in this report.

Pandemics are defined as large-scale outbreaks of infectious disease for which there is little or no human immunity. Pandemics cause disease and death over a wide geographic area and cause significant economic disruption.

The California Department of Public Health (CDPH) and Los Angeles County Department of Public Health have identified seasonal influenza and viral disease pandemics as specific hazards that would have a significant impact throughout the entire City of Palmdale.

EXTENT: SEVERITY OF INFECTIOUS DISEASE/PANDEMIC

The extent of a pandemic or infectious disease outbreak can be measured using **Table 3-28**, below.

Table 3.28 Level of Community Transmission

• Level of Community Transmission	• Community Characteristics & Description
• Substantial, uncontrolled transmission	• Large scale, uncontrolled community transmission, including communal settings (e.g., schools, workplaces)
• Substantial, controlled transmission	• Large scale, controlled transmission, including communal settings (e.g., schools, workplaces)
• Minimal to moderate community transmission	• Sustained transmission with high likelihood or confirmed exposure within communal settings and potential for rapid increase in cases
• No to minimal community transmission	• Evidence of isolated cases or limited community transmission, case investigations underway; no evidence of exposure in large communal settings

Previous Occurrences

There have been five worldwide pandemics over the past 102 years:

3. **1918 "Spanish Flu" (H1N1 Virus)**—The 1918-1919 Spanish Flu was estimated to have sickened 20%-40% of the world's population. Over 20 million people lost their lives. Between September 1918 and April 1919, 500,000 Americans died. The flu spread rapidly; many died within a few days of infection; others from secondary complications. The attack rate and mortality were highest among adults 20-50 years old; the reasons for this are uncertain. By late September 1918, over 35,000 people throughout California had contracted the Spanish Flu. According to state officials, influenza was most prevalent in the southern part of California, but the death toll was high across the state.



4. **1957-1958 "Asian Flu" (H2N2 Virus)**—This virus was quickly identified due to advances in technology, and a vaccine was produced. Infection rates were highest among school children, young adults, and pregnant women. The elderly had the highest rates of death. A second wave was developed in 1958 and in total, there were about 70,000 deaths in the United States. Worldwide deaths were estimated between roughly 1 and 2 million.

5. **1968-1969 "Hong Kong Flu" (H3N2 Virus)**—The strain of the H3N2 Hong Kong Flu caused approximately 34,000 deaths in the United States and more than 700,000 deaths globally. It was first detected in Hong Kong in early 1968 and spread to the United States later that year. Those over the age of 65 were most likely to die. This virus returned in 1970 and 1972 and still circulates today.

6. **2009 H1N1 Influenza Virus**—The first influenza pandemic of the 21st century occurred in 2009–2010 and was caused by an influenza A (H1N1) virus. It was the first pandemic for which many member States had developed comprehensive pandemic plans describing the public health measures to be taken, aimed at reducing illness and fatalities. For the first time, pandemic vaccinations were developed, produced, and deployed in multiple countries during its first year.

   While most cases of pandemic H1N1 were mild, globally it is estimated that the 2009 pandemic caused between 100,000–400,000 deaths in the first year alone. Children and young adults were disproportionately affected in comparison to seasonal influenza, which causes severe disease mainly in the elderly, persons with chronic conditions, and pregnant women.

7. **2019-2021 (Ongoing) Covid-19 Coronavirus (SARS-CoV-2)**—The world is currently facing a global viral pandemic caused by a novel coronavirus disease, SARS-CoV-2. Coronaviruses are a large family of viruses that usually cause mild respiratory disease, such as the common cold, but can also cause more serious illness. The virus that causes the Covid-19 is passed from person to person through respiratory secretions, such as saliva or discharge from the nose when one coughs or sneezes. Experts currently researching the virus believe that the virus can also be spread when airborne through aerosols.

The severity of Covid-19 symptoms ranges from mild to severe and affects different people in different ways. Most infected people will develop mild to moderate illness and recover without hospitalization. Some of the most common symptoms include fever, dry cough, and fatigue. Less common symptoms include aches and pains, nasal congestion, sore throat, diarrhea, conjunctivitis, headache, loss of taste or smell, a rash on skin, or discoloration of fingers or toes. The most serious symptoms include difficulty breathing or shortness of breath, chest pain or pressure, or loss of speech or movement.

In March of 2020, the World Health Organization characterized the outbreak as a pandemic, the United States declared the novel coronavirus a national emergency, Los Angeles County declared a local state of emergency, and the City of Palmdale issued a local emergency declaration in response to the coronavirus pandemic.

According to Johns Hopkins University Coronavirus Resource Center, as of August 28, 2021, there have been roughly 215.6 million confirmed cases globally, 4.49 million global deaths, 38.7 million confirmed cases in the United States, and 636,838 US deaths. According to the California Department of Public Health, as of August 26, 2021, there have been 4,171,104 confirmed cases in California and 65,033 deaths, with 1,334,372 confirmed cases in Los Angeles County and 25,199 confirmed deaths. According to the Los Angeles County Department of Public Health, there have been 27,646 confirmed cases and 329 deaths in the City of Palmdale to date.

At the time that this is being written, a nationwide and worldwide vaccine campaign is currently underway, with vaccines approved in the United States under emergency use authorization for individuals aged 12 and older, with one vaccine gaining full FDA approval in August 2021. At the same time, variants of the disease are spreading, and public health officials are continually monitoring these developments.

Palmdale, as well as other cities and regions across the world, faced or are facing high levels of illness, mortality, social disruption, political instability, mass unemployment, and economic losses. Recent impacts range from school and business closings to the interruption of basic essential services such as public transportation, health care/first aid, and the delivery of food and essential medicines to those in need.

Probability of Future Events

Evidence suggests that the likelihood of pandemics has increased over the past 100 years because of increased global travel and integration, urbanization, changes in land use, and greater exploitation of the natural environment. These trends likely will continue and will intensify.

The precise timing of a pandemic-scale health-related emergency is uncertain. Pandemic occurrences are most likely when a virus makes a dramatic change, or antigenic shift, that results in a new or “novel” virus to which the population has no immunity. Epidemic occurrences are more likely when there are ecological changes, the pathogen mutates, or the pathogen is introduced into an unprepared host population.

According to the World Bank, increased exposure to wildlife increases the risk to health, biosafety and global security. The current SARS-CoV-2 originated in wildlife; the virus managed to break

the species barrier into humans, a phenomenon called zoonosis. Numerous other emerging vector-borne diseases also originated in wildlife and were transmitted to humans.

Climate Change Impacts

Researchers are studying the impacts of climate change on infectious disease. Loss of biodiversity, destruction of wildlands, and warming temperatures may all be contributing to the spread of infectious disease.

According to the CDC, climate change, together with other natural and human-made health stressors, influences human health and disease in numerous ways. Some existing health threats will intensify, and new health threats will emerge. In the U.S., public health can be affected by disruptions of physical, biological, and ecological systems, including disturbances originating here and elsewhere. The health effects of these disruptions include increased respiratory and cardiovascular disease, injuries and premature deaths related to extreme weather events, changes in the prevalence and geographical distribution of food- and water-borne illnesses and other infectious diseases, and threats to mental health.

According to the World Health Organization, climatic conditions strongly affect water-borne diseases and diseases transmitted through insects, snails, or other cold-blooded animals. Changes in climate are likely to lengthen the transmission seasons of important vector-borne diseases and to alter their geographic range. Malaria is strongly influenced by climate. Transmitted by Anopheles mosquitoes, malaria kills over 400,000 people every year – mainly children under 5 years old in certain African countries. The Aedes mosquito vector of dengue is also highly sensitive to climate conditions, and studies suggest that climate change is likely to continue to increase exposure to dengue.

While developing nations are more vulnerable to many of these diseases than the United States or the City of Palmdale, all populations will be affected by climate change.

Vulnerability Assessment

While the entire population of the planning area may be at risk of infectious diseases and pandemics, some portions of the population may be at greater risk, including the very young, the elderly, and immune-compromised individuals. The recent COVID-19 pandemic also illustrated a greater risk for portions of the population living in areas of concentrated pollution and poverty, who may have greater risk of comorbidity factors that can influence immune response, may not have adequate access to shelter, transportation, healthy foods, and health care, and may not have the opportunity to work from home, or to take time off from work if they become ill.

Critical facilities, the natural environment, and structures would not be impacted by an infectious disease outbreak or pandemic. The most vulnerable aspects of the community are loss of life and potentially long-term health impacts, impacts to essential public services due to closure or limited operating hours of facilities, and the economy, which can suffer great losses if businesses are not able to operate at full capacity. The areas of the economy that are most vulnerable are service oriented, recreation and entertainment, and tourist sectors.

Estimating Potential Losses

There is no way to adequately predict the loss of life, impacts to essential public services, or the economy as a result of an infectious disease outbreak or pandemic, particularly in the case of an emerging infectious disease (EID) or novel virus, where no vaccine exists, little is known about how the disease is spread, the virulence of the disease and how quickly it spreads, how to treat it, and who is at greatest risk.

SECTION FOUR

MITIGATION STRATEGY

SECTION FOUR – MITIGATION STRATEGY

Requirement §201.6(c)(3):

The plan shall include a mitigation strategy that provides the jurisdiction's blueprint for reducing the potential losses identified in the risk assessment, based on existing authorities, policies, programs and resources, and its ability to expand on and improve these existing tools.

Requirement §201.6(c)(3)(i):

The hazard mitigation strategy shall include a] description of mitigation goals to reduce or avoid long-term vulnerabilities to the identified hazard.

Requirement §201.6(c)(3)(ii):

*The mitigation strategy **shall** include a section that identifies and analyzes a comprehensive range of specific mitigation actions and projects being considered to reduce the effects of each hazard, with particular emphasis on new and existing buildings and infrastructure.*

Requirement: §201.6(c)(3)(iii):

The mitigation strategy section shall include an action plan describing how the actions identified *in section (c)(3)(ii) will be prioritized, implemented, and administered by the local jurisdiction. Prioritization **shall** include a special emphasis on the extent to which benefits are maximized according to a cost benefit review of the proposed projects and their associated costs.*

OVERVIEW

The risk assessment section of "this LHMP has identified the "what, when, and how" of hazard impacts and possible effects on the community of Palmdale. The mitigation strategy provides for the development of specific mitigation actions that will reduce or possibly remove the City's exposure and vulnerability to the risks associated with natural and technological/human-caused hazards.

As indicated previously, the mitigation plan process includes:

- 4.1 Local Capabilities Assessment
  - 4.1.1 Plans, Programs Policies and Ordinances
  - 4.1.2 Administrative & Technical Mitigation Capabilities
- 4.2 Existing Mitigation Goals
- 4.3 Mitigation Strategy
- 4.4 National Flood Insurance Program (NFIP) Compliant Mitigation Actions

4.1 Local Capabilities Assessment

This chapter shows the existing capacity of the City of Palmdale, together with its mutual partners and community involvement, to respond to disasters. This helps to show any gaps in service should be provided.

4.1.1 Plans, Programs, Policies and Ordinances Supporting Mitigation

There are various plans, programs, policies and ordinances that support hazard mitigation efforts in Palmdale as described below. Because these various documents are adopted at different times and updated in cycles, when one is updated, expanded, or revised, the coordinating plans are reviewed and incorporated as necessary to maintain consistency across documents and mitigation projects.

Public Safety Programs

Existing public safety policies recommend a number of programs that will reduce loss of life, injury, and damage to property and the environment in the event of a disaster. These programs focus on educating the public concerning the proper procedures for avoiding hazards, the need for increased emergency preparedness, and prevention or mitigation of existing and potential hazards.

Emergency preparedness means the awareness of existing and potential hazards and the adoption of mitigation measures to preserve public health and safety. The City's policy is to give first priority to saving human lives; reducing property damage is second. The City also seeks to eliminate a hazard, reduce the risks if the hazard cannot be eliminated or avoided; but above all, to plan for any potential disasters. The prioritized hazard mitigation actions recommended in this LHMP will facilitate the allocation of public funds for safety programs with compatible goals and objectives.

Coordination with County Public Safety Agencies

Palmdale is policed by the Los Angeles County Sheriff's Department under a formal contract with the County of Los Angeles and has its municipal judicial system intertwined with the Los Angeles County Superior Court. The Los Angeles County Sheriff's Department (LASD) operates the Palmdale Station in Palmdale.

The city is served by the Los Angeles County Fire Department for its fire and paramedic services through the Consolidated Fire Protection District. Palmdale currently has five fire stations that cover the city boundaries.

The Fire Department and Sheriff's Department are encouraged to participate in the development plan review process to ensure adequacy of services and planning for safety. The City also supports mutual aid programs with the Angeles National Forest and the USAF Plant 42 in providing public services to the Planning Area. In addition, the City coordinates long range master planning with Los Angeles County Fire Department and Sheriff's Department Services.

Master Drainage Plan

The Master Drainage Plan is designed to provide the City with a comprehensive storm drainage system to reduce the risk of flooding.

Floodplain Standards

The City reviews development proposals for compliance with floodplain standards. Residential development is prohibited in floodplain areas unless the flood hazard has been adequately mitigated.

Hazardous Waste Management Plan

The City's Emergency Plan and Los Angeles County Hazardous Waste Management Plan both deal with detailed emergency response procedures under various conditions for hazardous materials spills. The Los Angeles County Fire Department and Environmental Health Division work with the City and County representatives to prevent the uncontrolled release of toxic substances into the environment by conducting inspections of toxic materials facilities, enforcing storage and use requirements, and educating local businesses on proper storage and handling of hazardous materials.

Hazardous Materials require special care in handling because of the hazards they pose to the public's health and safety, and the environment. For this, the City of Palmdale coordinates the handling with the County of Los Angeles. The Los Angeles County Fire Department responds to uncontrolled releases within the city limits, identifies the category of chemicals involved, contains the spill if possible, oversees cleanup activities, and makes sure that the site is safe to be occupied again.

The City also works with the State Department of Health Services to establish cleanup plans and to monitor the cleanup of known hazardous waste sites within the City.

Building Codes

The City strictly enforces building and fire safety codes to minimize hazards and the demand for emergency services. The City also requires the provision of fire alarms, fire escapes, and extinguishing systems within all commercial, industrial, and multi-family developments.

Public Awareness Programs

The City promotes public awareness programs to educate and integrate Hazard Mitigation principals into all facets of community life. This public education effort is aimed at reducing or eliminating injury or death and damage to property and the environment. Educational programs include earthquake safety and fire prevention.

Provision for Public Financing of Infrastructure

The City may assist in financing of the infrastructure needed to support new development through establishment of special financing districts, where appropriate. The City will investigate the use of similar mechanisms to finance hazard mitigation projects

Mutual Aid

Mutual aid agreements enable different jurisdictions to request aid from another when necessary. Through the California Master Mutual Aid and Los Angeles County Mutual Aid Plans, mutual aid regions are established under the Emergency Services Act by the Governor. Six mutual aid regions numbered I-VI have been established within California. The City of Palmdale is within Region I. Each mutual aid region consists of designated counties. Region I is in the OES Southern Administrative Region.

Evacuation Routes

Earthquakes, fires, and flooding can all necessitate evacuation. However, it is not possible to know with certainty how many people will actually need to be evacuated in any given situation. Similarly, the rate at which people will evacuate and their specific routes of travel and ultimate destinations are subject to wide variation. Therefore, in the case of an emergency, it is necessary to evaluate each situation on an individual basis and respond accordingly. At the time of an emergency, the Evacuation Coordinator will evaluate the situation, access various routes (many of which will have been planned out in advance), determine the best routes, alert the public via radio and/or TV of evacuation routes and procedures, and coordinate the evacuation with state and local officials, such as the H Patrol, Caltrans, etc.

4.1.2 Administrative and Technical Mitigation Capabilities:

The administrative and technical capability assessment identifies the personnel and community resources available within the city to engage in mitigation planning and carry out mitigation projects. The administrative and technical mitigation capabilities are listed below:

Table 4.1 Administration and Technical Resources

Personnel Resources	Role/Department
Director of Emergency Services	City Manager
Planner or engineer with knowledge of land development	Planning and Engineering Department
Engineers or professional trained in construction practices related to building and/or infrastructure	Public Works Program Management, Public Works Inspection and Public Works Maintenance, Building and Safety
Planner or engineer or emergency response personnel with an understanding of natural or human made hazards	Planning, Building and Safety, Public Works Program Management, Public Works Inspection and Public Works Maintenance
Floodplain Manager	City Engineer and/or Director of Public Works
Personnel skilled in GIS	GIS Coordinator and/or GIS staff
Purchasing	Finance
Public Information Officer	City Manager’s office
Full time Building Official	Building and Safety Department
Law & Fire Enforcement	Los Angeles County Sheriff’s & Fire Department

Personnel skill in water, sewer, storm drain, traffic, and lighting during hazardous conditions	Public Works Maintenance Department, Public Works Inspection

Key Legal and Regulatory Capabilities –

The City currently supports hazard mitigation through its regulations, plans and programs. The City of Palmdale Municipal Code contains hazard mitigation-related ordinances.

Table 4.2 lists planning and land management tools typically used by local jurisdictions to implement hazard mitigation activities and indicate those that are in place in the City of Palmdale. Detailed descriptions of the plans, policies, regulations, and programs follow to provide more information on existing mitigation capabilities.

Table 4.2 Legal and Regulatory Resources

Legal and Regulatory Resources	Used by City of Palmdale
Plans	
General Plan Safety Element (1993)	X
Public Safety Programs	X
Capital Improvement Plan	X
Local Emergency Operations Plan	X
Master Drainage Plan	X
Hazard Waste Management Plan	X
Programs	
National Flood Insurance Program (NFIP)	X (see more detail below)
Public Awareness Programs	X
Public Financing of Infrastructure	X
Policies	
Zoning & Subdivision Ordinance	X
Site Plan Review Ordinance	X
Building Code	X
Floodplain Ordinance	X
Water Conservation Ordinance	X

National Flood Insurance Program (NFIP)

The goals of the NFIP are to reduce future flood damage through floodplain management and to provide people in participating communities with flood insurance. Community participation is voluntary. The City of Palmdale has participated in the NFIP since 1983. The City of Palmdale maintains full compliance with the NFIP through Chapter 15.28, Floodplain Management, under the City of Palmdale Municipal Code, which sets forth means to reduce losses from floods. These standards focus on areas located within or near the 100-year floodplain. Developments are conditioned to comply with code, standards, and programs to prevent vulnerability to floods from increasing. Compliance with the City's flood program is also required of certain building rehabilitations and reconstructions.

Flood Insurance Rate Maps (F.I.R.M)

Flood Insurance Rate Maps (F.I.R.M.) are used to identify areas of flood risk in the community. FEMA has provided the City of Palmdale with all FIRM maps for City Limits and surrounding unincorporated areas. These maps provide detailed flood information for the planning area and are periodically updated to reflect new information. FIRM maps have received large scale changes and local revisions requested by developers and independent property owners. The most recent map revision was issued by FEMA with a date of September 2008.

Upon review of the FEMA's National Flood Hazard mapping area and **Map 3.7**, there is approximately 200-250 structures located in the 1% annual chance flood areas. The remaining areas in the Palmdale city limits are located in the 0.2% chance flood areas. During the reporting period, there has been no 100-year flooding event, thus no claims filed.

Repetitive Loss Properties

FEMA insures properties against flooding losses through the NFIP. As part of the process to reduce or eliminate repetitive flooding to structures across the United States, FEMA has developed an official Repetitive Loss Strategy. The purpose behind the national strategy is to identify, catalog, and propose mitigation measures to reduce flood losses to the relatively few numbers of structures that absorb the majority of the premium dollars from the National Flood Insurance Fund. A repetitive loss property is defined by FEMA as a "property for which two or more NFIP losses of at least $1,000 each have been paid within any 10-year period since 1978." The City of Palmdale has no repetitive loss properties. In order to ensure this, the Public Works Department conduct storm drain improvements as part of the Capital Improvement Project budget that help with flood control the flood prone areas.

4.2 Existing City of Palmdale Goals and Objectives that Support Hazard Mitigation Actions

SAFETY ELEMENT SECTION OF THE GENERAL PLAN

Specifically, the Safety Element informs the public of public safety goals, objectives, and policies of the City for development and was updated in July 2015. The General Plan is currently undergoing a comprehensive update with tentative adoption in September 2021. Changes to the Goals and Objectives listed below will be implemented in the next 5-year LHMP. It provides a comprehensive risk management program to serve as a guide for the day-to-day operational decisions of City staff. The Element evaluates the seismic, flood, geologic, wildfire, and urban fire hazards in the Planning Area, as well as aircraft accident potential, hazardous materials, and crime. It seeks to eliminate or reduce the risks to public safety through planning for the prevention of hazardous situations and for the provision of adequate emergency services. Following are the Safety Element Section Goals:

GOAL S1: Minimize danger and damage to public health, safety, and welfare resulting from natural hazards.

Objective S1.1: Review development within or adjacent to geologic hazards, to ensure adequate provisions for public safety.

Objective S1.2: Minimize hazards associated with flood plains in the area.

Objective S1.3: Ensure compatible development in areas within or adjacent to natural high fire risk areas (urban-wildland interface), and other high fire risk areas.

GOAL S2: Minimize damage associated with man-made hazards.

Objective S2.1: Minimize damage from catastrophic failure of infrastructure.

Objective S2.2: Minimize damage resulting from aircraft accidents.

Objective S2.3: Protect the public from hazardous materials and the hazards associated with the transport, storage, or disposal of such materials.

Objective S2.4: Ensure that development of a federal, state, or county prison in Palmdale shall not impact the health, safety, and lifestyle of residents.

Objective S2.5: Minimize potential hazards related to crime through the development review process and through on-going public education programs.

Objective S2.6: Minimize exposure of residents to other man-made hazards, to the extent feasible.

GOAL S3: Maintain and enhance City emergency services.

Objective S3.1: Prepare the Palmdale community to be self-sufficient in the event of an emergency.

GOAL S4: Protect public safety through the implementation and enforcement of City Ordinances and through public education.

Objective S4.1: Develop, implement, and enforce City Codes to ensure safe and sanitary living and working conditions throughout the City.

Objective S4.2: Support the development and continued updating of public education programs on health and safety.

PUBLIC SERVICES ELEMENT OF THE GENERAL PLAN

The Public Services Element of the General Plan establishes a framework for provision of infrastructure and public services to existing and new development in a timely and cost-efficient manner. The Element provides background information on issues and opportunities relative to infrastructure planning, as well as goals, objectives and policies to ensure effective coordination of public service provision with development.

Because of Palmdale's rapid growth and dispersed development pattern, the City faces significant challenges in providing public improvements such as regional drainage and traffic facilities.

GOAL PS3: Develop and maintain adequate storm drainage and flood control facilities.

Objective PS3.1: Maintain and implement the City's adopted Master Drainage Plan.

Objective PS3.2: Coordinate drainage master planning with environmental resource management.

GOAL PS5: Support the provision of adequate public and community services to meet the needs of residents.

Objective PS5.1: Ensure provision of fire protection facilities and equipment needed to protect existing and future development.

Objective PS5.2: Support the provision of adequate law enforcement services to meet the needs of City residents.

Objective PS5.7: Provide enforcement services to ensure compliance with municipal codes and ordinances, to protect public health and safety, preserve property values, and maintain a clean and orderly environment for Palmdale residents.

Objective PS6.2' Adopt and implement the City's Hazardous Waste Management Plan (HWMP).

GOAL PS7: Provide for open space elements throughout the planning area that preserve significant natural, historic, scenic, and topographic features while minimizing fiscal impacts to the City and its residents.

Objective PS7.1: Ensure that any land proposed for acquisition, dedication or that is maintained by the City will contribute benefits to the general public, and that short- and long-term impacts of accepting responsibility for such land are adequately evaluated by the City.

4.3 Setting New Hazard Mitigation Goals

The Risk Assessment element of this LHMP documents the risks from and vulnerabilities to the natural hazards that threaten the City of Palmdale. Coupled with the additional information provided through the assessment of existing mitigation capabilities, the City was able to begin to formulate mitigation planning goals.

Before formulating the goals, the planning team first reviewed planning goals in general. Each planning team member was provided with a written and graphic explanation of Goals and Objectives, the purpose they serve and how they are developed and written. Following this activity, each planning team member was provided with a list of sample goal statements. Some of these goals were from the State of California and the Los Angeles County mitigation plans and from nearby cities. Others were developed as a result of analyzing the Risk Assessment and some were existing community planning goals, such as “Improve Public Safety Services,” that are compatible with hazard mitigation.

The planning team participated in a discussion on the sample goal statements and developed an understanding of the relationship between goals and objectives and the recommended actions that they would later be tasked to formulate.

Based upon the planning data review, the planning team reviewed the goal statements and related objectives. These final goals and objectives provide direction for reducing future hazard-related lo within City of Palmdale.

4.4 City of Palmdale Hazard Mitigation Goals & Objections

MISSION

The mission of the City of Palmdale’s Local Hazard Mitigation Program is to establish and promote a comprehensive mitigation policy and program to protect, from natural and manmade hazards, 1) the lives of citizens and workers within the City; 2) property and facilities of residents, businesses, institutions, and governmental agencies; and 3) infrastructure and the environment.

GOALS

1. Protect Life and Property

OBJECTIVES:

1A. Continue to identify natural and manmade hazards that threaten life and property in the City of Palmdale.

1B. Implement programs and projects that assist in protecting lives by making infrastructure, critical facilities, and other property more resistant to losses from all hazards.

1C. Maintain standards, codes, and construction practices that to assist in protecting life and property.

1D. Reduce losses and repetitive damages from repetitive hazard events, while promoting insurance coverage for catastrophic hazards.

1E. Continue to implement facility and/or retrofit projects in both the City's 10-year Capital Improvement Project Plan and in the City's annual budget plan. These projects will help reduce damage during either a natural or manmade hazard.

1F. Improve traffic circulation during floods and other events.

2. Increase Public Awareness

OBJECTIVES:

2A. Increase public awareness of existing threats and the means to reduce these threats by conducting educational and outreach programs to all the various community groups in the City of Palmdale.

2B. Develop informational material for distribution to the public regarding general emergency preparedness. Promote this material through the Palmdale newsletter, Channel 27 promotional announcement, and displays at community events.

3. Strengthen Partnerships

OBJECTIVES:

3A. Strengthen communications and coordinate participation between the City and public agencies, schools, non-profit organizations, business, and industry to gain a vested interest in mitigation measures.

3B. Encourage and support leadership within the private sector, non-profit agencies and community-based organizations to promote and implement local hazard mitigation activities.

3C. Forward development plans as appropriate to the Los Angeles County Fire Department, State Department of Mines and Geology and other agencies who evaluate potential hazards and ensure that the recommendations from these agencies are incorporated into the project design through required conditions of approval.

3D. Encourage property-owner self-protection measures.

4. Provide Responsive Emergency Services

OBJECTIVES:

4A. Establish policies to ensure the implementation of mitigation programs and projects for critical facilities, services, and infrastructure.

4B. Continue to provide training and invest in equipment for City workers to address all identified hazards.

4C. Continue developing and strengthening inter-jurisdictional coordination and cooperation in the area of emergency services.

5. Promote Environmental Preservation

OBJECTIVES:

5A. Consider natural and manmade hazard mitigation in developing land use plans to protect life, property, and the environment.

6. Provide Responsible Stewardship of Public Funds

OBJECTIVES:

6A. Prioritize mitigation projects, starting with sites facing the greatest threat to life, health, and property.

6B. Use public funding to protect public services and critical facilities.

Maximize the use of outside funding sources.

4.5 Selecting and Prioritizing Hazard Mitigation Measures

MITIGATION STRATEGIES

In order to ensure that proposed mitigation actions were developed in a systematic fashion, the first step was to determine an overall strategic approach. The Hazard Mitigation Steering Committee developed the following mitigation strategies:

Enforcement.

The City has previously adopted numerous ordinances and policies that relate to hazard mitigation. Among these are the building codes, specific plan requirements, and policies found in the General Plan. Existing regulations should be periodically reviewed and modified as necessary to take advantage of experience gained from hazard events and new technology.

Inter-Agency Coordination.

By working with other agencies in the Antelope Valley, the City benefits from the resources and expertise that these agencies have to offer. Joint projects increase efficiency, can be extremely effective, avoid duplication, and stretch scarce resources.

Public Information and Education.

Public information and education programs are a cost-effective method to motivate individuals and institutions to implement hazard mitigation actions on their own.

Management.

Effective hazard mitigation programs do not just happen; they are the result of management attention and direction. A management structure that includes designated responsibility and accountability for implementation of hazard mitigation actions is necessary for success.

Mitigation Projects.

Mitigation projects may include measures to protect City facilities and critical infrastructure from damage, non-structural mitigation projects, and staff training.

SELECTION/PRIORITIZATION

The process of selecting and prioritizing mitigation actions began with each member of the Core Team developing a "wish list," that considered community planning assessment responses and included input from the Local Hazard Mitigation Planning Committee, as well as their own ideas. Individual "wish lists" were then consolidated into a single list of several dozen projects. The Core Team determined that the list needed to contain no more than 25 projects, and preferably less. In order to select the measures/actions that should be part of this LHMP, the Core Team initially used three criteria:

- What actions had the most serious consequences if not implemented?
- What actions could be implemented by existing staff with funding resources available internally (or externally)?
- What actions responded to the primary concerns of the community?

After much discussion within the Core Team, a final list of 25 actions was developed, reviewed, and approved by the full Committee. The actions were not prioritized, however. (At the suggestion of FEMA, and with the consensus of the Committee, an additional action was added to this iteration of the LHMP that is aimed at protecting future buildings and infrastructure).

Once the projects had been selected, the Core Team established priorities. Establishment of priorities for hazard mitigation helps to assure that projects will be implemented in a systematic fashion. Priorities are intended as guidelines for action, not as a rigid requirement. The order that projects are listed in is not necessarily the order that they will be implemented; projects ranked High by the City are of the first priority. Many factors were taken into consideration in the development of hazard mitigation priorities. These factors included, but were not limited to:

- Percent of population at risk
- Frequency, intensity, and likelihood of hazard; repetitive loss areas
- Types/percent of land areas at risk; development pressure
- Cost effectiveness of measure; Sources of available funding

Benefit-Cost Analysis Requirements

The FY 2003 Pre-Disaster Mitigation (PDM) program was established by Congress as a nationally competitive mitigation grant program. The benefit-cost ratio (BCR) of each mitigation project is a major factor in the evaluation of PDM projects. Mitigation projects with higher BCRs are more likely to be funded in the nationally competitive PDM program.

The Federal Office of Management and Budget OMB Circular A-94 describes the economic principles and methods by which most federal programs must determine the cost effectiveness (i.e., BCR) of funded projects. OMB A-94 states: *"Analyses should include comprehensive estimates of the expected benefits and costs to society based on established definitions and practices for program and policy evaluation. Social net benefits, and not the benefits and costs to the Federal Government, should be the basis for evaluating government programs or policies that have effects on private citizens or other levels of government."*

The benefits of mitigation projects can simply be the value of avoided damages, losses, and casualties. Other benefits generated could be environmental, economic, cultural, and societal in nature.

Examples of common benefits include avoided (or reduced):

- Damages to buildings, contents, or infrastructure
- Economic impacts of loss of function of buildings
- Displacement costs for temporary quarters
- Loss of public services
- Loss of net business income
- Economic impacts of loss of function of infrastructure
- - Road or bridge closures
- - Loss of utility services
- Deaths and injuries

While cost was a consideration in establishing hazard mitigation priorities, detailed cost-benefit analyses were not performed. A BCR will be calculated for any projects that are submitted for federal funding at the time of grant application preparation.

4.6 2022 Updated Mitigation Actions

This section provides proposed mitigation actions (in the form of recommendations) under the following six (6) categories: *Prevention; Property Protection; Public Education and Awareness; Natural Resource Protection; Emergency Services; and Structural Projects* and reflect a change in priorities from the 2016 update to the LHMP. Although many priorities are similar, mitigation efforts will now consider the impacts of climate change on existing hazards, and Palmdale has also included a new hazard for consideration and mitigation: infectious disease/pandemic.

Additionally, the following mitigation projects identified in the 2016 LHMP have been completed or are ongoing due to the nature of ongoing and/or persistent hazards:

- **Provide for Water Savings Techniques for Irrigation & Landscaping:** This project was noted as a mitigation action item in the 2016 LHMP and is ongoing due to the persistent threats of drought and climate change. Identified as Item 8 in this update.
- **Amargosa Creek Upper Recharge Project:** This project was identified in the 2016 LHMP and took several years to move through the design phase and the water recharge portion of the project has been completed, with the creation of the Habitat Restoration Park still remaining. Identified as Item 9 in this update.
- **Purchase and Training of Emergency Notification System:** This project has been completed and removed as a Mitigation Action Item, though training exercises are ongoing.
- **Recycled Water Facilities:** This project provided for the development of a recycled water master plan completed in 2012. The Recycled Water Master Plan provided for the future implementation of recycled water systems with new lines to be designed and constructed as funding becomes available.

The recommendations that follow are those that would have a long term, beneficial impact upon the entire city, neighboring communities, and participating districts. These recommendations will be made with the knowledge and consent of the entire Palmdale community by virtue of the formal adoption of this LHMP. The initial priorities were based upon the following criteria: *High, Medium, Low priority with regard to protection of life/property and risk. The City also evaluated per an approved FEMA method based upon the following levels.* See Table 4-3.

- *Level 1* - Requires human resources, but not necessarily financial resources
- *Level 2* - Can be accomplished primarily by City staff, but requires financial resources, internal or external
- *Level 3* - Requires external expertise/consultant and financial resources, internal or external
- *Level 4* - Requires multiple entity/agency participation, environmental reviews, and external human and financial resources.

Table 4.3 2022 Mitigation Action Prioritization

ITEM	PROJECT	CATEGORY	RANKING (CITY)	RANKING (FEMA)	FUNDING AND STATUS	IMPLEMENTATION SCHEDULE
1	Implement community based Nonstructural Mitigation program	Property Protection	Medium	2	Funding provided through General Fund. Project is ongoing on a case-by-case basis.	Ongoing as discovered during inspections and renovations.
2	Assess Vulnerability to Severe Wind	Property Protection	Medium	3	Funding TBD, on case-by-case basis from General Fund.	Project will be initiated as soon as funds become available with a target date of 2024.
3	Develop Seasonal Multi-Hazard Public Education Campaign	Public Education and Awareness	Medium	2	Funding provided through General Fund. Project is ongoing. The City partners with Los Angeles County Emergency Management Department for education programs.	Ongoing; annually.
4	Earthquake Education Program	Public Education and Awareness	Medium	2	Funding provided through General Fund. Project is ongoing. The City partners with Los Angeles County Emergency Management Department for education programs.	Ongoing; timeline determined by the LACFD.
5	Increase Public Awareness of Extreme Temperature Risks	Public Education and Awareness	Medium	2	Approximately $30,000 annually from General Fund.	Ongoing seasonal meetings and monthly information distribution.
6	Educate Property Owners of Wildfire Mitigation Techniques	Public Education and Awareness	Medium	2	Approximately $30,000 annually from General Fund.	Ongoing annual meetings and monthly mail information distribution.
7	Update the City's Master Plan of Drainage	Natural Resource Protection	High	3	Funding provided through General Fund. Project scheduled to begin in 2022.	Included in fiscal year 2022 budget.
8	Provide for water savings techniques for irrigation & landscaping	Natural Resource Protection	High	1	Funding provided through General Fund. Water conservation ordinance adopted in 2008 and updated as necessary.	Implemented in 2008; evaluations ongoing based on State law.
9	Amargosa Creek Upper Recharge Project	Natural Resource Protection	High	4	Funding provided through Drainage Funds, grants and multi-jurisdictional funding. Portion of project complete with work ongoing.	Water recharge completed; remaining mitigation ongoing.
10	**Upgrade existing City EOC	Emergency Services	High	3	Funding provided through General Plan. Some work completed; additional work TBD based on available funding.	Improvements to communication infrastructure, database, and visual aids completed; additional mitigation TBD.

ITEM	PROJECT	CATEGORY	RANKING (CITY)	RANKING (FEMA)	FUNDING AND STATUS	IMPLEMENTATION SCHEDULE
11	**Develop 3–7-day shelter, food and water plan	Emergency Services	Medium	2	Although still a priority, staff and funding are not available	TBD; upon availability of staff and funding.
12	**Establish shelter	Emergency Services	Medium	4	Funding to be provided from Hazard Mitigation Grant, City General Funds and City of Lancaster. Project approved at Joint City Council meeting in May 2021. Start of work TBD.	TBD; project approved at Joint Council meeting on May 10, 2021.
13	**Update GIS Aerial Imagery	Emergency Services	High	3	Funding provided through Hazard Mitigation Grant and General Fund. Budgeted for 2022 with annual subscription to follow upgrade.	Budgeted in fiscal year 2022; with annual subscription.
14	**Re-evaluate the City's evacuation routes	Emergency Services	High	2	Funding to be provided from Hazard Mitigation Grant and General Fund when available. Implementation TBD.	TBD; upon availability of staff and funding.
15	**Create shelter and medication disbursement plan	Emergency Services	Low	3	Funding to be provided from Hazard Mitigation Grant and General Fund when available. Implementation TBD.	TBD; upon availability of staff and funding.
16	**Create additional emergency related GIS layers	Emergency Services	Low	2	City has updated GIS information and has updated and provided additional emergency related GIS layers. Additional layers to be provided when funding and staff are available.	TBD; upon availability of staff and funding.
17	Construction of Navigation Access Center	Emergency Services	Medium	4	Funding to be provided through Hazard Mitigation Grant and General Fund. Design budgeted for 2022.	TBD; budgeted in fiscal year 2022 for design only. Construction dependent on availability of funds.
18	Creation of Palmdale Community Renaissance Plan	Emergency Services	Medium	4	Funding to be provided through Hazard Mitigation Grant and General Fund. Policy implemented in 2020 and could be implemented as necessary for future events.	Policy implemented in April 2020; ongoing updates based on current public health protocols. Similar strategies may be implemented for future pandemic/infectious disease outbreaks.
19	Creation of Al Fresca Dining Policy	Emergency Services	Medium	4	Funding to be provided through Hazard Mitigation Grant and General Fund. Policy implemented in 2020 and could be implemented as necessary for future events.	Policy implemented in June 2020; ongoing updates based on current public health protocols. Similar strategies may be implemented for future pandemic/infectious disease outbreaks.

ITEM	PROJECT	CATEGORY	RANKING (CITY)	RANKING (FEMA)	FUNDING AND STATUS	IMPLEMENTATION SCHEDULE
20	Manage COVID-19 Testing and Vaccination Sites	Emergency Services	Medium	4	Funding to be provided through Hazard Mitigation Grant and General Fund. Policy implemented in 2020 and could be implemented as necessary for future events.	Testing sites opened in April 2020, and vaccination sites opened in March 2021. Ongoing updates based on current public health protocols. Similar strategies may be implemented for future pandemic/infectious disease outbreaks.
21	Amargosa Creek Flood Control Improvement	Structural Projects	Medium	4	Funding to be provided through Hazard Mitigation Grants and General Fund. Project is currently identified in 10-year CIP based on availability of funds.	Project is budgeted for Palmdale's 10-year CIP and dependent upon available funds.
22	Anaverde Creek Regional Channel Improvements	Structural Projects	Medium	4	Funding to be provided through Hazard Mitigation Grant and General Fund. Watershed study and preliminary design to be completed June 2022. Final design and construction TBD.	Watershed Study and design scheduled for June 2022. Final design and construction TBD.
23	Hunt Canyon Drainage Basin	Structural Projects	High	4	Funding to be provided from Hazard Mitigation Grant and City Drainage Fund when available. Implementation TBD.	TBD; project dependent on availability of funds.
24	Avenue P Pearland Drainage Improvements	Structural Projects	Medium	4	Funding to be provided from Hazard Mitigation Grant and City Drainage Fund when available. Implementation TBD.	TBD; project dependent on availability of funds.
25	Avenue S Pearland Drainage Improvements	Structural Projects	Low	4	Funding to be provided from Hazard Mitigation Grant and City Drainage Fund when available. Implementation TBD.	TBD; project dependent on availability of funds.
26	Palmdale Blvd. Pearland Drainage Improvements	Structural Projects	Low	4	Funding to be provided from Hazard Mitigation Grant and City Drainage Fund when available. Implementation TBD.	TBD; project dependent on availability of funds.
27	Avenue O Portal Ridge Drainage Improvements	Structural Projects	Low	4	Funding to be provided from Hazard Mitigation Grant and City Drainage Fund when available. Implementation TBD.	TBD; project dependent on availability of funds.

** Preparedness/Response Activity

2022 Updated Mitigation Actions continued

Each of the reviewed and recommended 2022 mitigation actions proposed by the City of Palmdale is described in the following pages. Each description contains:

- Project Title & Description
- Issue/Background Statement
- Other Alternatives Considered
- Responsible Office/Person
- Funding Source
- Cost
- Benefits
- Implementation Schedule
- Priority

4.6.1 PROPERTY PROTECTION

Recommended Action #1

Project Title/Description:

Implement a community based Non-structural Mitigation Program to address earthquake hazards.

Goals Addressed:

GOAL # 1 – Protect Life and Property;
GOAL # 2 – Increase Public Awareness;
GOAL # 3 – Strengthen Partnerships;
GOAL # 4 – Provide Responsive Emergency Services;
GOAL # 6 - Provide Responsible Stewardship of Public Funds

Objectives Involved:

1A; 1B; 1C; 1D; 1E;
2A; 2B; 3B; 3D;
4A;
6A; 6B

Issue/Background Statement:

Securing non-structural elements may best be seen as an inherent part of local governments' responsibility to maintain a safe working environment for its employees. Non-structural mitigation actions can reduce earthquake-induced damage and injury and help maintain a satisfactory level of service following an earthquake event.

The program includes the identification of non-structural earthquake hazards in building spaces and the implementation of protection measures. Program issues related to necessary skills, safety, budgets, consistency, and liability generally require that City staff manage the non-structural protection program.

Guiding principles

The assumptions and philosophies behind the City Nonstructural Earthquake Protection Program are:

- Strong earthquake ground shaking will damage non-structural elements in buildings.
- City buildings on or near known faults are at great risk of being damaged by an earthquake; Palmdale, and all of Los Angeles County can be exposed to earthquake hazards capable of damaging nonstructural elements of the building.
- Maintenance of existing mechanical systems, bracing, and retrofitting of vulnerable non-structural elements of the facility will reduce damage and foster sustainability.

Other Alternatives Considered:

Do nothing

Responsible Offices/Persons:

Emergency Management/Building & Safety Dept.

Funding Source: City General Fund

Cost: Case-by-case basis

Benefit: Life Safety, reduced losses, increased insurance coverage

Updated Implementation Schedule:

Ongoing as discovered during inspections and renovations

Priority: Medium (2)

Recommended Action Item #2

Project Title/Description:

Assess vulnerability to severe wind.

Goals Addressed:

GOAL #1 – Protect Life and Property;
GOAL #2 – Increase Public Awareness;

Objectives Involved:

1A; 1B; 1C; 1D; 1E;
2A; 2B

Issue/Background Statement:

Identifying the locations in Palmdale most vulnerable to wind damage will allow the City to develop mitigation strategies and improvement projects for infrastructure, and city facilities, and establish programs to assist property owners in need of improvements. The City will develop and maintain database to track community vulnerability to wind, including creating a GIS layer to map concentrations of at-risk structures.

Other Alternatives Considered:

Create severe wind scenario to estimate potential loss of life and injuries, property damage, and existing vulnerabilities within a community to develop severe wind mitigation actions.

Responsible Offices/Persons:

Public Works, and Building & Safety Department

Funding Source: City General Fund

Cost: TBD on case-by-case basis

Benefit: Life Safety, reduced losses

Updated Implementation Schedule:

Initiate as soon as funds become available with a target date of 2024.

Priority: Medium (3)

4.6.2 PUBLIC EDUCATION AND AWARENESS

Recommended Action Item #3

Project Title/Description:

Develop a Seasonal Multi-Hazard Public Education Campaign to be implemented annually to address all hazards.

Goals Addressed:

GOAL # 1 – Protect Life and Property;
GOAL # 2 – Increase Public Awareness;
GOAL # 3 – Strengthen Partnerships

Objectives Involved:

1A; 1B; 1C; 1D; 1E; 1F;
2A; 2B;
3A; 3B; 3D

Issue/Background Statement:

The planning team gathered important and interesting information regarding the hazards that pose a threat to the health and safety of City of Palmdale, the likely impacts of such hazards, and reasonable measures that can be undertaken by individuals and organizations to reduce the impact of such inevitable events. This information needs to be made public in a multifaceted approach that addresses the hazards when they occur and where they occur. Public Education is one of the primary mechanisms in reducing future hazard related losses, and one that is inexpensive in comparison to other mitigation projects. This effort should be coordinated between the many organizations that already have extensive and/or limited programs in place.

Other Alternatives Considered:

Utilize other innovative outreach methods to get the public's attention

Responsible Offices/Persons:

Emergency Management

Funding Source: City General Fund

Cost:

Incremental. A single citywide mailing to 42,000 residential units (at $.49 per mailing) would cost $20,580. This program should build on existing programs and agencies that are already incurring these costs, and explore other avenues of public outreach, schools, public utility newsletters, flyers, etc.

Benefit: Life Safety, reduced losses, increased insurance coverage

Implementation Schedule:

Ongoing, annual campaign.

Priority: Medium (2)

Recommended Action Item #4:

Project Title/Description:

Earthquake Education Program to address earthquake hazards.

Goal Addressed:

GOAL # 2 – Increase Public Awareness,
GOAL # 3 – Strengthen Partnerships

Objectives Involved:

2A; 2B;
3A; 3B; 3D

Issue/Background Statement:

Hold public meetings to acquire information from homeowners on their specific needs, explain what resources available and what procedures are to take in the event of a major earthquake. Send literature to all homeowners addressing earthquake problems and what homeowners can do to reduce vulnerability.

Other Alternatives Considered:

Utilize other innovative outreach methods to get the public's attention, including the City of Palmdale website.

Responsible Offices/Persons:

Emergency Management in participation with the LA County Fire Department (LACFD)

Funding Source: City General Fund

Cost:

Incremental. A single citywide mailing to 42,000 residential units (at $.49 per mailing) would cost $20,580. This program should build on existing programs and agencies that are already incurring these costs, and explore other avenues of public outreach, schools, public utility newsletters, flyers, etc.

Benefit: Life Safety, reduced losses, increased insurance coverage

Implementation Schedule:

Ongoing meetings, timeline determined by the LACFD.

Priority: Medium (2)

Recommended Action Item #5:

Project Title/Description:

Increase public awareness of extreme temperature risk and safety measures.

Goal Addressed:

GOAL # 2 – Increase Public Awareness;
GOAL # 3 – Strengthen Partnerships;

Objectives Involved:

2A; 2B;
3A; 6D;

Issue/Background Statement:

Extreme heat can cause public health impacts, which can be mitigated if the public is adequately informed on how to avoid exposure. Hold public meetings to acquire information from residents

on their specific needs, and provide literature on proper hydration, and activities to avoid during extreme heat events, including educational information provided by the LA County Heath Department and distributed in monthly newsletter.

Other Alternatives Considered:

Utilize other innovative outreach methods to get the public's attention, including the City of Palmdale website, and social media.

Responsible Offices/Persons:

Public Safety in participation with the LA County Department of Public Health

Funding Source: City General Fund

Cost:

Incremental. A single citywide mailing to 42,000 residential units (at $.49 per mailing) and cost of staff preparation time would cost approximately $30,000 annually. This program should build on existing programs and agencies that are already incurring these costs, and explore other avenues of public outreach, schools, public utility newsletters, flyers, etc.

Benefit: Life Safety

Implementation Schedule:

Ongoing: seasonal meetings and monthly information distribution.

Priority: Medium (2)

Recommended Action Item #6

Project Title/Description: (Public Education and Awareness)

Educate property owners about wildfire mitigation techniques.

Goal Addressed:

GOAL # 1 – Protect Life and Property;
GOAL # 2 – Increase Public Awareness;
GOAL # 3 – Strengthen Partnerships

Objectives Involved:

1A; 1B; 1C; 1D; 1E
2A; 2B;
3A; 3B; 3D

Issue/Background Statement:

Property owners can reduce their risks to wildfire by implementing proper mitigation techniques. The City will partner with the LA County Fire Department to conduct public awareness campaigns including seasonal meetings and providing information on the City's website and social media pages, as well as mail distribution of informational materials provided from the LA County Fire Department to residents in monthly newsletter. Information that the City can share with residents include:

- Installing mitigation systems such interior and exterior sprinkler systems
- Discouraging or prohibiting the burning of yard and household waste
- Maintaining defensible space around structures by limiting and regularly trimming vegetation near the structure, removing dead or dry vegetation and combustibles from roofs, decks, eaves, porches, and yards
- Installing and maintaining smoke detectors and fire extinguishers on each floor of the structure
- Safely using and storing necessary flammable materials and fuels. Piling fire wood at least 100 feet away from the structure and uphill from the structure if on a slope

Other Alternatives Considered:

Participate in local Firewise Program

Responsible Offices/Persons:

Public Safety and partner with Los Angeles County Fire Department (LACFD)

Funding Source: City General Fund

Cost:

Incremental. A single citywide mailing to 42,000 residential units (at $.49 per mailing) would cost approximately $30,000. This program should build on existing programs and agencies that are already incurring these costs, and explore other avenues of public outreach, schools, public utility newsletters, flyers, etc.

Benefit: Life Safety, reduced losses

Implementation Schedule:

Ongoing, annual meetings and monthly mail distribution of informational materials.

Priority: Medium (2)

4.6.3 NATURAL RESOURCE PROTECTION

Recommended Action Item #7:

Project Title/Description:

Update the City's Drainage Master Plan to address flood hazards.

Goal Addressed:

GOAL # 1 - Protect Life and Property;
GOAL #5 – Promote Environmental Preservation;
GOAL #6 – Provide Responsible Stewardship of Public Funds

Objectives Involved:

1A; 1B; 1C; 1D; 1E; 1F;
5A;
6A; 6B; 6C

Issue/Background Statement:

The City's Master Plan of Drainage is intended to provide the basis for making decisions regarding storm drainage and overall watershed management as well as to provide a funding mechanism for implementing such decisions. The most recent revision to the DMP was prepared in 1996 and needs to be updated to address the latest requirements imposed by Federal and State authorities and other watershed issues.

Other Alternatives Considered:

Continue use of existing Drainage Master Plan

Responsible Offices/Persons:

Public Works/City Consultant

Funding Source: City General Fund

Cost: $650,000

Benefit: Life Safety, reduced losses

Updated Implementation Schedule:

Included in fiscal year 2022 budget.

Priority: High (3)

Recommended Action Item #8

Project Title/Description:

Provide for water savings techniques in irrigation and landscaping to address drought hazards.

Goal Addressed:

GOAL #5 – Promote Environmental Preservation;
GOAL #6 – Provide Responsible Stewardship of Public Funds

Objectives Involved:

5A;
6A; 6B; 6C

Issue/Background Statement:

Continue to update the City's Water Conservation Ordinance to include recent updates to State Law. Ordinance promotes the values and benefits of landscaping while recognizing the need to utilize water and other resources as efficiently as possible. Use water efficiently without waste by setting a Maximum Applied Water Allowance as an upper limit for water use; establish a structure for planning, designing, installing, maintaining, and managing water efficient landscapes in new and rehabilitated projects; establish provisions for water management practices and water waste prevention for existing landscapes; implement water conservation policies contained in the City's General Plan

Other Alternatives Considered:

Continue to monitor water consumption

Responsible Offices/Persons:

Public Works/City Consultant

Funding Source: City General Fund

Cost: Costs negligible

Benefit: Drought reduction, reduced cost for water; reduced losses of water

Implementation Schedule:

Water conservation ordinance went into effect in October 2008; City provides ongoing evaluations and updates based in State laws and new developments in water efficient landscaping.

Priority: High (1)

Recommended Action Item #9

Project Title/Description:

Upper Amargosa Creek Flood Control, Recharge & Habitat Restoration Project to address flood hazards.

Goal Addressed:

GOAL # 1 – Protect Life and Property;
GOAL #5 – Promote Environmental Preservation

Objectives Involved:

1A; 1B; 1C; 1D; 1E; 1F;
5A

Issue/Background Statement:

The Upper Amargosa Creek Flood Control, Recharge, and Habitat Restoration Project will provide the Antelope Valley with flood control along the Amargosa Creek between 20th Street West and 25th Street West and along Elizabeth Lake Road. The recharge facility will utilize water supplies available from the California State Water Project (aqueduct) and percolate this water into the Antelope Valley aquifer so the water may be extracted for beneficial use. In addition, the Upper Amargosa Creek Recharge Project will provide a community Habitat Restoration Park, inviting local citizens to exercise, relax, and learn about their natural surroundings

Other Alternatives Considered:

Continue allowing water to travel its natural course with no percolation into the aquifer

Responsible Offices/Persons:

Public Works/City Consultant

Funding Source: Drainage Funds/Grants/Multi-jurisdictional

Cost: $13.5 million

Benefit: Recharge aquifer; provide community park; control flooding

Implementation Schedule:

Water recharge portion of project is completed, remaining mitigation actions still ongoing.

Priority: High (4)

4.6.4 EMERGENCY SERVICES

Recommended Action Item #10: Preparedness Activity

Project Title/Description:

Upgrade existing City of Palmdale Emergency Operations Center (EOC) to meet current seismic standards and provide for better communication infrastructure, data implementation, and visual aids to address all hazards.

Goal Addressed:

GOAL # 1 - Protect Life and Property

Objectives Involved:

1A; 1B; 1C; 1D; 1E; 1F

Issue/Background Statement:

The City Emergency Management department and Steering Committee and the Public Works Department will gather necessary information and requirements to bring the existing City of Palmdale's EOC up to current seismic standards. The team will also work on providing up to date database information about City's critical facilities via the City's GIS system to all departments involved in the EOC operation. Additional equipment for transmission of information between field EOC staff and administrative EOC staff will be necessary to allow for continues updates to the GIS database.

Other Alternatives Considered:

Continue use of existing equipment and provide additional training for staff.

Responsible Offices/Persons:

City Emergency Management/Steering Committee

Funding Source: City General Fund

Cost: Costs are to be determined at a later date upon further research of the existing structural facility and necessary equipment.

Benefit: Life Safety, reduced losses, better response time

Updated Implementation Schedule:

TBD; Improvements to communication infrastructure, database, and visual aids are completed

Priority: High (3)

Recommended Action Item #11: Preparedness Activity

Project Title/Description:

Develop three-to-seven-day shelter, food, and water plan for emergency workers. This would include isolating and use of specific grocery stores, water storage tanks, gas stations, hotels, etc. to address all hazards.

Goal Addressed:

GOAL # 1 – Protect Life and Property,
GOAL # 3 – Strengthen Partnerships and
GOAL # 4 – City Emergency Services

Objectives Involved:

1A; 1B; 1C; 1D; 1E; 1F;
3A; 3B; 3D;
4C

Issue/Background Statement:

The Steering Committee is to implement a plan with local commercial services (i.e., housing, food, water, gas, etc.) to provide specific services to emergency workers in the event of either a natural or manmade hazard.

Other Alternatives Considered:

Utilize other innovative outreach methods to get the public's attention.

Responsible Offices/Persons:

City Emergency Management offices

Funding Source: City General Fund

Cost: Cost cannot be determined at this time until negotiations and agreements with commercial services have been implemented.

Benefit: Life Safety, reduced losses

Updated Implementation Schedule:

TBD; Limited funding and staff

Priority: Medium (2)

Recommended Action Item #12: Preparedness Activity

Project Title/Description:

Establish a shelter for use in a disaster to address all hazards.

Goal Addressed:

GOAL # 1 – Protect Life and Property,
GOAL # 3 – Strengthen Partnerships,
GOAL # 4 – City Emergency Services

Objectives Involved:

1A; 1B; 1C; 1D; 1E; 1F;
3A; 3B; 3D;
4C

Issue/Background Statement:

The City of Palmdale does not have many buildings that are categorized as emergency and/or evacuation shelters. The City of Palmdale and the City of Lancaster have identified the need for a large event center, that may also serve as a regional evacuation center for the entire Antelope Valley. In the event of a disaster, both cities would be able to use this facility as a shelter and emergency operations center.

Other Alternatives Considered:

Continue using the existing facilities.

Responsible Offices/Persons:

City of Palmdale

Funding Source: Hazard Mitigation Grant/City General Fund/Park and Recreation

Cost: TBD; Cost shared with City of Lancaster

Benefit: Life Safety, reduced losses

Updated Implementation Schedule:

TBD; Project approved at Joint City Council Meeting on May 10, 2021

Priority: Medium (4)

Recommended Action Item #13: Preparedness Activity

Project Title/Description:

Update Aerial Imagery in City's GIS Database to address all hazards.

Goal Addressed:

GOAL # 4 – City Emergency Services

Objectives Involved:

4A; 4B; 4C

Issue/Background Statement:

To provide for the purchase of annual purchase of aerial imagery to be used by the City's GIS system.

Other Alternatives Considered:

Continue using existing aerial data that is not the most current in many instances.

Responsible Offices/Persons:

GIS Department

Funding Source: Hazard Mitigation Grant/City General Funds

Cost: $30,000 annually

Benefit: Expand the capacity of the City's existing GIS system

Updated Implementation Schedule:

Budgeted in fiscal year 2022; with annual subscription.

Priority: High (3)

Recommended Action Item #14: Preparedness Activity

Project Title/Description:

Re-evaluate the City's Evacuation Routes and create new GIS layer for EOC purposes to address all hazards.

Goal Addressed:

GOAL # 1 – Protect Life and Property,
GOAL # 4 – City Emergency Services

Objectives Involved:

1A; 1B; 1C; 1D; 1E; 1F;
4A; 4B

Issue/Background Statement:

City needs additional information to determine evacuation routes out of the City, should an emergency be declared.

Other Alternatives Considered:

Continue following the existing evacuation route data

Responsible Offices/Persons:

GIS Section

Funding Source: Hazard Mitigation Grant/City General Funds

Cost: $75,000

Benefit: Increased emergency response effectiveness, expansion of GIS system data

Updated Implementation Schedule:

TBD, limited funding and staff.

Priority: High (2)

Recommended Action Item #15: Preparedness Activity

Project Title/Description:

Create a comprehensive emergency shelter and medication disbursement plan for EOC purposes to address all hazards.

Goal Addressed:

GOAL # 1 – Protect Life and Property,
GOAL # 4 – City Emergency Services

Objectives Involved:

1A; 1B; 1C; 1D; 1E; 1F;
4A; 4B; 4C

Issue/Background Statement:

A comprehensive plan for the disbursement of medication and shelter provision during and after a disaster does not exist.

Other Alternatives Considered:

Continue following existing EOC plan which may not have most current information

Responsible Offices/Persons:

Emergency Operations Center

Funding Source: Hazard Mitigation Grant/City General Funds

Cost: $75,000

Benefit: Increase in the effectiveness of 1st responders and EOC staff and protection of health and safety.

Updated Implementation Schedule:

TBD, limited funding and staff.

Priority: Low (3)

Recommended Action Item #16: Preparedness Activity

Project Title/Description:

Create several other Emergency Related GIS layers as identified and needed by the City to address all hazards.

Goal Addressed:

GOAL # 1 – Protect Life and Property,
GOAL # 4 – City Emergency Services

Objectives Involved:

1A; 1B; 1C; 1D; 1E; 1F;
4A; 4B

Issue/Background Statement:

Additional information is needed to increase efficiency of Emergency Operations and 1st responders.

Other Alternatives Considered:

Continue using the existing GIS data

Responsible Offices/Persons:

GIS Section

Funding Source: Hazard Mitigation Grant/City General Funds

Cost: $25,000 to $30,000/per layer

Benefit: Increase information to provide to the City's existing GIS system.

Updated Implementation Schedule:

TBD, limited funding and staff.

Priority: Low (2)

Recommended Action Item # 17: Preparedness Activity

Project Title/Description:

Construction of Navigation Access Center to address all hazards.

Goal Addressed:

GOAL #1 – Protect Life and Property,
GOAL #4 – City Emergency Services

Objectives:

1A, 1B, 1C, 1D, 1E, 1F,
4A;

Issues/Background Statement:

Construction of an access center which would include a new South Antelope Valley Emergency Services (SAVES) facility, partner common office space, and temporary housing.

Other Alternatives Considered:

Do not construct the access center and have the existing South Antelope Valley Emergency Services (SAVES) facility remain at its current location.

Responsible Offices/Persons:

Public Works

Funding Source: Hazard Mitigation Grant/City General Fund

Cost: $1.0 million

Benefit:

Provide additional space and resources for a new South Antelope Valley Emergency Services (SAVES) facility and reduce homelessness through temporary housing.

Updated Implementation Schedule:

TBD; Budgeted in fiscal year 2022 for design only. Project Construction dependent upon availability of funds.

Priority: Medium (4)

Recommended Action Item #18:

Project Title/Description:

Creation of the Palmdale Community Renaissance Plan to address infectious disease/pandemic hazards.

Goal Addressed:

GOAL # 1 – Protect Life and Property,
GOAL #2 – Increase Public Awareness,
GOAL # 3 – Strengthen Partnerships,
GOAL # 4 – City Emergency Services

Objectives Involved:

1A; 1B; 1C; 1D;
2A; 2B;
3A;
4A

Issue/Background Statement:

The intent of the Palmdale Community Renaissance Plan is to fully open the City of Palmdale while continuing to prevent the spread of COVID19 through the practice of reasonable infection control precautions. The plan applies to all businesses, corporations, and non-profit organizations in Palmdale to allow them to conduct basic operations.

Other Alternatives Considered:

Wait for public health protocols to return to pre-pandemic conditions.

Responsible Offices/Persons:

City Manager's Office / City Attorney's Office

Funding Source: Hazard Mitigation Grant/City General Fund

Cost: Negligible (Policy Change Only)

Benefit: Allow all businesses, corporations, and non-profit organizations in Palmdale to conduct basic operations during a pandemic.

Updated Implementation Schedule:

Policy implemented April 2020; ongoing updates based on current public health protocols. Same or similar strategies may be used for future pandemic/infectious disease outbreaks.

Priority: Medium (4)

Recommended Action Item #19:

Project Title/Description:

Creation of the Al Fresco Dining Policy to address infectious disease/pandemic hazards.

Goal Addressed:

GOAL # 1 – Protect Life and Property,
GOAL #2 – Increase Public Awareness,
GOAL # 3 – Strengthen Partnerships,
GOAL # 4 – City Emergency Services

Objectives Involved:

1A; 1B; 1C; 1D;
2A; 2B;
3A;
4A

Issue/Background Statement:

Restaurants may find more opportunities for enjoying their meals outdoors in Palmdale as the City rolls out a program to help local restaurants deal with the public health requirements during a pandemic. The Al Fresco dining program will allow restaurants to temporarily expand their seating to sidewalks and off-street parking areas to help meet the spacing requirements of the public health protocols.

Other Alternatives Considered:

Wait for public health protocols to return to pre-pandemic conditions.

Responsible Offices/Persons:

City Manager's Office / City Attorney's Office

Funding Source: Hazard Mitigation Grant/City General Fund

Cost: Negligible (Policy Change Only)

Benefit: Provide restaurants an option to remain open and the public an option to dine out.

Updated Implementation Schedule:

Policy implemented June 2020; ongoing updates based on current public health protocols. Same or similar strategies may be used for future pandemic/infectious disease outbreaks.

Priority: Medium (4)

Recommended Action Item #20:

Project Title/Description:

Manage COVID-19 Testing and Vaccination Sites to address infectious disease/pandemic hazards.

Goal Addressed:

GOAL # 1 – Protect Life and Property,
GOAL # 2 – Increase Public Awareness,
GOAL # 4 – City Emergency Services,

Objectives Involved:

1A; 1B; 1C; 1D;
2A; 2B;

4A

Issue/Background Statement:

The World Health Organization called the coronavirus situation a pandemic on March 11th, 2020, and on March 12th, 2020, the City of Palmdale declared a state of emergency to gain better access to the tools and resources needed to fulfill the mission of protecting residents while carrying out the functions of the City government. These functions including dedicating City facilities as testing and vaccination sites and providing staff to maintain operations.

Other Alternatives Considered:

Wait for public health protocols to return to pre-pandemic conditions.

Responsible Offices/Persons:

City Manager's Office, Public Works, Emergency Management

Funding Source: Hazard Mitigation Grant/City General Fund

Cost: Unknown

Benefit: Provide the public with a safe place to be tested for the COVID-19 virus and receive the vaccination for the COVID-19 virus.

Updated Implementation Schedule:

Testing Sites opened April 2020; Vaccination Sites opened March 2021; ongoing updates based on current public health protocols. Same or similar strategies may be used for future pandemic/infectious disease outbreaks.

Priority: Medium (4)

4.6.5 STRUCTURAL PROJECTS

Recommended Action Item #21:

Project Title/Description:

Amargosa Creek Flood Control Improvements to address flood hazards.

Goal Addressed:

GOAL # 1 – Protect Life and Property,

GOAL # 4 – City Emergency Services,
GOAL # 5 – Environmental Preservation

Objectives Involved:

1A; 1B; 1C; 1D; 1E; 1F;
4A;
5A

Issue/Background Statement:

Construction of improvements to the Amargosa Creek between Avenue O and Avenue M, including channelization of the ephemeral creek, the upgrade of the existing box culverts at Avenue O and Avenue M, and the installation of a box culvert at Avenue "N".

Other Alternatives Considered:

Continue allowing water to travel its natural course and continually install traffic closures and repair of intersections due to floodwater.

Responsible Offices/Persons:

Public Works

Funding Source: Hazard Mitigation Grant/City Drainage Funds

Cost: $6.5 million

Benefit: Reduce flood damage to street intersections, provide for safer travel for citizens, reduce costs for pavement and channel repair.

Updated Implementation Schedule:

Project is currently budgeted in the City of Palmdale's 10-year Capital Improvement program. Project is dependent upon availability of funds.

Priority: Medium (4)

Recommended Action Item #22:

Project Title/Description:

Anaverde Creek Regional Channel Improvements to address flood hazards.

Goal Addressed:

GOAL # 1 – Protect Life and Property,

GOAL # 4 – City Emergency Services,
GOAL # 5 – Environmental Preservation

Objectives Involved:

1A; 1B; 1C; 1D; 1E; 1F;
4A;
5A

Issue/Background Statement:

Regional improvements to the ephemeral creek and its tributaries, within the area bounded by Avenue R, Rancho Vista Blvd, State Highway 14, and 15th Street East, including channelization, storm drain piping and box culverts, as well as the detention basins at the northeast corner of Avenue M-12 and Sierra Highway as well as at the northeast corner of Avenue R and Division Street.

Other Alternatives Considered:

Continue allowing water to travel its natural course and continually install traffic closures and repair of intersections due to floodwater.

Responsible Offices/Persons:

Public Works

Funding Source: Hazard Mitigation Grant/City Drainage Funds

Cost: $30.0 million

Benefit: Reduce flood damage to street intersections, provide for safer travel for citizens, reduce costs for pavement and channel repair.

Updated Implementation Schedule:

Watershed Study: June 2022

Preliminary Design: June 2022

Final Design: TBD

Construction: TBD

Priority: Medium (4)

Recommended Action Item #23:

Project Title/Description:

Hunt Canyon Drainage Basin to address flood hazards.

Goal Addressed:

GOAL # 1 – Protect Life and Property,
GOAL # 4 – City Emergency Services,
GOAL # 5 – Environmental Preservation

Objectives Involved:

1A; 1B; 1C; 1D; 1E; 1F;
4A;
5A

Issue/Background Statement:

Acquisition and construction of a 3000 acre-foot regional detention basin, south of Pearblossom Hwy. at 47th Street East.

Other Alternatives Considered:

Continue to allow water to travel its natural course/spend funds to upgrade existing underground storm drain systems.

Responsible Offices/Persons:

City of Palmdale

Funding Source: Hazard Mitigation Grant/City Drainage Funds

Cost: $35.5 million

Benefit: Reduce flood damage to downstream critical facilities

Updated Implementation Schedule:

TBD; Project dependent upon availability of funds.

Priority: High (4)

Recommended Action Item #24:

Project Title/Description:

Avenue P Pearland Drainage Improvements to address flood hazards.

Goal Addressed:

GOAL # 1 – Protect Life and Property,
GOAL # 4 – City Emergency Services,
GOAL # 5 – Environmental Preservation

Objectives Involved:

1A; 1B; 1C; 1D; 1E; 1F;
4A;
5A

Issue/Background Statement:

To provide for the construction of storm drain piping, box culverts and detention basins within the Pearland Watershed, south of Avenue P and north of Palmdale Blvd, including the Q-West Basin, Q-East Basin.

Other Alternatives Considered:

Continue allowing water to travel its natural course and install traffic closures and/or repair of intersections as necessary due to repeated flooding.

Responsible Offices/Persons:

Public Works

Funding Source: Hazard Mitigation Grant/City Drainage Funds

Cost: $32.0 million

Benefit: Reduce flood damage to street intersections, provide for safer travel for citizens, reduce costs for pavement and channel repair.

Updated Implementation Schedule:

TBD; Project dependent on availability of funds.

Priority: Medium (4)

Recommended Action Item #25:

Project Title/Description:

Avenue S Pearland Drainage Improvements to address flood hazards.

Goal Addressed:

GOAL # 1 – Protect Life and Property,
GOAL # 4 – City Emergency Services,
GOAL # 5 – Environmental Preservation

Objectives Involved:

1A; 1B; 1C; 1D; 1E; 1F;
4A;
5A

Issue/Background Statement:

To provide for the construction of storm drain piping, box culverts and detention basins within the Pearland Watershed, south of Avenue S and north of Pearblossom Highway, including the Barrel Springs Basin.

Other Alternatives Considered:

Continue allowing water to travel its natural course and install traffic closures and/or repair intersections as necessary due to repeated flooding.

Responsible Offices/Persons:

Public Works

Funding Source: Hazard Mitigation Grant/City Drainage Funds

Cost: $29.4 million

Benefit: Reduce flood damage to street intersections, provide safer travel for citizens, reduce costs for pavement and channel repair, reduced impact to downstream properties.

Updated Implementation Schedule:

TBD; Project dependent on availability of funds.

Priority: Low (4)

Recommended Action Item #26:

Project Title/Description:

Palmdale Blvd Pearland Drainage Improvements to address flood hazards.

Goal Addressed:

GOAL # 1 – Protect Life and Property,
GOAL # 4 – City Emergency Services,
GOAL # 5 – Environmental Preservation

Objectives Involved:

1A; 1B; 1C; 1D; 1E; 1F;
4A;
5A

Issue/Background Statement:

To provide for the construction of storm drain piping, box culverts and detention basins within the Pearland Watershed, south of Palmdale Blvd and north of Avenue S, including the 25th St. East Basin

Other Alternatives Considered:

Continue allowing water to travel its natural course and install traffic closures and/or repair intersections as necessary due to repeated flooding.

Responsible Offices/Persons:

Public Works

Funding Source: Hazard Mitigation Grant/City Drainage Funds

Cost: $14.9 million

Benefit: Reduce flood damage to street intersections, provide for safer travel for citizens, reduce costs for pavement and channel repair.

Updated Implementation Schedule:

TBD; Project dependent on availability of funds.

Priority: Low (4)

Recommended Action Item #27:

Project Title/Description:

Avenue O Portal Ridge Drainage Improvements to address flood hazards.

Goal Addressed:

GOAL # 1 – Protect Life and Property,

GOAL # 4 – City Emergency Services,
GOAL # 5 – Environmental Preservation

Objectives Involved:

1A; 1B; 1C; 1D; 1E; 1F;
4A;
5A

Issue/Background Statement:

To provide for the construction of storm drain piping, box culverts and detention basins within the Portal Ridge Watershed, south of Avenue O, including the Fulham Basin.

Other Alternatives Considered:

Continue allowing water to travel its natural course and install traffic closures and/or repair intersections as necessary due to repeated flooding.

Responsible Offices/Persons:

Public Works

Funding Source: Hazard Mitigation Grant/City Drainage Funds

Cost: $4.3 million

Benefit: Reduce flood damage to street intersections, provide for safer travel for citizens, reduce costs for pavement and channel repair.

Updated Implementation Schedule:

TBD; Project dependent on availability of funds.

Priority: Low (4)

SECTION FIVE

PLAN MAINTENANCE PROCEDURES

SECTION FIVE – PLAN MAINTENANCE PROCEDURES

Requirement §201.6(c)(4)(i):

*[The plan maintenance process **shall** include a] section describing the method and schedule of monitoring, evaluating, and updating the mitigation plan within a five-year cycle.*

Requirement §201.6(c)(4)(ii):

*The plan **shall** include a process by which local governments incorporate the requirements of the mitigation plan into other planning mechanisms, such as comprehensive or capital improvement plans, when appropriate.*

Requirement §201.6(c)(4)(iii):

*[The plan maintenance process **shall** include a] discussion on how the community will continue public participation in the plan maintenance process.*

OVERVIEW

As indicated previously, the mitigation plan process includes four broad tasks:

- **Organize Resources**
- **Assess Risks**
- **Develop LHMP**
- **Implement the LHMP and Monitor Progress**

The final step in the development of a local hazard mitigation plan is to define and set forth procedures for the following:

- Monitoring, Evaluating, and Updating the LHMP;
- Implementing the LHMP;
- Potential for Incorporation into Other Agency or Jurisdictional Planning Mechanisms; and,
- Continued Public Participation

It is important to remember that this LHMP is not intended to be a static, one-time document, but rather a "living" document with regularly scheduled monitoring and evaluation. Per DMA 2000, a LHMP must be reviewed annually and updated at least every five years. As of 2021, the Emergency Services Administrator, City of Palmdale, Department of Neighborhood Services, has been assigned the responsibility for coordinating the annual LHMP maintenance and evaluation and can be reached at (661) 267-5126. The Emergency Services Administrator will work closely with the Planning Team, who will review and evaluate the LHMP.

5.1 Monitoring and Evaluation

At a minimum, the evaluation process will assess if goals and objectives still reflect current or anticipated conditions, whether the nature or magnitude of risks has changed, if current resources are sufficient to implement the LHMP, and if outcomes are as expected.

Schedule.

- The LHMP will be reviewed and evaluated on an annual basis, during the month of June or July; it will also be reviewed following a disaster. A brief report or memorandum documenting the review findings will be prepared and included as an Appendix to this LHMP. Each review shall include an evaluation of the following:

Public Involvement.

- Public involvement successes and challenges should be reviewed and noted, with any recommendations for changes.

Risk Assessment.

- The identified hazards and associated risks should be evaluated with respect to the previous year's events, and any significant differences should be noted.

Mitigation Actions.

- The proposed Projects should be reviewed and updated regarding status and implementation (e.g., "proposed project is now fully complete"). Any changes should be noted, along with the successes and/or challenges associated with the implementation.

Responsibility.

- The assignments of responsibilities to individuals and departments should be reviewed and updated, as necessary. This includes the department/person responsible for coordinating the annual plan maintenance. Information should, at a minimum, include a name, position, department or agency, address, contact phone numbers, and e-mail.

Another tool in establishing a plan maintenance mechanism is to institutionalize hazard mitigation planning as a regular part of the community's governmental services. This goal could be accomplished by the following:

- Update department work plans, policy, and procedural changes to include hazard mitigation concepts and activities.
- Change job descriptions of government and/or partner organization staff to include mitigation-related duties – provide appropriate training, workload, and salary.
- Governing body or local government executive can issue resolutions, orders, ordinances, or other directives, to order local departments and agencies to carry out hazard mitigation activities, such as providing progress reports.

5.2 Plan Implementation

LHMP IMPLEMENTATION

The first step is to officially adopt and promulgate the LHMP. This official adoption demonstrates the City's commitment to hazard mitigation and legitimizes the hazard mitigation planning effort. In addition, potential opportunities for incorporation of the hazard mitigation plan into other existing planning mechanisms should be investigated.

At a Project level, projects may be incorporated into capital improvement projects, annual operational budgets, and applications for Federal and state grants, as deemed appropriate.

Upon adoption, the LHMP faces the truest test of its worth: implementation. Implementation implies two concepts: action and priority. These are closely related.

While this LHMP puts forth many worthwhile recommendations, the decision of which action(s) to undertake initially will be the first issue that the City faces. There are two essential elements in that decision-making process. First, there are the priorities established in this LHMP, and second, the availability of funding. At face value, pursuing low or no-cost high-priority recommendations will have the greatest likelihood of success.

It will be important to monitor funding opportunities that can be leveraged to implement some of the more costly recommended actions. This can include creating and maintaining a bank of ideas on how any required local match or participation requirement can be met.

Then, when funding does become available, Palmdale will be in a position to capitalize upon the opportunity. Funding opportunities that can be monitored include special pre- and post-disaster funds, special district budgeted funds, state or federal ear-marked funds, and grant programs, including those that can serve or support multi-objective applications.

With adoption of this LHMP, the City of Palmdale commits to:

- Pursuing the implementation of the high priority, low/no-cost Recommended Actions.
- Maintaining a vigilant monitoring of multi-objective, cost-share opportunities to assist in implementing the recommended actions of LHMP.

It is envisioned that the Steering Committee will continue as an ongoing body with the responsibility for monitoring plan implementation issues. At the minimum, they will:

- Act as a forum for hazard mitigation issues;
- Monitor implementation of this LHMP;
- Report on progress and recommended changes to the City Manager and Council, as appropriate; and,
- Inform and solicit input from the public.

5.3 Continued Public Involvement

Keeping the public informed of local hazard mitigation planning is an important way to garner continued public support for the planning process. The following is a brief list of public information recommendations:

- Provide periodic summary updates of hazard mitigation measures, hazard mitigation projects under construction, and most importantly, hazard mitigation success stories (following a disaster event), using local media, social media, and posted on City web site.
- Hold periodic public meetings, workshops, and "open house" events to present hazard mitigation planning elements.
- Participate in annual community events.

5.4 Plan Maintenance

Plan maintenance is the ongoing effort to monitor and evaluate the implementation of the LHMP and to update the LHMP as progress, roadblocks, or changing circumstances are recognized.

This monitoring and updating will take place through an annual review by the Steering Committee, at the minimum, and a 5-year written update to be submitted to the state and FEMA Region IX, unless a disaster or other circumstances (e.g., changing regulations) lead to a different time frame.

When the Committee reconvenes for the review, they will coordinate with all stakeholders interested in participating in the planning process to update and revise the LHMP. Public notice will be given, and public participation will be invited, at a minimum, through available web-postings and press releases to local media outlets, primarily newspapers and radio stations.

The Committee is an advisory body only. Its primary duty is to see the LHMP successfully carried out and to report to the City Manager and City Council the status of Plan Implementation and mitigation opportunities. Other responsibilities include reviewing and promoting mitigation proposals, hearing stakeholder concerns about hazard mitigation, and passing the concerns on to the appropriate entities.

The evaluation of the progress can be achieved by monitoring changes in the vulnerability identified in the LHMP. Changes in vulnerability can be identified by noting:

- Lessened vulnerability as a result of implementing Recommended Actions;
- Increased vulnerability as a result of failed or ineffective mitigation actions; and/or,
- Increased vulnerability as a result of new development (and/or annexation).

5.5 Coordinating Mitigation Planning Activities

As part of the annual LHMP review process, the Hazard Mitigation Steering Committee will evaluate the opportunities to coordinate and include local hazard mitigation planning with other planning efforts in the city. A high priority mitigation project is the development and

implementation of a formal process that can help assure this occurs. Work has already begun on developing those mechanisms that will facilitate the process. The Neighborhood Services Department will take the lead and will assume overall responsibility for assuring that the LHMP planning process, risk assessment, mitigation strategy, LHMP update process, and mitigation priorities are coordinated with the goals and objectives of the General Plan. In addition, other plans that will be coordinated with the LHMP may include, but are not necessarily limited to: Specific Plans, special purpose plans such as the Drainage Master Plan and Hazardous Materials Plan Emergency Operations Plan.

All new ordinances affecting land development will be reviewed by the Steering Committee to assure that mitigation measure is always part of land development planning.

Recommended actions that will result in the coordination of the LHMP with other planning activities will be developed by the Core Team, reviewed by the Hazard Mitigation Steering Committee, and forwarded to the appropriate department or agency for consideration and action.

In an ideal situation, Palmdale would be part of the Los Angeles County Multi-Jurisdictional Hazard Mitigation Plan. We will continue to work with Los Angeles County to try and make the ideal a reality.

5.6 Assurances

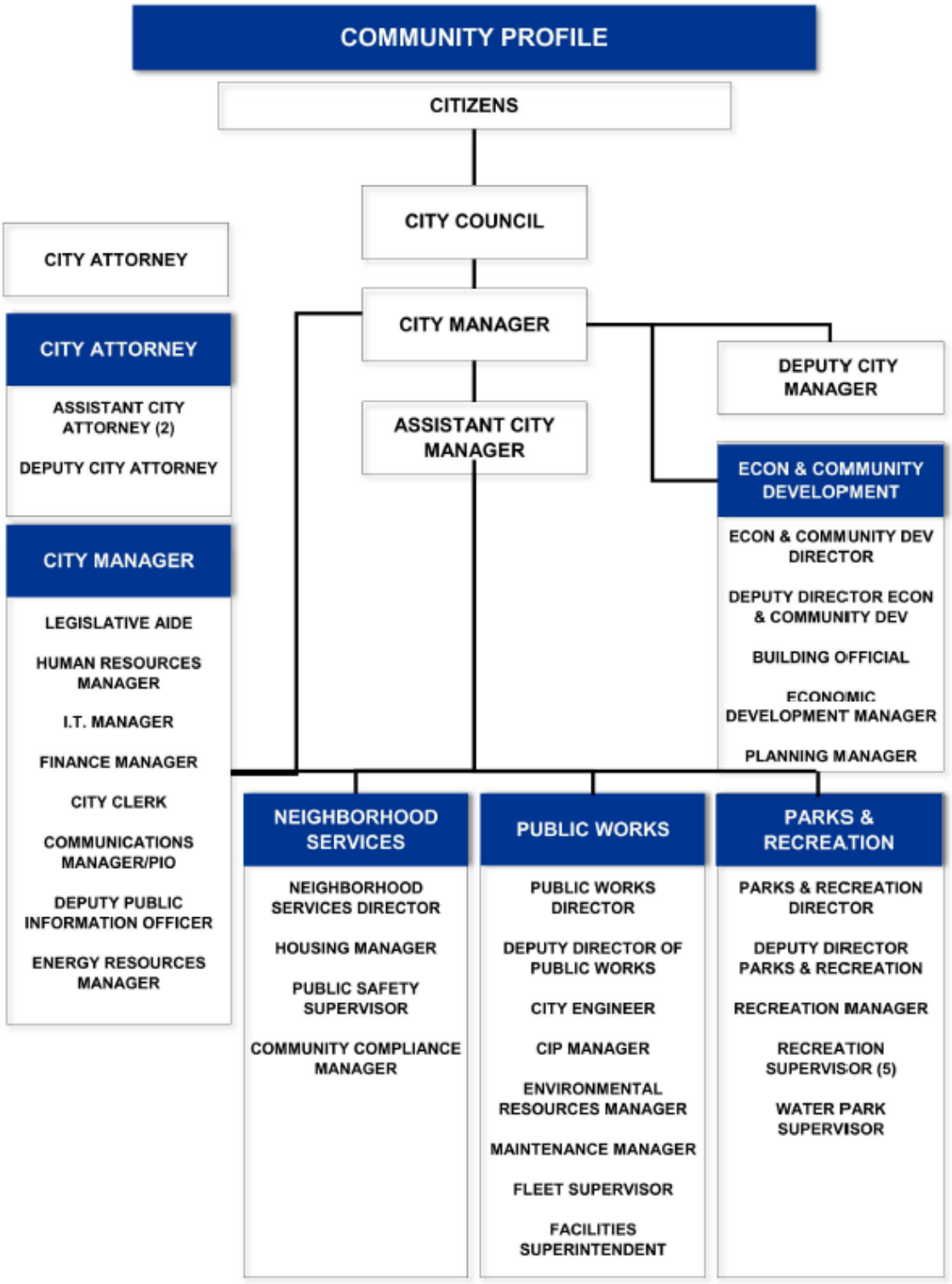
The City of Palmdale will comply with all applicable Federal statutes and regulations during the periods for which it receives federal grant funding.

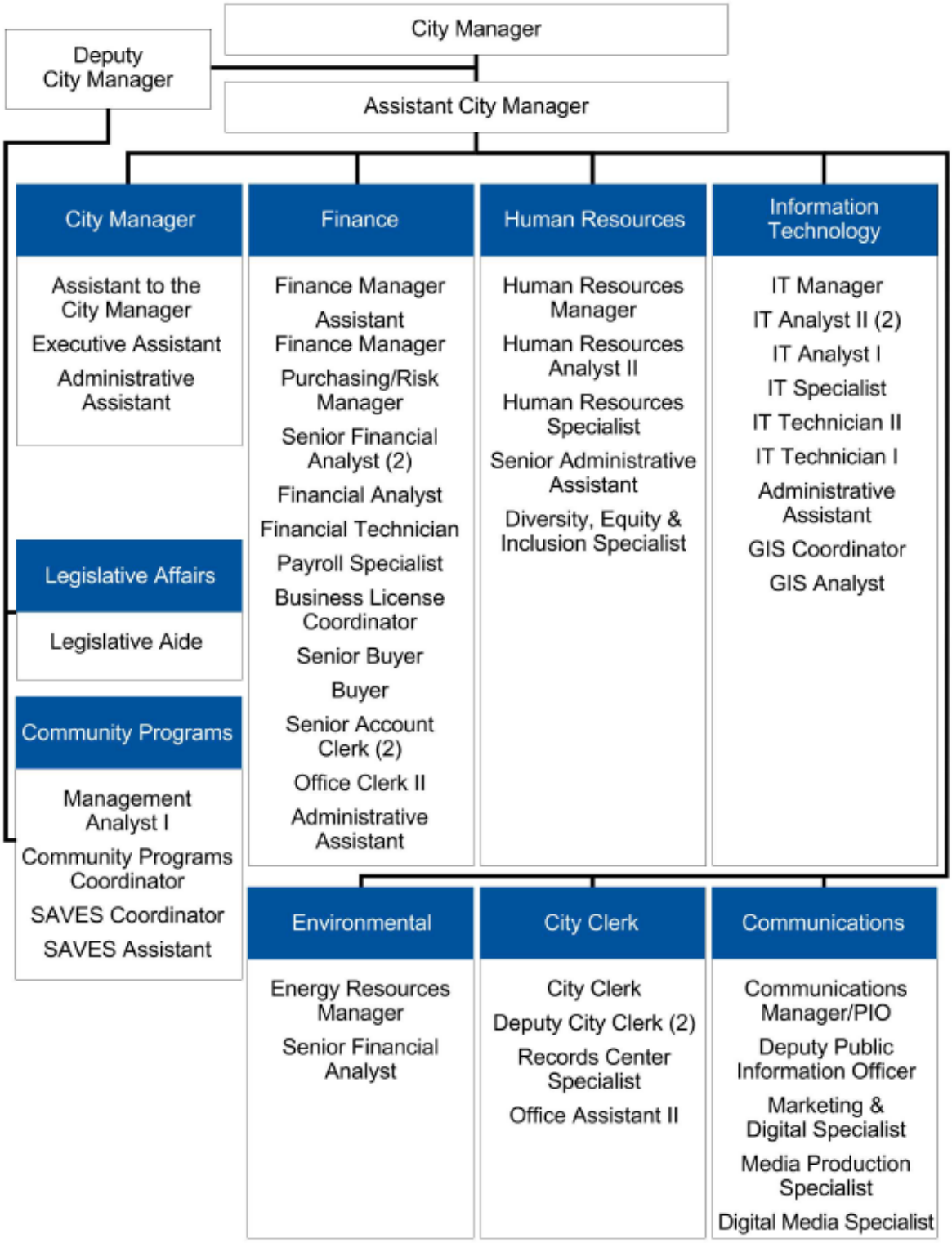
In addition, the City will amend this LHMP, and/or the implementation strategies for this LHMP, to reflect new or revised Federal (and State) regulations or statutes, policy, or government operations. Any such amendments will be added to the LHMP as they are developed. They will be incorporated upon formal updating of the LHMP and submitted to FEMA.

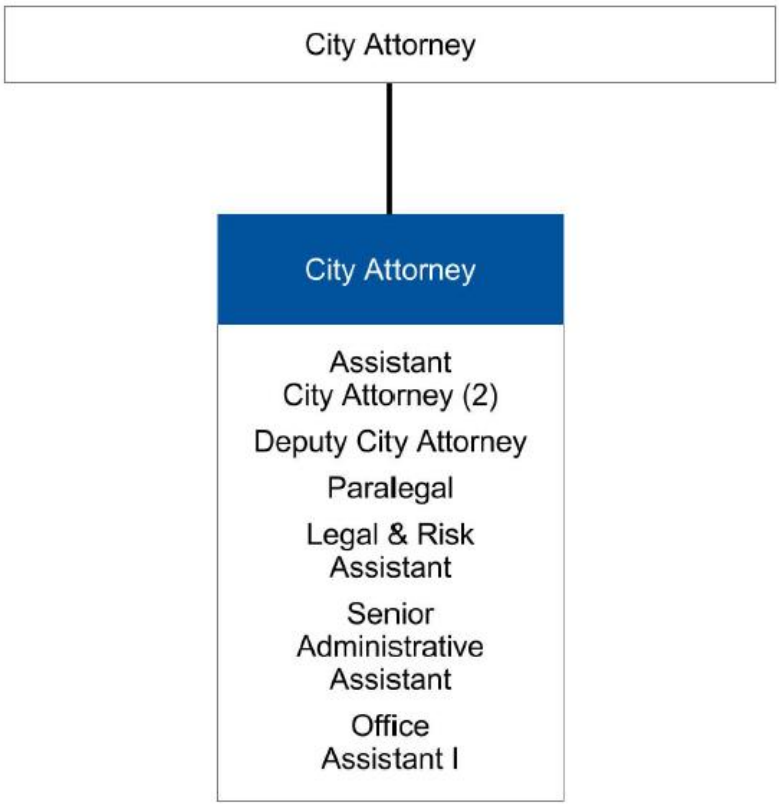
APPENDIX

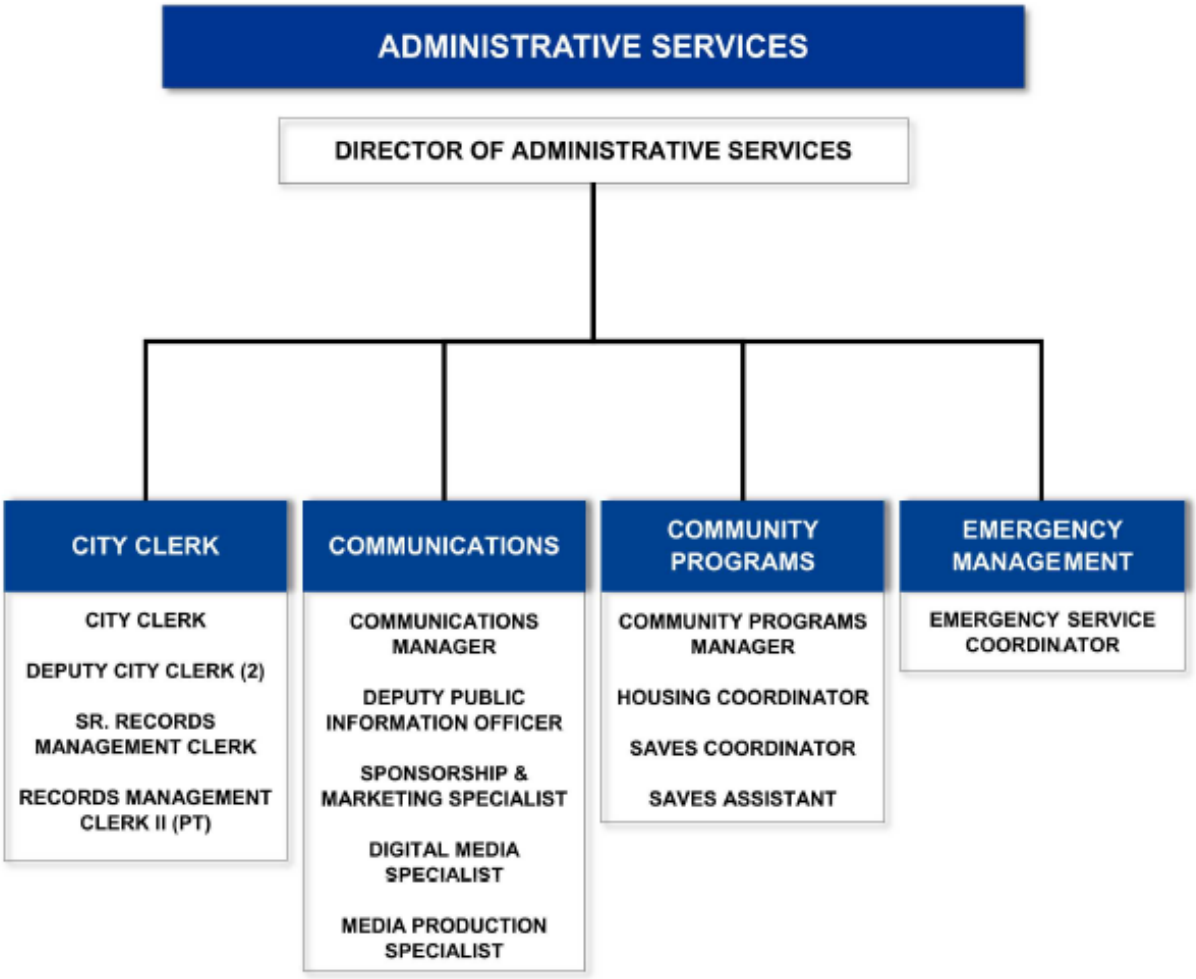
A

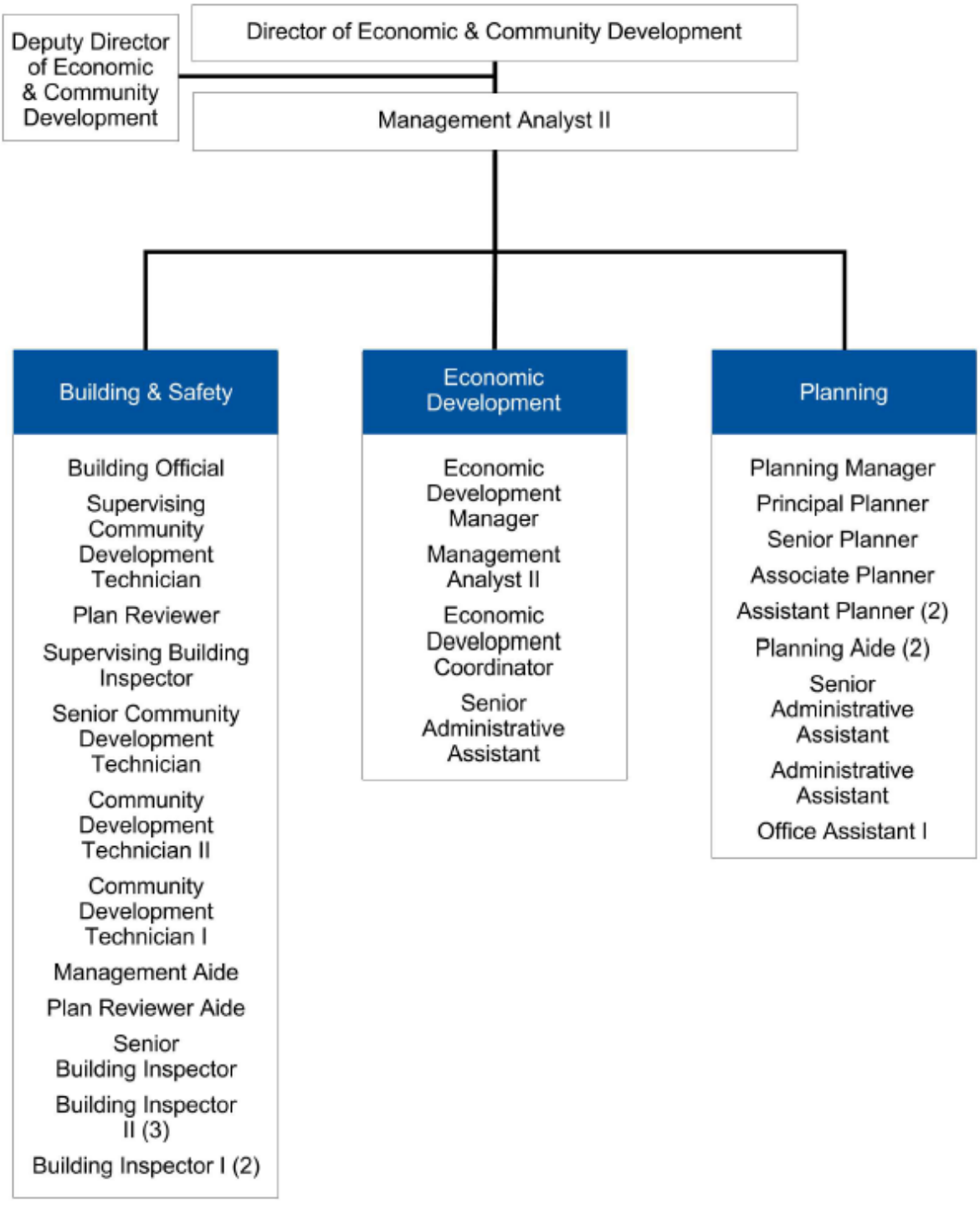
CITY ORGANIZATION CHARTS

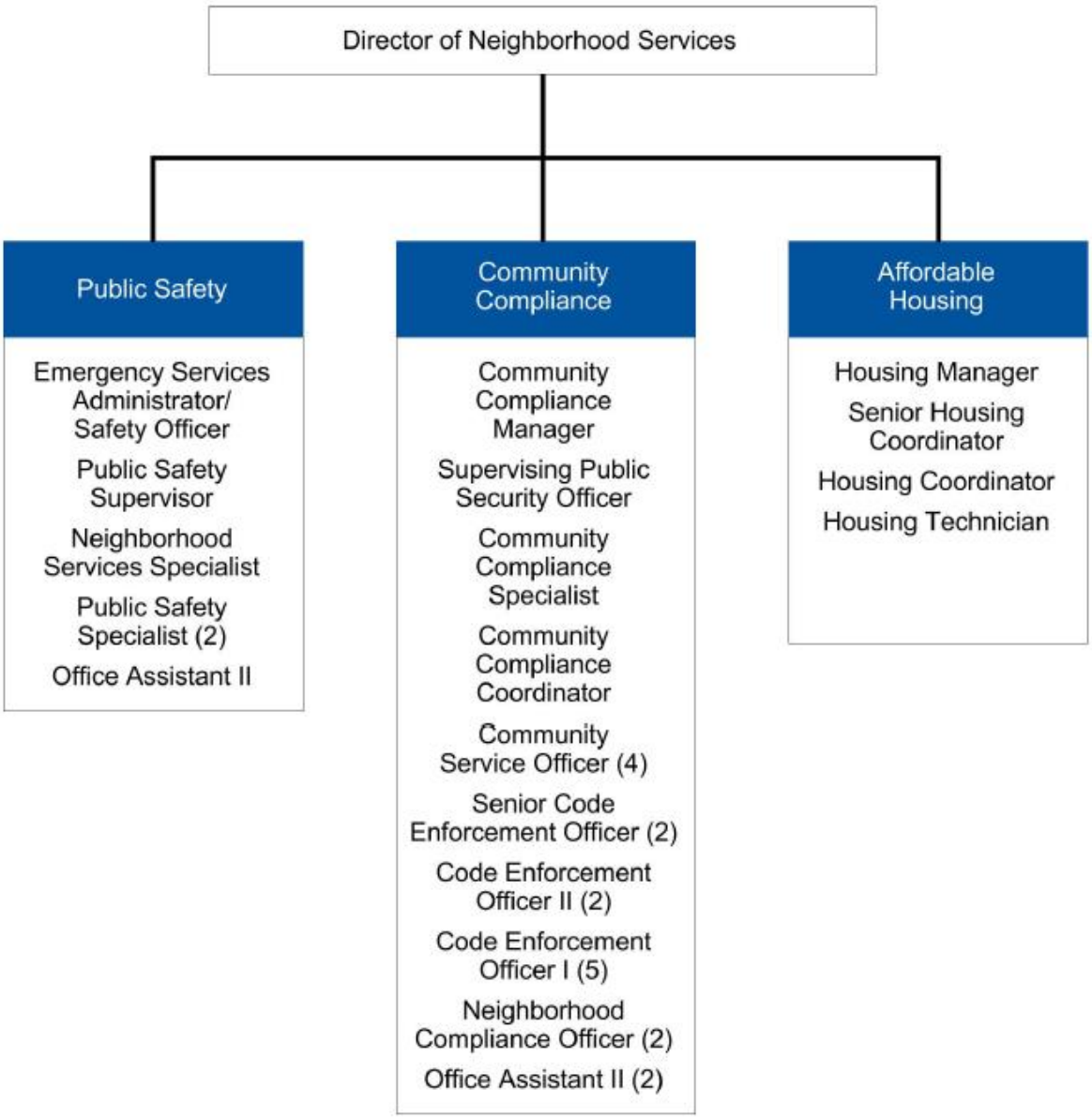

COMMUNITY PROFILE
CITIZENS
CITY COUNCIL
CITY ATTORNEY
CITY MANAGER
DEPUTY CITY MANAGER
ASSISTANT CITY MANAGER
ECON & COMMUNITY DEVELOPMENT
CITY ATTORNEY
ASSISTANT CITY ATTORNEY (2)
DEPUTY CITY ATTORNEY
CITY MANAGER
LEGISLATIVE AIDE
HUMAN RESOURCES MANAGER
I.T. MANAGER
FINANCE MANAGER
CITY CLERK
COMMUNICATIONS MANAGER/PIO
DEPUTY PUBLIC INFORMATION OFFICER
ENERGY RESOURCES MANAGER
ECON & COMMUNITY DEV DIRECTOR
DEPUTY DIRECTOR ECON & COMMUNITY DEV
BUILDING OFFICIAL
ECONOMIC DEVELOPMENT MANAGER
PLANNING MANAGER
NEIGHBORHOOD SERVICES
NEIGHBORHOOD SERVICES DIRECTOR
HOUSING MANAGER
PUBLIC SAFETY SUPERVISOR
COMMUNITY COMPLIANCE MANAGER
PUBLIC WORKS
PUBLIC WORKS DIRECTOR
DEPUTY DIRECTOR OF PUBLIC WORKS
CITY ENGINEER
CIP MANAGER
ENVIRONMENTAL RESOURCES MANAGER
MAINTENANCE MANAGER
FLEET SUPERVISOR
FACILITIES SUPERINTENDENT
PARKS & RECREATION
PARKS & RECREATION DIRECTOR
DEPUTY DIRECTOR PARKS & RECREATION
RECREATION MANAGER
RECREATION SUPERVISOR (5)
WATER PARK SUPERVISOR

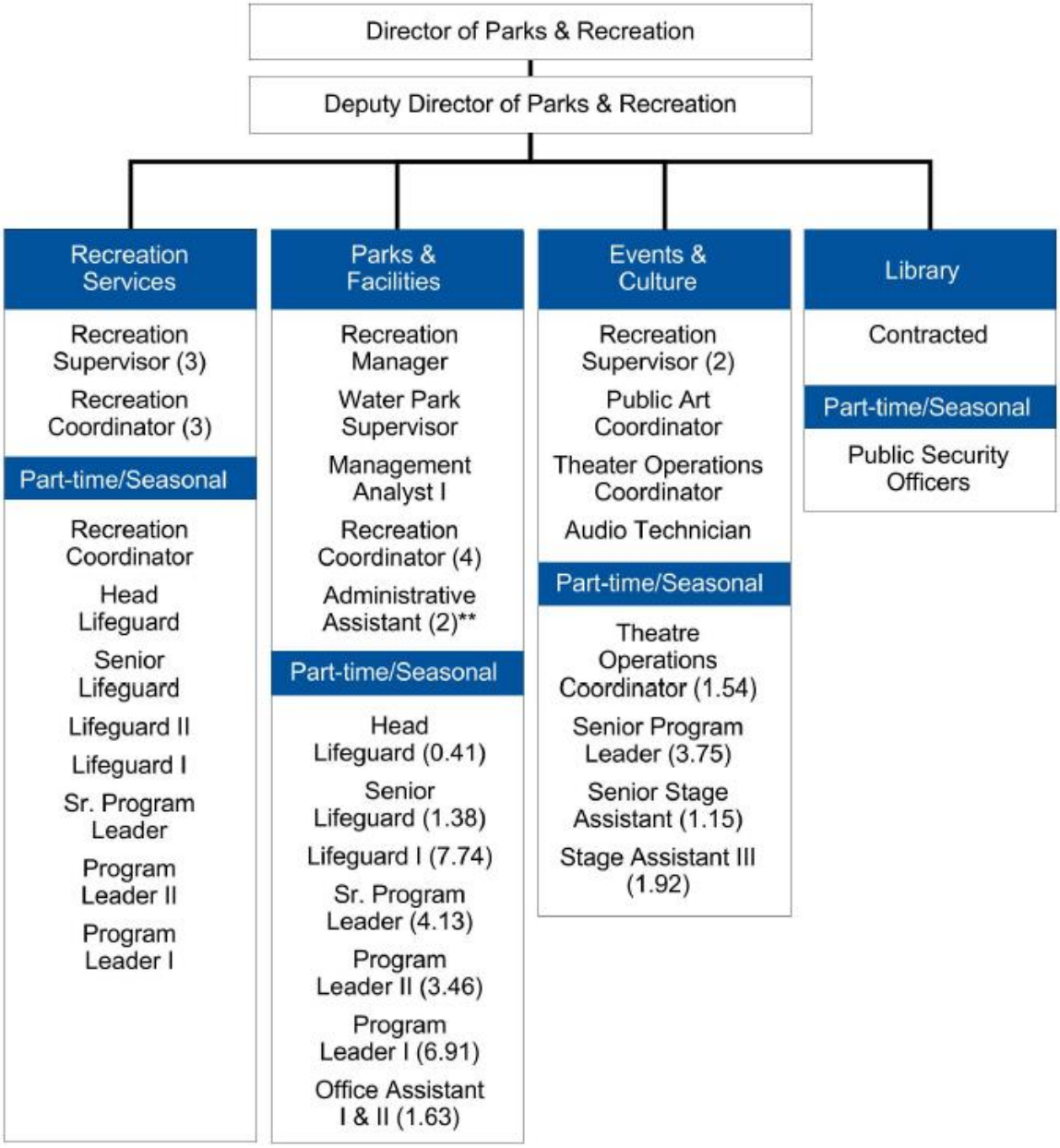

City Manager
Deputy City Manager
Assistant City Manager
City Manager
Assistant to the City Manager
Executive Assistant
Administrative Assistant
Finance
Finance Manager
Assistant Finance Manager
Purchasing/Risk Manager
Senior Financial Analyst (2)
Financial Analyst
Financial Technician
Payroll Specialist
Business License Coordinator
Senior Buyer
Buyer
Senior Account Clerk (2)
Office Clerk II
Administrative Assistant
Human Resources
Human Resources Manager
Human Resources Analyst II
Human Resources Specialist
Senior Administrative Assistant
Diversity, Equity & Inclusion Specialist
Information Technology
IT Manager
IT Analyst II (2)
IT Analyst I
IT Specialist
IT Technician II
IT Technician I
Administrative Assistant
GIS Coordinator
GIS Analyst
Legislative Affairs
Legislative Aide
Community Programs
Management Analyst I
Community Programs Coordinator
SAVES Coordinator
SAVES Assistant
Environmental
Energy Resources Manager
Senior Financial Analyst
City Clerk
City Clerk
Deputy City Clerk (2)
Records Center Specialist
Office Assistant II
Communications
Communications Manager/PIO
Deputy Public Information Officer
Marketing & Digital Specialist
Media Production Specialist
Digital Media Specialist

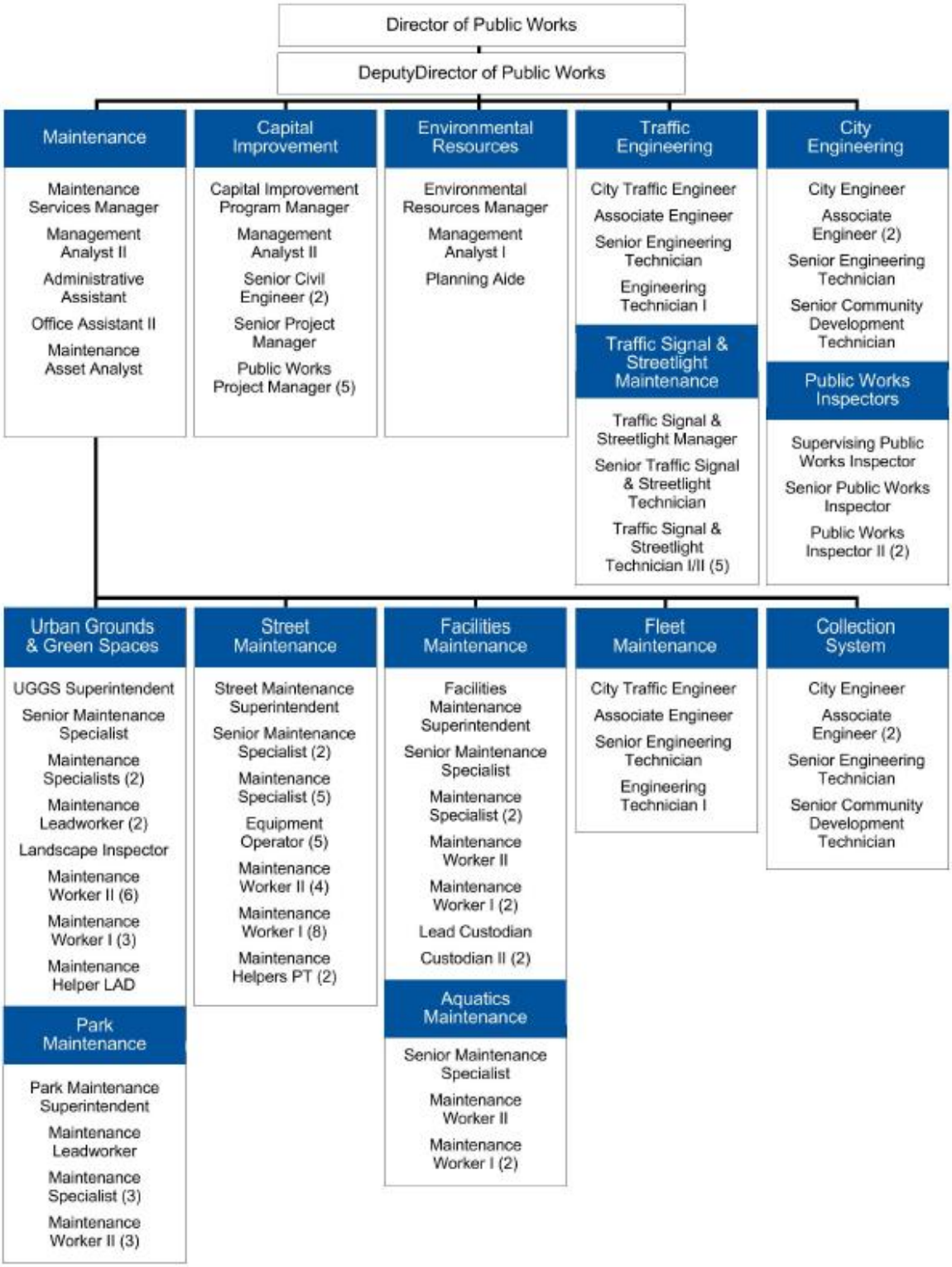

City Attorney
City Attorney
Assistant City Attorney (2)
Deputy City Attorney
Paralegal
Legal & Risk Assistant
Senior Administrative Assistant
Office Assistant I


ADMINISTRATIVE SERVICES
DIRECTOR OF ADMINISTRATIVE SERVICES
CITY CLERK
CITY CLERK
DEPUTY CITY CLERK (2)
SR. RECORDS MANAGEMENT CLERK
RECORDS MANAGEMENT CLERK II (PT)
COMMUNICATIONS
COMMUNICATIONS MANAGER
DEPUTY PUBLIC INFORMATION OFFICER
SPONSORSHIP & MARKETING SPECIALIST
DIGITAL MEDIA SPECIALIST
MEDIA PRODUCTION SPECIALIST
COMMUNITY PROGRAMS
COMMUNITY PROGRAMS MANAGER
HOUSING COORDINATOR
SAVES COORDINATOR
SAVES ASSISTANT
EMERGENCY MANAGEMENT
EMERGENCY SERVICE COORDINATOR


Deputy Director of Economic & Community Development
Director of Economic & Community Development
Management Analyst II
Building & Safety
Building Official
Supervising Community Development Technician
Plan Reviewer
Supervising Building Inspector
Senior Community Development Technician
Community Development Technician II
Community Development Technician I
Management Aide
Plan Reviewer Aide
Senior Building Inspector
Building Inspector II (3)
Building Inspector I (2)
Economic Development
Economic Development Manager
Management Analyst II
Economic Development Coordinator
Senior Administrative Assistant
Planning
Planning Manager
Principal Planner
Senior Planner
Associate Planner
Assistant Planner (2)
Planning Aide (2)
Senior Administrative Assistant
Administrative Assistant
Office Assistant I


Director of Neighborhood Services
Public Safety
Emergency Services Administrator/ Safety Officer
Public Safety Supervisor
Neighborhood Services Specialist
Public Safety Specialist (2)
Office Assistant II
Community Compliance
Community Compliance Manager
Supervising Public Security Officer
Community Compliance Specialist
Community Compliance Coordinator
Community Service Officer (4)
Senior Code Enforcement Officer (2)
Code Enforcement Officer II (2)
Code Enforcement Officer I (5)
Neighborhood Compliance Officer (2)
Office Assistant II (2)
Affordable Housing
Housing Manager
Senior Housing Coordinator
Housing Coordinator
Housing Technician


Director of Parks & Recreation
Deputy Director of Parks & Recreation
Recreation Services
Recreation Supervisor (3)
Recreation Coordinator (3)
Part-time/Seasonal
Recreation Coordinator
Head Lifeguard
Senior Lifeguard
Lifeguard II
Lifeguard I
Sr. Program Leader
Program Leader II
Program Leader I
Parks & Facilities
Recreation Manager
Water Park Supervisor
Management Analyst I
Recreation Coordinator (4)
Administrative Assistant (2)**
Part-time/Seasonal
Head Lifeguard (0.41)
Senior Lifeguard (1.38)
Lifeguard I (7.74)
Sr. Program Leader (4.13)
Program Leader II (3.46)
Program Leader I (6.91)
Office Assistant I & II (1.63)
Events & Culture
Recreation Supervisor (2)
Public Art Coordinator
Theater Operations Coordinator
Audio Technician
Part-time/Seasonal
Theatre Operations Coordinator (1.54)
Senior Program Leader (3.75)
Senior Stage Assistant (1.15)
Stage Assistant III (1.92)
Library
Contracted
Part-time/Seasonal
Public Security Officers


Director of Public Works
DeputyDirector of Public Works
Maintenance
Maintenance Services Manager
Management Analyst II
Administrative Assistant
Office Assistant II
Maintenance Asset Analyst
Capital Improvement
Capital Improvement Program Manager
Management Analyst II
Senior Civil Engineer (2)
Senior Project Manager
Public Works Project Manager (5)
Environmental Resources
Environmental Resources Manager
Management Analyst I
Planning Aide
Traffic Engineering
City Traffic Engineer
Associate Engineer
Senior Engineering Technician
Engineering Technician I
Traffic Signal & Streetlight Maintenance
Traffic Signal & Streetlight Manager
Senior Traffic Signal & Streetlight Technician
Traffic Signal & Streetlight Technician I/II (5)
City Engineering
City Engineer
Associate Engineer (2)
Senior Engineering Technician
Senior Community Development Technician
Public Works Inspectors
Supervising Public Works Inspector
Senior Public Works Inspector
Public Works Inspector II (2)
Urban Grounds & Green Spaces
UGGS Superintendent
Senior Maintenance Specialist
Maintenance Specialists (2)
Maintenance Leadworker (2)
Landscape Inspector
Maintenance Worker II (6)
Maintenance Worker I (3)
Maintenance Helper LAD
Park Maintenance
Park Maintenance Superintendent
Maintenance Leadworker
Maintenance Specialist (3)
Maintenance Worker II (3)
Street Maintenance
Street Maintenance Superintendent
Senior Maintenance Specialist (2)
Maintenance Specialist (5)
Equipment Operator (5)
Maintenance Worker II (4)
Maintenance Worker I (8)
Maintenance Helpers PT (2)
Facilities Maintenance
Facilities Maintenance Superintendent
Senior Maintenance Specialist
Maintenance Specialist (2)
Maintenance Worker II
Maintenance Worker I (2)
Lead Custodian
Custodian II (2)
Aquatics Maintenance
Senior Maintenance Specialist
Maintenance Worker II
Maintenance Worker I (2)
Fleet Maintenance
City Traffic Engineer
Associate Engineer
Senior Engineering Technician
Engineering Technician I
Collection System
City Engineer
Associate Engineer (2)
Senior Engineering Technician
Senior Community Development Technician

APPENDIX

B

SAMPLE PLANNING SURVEYS, PLANNING MEETINGS, and AGENDAS

CITY OF PALMDALE

Local Hazard Mitigation Planning Assessment Survey



2022 Palmdale Local Hazard Mitigation Plan Update Survey

1. Your Zip Code _____ and Community Name or Location _____

2. Do you: ☐ Live or ☐ Work in Palmdale?

3. If you live in Palmdale, do you: ☐ Own or ☐ Rent?

4. If you live in Palmdale, how many years? _____

5. If you have lived in Palmdale for 5 years or more, have you or someone in your household directly experienced a natural disaster such as an earthquake, severe windstorm, flood, wildfire, or other type of natural disaster while in Palmdale?

☐ Yes ☐ No (**IF NO, skip to question 7**)

6. **If "YES"**, which of these natural disasters have you or someone in your household experienced in the past five years? (**Please check all that apply**)

☐ Earthquake

☐ Floods, Dam Failure and Inundation Hazards

☐ Wildfire Hazards/Brush Fire

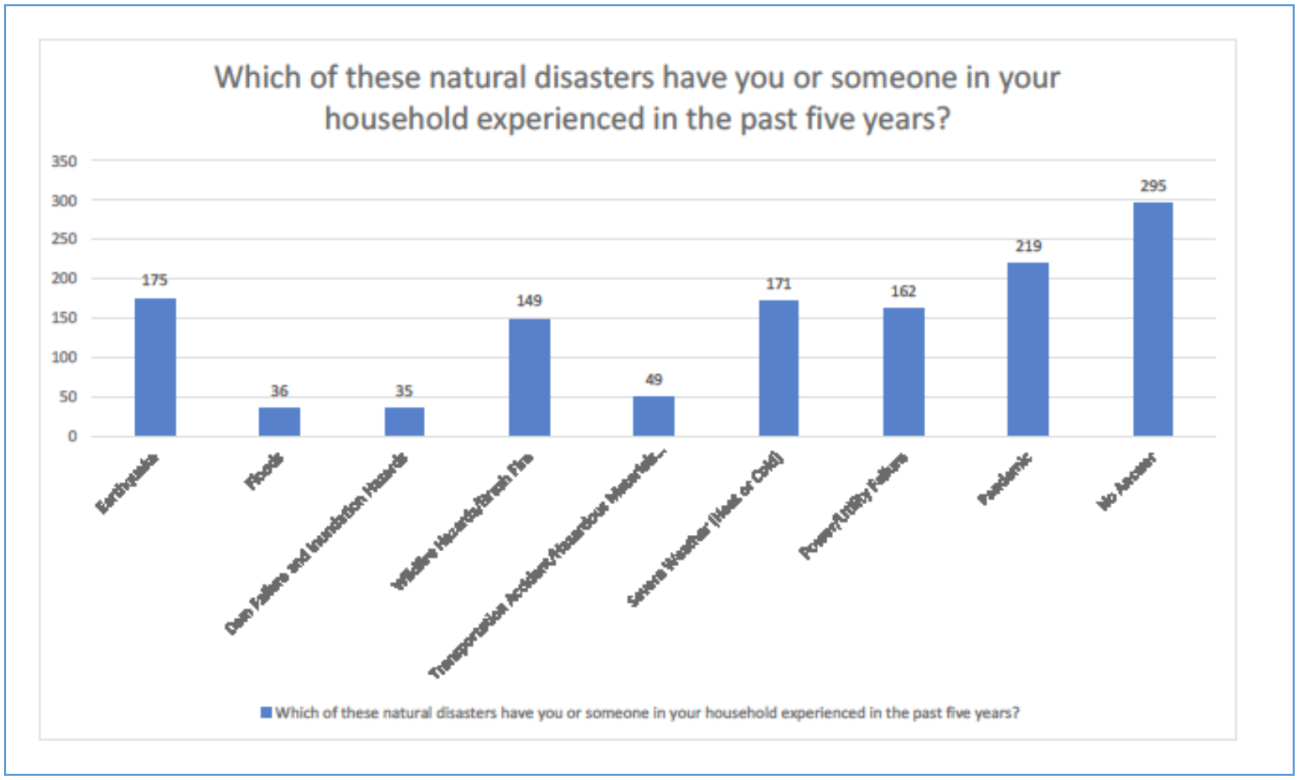
☐ Transportation Accident/Hazardous Materials Spill

☐ Drought

☐ Severe Weather (Heat or Cold)

☐ Power/Utility Failure

☐ Pandemic


Which of these natural disasters have you or someone in your household experienced in the past five years?
350
300
250
200
150
100
50
0
175
36
35
149
49
171
162
219
295
Earthquake
Flood
Dam Failure and Inundation Hazards
Wildfire Hazards/Brush Fire
Transportation Accident/Hazardous Materials...
Severe Weather (Heat or Cold)
Power/Utility Failure
Pandemic
No Answer
Which of these natural disasters have you or someone in your household experienced in the past five years?

7. How do you get information? (**Please check up to three**)

☐ Newspaper stories/ads

☐ Television news/ads

☐ Radio News/ads

Internet:

☐ Email newsletters

☐ Online news outlets

☐ City web site

☐ Social media (e.g. Facebook, Twitter, Instagram, etc.)

☐ Mail/Utility Bill

☐ Fire Department

☐ Fact sheet/Brochure

☐ Library

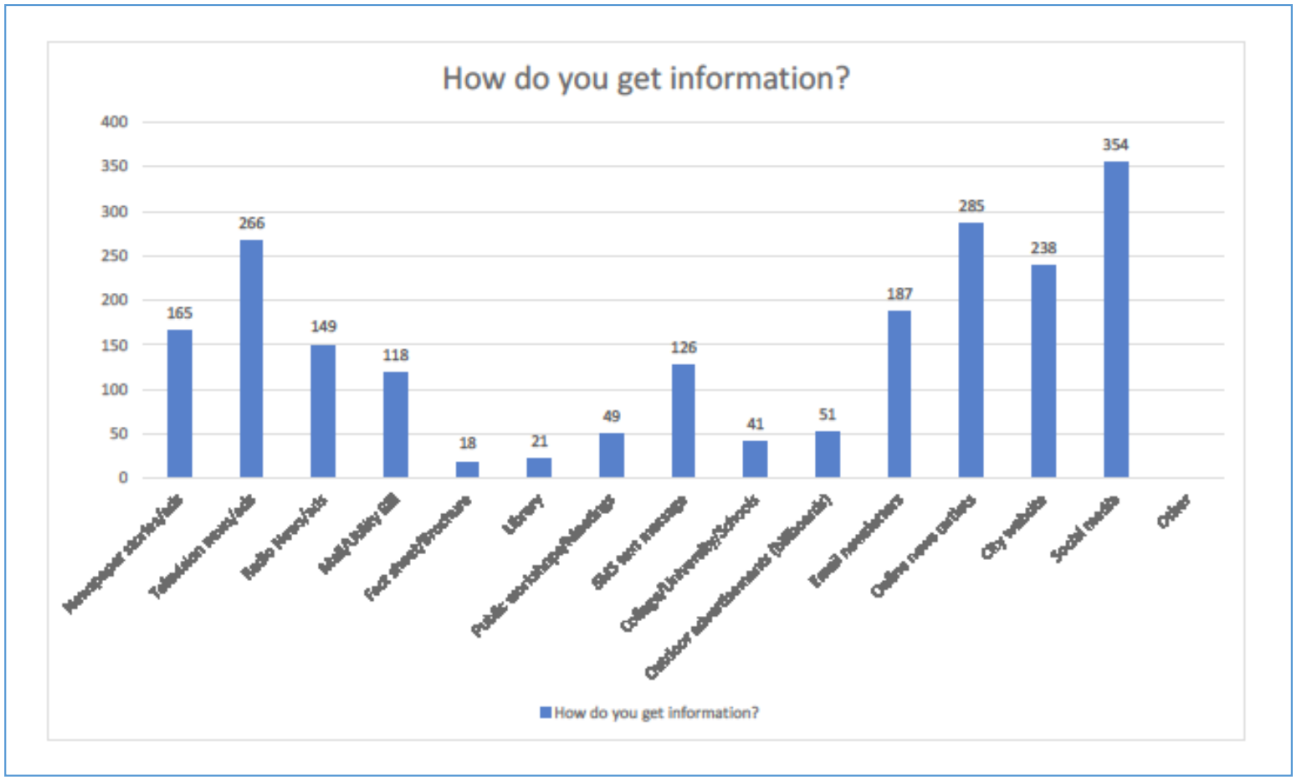
☐ Public workshops/Meetings

☐ SMS text message

☐ College/University/Schools

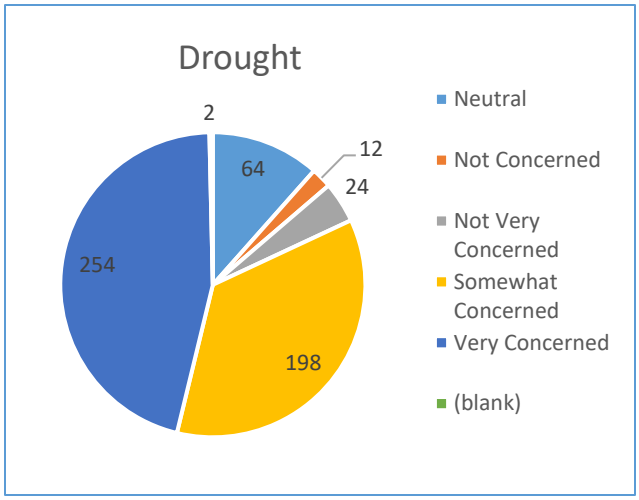
☐ Outdoor advertisements (billboards)

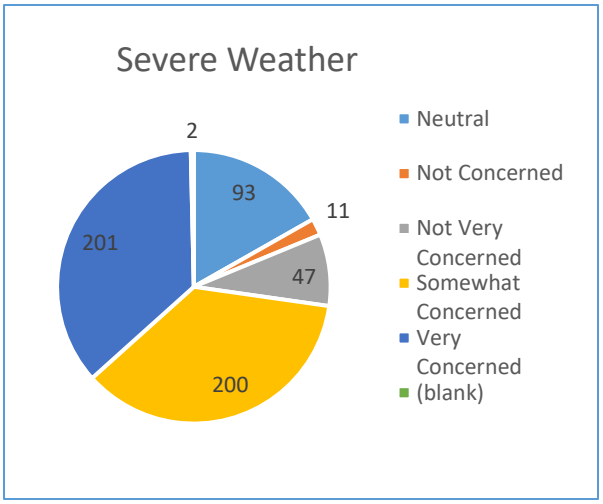
☐ Other: _____

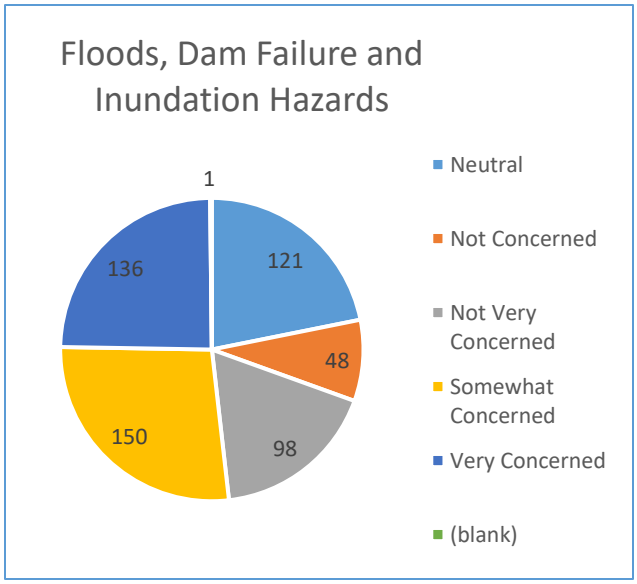


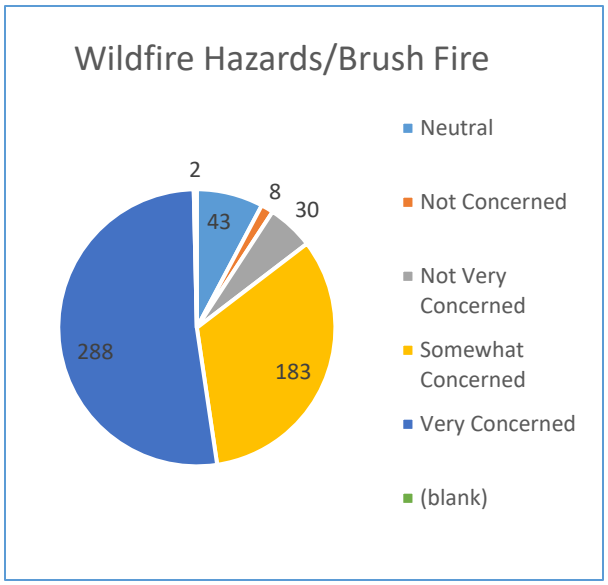
8. How concerned are you about the following hazards?

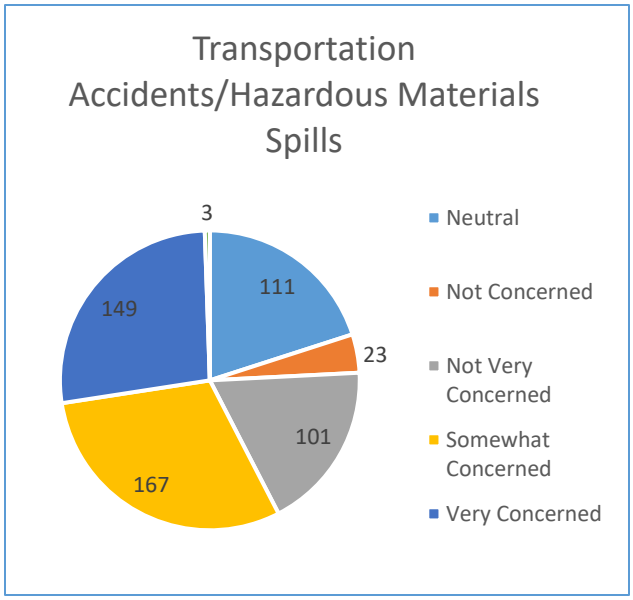
Natural Disaster	Very Concerned	Somewhat Concerned	Neutral	Not Very Concerned	Not Concerned
Drought	☐	☐	☐	☐	☐
Severe Weather	☐	☐	☐	☐	☐
Flood, Dam Failure and Inundation Hazards	☐	☐	☐	☐	☐
Wildfire Hazards/Brush Fire	☐	☐	☒	☐	☐
Transportation Accident/ Hazardous Materials Spill	☐	☐	☐	☐	☐
Pandemic	☐	☐	☐	☐	☐
Earthquake	☐	☐	☐	☐	☐
Power/Utility Failure	☐	☐	☐	☐	☐

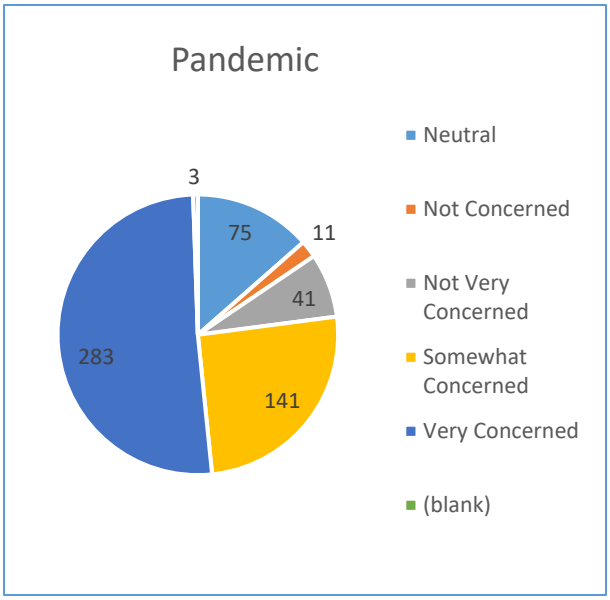


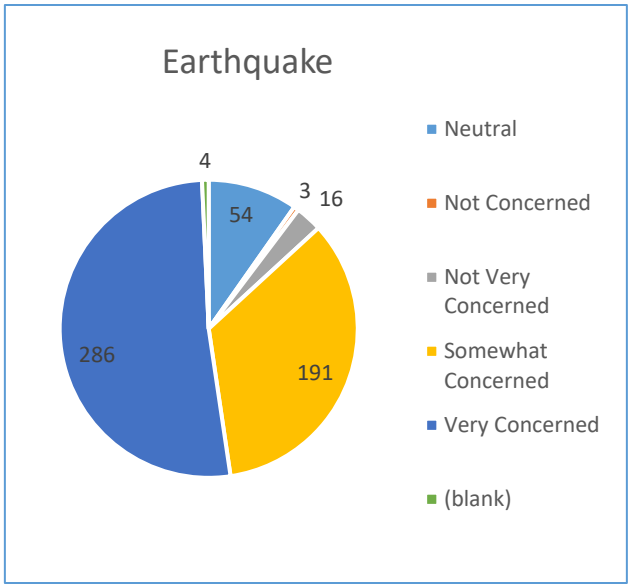


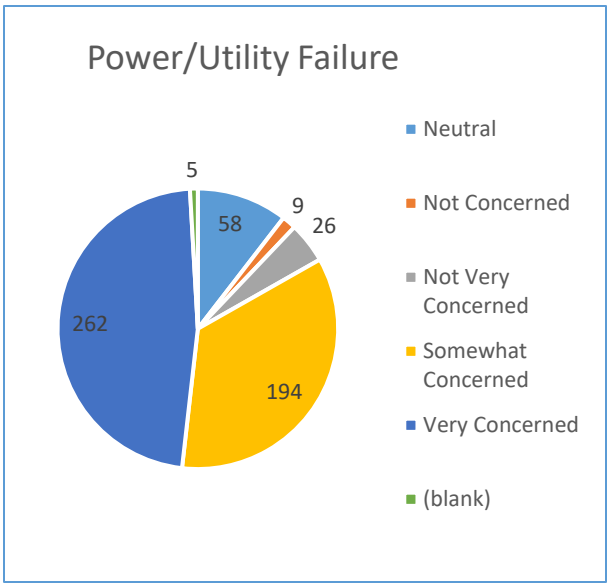






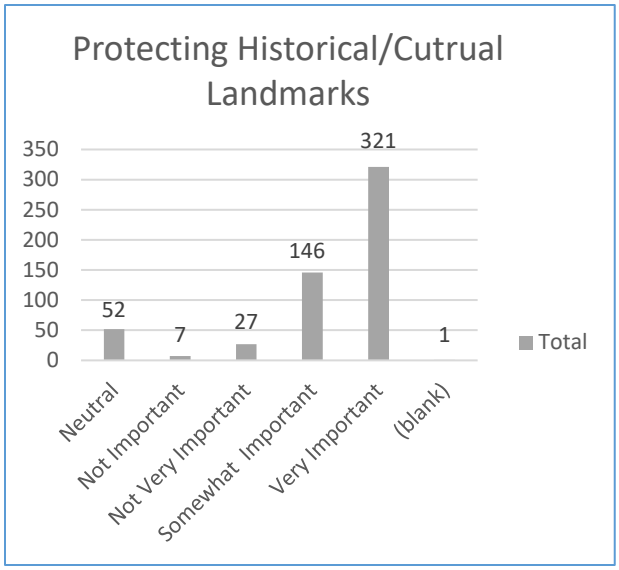


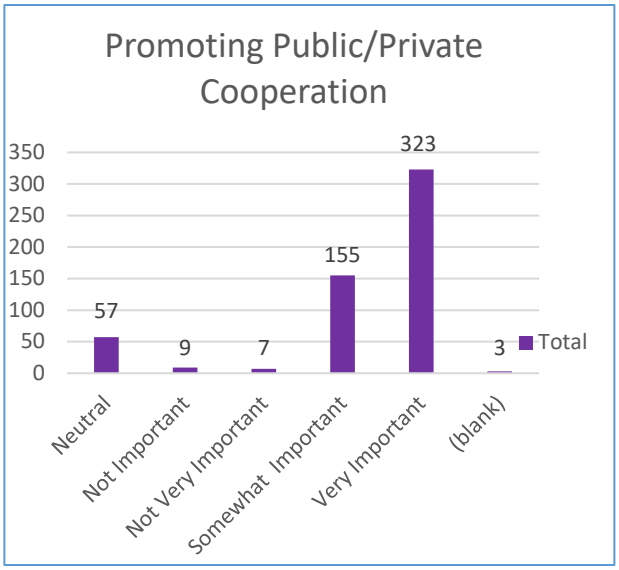


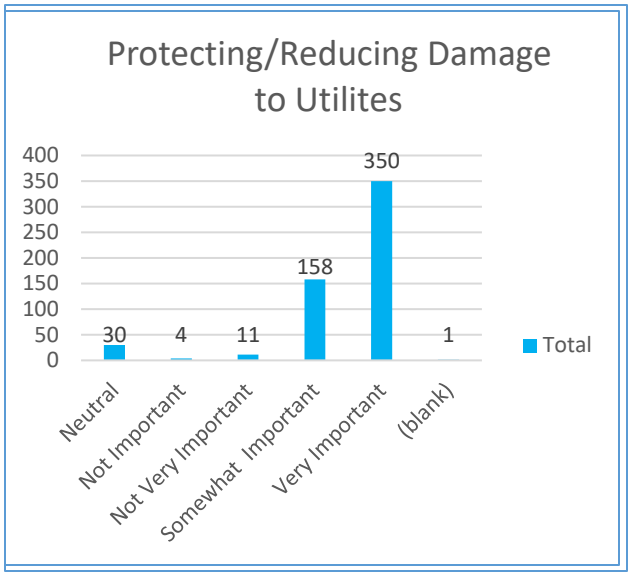


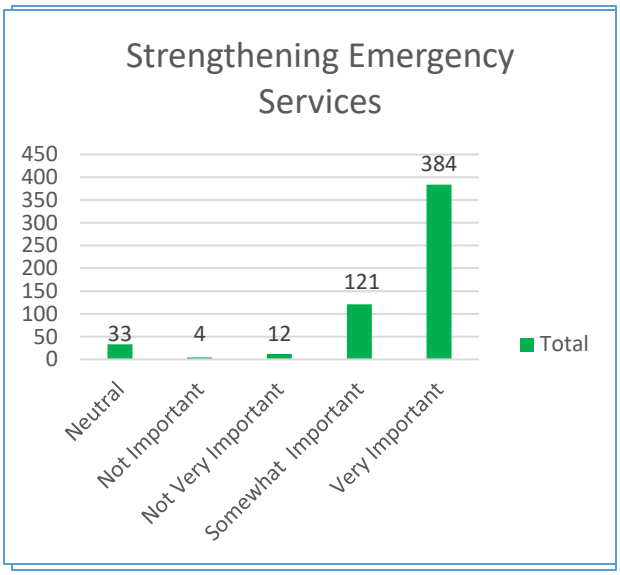
9. Planning ahead for responding to disasters can help lessen their impact. To help the City prioritize its disaster preparedness efforts, please tell us how important each of the following goals is to you.

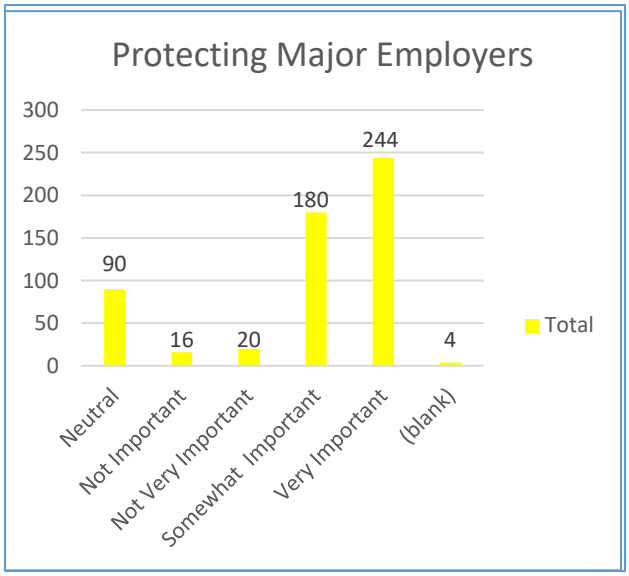
Goal	Very Important	Somewhat Important	Neutral	Not Very Important	Not Important
Protecting private property	☐	☐	☐	☐	☐
Protecting critical facilities (hospitals, fire stations, etc.)	☐	☐	☐	☐	☐
Preventing development in hazard areas	☐	☐	☐	☐	☐
Protecting the natural environment	☐	☐	☐	☐	☐
Protecting historical/cultural landmarks, museums, etc.	☐	☐	☐	☐	☐
Promoting cooperation among public and private organizations and citizens	☐	☐	☐	☐	☐
Protecting and reducing damage to utilities	☐	☐	☐	☐	☐
Strengthening emergency services (police, fire, ambulance)	☐	☐	☐	☐	☐
Protecting major employers	☐	☐	☐	☐	☐
Protecting small businesses	☐	☐	☐	☐	☐
Protecting K-12 schools	☐	☐	☐	☐	☐
Protecting Colleges/Universities	☐	☐	☐	☐	☐

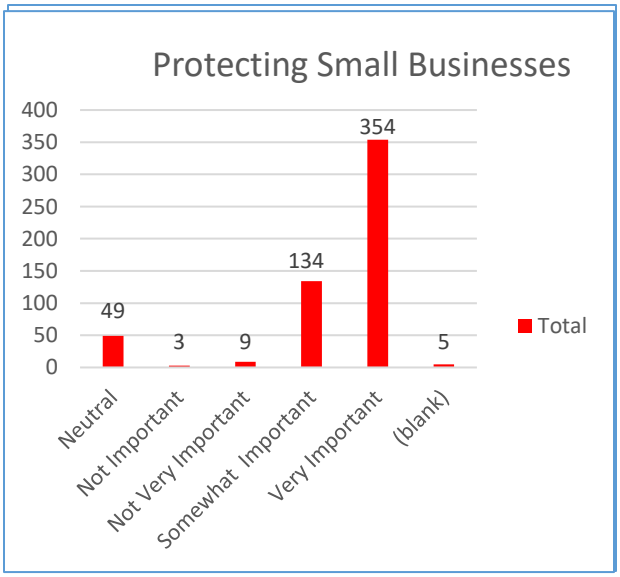

Protecting Historical/Cutrual Landmarks
350
300
250
200
150
100
50
0
52
7
27
146
321
1
Total
Neutral
Not Important
Not Very Important
Somewhat Important
Very Important
(blank)

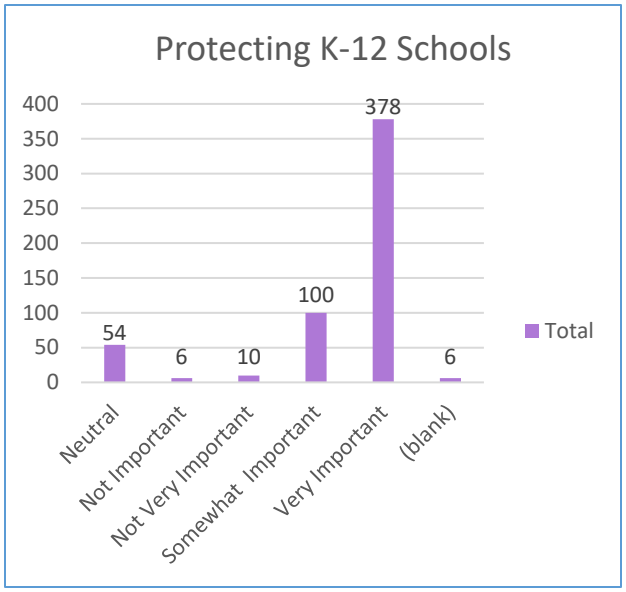

Promoting Public/Private Cooperation
350
300
250
200
150
100
50
0
57
9
7
155
323
3
Total
Neutral
Not Important
Not Very Important
Somewhat Important
Very Important
(blank)

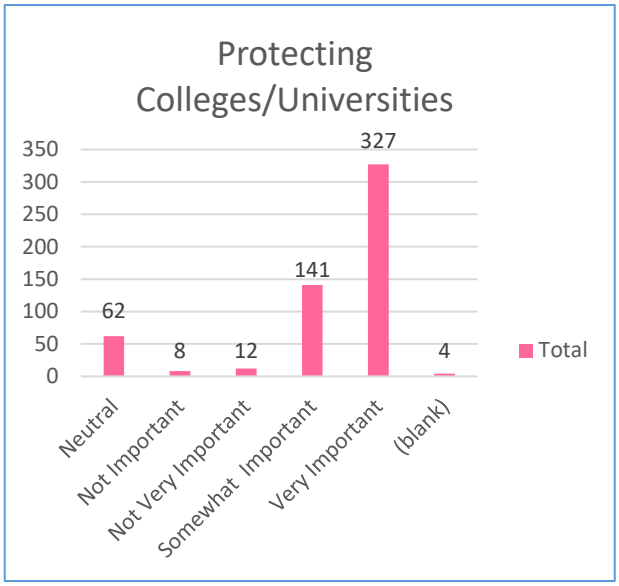

Protecting/Reducing Damage to Utilites
400
350
300
250
200
150
100
50
0
30
4
11
158
350
1
Total
Neutral
Not Important
Not Very Important
Somewhat Important
Very Important
(blank)


Strengthening Emergency Services
450
400
350
300
250
200
150
100
50
0
33
4
12
121
384
Total
Neutral
Not Important
Not Very Important
Somewhat Important
Very Important


Protecting Major Employers
300
250
200
150
100
50
0
90
16
20
180
244
4
Total
Neutral
Not Important
Not Very Important
Somewhat Important
Very Important
(blank)

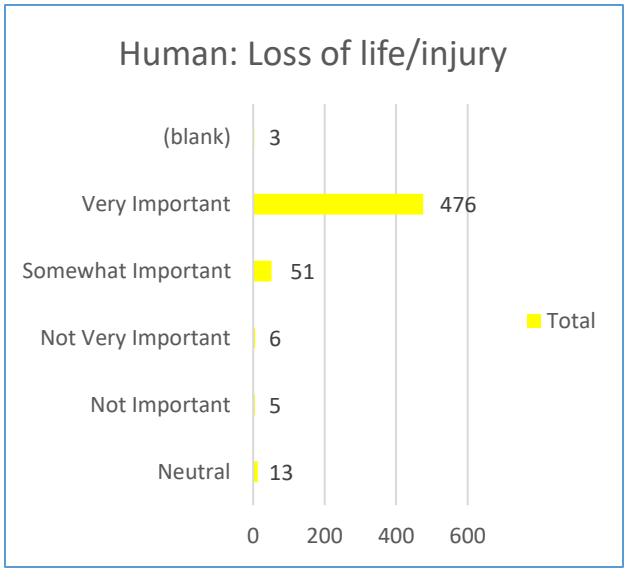

Protecting Small Businesses
400
350
300
250
200
150
100
50
0
49
3
9
134
354
5
Total
Neutral
Not Important
Not Very Important
Somewhat Important
Very Important
(blank)

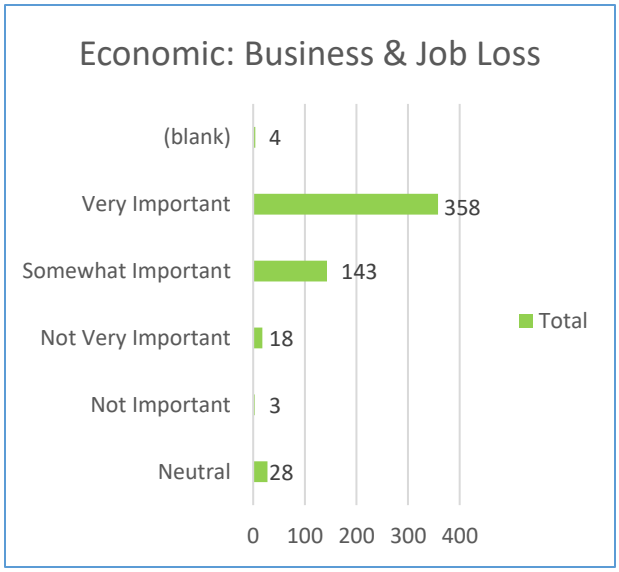


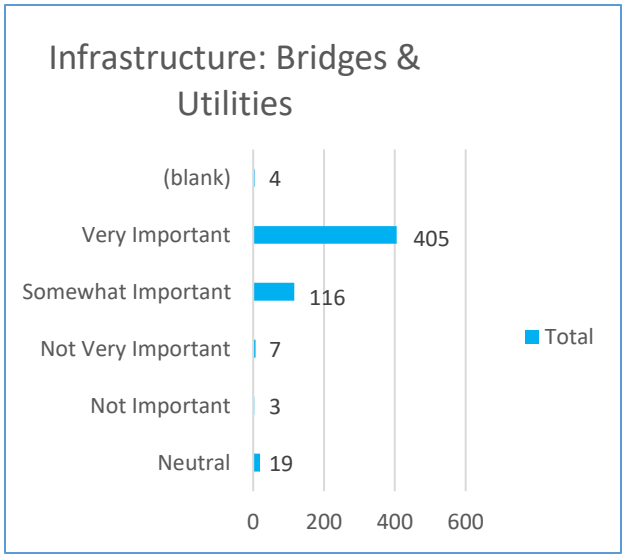


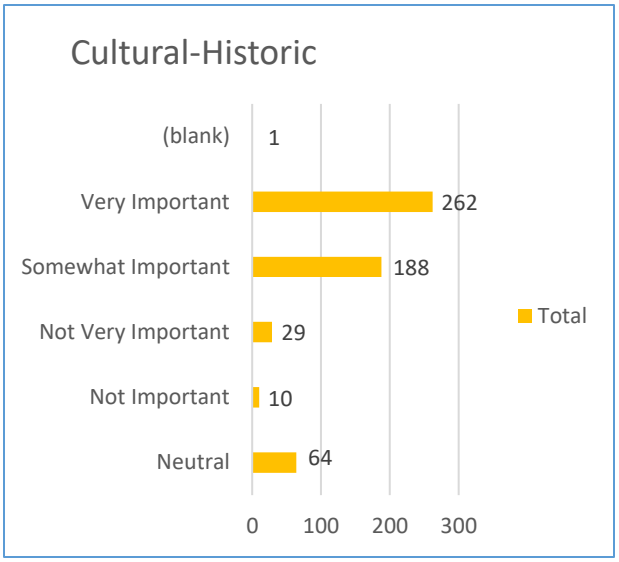
10. Community assets are features, characteristics, or resources that either make a community unique or allow the community to function. Please rank the importance of protecting the following community assets:

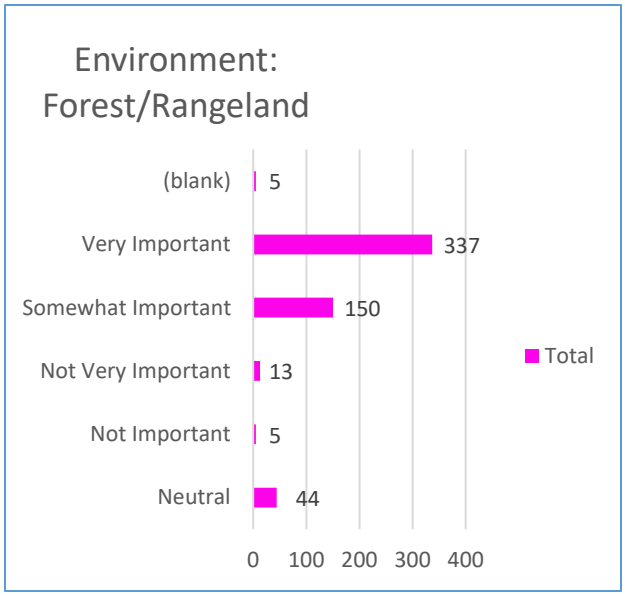
Community Assets: Potential Disaster Impact	Very Important	Somewhat Important	Neutral	Not Very Important	Not Important
Human: Loss of life and/or injuries	☐	☐	☐	☐	☐
Economic: Business closures and/or job losses	☐	☐	☐	☐	☐
Infrastructure: Damage or loss of bridges, utilities, schools, etc.	☐	☐	☐	☐	☐
Cultural Historic: Damage or loss of libraries, museums, fairgrounds, etc.	☐	☐	☐	☐	☐
Environmental: Damage or loss of forests, rangeland, waterways, etc.	☐	☐	☐	☐	☐
Governance: Ability to maintain order and/or provide public amenities and services	☐	☐	☐	☐	☐

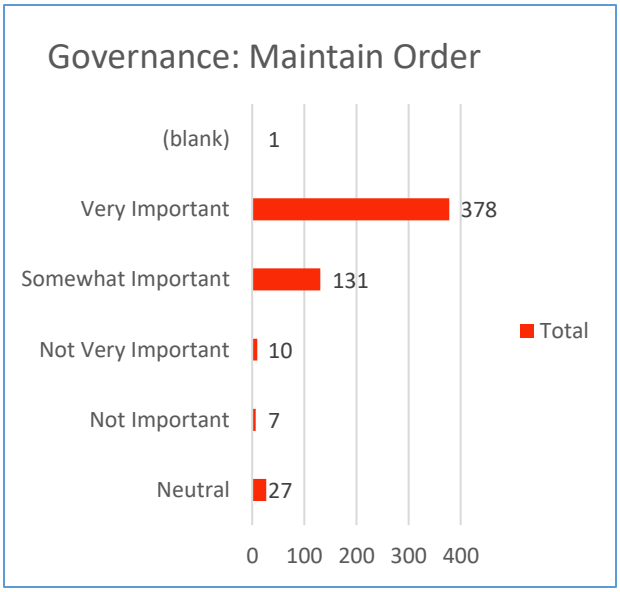

Human: Loss of life/injury
(blank) 3
Very Important 476
Somewhat Important 51
Not Very Important 6
Not Important 5
Neutral 13
0 200 400 600
Total


Economic: Business & Job Loss
(blank) 4
Very Important 358
Somewhat Important 143
Not Very Important 18
Not Important 3
Neutral 28
0 100 200 300 400
Total


Infrastructure: Bridges & Utilities
(blank) 4
Very Important 405
Somewhat Important 116
Not Very Important 7
Not Important 3
Neutral 19
0 200 400 600
Total


Cultural-Historic
(blank) 1
Very Important 262
Somewhat Important 188
Not Very Important 29
Not Important 10
Neutral 64
0 100 200 300
Total


Environment: Forest/Rangeland
(blank) 5
Very Important 337
Somewhat Important 150
Not Very Important 13
Not Important 5
Neutral 44
0 100 200 300 400
Total

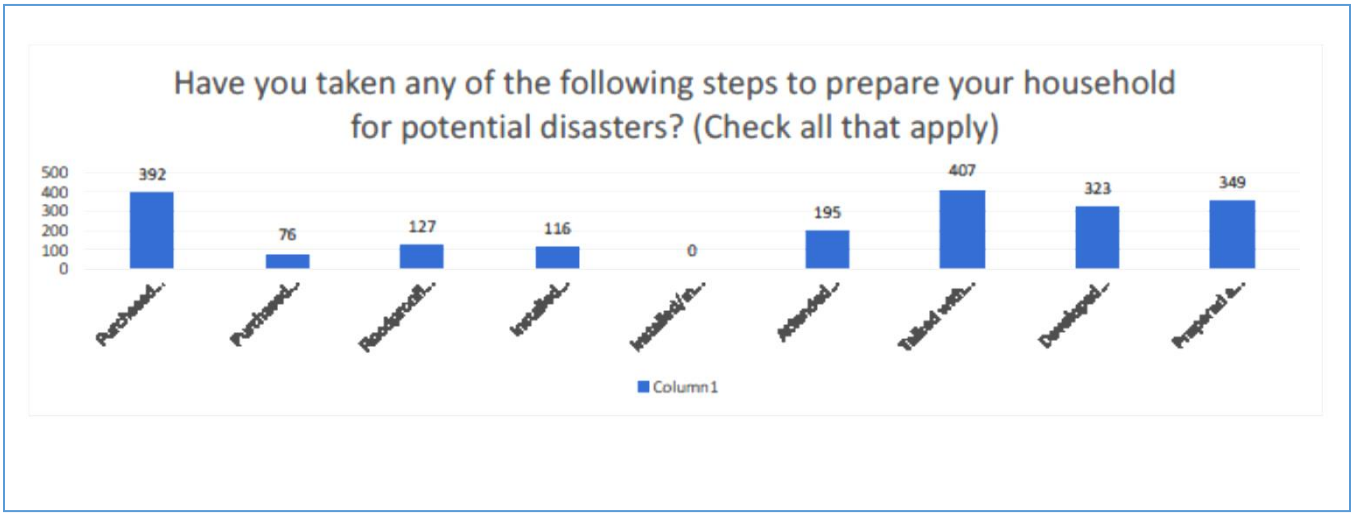

Governance: Maintain Order
(blank) 1
Very Important 378
Somewhat Important 131
Not Very Important 10
Not Important 7
Neutral 27
0 100 200 300 400
Total

11. Have you taken any of the following steps to prepare for your household for potential disasters? Check all that apply.

☐ Purchased homeowners/renters insurance
☐ Purchased flood insurance

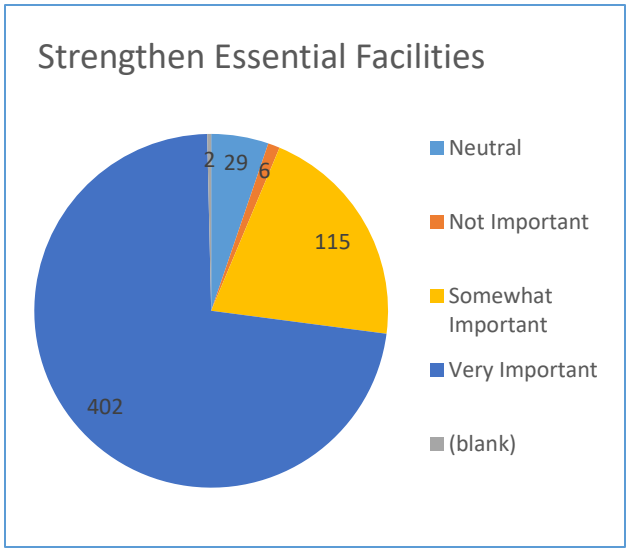
☐ Floodproofing (elevating furnace, water heaters, electric panels
☐ Installed retrofits such as high impact windows or doors to withstand high winds; fire resistant siding roofing or window screens, etc.
☐ Installed/maintained firebreaks around the Home

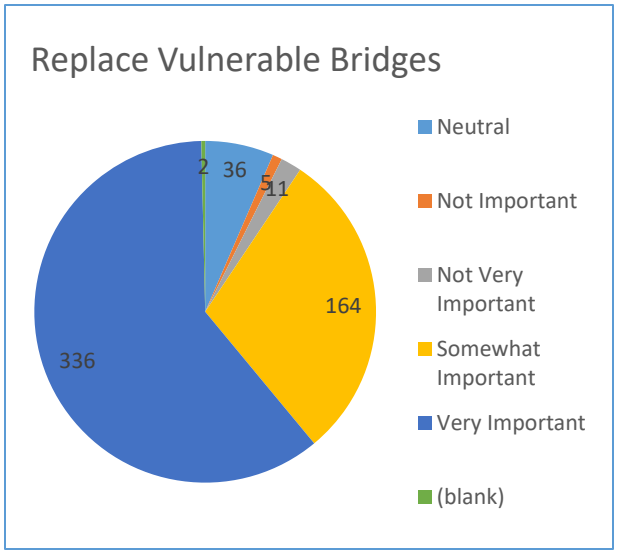
☐ Attended meetings or received written information on natural disasters or emergency preparedness
☐ Talked with family members about what to do in case of a disaster or emergency
☐ Developed a "Household/Family Emergency Plan" in order to decide what everyone would do in the event of a disaster
☐ Prepared a "Disaster Supply Kit" (extra food, water, batteries, medications, first aid, etc.)

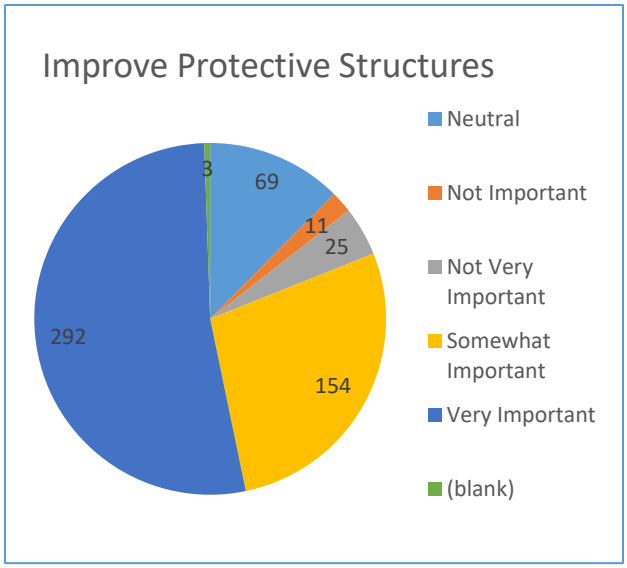


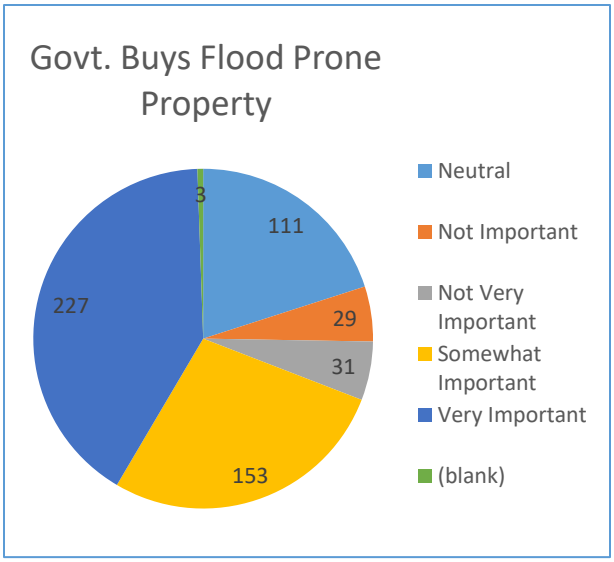
12. How would you rank the following strategies to address pre- and post-disaster damage?

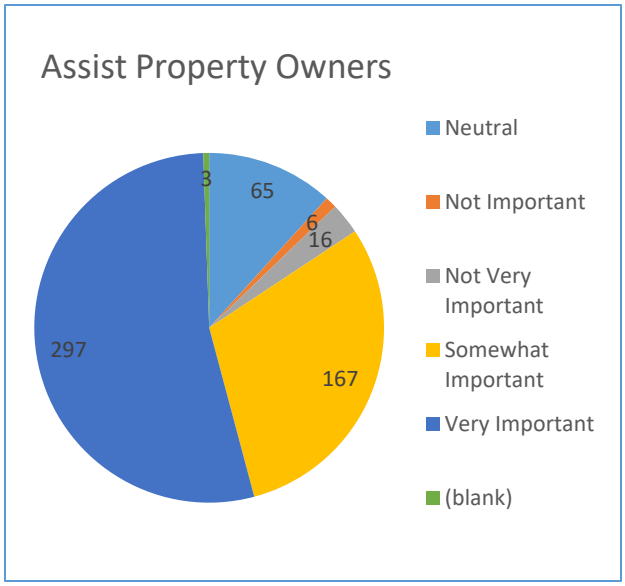
Strategy	Very Important	Somewhat Important	Neutral	Not Very Important	Not Important
Retrofit and strengthen essential facilities such as police, fire, emergency medical services, hospitals, schools, etc.	☐	☐	☐	☐	☐
Replace inadequate or vulnerable bridges and causeways	☐	☐	☐	☐	☐
Install or improve protective structures, such as floodwalls or levees	☐	☐	☐	☐	☐
Government buys flood-prone properties and returns them to a natural condition	☐	☐	☐	☐	☐
Assist property owners with securing funding to mitigate impacts to their property caused by disasters	☐	☐	☐	☐	☐
Work on improving the damage resistance of utilities (electricity, communications, water/wastewater facilities, etc.	☐	☐	☐	☐	☐
Strengthen City codes, ordinances, and plans to require high risk management standards	☐	☐	☐	☐	☐
Provide better information about hazard risk and high-hazard areas	☐	☐	☐	☐	☐
Inform property owners of ways they can prevent damage to their properties	☐	☐	☐	☐	☐

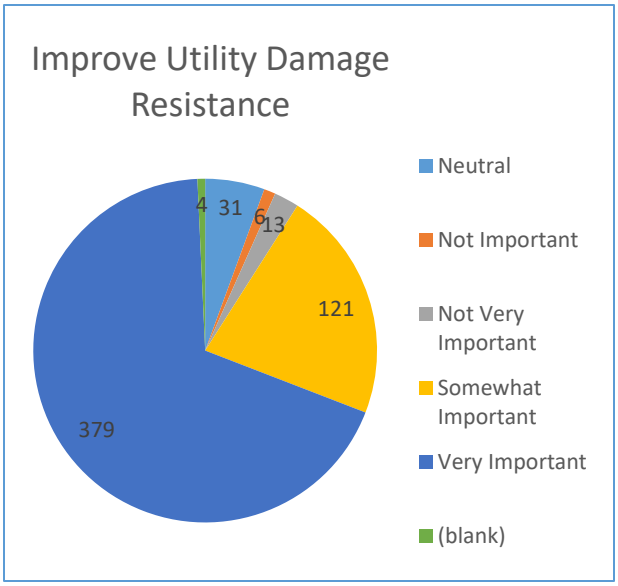

Strengthen Essential Facilities
2
29
6
115
402
Neutral
Not Important
Somewhat Important
Very Important
(blank)

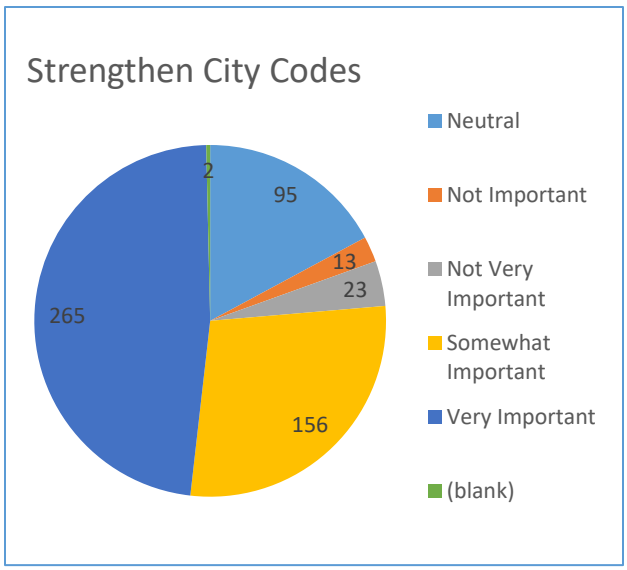

Replace Vulnerable Bridges
2
36
5
11
164
336
Neutral
Not Important
Not Very Important
Somewhat Important
Very Important
(blank)

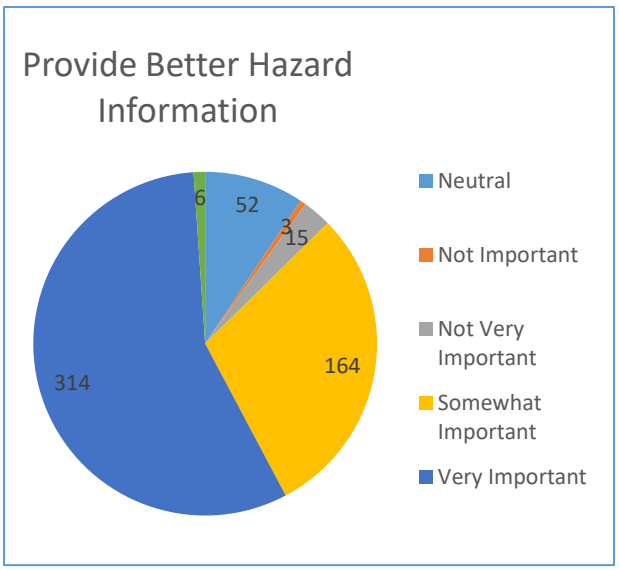

Improve Protective Structures
3
69
11
25
154
292
Neutral
Not Important
Not Very Important
Somewhat Important
Very Important
(blank)

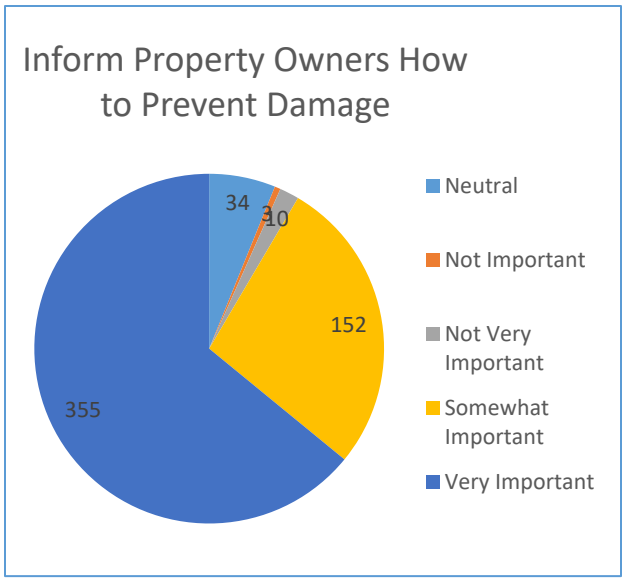

Govt. Buys Flood Prone Property
3
111
29
31
153
227
Neutral
Not Important
Not Very Important
Somewhat Important
Very Important
(blank)


Assist Property Owners
3
65
6
16
167
297
Neutral
Not Important
Not Very Important
Somewhat Important
Very Important
(blank)


Improve Utility Damage Resistance
4
31
6
13
121
379
Neutral
Not Important
Not Very Important
Somewhat Important
Very Important
(blank)







13. Please feel free to provide any additional comments:

CITY OF PALMDALE
LHMP Assessment Survey Press Release Number 1

FOR IMMEDIATE RELEASE

CITY OF PALMDALE
NEWS RELEASE

CONTACT: John Mlynar
PHONE: 661/267-5115
DATE: March 26, 2021

Take Palmdale's Hazard Plan Survey and Be Eligible to Win Gift Card

PALMDALE – The City of Palmdale is asking residents, business owners, and stakeholders to take a survey to help update the existing Local Hazard Mitigation Plan (LHMP).

The survey is available at www.CityofPalmdale.org/hazardplan . It is open to Palmdale residents, business owners and stakeholders. Gift cards will be given away randomly throughout the duration of the survey.

The City's current LHMP was adopted in 2015 and is due to be updated this year for another five-year period. Working with partner agencies (schools, police, fire, military, medical, etc.), the City will ensure that potential hazards are properly identified, and that appropriate measures to protect the public are included in the plan.

"The LHMP covers a wide range of hazards affecting Palmdale, including earthquakes; floods, dam failure and inundation; wildfires and brush fires; transportation accidents and hazardous material spills; drought; severe weather; and power/utility failure," said Palmdale Mayor Steve Hofbauer. "It's important that our residents weigh in and provide feedback to ensure that the new plan has us prepared for a potential disaster."

"Having an LHMP in place helps direct City resources appropriately and qualifies the City for federal disaster relief," said Mayor Pro Tem Laura Bettencourt. "Updated plans are critical as Living in Southern California makes us vulnerable to a variety of potential disasters."

Funding for updating the LHMP was provided in part by a $50,000 Southern California Gas (SoCalGas) Climate Adaptation and Resiliency Planning Grant.

"We look forward to hearing from the public as our staff prepares to update our existing plan," said Palmdale City Manager J.J. Murphy. "Gauging the priorities of our community is a priority in the process, and people can win a gift card just for taking the survey."

For more information, please visit www.CityofPalmdale.org/hazardplan.

Communications Divison ● 38300 Sierra Highway ● Palmdale, CA 93550
www.CityofPalmdale.org

CITY OF PALMDALE

LHMP Assessment Survey Press Release Number 2

FOR IMMEDIATE RELEASE

CITY OF PALMDALE

NEWS RELEASE

CONTACT: John Mlynar
PHONE: 661/267-5115
DATE: May 26, 2021

Last Chance to Take Palmdale's Hazard Plan Survey and Be Eligible to Win Gift Card

PALMDALE – The deadline to take the City of Palmdale's Local Hazard Mitigation Plan (LHMP) survey and win a $100 gift card has been extended to Monday, May 31.

Resident, business owners, and stakeholders are encouraged to take the survey at www.CityofPalmdale.org/hazardplan to help update the existing LHMP. A winner will be randomly selected at the conclusion of the survey.

The City's current LHMP was adopted in 2015 and is due to be updated this year for another five-year period. Working with partner agencies (schools, police, fire, military, medical, etc.), the City will ensure that potential hazards are properly identified, and that appropriate measures to protect the public are included in the plan.

"The LHMP covers a wide range of hazards affecting Palmdale, including earthquakes; floods, dam failure and inundation; wildfires and brush fires; transportation accidents and hazardous material spills; drought; severe weather; and power/utility failure," said Palmdale Mayor Steve Hofbauer. "It's important that our residents weigh in and provide feedback to ensure that the new plan has us prepared for a potential disaster."

"Having an LHMP in place helps direct City resources appropriately and qualifies the City for federal disaster relief," said Mayor Pro Tem Laura Bettencourt. "Updated plans are critical as Living in Southern California makes us vulnerable to a variety of potential disasters."

Funding for updating the LHMP was provided in part by a $50,000 Southern California Gas (SoCalGas) Climate Adaptation and Resiliency Planning Grant.

"We look forward to hearing from the public as our staff prepares to update our existing plan," said Palmdale City Manager J.J. Murphy. "Gauging the priorities of our community is a priority in the process, and someone will win a $100 gift card just for taking the survey."

For more information, please visit www.CityofPalmdale.org/hazardplan.

Communications ● 38300 Sierra Highway ● Palmdale, CA 93550
www.CityofPalmdale.org

History of the Updated LHMP Participation/Development Process

DISASTER MANAGEMENT AREA B HAZMIT PLAN (LHMP) Meeting
QUARTERLY MEETING 7/21/2016
City of Santa Clarita
The Centre

	Print Name (Clearly)	Agency/Title	Email	Phone
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				
24				
25				

D:\Pedrazzini\Agenda\boardmeeting\planning\attendancetemplate.xls

Page 1 of 1

Area B - LHMP Quarterly Meeting Jan 19, 2017 9am-10am Attendees GoToMeeting

Summary

Meeting Date	Meeting Duration	Number of Attendees	Meeting ID
January 19, 2017 8:25 AM PST	94 minutes	7	209-816-877

Details

Name	Email Address	Join Time	Leave Time	Time in Session (minutes)
Lisa Soghor		8:58 AM	9:59 AM	61
Debbie Pedrazzoli	areab@earthlink.net	8:25 AM	9:59 AM	94
Donna Nuzzi		9:00 AM	9:59 AM	58
Jim Jordan		8:58 AM	9:48 AM	49
Kevin Ryan	eoc@hiddenhillscity.org	8:52 AM	9:59 AM	66
Louis Celaya	lcelaya@ci.agoura-hills.ca.us	9:02 AM	9:59 AM	57
Noga, Andrew		8:58 AM	9:59 AM	61

DISASTER MANAGEMENT AREA B HAZMIT PLAN (LHMP) Meeting
QUARTERLY MEETING 4/20/2017
City of Palmdale

	Print Name (Clearly)	Agency/Title	Email	Phone
1	Dessi Pennazzoli	DMA-B DMAC	DistPC AREAB-Incoming	310 457 7787
2	Philippe Eskander	WLN	Philippe@wln.org	818 706 1613
3	Donna Duzzi	City of Santa Clarita	dduzzi@santaclarita.com	661-286-4093
4	ANDREW NAGEL	L.A. SHERIFF / PALMDALE	ASNAGEL@LASD.ORG	661-272-2428
5	Debbie Larson	Calabasas	dlarson@cityofcalabasas.com	818 224 1620
6	Jim Jordan	Calabasas	jjordan@cityofcalabasas.com	818-224-1600
7	JT TREICHLER	AGOURA Hills	jtreichler@ci.agoura-hills.ca.us	818-597 7309
8	GLEN Andrews	AFP 42	GLEN.ANDREWS.1@US.AF.MIL	661-810-4447
9	Alma Ambrocio	Palmdale	aambrocio@cityofpalmdale.org	661-267-5477
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				
24				
25				

* —— Area B Quarterly LHMP —— *

DIASTER MANAGEMENT AREA B MONTHLY MEETINGS
January 18, 2018
City of Agoura Hills - City Hall

	Print Name (Clearly)	Agency and Title	Email	Phone
1	Deana Pedrazzoli	DMA-B DMAC	DMP@AREAB-LACO.org	310 917 0333
2	Joana Nizzi	Santa Clarita	jnizzi@santaclanta.com	(661) 286-4093
3	Philippe Eskander	Westlake Village	pheilippe@wlv.org	818 706 1613
4	KEVIN RYAN	HIDDEN HILLS	EOC@HIDDENHILLSCITY.ORG	818-439-7077
5	JT Reichler	Agoura Hills	jtreichler@ci.agoura-hills.ca.us	818-597-7309
6	Debbie Larson	Calabasas	dlarson@cityofcalabasas.com	818-224-1620
7	Jim Jordan	Calabasas	jjordan@cityofcalabasas.com	818-224-1600
8	KEVIN MCVEIGH	AMERICAN RED CROSS	KMCVEIGH49@GMAIL.COM	818-970-7271
9		Tentative 1 (not Malibu)		
10		- "Volunteer" - go to -		
11		must call		
12	Angela Teglia CD	LAPH-CHS Sept 13 2	ateglia@ph.lacounty.gov	(626) 497-3262
13				
14	MARK Wiesen	LASD	MPWIESE@LASD.ORG	818-878-1808
15				
16				
17				
18				
19				
20				
21				
22				
23				
24				
25				

Disaster Management Area B
Local Hazard Mitigation Plan (LHMP) Quarterly Meeting
January 18, 2018
City of Agoura Hills

Agenda

I. **Call to Order**
   A. Attendance sign-in sheet.
   B. Welcome and Introductions.

II. **Topic/Discussion**
   A. Review of the FEMA "Local Mitigation Plan Review Guide" dated Oct 1, 2011. Continue reviewing the five elements (A through E) and their requirements.
      1. **Section 4.3- Element C: Mitigation Strategy (page 23).**
         a) Element – C2 (One of six requirements for element C).
            a. Does the Plan address each jurisdiction's participation in the National Flood Insurance Program (NFIP) and continued compliance with NFIP requirements, as appropriate? 44CFR 201.6(c)(3)(ii)
               i. Intent
                  1. To demonstrate flood hazard mitigation efforts by the community through NFIP activities.
                     a. Where FEMA is the official administrating Federal agency of the NFIP, participation in the program is a basic community capability and resource for flood hazard mitigation activities.
               ii. Requirement
                  1. The plan must describe each jurisdiction's participation in the NFIP and describe their floodplain management program for continued compliance.
                     a. Simply stating "The community will continue to comply with NFIP", will NOT meet this requirement.
                     b. The description could include, but is not limited to:
                        i. Adoption and enforcement of floodplain management requirements, including regulating new construction in Special Flood Hazard Areas (SGHAs);
                        ii. Floodplain identification and mapping, including any local requests for map updates;
                        iii. Description of community assistance and monitoring activities.
                     c. Jurisdictions that are currently not participating in the NFIP and where an Flood Hazard Boundary Map (FHBM) or Flood Insurance Rate Map (FIRM) has been issued may meet this requirement by describing the reasons why the community does not participate.
                        i. **Flood Hazard Boundary Map (FHBM).** Official map of a community issued by FEMA, where the boundaries of the flood, mudflow and related erosion areas having special hazards have been designated.
                        ii. **Flood Insurance Rate Map (FIRM).** Official map of a community on which FEMA has delineated the Special Flood Hazard Areas (SFHAs), the Base Flood Elevations (BFEs) and the risk premium zones applicable to the community.
                        iii.

C2. Does the Plan address each jurisdiction's participation in the NFIP and continued compliance with NFIP requirements, as appropriate? *44 CFR 201.6(c)(3)(ii)* ***Intent:*** *To demonstrate flood hazard mitigation efforts by the community through NFIP activities. Where FEMA is the official administering Federal agency of the NFIP, participation in the program is a basic community capability and resource for flood hazard mitigation activities.*	a. The plan **must** describe each jurisdiction's participation in the NFIP and describe their floodplain management program for continued compliance. Simply stating "The community will continue to comply with NFIP," will <u>not</u> meet this requirement. The description could include, but is not limited to: • Adoption and enforcement of floodplain management requirements, including regulating new construction in Special Flood Hazard Areas (SFHAs); • Floodplain identification and mapping, including any local requests for map updates; or • Description of community assistance and monitoring activities. Jurisdictions that are currently not participating in the NFIP and where an FHBM or FIRM has been issued may meet this requirement by describing the reasons why the community does not participate.

DIASTER MANAGEMENT AREA B MONTHLY MEETINGS
April 19, 2018
Area B Quarterly LHMP Meeting
Palmdale - Chimbole Cultural Center

	Print Name (Clearly)	Agency and Title	Email	Phone
1	Deanie Pedrazzoli	OMA-B OMAC	DEP@AREAB-LACO.ORG	310 409 0333
2	Miguel Lopez	Palmdale I.T.		
3	Nazy Chinikeroushan	Palmdale / EOC	NChinikeroushan@cityofpalmdale.org	
4	ANDREW NAGA	CITY OF LANCASTER EM	ANAGA@CITYOFLANCASTERCA.ORG	661 723 6056
5				
6				
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				
24				
25				

Disaster Management Area B
Local Hazard Mitigation Plan (LHMP) Quarterly Meeting
April 19, 2018
Palmdale – Chimbole Cultural Center

Agenda

I. **Call to Order**
   A. Attendance sign-in sheet.
   B. Welcome and Introductions.

II. **Topic/Discussion**
   A. Review of the FEMA "Local Mitigation Plan Review Guide" dated Oct 1, 2011. Continue reviewing the five elements (A through E) and their requirements.
      1. **Section 4.3- Element C: Mitigation Strategy (page 24).**
         a) Element – C3 (One of six requirements for element C).
            a. Does the Plan include **goals** to reduce/avoid long-term vulnerabilities to the identified hazards? 44CFR 201.6(c)(3)(i)
               i. Intent
                  1. To guide the development and implementation of hazard mitigation actions for the community(ies).
                     a. Goals are statements of the community's visions for the future.
               ii. Requirement
                  1. The plan **must** include general hazard mitigation goals that represent what the jurisdiction(s) seeks to accomplish through mitigation plan implementation.
                     a. GOALS are broad policy statements that explain what is to be achieved.
                     b. Goals **MUST** be consistent with the hazards identified in the plan.

III. **Notes**

ELEMENT	REQUIREMENTS
C3. Does the Plan include goals to reduce/avoid long-term vulnerabilities to the identified hazards? *44 CFR 201.6(c)(3)(i)* ***Intent**: To guide the development and implementation of hazard mitigation actions for the community(ies). Goals are statements of the community's visions for the future.*	a. **The plan must include general hazard mitigation goals that represent what the jurisdiction(s) seeks to accomplish through mitigation plan implementation.** ***Goals** are broad policy statements that explain what is to be achieved.* b. **The goals must be consistent with the hazards identified in the plan.**

DISASTER MANAGEMENT AREA B HAZMIT PLAN (LHMP) Meeting
QUARTERLY MEETING 10/11/2018
City of Lancaster

	Print Name (Clearly)	Agency/Title	Email	Phone
1	Jessi Pannelli	DMA- B DMAC	Dept of Aud-LACO.org	310-409-0233
2	Dana Nuzzi	City of Santa Clarita	dnuzzi@santaclarita.com	661-286-4093
3	ANDREW NOGA	CITY OF LANCASTER	ANOGA@CITYOFLANCASTERCA.org	661 723 6056
4	Philippe Estandar	City of Westlake Village	philippe@wlv.org	818 706 1613
5	Edwin Duenas	City of Malibu	eduenas@malibucity.org	310.456-2
6	Helen Lemich	American Red Cross	helen.lemich@redcross.org	8248249
7	Shiarron Baker	LAC - Dept. of Public Health	shbaker@ph.lacounty.gov	(661-2877046
8	Jamie Wolfe	LAC Dept of Public Health	Jwolfe@ph.lacounty.gov	(661-471-4888
9	ROBERT BERNARD	LASD - Palmdale Station	rbernain@LASD.ORG	(661-272-2400
10	Michele Webb	AVDRN/CART	michele@AVDRN.ORG	(661-618-3560
11	Steve Webb	AVDRN/CERT	steve@avdrn.org	661-618-3561
12	Emily Cooksey	Lancaster School District	emmcooksey@sbcglobal.net	(661-723-0351
13	Jenny Sampson	Lancaster School District	sampsonj@lancsd.org	(661-433-9710
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				
24				
25				

Disaster Management Area B
Local Hazard Mitigation Plan (LHMP) Quarterly Meeting
Oct 11, 2018
Lancaster – City Hall
44933 Fern Ave. Lancaster, CA 93534

Agenda

I. **Call to Order**
   A. Attendance sign-in sheet.
   B. Welcome and Introductions.

II. **Topic/Discussion**
   A. Review of the FEMA "Local Mitigation Plan Review Guide" dated Oct 1, 2011. Continue reviewing the five elements (A through E) and their requirements.
      1. **Section 4.3- Element C: Mitigation Strategy (page 24).**
         a) Element – C4 (One of six requirements for element C).
            a. Does the Plan identify and analyze a comprehensive range of specific mitigation actions and projects for each jurisdiction being considered to reduce the effects of hazards with emphasis on new and existing buildings and infrastructure? 44 CFR 201.6(c)(3)(ii) and 44 CFR 201.6(c)(3)(iv)

               i. Intent
                  1. To ensure the hazard mitigation actions are based on the identified hazard vulnerabilities, are within the capability of each jurisdiction, and reduce or avoid future losses. This is the heart of the mitigation plan, and is essential to leading communities to reduce their risk. Communities, not FEMA, "own" the hazard mitigation actions in the strategy.
               ii. Requirements (1-3)
                  1. The plan **must** include a mitigation strategy that
                     a. Analyzes actions and/projects that the jurisdiction considered to reduce the impacts of hazards identified in the risk assessment
                     b. Identifies the actions and/or projects that the jurisdiction intends to implement.

                  Mitigation actions and projects means a hazard mitigation action, activity or process (ex. adopting a building code) or it can be a physical project (ex. elevating structures or retrofitting critical infrastructure) *designed to reduce or eliminate the long-term risks from hazards.* This sub-element can be met with either actions or projects, or a combo.

                  The mitigation plan may include non-mitigation actions (ex. emergency response or operational preparedness). These will **NOT** be accepted as hazard mitigation actions but neither will FEMA require these to be removed from the plan prior to approval.

                  A comprehensive range consists of different hazard mitigation alternatives that address the vulnerabilities to the hazards that the jurisdiction(s) determine are most important.

2. Each jurisdiction participating in the plan **must** have mitigation actions specific to that jurisdiction that are based on the community's risk and vulnerabilities, as well as community priorities.

3. The action plan **must** reduce risk to existing buildings and infrastructure as well as limit any risk to new development and redevelopment. ***With emphasis on new and existing building and infrastructure*** means that the action plan includes a consideration of actions that address the built environment.

III. Notes

IV. Handouts

A. None

V. Other Helpful Resources

A. Cal OES Hazard Mitigation Grants Branch – Main number 916-845-8150
B. Cal OES Hazard Mitigation Planning Division – Main number 916-845-8177
C. FEMA Planning – http://www.fema.gov/multi-hazard-mitigation-planning
D. FEMA Assistance – http://www.fema.gov/hazard-mitigation-assistance
E. FEMA IS-318 Hazard Mitigation Planning for Local and Tribal Communities
   1. http://training.fema.gov/is/courseoverview.aspx?code=IS-318
F. FEMA IS-393 Introduction for Hazard Mitigation
   1. https://training.fema.gov/is/courseoverview.aspx?code=is-393.a
G. FEMA / CSTI G-393 Mitigation
H. FEMA State and Local Mitigation Planning How-To Series/Guides #1-#9
   1. https://www.fema.gov/media-library/resources-documents/collections/6
   2. FEMA 386-1 "Getting Started – building Support for Mitigation Planning"
   3. FEMA 386-2 "Understanding Your Risks – identifying hazards and estimating losses"
   4. FEMA 386-3 "Developing the Mitigation Plan – identifying actions and implementing strategies"
   5. FEMA 386-4 "Bringing the Plan to Life – implementing the hazard mitigation plan"
I. FEMA "Local Mitigation Planning Handbook"
   1. http://www.fema.gov/media-library-data/20130726-1910-25045-9160/fema_local_mitigation_handbook.pdf
J. FEMA "Local Mitigation Plan Review Guide" (Oct 1, 2011)
   1. http://www.fema.gov/media-library-data/20130726-1809-25045-7498/plan_review_guide_final_9_30_11.pdf
K. FEMA "Integrating Hazard Mitigation into Local Planning"
   1. http://www.fema.gov/media-library-data/20130726-1908-25045-0016/integrating_hazmit.pdf
L. FEMA "Mitigation Ideas"
   1. http://www.fema.gov/media-library-data/20130726-1904-25045-0186/fema_mitigation_ideas_final508.pdf
M. CFR Title 44 – Emergency Management & Assistance §201.6, Local Mitigation Plans

VI. Wrap up

A. Next Area B LHMP Quarterly Meeting
   1. Jan 17, 2019 Host: City of Agoura Hills

VII. Adjournment

C4. Does the Plan identify and analyze a comprehensive range of specific mitigation actions and projects for each jurisdiction being considered to reduce the effects of hazards, with emphasis on new and existing buildings and infrastructure? *44 CFR 201.6(c)(3)(ii) and 44 CFR 201.6(c)(3)(iv)* ***Intent**: To ensure the hazard mitigation actions are based on the identified hazard vulnerabilities, are within the capability of each jurisdiction, and reduce or avoid future losses. This is the heart of the mitigation plan, and is essential to leading communities to reduce their risk. Communities, not FEMA, "own" the hazard mitigation actions in the strategy.*	a. The plan **must** include a mitigation strategy that 1) analyzes actions and/or projects that the jurisdiction considered to reduce the impacts of hazards identified in the risk assessment, and 2) identifies the actions and/or projects that the jurisdiction intends to implement. ***Mitigation actions and projects** means a hazard mitigation action, activity or process (for example, adopting a building code) or it can be a physical project (for example, elevating structures or retrofitting critical infrastructure) designed to reduce or eliminate the long term risks from hazards.* This sub-element can be met with either actions or projects, or a combination of actions and projects. The mitigation plan may include non-mitigation actions, such as actions that are emergency response or operational preparedness in nature. These will not be accepted as hazard mitigation actions, but neither will FEMA require these to be removed from the plan prior to approval. *A **comprehensive range** consists of different hazard mitigation alternatives that address the vulnerabilities to the hazards that the jurisdiction(s) determine are most important.* b. Each jurisdiction participating in the plan **must** have mitigation actions specific to that jurisdiction that are based on the community's risk and vulnerabilities, as well as community priorities. c. The action plan **must** reduce risk to existing buildings and infrastructure as well as limit any risk to new development and redevelopment. ***With emphasis on new and existing building and infrastructure** means that the action plan includes a consideration of actions that address the built environment.*

Area B Board Only - Go To Meeting 1-17-19 9am Attendees

Summary

GoToMeeting

Meeting Date	Meeting Duration	Number of Attendees	Meeting ID
January 17, 2019 8:43 AM PST	81 minutes	5	571-800-677

Board Meeting 9-10am followed by LHMP Planning Meeting

Details

Name	Email Address	Join Time	Leave Time	Time in Session (minutes)
Andrew Noga	anoga@cityoflancasterca.org	8:58 AM	10:04 AM	66
Deb Pedrazzoli	areab@earthlink.net	8:43 AM	10:04 AM	81
Donna Nuzzi	dnuzzi@santa-clarita.com	8:49 AM	10:04 AM	74
Jim & Debbie	jjordan@cityofcalabasas.com	9:19 AM	10:04 AM	45
Susan Duenas	sduenas@malibucity.org	9:02 AM	10:04 AM	61

Dial In:
Mike Woodard - Hidden Hills
Nazy C - Palmdale
Philippe E - Westlake Village

Disaster Management Area B
Local Hazard Mitigation Plan (LHMP) Quarterly Meeting
Jan 17, 2019
Board Only Go-To Meeting

Agenda

I. **Call to Order**
   A. Attendance sign-in sheet.
   B. Welcome and Introductions.

II. **Topic/Discussion**
   A. Review of the FEMA "Local Mitigation Plan Review Guide" dated Oct 1, 2011. Continue reviewing the five elements (A through E) and their requirements.
      1. **Section 4.3- Element C: Mitigation Strategy (page 25).**
         a) Element – C5 (One of six requirements for element C).
            a. Does the Plan contain an *action plan* that describes how the actions identified will be **prioritized** (including cost benefit review), **implemented**, and **administered** by each jurisdiction? 44 CFR 201.6(c)(3)(iii) and 44 CFR 201.6(c)(3)(iv)

               i. Intent
                  1. To identify *how the plan will directly lead to implementation of the hazard mitigation actions.* As opportunities arise for actions or projects to be implemented, the responsible entity will be able to take action towards completion of the activities.
               ii. Requirements (1-4)
                  1. The plan **must** describe the **criteria used for prioritizing** implementation of the actions.

                  2. The plan **must** demonstrate when prioritizing hazard mitigation actions that the local jurisdictions considered the benefits that would result from the hazard mitigation actions versus the cost of those actions.

                     The requirement is met as long as the economic considerations are summarized in the plan as part of the community's analysis. A complete benefit-cost analysis is not required. Qualitative benefits (for example, quality of life, natural and beneficial values, or other "benefits") can also be included in how actions will be prioritized.

                  3. The plan **must** identify the position, office, department, or agency responsible for implementing and administering the action (for each jurisdiction), and identify potential funding sources and expected timeframes for completion.

IV. Handouts

A. None

V. Other Helpful Resources

A. Cal OES Hazard Mitigation Grants Branch – Main number 916-845-8150
B. Cal OES Hazard Mitigation Planning Division – Main number 916-845-8177
C. FEMA Planning – http://www.fema.gov/multi-hazard-mitigation-planning
D. FEMA Assistance – http://www.fema.gov/hazard-mitigation-assistance
E. FEMA IS-318 Hazard Mitigation Planning for Local and Tribal Communities
   1. http://training.fema.gov/is/courseoverview.aspx?code=IS-318
F. FEMA IS-393 Introduction for Hazard Mitigation
   1. https://training.fema.gov/is/courseoverview.aspx?code=is-393.a
G. FEMA / CSTI G-393 Mitigation
H. FEMA State and Local Mitigation Planning How-To Series/Guides #1-#9
   1. https://www.fema.gov/media-library/resources-documents/collections/6
   2. FEMA 386-1 "Getting Started – building Support for Mitigation Planning"
   3. FEMA 386-2 "Understanding Your Risks – identifying hazards and estimating losses"
   4. FEMA 386-3 "Developing the Mitigation Plan – identifying actions and implementing strategies"
   5. FEMA 386-4 "Bringing the Plan to Life – implementing the hazard mitigation plan"
I. FEMA "Local Mitigation Planning Handbook"
   1. http://www.fema.gov/media-library-data/20130726-1910-25045-9160/fema_local_mitigation_handbook.pdf
J. FEMA "Local Mitigation Plan Review Guide" (Oct 1, 2011)
   1. http://www.fema.gov/media-library-data/20130726-1809-25045-7498/plan_review_guide_final_9_30_11.pdf
K. FEMA "Integrating Hazard Mitigation into Local Planning"
   1. http://www.fema.gov/media-library-data/20130726-1908-25045-0016/integrating_hazmit.pdf
L. FEMA "Mitigation Ideas"
   1. http://www.fema.gov/media-library-data/20130726-1904-25045-0186/fema_mitigation_ideas_final508.pdf
M. CFR Title 44 – Emergency Management & Assistance §201.6, Local Mitigation Plans

VI. Wrap up

A. Next Area B LHMP Quarterly Meeting
   1. Apr 18, 2019 Host: City of Palmdale

VII. Adjournment

ELEMENT	REQUIREMENTS
C5. Does the Plan contain an action plan that describes how the actions identified will be prioritized (including cost benefit review), implemented, and administered by each jurisdiction? *44 CFR 201.6(c)(3)(iii) and 44 CFR (c)(3)(iv)* ***Intent**: To identify how the plan will directly lead to implementation of the hazard mitigation actions. As opportunities arise for actions or projects to be implemented, the responsible entity will be able to take action towards completion of the activities.*	a. The plan **must** describe the criteria used for prioritizing implementation of the actions. b. The plan **must** demonstrate when prioritizing hazard mitigation actions that the local jurisdictions considered the benefits that would result from the hazard mitigation actions versus the cost of those actions. The requirement is met as long as the economic considerations are summarized in the plan as part of the community's analysis. A complete benefic-cost analysis is not required. Qualitative benefits (*for example*, quality of life, natural and beneficial values, or other "benefits") can also be included in how actions will be prioritized. c. The plan **must** identify the position, office, department, or agency responsible for implementing and administering the action (for each jurisdiction), and identify potential funding sources and expected timeframes for completion.

DISASTER MANAGEMENT AREA B HAZMIT PLAN (LHMP) Meeting
QUARTERLY MEETING 4/18/2019
City of Palmdale

	Print Name (Clearly)	Agency/Title	Email	Phone
1	Debbie Pedrazzoli	OMA-B DMAC	DebP@Area-B-LACO.org	310 429 0333
2	Donna Nuzzi	City of Santa Clarita	dnuzzi@santa-clarita.com	661-286-4093
3	ANDREW NOGA	CITY OF LANCASTER	ANOGA@CITYOFLANCASTERCA.ORG	(661-723-6056
4	ALLEN THOMPSON	" "	athompson " " "	(661-945-6896
5	NAZANIN CHRISTOFOROUSHAN	City of Palmdale	nchristoforoushan@cityofpalmdale.org	661-267-3215
6	Helen Lemich	American Red Cross	Helen.Lemich@redcross.org	424-832-4992
7				
8				
9				
10				
11				
12				
13				
14				
15				
16				
17				
18				
19				
20				
21				
22				
23				
24				
25				

Disaster Management Area B
Local Hazard Mitigation Plan (LHMP) Quarterly Meeting
Apr 18, 2019
City of Palmdale

Agenda

I. **Call to Order**
   A. Attendance sign-in sheet.
   B. Welcome and Introductions.

II. **Topic/Discussion**
   A. Review of the FEMA "Local Mitigation Plan Review Guide" dated Oct 1, 2011. Continue reviewing the five elements (A through E) and their requirements.
      1. **Section 4.3- Element C: Mitigation Strategy (page 25).**
         a) Element – C6 (One of six requirements for element C).
            a. Does the Plan describe a process by which local governments will integrate the requirements of the mitigation plan into other planning mechanisms, such as comprehensive or capital improvement plans, when appropriate? 44 CFR 201.6(c)(4)(iii)

               i. Intent
                  1. To assist communities in capitalizing on all available mechanisms that they have at their disposal to accomplish hazard mitigation and reduce risk.
               ii. Requirements (1-5)
                  1. The plan **must** describe the community's process to integrate the data, information, and hazard mitigation goals and actions into other planning mechanisms.

                  2. The plan **must** identify the local planning mechanisms where hazard mitigation information and/or actions may be incorporated.

                     Planning mechanisms means governance structures that are used to manage local land use development and community decision-making, such as comprehensive plans, capital improvement plans, or other long-range plans.

                  3. A multi-jurisdictional plan **must** describe each participating jurisdiction's individual process for integrating hazard mitigation actions applicable to their community into other planning mechanisms.

                  4. The updated plan **must** explain how the jurisdiction(s) incorporated the mitigation plan, when appropriate, into other planning mechanisms as a demonstration of progress in local hazard mitigation efforts.

IV. Handouts

A. None

V. Other Helpful Resources

A. Cal OES Hazard Mitigation Grants Branch – Main number 916-845-8150
B. Cal OES Hazard Mitigation Planning Division – Main number 916-845-8177
C. FEMA Planning – http://www.fema.gov/multi-hazard-mitigation-planning
D. FEMA Assistance – http://www.fema.gov/hazard-mitigation-assistance
E. FEMA IS-318 Hazard Mitigation Planning for Local and Tribal Communities
   1. http://training.fema.gov/is/courseoverview.aspx?code=IS-318
F. FEMA IS-393 Introduction for Hazard Mitigation
   1. https://training.fema.gov/is/courseoverview.aspx?code=is-393.a
G. FEMA / CSTI G-393 Mitigation
H. FEMA State and Local Mitigation Planning How-To Series/Guides #1-#9
   1. https://www.fema.gov/media-library/resources-documents/collections/6
   2. FEMA 386-1 "Getting Started – building Support for Mitigation Planning"
   3. FEMA 386-2 "Understanding Your Risks – identifying hazards and estimating losses"
   4. FEMA 386-3 "Developing the Mitigation Plan – identifying actions and implementing strategies"
   5. FEMA 386-4 "Bringing the Plan to Life – implementing the hazard mitigation plan"
I. FEMA "Local Mitigation Planning Handbook"
   1. http://www.fema.gov/media-library-data/20130726-1910-25045-9160/fema_local_mitigation_handbook.pdf
J. FEMA "Local Mitigation Plan Review Guide" (Oct 1, 2011)
   1. http://www.fema.gov/media-library-data/20130726-1809-25045-7498/plan_review_guide_final_9_30_11.pdf
K. FEMA "Integrating Hazard Mitigation into Local Planning"
   1. http://www.fema.gov/media-library-data/20130726-1908-25045-0016/integrating_hazmit.pdf
L. FEMA "Mitigation Ideas"
   1. http://www.fema.gov/media-library-data/20130726-1904-25045-0186/fema_mitigation_ideas_final508.pdf
M. CFR Title 44 – Emergency Management & Assistance §201.6, Local Mitigation Plans

VI. Wrap up

A. Next Area B LHMP Quarterly Meeting
   1. Oct 11, 2019 Host: City of Lancaster

VII. Adjournment

ELEMENT	REQUIREMENTS
C6. Does the Plan describe a process by which local governments will integrate the requirements of the mitigation plan into other planning mechanisms, such as comprehensive or capital improvement plans, when appropriate? *44 CFR 201.6(c)(4)(ii)* *Intent: To assist communities in capitalizing on all available mechanisms that they have at their disposal to accomplish hazard mitigation and reduce risk.*	a. The plan **must** describe the community's process to integrate the data, information, and hazard mitigation goals and actions into other planning mechanisms. b. The plan **must** identify the local planning mechanisms where hazard mitigation information and/or actions may be incorporated. ***Planning mechanisms*** *means governance structures that are used to manage local land use development and community decision-making, such as comprehensive plans, capital improvement plans, or other long-range plans.* c. A multi-jurisdictional plan **must** describe each participating jurisdiction's individual process for integrating hazard mitigation actions applicable to their community into other planning mechanisms. d. The updated plan **must** explain how the jurisdiction(s) incorporated the mitigation plan, when appropriate, into other planning mechanisms as a demonstration of progress in local hazard mitigation efforts. e. The updated plan **must** continue to describe how the mitigation strategy, including the goals and hazard mitigation actions will be incorporated into other planning mechanisms.

APPENDIX

C

HAZUS REPORT & MAPS

Hazus: Earthquake Global Risk Report

Region Name: PalmdaleStudyV2

Earthquake Scenario: Palmdale Scenario 1

Print Date: May 21, 2021

Disclaimer:
This version of Hazus utilizes 2010 Census Data.
Totals only reflect data for those census tracts/blocks included in the user's study region.

The estimates of social and economic impacts contained in this report were produced using Hazus loss estimation methodology software which is based on current scientific and engineering knowledge. There are uncertainties inherent in any loss estimation technique. Therefore, there may be significant differences between the modeled results contained in this report and the actual social and economic losses following a specific earthquake. These results can be improved by using enhanced inventory, geotechnical, and observed ground motion data.

Table of Contents

Section	Page #
General Description of the Region	3
Building and Lifeline Inventory	4
Building Inventory	
Critical Facility Inventory	
Transportation and Utility Lifeline Inventory	
Earthquake Scenario Parameters	7
Direct Earthquake Damage	8
Buildings Damage	
Essential Facilities Damage	
Transportation and Utility Lifeline Damage	
Induced Earthquake Damage	14
Fire Following Earthquake	
Debris Generation	
Social Impact	15
Shelter Requirements	
Casualties	
Economic Loss	17
Building Related Losses	
Transportation and Utility Lifeline Losses	

Appendix A: County Listing for the Region

Appendix B: Regional Population and Building Value Data

General Description of the Region

Hazus-MH is a regional earthquake loss estimation model that was developed by the Federal Emergency Management Agency (FEMA) and the National Institute of Building Sciences. The primary purpose of Hazus is to provide a methodology and software application to develop multi-hazard losses at a regional scale. These loss estimates would be used primarily by local, state and regional officials to plan and stimulate efforts to reduce risks from multi-hazards and to prepare for emergency response and recovery.

The earthquake loss estimates provided in this report was based on a region that includes 1 county(ies) from the following state(s):

California

Note:
Appendix A contains a complete listing of the counties contained in the region.

The geographical size of the region is 110.85 square miles and contains 33 census tracts. There are over 46 thousand households in the region which has a total population of 160,533 people (2010 Census Bureau data). The distribution of population by Total Region and County is provided in Appendix B.

There are an estimated 44 thousand buildings in the region with a total building replacement value (excluding contents) of 14,478 (millions of dollars). Approximately 96.00 % of the buildings (and 91.00% of the building value) are associated with residential housing.

The replacement value of the transportation and utility lifeline systems is estimated to be 3,149 and 305 (millions of dollars) , respectively.

Building and Lifeline Inventory

Building Inventory

Hazus estimates that there are 44 thousand buildings in the region which have an aggregate total replacement value of 14,478 (millions of dollars) . Appendix B provides a general distribution of the building value by Total Region and County.

In terms of building construction types found in the region, wood frame construction makes up 91% of the building inventory. The remaining percentage is distributed between the other general building types.

Critical Facility Inventory

Hazus breaks critical facilities into two (2) groups: essential facilities and high potential loss facilities (HPL). Essential facilities include hospitals, medical clinics, schools, fire stations, police stations and emergency operations facilities. High potential loss facilities include dams, levees, military installations, nuclear power plants and hazardous material sites.

For essential facilities, there are 1 hospitals in the region with a total bed capacity of 157 beds. There are 51 schools, 6 fire stations, 1 police stations and 0 emergency operation facilities. With respect to high potential loss facilities (HPL), there are no dams identified within the inventory. The inventory also includes 1 hazardous material sites, no military installations and no nuclear power plants.

Transportation and Utility Lifeline Inventory

Within Hazus, the lifeline inventory is divided between transportation and utility lifeline systems. There are seven (7) transportation systems that include highways, railways, light rail, bus, ports, ferry and airports. There are six (6) utility systems that include potable water, wastewater, natural gas, crude & refined oil, electric power and communications. The lifeline inventory data are provided in Tables 1 and 2.

The total value of the lifeline inventory is over 3,454.00 (millions of dollars). This inventory includes over 226.18 miles of highways, 34 bridges, 1,788.93 miles of pipes.

Table 1: Transportation System Lifeline Inventory

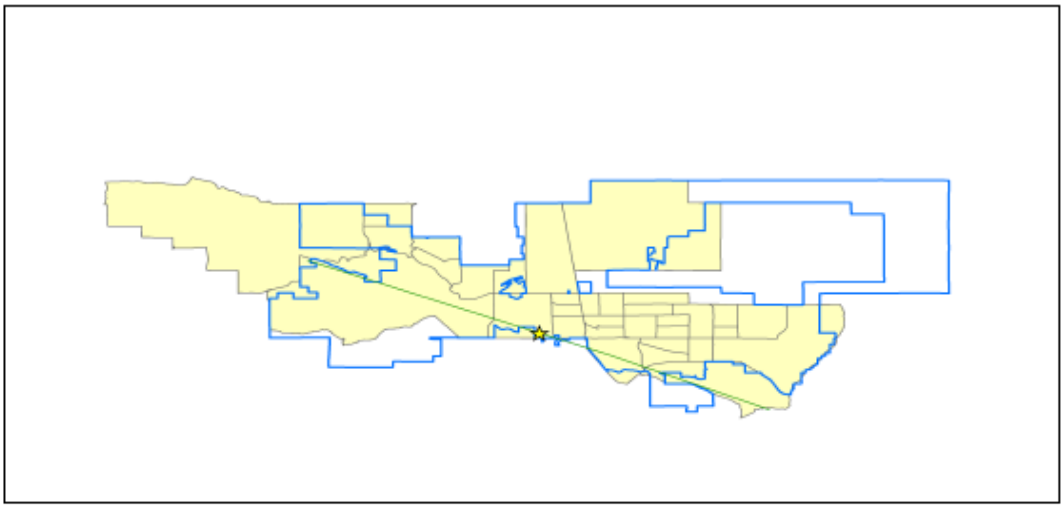
System	Component	# Locations/ # Segments	Replacement value (millions of dollars)
Highway	Bridges	34	98.2216
	Segments	79	2364.6559
	Tunnels	0	0.0000
		Subtotal	**2462.8775**
Railways	Bridges	7	40.0448
	Facilities	0	0.0000
	Segments	33	132.3697
	Tunnels	0	0.0000
		Subtotal	**172.4145**
Light Rail	Bridges	0	0.0000
	Facilities	0	0.0000
	Segments	1	41.5904
	Tunnels	0	0.0000
		Subtotal	**41.5904**
Bus	Facilities	1	1.8306
		Subtotal	**1.8306**
Ferry	Facilities	0	0.0000
		Subtotal	**0.0000**
Port	Facilities	0	0.0000
		Subtotal	**0.0000**
Airport	Facilities	1	14.4161
	Runways	2	456.5705
		Subtotal	**470.9866**
		Total	**3,149.70**

Table 2: Utility System Lifeline Inventory

System	Component	# Locations / Segments	Replacement value (millions of dollars)
Potable Water	Distribution Lines	NA	35.4311
	Facilities	0	0.0000
	Pipelines	0	0.0000
		Subtotal	**35.4311**
Waste Water	Distribution Lines	NA	21.2586
	Facilities	0	0.0000
	Pipelines	0	0.0000
		Subtotal	**21.2586**
Natural Gas	Distribution Lines	NA	14.1724
	Facilities	0	0.0000
	Pipelines	1	35.0997
		Subtotal	**49.2721**
Oil Systems	Facilities	0	0.0000
	Pipelines	0	0.0000
		Subtotal	**0.0000**
Electrical Power	Facilities	1	199.0800
		Subtotal	**199.0800**
Communication	Facilities	0	0.0000
		Subtotal	**0.0000**
		Total	**305.00**

Earthquake Scenario

Hazus uses the following set of information to define the earthquake parameters used for the earthquake loss estimate provided in this report.



Scenario Name	Palmdale Scenario 1
Type of Earthquake	Source
Fault Name	Mojave
Historical Epicenter ID #	9
Probabilistic Return Period	NA
Longitude of Epicenter	-118.14
Latitude of Epicenter	34.56
Earthquake Magnitude	6.70
Depth (km)	0.00
Rupture Length (Km)	25.59
Rupture Orientation (degrees)	0.00
Attenuation Function	West US, Extensional 2008 - Strike Slip

Direct Earthquake Damage

Building Damage

Hazus estimates that about 12,380 buildings will be at least moderately damaged. This is over 28.00 % of the buildings in the region. There are an estimated 931 buildings that will be damaged beyond repair. The definition of the 'damage states' is provided in Volume 1: Chapter 5 of the Hazus technical manual. Table 3 below summarizes the expected damage by general occupancy for the buildings in the region. Table 4 below summarizes the expected damage by general building type.

Damage Categories by General Occupancy Type

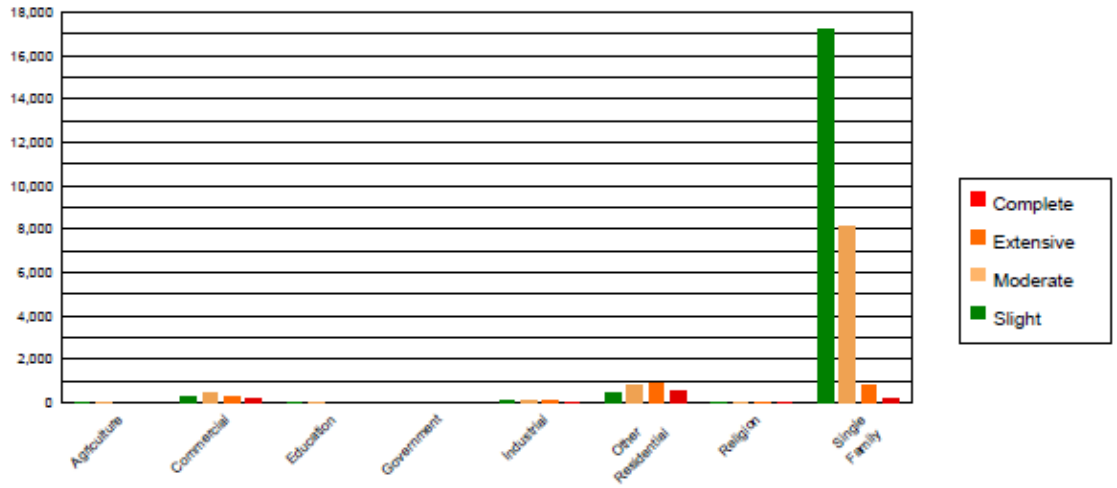


Table 3: Expected Building Damage by Occupancy

	None		Slight		Moderate		Extensive		Complete	
	Count	(%)	Count	(%)	Count	(%)	Count	(%)	Count	(%)
Agriculture	8.87	0.06	10.29	0.06	9.93	0.11	5.05	0.25	2.86	0.31
Commercial	242.10	1.67	294.00	1.63	407.74	4.32	255.08	12.73	131.08	14.08
Education	13.22	0.09	14.02	0.08	12.92	0.14	6.16	0.31	2.67	0.29
Government	3.02	0.02	3.04	0.02	3.58	0.04	2.24	0.11	1.12	0.12
Industrial	41.07	0.28	54.68	0.30	83.38	0.88	56.01	2.80	31.86	3.42
Other Residential	293.53	2.02	477.46	2.64	777.81	8.24	893.35	44.59	551.86	59.26
Religion	20.35	0.14	23.36	0.13	25.51	0.27	15.66	0.78	8.13	0.87
Single Family	13894.20	95.71	17211.74	95.15	8124.29	86.02	770.07	38.43	201.71	21.66
Total	14,516		18,089		9,445		2,004		931	

Table 4: Expected Building Damage by Building Type (All Design Levels)

	None		Slight		Moderate		Extensive		Complete	
	Count	(%)	Count	(%)	Count	(%)	Count	(%)	Count	(%)
Wood	14104.74	97.16	17560.10	97.08	8251.96	87.37	757.22	37.79	215.18	23.11
Steel	37.61	0.26	52.50	0.29	119.10	1.26	103.48	5.16	53.73	5.77
Concrete	66.71	0.46	86.80	0.48	97.95	1.04	66.01	3.29	36.86	3.96
Precast	49.47	0.34	65.49	0.36	114.82	1.22	70.77	3.53	33.23	3.57
RM	226.09	1.56	174.87	0.97	254.46	2.69	143.02	7.14	39.94	4.29
URM	10.70	0.07	17.67	0.10	31.90	0.34	24.85	1.24	25.37	2.72
MH	21.03	0.14	131.16	0.73	574.95	6.09	838.27	41.84	526.97	56.59
Total	**14,516**		**18,089**		**9,445**		**2,004**		**931**	

*Note:
RM Reinforced Masonry
URM Unreinforced Masonry
MH Manufactured Housing

Essential Facility Damage

Before the earthquake, the region had 157 hospital beds available for use. On the day of the earthquake, the model estimates that only 61 hospital beds (39.00%) are available for use by patients already in the hospital and those injured by the earthquake. After one week, 70.00% of the beds will be back in service. By 30 days, 96.00% will be operational.

Table 5: Expected Damage to Essential Facilities

Classification	Total	# Facilities		
		At Least Moderate Damage > 50%	Complete Damage > 50%	With Functionality > 50% on day 1
Hospitals	1	0	0	0
Schools	51	7	0	0
EOCs	0	0	0	0
PoliceStations	1	0	0	0
FireStations	6	0	0	1

Transportation Lifeline Damage

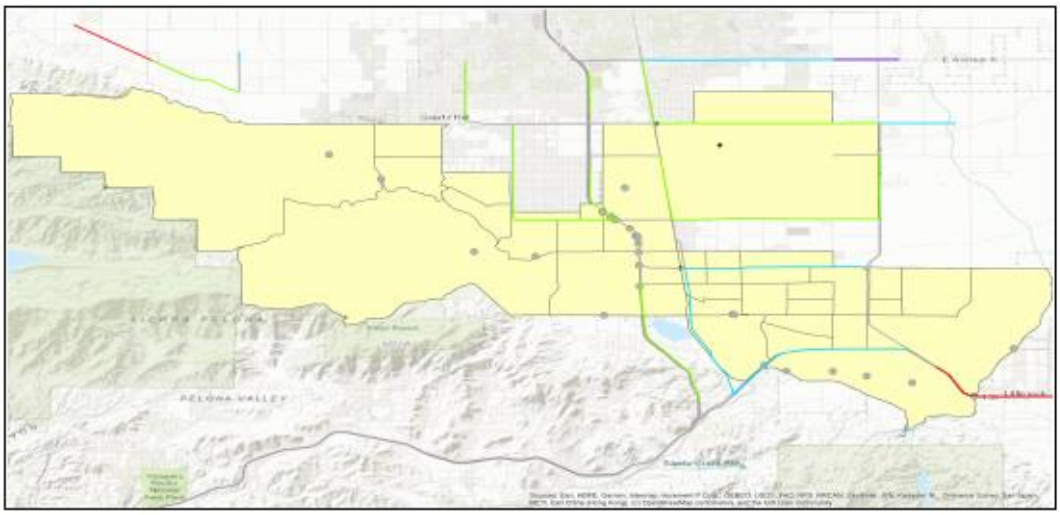


Table 6: Expected Damage to the Transportation Systems

System	Component		Number of Locations			
		Locations/ Segments	With at Least Mod. Damage	With Complete Damage	With Functionality > 50 %	
					After Day 1	After Day 7
Highway	Segments	79	0	0	77	77
	Bridges	34	2	0	32	34
	Tunnels	0	0	0	0	0
Railways	Segments	33	0	0	33	33
	Bridges	7	0	0	7	7
	Tunnels	0	0	0	0	0
	Facilities	0	0	0	0	0
Light Rail	Segments	1	0	0	1	1
	Bridges	0	0	0	0	0
	Tunnels	0	0	0	0	0
	Facilities	0	0	0	0	0
Bus	Facilities	1	1	0	1	1
Ferry	Facilities	0	0	0	0	0
Port	Facilities	0	0	0	0	0
Airport	Facilities	1	0	0	1	1
	Runways	2	0	0	2	2

Table 6 provides damage estimates for the transportation system.

Note: Roadway segments, railroad tracks and light rail tracks are assumed to be damaged by ground failure only. If ground failure maps are not provided, damage estimates to these components will not be computed.

Tables 7-9 provide information on the damage to the utility lifeline systems. Table 7 provides damage to the utility system facilities. Table 8 provides estimates on the number of leaks and breaks by the pipelines of the utility systems. For electric power and potable water, Hazus performs a simplified system performance analysis. Table 9 provides a summary of the system performance information.

Table 7 : Expected Utility System Facility Damage

System	# of Locations				
	Total #	With at Least Moderate Damage	With Complete Damage	with Functionality > 50 %	
				After Day 1	After Day 7
Potable Water	0	0	0	0	0
Waste Water	0	0	0	0	0
Natural Gas	0	0	0	0	0
Oil Systems	0	0	0	0	0
Electrical Power	1	0	0	1	1
Communication	0	0	0	0	0

Table 8 : Expected Utility System Pipeline Damage (Site Specific)

System	Total Pipelines Length (miles)	Number of Leaks	Number of Breaks
Potable Water	1,101	829	207
Waste Water	660	417	104
Natural Gas	28	0	0
Oil	0	0	0

Table 9: Expected Potable Water and Electric Power System Performance

	Total # of Households	Number of Households without Service				
		At Day 1	At Day 3	At Day 7	At Day 30	At Day 90
Potable Water	46,077	23,657	16,848	1,047	0	0
Electric Power		32,519	19,632	7,768	1,443	46

Induced Earthquake Damage

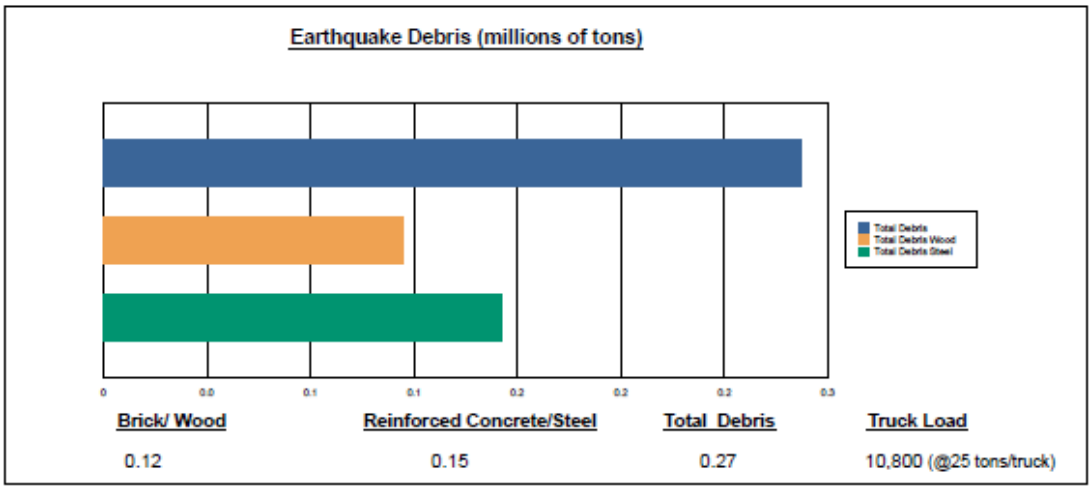
Fire Following Earthquake

Fires often occur after an earthquake. Because of the number of fires and the lack of water to fight the fires, they can often burn out of control. Hazus uses a Monte Carlo simulation model to estimate the number of ignitions and the amount of burnt area. For this scenario, the model estimates that there will be 0 ignitions that will burn about 0.00 sq. mi 0.00 % of the region's total area.) The model also estimates that the fires will displace about 0 people and burn about 0 (millions of dollars) of building value.

Debris Generation

Hazus estimates the amount of debris that will be generated by the earthquake. The model breaks the debris into two general categories: a) Brick/Wood and b) Reinforced Concrete/Steel. This distinction is made because of the different types of material handling equipment required to handle the debris.

The model estimates that a total of 270,000 tons of debris will be generated. Of the total amount, Brick/Wood comprises 43.00% of the total, with the remainder being Reinforced Concrete/Steel. If the debris tonnage is converted to an estimated number of truckloads, it will require 10,800 truckloads (@25 tons/truck) to remove the debris generated by the earthquake.



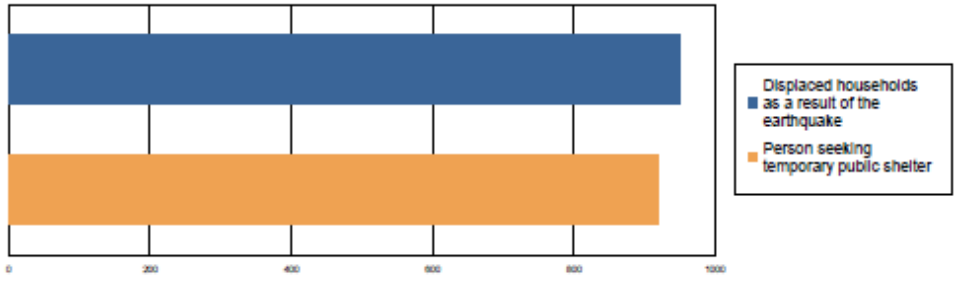
Brick/ Wood	Reinforced Concrete/Steel	Total Debris	Truck Load
0.12	0.15	0.27	10,800 (@25 tons/truck)

Social Impact

Shelter Requirement

Hazus estimates the number of households that are expected to be displaced from their homes due to the earthquake and the number of displaced people that will require accommodations in temporary public shelters. The model estimates 949 households to be displaced due to the earthquake. Of these, 920 people (out of a total population of 160,533) will seek temporary shelter in public shelters.

Displaced Households/ Persons Seeking Short Term Public Shelter



Displaced households as a result of the earthquake	Persons seeking temporary public shelter
949	920

Casualties

Hazus estimates the number of people that will be injured and killed by the earthquake. The casualties are broken down into four (4) severity levels that describe the extent of the injuries. The levels are described as follows;

- Severity Level 1: Injuries will require medical attention but hospitalization is not needed.
- Severity Level 2: Injuries will require hospitalization but are not considered life-threatening
- Severity Level 3: Injuries will require hospitalization and can become life threatening if not promptly treated.
- Severity Level 4: Victims are killed by the earthquake.

The casualty estimates are provided for three (3) times of day: 2:00 AM, 2:00 PM and 5:00 PM. These times represent the periods of the day that different sectors of the community are at their peak occupancy loads. The 2:00 AM estimate considers that the residential occupancy load is maximum, the 2:00 PM estimate considers that the educational, commercial and industrial sector loads are maximum and 5:00 PM represents peak commute time.

Table 10 provides a summary of the casualties estimated for this earthquake

Table 10: Casualty Estimates

		Level 1	Level 2	Level 3	Level 4
2 AM	Commercial	10.69	3.01	0.48	0.95
	Commuting	0.05	0.06	0.11	0.02
	Educational	0.00	0.00	0.00	0.00
	Hotels	0.00	0.00	0.00	0.00
	Industrial	17.38	4.72	0.69	1.35
	Other-Residential	148.96	35.53	3.56	6.59
	Single Family	159.80	22.16	1.08	1.89
	Total	**337**	**65**	**6**	**11**
2 PM	Commercial	644.98	181.36	28.96	56.83
	Commuting	0.44	0.58	0.99	0.19
	Educational	278.30	77.47	12.57	24.59
	Hotels	0.00	0.00	0.00	0.00
	Industrial	127.96	34.71	5.08	9.84
	Other-Residential	34.80	8.37	0.88	1.61
	Single Family	35.45	4.97	0.28	0.42
	Total	**1,122**	**307**	**49**	**93**
5 PM	Commercial	465.27	130.56	20.93	40.57
	Commuting	6.75	8.85	15.12	2.92
	Educational	22.41	6.24	1.01	1.98
	Hotels	0.00	0.00	0.00	0.00
	Industrial	79.98	21.70	3.18	6.15
	Other-Residential	54.95	13.18	1.37	2.49
	Single Family	61.64	8.66	0.49	0.73
	Total	**691**	**189**	**42**	**55**

Economic Loss

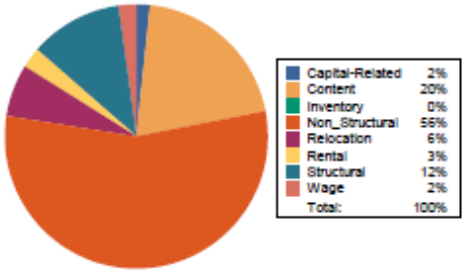
The total economic loss estimated for the earthquake is 1,828.81 (millions of dollars), which includes building and lifeline related losses based on the region's available inventory. The following three sections provide more detailed information about these losses.

Building-Related Losses

The building losses are broken into two categories: direct building losses and business interruption losses. The direct building losses are the estimated costs to repair or replace the damage caused to the building and its contents. The business interruption losses are the losses associated with inability to operate a business because of the damage sustained during the earthquake. Business interruption losses also include the temporary living expenses for those people displaced from their homes because of the earthquake.

The total building-related losses were 1,772.68 (millions of dollars); 13 % of the estimated losses were related to the business interruption of the region. By far, the largest loss was sustained by the residential occupancies which made up over 75 % of the total loss. Table 11 below provides a summary of the losses associated with the building damage.

Earthquake Losses by Loss Type ($ millions)



Earthquake Losses by Occupancy Type ($ millions)

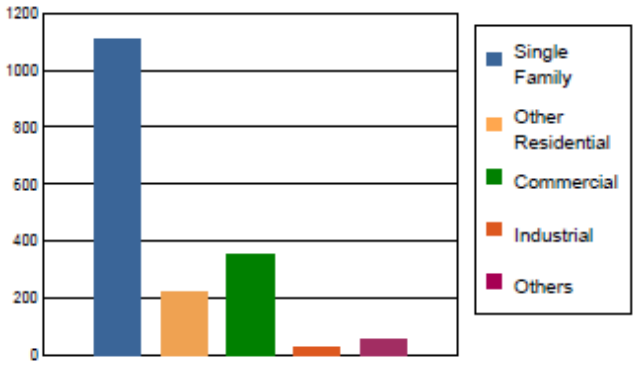


Table 11: Building-Related Economic Loss Estimates

(Millions of dollars)

Category	Area	Single Family	Other Residential	Commercial	Industrial	Others	Total
Income Losses							
	Wage	0.0000	1.4878	33.7369	0.5257	1.2732	37.0236
	Capital-Related	0.0000	0.6348	30.3480	0.3009	0.3860	31.6697
	Rental	18.8033	8.4719	16.5401	0.1566	0.6310	44.6029
	Relocation	68.3571	11.0591	23.9363	1.0218	5.9695	110.3438
	Subtotal	**87.1604**	**21.6536**	**104.5613**	**2.0050**	**8.2597**	**223.6400**
Capital Stock Losses							
	Structural	122.0324	27.4644	43.7616	3.9631	8.7495	205.9710
	Non_Structural	663.3415	140.4543	138.8491	14.6816	27.3220	984.6485
	Content	235.4067	33.2096	64.8364	8.7016	13.2932	355.4475
	Inventory	0.0000	0.0000	1.5343	1.2808	0.1549	2.9700
	Subtotal	**1020.7806**	**201.1283**	**248.9814**	**28.6271**	**49.5196**	**1549.0370**
	Total	**1107.94**	**222.78**	**353.54**	**30.63**	**57.78**	**1772.68**

Transportation and Utility Lifeline Losses

For the transportation and utility lifeline systems, Hazus computes the direct repair cost for each component only. There are no losses computed by Hazus for business interruption due to lifeline outages. Tables 12 & 13 provide a detailed breakdown in the expected lifeline losses.

Table 12: Transportation System Economic Losses
(Millions of dollars)

System	Component	Inventory Value	Economic Loss	Loss Ratio (%)
Highway	Segments	2364.6559	0.0000	0.00
	Bridges	98.2216	11.4822	11.69
	Tunnels	0.0000	0.0000	0.00
	Subtotal	**2462.8775**	**11.4822**	
Railways	Segments	132.3697	0.0000	0.00
	Bridges	40.0448	3.5553	8.88
	Tunnels	0.0000	0.0000	0.00
	Facilities	0.0000	0.0000	0.00
	Subtotal	**172.4145**	**3.5553**	
Light Rail	Segments	41.5904	0.0000	0.00
	Bridges	0.0000	0.0000	0.00
	Tunnels	0.0000	0.0000	0.00
	Facilities	0.0000	0.0000	0.00
	Subtotal	**41.5904**	**0.0000**	
Bus	Facilities	1.8306	0.7517	41.06
	Subtotal	**1.8306**	**0.7517**	
Ferry	Facilities	0.0000	0.0000	0.00
	Subtotal	**0.0000**	**0.0000**	
Port	Facilities	0.0000	0.0000	0.00
	Subtotal	**0.0000**	**0.0000**	
Airport	Facilities	14.4161	4.0880	28.36
	Runways	456.5705	0.0000	0.00
	Subtotal	**470.9866**	**4.0880**	
	Total	**3,149.70**	**19.88**	

Table 13: Utility System Economic Losses

(Millions of dollars)

System	Component	Inventory Value	Economic Loss	Loss Ratio (%)
Potable Water	Pipelines	0.0000	0.0000	0.00
	Facilities	0.0000	0.0000	0.00
	Distribution Lines	35.4311	3.7314	10.53
	Subtotal	**35.4311**	**3.7314**	
Waste Water	Pipelines	0.0000	0.0000	0.00
	Facilities	0.0000	0.0000	0.00
	Distribution Lines	21.2586	1.8744	8.82
	Subtotal	**21.2586**	**1.8744**	
Natural Gas	Pipelines	35.0997	0.0000	0.00
	Facilities	0.0000	0.0000	0.00
	Distribution Lines	14.1724	0.6421	4.53
	Subtotal	**49.2721**	**0.6421**	
Oil Systems	Pipelines	0.0000	0.0000	0.00
	Facilities	0.0000	0.0000	0.00
	Subtotal	**0.0000**	**0.0000**	
Electrical Power	Facilities	199.0800	30.0043	15.07
	Subtotal	**199.0800**	**30.0043**	
Communication	Facilities	0.0000	0.0000	0.00
	Subtotal	**0.0000**	**0.0000**	
	Total	**305.04**	**36.25**	

Appendix A: County Listing for the Region

Los Angeles,CA

Appendix B: Regional Population and Building Value Data

State	County Name	Population	Building Value (millions of dollars)		
			Residential	Non-Residential	Total
California					
	Los Angeles	160,533	13,172	1,305	14,478
Total Region		**160,533**	**13,172**	**1,305**	**14,478**

APPENDIX

D

PLANNING RESOURCES DIRECTORY

Master Resource Directory

The Resource Directory provides contact information for Local, Regional, State, and Federal programs that are currently involved in hazard mitigation activities. The City of Palmdale Hazard Mitigation Steering Committee may look to the organizations on the following pages for resources and technical assistance. The Resource Directory provides a foundation for potential partners in action item implementation.

The City of Palmdale Hazard Mitigation Steering Committee will continue to add contact information for organizations currently engaged in hazard mitigation activities. This section may also be used by various community members interested in hazard mitigation information and projects.

American Public Works Association			
Level: National	Hazard: Multi	http://www.apwa.net	
2345 Grand Boulevard		Suite 500	
Kansas City, MO 64108-2641		Ph: 816-472-6100	Fx: 816-472-1610
Notes: The American Public Works Association is an international educational and professional association of public agencies, private sector companies, and individuals dedicated to providing high quality public works goods and services.			
Antelope Valley Air Quality Management District (AQMD)			
Level: Regional	Hazard: Multi	www.avaqmd.gov	
43301 Division Street, Suite 206			
Lancaster, CA 93535		Ph: 661-723-8070	Fax:
Notes: AQMD is a regional government agency that seeks to achieve and maintain healthful air quality through a comprehensive program of research, regulations, enforcement, and communication. The AVAQMD District lies within the northern part of Los Angeles County. The District boundaries start on the south just outside of Acton, north to the Kern County line, east to the San Bernardino County line, and west to the Quail Lake area. The AVAQMD is located within the Mojave Desert air basin. An air basin is a geographical region to describe an area with a commonly shared air mass, since air pollution does not follow county, city, or political boundaries.			
Association of State Floodplain Managers			
Level: Federal	Hazard: Flood	www.floods.org	
575 D'Onofrio Drive, Suite 200			

Madison, WI 53719	Ph: 608-828-3000	Fax:
Notes: The Association of State Floodplain Managers is an organization of professionals involved in floodplain management, flood hazard mitigation, the National Flood Insurance Program, and flood preparedness, warning, and recovery.		

Building Seismic Safety Council (BSSC)			
Level: National	Hazard: Earthquake	www.bssconline.org	
1090 Vermont Ave., NW		Suite 700	
Washington, DC 20005		Ph: 202-289-7800	Fax: 202-289-109
Notes: The Building Seismic Safety Council (BSSC) develops and promotes building earthquake risk mitigation regulatory provisions for the nation.			

California Department of Transportation (Caltrans)			
Level: State	Hazard: Multi	http://www.dot.ca.gov/	
120 S. Spring Street			
Los Angeles, CA 90012		Ph: 213-897-3656	Fax:
Notes: CalTrans is responsible for the design, construction, maintenance, and operation of the California State Highway System, as well as that portion of the Interstate Highway System within the state's boundaries. Alone and in partnership with Amtrak, Caltrans is also involved in the support of intercity passenger rail service in California.			

California Resources Agency			
Level: State	Hazard: Multi	http://resources.ca.gov/	
1416 Ninth Street		Suite 1311	
Sacramento, CA 95814		Ph: 916-653-5656	Fax:
Notes: The California Resources Agency restores, protects, and manages the state's natural, historical, and cultural resources for current and future generations using solutions based on science, collaboration, and respect for all the communities and interests involved.			

California Division of Forestry (CDF)

Level: State	Hazard: Multi	http://www.fire.ca.gov/php/index.php
1234 East Shaw Avenue		
Fresno CA 93710	Ph: 559-223-3714	Fax:
Notes: The California Department of Forestry and Fire Protection protect over 31 million acres of California's privately-owned wildlands. CDF emphasizes the management and protection of California's natural resources.		

California Division of Mines and Geology (DMG)			
Level: State	Hazard: Multi	www.consrv.ca.gov/cgs/index.htm	
801 K Street		MS 12-30	
Sacramento, CA 95814		Ph: 916-445-1825	Fax: 916-445-5718
Notes: The California Geological Survey develops and disseminates technical information and advice on California's geology, geologic hazards, and mineral resources.			

California Environmental Resources Evaluation System (CERES)		
Level: State	Hazard: Multi	http://ceres.ca.gov/
1416 9th Street	Suite 1311	
Sacramento, Ca. 95814	Ph: 916-651-0770	Fax:
Notes: CERES is an excellent website for access to environmental information and websites.		

California Department of Water Resources (DWR)			
Level: State	Hazard: Flood	http://wwwdwr.water.ca.gov	
1416 9th Street			
Sacramento, CA 95814		Ph: 916-653-5791	Fax:
Notes: The Department of Water Resources manages the water resources of California in cooperation with other agencies, to benefit the State's people, and to protect, restore, and enhance the natural and human environments.			

California Department of Conservation

Level: State	Hazard: Multi	www.consrv.ca.gov	
801 K Street, MS 24-01			
Sacramento, CA 95814		Ph: 916-322-1080	Fax: 916-445-0732
Notes: The Department of Conservation provides services and information that promote environmental health, economic vitality, informed land-use decisions, and sound management of our state's natural resources.			
California Land Use Planning Information Network			
Level: State	Hazard: Multi	www.calpin.ca.gov	
1416 9th Street		Suite 1311	
Sacramento, CA 95814		Ph: 916-651-1228	Fax:
Notes: The Governor's Office of Land Use Planning Information Network publishes basic information on local planning agencies, known as the California Planners' Book of Lists. This local planning information is available on-line with new search capabilities and up-to-the- minute updates.			
California Natural Resources Agency, Department of Water Resources, Division of Safety of Dams (DSOD)			
Level: State	Hazard: Flood	http://www.water.ca.gov	
2720 Gateway Oaks Drive		Suite 300	
Sacramento, CA 94236		916-296-0187	
EPA, Region 9			
Level: Regional	Hazard: Multi	http://www.epa.gov/region09	
75 Hawthorne Street			
San Francisco, CA 94105		Ph: 415-947-8000	Fax: 415-947-3553
Notes: The mission of the U.S. Environmental Protection Agency is to protect human health and to safeguard the natural environment through the themes of air and global climate change, water, land, communities and ecosystems, and compliance and environmental stewardship.			
Federal Emergency Management Agency, Region IX			
Level: Federal	Hazard: Multi	www.fema.gov	
1111 Broadway		Suite 1200	

Oakland, CA 94607	Ph: 510-627-7100	Fax: 510-627-7112
Notes: The Federal Emergency Management Agency is tasked with responding to, planning for, recovering from, and mitigating against disasters.		

Federal Emergency Management Agency, Mitigation Division		
Level: Federal	Hazard: Multi	www.fema.gov/fima/planhowto.shtm
500 C Street, S.W.		
Washington, D.C. 20472	Ph: 202-566-1600	Fax:
Notes: The Mitigation Division manages the National Flood Insurance Program and oversees FEMA's mitigation programs. It has of a number of programs and activities of which provide citizens Protection, with flood insurance; Prevention, with mitigation measures and Partnerships, with communities throughout the country.		

Floodplain Management Association		
Level: Federal	Hazard: Flood	www.floodplain.org
P.O. Box 712080		
Santee, CA 92072	Ph: 916-231-2134	Fax:
Notes: The Floodplain Management Association is a nonprofit educational association. It was established in 1990 to promote the reduction of flood losses and to encourage the protection and enhancement of natural floodplain values. Members include representatives of federal, state, and local government agencies as well as private firms.		

Governor's Office of Emergency Services (OES)		
Level: State	Hazard: Multi	www.caloes.ca.gov
3650 Schriever Ave		
Mather, CA 95655	Ph: 916-854-8510	Fax: 916 845- 8511
Notes: The Governor's Office of Emergency Services coordinates overall state agency response to major disasters in support of local government. The office is responsible for assuring the state's readiness to respond to and recover from natural, manmade, and war-caused emergencies, and for assisting local governments in their emergency preparedness, response, and recovery efforts.		

Greater Antelope Valley Economic Alliance	
Level: Regional	Hazard: Multi

1028 West Avenue L-12, Suite 101		
Lancaster, CA 93534	Ph: 661-945-2741	Fax: 661-945-7711
Notes: The Greater Antelope Valley Economic Alliance, (GA VEA) is a 501 (c)(6) nonprofit organization with a 501(c)(3) affiliated organization with the Antelope Valley Economic Research and Education Foundation. GA VEA is a public-private partnership of business, local governments, education, non-profit organizations, and health care organizations that was founded in 1999 with the goal of attracting good paying jobs to the Antelope Valley in order to build a sustainable economy.		
Landslide Hazards Program, USGS		
Level: Federal	Hazard: Landslide	http://landslides.usgs.gov/index.html
12201 Sunrise Valley Drive		MS 906
Reston, VA 20192	Ph: 703-648- 4460	Fax:
Notes: The NLIC website provides good information on the programs and resources regarding landslides. The page includes information on the National Landslide Hazards Program Information Center, a bibliography, publications, and current projects. USGS scientists are working to reduce long-term losses and casualties from landslide hazards through better understanding of the causes and mechanisms of ground failure both nationally and worldwide.		
Los Angeles County Economic Development Corporation		
Level: Regional	Hazard: Multi	www.laedc.org
444 S. Flower Street		37th Floor
Los Angeles, CA 90071	Ph: 213-622-4300	Fax: 213- 623-0281
Notes: The LAEDC is a private, non-profit 501 (c) 3 organization established in 1981 with the mission to attract, retain, and grow businesses and jobs in the Los Angeles region. The LAEDC is widely relied upon for its Southern California Economic Forecasts and Industry Trend Reports. Lead by the renowned Jack Kyser (Sr. Vice President, Chief Economist) his team of researchers produces numerous publications to help business, media, and government navigate the LA region's diverse economy.		
Los Angeles County Public Works Department		
Level: County	Hazard: Multi	http://ladpw.org
900 S. Fremont Ave.		
Alhambra, CA 91803	Ph: 626-458-5100	Fax:

Notes: The Los Angeles County Department of Public Works protects property and promotes public safety through Flood Control, Water Conservation, Road Maintenance, Bridges, Buses and Bicycle Trails, Building and Safety, Land Development, Waterworks, Sewers, Engineering, Capital Projects and Airports		
National Wildland/Urban Interface Council		
Level: Federal	Hazard: Wildfire	
1418 Washburn Street		
Missoula, MT 59601	Ph: 406-531-8264	Fax:
Notes: Firewise maintains a Website designed for people who live in wildfire- prone areas, but it also can be of use to local planners and decision makers. The site offers online wildfire protection information and checklists, as well as listings of other publications, videos, and conferences.		
National Resources Conservation Service		
Level: Federal	Hazard: Multi	http://www.nrcs.usda.gov/
14th and Independence Ave., SW	Room 5105-A	
Washington, DC 20250	Ph: 202-720-7246	Fax: 202-720-7690
Notes: NRCS assists owners of America's private land with conserving their soil, water, and other natural resources, by delivering technical assistance based on sound science and suited to a customer's specific needs. Cost shares and financial incentives are available in some cases.		
National Interagency Fire Center (NIFC)		
Level: Federal	Hazard: Wildfire	www.nifc.gov
3833 S. Development Ave.		
Boise, Idaho 83705-5354	Ph: 208-387- 5512	Fax:
Notes: The NIFC in Boise, Idaho is the nation’s support center for wildland firefighting. Seven federal agencies work together to coordinate and support wildland fire and disaster operations.		
National Fire Protection Association (NFPA)		
Level: National	Hazard: Wildfire	http://www.nfpa.org/catalog/home/index.asp
1 Batterymarch Park		
Quincy, MA 02169-7471	Ph: 617-770-3000	Fx: 617 770-0700

Notes: The mission of the international nonprofit NFPA is to reduce the worldwide burden of fire and other hazards on the quality of life by providing and advocating scientifically-based consensus codes and standards, research, training and education		
National Floodplain Insurance Program (NFIP)		
Level: Federal	Hazard: Flood	www.fema.gov/nfip/
PO Box 29138		
Shawnee Mission, KS 66201	Ph: 800-638-6620	Fx: 800-742-3148
Notes: The Mitigation Division manages the National Flood Insurance Program and oversees FEMA's mitigation programs. It has of a number of programs and activities of which provide citizens Protection, with flood insurance; Prevention, with mitigation measures and Partnerships, with communities throughout the country.		
National Oceanic /Atmospheric Administration		
Level: Federal	Hazard: Multi	www.noaa.gov
1401 Constitution Avenue, NW	Rm 5128	
Washington, DC 20230	Ph: 301-713-1208	Fax
Notes: NOAA's historical role has been to predict environmental changes, protect life and property, provide decision makers with reliable scientific information, and foster global environmental stewardship.		
National Weather Service, Office of Hydrologic Development		
Level: Federal	Hazard: Flood	http://www.nws.noaa.gov/
1325 East West Highway	SSMC2	
Silver Spring, MD 20910	Ph: 301-713-1658	Fx: 301-713-0963
Notes: The Office of Hydrologic Development (OHD) enhances National Weather Service products by: infusing new hydrologic science, developing hydrologic techniques for operational use, managing hydrologic development by NWS field office, providing advanced hydrologic products to meet needs identified by NWS customers		
National Weather Service		
Level: Federal	Hazard: Multi	http://www.nws.noaa.gov/
520 North Elevar Street		

Oxnard, CA 93030	Ph: 805-988- 6615	Fax:
Notes: The National Weather Service is responsible for providing weather service to the nation. It is charged with the responsibility of observing and reporting the weather and with issuing forecasts and warnings of weather and floods in the interest of national safety and economy. Briefly, the priorities for service to the nation are: 1. protection of life, 2. protection of property, and 3. promotion of the nation's welfare and economy.		
Palmdale Water District		
Level: Local	Hazard: Multi	https://www.palmdalewater.org/
2029 East Avenue Q		
Palmdale, CA 93534	Ph: 661-456-1023	
San Gabriel Valley Economic Partnership		
Level: Regional	Hazard: Multi	www.valleynet.org
4900 Rivergrade Road	Suite B130	
Baldwin Park, CA 91706	Ph: 626-856-3400	Fax: 626-856-5115
Notes: The San Gabriel Valley Economic Partnership is a non-profit corporation representing both public and private sectors. The Partnership is the exclusive source for San Gabriel Valley-specific information, expertise, consulting, products, services, and events. It is the single organization in the Valley with the mission to sustain and build the regional economy for the mutual benefit of all thirty cities, chambers of commerce, academic institutions, businesses, and residents.		
Sanitation Districts of Los Angeles County		
Level: County	Hazard: Flood	http://www.lacsd.ora/
1955 Workman Mill Road		
Whittier, CA 90607	Ph:562-699-7411 x2301	Fax:
Notes: The Sanitation Districts provide wastewater and solid waste management for over half the population of Los Angeles County and turn waste products into resources such as reclaimed water, energy, and recyclable materials.		
Santa Monica Mountains Conservancy		
Level: Regional	Hazard: Multi	http://smmc.ca.gov/
600 N. San Fernando Rd		

Los Angeles, CA 90065	Ph: 323-221-8900	Fax:
Notes: The Santa Monica Mountains Conservancy helps to preserve over 55,000 acres of parkland in both wilderness and urban settings and has improved more than 114 public recreational facilities throughout Southern California.		
South Bay Economic Development Partnership		
Level: Regional	Hazard: Multi	
3460 Torrance Blvd		
Torrance, CA 90503	Ph: 310-792-0323	Fax:
Notes: The South Bay Economic Development Partnership is a collaboration of business, labor, education, and government. Its primary goal is to plan and implement an economic development and marketing strategy designed to retain and create jobs and stimulate economic growth in the South Bay of Los Angeles County.		
Southern California Earthquake Center (SCEC)		
Level: Regional	Hazard: Earthquake	www.scec.org
3651 Trousdale Parkway		Suite 169
Los Angeles, CA 90089-0742	Ph: 213-740-5843	Fax: 213/740-0011
Notes: The Southern California Earthquake Center (SCEC) gathers new information about earthquakes in Southern California, integrates this information into a comprehensive and predictive understanding of earthquake phenomena, and communicates this understanding to end-users and the general public in order to increase earthquake awareness, reduce economic losses, and save lives.		
Southern California Edison		
Level: Regional	Hazard: Multi	https://www.sce.com/
42060 10th Street		
Lancaster, CA 93534	661-726-5612	
Southern California Gas		
Level: Regional	Hazard: Multi	https://www.socalgas.com/
9400 Oakdale Avenue		

Chatsworth, CA 91311 818-701-3335			
Southern California Association of Governments (SCAG)			
Level: Regional	Hazard: Multi	www.scag.ca.gov	
818 W. Seventh Street		12th Floor	
Los Angeles, CA 90017		Ph: 213-236-1800	Fax: 213-236-1825
Notes: The Southern California Association of Governments functions as the Metropolitan Planning Organization for six counties: Los Angeles, Orange, San Bernardino, Riverside, Ventura, and Imperial. As the designated Metropolitan Planning Organization, the Association of Governments is mandated by the federal government to research and draw up plans for transportation, growth management, hazardous waste management, and air quality.			
State Fire Marshal (SFM)			
Level: State	Hazard: Wildfire	http://osfm.fire.ca.gov	
1131 "S" Street			
Sacramento, CA 95814		Ph: 916-445-8200	Fax: 916-445-8509
Notes: The Office of the State Fire Marshal (SFM) supports the mission of the California Department of Forestry and Fire Protection (CDF) by focusing on fire prevention. SFM regulates buildings in which people live, controls substances which may, cause injuries, death, and destruction by fire; provides statewide direction for fire prevention within wildland areas; regulates hazardous liquid pipelines; reviews regulations and building standards; and trains and educates in fire protection methods and responsibilities.			
United States Geological Survey			
Level: Federal	Hazard: Multi	http://www.usgs.gov/	
345 Middlefield Road			
Menlo Park, CA 94025		Ph: 650-853-8300	Fax:
Notes: The USGS provides reliable scientific information to describe and understand the Earth; minimize loss of life and property from natural disasters; manage water, biological, energy, and mineral resources; and enhance and protect our quality of life.			
US Army Corps of Engineers			
Level: Federal	Hazard: Multi	http://www.usace.army.mil	

915 Wilshire Blvd.			
Los Angeles CA 90017		Ph: 213-452-333	Fax:
Notes: The United States Army Corps of Engineers work in engineering and environmental matters. A workforce of biologists, engineers, geologists, hydrologists, natural resource managers and other professionals provide engineering services to the nation including planning, designing, building, and operating water resources and other civil works projects.			
USDA Forest Service			
Level: Federal	Hazard: Wildfire	http://www.fs.fed.us	
1400 Independence Ave. SW			
Washington, D.C. 20250-0002		Ph: 202-205-8333	Fax:
Notes: The Forest Service is an agency of the U.S. Department of Agriculture. The Forest Service manages public lands in national forests and grasslands.			
USGS Water Resources			
Level: Federal	Hazard: Multi	www.water.usgs.gov	
6000 J Street		Placer Hall	
Sacramento, CA 95819-6129		Ph: 916-278-3100	Fax:
Notes: The USGS Water Resources mission is to provide water information that benefits the Nation's citizens: publications, data, maps, and applications software.			
Western States Seismic Policy Council (WSSPC)			
Level: Regional	Hazard: Earthquake	www.wsspc.org	
801 K Street		Suite 1236	
Sacramento, CA 95814		Ph: 916-444-6816	Fax: 916-444-8077
Notes: WSSPC is a regional earthquake consortium funded mainly by FEMA. Its website is a great resource, with information clearly categorized - from policy to engineering to education.			
Westside Economic Collaborative			
Level: Regional	Hazard: Multi		

10736 Jefferson Blvd		
Culver City, CA 90230	Ph: 231-952-9373	Fax:
Notes: The Westside Economic Development Collaborative is the first Westside regional economic development corporation. The Westside EDC functions as an information gatherer and resource center, as well as a forum, through bringing business, government, and residents together to address issues affecting the region: Economic Diversity, Transportation, Housing, Workforce Training and Retraining, Lifelong Learning, Tourism, and Embracing Diversity.		

APPENDIX

E

FEDERAL ACRONYMS

Federal Acronyms

AASHTO	American Association of State Highway and Transportation Officials
ATC	Applied Technology Council b/ca benefit/cost analysis
BFE	Base Flood Elevation
BLM	Bureau of Land Management
BSSC	Building Seismic Safety Council
CDBG	Community Development Block Grant
CFR	Code of Federal Regulations CRS Community Rating System
EDA	Economic Development Administration EPA Environmental Protection Agency ER Emergency Relief
EWP	Emergency Watershed Protection (NRCS Program)
FAS	Federal Aid System FEMA Federal Emergency Management Agency FIRM Flood Insurance Rate Map
FMA	Flood Mitigation Assistance (FEMA Program) FTE Full Time Equivalent GIS Geographic Information System
GNS	Institute of Geological and Nuclear Sciences (International) GSA General Services Administration
HAZUS	Hazards U.S.
HMGP	Hazard Mitigation Grant Program
HMST	Hazard Mitigation Survey Team HUD Housing and Urban Development (United States, Department of)
IBHS	Institute for Business and Home Safety
ICC	Increased Cost of Compliance
IHMT	Interagency Hazard Mitigation Team
NCDC	National Climate Data Center
NFIP	National Flood Insurance Program
NFPA	National Fire Protection Association
NHMP	Natural Hazard Mitigation Plan (also known as "409 Plan") NIBS National Institute of Building Sciences
NIFC	National Interagency Fire Center
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration NPS National Park Service
NRCS	Natural Resources Conservation Service
NWS	National Weather Service SBA Small Business Administration
SEAO	Structural Engineers Association of Oregon
SHMO	State Hazard Mitigation Officer
TOR	Transfer of Development Rights
UGB	Urban Growth Boundary
URM	Unreinforced Masonry
SACE	United States Army Corps of Engineers
SBR	United States Bureau of Reclamation
SDA	United States Department of Agriculture

SFA	United States Fire Administration
USFS	United States Forest Service
USGS	United States Geological Survey
WSSPC	Western States Seismic Policy Council

California Acronyms

A&W	Alert and Warning
AA	Administering Areas
AAR	After Action Report
ARC	American Red Cross
ARP	Accidental Risk Prevention
ATC20	Applied Technology Council 20
ATC21	Applied Technology Council 21
BCP	Budget Change Proposal
BSA	California Bureau of State Audits
CAER	Community Awareness & Emergency response
CalARP	California Accidental Release Prevention
CalBO	California Building Officials
CalEPA	California Environmental Protection Agency
CalREP	California Radiological Emergency Plan
CALSTARS	California State Accounting Reporting System
CalTRANS	California Department of Transportation
CBO	Community Based Organization
CD	Civil Defense
CDF	California Department of Forestry and Fire Protection
CDMG	California Division of Mines and Geology
CEC	California Energy Commission
CEPEC	California Earthquake Prediction Evaluation Council
CESRS	California Emergency Services Radio System
CHIP	California Hazardous Identification Program
CHMIRS	California Hazardous Materials Incident Reporting System
CHP	California Highway Patrol
CLETS	California Law Enforcement Telecommunications System
CSTI	California Specialized Training Institute
CUEA	California Utilities Emergency Association
CUPA	Certified Unified Program Agency
DAD	Disaster Assistance Division (of the state Office of Emergency Svcs)
DFO	Disaster Field Office
DGS	California Department of General Services
DHSRHB	California Department of Health Services, Radiological Health Branch
DO	Duty Officer
DOC	Department Operations Center
DOE	Department of Energy

DOF	California Department of Finance
DOJ	California Department of Justice
DPA	California Department of Personnel Administration
DPIG	Disaster Preparedness Improvement Grant
DR	Disaster Response
DSA	Division of the State Architect
DSR	Damage Survey Report
DSW	Disaster Service Worker
DWR	California Department of Water Resources
EAS	Emergency Alerting System
EDIS	Emergency Digital Information System
EERI	Earthquake Engineering Research Institute
IEMA	Emergency Management Assistance
EMI	Emergency Management Institute
EMMA	Emergency Managers Mutual Aid
EMS	Emergency Medical Services
EOC	Emergency Operations Center
EOP	Emergency Operations Plan
EPA	Environmental Protection Agency (U.S.)
EPEDAT	Early Post Earthquake Damage Assessment Tool
EPI	Emergency Public Information
EPIC	Emergency Public Information Counsel
ESC	Emergency Services Coordinator
FAY	Federal Award Year
FDAA	Federal Disaster Assistance Administration
FEAT	Governor's Flood Emergency Action Team
FEMA	Federal Emergency Management Agency
FFY	Federal Fiscal Year
FIR	Final Inspection Reports
FIRESCOPE	Firefighting Resources of So. Calif. Organized for Potential Emergencies
FMA	Flood Management Assistance
FSR	Feasibility Study Report
FY	Fiscal Year
GIS	Geographical Information System
HAZMAT	Hazardous Materials
HAZMIT	Hazardous Mitigation
HAZUS	Hazards United States (an earthquake damage assessment prediction tool)
HAD	Housing and Community Development
HEICS	Hospital Emergency Incident Command System
HEPG	Hospital Emergency Planning Guidance
HIA	Hazard Identification and Analysis Unit
HMEP	Hazardous Materials Emergency Preparedness
HMGP	Hazard Mitigation Grant Program

IDE	Initial Damage Estimate
IA	Individual Assistance
IFG	Individual & Family Grant (program)
IRG	Incident Response Geographic Information System
IPA	Information and Public Affairs (of state Office of Emergency Services)
LAN	Local Area Network
LEMMA	Law Enforcement Master Mutual Aid
LEPC	Local Emergency Planning Committee
MARAC	Mutual Aid Regional Advisory Council
MOU	Memorandum of Understanding
NBC	Nuclear, Biological, Chemical
NEMA	National Emergency Management Agency
NEMIS	National Emergency Management Information Assistance Program
NFIP	National Flood Insurance Program
NOAA	National Oceanic and Atmospheric Association
NPP	Nuclear Power Plant
NSF	National Science Foundation
NWS	National Weather Service
OA	Operational Area
OASI	Operational Area Satellite Information System
OCC	Operations Coordination Center
OCD	Office of Civil Defense
OEP	Office of Emergency Planning
OES	California Governor's Office of Emergency Services
OSHPD	Office of Statewide Health Planning and Development
OSPR	Oil Spill Prevention and Response
PA	Public Assistance
PC	Personal Computer
PDA	Preliminary Damage Assessment
PIO	Public Information Office
POST	Police Officer Standards and Training
PPA/CA	Performance Partnership Agreement/Cooperative Agreement (FEMA)
PSA	Public Service Announcement
PTAB	Planning and Technological Assistance Branch
PTR	Project Time Report
RA	Regional Administrator (OES)
RADEF	Radiological Defense Program
RAMP	Regional Assessment of Mitigation Priorities
RAPID	Railroad Accident Prevention & Immediate Deployment
RDO	Radiological Defense Officer
RDMHC	Regional Disaster Medical Health Coordinator
REOC	Regional Emergency Operations Center
REPI	Reserve Emergency Public Information
RES	Regional Emergency Staff

RIMS	Response Information Management System
RMP	Risk Management Plan
RPU	Radiological Preparedness Unit (OES)
RRT	Regional Response Team
SAM	State Administrative Manual
SARA	Superfund Amendments & Reauthorization Act
SAVP	Safety Assessment Volunteer Program
SBA	Small Business Administration
SCO	California State Controller's Office
SEMS	Standardized Emergency Management System
SEPIC	State Emergency Public Information Committee
SLA	State and Local Assistance
SONGS	San Onofre Nuclear Generating Station
SOP	Standard Operating Procedure
SWEP	Statewide Emergency Planning Committee
TEC	Travel Expense Claim
TRU	Transuranic
TTT	Train the Trainer
UPA	Unified Program Account
UPS	Uninterrupted Power Source
USAR	Urban Search and Rescue
USGS	United States Geological Survey
WC	California State Warning Center
WAN	Wide Area Network
WIPP	Waste Isolation Pilot Project

APPENDIX

F

GLOSSARY

Acceleration	The rate of change of velocity with respect to time. Acceleration due to gravity at the earth's surface is 9.8 meters per second squared. That means that every second that something falls toward the surface of earth its velocity increases by 9.8 meters per second.
Asset	Any manmade or natural feature that has value, including, but not limited to people; buildings; infrastructure like bridges, roads, and sewer and water systems; lifelines like electricity and communication resources; or environmental, cultural, or recreational features like parks, dunes, wetlands, or landmarks.
Base Flood	Flood that has a1 percent probability of being equaled or exceeded in any given year. Also known as the 100-year flood.
Base Flood Elevation (BFE)	Elevation of the base flood in relation to a specified datum, such as the National Geodetic Vertical Datum of 1929. The Base Flood Elevation is used as the standard for the National Flood Insurance Program.
Bedrock	The solid rock that underlies loose material, such as soil, sand, clay, or gravel.
Building	A structure that is walled and roofed, principally above ground and permanently affixed to a site. The term includes a manufactured home on a permanent foundation on which the wheels and axles carry no weight.
Coastal High Hazard Area	Area, usually along an open coast, bay, or inlet that is subject to inundation by storm surge and in some instances, wave action caused by storms or seismic sources.
Coastal Zones	The area along the shore where the ocean meets the land as the surface of the land rises above the ocean. This land/water interface includes barrier islands, estuaries, beaches, coastal wetlands, and land areas having direct drainage to the ocean.

Community Rating System (CRS)	An NFIP program that provides incentives for NFIP communities to complete activities that reduce flood hazard risk. When the community completes specified activities, the insurance premiums of policyholders in these communities are reduced.
Computer-Aided Design and Drafting (CADD)	A computerized system enabling quick and accurate electronic 2-D and 3-D drawings, topographic mapping, site plans, and profile/cross section drawings.
Contour	A line of equal ground elevation on a topographic (contour) map.
Critical Facility	Facilities that are critical to the health and welfare of the population and that are especially important following hazard events. Critical facilities include, but are not limited to, shelters, police and fire stations, and hospitals.

Debris	The scattered remains of assets broken or destroyed in a hazard event. Debris caused by a wind or water hazard event can cause additional damage to other assets.
Digitize	To convert electronically points, lines, and area boundaries shown on maps into x, y coordinates (e.g., latitude and longitude, universal transverse mercator (UTM), or table coordinates) for use in computer applications.
Displacement Time	The average time (in days) which the building's occupants typically must operate from a temporary location while repairs are made to the original building due to damages resulting from a hazard event.
Duration	How long a hazard event lasts.
Earthquake	A sudden motion or trembling that is caused by a release of strain accumulated within or along the edge of earth's tectonic plates.
	Wearing away of the land surface by detachment and movement of soil and rock fragments, during a flood or storm

Erosion	or over a period of years, through the action of wind, water, or other geologic processes.
Erosion Hazard Area	Area anticipated being lost to shoreline retreat over a given period of time. The projected inland extent of the area is measured by multiplying the average annual long-term recession rate by the number of years desired.
Essential Facility	Elements that are important to ensure a full recovery of a community or state following a hazard event. These would include: government functions, major employers, banks, schools, and certain commercial establishments, such as grocery stores, hardware stores, and gas stations.
Extent	The size of an area affected by a hazard or hazard event.
Extratropical Cyclone	Cyclonic storm events like Nor'easters and sever winter low-pressure systems. Both West and East coasts can experience these non-tropical storms that produce gale-force winds and precipitation in the form of heavy rain or snow. These cyclonic storms, commonly called Nor'easters on the East Coast because of the direction of the storm winds, can last for several days and can be very large – 1,000-mile-wide storms are not uncommon.
Fault	A fracture in the continuity of a rock formation caused by a shifting or dislodging of the earth's crust, in which adjacent surfaces are differentially displaced parallel to the plane of fracture.
Federal Emergency Management Agency (FEMA)	Independent agency created in 1978 to provide a single point of accountability for all Federal activities related to disaster mitigation and emergency preparedness, response, and recovery.

Fire Potential Index (FPI)	Developed by USGS and USFS to assess and map fire hazard potential over broad areas. Based on such geographic information, national policy makers and on-the-ground fire managers prevention activities in the defined area to reduce the risk of managed and wildfire ignition and spread. Prediction of fire hazard shortens the time between fire

	ignition and initial attack by enabling fire managers to pre-allocate and stage suppression forces to high fire risk areas.
Flash Flood	A flood event occurring where water levels rise water levels rise with little or no warning at an extremely fast rate.
Flood	A general and temporary condition of partial or complete inundation of normally dry land areas from (1) the overflow of inland or tidal waters, (2) the unusual and rapid accumulation or runoff of surface waters from any source, or (3) mudflows or the sudden collapse of shoreline land.
Flood Depth	Height of the flood water surface above the ground surface.
Flood Elevation	Elevation of the water surface above an established datum, e.g. National Geodetic Vertical Datum of 1929, North American Vertical Datum of 1988, or Mean Sea Level.
Flood Hazard Area	The area shown to be inundated by a flood of a given magnitude on a map.
Flood Insurance Rate Map (FIRM)	Map of a community, prepared by the Federal Emergency Management Agency that shows both the special flood hazard areas and the risk premium zones applicable to the community.
Flood Insurance Study (FIS)	A study that provides an examination, evaluation, and determination of flood hazards and, if appropriate, corresponding water surface elevations in a community or communities.
Floodplain	Any land area, including watercourse, susceptible to partial or complete inundation by water from any source.
Frequency	A measure of how often events of a particular magnitude is expected to occur. Frequency describes how often a hazard of a specific magnitude, duration, and/or extent typically occurs, on average. Statistically, a hazard with a 100-year recurrence interval is expected to occur once every 100 years on average and would have a 1 percent chance – its probability – of

	happening every year. The reliability of this information varies depending on the kind of hazard being considered.
Fujita Scale of Tornado Intensity	Rates tornadoes with numeric values from F0 to F5 based on tornado wind speed and damage sustained. An F0 indicates minimal damage, such as broken tree limbs or signs, while an F5 indicates severe damage sustained.

Functional Downtime	The average time (in days) during which a function (business or service) is unable to provide its services due to a hazard event.
Geographic Area Impacted	The physical area in which the effects of the hazard are experienced.
Geographic Information Systems (GIS)	A computer software application that relates physical features on the earth to a database to be used for mapping and analysis.
Ground Motion	The vibration or shaking of the ground during an earthquake. When a fault ruptures, seismic waves radiate, causing the ground to vibrate. The severity of the vibration increases with the amount of energy released and decreases with distance from the causative fault or epicenter, but soft soils can further amplify ground motions.
Hazard	A source of potential danger or adverse condition. Hazards in this how-to series will include naturally occurring events, such as floods, earthquakes, tornadoes, tsunami, coastal storms, landslides, and wildfires that strike populated areas. A natural event is a hazard when it has the potential to harm people or property.
Hazard Event	A specific occurrence of a particular type of hazard.
Hazard Identification	The process of identifying hazards that threaten an area.
Hazard Mitigation	Sustained actions taken to reduce or eliminate long-term risk from hazards and their effects.

Hazard Profile	A description of the physical characteristics of hazards and a determination of various descriptors including magnitude, duration, frequency, probability, and extent. In most cases, a community can most easily use these descriptors when they are recorded and displayed as maps.
HAZUS (Hazards U.S.)	A GIS-based nationally standardized earthquake loss estimation tool developed by FEMA.
Hurricane	An intense tropical cyclone, formed in the atmosphere over warm ocean areas, in which wind speeds reach 74-miles-per-hour or more and blow in a large spiral around a relatively calm center or "eye." Hurricanes develop over the north Atlantic Ocean, northeast Pacific Ocean, or the south Pacific Ocean east of 160°E longitude. Hurricane circulation is counterclockwise in the Northern Hemisphere and clockwise in the Southern Hemisphere.
Hydrology	The science of dealing with the waters of the earth. A flood discharge is developed by a hydrologic study.

Infrastructure	Refers to the public services of a community that have a direct impact on the quality of life. Infrastructure includes communication technology such as phone lines or Internet access, vital services such as public water supplies and sewer treatment facilities, and includes an area's transportation system such as airports, heliports; highways, bridges, tunnels, roadbeds, overpasses, railways, bridges, rail yards, depots; and waterways, canals, locks, seaports, ferries, harbors, dry-docks, piers and regional dams.
Intensity	A measure of the effects of a hazard event at a particular place.
Landslide	Downward movement of a slope and materials under the force of gravity.
	Develop on gentle slopes and entail the sidelong movement of large masses of soil as an underlying layer liquefies in a seismic event. The phenomenon that occurs when ground shaking causes loose soils to lose

Lateral Spreads	strength and act like viscous fluid. Liquefaction causes two types of ground failure: lateral spread and loss of bearing strength.
Liquefaction	Results when the soil supporting structures liquefies. This can cause structures to tip and topple
Lowest Floor	Under the NFIP, the lowest floor of the lowest enclosed area (including basement) of a structure.
Magnitude	A measure of the strength of a hazard event. The magnitude (also referred to as severity) of a given hazard event is usually determined using technical measures specific to the hazard.
Mitigation Plan	A systematic evaluation of the nature and extent of vulnerability to the effects of natural hazards typically present in the state and includes a description of actions to minimize future vulnerability to hazards.
National Flood Insurance Program (NFIP)	Federal program created by Congress in 1968 that makes flood insurance available in communities that enact minimum floodplain management regulations in 44 CFR §60.3.
National Geodetic Vertical Datum of 1929 (NGVD)	Datum established in 1929 and used in the NFIP as a basis for measuring flood, ground, and structural elevations, previously referred to as Sea Level Datum or Mean Sea Level. The Base Flood Elevations shown on most of the Flood Insurance Rate Maps issued by the Federal Emergency Management Agency are referenced to NGVD.
National Weather Service (NWS)	Prepares and issues flood, severe weather, and coastal storm warnings and can provide technical assistance to Federal and state entities preparing weather and flood warning plans.
Nor'easter	An extra-tropical cyclone producing gale-force winds and precipitation in the form of heavy snow or rain.

Outflow	Follows water inundation creating strong currents that rip at structures and pound them with debris and erode beaches and coastal structures.

Planimetric	Describes maps that indicate only man-made features like buildings.
Planning	The act or process of making or carrying out plans; the establishment of goals, policies, and procedures for a social or economic unit
Probability	A statistical measure of the likelihood that a hazard event will occur.
Recurrence Interval	The time between hazard events of similar size in a given location. It is based on the probability that the given event will be equaled or exceeded in any given year.
Repetitive Loss Property	A property that is currently insured for which two or more National Flood Insurance Program losses (occurring more than ten days apart) of at least $1000 each have been paid within any 10-year period since 1978.
Replacement Value	The cost of rebuilding a structure. This is usually expressed in terms of cost per square foot and reflects the present-day cost of labor and materials to construct a building of a particular size, type, and quality.
Richter Scale	A numerical scale of earthquake magnitude devised by seismologist C.F. Richter in 1935.
Risk	The estimated impact that a hazard would have on people, services, facilities, and structures in a community; the likelihood of a hazard event resulting in an adverse condition that causes injury or damage. Risk is often expressed in relative terms such as a high, moderate, or low likelihood of sustaining damage above a particular threshold due to a specific type of hazard event. It also can be expressed in terms of potential monetary losses associated with the intensity of the hazard.
Riverine	Of or produced by a river.
Scale	A proportion used in determining a dimensional relationship; the ratio of the distance between two points on a map and the actual distance between the two points on the earth's surface.
Scarp	A steep slope.

Scour	Removal of soil or fill material by the flow of flood waters. The term is frequently used to describe storm-induced, localized conical erosion around pilings and other foundation supports where the obstruction of flow increases turbulence.
Seismicity	Describes the likelihood of an area being subject to earthquakes.
Special Flood Hazard Area (SFHA)	An area within a floodplain having a 1 percent or greater chance of flood occurrence in any given year (100-year floodplain); represented on Flood Insurance Rate Maps by darkly shaded areas with zone designations that include the letter A or V.
Stafford Act	The Robert T. Stafford Disaster Relief and Emergency Assistance Act, PL 100-107 was signed into law November 23, 1988 and amended the Disaster Relief Act of 1974, PL 93-288. The Stafford Act is the statutory authority for most Federal disaster response activities, especially as they pertain to FEMA and its programs.
State Hazard Mitigation Officer (SHMO)	The representative of state government who is the primary point of contact with FEMA, other state and Federal agencies, and local units of government in the planning and implementation of pre- and post-disaster mitigation activities.
Storm Surge	Rise in the water surface above normal water level on the open coast due to the action of wind stress and atmospheric pressure on the water surface.
Structure	Something constructed. (See also Building)
Substantial Damage	Damage of any origin sustained by a structure in a Special Flood Hazard Area whereby the cost of restoring the structure to its before-damaged condition would equal or exceed 50 percent of the market value of the structure before the damage.
Super Typhoon	A typhoon with maximum sustained winds of 150 mph or more.
Surface Faulting	The differential movement of two sides of a fracture – in other words, the location where the ground breaks apart. The

	length, width, and displacement of the ground characterize surface faults.
Tectonic Plate	Torsionally rigid, thin segments of the earth's lithosphere that may be assumed to move horizontally and adjoin other plates. It is the friction between plate boundaries that cause seismic activity.
Topographic	Characterizes maps that show natural features and indicate the physical shape of the land using contour lines. These maps may also include manmade features.
Tornado	A violently rotating column of air extending from a thunderstorm to the ground.
Tropical Cyclone	A generic term for a cyclonic, low-pressure system over tropical or subtropical waters.
Tropical Depression	A tropical cyclone with maximum sustained winds of less than 39 mph.
Tropical Storm	A tropical cyclone with maximum sustained winds greater than 39 mph and less than 74 mph.

Tsunami	Great sea wave produced by submarine earth movement or volcanic eruption.
Typhoon	A special category of tropical cyclone peculiar to the western North Pacific Basin, frequently affecting areas in the vicinity of Guam and North Mariana Islands. Typhoons whose maximum sustained winds attain or exceed 150 mph are called super typhoons.
Vulnerability	Describes how exposed or susceptible to damage an asset is. Vulnerability depends on an asset's construction, contents, and the economic value of its functions. Like indirect damages, the vulnerability of one element of the community is often related to the vulnerability of another. For example, many businesses depend on uninterrupted electrical power – if an electric substation is flooded, it will affect not only the substation itself, but a number of businesses as well. Often,

	indirect effects can be much more widespread and damaging than direct ones.
Vulnerability Assessment	The extent of injury and damage that may result from a hazard event of a given intensity in a given area. The vulnerability assessment should address impacts of hazard events on the existing and future built environment.
Water Displacement	When a large mass of earth on the ocean bottom sinks or uplifts, the column of water directly above it is displaced, forming the tsunami wave. The rate of displacement, motion of the ocean floor at the epicenter, the amount of displacement of the rupture zone, and the depth of water above the rupture zone all contribute to the intensity of the tsunami.
Wave Run-up	The height that the wave extends up to on steep shorelines, measured above a reference level (the normal height of the sea, corrected to the state of the tide at the time of wave arrival).
Wildfire	An uncontrolled fire spreading through vegetative fuels, exposing and possibly consuming structures.
Zone	A geographical area shown on a Flood Insurance Rate Map (FIRM) that reflects the severity or type of flooding in the area.

City Council Staff Report

DATE: **SEPTEMBER 21, 2022**

TO: **HONORABLE MAYOR AND CITY COUNCIL**

FROM: **ECONOMIC AND COMMUNITY DEVELOPMENT DEPARTMENT PLANNING DIVISION**

DISTRICTS: **ALL**

SUBJECT: **ADOPT RESOLUTION NO. CC 2022-096, A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF PALMDALE APPROVING GENERAL PLAN AMENDMENT 20-003, RE-ADOPTING THE CALIFORNIA DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT APPROVED 2021-2029 HOUSING ELEMENT, CERTIFIED PROGRAM ENVIRONMENTAL IMPACT REPORT 22-002 (SCH#2021060494), AND ADOPTING A STATEMENT OF OVERRIDING CONSIDERATIONS AND ADOPT RESOLUTION NO. CC 2022-097 DISCOURAGING AMENDMENTS TO THE GENERAL PLAN FOR 18 MONTHS FOLLOWING ADOPTION OF THE GENERAL PLAN**

ISSUE

Adopt Resolution No. CC 2022-096 approving General Plan Amendment (GPA) 20-003, re-adoption of the California Department of Housing and Community Development (HCD) certified 2021-2029 Housing Element, certification of Program Environmental Impact Report (PEIR) 22-002 (SCH#2021060494), and adoption of a Statement of Overriding Considerations. In addition, adopt Resolution No. CC 2022-097 discouraging amendments to the General Plan for a period of 18 months following adoption of the General Plan.

RECOMMENDATION

The Planning Commission recommends that the City Council:

1. Receive public testimony regarding Resolution Nos. CC 2022-096 and CC 2022-097;
2. Adopt Resolution No. CC 2022-096 approving GPA 20-003, re-adopting the HCD approved 2021-2029 Housing Element, certifying PEIR 22-002 (SCH#2021060494), and adoption of a Statement of Overriding Considerations; and,
3. Adopt Resolution No. CC 2022-097 discouraging amendments to the General Plan for a period of 18 months following adoption of the General Plan or alternatively,

discuss and direct a different duration on the discouragement of amendments to the General Plan.

BACKGROUND

The City's General Plan (1993 General Plan) was approved by the City Council in January 1993. While amendments have occurred over time, the General Plan has not been comprehensively updated since adoption. In October 2018, the City Council approved a professional services agreement with Raimi + Associates to update the General Plan. Since then, the City Council appointed a General Plan Advisory Committee (GPAC) comprised of members of the community to work with the General Plan Team, which consists of City staff and Raimi + Associates. This 13-member GPAC held 18 public meetings with the General Plan Team to provide direction and feedback on all aspects of the General Plan.

The housing element portion of Palmdale 2045 is a comprehensive assessment of current and future housing needs for the City, as well as an outline of programs for meeting those needs. On December 16, 2021, the Planning Commission recommended City Council adoption of Resolution No. PC-2021-025 for the approval of GPA 21-004, the 6th Cycle 2021-2029 Housing Element (Housing Element). Subsequently, on January 12, 2022, City Council adopted Resolution No. CC 2022-011 approving the Housing Element and directed staff to submit the Housing Element to HCD for certification. The HCD affirmed compliance of the Housing Element with State law on August 26, 2022, which included minor revisions to the previously adopted Housing Element.

On September 8, 2022, the Planning Commission adopted Resolution No. PC-2022-033 recommending City Council approval of the project. GPA 20-003 includes a request to readopt the revised Housing Element as approved by HCD. In addition, adopted Resolution No. PC-2022-034 recommending City Council approval of the establishment of an 18-month limitation on amendments to the General Plan.

PROJECT DESCRIPTION

GPA 20-003, also known as Palmdale 2045, presents the community's vision for Palmdale for the next two decades. State law requires each city to adopt a General Plan to guide land use and development (Government Code Section 65300), as such, it serves as the blueprint for the City and offers a strong foundation for making future development decisions. Palmdale 2045 will help the City plan for important community issues such as population growth, housing needs and environmental protection while also considering social, physical, and economic development. The General Plan and its maps, diagrams, goals, and policies form the basis for city zoning, subdivision, and public works actions.

State law requires that a General Plan address the following nine mandatory subject areas, or "elements": land use, circulation, environmental justice, open space,

conservation, safety, air quality, noise, and housing. General Plan elements may be combined in any way a jurisdiction deems appropriate and additional topics may be added as deemed applicable or appropriate by each city. As such, Palmdale 2045 addresses the following additional topics either as stand-alone elements or incorporated in other elements: community design, economic development, military compatibility, parks, natural and cultural resources, infrastructure and community facilities, sustainability and climate action.

A city may adopt a general plan in the format that best fits its unique circumstances (Government Code Section 65300.5). In doing so, the city must ensure that the General Plan and its component parts comprise an integrated, internally consistent, and compatible statement of development policies. Palmdale 2045 integrates vision and guiding principles, background information, legislative context, goals and policies, and implementation actions.

DISCUSSION

The existing General Plan provides for primarily traditional suburban residential uses, with regional-serving commercial developments found along 10th Street West and 47th Street East. The land use pattern does not provide for commercial nodes in neighborhood-serving locations and contributes to urban sprawl, which in turn contributes to increased reliance on individual use of automobiles. The 1993 General Plan focuses on traditional commercial development, which discourages walkability and encourages large expanses of street-facing parking. Although the land use pattern envisioned by the 1993 General Plan was forward-thinking at the time of adoption, the type and location of land uses specified within the 1993 General Plan do not maximize development potential or reflect current best practices.

As a part of Palmdale 2045, four Specific Plans are being rescinded and replaced with consistent land use designations; two that are fully built out, Joshua Hills Specific Plan and Hillside Residential Specific Plan; and two others that are not fully built out, Palmdale Trade and Commerce Center Specific Plan and Foothill Ranch Specific Plan. In addition, the Palmdale Business Park Center Specific Plan is no longer considered economically viable; a new specific plan is being proposed in its place, though it will not cover the entire Palmdale Business Park Center area. Seven remaining Specific Plans remain in effect.

Public Outreach

Public input contributed to defining a shared vision for the Palmdale 2045 General Plan. The engagement process for Palmdale 2045 has been one of the most extensive engagement and outreach processes that the City has undertaken in recent history. Since 2018, the General Plan Team received input from thousands of Palmdale residents, business and property owners and the GPAC. Chapter 3 of Palmdale 2045 summarizes the community engagement process, and Appendix A contains detailed information.

As a response to health restrictions due to the COVID-19 pandemic, the General Plan Team revised the engagement activities to be a robust combination of virtual and in-person events. These included public workshops, online and paper surveys, multiple stakeholder focus groups, in-person pop-up events throughout the city, as well as GPAC meetings that were streamed live on the project's YouTube channel. Engagement activities were promoted via print and digital notifications in both English and Spanish (flyers, posters, mailed postcards, social media, press releases, online advertisements, newsletters and eblasts, electronic billboard advertisements, radio and Palmdale Minute Videos).

Outreach activities included:

- 18 GPAC Meetings
- 17 Stakeholder Focus Groups (3 rounds)
- 15 Pop-Up Workshops (2 rounds)
- 3 City Council Workshops
- 4 Planning Commission Workshops
- 4 Community Workshops
- 3 Community Surveys

Community Feedback on the Plan and Land Use Framework

The community members who participated in outreach activities provided broad and detailed information about needs and concerns for the City. The general feedback received includes the need to expand housing diversity and affordability, expand higher education and job training, expand access to healthcare services, reduce long commutes, revitalize Palmdale Boulevard, preserve the natural environment, and preserve Plant 42 and the aerospace industry presence.

Based on input from the public, the GPAC and the General Plan Team, a Land Use Framework map (Palmdale 2045 Figure 5.3, Page 67) was prepared to represent the goals and vision of the City with this comprehensive update. The guiding principles used to create the land use framework encompass the City's vision of creating: a "Complete City" with a variety of place types that support and foster community, economic sustainability, and healthy living; 20-minute neighborhoods where most residential neighborhoods have access to jobs, transportation, parks, recreation, services, arts and culture, food, health services, within 20 minutes; diversified housing options; higher education and health and wellness; and increased walkability and bicycle safety. This land use framework serves as the foundation for the Palmdale 2045 land use plan and identifies areas of the City that could see major change as well as areas of stability, which will largely remain the same.

The Palmdale 2045 Land Use and Community Design chapter addresses these guiding principles by implementing educational districts, health and wellness districts, regional commercial uses around the Antelope Valley Mall, Four Points, and Palmdale Boulevard and 47th Street East, a mix of employment uses around Plant 42, mixed-uses along Palmdale Boulevard, and Village Centers and Multi-Use Nodes throughout the City.

General Plan Land Use Designations and Map

The General Plan Land Use Map identifies land use designations for all properties within the City and the City's sphere of influence. The Land Use Map includes 27 land use designations and some of the land use categories from the 1993 General Plan have not changed; however, definitions have been refined to encompass current best practices and enhance flexibility. New land use designations have been established for the rest of the City. The land use designations are intended to enhance flexibility and allow a wide variety of supportive uses in order to meet the vision of the City, while still accommodating the development community. Definitions have been provided below to clarify intent and vision for each designation and to support specific densities or uses in select areas of the City;

- Residential: There are nine residential designations that cover the range of housing types expected in Palmdale. Seven of these designations are carried over from the 1993 General Plan. New designations and modified density ranges address the missing middle and smaller lot subdivisions.

- Commercial and Industrial: Six commercial, employment and industrial designations allow a range of commercial and industrial uses at a variety of scales. The Neighborhood Commercial and Regional Commercial designations support commercial uses at the neighborhood and regional scale, respectively. The Visitor Commercial designation supports retail, entertainment, and hotels to serve the needs of visitors and highway traffic. The Employment Flex designation covers job-producing uses including office, medical, research and development and light industrial uses.

- Mixed-Use Designations: Mixed-use designations allow for a mix of commercial and residential uses, integrated either in a building (vertical mixed-use) or on the same parcel (horizontal mixed-use). Three mixed-use designations are proposed at a range of densities.

- Public Designations: Five designations cover utilities, parks, schools, public and civic facilities, and Open Space uses.

- Specific Plan Designation: This designation covers the remaining adopted Specific Plans in the City. Each Specific Plan document provides more detail about allowed

uses, densities, and other development regulations in the area in which the Specific Plan covers.

- Health and Wellness Designation: This designation allows uses that are supportive of health and wellness of the Palmdale community. Allowed uses include medical facilities and offices, supportive research and development uses, and ancillary retail and lodging.

- Educational Flex Designation: This designation is intended to support development of educational uses including higher education, vocational training, and satellite campuses. Supportive retail, office and limited housing is also allowed.

Prohibition on Amendments to the General Plan

The Planning Commission recommended establishing a prohibition on Amendments for the first 18 months from adoption of Palmdale 2045. Public input contributed to defining a shared vision for the Palmdale 2045 General Plan. The General Plan Team received input from thousands of Palmdale residents, business and property owners and the GPAC. Based on input from the public, GPAC and the General Plan Team, a land use map was prepared to represent the goals and vision of the City with this comprehensive update. While the prohibition is intended to limit amendments for the first 18 months after adoption of Palmdale 2045, staff recognizes the need to accommodate larger, comprehensive development projects during that time frame. As such, the language within Resolution No. PC-2022-034 excluded General Plan Amendments related to proposed Planned Developments and Specific Plans larger than 20-acres. Staff has proposed a version of the resolution slightly different from that proposed by the Planning Commission in that the resolution establishes that the resolution does also not prohibit staff-initiated General Plan Amendments or Amendments which are otherwise required by local, state or federal law.

FISCAL IMPACT

Palmdale 2045 will facilitate the entitlement process, accelerate new development, and create more housing and jobs, which will increase property and sales tax revenues for the City.

STRATEGIC PLAN

Goal IV: Maintain a desirable community where everyone wants to live, work and play.

B. Provide inclusive access to a variety of supportive services that build a resilient and healthy community.

Prepared by:	Brenda Magaña, Senior Planner
Certified as to availability of Funds:	Janelle Samson, Director of Finance
Approved by:	Ronda Perez, Interim City Manager
Approved as to form:	Scott E. Porter, Interim City Attorney

ATTACHMENTS

1. Resolution No. CC 2022-096
2. Resolution No. CC 2022-097

CITY OF PALMDALE
COUNTY OF LOS ANGELES, CALIFORNIA
RESOLUTION NO. CC 2022-096

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF PALMDALE ADOPTING GENERAL PLAN AMENDMENT 20-003 (PALMDALE 2045), RE-ADOPTING THE CALIFORNIA DEPARTMENT OF HOUSING AND COMMUNITY DEVELOPMENT APPROVED 2021-2029 HOUSING ELEMENT, CERTIFYING PROGRAM ENVIRONMENTAL IMPACT REPORT 22-002 (SCH#2021060494) AND ADOPTING A STATEMENT OF OVERRIDING CONSIDERATIONS

A. RECITALS

WHEREAS, the City of Palmdale (City) has contracted with Raimi + Associates under the direction of the City Council of the City of Palmdale to prepare the City's comprehensive General Plan update (Palmdale 2045) outlined within Exhibit IV;

WHEREAS, the City has filed an application that applies to the City and the City's sphere of influence, requesting approval of General Plan Amendment (GPA) 20-003, which includes re-adoption of the Housing Element, as described herein (herein referred to as "Application");

WHEREAS, California State law requires that each city adopt a general plan to describe its long-term goals, policies and programs to achieve those goals. Accordingly, the general plan is a long-range, comprehensive document that serves as a guide for the orderly development of the City. The City's current General Plan was adopted in 1993 and reflects the environmental conditions, demographics, growth projections, and community goals of that time. There is a need, and it is in the interest of public health, safety, and welfare to update the City's General Plan to incorporate current conditions, community goals, and anticipated growth projections;

WHEREAS, on December 16, 2021, the Planning Commission of the City of Palmdale adopted Resolution No. PC-2021-0025 recommending City Council approval of the 2021-2029 Housing Element;

WHEREAS, on January 12, 2022, the City Council of the City of Palmdale adopted Resolution No. CC 2022-011 for the 2021-2029 Housing Element and directed staff to submit the document to the California Department of Housing and Community Development (HCD). Thereafter, the HCD affirmed compliance of the Housing Element with State law;

WHEREAS, On September 8, 2022, the Planning Commission of the City of Palmdale adopted Resolution No. PC-2022-033 recommending City Council approval of GPA 20-003, re-adoption of the HCD approved 2021-2029 Housing Element,

certification of PEIR 22-002 (SCH#2021060494), and adoption of a Statement of Overriding Considerations; and,

WHEREAS, on September 21, 2022, the City Council of the City of Palmdale conducted a duly noticed public hearing on the Application and concluded said hearing on that date. Evidence, both written and oral, was duly presented and considered by the City Council at the aforesaid public hearing, including but not limited to, the staff report dated September 21, 2022.

B. RESOLUTION

NOW THEREFORE, THE CITY COUNCIL OF THE CITY OF PALMDALE DOES ORDAIN AS FOLLOWS:

SECTION 1. The City Council hereby specifically finds that all of the facts set forth in the Recitals, Part A of this Resolution, are true and correct.

SECTION 2. The City Council hereby finds as follows with respect to the environmental documentation:

(a) A Program Environmental Impact Report has been prepared for the project which identified potentially significant impacts with respect to the following issues: Air Quality, Biological Resources, Cultural Resources, Geology and Soils, Noise, Tribal and Cultural Resources and Utilities, and Service Systems. The City finds and determines that, as proposed, the majority of the significant impacts of the project will be reduced to acceptable levels through implementation of mitigation measures. However, the City further finds that cumulative impacts to air quality (impacts related to construction and operational emissions) and utilities and service systems (potential for impacts on water supply and wastewater) from the project are significant and unavoidable even with the implementation of mitigation (Section 4.3, Air Quality, and Section 4.19, Utilities and Service Systems, of the Final PEIR). Collectively, reasonably foreseeable future development and growth in the City of Palmdale would increase ozone and criteria air pollutant emissions beyond local and state thresholds and there would be insufficient water supplies and wastewater capacity available to serve the Planning Area and reasonably foreseeable future development under the Plan. The City further finds that there are no other feasible mitigation measures or feasible project alternatives that will further mitigate, avoid, or reduce to a less-than-significant level these

environmental effects. As such, a Statement of Overriding Considerations is proposed to be adopted.

(b) The custodian of records for the environmental document, and all other materials which constitute the record of proceedings upon which the Planning Commission's decision is based, is the Planning Manager of the City of Palmdale. These documents are available for public review in the Planning Division of the City of Palmdale located at 38250 Sierra Highway, Palmdale, California 93550, telephone (661) 267-5200.

SECTION 3. Based upon substantial evidence presented to the City Council during September 21, 2022, public hearing, including public testimony and written and oral staff reports, the City Council specifically finds as follows:

(a) The proposed change in land use is consistent with State law.

The Application will help the City plan for important community issues such as population growth, housing needs and environmental protection while also considering social, physical, and economic development. This GPA will allow the City to comply with Government Code Section 65300 and will provide the City with a consistent framework for decision-making. In addition, the Application and its maps, diagrams, goals, and policies form the basis for city zoning, subdivision, and public works actions.

In addition, State law requires that a General Plan address the following nine mandatory subject areas, or "elements": land use, circulation, environmental justice, open space, conservation safety, air quality, noise, and housing. General Plan elements may be combined in any way a jurisdiction deems appropriate and additional topics may be added as deemed applicable or appropriate by each City. As such, Palmdale 2045 addresses the following additional topics either as stand-alone elements or incorporated in other elements: community design, economic development, military compatibility, parks, natural and cultural resources, infrastructure and community facilities, sustainability and climate action. As a result, this proposed comprehensive update of the General Plan is consistent with State law.

(b) The amendment is suitable and beneficial for the uses permitted within the associated zone districts.

The 1993 General Plan identifies land use designations for all properties within the City and the City's sphere of influence. The Application includes 27 land use designations and some of the land use categories from the 1993 General Plan have not changed, however, definitions have been refined to encompass current best practices and enhance flexibility. New land use designations have been established for the rest of the City. The land use designations are intended to enhance flexibility and allow a wide range of supportive uses in order to meet the vision of the City, while still accommodating the development community. The specific uses allowed within each zone will be determined in conjunction with a comprehensive Zoning Ordinance Amendment, which will be processed after adoption of the Application. Therefore, this amendment is necessary and beneficial in implementing the City's vision for land use and zoning for the next two decades.

SECTION 4. Based on the findings and conclusions set forth in the above Sections, and based on all other evidence in the record, the City Council hereby approves Resolution No. CC 2022-096 for the adoption of the Application, re-adoption of the Housing Element, certification of Program Environmental Impact Report 22-002, and adoption of a Statement of Overriding Considerations.

After due consideration, and in light of the environmental, social, economic, and other considerations identified in the findings, the 2045 General Plan Update, and the record as a whole related to this project, the City chooses to approve the project because, in its independent judgement, the benefits to the project substantially outweigh the project's significant and unavoidable adverse environmental impacts.

SECTION 5. The City Clerk shall certify to the adoption of this resolution.

PASSED, APPROVED and **ADOPTED** this 21st day of September, 2022.

Approved as to form:

_____
Steven D. Hofbauer, Mayor

ATTEST:

_____
Scott E. Porter
Acting City Attorney

_____
Shanae S. Smith, City Clerk

I, Shanae S. Smith, City Clerk of Palmdale, California, do hereby certify that the foregoing resolution was duly passed, approved, and adopted by the City Council of the City of Palmdale at a regular meeting of said Council held on the 21st day of September, 2022, by the following roll call vote:

AYES: _____

NOES: _____

ABSTAIN: _____ ABSENT: _____

Date: _____ _____
Shanae S. Smith, City Clerk

CITY OF PALMDALE
COUNTY OF LOS ANGELES, CALIFORNIA
RESOLUTION NO. CC 2022-097

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF PALMDALE DISCOURAGING GENERAL PLAN AMENDMENTS FOR 18 MONTHS FOLLOWING ADOPTION OF THE GENERAL PLAN

A. RECITALS

WHEREAS, the City of Palmdale (City) has contracted with Raimi + Associates under the direction of the City Council of the City of Palmdale to prepare the City's comprehensive General Plan update (Palmdale 2045) outlined within Exhibit IV of Resolution No. CC 2022-096;

WHEREAS, the City has filed an application that applies to the City and the City's sphere of influence, requesting approval of General Plan Amendment (GPA) 20-003, which includes re-adoption of the Housing Element, as described herein (herein referred to as "Application");

WHEREAS, California State law requires that each city adopt a general plan to describe its long-term goals, policies and programs to achieve those goals. Accordingly, the general plan is a long-range, comprehensive document that serves as a guide for the orderly development of the City. The City's current General Plan was adopted in 1993 and reflects the environmental conditions, demographics, growth projections, and community goals of that time. There is a need, and it is in the interest of public health, safety, and welfare to update the City's General Plan to incorporate current conditions, community goals, and anticipated growth projections;

WHEREAS, on December 16, 2021, the Planning Commission of the City of Palmdale adopted Resolution No. PC-2021-0025 recommending City Council approval of the 2021-2029 Housing Element;

WHEREAS, on January 12, 2022, the City Council of the City of Palmdale adopted Resolution No. CC 2022-011 for the 2021-2029 Housing Element and directed staff to submit the document to the California Department of Housing and Community Development (HCD). Thereafter, the HCD affirmed compliance of the Housing Element with State law;

WHEREAS, On September 8, 2022, the Planning Commission of the City of Palmdale adopted Resolution No. PC-2022-033 recommending City Council approval of GPA 20-003, re-adoption of the HCD approved 2021-2029 Housing Element, certification of a PEIR 22-002 (SCH#2021060494), and adoption of a Statement of Overriding Considerations; and,

WHEREAS, on September 21, 2022, the City Council of the City of Palmdale conducted a duly noticed public hearing on the Application and concluded said hearing on that date. Evidence, both written and oral, was duly presented and considered by the City Council at the aforesaid public hearing, including but not limited to, the staff report dated September 21, 2022.

B. RESOLUTION

NOW THEREFORE, THE CITY COUNCIL OF THE CITY OF PALMDALE DOES ORDAIN AS FOLLOWS:

SECTION 1. Recitals. The City Council hereby specifically finds that all of the facts set forth in the Recitals, Part A of this Resolution, are true and correct.

SECTION 2. Intent. The City Council hereby encourages applicants to not propose any amendments to the General Plan during the first 18-month period immediately following the adoption of the General Plan. To be clear, the City Council is not herein prohibiting staff-initiated amendments, General Plan Amendments related to proposed Planned Developments or Specific Plans larger than 20-acres, or as otherwise required to comply with local, state or federal law.

SECTION 3. CEQA.

(a) Reducing the number of amendments to the General Plan during the initial 18 month period does not create any development, and therefore it does not result in a physical change that could cause an impact to the environment. Therefore, adoption of this resolution is exempt from CEQA under the common sense rule that CEQA applies only to projects which have the potential for causing a significant effect on the environment. Pursuant to CEQA Guidelines Section 15061(b)(3), it can be seen with certainty that there is no possibility that the activity in question may have a significant effect on the environment, the activity is not subject to CEQA.

(b) The custodian of records for the environmental document, and all other materials which constitute the record of proceedings upon which the City Council's decision is based, is the Planning Manager of the City of Palmdale. These documents are available for public review in the Planning Division of the City of Palmdale located at 38250 Sierra Highway, Palmdale, California 93550, telephone (661) 267-5200.

SECTION 4. Findings. Based upon substantial evidence presented to the City Council during September 21, 2022, public hearing, including public testimony and written and oral staff reports, the City Council specifically finds as follows:

(a) Discouraging amendments to the General Plan is beneficial and desirous to the community and is consistent with the purpose and intent of GPA 20-003 (Palmdale 2045), and other applicable standards and codes adopted by the City of Palmdale.

Public input contributed to defining a shared vision for the Palmdale 2045 General Plan. The General Plan Team received input from thousands of Palmdale residents, businesses and property owners. Based on input from the public, GPAC, and General Plan Team, a land use map was prepared to represent the goals and vision of the City with this comprehensive update. While this resolution is intended to limit amendments for the first 18 months after adoption of Palmdale 2045, it is necessary to consider accommodating larger, comprehensive development projects during that time frame and therefore, General Plan Amendments related to proposed Planned Developments and Specific Plans larger than 20-acres and staff-initiated amendments are excluded. It is also necessary to exclude any application which may otherwise be required under local, state or federal law.

SECTION 5. The City Clerk shall certify to the adoption of this resolution.

PASSED, APPROVED and **ADOPTED** this 21st day of September, 2022.

Approved as to form:

_____
Steven D. Hofbauer, Mayor

ATTEST:

_____
Scott E. Porter
Interim City Attorney

_____
Shanae S. Smith, City Clerk

I, Shanae S. Smith, City Clerk of Palmdale, California, do hereby certify that the foregoing resolution was duly passed, approved, and adopted by the City Council of the City of Palmdale at a regular meeting of said Council held on the 21st day of September, 2022, by the following roll call vote:

AYES: _____

NOES: _____

ABSTAIN: _____ ABSENT: _____

Date: _____ _____

Shanae S. Smith, City Clerk

EXHIBIT I



City of Palmdale 2045 General Plan Update

Final Environmental Impact Report
SCH# 2021060494

prepared by

City of Palmdale
Department of Economic and Community Development
38250 Sierra Highway
Palmdale, California 93550
Contact: Megan Taggart, Planning Manager

prepared with the assistance of

Rincon Consultants, Inc.
180 North Ashwood Avenue
Ventura, California 93003

August 2022

RINCON CONSULTANTS, INC.
Environmental Scientists | Planners | Engineers
rinconconsultants.com

City of Palmdale 2045 General Plan Update

Final Environmental Impact Report
SCH# 2021060494

prepared by

City of Palmdale
Department of Economic and Community Development
38250 Sierra Highway
Palmdale, California 93550
Contact: Megan Taggart, Planning Manager

prepared with the assistance of

Rincon Consultants, Inc.
180 North Ashwood Avenue
Ventura, California 93003

August 2022

RINCON CONSULTANTS, INC.
Environmental Scientists | Planners | Engineers
rinconconsultants.com

This report prepared on 50 percent recycled paper with 50 percent post-consumer content.

Table of Contents

Executive Summary ES-1
Project Proponent ES-1
Lead Agency Contact Person ES-1
Project Location ES-1
Project Characteristics ES-1
Project Objectives ES-5
Alternatives ES-5
Areas of Known Controversy and Issues to be Resolved ES-6
Required Approvals ES-6
Summary of Impacts and Mitigation Measures ES-7
1 Introduction 1-1
1.1 Environmental Impact Report Background 1-1
1.2 Overview of General Plan Update 1-1
1.3 Purpose and Legal Authority 1-2
1.4 Scope and Content 1-3
1.5 Lead, Responsible, and Trustee Agencies 1-6
1.6 Environmental Review Process 1-7
2 Project Description 2-1
2.1 Project Proponent/Lead Agency 2-1
2.2 Project Location 2-1
2.3 Characteristics of the Proposed General Plan Update 2-4
2.3.1 Objectives of the General Plan Update 2-4
2.3.2 General Plan Organization 2-5
2.3.3 Overarching Purposes and Goals 2-7
2.3.4 General Plan Land Use Map 2-7
2.3.5 Residential and Employment Growth 2-12
2.3.6 Commercial/Industrial and Employment Growth by Land Use Type 2-13
2.4 Required Discretionary Actions 2-14
3 Environmental Setting 3-1
3.1 Introduction 3-1
3.2 Regional Setting 3-1
3.3 General Geographic Setting 3-1
3.4 Topography and Drainage 3-2
3.5 Cumulative Project Setting 3-2

4 Environmental Impact Analysis 4-1
4.1 Aesthetics 4.1-1
4.1.1 Environmental Setting 4.1-1
4.1.2 Regulatory Framework 4.1-4
4.1.3 Impact Analysis 4.1-5
4.2 Agriculture and Forestry Resources 4.2-1
4.2.1 Setting 4.2-1
4.2.2 Environmental Setting 4.2-2
4.2.3 Regulatory Setting 4.2-4
4.2.4 Impact Analysis 4.2-5
4.2.5 Cumulative Impacts 4.2-7
4.3 Air Quality 4.3-1
4.3.1 Environmental Setting 4.3-1
4.3.2 Regulatory Setting 4.3-5
4.3.3 Impact Analysis 4.3-11
4.3.4 Cumulative Impacts 4.3-21
4.4 Biological Resources 4.4-1
4.4.1 Environmental Setting 4.4-1
4.4.2 Regulatory Setting 4.4-15
4.4.3 Impact Analysis 4.4-18
4.5 Cultural Resources 4.5-1
4.5.1 Cultural Setting 4.5-1
4.5.2 Regulatory Setting 4.5-7
4.5.3 Impact Analysis 4.5-9
4.6 Energy 4.6-1
4.6.1 Environmental Setting 4.6-1
4.6.2 Regulatory Setting 4.6-7
4.6.3 Impact Analysis 4.6-13
4.6.4 Cumulative Impacts 4.6-27
4.7 Geology and Soils 4.7-1
4.7.1 Environmental Setting 4.7-1
4.7.2 Regulatory Setting 4.7-11
4.7.3 Impact Analysis 4.7-12
4.7.4 Cumulative Impacts 4.7-19
4.8 Greenhouse Gas Emissions 4.8-1
4.8.1 Environmental Setting 4.8-1
4.8.2 Regulatory Setting 4.8-5
4.8.3 Impact Analysis 4.8-14
4.8.4 Cumulative Impacts 4.8-23

4.9 Hazards and Hazardous Materials 4.9-1
4.9.1 Environmental Setting 4.9-1
4.9.2 Regulatory Setting 4.9-8
4.9.3 Impact Analysis 4.9-17
4.9.4 Cumulative Impacts 4.9-26
4.10 Hydrology and Water Quality 4.10-1
4.10.1 Environmental Setting 4.10-1
4.10.2 Regulatory Setting 4.10-6
4.10.3 Impact Analysis 4.10-10
4.11 Land Use and Planning 4.11-1
4.11.1 Environmental Setting 4.11-1
4.11.2 Regulatory Setting 4.11-1
4.11.3 Impact Analysis 4.11-7
4.11.4 Cumulative Impacts 4.11-12
4.12 Mineral Resources 4.12-1
4.12.1 Environmental Setting 4.12-1
4.12.2 Regulatory Setting 4.12-4
4.12.3 Impact Analysis 4.12-4
4.13 Noise 4.13-1
4.13.1 Environmental Setting 4.13-1
4.13.2 Regulatory Setting 4.13-9
4.13.3 Impact Analysis 4.13-14
4.14 Population and Housing 4.14-1
4.14.1 Environmental Setting 4.14-1
4.14.2 Regulatory Setting 4.14-2
4.14.3 Impact Analysis 4.14-3
4.14.4 Cumulative Impacts 4.14-9
4.15 Public Services 4.15-1
4.15.1 Environmental Setting 4.15-1
4.15.2 Regulatory Setting 4.15-5
4.15.3 Impact Analysis 4.15-7
4.15.4 Cumulative Impacts 4.15-13
4.16 Recreation 4.16-1
4.16.1 Environmental Setting 4.16-1
4.16.2 Regulatory Setting 4.16-2
4.16.3 Impact Analysis 4.16-4
4.16.4 Cumulative Impacts 4.16-10

4.17 Transportation 4.17-1
4.17.1 Environmental Setting 4.17-1
4.17.2 Regulatory Setting 4.17-10
4.17.3 Impact Analysis 4.17-11
4.17.4 Cumulative Impacts 4.17-27
4.18 Tribal Cultural Resources 4.18-1
4.18.1 Environmental Setting 4.18-1
4.18.2 Regulatory Setting 4.18-3
4.18.3 Existing Conditions 4.18-5
4.18.4 Impact Analysis 4.18-5
4.18.5 Cumulative Analysis 4.18-8
4.19 Utilities and Service Systems 4.19-1
4.19.1 Environmental Setting 4.19-1
4.19.2 Regulatory Setting 4.19-7
4.19.3 Impact Analysis 4.19-12
4.19.4 Cumulative Impacts 4.19-23
4.20 Wildfire 4.20-1
4.20.1 Environmental Setting 4.20-1
4.20.2 Regulatory Setting 4.20-4
4.20.3 Impact Analysis 4.20-7
5 Other CEQA Required Discussions 5-1
5.1 Growth Inducement 5-1
5.1.1 Population and Employment Growth 5-1
5.1.2 Removal of Obstacles to Growth 5-2
5.2 Irreversible Environmental Effects 5-3
5.3 Significant and Unavoidable Impacts 5-4
6 Alternatives 6-1
6.1 Alternative 1: No Project Alternative 6-1
6.1.1 Description 6-1
6.1.2 Impact Analysis 6-4
6.2 Alternative 2: Reduced Growth Alternative 6-10
6.2.1 Description 6-10
6.2.2 Impact Analysis 6-11
6.3 Alternatives Considered but Rejected 6-17
6.3.1 Description 6-17
6.4 Environmentally Superior Alternative 6-18
7 References 7-1
7.1 Bibliography 7-1
7.2 List of Preparers 7-21

8 Responses to Comments on the Draft EIR 8-1

Tables

Table ES-1 Summary of Impacts, Mitigation Measures, and Significance after Mitigation ES-8
Table 1-1 NOP Comments and EIR Response 1-4
Table 2-1 Comparison of Existing and Proposed Land Use Designations 2-11
Table 2-2 SCAG Population, Housing, and Jobs Forecasts 2-13
Table 2-3 Plan Population and Housing Forecasts 2-13
Table 2-4 Plan and SCAG Forecasts for Commercial/Industrial Development and Job Growth, 2016-2045 2-13
Table 3-1 Development Status of Major Approved Projects 3-3
Table 3-2 Development Status of Approved Specific Plans 3-4
Table 4.3-1 Summary of Ambient Air Quality in the AVAQMD 4.3-4
Table 4.3-2 Current Federal and State Ambient Air Quality Standards & Attainment Status . 4.3-6
Table 4.3-3 AVAQMD Regional Project Level Significance Thresholds 4.3-12
Table 4.3-4 Regional Daily Unmitigated Construction Emissions by Land Use Type 4.3-16
Table 4.3-5 Regional Daily Unmitigated Plan Operational Emissions 4.3-17
Table 4.3-6 Regional Daily Unmitigated Operational Emissions by Example Project 4.3-17
Table 4.3-7 Regional Daily Mitigated Construction Emissions by Land Use Type 4.3-19
Table 4.5-1 Mojave Desert Chronology (after Sutton et al. 2007:236) 4.5-1
Table 4.6-1 California 2020 Total System Electric Generation 4.6-2
Table 4.6-2 2017 Annual Gasoline and Diesel Consumption 4.6-6
Table 4.6-3 2020 Annual Electricity Consumption 4.6-6
Table 4.6-4 2020 Annual Natural Gas Consumption 4.6-7
Table 4.6-5 Direct Transportation Energy Use in Palmdale 4.6-15
Table 4.6-6 Annual Natural Gas and Electricity Consumption in Palmdale 4.6-21
Table 4.6-7 Consistency with State Renewable Energy and Energy Efficiency Plans 4.6-23
Table 4.6-8 Plan Consistency with the Palmdale Energy Action Plan 4.6-25
Table 4.8-1 Palmdale Community Energy Consumption by Sector 2017 ..... 4.8-3
Table 4.8-2 Per-Service Population Thresholds 4.8-15
Table 4.8-3 Amortized Construction Emissions1 ..... 4.8-17
Table 4.8-4 Palmdale Estimated Plan wide emissions by year 4.8-18
Table 4.8-5 Plan Consistency with 2020 RTP/SCS Land Use Policies 4.8-20
Table 4.9-1 CERCLIS Sites in the Palmdale Area 4.9-5
Table 4.11-1 Comparison of Sites Inventory and RHNA 4.11-9
Figure 4.12-1 Mineral Resource Locations in and Around Palmdale 4.12-2
Figure 4.12-2 Mineral Resource Extraction in Palmdale 4.12-3
Table 4.13-1 Measured Ambient Noise Levels1 ..... 4.13-6
Table 4.13-2 Typical Noise Levels for Construction Equipment 4.13-15
Table 4.13-3 Vibration Levels for Typical Construction Equipment 4.13-21

Table 4.14-1 2022 Population, Households, and Housing Unit Estimates 4.14-1
Table 4.14-2 SCAG Population, Housing, and Jobs Forecasts 4.14-2
Table 4.14-3 Regional Housing Needs Assessment Allocation 2021-2029 ..... 4.14-3
Table 4.15-1 Emergency Fire Facilities 4.15-1
Table 4.15-2 LACoFD Average Incident Response Times for Palmdale 4.15-1
Table 4.15-3 Palmdale Sheriff Response Synopsis (2015-2018) 4.15-2
Table 4.15-4 Crime Rate Comparison 4.15-2
Table 4.15-5 Schools Serving the Planning Area 4.15-3
Table 4.16-1 Planning Area Park Areas 4.16-1
Table 4.17-1 2017 Existing Planning Area (II, IX and XI*) Daily, VMT, VHT, Average Speed by Facility 4.17-4
Table 4.17-2 AVTA Route Characteristics 4.17-5
Table 4.17-3 Metrolink Train Schedule: Palmdale to and from Union Station 4.17-9
Table 4.17-4 2045 Base Planning Area (II, IX and XI*) Daily, VMT, VHT, Average Speed by Facility 4.17-12
Table 4.17-5 2045 Base Planning Area VMT/VHT by Facility Type for All Trips 4.17-13
Table 4.17-6 2045 Base with High Desert Corridor Planning Area (II,IX, and XI*) Daily, VMT, VHT, Average Speed by Facility 4.17-14
Table 4.17-7 2045 Base with High Desert Corridor Planning Area VMT/VHT by Facility Type for All Trips 4.17-15
Table 4.17-8 Preferred Plan Planning Area (II and IX) Average VMT, VHT, and Speed 4.17-16
Table 4.17-9 2045 Preferred Plan Planning Area VMT/VHT by Facility Type for All Trips 4.17-17
Table 4.17-10 Trip Purpose Statistics 4.17-18
Table 4.17-11 Performance Statistics by Facility Type within the Planning Area 4.17-18
Table 4.17-12 Cumulative Vehicle Miles Traveled Thresholds 4.17-21
Table 4.17-13 Baseline VMT Thresholds—Total VMT per Service Population 4.17-24
Table 4.17-14 All Trips and VMT Statistics 4.17-24
Table 4.19-1 City Service Landfill Capacity 4.19-5
Table 4.19-2 Projected Water Usage and Water Supplies 4.19-14
Table 4.19-3 Wastewater Generation by Development Type 4.19-20
Table 4.19-4 Projected Plan Solid Waste Generation 4.19-22
Table 4.19-5 Existing Landfills Remaining Capacity 4.19-22
Table 4.20-1 Palmdale Fire Stations 4.20-2
Table 6-1 Impact Comparison of Alternatives 6-19

Figures

Figure ES-1 Proposed General Plan Land Use Map ES-4
Figure 1-1 Environmental Review Process 1-9
Figure 2-1 Regional Location 2-2
Figure 2-2 Project Location 2-3

Figure 2-3 Proposed General Plan Land Use Map 2-9
Figure 4.1-1 Palmdale Boulevard Current Streetscape 4.1-10
Figure 4.2-1 Farmland in the Planning Area 4.2-3
Figure 4.4-1 Vegetation Communities and Land Cover in the Planning Area 4.4-2
Figure 4.4-2 National Wetlands Inventory 4.4-10
Figure 4.7-1 Topographic Map of Palmdale 4.7-2
Figure 4.7-2 Soil Types in Palmdale 4.7-3
Figure 4.7-3 Fault Map of Palmdale 4.7-5
Figure 4.7-4 Slope Map of Palmdale 4.7-6
Figure 4.7-5 Liquefaction Hazard Zones of Palmdale 4.7-7
Figure 4.10-1 FEMA Flood Zones 4.10-5
Figure 4.11-1 Current Palmdale General Plan Land Use Map 4.11-5
Figure 4.11-2 Current Palmdale Zoning Map 4.11-6
Figure 4.13-1 Palmdale Noise Sensitive Land Uses 4.13-3
Figure 4.13-2 Noise Measurement Locations 4.13-7
Figure 4.13-3 Existing Noise Contours 4.13-8
Figure 4.13-4 Noise Contours map for Palmdale Airport/USAF Plant 42 ..... 4.13-11
Figure 4.13-5 Air Installation Compatible Use Zones Map 4.13-12
Figure 4.13-6 Palmdale General Plan Noise Level Guidance 4.13-13
Figure 4.13-7 Future Noise Contours 4.13-19
Figure 4.16-1 Planning Area Parks 4.16-3
Figure 4.20-1 Palmdale Fire Hazard Severity Zones 4.20-3
Figure 6-1 Palmdale Current General Plan Land Use Map 6-3

Appendices

Appendix A Notice of Preparation
Appendix B CalEEMod Modeling Outputs
Appendix C Special Status Species List
Appendix D Traffic Report
Appendix E Traffic Noise Prediction Model
Appendix F Mitigation Monitoring and Reporting Program

This page intentionally left blank.

Executive Summary

This section summarizes the characteristics of the proposed Palmdale 2045 (the Plan), project alternatives, and the project's environmental impacts.

Project Proponent

City of Palmdale
Economic and Community Development Department, Planning Division
38250 Sierra Hwy
Palmdale, CA 93550

Lead Agency Contact Person

Megan Taggart, Planning Manager
City of Palmdale
Economic and Community Development Department, Planning Division
38250 Sierra Hwy
Palmdale, CA 93550
661-267-5200

Project Location

Palmdale is in the Antelope Valley, in the 'high desert' portion of Los Angeles County. The Antelope Valley is disconnected from the Southern California coastal and Central California valley regions by the Tehachapi Mountains to the northwest and by the San Gabriel Mountains to the south. The far western portions of the City and the Planning Area are in the foothills of the San Gabriel Mountains. Nearby communities include the city of Lancaster and the unincorporated community of Quartz Hill to the north; as well as other unincorporated communities such as Lake Los Angeles to the east, Sun Village, Littlerock, and Pearblossom to the southeast, Acton to the south, Agua Dulce to the southwest, and Leona Valley to the west. The Antelope Valley Freeway (SR-14) traverses the Planning Area from north to south, and SR-138 runs as Palmdale Boulevard in an east/west direction from its intersection with SR-14 to 47th Street East, then south along 47th Street east, then southeast along Fort Tejon Road and Pearblossom Highway to Littlerock.

Project Characteristics

Palmdale 2045 is intended to function as a policy document to guide land use decisions in the City's Planning Area over 23 years (2022-2045). According to State law, General Plans are required to cover nine topics: land use, circulation, housing, conservation, open space, noise, air quality, safety, and environmental justice. Jurisdictions may address these topics across different chapters, or elements, of their general plan, and include any other topic that is relevant to planning its future. The updated City of Palmdale General Plan will include the State required topics plus economic development, urban design, infrastructure, military readiness, community facilities, sustainability and resilience, and climate change.

Palmdale 2045's vision for the city was developed with extensive community input and in recognition of the state's planning priorities. Palmdale 2045 focuses on enhancing community identity, building on planned infrastructure investments, improving multi-modal active transportation and connectivity, integrating health and equity, and capitalizing on the City's unique location in the region. Palmdale 2045's vision for the future includes the following vision themes.

- **Unified and welcoming community.** The Palmdale community values opportunity, diversity, and unity, and seeks to promote Palmdale's positive reputation while boosting community beautification
- **Active and vibrant downtown.** Palmdale residents desire a future downtown that fosters a sense of place, promotes local businesses, provides gathering spaces, and events, and improves the overall appearance of Palmdale
- **Diverse and high-quality job options.** Palmdale seeks to retain and expand its employment base through training for key industries, connecting residents to local jobs, and promoting telecommuting within the city
- **Diverse and resilient local economy.** Palmdale values its existing aerospace presence and aims to leverage and diversify new economic opportunities from expanded transportation connections
- **Safe, healthy place to live and work.** Palmdale residents want to address crime and safety, increase access to parks and open space, and support marginalized communities like foster youth and those experiencing homelessness
- **High quality medical and mental healthcare.** As a medical provider shortage area, Palmdale seeks to improve access to quality medical and mental healthcare services and facilities by attracting physicians, maintaining the Palmdale Regional Medical Center, and expanding services
- **Housing options for residents at different stages of life and ability.** The residents of Palmdale desire to preserve and expand affordable housing and diversify housing types across the city that support residents of all abilities through different stages of life
- **High quality and accessible educational opportunities.** Citizens of Palmdale seek to promote and expand educational opportunities in the City including higher education, trade school, and formal and informal training programs
- **Beautiful natural setting.** The Palmdale community values its natural setting and seeks to improve connectivity to trails and open space, maintain mountain views, healthy air quality, and dark night sky
- **Forefront of transportation innovations.** On the cusp of major regional transportation improvements, Palmdale seeks to leverage planned investments and improve local transit opportunities
- **General Plan implementation.** Residents of Palmdale value the long-term vision of the General Plan Update and desire regular review and update of the Plan including metrics for tracking implementation

Palmdale 2045 identifies major strategies and physical improvements for the City over the next 23 years. These strategies include creating a vibrant downtown near the future multimodal transit station, establishing three health and wellness districts and two education districts, transforming Palmdale Boulevard into a mixed-use corridor, promoting a diversity of housing types in the City, forming village centers that offer a mix of residential choices and daily goods and services near

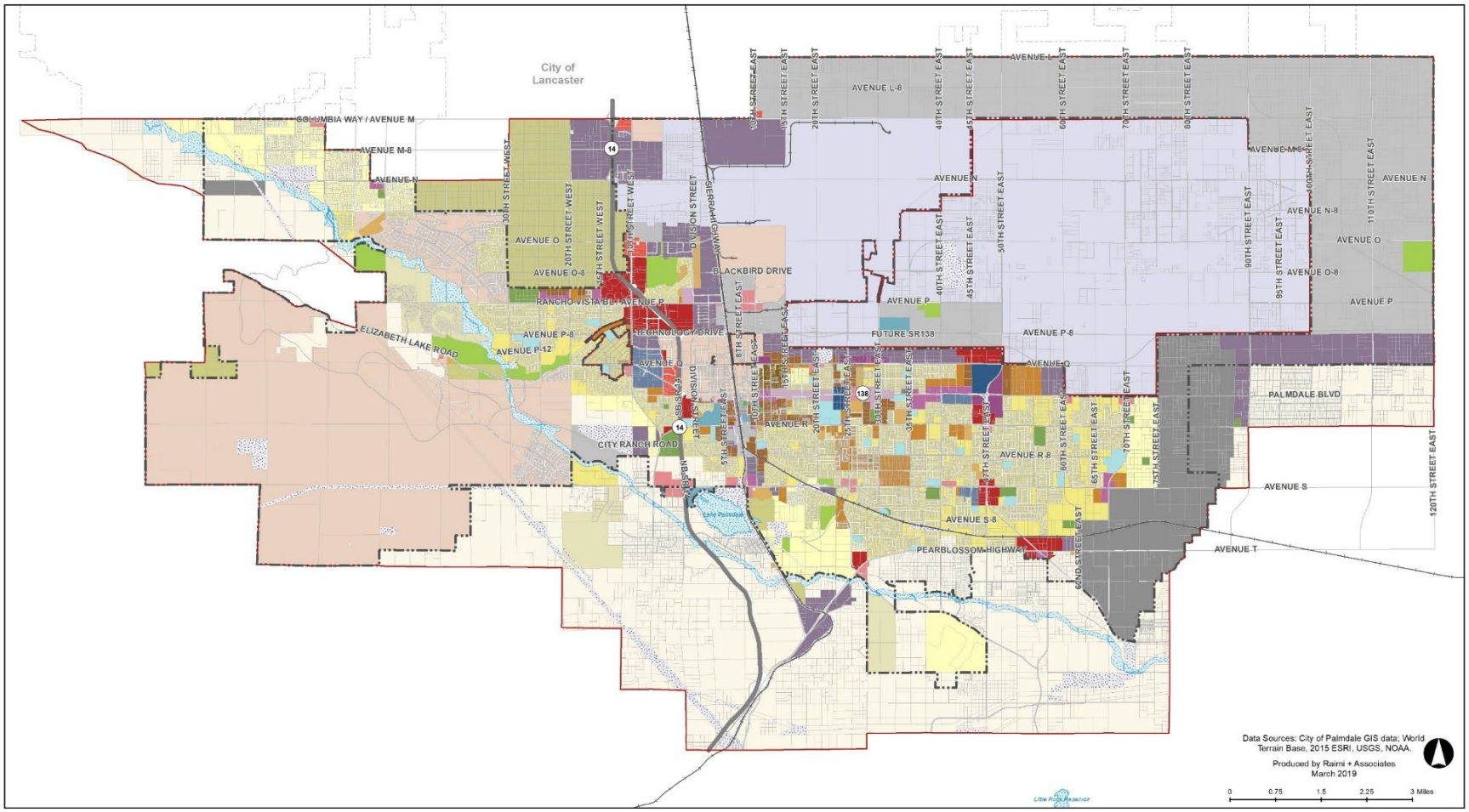
existing neighborhoods, and building off existing industrial and aerospace business opportunities. These strategies will support existing and future employees, businesses, and residents by improving quality of life in Palmdale.

The following actions will also be taken by the City of Palmdale in connection with the General Plan Update and are also considered part of the proposed project to be analyzed in the forthcoming EIR:

- Adoption and implementation of the General Plan Update (Palmdale 2045 Plan)
- Adoption and implementation of the Climate Action Plan
- Adoption and implementation of the Comprehensive Zoning Ordinance Amendment
- A slight expansion of the boundary of the Palmdale Transit Area Specific Plan. Currently, many of the parcels along the external boundary of this Specific Plan area have split zoning because they are partly inside and partly outside the Specific Plan area. This proposed expansion would fully include these parcels within the Specific Plan area. Because the Specific Plan area is in the core of the city, this action would not affect the Planning Area of the proposed General Plan Update or require annexations.

Palmdale 2045 also includes an update of the City's Housing Element, in compliance with the requirements of State Housing Element law, which required the City to adopt an updated Housing Element by October 2021. A description of City actions taken to date in connection with the Housing Element Update is included in Section 2.3.2 of this EIR. While an Addendum was prepared for the Housing Element Update, the Housing Element Update is also analyzed in this EIR, as necessary, in the context of the overall Plan. The Housing Element Update will be readopted as part of the Plan after certification by the California Department of Housing and Community Development (HCD).

Figure ES-1 Proposed General Plan Land Use Map



Project Objectives

As explained in Section 2.3.1, the Plan's objectives are enhancing community identity, building on planned infrastructure investments, improving multi-modal active transportation and connectivity, integrating health and equity, and capitalizing on the City's unique location in the region. Based on these objectives and input from the community, the Plan includes the overarching purposes listed in in each topical chapter to guide Plan policies and City decision-making. The overarching purpose is a vision statement that provides general direction for the chapter. The goals in each chapter specify ends that help achieve the overarching purpose. The policies are specific statements that guide decision-making.

Alternatives

As required by CEQA, this section evaluates a range of alternatives to the proposed project. Alternatives analyzed in Section 6 include the following:

- Alternative 1: No Project (see Section 6.1)
- Alternative 2: Reduced Growth Alternative (see Section 6.2)

Each of the alternatives discussed in this section has certain advantages and disadvantages as compared to the proposed Plan, as described below.

No Project (Current General Plan). The "No Project" Alternative involves continued implementation of the City's current General Plan, the last comprehensive update of which was adopted in 1993. The No Project Alternative assumes that the proposed Plan would not be adopted and therefore future development would be carried out under the City's existing General Plan policies and land use designations. The overall amount of growth anticipated to occur under the City's current General Plan is less than anticipated to occur under the proposed Plan. The proposed Plan includes additional land use designations for mixed housing densities focused around the future downtown area and across Palmdale Boulevard with education and medical districts strategically distributed within the City. Therefore, it also increases the City's total potential population and amount of commercial development compared to the current General Plan. The Plan identifies major strategies and physical improvements for the City over the next 23 years. These strategies include creating a vibrant downtown near the future multimodal transit station, establishing three health and wellness districts and two education districts, transforming Palmdale Boulevard into a mixed-use corridor, promoting a diversity of housing types in the City, forming village centers that offer a mix of residential choices and daily goods and services near existing neighborhoods, and building off existing industrial and aerospace business opportunities. In contrast, the No Project Alternative would continue to facilitate development in the same pattern as currently seen in the Planning Area.

Reduced Growth Alternative. The Reduced Growth Alternative (Alternative 2) is included in this EIR to address potential growth-related impacts associated with the Plan. Although this alternative would result in less overall development than the Plan, development is assumed to occur in the same general locations as under the Plan, and be subject to the same goals, policies, and development standards as under the Plan. Implementation of the Reduced Growth Alternative would result in development within the Planning Area that would generally meet the project objectives established for the Plan, although in some cases to a lesser degree than the Plan. Further,

this alternative would result in lower housing density than the Plan and thus would, overall, result in less housing and population growth.

Environmentally Superior Alternative. When the two alternatives (No Project and Reduced Growth) are compared to each other and the Plan, the Reduced Growth Alternative would be environmentally superior because apart from greater impacts to Land Use and Planning and Transportation, it would have reduced or similar environmental impacts to the Plan, while the No Project Alternative would result in greater impacts to Biological Resources, Cultural Resources, Energy, Geology and Soils, Hazards and Hazardous Materials, Land Use and Planning, Mineral Resources, Noise, Transportation and Traffic, Tribal Cultural Resources and Wildfire, with reduced impacts in Air Quality, Hydrology and Water Quality, Population and Housing, Public Services, Recreation, Utilities and Service Systems, and Wildfire.

Areas of Known Controversy and Issues to be Resolved

Responses to the Notice of Preparation (NOP) of a Draft EIR and input received at the EIR scoping meeting held by the City are summarized in Chapter 1, *Introduction* and Table 1-1 of that section. No known areas of controversy or other issues to be resolved have been identified based on this public input.

Required Approvals

With recommendations from the City's Planning Commission, the Palmdale City Council will need to take the following discretionary actions in conjunction with or subsequent to the Plan:

- Certification of the 2045 General Plan Update EIR
- Adopt the General Plan Update (Palmdale 2045)
- Adopt the Climate Action Plan
- Adopt any Zoning Ordinance Amendments required to make the Zoning Ordinance consistent with the General Plan Update
- Adopt the HCD-certified Housing Element Update, in compliance with the requirements of State Housing Element law
- Adopt revisions to the Palmdale Transit Area Specific Plan to slightly expand the boundary of this Specific Plan. Currently, many of the parcels along the external boundary of the Specific Plan area have split zoning because they are partly inside and partly outside the Specific Plan area. This proposed expansion would fully include these parcels within the Specific Plan area. Because the Specific Plan area is in the core of the city, this action would not affect the Planning Area of the proposed General Plan Update or require annexations.

Palmdale 2045 does not involve any annexation of lands or adjustments to the City's Sphere of Influence. If annexation is pursued in the future, it would require approval from the Los Angeles Local Agency Formation Commission. The California Department of Conservation, Division of Mines and Geology, has no discretionary authority over the Plan, but will review the plans and policies relating to seismic safety for compliance with state regulations.

Summary of Impacts and Mitigation Measures

Table ES-1 summarizes the environmental impacts of the Plan, proposed mitigation measures, and residual impacts. Impacts are categorized by their severity. Significant and Unavoidable impacts require a statement of overriding considerations to be issued per Section 15093 of the CEQA Guidelines if the Plan is approved. Impacts classified as Less than Significant with Mitigation Incorporated are significant adverse impacts that can be feasibly mitigated to a less than significant level and that require findings to be made under Section 15091 of the CEQA Guidelines. Less than Significant impacts are those that do not exceed identified thresholds and do not require findings. No Impact indicates the Plan would have no effect on environmental conditions or would reduce existing environmental problems or hazards.

Table ES-1 Summary of Impacts, Mitigation Measures, and Significance after Mitigation

Impact	Mitigation Measure	Significance After Mitigation
Aesthetics		
Impact AES-1: Future development carried out under the Plan may affect public views along designated scenic corridors. Adherence to development review procedures and Plan policies would reduce potential impacts to scenic vistas to a less than significant level.	None required.	Less than significant without mitigation.
Impact AES-2: Future development carried out under the Plan may impact scenic resources, including trees, rock outcroppings, and historic buildings. This development could result in direct impacts to scenic resources should construction result in the physical demolition, destruction, relocation, or alteration of a scenic resource. compliance with Plan goals and policies would reduce potential impacts to scenic vistas to a less than significant level.	None required.	Less than significant without mitigation.
Impact AES-3: While development under the Plan could change the visual character and quality of portions of the Planning Area, the Plan contains goals and policies specifically designed to protect areas of high visual character and quality and improve areas of low visual character and quality. Impacts would be less than significant.	None required beyond compliance with applicable Plan policies and supporting City regulations.	Less than significant without mitigation.
Impact AES-4: New development carried out under the Plan would add new sources of light and glare to the Planning Area, but development would be required to comply with the City's lighting regulations and impacts would therefore be less than significant.	None required.	Less than significant without mitigation.
Agriculture and Forestry Resources		
Impact AG-1: The Plan would not convert Farmland to non-agricultural use, conflict with existing zoning or a Williamson Act Contract, or involve other changes that could result in the conversion of Farmland to non-agricultural use. There would be no impact.	None required.	No Impact.
Impact AG-2: There is no land in the Planning Area designated or zoned as forest land, timberland, or timberland production. Therefore, the Plan would not conflict with zoning for forest land, timberland, or timberland production, or result in the conversion of forest land to non-forest use. There would be no impact.	None required.	No Impact.

Impact	Mitigation Measure	Significance After Mitigation
Air Quality		
Impact AQ-1: Individual development projects carried out under the Plan would generate construction and operational-related emissions. Such emissions may conflict with or obstruct the implementation of the AVAQMD's Ozone Attainment Plan. Implementation of Plan policies, compliance with existing regulations, and implementation of mitigation would reduce construction and operational emissions, but not below applicable emissions thresholds. Impacts would be significant and unavoidable.	There are no feasible mitigation measures that can be implemented to reduce growth under the Plan and maintain the nature of the Plan. However, the Plan would not obstruct the implementation of the air quality plan.	There are no feasible mitigation measures that can be implemented to reduce growth under the Plan and maintain the nature of the Plan, even though the Plan would not obstruct the implementation of the air quality plan. Therefore, impacts remain significant and unavoidable.
Impact AQ-2: Individual development projects facilitated by the Plan would generate construction and operational emissions. Such emissions may result in adverse impacts to local air quality. Implementation of Plan policies and compliance with existing regulations would reduce emissions, but not below applicable levels of significance. Impacts would be significant and unavoidable.	**MM-AQ-Architectural Coating** The City shall require that the following measures be implemented for all projects where unmitigated ROG impacts exceed regulatory thresholds. Implementation of these measures shall ensure that ROG emissions are reduced to below 137 lbs/day during construction activities. ▪ Project contractors shall use architectural coating materials that are zero-emission or has a low-ROG content (below 10 grams per liter). Where such ROG coatings are not available or feasible, the coating with the lowest ROG rating available shall be used. These measures shall be noted on all construction plans, and the City shall perform periodic site inspections during construction to verify compliance; and/or, ▪ All architectural coating phases shall be extended such that ROG emissions are reduced to below 137 lbs/day. **MM-AQ-2 Operational Emissions Reductions** The City shall require that some or all of the following measures be implemented for individual projects under the Plan where unmitigated criteria pollutant impacts exceed regulatory thresholds. Applicable measures shall be incorporated such that emissions are fully	With incorporation of Mitigation Measure AQ-1, emissions from construction activities could be reduced to less than significant levels for the sample multi-family and industrial projects implemented under the Plan. As part of Mitigation Measure AQ-1, individual project architectural coating phases were extended as follows: Multi-family Residential from 35 days to 88 days; and industrial from 20 to 30 days. Adherence to applicable Plan policies, AVAQMD rules, and Mitigation Measure AQ-1 would reduce potential construction-related impacts to the greatest extent possible. However, given the unknown specifics of each individual project, there is the potential that even with these measures, construction impacts would remain significant. Therefore, impacts would be significant and unavoidable.

Impact	Mitigation Measure	Significance After Mitigation
	reduced to below regulatory thresholds or the greatest extent feasible. The reduction measures include, but are not limited to, the following: ▪ Architectural coating materials that are zero-emission or have a low-ROG content (below 10 grams per liter). Where such ROG coatings are not available, the coating with the lowest ROG rating available shall be used ▪ Require new development to exceed the applicable Title 24 energy-efficiency requirements ▪ Projects shall incorporate outdoor electrical outlets such that 10 percent of outdoor landscaping equipment can be electrically powered ▪ All dock doors shall be equipped with electric plugs for electric TRUs ▪ Installation of electric vehicle charging stations at three percent beyond those required by State and local codes ▪ Provide infrastructure to allow for future electric vehicle charging stations for a minimum of 10 percent of the parking spaces beyond those already required to accommodate electric vehicle charging stations ▪ Require new development to implement circulation design elements in parking lots for non-residential uses to reduce vehicle queuing and improve the pedestrian environment ▪ Utilization of electric vehicles and/or alternatively fueled vehicles in company fleet ▪ Provision of dedicated parking for carpools, vanpool, and clean air vehicles ▪ Provision of vanpool and/or shuttle service for employees	

Impact	Mitigation Measure	Significance After Mitigation
	▪ Implementation of reduced parking minimum requirements ▪ Implementation of maximum parking limits ▪ Provision of bicycle parking facilities beyond those required by State and local codes ▪ Provision of a bicycle-share program ▪ Expansion of bicycle routes/lanes along the project site frontage ▪ Provision of new or improved transit amenities (e.g., covered turnouts, bicycle racks, covered benches, signage, lighting) if the project site is located along an existing transit route ▪ Expansion of sidewalk infrastructure along the project site frontage ▪ Provision of safe, pedestrian-friendly, and interconnected sidewalks and streetscapes ▪ Provision of employee lockers and showers ▪ Provision of on-site services that reduce the need for off-site travel (e.g., childcare facilities, automatic teller machines, postal machines, food services) ▪ Provision of alternative work schedule options, such as telework or reduced working days per week (e.g., 9/80 or 10/40 schedules), for employees ▪ Implementation of transportation demand management programs to educate and incentivize residents and/or employees to use transit, smart commute, and alternative transportation options ▪ As applicable all industrial uses shall be required to enroll in U.S. EPA's SmartWay program and shall use carriers that are SmartWay carriers	

Impact	Mitigation Measure	Significance After Mitigation
Impact AQ-3: Individual development projects carried out under the Plan would generate construction- and operational-related emissions. Such emissions may result in adverse impacts to local air quality. However, implementation of Plan policies and compliance with existing regulations would reduce construction and operational emissions such that it would not expose sensitive receptors to substantial pollutant concentrations. Impacts would be less than significant.	None required beyond compliance with applicable regulations.	Less than significant without mitigation.
Impact AQ-4: Individual development projects carried out under the Plan would generate construction- and operation-related odors. Such emissions may result in temporary impacts to local air quality. Implementation of Plan policies and compliance with existing regulations would reduce odor emissions to a less than significant level.	None required beyond compliance with applicable regulations.	Less than significant without mitigation.
Biological Resources		
Impact BIO-1: Development carried out under the Plan would have the potential to adversely affect special-status species, including nesting birds, or their habitat. Impacts would be less than significant with mitigation.	**MM-BIO-1 Pre-Construction Nesting Bird Surveys** To avoid disturbance of nesting and special-status birds, including raptorial species protected by the MBTA and CFGC, activities related to construction projects carried out under the Plan, including, but not limited to, vegetation removal, ground disturbance, and construction and demolition shall occur outside of the bird breeding season, February 15 through September 15 (as early as January 1 for some raptors) ~~(February 1 through August 31)~~. If construction must begin during the breeding season, then a pre-construction nesting bird survey shall be conducted no more than 3 days prior to initiation of ground disturbance and vegetation removal activities. The nesting bird pre-construction survey shall be conducted on foot inside the area of proposed development, including a 300-foot buffer (500-foot for raptors), and in inaccessible areas (e.g., private lands) from afar using binoculars to the extent practical. The survey shall be conducted by a biologist familiar with the identification of avian species	Implementation of Mitigation Measure BIO-1 would reduce potential impacts to nesting birds and associated habitat to a less than significant level by requiring pre-construction surveys and avoidance measures.

Impact	Mitigation Measure	Significance After Mitigation
	known to occur in southern California desert communities. If nests are found, an avoidance buffer (dependent upon the species, the proposed work activity, and existing disturbances associated with land uses outside of the site) shall be determined and demarcated by the biologist with bright orange construction fencing, flagging, construction lathe, or other means to mark the boundary. All construction personnel shall be notified as to the existence of the buffer zone and to avoid entering the buffer zone during the nesting season. No ground disturbing activities shall occur within this buffer until the avian biologist has confirmed that breeding/nesting is completed and the young have fledged the nest. Encroachment into the buffer shall occur only at the discretion of the qualified biologist.	
Impact BIO-2: Projects carried out under the Plan may adversely affect riparian habitat or other sensitive natural communities during project construction. Implementation of federal, State, and or local policies (including Plan policies) would ensure that riparian habitat and wetlands are not significantly impacted. Impacts would be less than significant.	None required.	Less than significant without mitigation.
Impact BIO-3: Development carried out under the Plan would avoid impacts to wildlife movement corridors by conserving natural areas in the Planning Area, as directed by policies in the Plan. Impacts would be less than significant.	See Mitigation Measure BIO–1.	With implementation of Mitigation Measure BIO-1, impacts to wildlife corridors and species would be less than significant.
Impact BIO-4: With implementation of Plan goals and policies and regulations contained in the Palmdale Municipal Code, The Plan would not conflict with an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan. There would be no impact.	None required.	No impact.
Impact BIO-5: The Planning Area is in the West Mojave Coordinated Management Plan planning area. Impacts to areas identified in the West Mojave Coordinated Management Plan Strategy would be reduced through compliance with conservation strategies contained in goals and policies of the proposed Plan. Impacts would be less than significant.	None required.	Less than significant without mitigation.

Impact	Mitigation Measure	Significance After Mitigation
Cultural Resources		
Impact CUL-1: The Plan may cause a significant impact to historical resources because site preparation, demolition, and construction associated with development carried out under the plan may cause substantial adverse changes in the significance of a historical resource. However, implementation of Plan policies and implementation actions included in the Conservation Element and further mitigation would reduce this impact to significant but mitigable.	**MM-CUL-1 Historical Resources** A historical resources evaluation shall be prepared for all discretionary projects carried out under the Plan involving a property which includes buildings, structures, objects, sites, landscape/site plans, or other features that are 45 years of age or older. The evaluation shall be prepared by a qualified architectural historian or historian who meets the Secretary of the Interior's Professional Qualifications Standards (PQS) in architectural history or history. The qualified architectural historian or historian shall conduct an intensive-level evaluation in accordance with the guidelines and best practices promulgated by the State Office of Historic Preservation to identify any potential historical resources within the proposed development site. All structures 45 years of age or older shall be evaluated within their historic context and documented in a report meeting the State Office of Historic Preservation guidelines. All evaluated properties shall be documented on Department of Parks and Recreation Series 523 Forms. The report shall be submitted to the City for review and concurrence. If the property is already listed in the NRHP, CRHR, or as a Landmark in Palmdale, the historical resources evaluation described above shall not be required. If historical resources are identified within the project area of a proposed development, efforts shall be made to the extent feasible to ensure that impacts are mitigated. Application of mitigation shall generally be overseen by a qualified architectural historian or historic architect meeting the PQS, unless unnecessary in the circumstances (e.g., preservation in place). In conjunction with any development application	Implementation of Mitigation Measure CUL-1 would reduce impacts to historical resources by identifying and evaluating significant historical resources and managing relocation, rehabilitation, or alteration in compliance with the Standards as applicable HABS documentation would also reduce these impacts to the greatest extent feasible in cases where compliance with the Standards or avoidance is not possible. Therefore, impacts would be less than significant with implementation of Plan policies and Mitigation Measure CUL-1.

Impact	Mitigation Measure	Significance After Mitigation
	that may affect the historical resource, the historical resources evaluation report shall also identify and specify the treatment of character-defining features and construction activities. Efforts shall be made to the greatest extent possible to ensure that the relocation, rehabilitation, or alteration of the resource is consistent with the Secretary of the Interior's Standards for the Treatments of Historic Properties (Standards). In accordance with CEQA, a project that has been determined to conform with the Standards generally would not cause a significant adverse direct or indirect impact to historical resources (14 CCR § 15126.4(b)(1)). Application of the Standards shall be overseen by a qualified architectural historian or historic architect meeting the PQS. In conjunction with any development application that may affect the historical resource, a report identifying and specifying the treatment of character-defining features and construction activities shall be provided to the City for review and concurrence. As applicable, the report shall demonstrate how the project complies with the Standards and be submitted to the City for review and approval prior to the issuance of any permits. If significant historical resources are identified on a development site and compliance with the Standards and or avoidance is not possible, appropriate site-specific mitigation measures shall be established and undertaken. Mitigation measures may include documentation of the historical resource in the form of a Historic American Building Survey (HABS)-Like report. The report shall comply with the Secretary of the Interior's Standards for Architectural and Engineering Documentation and shall generally follow the HABS Level III requirements, including	

Impact	Mitigation Measure	Significance After Mitigation
	digital photographic recordation, detailed historic narrative report, and compilation of historic research. The documentation shall be completed by a qualified architectural historian or historian who meets the PQS and be submitted to the City prior to issuance of any permits for demolition or alteration of the historical resource.	
Impact CUL-2: The Plan may cause a significant impact if ground disturbance associated with development carried out under the Plan would cause a substantial adverse change in the significance of an archaeological resource, including those that qualify as historical resources. This impact would be significant but mitigable.	**MM-CUL-2 Phase I Archaeological Resources Study** For any project carried out under the General Plan Update, the City and/or project applicant shall investigate the potential to disturb archaeological resources. If the project will involve any ground disturbance (unless the project site is within soils that can be reliably demonstrated as being non-native or artificial fill) a Phase I cultural resources study shall be performed by a qualified professional meeting the Secretary of the Interior's (SOI's) Professional Qualification Standards (PQS) for archaeology (National Park Service 1983). If a project would solely involve the refurbishment of an existing building and no ground disturbance would occur, this measure would not be required. The Phase I cultural resources study shall include a pedestrian survey of the project site and sufficient background research and field sampling to determine whether archaeological resources may be present. Archival research shall include a records search of the South Central Coastal Information Center no more than two years old and a Sacred Lands File search with the NAHC. The Phase I technical report documenting the study shall include recommendations that must be implemented prior to and/or during construction to avoid or reduce impacts on archaeological resources. The report shall be	Implementation of mitigation measures CUL-2 through CUL-8 would reduce impacts to archaeological resources to less than significant levels by ensuring the avoidance of archeological resources to the extent feasible, or by identifying, evaluating, and conducting data recovery of archaeological resources that may be impacted by future projects in a timely manner.

Impact	Mitigation Measure	Significance After Mitigation
	submitted to the City of Palmdale for review and approval prior to the issuance of any grading or construction permits. Recommendations in the Phase I technical report shall be made Conditions of Approval and shall be implemented throughout all ground disturbance activities. **MM-CUL-3 Extended Phase 1 Testing** For any projects proposed within 100 feet of a known archaeological site and/or in areas identified as sensitive by a Phase I study [Mitigation Measure CUL-2], the project applicant shall retain a qualified archaeologist to conduct an Extended Phase I (XPI) study to determine the presence/absence and extent of archaeological resources on the project site. XPI testing should comprise a series of shovel test pits and/or hand augured units and/or mechanical trenching to establish the boundaries of archaeological site(s) on the project site. If the boundaries of the archaeological site are already well understood from previous archaeological work, an XPI will not be required. If the archaeological resource(s) of concern are Native American in origin, the qualified archaeologist shall confer with local California Native American tribe(s). All archaeological excavation shall be conducted by a qualified archaeologist(s) under the direction of a principal investigator meeting the SOI's PQS for archaeology (National Park Service 1983). If an XPI report is prepared, it shall be submitted to the City of Palmdale for review and approval prior to the issuance of any grading or construction permits. Recommendations contained therein shall be implemented for all ground disturbance activities.	

Impact	Mitigation Measure	Significance After Mitigation
	MM-CUL-4 Archaeological Site Avoidance Any identified archaeological sites (determined after implementing mitigation measures CUL-2 and/or CUL-3) shall be avoided by project-related construction activities, where feasible. A barrier (temporary fencing) and flagging shall be placed between the work location and any resources within 60 feet of a work location to minimize the potential for inadvertent impacts. **MM-CUL-5 Phase II Site Evaluation** If the results of any Phase I and/or XPI (mitigation measures CUL-2 and/or CUL-3) indicate the presence of archaeological resources that cannot be avoided by the project (Mitigation Measure CUL-4) and that have not been adequately evaluated for the NRHP or CRHR listing at the project site, the qualified archaeologist shall conduct a Phase II investigation to determine if intact deposits remain and if they may be eligible for the CRHR or qualify as unique archaeological resources. If the archaeological resource(s) of concern are Native American in origin, the qualified archaeologist shall confer with local California Native American tribe(s). A Phase II evaluation shall include any necessary archival research to identify significant historical associations and mapping of surface artifacts, collection of functionally or temporally diagnostic tools and debris, and excavation of a sample of the cultural deposit. The sample excavation will characterize the nature of the sites, define the artifact and feature contents, determine horizontal and vertical boundaries, and retrieve representative samples of artifacts and other remains.	

Impact	Mitigation Measure	Significance After Mitigation
	If the archeologist and, if applicable, a Native American monitor (see Mitigation Measure TCR-2) or other interested tribal representative determine it is appropriate, cultural materials collected from the site shall be processed and analyzed in a laboratory according to standard archaeological procedures. The age of the materials shall be determined using radiocarbon dating and/or other appropriate procedures; lithic artifacts, faunal remains, and other cultural materials shall be identified and analyzed according to current professional standards. The significance of the sites shall be evaluated according to the criteria of the CRHR. The results of the investigations shall be presented in a technical report following the standards of the California Office of Historic Preservation publication "Archaeological Resource Management Reports: Recommended Content and Format (1990 or latest edition)." The report shall be submitted to the City of Palmdale for review and approval prior to the issuance of any grading or construction permits. Recommendations in the Phase II report shall be implemented for all ground disturbance activities. **MM-CUL-6 Phase III Data Recovery** Should the results of the Phase II site evaluation (Mitigation Measure CUL-5) yield resources that meet CRHR significance standards and if the resource cannot be avoided by project construction in accordance with CUL-4, the project applicant shall ensure that all feasible recommendations for mitigation of archaeological impacts are incorporated into the final design and approved by the City of Palmdale prior to construction. Any necessary Phase III data recovery excavation, conducted to exhaust	

Impact	Mitigation Measure	Significance After Mitigation
	the data potential of significant archaeological sites, shall be carried out by a qualified archaeologist meeting the SOI PQS for archaeology according to a research design reviewed and approved by the City of Palmdale prepared in advance of fieldwork and using appropriate archaeological field and laboratory methods consistent with the California Office of Historic Preservation Planning Bulletin 5 (1991), Guidelines for Archaeological Research Design, or the latest edition thereof. If the archaeological resource(s) of concern are Native American in origin, the qualified archaeologist shall confer with local California Native American tribe(s). If applicable, a Native American monitor shall be present. As applicable, the final Phase III Data Recovery reports shall be submitted to the City of Palmdale prior to issuance of any grading or construction permit. Recommendations contained therein shall be implemented throughout all ground disturbance activities. **MM-CUL-7 Cultural Resources Monitoring** If recommended by Phase I, XPI, Phase II, or Phase III studies [mitigation measures CUL-2, CUL-3, CUL-5, and/or CUL-6], the project applicant shall retain a qualified archaeologist to monitor project-related, ground-disturbing activities. If archaeological resources are encountered during ground-disturbing activities, mitigation measures CUL-4 through CUL-6 shall be implemented, as appropriate. **MM-CUl-8 Unanticipated Discovery of Archaeological Resources** If archaeological resources are encountered during ground-disturbing activities, work within	

Impact	Mitigation Measure	Significance After Mitigation
	60 feet shall be halted and the project archaeologist meeting the SOI's Professional Qualification Standards for archaeology (National Park Service 1983) shall immediately evaluate the find. If necessary, the evaluation may require preparation of a treatment plan and archaeological testing for CRHR eligibility. If the discovery proves to be significant under CEQA and cannot be avoided by the project, additional work may be warranted, such as data recovery excavation, to mitigate any significant impacts to historical resources. Any reports required to document and/or evaluate unanticipated discoveries shall be submitted to the City of Palmdale for review and approval. Recommendations contained therein shall be implemented throughout the remainder of ground disturbance activities.	
Impact CUL-3 The discovery of human remains is always a possibility during ground-disturbing activities. Ground disturbance associated with development carried out under the Plan may disturb or damage known or unknown human remains. This impact would be less than significant with adherence to existing regulations.	Because this impact would be less than significant due to required regulations, mitigation measures are not required.	Compliance with existing regulations would reduce Plan impacts to human remains to less than significant levels by ensuring proper identification and treatment of any human remains that may be present.
Energy		
Impact E-1: With compliance with applicable regulations and Plan policies, the Plan would not result in significant environmental impacts due to wasteful, inefficient, or unnecessary consumption of energy resources during construction or operation of projects carried out under the Plan. Therefore, impacts would be less than significant.	None required beyond compliance with applicable Plan policies and regulations.	Less than significant without mitigation.
Impact E-2: The Plan would be consistent with energy efficiency goals contained in the Palmdale Energy Action Plan. Construction and operation of projects carried out under the Plan would comply with relevant provisions of the State's CALGreen and Title 24 of the California Energy Code. Impacts would be less than significant.	None required.	Less than significant without mitigation.

Impact	Mitigation Measure	Significance After Mitigation
Geology and Soils		
Impact GEO-1: Future seismic events could produce ground shaking in the Planning Area that could damage structures and/or result in adverse health and safety effects. However, with implementation of Plan policies and required compliance with building codes, impacts would be less than significant.	None required.	Less than significant without mitigation.
Impact GEO-2: The plan would not result in substantial soil erosion or loss of topsoil. Impacts would be less than significant.	None required.	Less than significant without mitigation.
Impact GEO-3: Future seismic events are unlikely to result in liquefaction and lateral spreading of soils in the Planning Area. Additionally, development in the Planning Area would be subject to compliance with applicable building codes. Impacts would be less than significant.	None required.	Less than significant after mitigation.
Impact GEO-4: Development carried out under the Plan may result in the construction of structures on expansive soils that could create a substantial risk to life or property. However, all new development would be required to comply with the standards of the CBC, which would ensure that expansive soils are remediated or that foundations and structures are engineered to withstand the forces of expansive soil. Compliance with the requirements of the CBC would reduce this impact to a less than significant level.	None required.	Less than significant without mitigation.
Impact GEO-5: Projects carried out under the Plan would not include the use of septic tanks or alternative wastewater systems; therefore, there would be no impact related to soil stability for wastewater systems.	None required.	No Impact.
Impact GEO-6: Impacts to unique paleontological resources or unique geological features would be less than significant with mitigation.	**MM-GEO-1 Unanticipated Discovery of Paleontological Resources** If paleontological resources are encountered during ground-disturbing activities, work within 60 feet shall be halted and the project paleontologist shall immediately evaluate the find. If necessary, the evaluation may require preparation of a treatment plan and paleontological testing. If the discovery proves to be significant under CEQA and cannot be avoided by the project, additional work may be warranted, such as data recovery excavation, to mitigate any significant impacts to historical resources. Any reports required to document and/or evaluate unanticipated discoveries shall	Implementation of Mitigation Measure GEO-1 would reduce impacts to paleontological resources to less than significant levels by ensuring the avoidance of paleontological resources to the extent feasible, or by identifying, evaluating, and conducting data recovery paleontological resources that may be impacted by future projects in a timely manner.

Impact	Mitigation Measure	Significance After Mitigation
	be submitted to the City of Palmdale for review and approval. Recommendations contained therein shall be implemented throughout the remainder of ground disturbance activities.	
Greenhous Gas Emissions		
Impact GHG-1: Implementation of projects carried out under the Plan would not increase per service population GHG Emissions. The CAP is part of the Plan and shows per service Population emissions reductions over time. All future projects would be required to comply with the CAP. The Plan would therefore have a less than significant impact on GHG emissions.	None required.	Less than significant without mitigation.
Impact GHG-2: The Plan would not conflict with any applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs. The Plan would therefore have a less than significant impact on GHG emissions.	None required.	Less than significant without mitigation.
Hazards and Hazardous Materials		
Impact HAZ-1: Implementation of the Plan could result in an incremental increase of the overall routine transport, use, storage, and disposal of hazardous materials. Compliance with applicable regulations related to the handling, transport, disposal, and storage of hazardous materials and adherence to Plan policies would minimize the risk of spills and the public's potential exposure to these substances and reduce the risk of adverse impacts of hazardous materials. This impact would be less than significant.	None required.	Less than significant without mitigation.
Impact HAZ-2: New development of land uses facilitated by the Plan could result in accidental release of hazardous materials within one quarter mile of existing schools. compliance with regulatory requirements of the City's Fire Code, Plan policies, and existing applicable state and federal regulations would ensure that risks from hazardous emissions or handling of hazardous materials, substances, or waste near existing or proposed schools would remain less than significant.	None required.	Less than significant without mitigation.
Impact HAZ-3: Implementation of the Plan could result in development of sites contaminated with hazardous materials. However, compliance with applicable regulations relating to site cleanup and adherence to Plan policies would minimize the impacts related to development on a listed contaminated site. This impact would be less than significant.	None required.	Less than significant without mitigation.

Impact	Mitigation Measure	Significance After Mitigation
Impact HAZ-4: Development under the Plan may result in construction in proximity to the Palmdale Regional Airport and United States Air Force Plan 42. Compliance with existing regulations, including the Federal Code of Regulations and ALCUP policies, would reduce impacts to a less than significant level.	None required.	Less than significant without mitigation.
Impact HAZ-5: Population growth and increased development as a result of the Plan could impact evacuation routes in the event of an emergency in the Planning Area. Proposed goals in the Plan would ensure effective emergency response following a natural or human caused disaster. Therefore, the Plan would not result in interference with an adopted emergency response plan or emergency evacuation plan. This impact would be less than significant.	None required.	Less than significant without mitigation.
Impact HAZ-6: The Planning Area includes a designated very high fire hazard area. Goals included in the Plan would minimize exposure of people or structures to risk of loss, injury, or death involving wildfire and wildland fires. This impact would be less than significant.	None required.	Less than significant without mitigation.
Hydrology and Water Quality		
Impact HWQ-1: Compliance with applicable laws and regulations and implementation of the goals and policies in the Plan would minimize the potential for water quality degradation, ensure compliance with waste discharge requirements, and reduce impacts to a less than significant level.	None required.	Less than significant without mitigation.
Impact HWQ-2: Impacts to groundwater supplies would be reduced to a less than significant level with compliance to the Palmdale Municipal Code, the MS4 permit, LID goals, and Plan Policies.	None required.	Less than significant without mitigation.
Impact HWQ-3: Impacts related to erosion, flooding, and stormwater drainage system capacity from substantial alteration of drainage patterns would be reduced to a less than significant level through compliance with LIDs, the NPDES, the Palmdale Municipal Code, and proposed Plan goals and policies.	None required.	Less than significant without mitigation.
Impact HWQ-4: Risks related to the release of pollutants due to project inundation would be less thank significant through compliance with applicable Plan policies.	None required.	Less than significant without mitigation.
Impact HWQ-5: The Plan would be consistent with the LRWQCB Basin Plan and projects carried out under the Plan would be subject to Plan policies that would help to protect local groundwater resources. Impacts would be less than significant.	None required.	Less than significant without mitigation.

Impact	Mitigation Measure	Significance After Mitigation
Land Use and Planning		
Impact LU-1: The Plan retains and continues the Planning Area's existing street system and protects its established communities. It would therefore not divide an established community and there would be no impact.	None required.	No impact.
Impact LU-2: Because the Plan and its policies are consistent with SCAG'S RCP and RTP/SCS and other applicable plans, the Plan would not conflict with applicable land use plans, policies, or regulations adopted for the purpose of avoiding or mitigating an environmental effect. Impacts would be less than significant.	None required.	Less than significant without mitigation.
Mineral Resources		
Impact MIN-1: Because the Plan would not redesignate any areas currently designated as mineral resource zones, and projects carried out under the Plan would be required to adhere to applicable regulations and Plan policies related to mineral resources, impacts related to the loss of availability of a known mineral or a locally imported mineral resource recovery site delineation would be less than significant.	None required.	Less than significant without mitigation.
Noise		
Impact N-1: Construction of individual projects carried out under the Plan would temporarily produce high noise levels, potentially affecting adjacent noise-sensitive land uses. Operation of individual projects carried out under the Plan would create more permanently increased noise levels, also potentially affecting adjacent noise-sensitive land uses. compliance with requirements of the Palmdale Municipal Code and implementation of Plan policies would, however, reduce these impacts to a less than significant level.	None required beyond compliance with applicable policies and regulations.	Less than significant without mitigation.
Impact N-2: Construction of individual projects carried out under the Plan could temporarily generate groundborne vibration, potentially affecting adjacent sensitive land uses. This impact would be less than significant with mitigation.	**MM-NOI-1 Construction Vibration Control Measures** The following measures to minimize exposure to construction vibration shall be included as standard conditions of approval, as applicable, for construction projects carried out under the Plan within 50 feet of fragile buildings as defined in this mitigation measure: 1. Avoid the use of vibratory rollers within 50 feet of fragile buildings, which are buildings that are susceptible to damage from vibration	Avoiding the use of vibratory rollers within 50 feet of fragile buildings would prevent potential structural damage from vibration. In addition, appropriate scheduling of construction activities and notification of neighbors would minimize disturbance of people from use of vibration-generating equipment. Compliance with the vibration control and notification measures in Mitigation Measure N-2

Impact	Mitigation Measure	Significance After Mitigation
	as determined by the Palmdale Planning Department. 2. Schedule construction activities with the highest potential to produce vibration to hours with the least potential to affect nearby institutional, educational, and office uses that the Federal Transit Administration identifies as sensitive to daytime vibration (FTA 2006). 3. Notify neighbors of scheduled construction activities that would generate vibration.	would reduce impacts to a less than significant level.
Impact N-3: Compliance with Plan polices would reduce impacts related to airport Noise levels to less than significant.	None required.	Less than significant without mitigation.
Population and Housing		
Impact PH-1: Implementation of the Plan would accommodate more growth than envisioned in SCAG's latest Regional Transportation Plan/Sustainable Communities Strategy. However, policies and actions included in the Plan would adequately address the projected population growth. Thus the Plan is designed for planned and orderly growth which improves the balance of jobs and housing. this impact would be less than significant.	None required.	Less than significant without mitigation.
Impact PH-2: Development carried out under the Plan would add up to 22,000 new housing units to the City's housing stock and 75,756 new residents by 2045. The Plan would Increase the number of housing units, including multifamily housing units, and would not directly replace any existing housing. Therefore, the Plan would not displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere, and this impact would be less than significant.	None required.	Less than significant without mitigation.
Public Services		
Impact PS-1: Development carried out under the proposed plan would increase the City's population. This would increase the demand for fire and emergency medical services and potentially create the need for new fire service facilities. However, compliance with policies in the plan and the Palmdale municipal code as well as other city programs, would reduce impacts related to fire protection facilities to less than a significant level.	None required.	Less than significant without mitigation.

Impact	Mitigation Measure	Significance After Mitigation
Impact PS-2: Development carried out under the proposed Plan would increase the City's population. This would increase demand for police services and potentially create the need for new police service facilities. However, compliance with policies in the Plan would reduce impacts related to police protection services to a less than significant level.	None required.	Less than significant without mitigation.
Impact PS-3: The Plan would not result in substantial adverse physical impacts associated with the provision of new or physically altered schools, or the need for new or physically altered schools, in order to maintain acceptable service ratios or other performance objectives. Therefore, impacts would be less than significant.	None required.	Less than significant without mitigation.
Recreation		
Impact REC-1: Development facilitated by the Plan may increase the use of existing parks and open space, but policies in the Plan for providing additional recreational facilities, as well as City park dedication fees and development impact fees, would help offset these impacts, and substantial physical deterioration of recreational facilities would not occur. This impact would be less than significant.	None required.	Less than significant without mitigation.
Transportation		
Impact T-1: The Plan would not conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle, and pedestrian facilities. Impacts would be less than significant**.**	None required.	Less than significant without mitigation.
Impact T-2: The Plan would be consistent with CEQA Guidelines Section 15064.3(b). The Plan has the least significant VMT impact of all the scenarios, where socio-economic data were evaluated and placed in the optimum locations for smart growth consideration. No significant impacts would occur.	None required.	No impact.
Impact T-3: Through implementation of Plan policies and actions, the Plan would help ensure safe and efficient movement for all modes of travel and would therefore not substantially increase hazards due to a design feature (e.g., sharp curves or dangerous intersections) or incompatible uses (e.g. farm equipment). this would be a less than significant impact.	None required.	Less than significant without mitigation.
Impact T-4: The Plan would not result in inadequate emergency access because Plan goals and policies would encourage ease of connectivity and ease of mobility throughout the Planning Area and emergency access would be improved. there would be no impact.	None required.	No impact.

Impact	Mitigation Measure	Significance After Mitigation
Tribal Cultural Resources		
Impact TCR-1: Development carried out under the Plan may impact unidentified tribal cultural resources, but these impacts would be reduced to a less than significant level with incorporation of mitigation measures MM-TCR-1 and MM-TCR-2.	**MM-TCR-1: Native American Monitoring** Prior to the issuance of a grading permit for a project under the Plan, the City of Palmdale (City) shall ensure that the project applicant seeks the services of a tribal monitor(s) approved by the relevant tribes to provide Native American monitoring during ground-disturbing activities. This provision shall be included on the proposed project contractor's plans and specifications. Ground-disturbing activities are defined by the relevant tribes as activities that may include but are not limited to pavement removal, pot-holing or using an auger, grubbing, tree removals, borings, grading, excavation, drilling, and/or trenching within the project area. The project site shall be made accessible to the monitor(s), provided adequate notice is given to the construction contractor and that a construction safety hazard does not occur. The monitor(s) shall possess Hazardous Waste Operations and Emergency Response (HAZWOPER) certification. In addition, the monitor(s) shall be required to provide insurance certificates, including liability insurance. If evidence of tribal cultural resources is found during ground-disturbing activities, the monitor(s) shall have the capacity to halt construction in the immediate vicinity of the find to recover and/or determine the appropriate plan of recovery for the resource in consultation with a qualified archaeologist. The recovery process shall not unreasonably delay the construction process and must be carried out consistent with CEQA and local regulations. Construction activity shall not be contingent on the presence or availability of a monitor, and construction may proceed regardless of whether	Implementation of mitigation measures CUL-2 through CUL-8 in Section 4.5 *Cultural Resources*, and TCR-1 and TCR-2 would reduce impacts to archaeological resources to less than significant levels by ensuring the avoidance of archeological resources to the extent feasible, or by identifying, evaluating, and conducting data recovery archaeological resources that may be impacted by future projects in a timely manner.

Impact	Mitigation Measure	Significance After Mitigation
	or not a monitor is present on site. The monitor shall complete daily monitoring logs that will provide descriptions of the day's activities and general observations and whether the Native American monitor believes they observed a TCR and what action they took. The on-site monitoring shall end when the project site grading and excavation activities are completed or prior to the completion if the monitor has indicated that the site has a low potential for tribal cultural resources. **MM-TCR-2 Unanticipated Discovery of Tribal Cultural Resources** Upon discovery of any tribal cultural resources, the Native American monitor has the ability to halt construction activities in the immediate vicinity (within 50 feet) of the find until the find can be assessed. All tribal cultural resources unearthed during project construction activities shall be evaluated by the Native American monitor approved by the relevant tribes and a qualified archaeologist. Construction work shall be permitted to continue on other parts of the project site while evaluation and, if necessary, additional investigations and/or preservation measures take place (CEQA Guidelines Section15064.5(f)). If the resources are Native American in origin, the relevant tribes tribe shall coordinate with the landowner regarding treatment and curation of these resources. If a resource is determined by the qualified archaeologist to constitute a "historical resource" or "unique archaeological resource," time allotment and funding sufficient to allow for implementation of avoidance measures shall be made available through coordination between the relevant tribes and the project applicant. The treatment plan established for the resources	

Impact	Mitigation Measure	Significance After Mitigation
	shall be in accordance with California Environmental Quality Act (CEQA) Guidelines Section 15064.5(f) for historical resources and Public Resources Code (PRC) Sections 21083.2(b) for unique archaeological resources. Preservation in place (i.e., avoidance) shall be the preferred manner of treatment. If preservation in place is not feasible, treatment may include implementation of archaeological data recovery excavations to remove the resource along with subsequent laboratory processing and analysis.	
Utilities and Service Systems		
Impact U-1: Development facilitated by the Plan would create additional demand for water supply and wastewater facilities, which would require the construction or relocation of new or expanded water and wastewater facilities. Sufficient water supplied by PWD and LACWD 40 would not be available to serve the Plan and reasonably foreseeable future development. The Plan would also exceed capacity of local wastewater treatment facilities. Impacts would be significant and unavoidable.	At this time, it cannot be determined with certainty whether sufficient water supply sources may be available and sufficient to accommodate the demands of anticipated growth. There are no known mitigation measures that would reduce this impact to less than significant.	Impacts related to water supply and wastewater capacity would be significant and unavoidable.
Impact U-2: The Plan would not generate solid waste in excess of state or local standards or in excess of capacity of local infrastructure. Projects carried out under the Plan would comply with relevant waste reduction statutes and regulations. impacts would be less than significant.	None required.	Less than significant without mitigation.
Wildfire		
Impact WFR-1: A portion of the Planning Area is in a VHFHSZ. However, development carried out under the Plan would not substantially impair any adopted emergency response plans or emergency evacuation routes because it would be subject to adopted federal, State, and local development guidelines that govern wildfire, emergency services, and emergency access, and Plan policies address emergency planning and response. Therefore, this impact would be less than significant.	None required.	Less than significant without mitigation.

Impact	Mitigation Measure	Significance After Mitigation
Impact WFR-2: The Plan would not exacerbate wildfire risk due to slope, prevailing winds, or any other factor. The Plan would not expose occupants of projects carried out under the Plan to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire. This impact would be less than significant.	None required.	Less than significant without mitigation.
Impact WFR-3: The Plan would not require the installation or maintenance of associated infrastructure that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment. Therefore, the impact would be less than significant.	None required.	Less than significant without mitigation.
Impact WFR-4: The Plan would not expose people or structures to significant risks, including downslopes or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes, and there would be no impact.	None required.	No Impact.

This page intentionally left blank.

1 Introduction

This Environmental Impact Report (EIR) examines the potential environmental effects of the proposed City of Palmdale (City) General Plan Update, entitled *Palmdale 2045– A Complete Community* (Palmdale 2045, or the Plan). The Plan, the California Environmental Quality Act (CEQA) environmental review process, and the legal basis for preparing an EIR are described below.

This section (1) provides an overview of the background behind the Plan; (2) describes the purpose of and legal authority of the document; (3) summarizes the scope and content of the EIR; (4) lists lead, responsible, and trustee agencies for the EIR; (5) describes the intended uses of the EIR; and (6) provides a synopsis of the environmental review process required under CEQA.

1.1 Environmental Impact Report Background

This document is an EIR that evaluates the potential environmental effects associated with implementation of the Plan, a document that establishes the community's vision for future development of the Planning Area and provides comprehensive policies relating to land use and community design; housing; circulation and mobility; noise; conservation, natural, and cultural resources; air quality; parks, recreation and open space; equitable, resilient, and healthy community; military readiness; economic development; safety; public facilities, services, and infrastructure; and sustainability and climate vulnerability.

The contents of other EIR chapters are as follows:

- Chapter 2, *Project Description*, provides a detailed discussion of the Plan
- Chapter 3, *Environmental Setting*, describes the general environmental setting of the Planning Area
- Chapter 4, *Environmental Impact Analysis*, describes the potential environmental effects associated with implementation of the Plan
- Chapter 5, *Other CEQA Required Discussions*, discusses other issues required to be analyzed under CEQA such as growth inducement and significant irreversible environmental effects
- Chapter 6, *Alternatives*, discusses alternatives to the Plan, including the CEQA-required "no project" alternative
- Chapter 7, *References*, lists informational sources for the EIR and persons involved in the preparation of the document

1.2 Overview of General Plan Update

The last comprehensive update of the City's General Plan was adopted by the City Council on January 25, 1993. The City is proposing a new, comprehensive update of the General Plan (Palmdale 2045, or the Plan) that will need to be reviewed and recommended for adoption by the City's Planning Commission, followed by final approval and adoption by the City Council.

State law (Government Code Section 65300) requires that each city and county adopt a comprehensive, long-term general plan. This Plan fulfills that requirement by updating the City's existing General Plan, last comprehensively updated in 1993. The Plan defines the framework by which the Planning Area's physical and economic resources are to be managed and used in the

future; and clarifies and articulates the City's intentions for Palmdale's future, with respect for the rights and expectations of the community including residents, property owners, and businesses. Through the Plan, the City informs these groups of its goals, policies, and standards, which are designed to achieve the objectives of the City and the community. The Plan's planning horizon is the year 2045.

Since a general plan is a community's constitution for future development, any decision by a city affecting land use and development must be consistent with its adopted general plan. This includes any future development projects proposed in and approved by the city. An action, program, or project would be considered consistent with the general plan if, considering all of its aspects, it would further or not obstruct attainment of the objectives and policies outlined in the general plan.

Each chapter of the Plan includes a list of desired outcomes, indicators, targets for that issue area; and goals, and policies meant to achieve them. Goals are defined as specified ends that help achieve the desired outcomes, indicators, and targets. Policies are specific statements that guide decision-making. These goals and policies are statements adopted by the City Council that help implement the vision of Palmdale that the Plan seeks to achieve. The goals and policies also provide protection for the City's resources by establishing planning requirements, programs, standards, and criteria for project review. Goals and policies may refer to existing programs or call for establishment of new programs.

1.3 Purpose and Legal Authority

This EIR has been prepared in accordance with CEQA and the state CEQA Guidelines. In accordance with Section 15121(a) of the CEQA Guidelines (California Code of Regulations [CCR], Title 14, Division 6, Chapter 3), the purpose of an EIR is to inform public agency decision-makers and the public generally of the significant environmental effects of a project, identify possible ways to minimize the significant effects, and describe reasonable alternatives to the project.

This EIR fulfills the requirements for a program EIR. Although the legally required contents of a program EIR are the same as those of a project EIR, program EIRs are typically more conceptual and may contain a more general discussion of impacts, alternatives, and mitigation measures than a project EIR. As provided in Section 15168 of the CEQA Guidelines, a program EIR may be prepared on a series of actions that may be characterized as one large project. Use of a program EIR provides the City (as lead agency) with the opportunity to consider broad policy alternatives and program-wide mitigation measures, and provides the City with greater flexibility to address environmental issues and/or cumulative impacts on a comprehensive basis.

Agencies generally prepare program EIRs for programs or a series of related actions that are (1) linked geographically; (2) logical parts of a chain of contemplated events, rules, regulations, or plans that govern the conduct of a continuing program; or (3) individual activities carried out under the same authority and having generally similar environmental effects that can be mitigated in similar ways. By its nature, a program EIR considers the "macro" effects associated with implementing a program (such as a general plan or specific plan) and does not, and is not intended to, examine the specific environmental effects associated with particular projects that may be implemented under general or specific plans.

Once a program EIR has been prepared, subsequent activities in the program must be examined in the light of that program EIR to determine what, if any, additional CEQA documentation needs to be prepared. If the program EIR addresses the program's effects as specifically and comprehensively as

possible, many subsequent activities could be found to be within the scope of the program EIR and additional environmental documents may not be required (CEQA Guidelines Section 15168[c]). When a lead agency relies on a program EIR for a subsequent activity, it must incorporate applicable mitigation measures and alternatives developed in the program EIR into the subsequent activities (CEQA Guidelines Section 15168[c][3]). If a subsequent activity would have effects not identified in the program EIR, the lead agency must prepare a new initial study leading to a Negative Declaration, Mitigated Negative Declaration, or a project-level EIR. In this case, the program EIR still serves a valuable purpose as the first-tier environmental analysis. In addition, Section 15168(b) of the CEQA Guidelines encourages the use of program EIRs, citing five advantages:

1. Provide for a more exhaustive consideration of impacts and alternatives than would be practical in an individual EIR
2. Focus on cumulative impacts that might be slighted in a case-by-case analysis
3. Avoidance of continual reconsideration of recurring policy issues
4. Consideration of broad policy alternatives and programmatic mitigation measures at an early stage when the agency has greater flexibility to deal with them
5. Reduction of paperwork by encouraging the reuse of data (through tiering)

As a "macro" level environmental document, the program EIR uses macro-level thresholds rather than the project-level thresholds that might be used for an EIR on a specific development project. It should not be assumed that impacts determined not to be significant at a macro level would not be significant at a project level. In other words, determination that implementation of the Plan as a "program" would not have a significant environmental effect does not necessarily mean that an individual project would not have significant effects based on project-level CEQA thresholds, even if the project is consistent with the General Plan.

This EIR has been prepared to analyze potentially significant environmental impacts associated with future development resulting from implementation of the Plan and addresses appropriate and feasible mitigation measures or project alternatives that would minimize or eliminate these impacts. Additionally, this EIR will provide the primary source of environmental information for the City, the lead agency, to use when considering implementation of all future projects.

This EIR is intended to provide decision-makers and the public with information that enables them to intelligently consider the environmental consequences of the Plan (considered to be the "proposed project" under CEQA). This EIR identifies significant or potentially significant environmental effects, as well as ways in which those impacts can be reduced to less than significant levels (if feasible), whether through the incorporation of mitigation measures or through the implementation of specific alternatives to the Plan. In a practical sense, this document functions as a tool for fact-finding, allowing concerned citizens, agencies, and City staff an opportunity to collectively review and evaluate baseline conditions and project impacts through a process of full disclosure.

1.4 Scope and Content

In accordance with the CEQA Guidelines, a Notice of Preparation (NOP) of a Draft EIR was circulated to potentially interested parties on June 23, 2021. The NOP, included in Appendix A, indicated that all issues on the City's environmental checklist would be discussed in the EIR. These include the following:

- Aesthetics
- Agriculture and Forestry Resources
- Air Quality
- Biological Resources
- Cultural Resources
- Energy
- Geology/Soils
- Greenhouse Gas Emissions
- Hazards and Hazardous Materials
- Hydrology/Water Quality
- Land Use and Planning
- Mineral Resources
- Noise
- Population and Housing
- Public Services
- Recreation
- Transportation
- Tribal Cultural Resources
- Utilities and Service Systems
- Wildfire
- Mandatory Findings of Significance

This EIR evaluates potential impacts in each of these areas. The focus of this EIR is to:

- Provide information about the Plan for consideration by City decision-makers in their selection of the Plan, an alternative to the Plan, or a combination of various elements from the Plan and its alternatives, for approval
- Review and evaluate the potentially significant environmental impacts that could occur as a result of the growth and development envisioned in the Plan
- Identify feasible mitigation measures that may be incorporated into the Plan in order to reduce or eliminate potentially significant effects
- Disclose any potential growth-inducing and/or cumulative impacts associated with the Plan
- Examine a reasonable range of alternative growth scenarios (such as "no growth"/growth according to the existing Plan, reduced growth, or growth in alternative locations) that could feasibly attain the basic objectives of the Plan, while eliminating and/or reducing some or all of its potentially significant adverse environmental effects

The City received six written comment letters on the NOP. The comment letters are included in Appendix A and are addressed, as appropriate, in the analysis contained in the various subsections of Section 4, *Environmental Impact Analysis*. The City also held an EIR scoping meeting on June 30, 2021. The scoping meeting was conducted remotely due to COVID-19 restrictions and safety concerns. Table 1-1 summarizes all comments received, by topic, in the comment letters and at the scoping meeting, and where the topic of each comment letter is addressed in this EIR.

Table 1-1 NOP Comments and EIR Response

Topic	Where Topic is Addressed in EIR
General Plan Scope and Description ▪ Disclosure of possible impacts and feasible mitigation measures	Section 2.3.1, *Objectives of the General Plan Update*
Biological Resources ▪ Permit required for impacts to or removal or relocation of Oak trees, pursuant to Los Angeles County Oak tree Ordinance ▪ Protection and possible take of Western Joshua tree ▪ Appropriate authorization for any take of Endangered Species Act (ESA) or California Endangered Species Act (CESA) listed or eligible species ▪ Discussion of potential impact on other special status species	Section 4.4, *Biological Resources*

Topic	Where Topic is Addressed in EIR
▪ Biologically significant sites inventory ▪ Notification to California Department of Fish and Wildlife (CDFW) regarding changes and impacts to jurisdictional waters ▪ Delineation and setbacks for wetlands and other jurisdictional waters ▪ "No net loss" of wetlands; avoidance of development on wetlands and mitigation for development near wetlands ▪ Avoid loss of and impacts to nesting birds and nesting bird habitat ▪ Completion of a biological baseline assessment ▪ Reporting of any detected special status species and natural communities ▪ Discussion of direct, indirect, and cumulative impacts expected to adversely affect biological resources ▪ Translocation and salvage of plants and animal species ▪ Restoration and compensatory mitigation ▪ Long-term management of mitigation lands	
Population and Housing ▪ Recommendation for infill development ▪ Use of accurate growth forecasts ▪ Use of 6th Cycle Regional Housing Needs Allocation (RHNA) plan	Section 4.14, *Population and Housing* Section 2.3.5, *Residential and Employment Growth*
Public Services ▪ Compliance with all applicable codes and ordinances for fire access and protection ▪ Emergency vehicle accessibility and water supply requirements ▪ Fuel modification plans ▪ Fire and safety requirements during construction	Section 4.9, *Hazards and Hazardous Materials* Section 4.15, *Public Services*
Transportation ▪ Vehicle miles traveled (VMT) as primary metric in transportation analysis ▪ Complete traffic safety analysis ▪ Promotion of alternative transportation ▪ Plan consistency with Southern California Association of Governments (SCAG) Connect SoCal goals	Section 4.17, *Transportation*
Tribal Cultural Resources ▪ Consultation with tribes traditionally and culturally affiliated with Plan area pursuant to AB 52 ▪ Consultation with tribes prior to adoption of a General Plan, pursuant to SB 18 ▪ Completion of historical and archaeological records search ▪ Sacred Lands File search through the NAHC ▪ Mitigation for inadvertently discovered archaeological resources	Section 4.18, *Tribal Cultural Resources*
Utilities and Service Systems ▪ No current sewer deficiencies in Los Angeles County Sanitation District (LACSD) services ▪ Impact to LACSD sewer facilities ▪ Location of wastewater treatment facilities ▪ Possible sewerage system connection fees ▪ Projected population's impact on sewerage facilities	Section 4.19, *Utilities and Service Systems*

Topic	Where Topic is Addressed in EIR
Topics not Required to be Covered in the EIR under CEQA ▪ Request for provision of environmental documentation during public comment period ▪ Development of an Environmental Justice Element	Not applicable
Alternatives ▪ Discussion of need for project and potentially feasible alternatives	Chapter 6, *Alternatives*

1.5 Lead, Responsible, and Trustee Agencies

The City is the lead agency under CEQA for this EIR because it has primary discretionary authority to determine whether or how to approve the Plan.

"Responsible agencies" are other agencies responsible for carrying out/implementing a specific component of a proposed project or for approving a project (such as an annexation) that implements the goals and policies of a general plan. Section 15381 of the CEQA Guidelines defines a responsible agency as:

> A public agency which proposes to carry out or approve a project, for which a lead agency is preparing or has prepared an EIR or Negative Declaration. For purposes of CEQA, responsible agencies include all public agencies other than the lead agency that have discretionary approval authority over the project.

There are no responsible agencies for the General Plan Update. Although no responsible agencies occur under CEQA, several other agencies have review authority over aspects of the Plan or approval authority over projects that could potentially be implemented in accordance with various objectives and policies included in the Plan. These agencies and their roles are listed below.

- The state geologist is responsible for the review of the City's program for minimizing exposure to geologic hazards and for regulating surface mining activities.
- The California Department of Transportation (Caltrans) has responsibility for approving future improvements to the state highway system, including State Route 14 (SR 14) and State Route 138 (SR 138).
- The CDFW has responsibility for issuing take permits and streambed alteration agreements for any projects with the potential to affect plant or animal species listed by the State of California as rare, threatened, or endangered, or that would disturb waters of the state.
- The Antelope Valley Transit Authority (AVTA) is responsible for approving and implementing projects involving construction or remodeling of new or existing AVTA facilities, such as bus stops.
- The LACSD treats wastewater from the City's system and would therefore be responsible for approving and implementing improvements to wastewater infrastructure should they be required as a result of the General Plan Update.
- The Board of Forestry and Fire Protection (Board), which is a government-appointed body within the California Department of Forestry and Fire Protection (CalFire), is responsible for reviewing the Safety Element under Government Code Section 65302.5. The Board reviews the Safety Element and responds to the City with its findings regarding the uses of land and policies in State Responsibility Areas (SRAs) or Very High Fire Hazard Severity Zones (VHFHSZs) that will protect life, property, and natural resources from unreasonable risks associated with wildfires,

and the methods and strategies for wildfire risk reduction and prevention within SRAs or VHFHSZs (Gov. Code, § 65302.5, subd. (b)(3); California Board of Forestry and Fire Protection, 2022).

"Trustee agencies" have jurisdiction over certain resources held in trust for the people of California, but do not have legal authority to approve or carry out the project. CEQA Guidelines Section 15386 designates four agencies as trustee agencies: the CDFW with regards to fish and wildlife, native plants designated as rare or endangered, game refuges, and ecological reserves; the State Lands Commission with regard to state-owned "sovereign" lands, such as the beds of navigable waters and state school lands; the California Department of Parks and Recreation with regard to units of the state park system; and the University of California with regard to sites within the Natural Land and Water Reserves System. The CDFW is the only trustee agency for the Plan EIR.

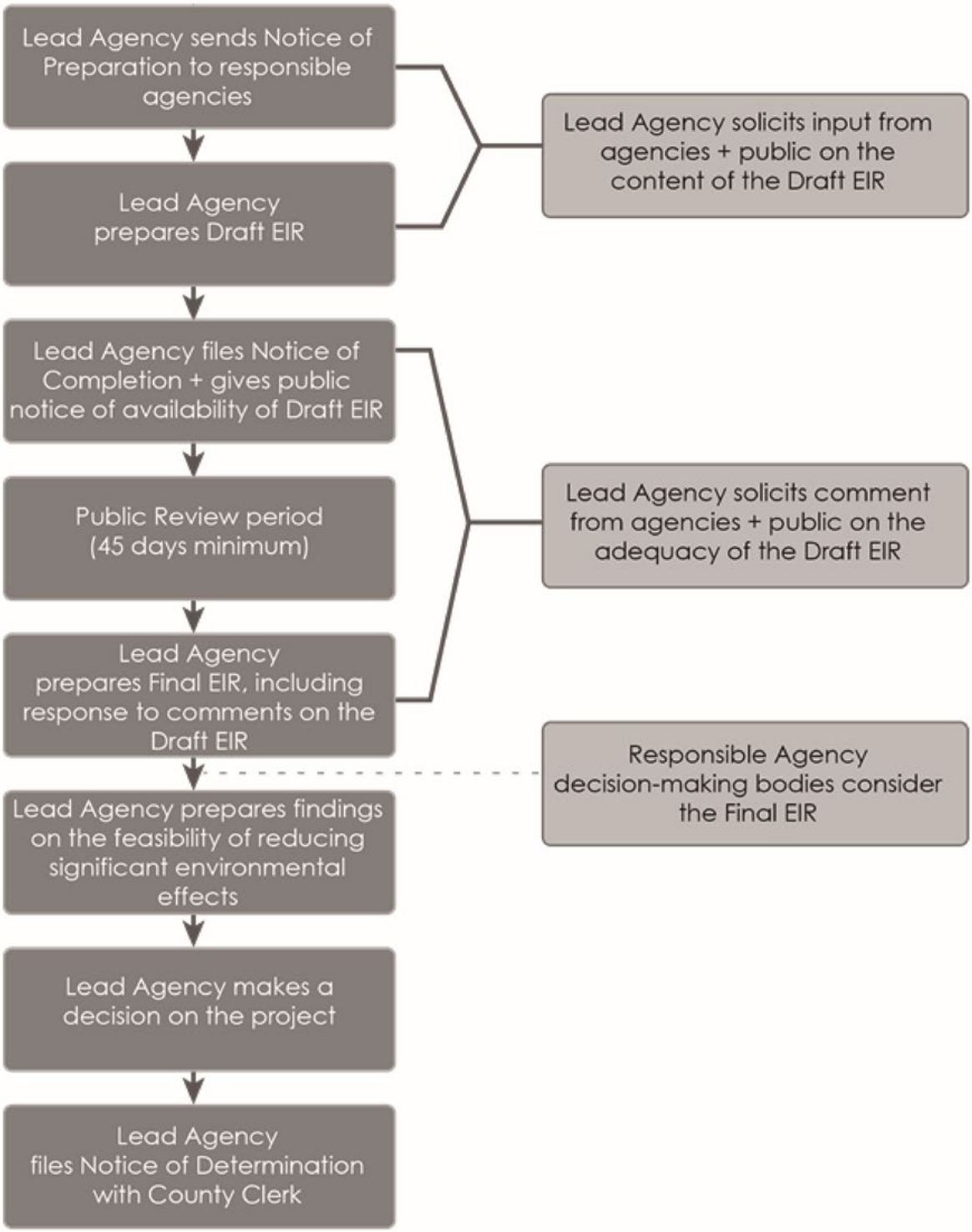
1.6 Environmental Review Process

The environmental impact review process required under CEQA is summarized below and illustrated in Figure 1-1. The steps appear in sequential order.

1. **Notice of Preparation (NOP).** After deciding that an EIR is required, the lead agency must file an NOP soliciting input on the EIR scope to responsible, trustee, and involved federal agencies; to the State Clearinghouse, if one or more state agencies is a responsible or trustee agency; and to parties previously requesting notice in writing (CEQA Guidelines Section 15082; Public Resources Code [PRC] Section 21092.2). The NOP must be posted in the County Clerk's office for 30 days. For projects of statewide or regional significance, the lead agency must hold a scoping meeting during the 30-day NOP review period to solicit public input on the issues to be assessed in the EIR. For other projects, a scoping meeting is not required, but may be conducted by the lead agency.
2. **Draft EIR.** The Draft EIR must contain (1) table of contents or index; (2) summary; (3) project description; (4) environmental setting; (5) significant impacts (direct, indirect, cumulative, growth-inducing, and unavoidable impacts); (6) alternatives; (7) mitigation measures; and (8) irreversible changes.
3. **Public Notice and Review.** A lead agency must prepare a Public Notice of Availability of an EIR. The Notice must be placed in the County Clerk's office for 30 days (PRC Section 21092) and sent to parties previously requesting notice. Additionally, public notice of Draft EIR availability must be given through at least one of the following procedures: (1) publication in a newspaper of general circulation; (2) posting on and off the project site; and (3) direct mailing to owners and occupants of contiguous properties. The lead agency must consult with and request comments on the Draft EIR from responsible and trustee agencies, and adjacent cities and counties. The minimum public review period for a Draft EIR is 30 days. When a Draft EIR is sent to the State Clearinghouse for review, the public review period must be 45 days, unless a shorter period is approved by the State Clearinghouse (PRC 21091). Distribution of the Draft EIR may be required through the State Clearinghouse.
4. **Notice of Completion.** A lead agency must file a Notice of Completion with the State Clearinghouse as soon a Draft EIR is completed.
5. **Final EIR.** A Final EIR must include (1) the Draft EIR; (2) copies of comments received during public review; (3) a list of persons and entities commenting; and (4) responses to comments.

6. **Final EIR Certification.** The lead agency shall certify that (1) the Final EIR has been completed in compliance with CEQA; (2) the Final EIR was presented to the decision-making body of the lead agency; and (3) the decision-making body reviewed and considered the information in the Final EIR prior to approving a project.
7. **Lead Agency Project Decision.** Once the lead agency certifies the Final EIR, it must then make a decision on the project analyzed in the EIR. If a project has significant environmental effects, the lead agency may (1) disapprove the project because of its significant environmental effects; (2) require changes to the project to reduce or avoid significant environmental effects; or (3) approve the project despite its significant environmental effects, if the proper findings and Statement of Overriding Considerations are adopted.
8. **Findings/Statement of Overriding Considerations.** For each significant impact of the project identified in the EIR, the lead or responsible agency must find, based on substantial evidence, that either (1) the project has been changed to avoid or substantially reduce the magnitude of the impact; (2) changes to the project are within another agency's jurisdiction and such changes have or should be adopted; or (3) specific economic, social, or other considerations make the mitigation measures or project alternatives infeasible. If an agency approves a project with unavoidable significant environmental effects, it must prepare a written Statement of Overriding Considerations that sets forth the specific social, economic, or other reasons supporting the agency's decision.
9. **Mitigation Monitoring and Reporting Program.** When an agency makes findings on significant effects identified in the EIR, it must adopt a reporting or monitoring program for mitigation measures that were adopted or made conditions of project approval to mitigate significant effects.
10. **Notice of Determination (NOD).** An agency must file an NOD after deciding to approve a project for which an EIR is prepared. A local agency must file the NOD with the County Clerk. The NOD must be posted for 30 days and sent to anyone previously requesting notice. Posting of the NOD starts a 30-day statute of limitations on CEQA challenges.

Figure 1-1 Environmental Review Process



This page intentionally left blank

2 Project Description

The proposed project is an update of the City of Palmdale General Plan entitled *Palmdale 2045– A Complete Community* (Palmdale 2045, the Plan or proposed Plan). The actions that make up the proposed Plan are described below.

The proposed Plan is a comprehensive update of the City's General Plan, the guiding document for the future of Palmdale over 23 years (2022-2045). The General Plan serves as the City's primary guide for land use and development decisions and is a key tool for influencing and improving the quality of life for residents and businesses. As such, it serves as the "blueprint" for future development and conservation of the community. The Plan will help the City plan for important community issues such as new growth, housing and infrastructure needs, and environmental protection. It also sets the stage for future social, physical, and economic development of the City. It addresses issues that impact the entire community, such as how land is used, where buildings are constructed, and the location of infrastructure. The Planning Area for the proposed project includes the land within Palmdale's City Limits, Sphere of Influence (SOI), and several unincorporated Los Angeles County 'islands,' as further described in Section 2.2, *Project Location*.

This section of the EIR describes the key characteristics of the proposed Plan, including the project proponent/lead agency, the geographic extent of the project objectives, required approvals, and the types and extent of development forecast for the Planning Area. This section also summarizes key aspects of the Plan that have the potential to result in physical environmental effects.

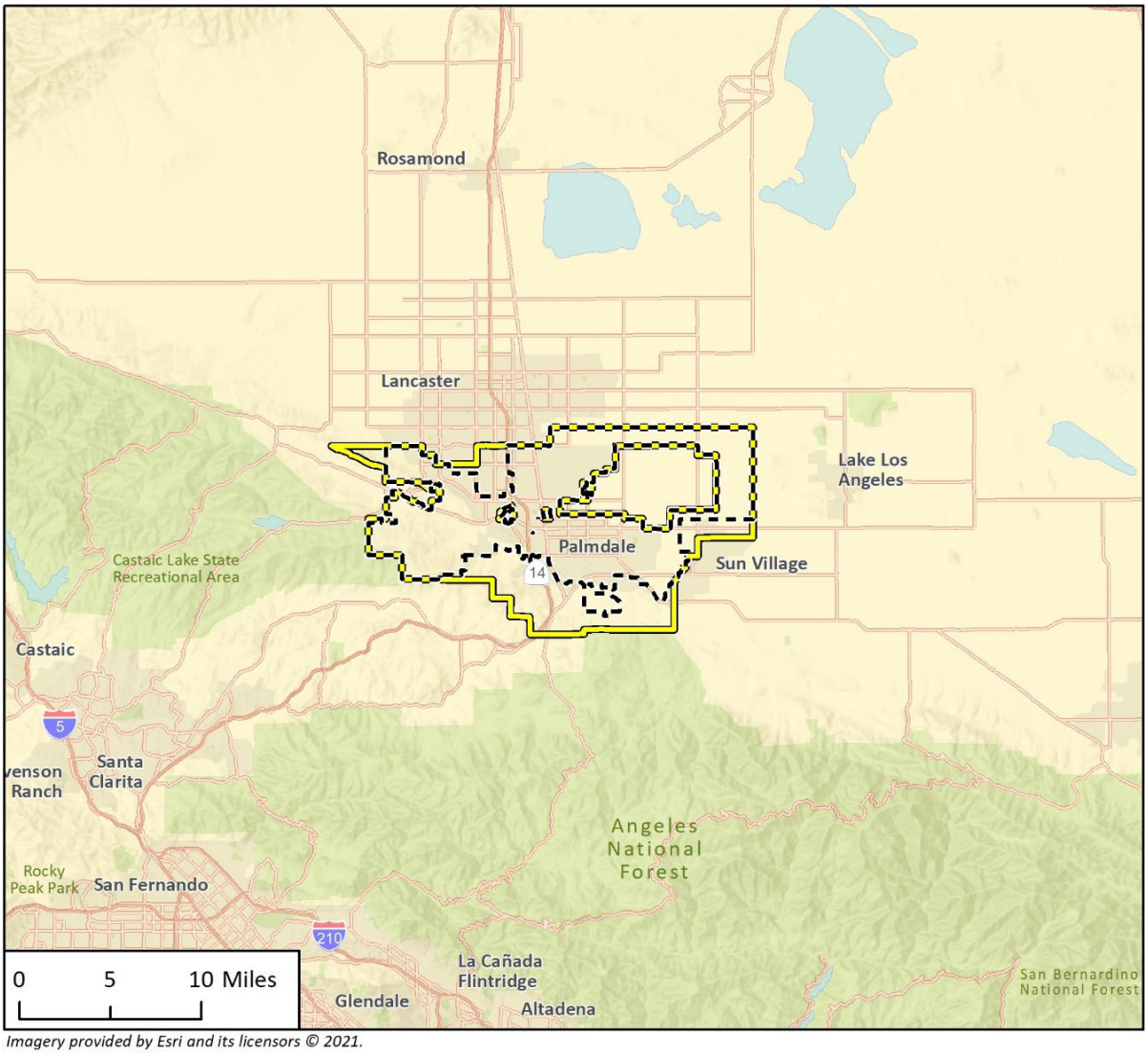
2.1 Project Proponent/Lead Agency

The City of Palmdale is both the project proponent and the lead agency for the proposed Plan.

2.2 Project Location

Palmdale is in the Antelope Valley, in the 'high desert' portion of Los Angeles County. The Antelope Valley is disconnected from the Southern California coastal and Central California valley regions by the Tehachapi Mountains to the northwest and by the San Gabriel Mountains to the south. The far western portions of the City and the Planning Area are in the foothills of the San Gabriel Mountains. Nearby communities include the city of Lancaster and the unincorporated community of Quartz Hill to the north; as well as other unincorporated communities such as Lake Los Angeles to the east, Sun Village, Littlerock, and Pearblossom to the southeast, Acton to the south, Agua Dulce to the southwest, and Leona Valley to the west. The Antelope Valley Freeway (SR-14) traverses the Planning Area from north to south, and SR-138 runs as Palmdale Boulevard in an east/west direction from its intersection with SR-14 to 47th Street East, then south along 47th Street east, then southeast along Fort Tejon Road and Pearblossom Highway to Littlerock. Figure 2-1 shows the regional location of the Planning Area and Figure 2-2 shows the local location. The Planning Area is 106,634 acres, or approximately 166 square miles.

Figure 2-1 Regional Location



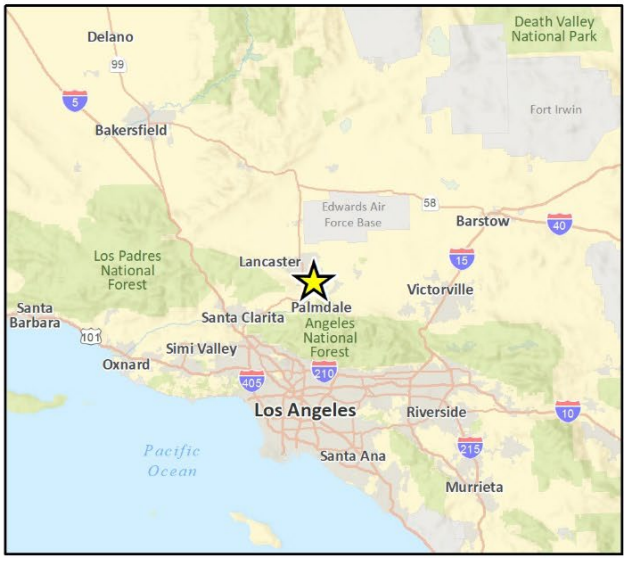
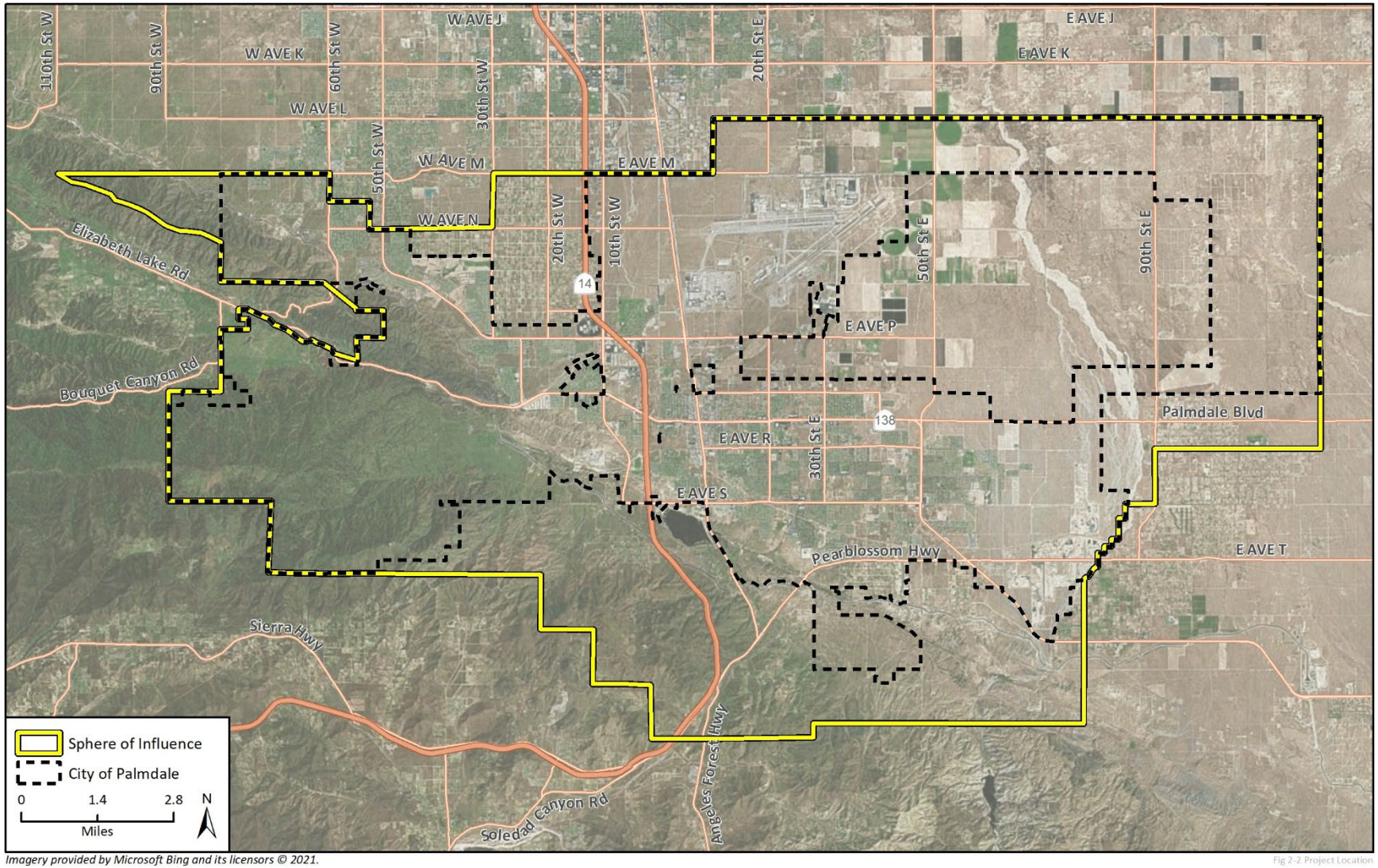


Figure 2-2 Project Location



Imagery provided by Microsoft Bing and its licensors © 2021.

Fig 2-2 Project Location

2.3 Characteristics of the Proposed General Plan Update

2.3.1 Objectives of the General Plan Update

Palmdale 2045 is intended to function as a policy document to guide land use decisions in the City's Planning Area over 23 years (2022-2045). According to State law, General Plans are required to cover nine topics: land use, circulation, housing, conservation, open space, noise, air quality, safety, and environmental justice. Jurisdictions may address these topics across different chapters, or elements, of their general plan, and include any other topic that is relevant to planning its future. The updated City of Palmdale General Plan will include the State required topics plus economic development, urban design, infrastructure, military readiness, community facilities, sustainability and resilience, and climate change.

Palmdale 2045's vision for the city was developed with extensive community input and in recognition of the state's planning priorities. Palmdale 2045 focuses on enhancing community identity, building on planned infrastructure investments, improving multi-modal active transportation and connectivity, integrating health and equity, and capitalizing on the City's unique location in the region. Palmdale 2045's vision for the future includes the following vision themes.

- **Unified and welcoming community.** The Palmdale community values opportunity, diversity, and unity, and seeks to promote Palmdale's positive reputation while boosting community beautification
- **Active and vibrant downtown.** Palmdale residents desire a future downtown that fosters a sense of place, promotes local businesses, provides gathering spaces, and events, and improves the overall appearance of Palmdale
- **Diverse and high-quality job options.** Palmdale seeks to retain and expand its employment base through training for key industries, connecting residents to local jobs, and promoting telecommuting within the city
- **Diverse and resilient local economy.** Palmdale values its existing aerospace presence and aims to leverage and diversify new economic opportunities from expanded transportation connections
- **Safe, healthy place to live and work.** Palmdale residents want to address crime and safety, increase access to parks and open space, and support marginalized communities like foster youth and those experiencing homelessness
- **High quality medical and mental healthcare.** As a medical provider shortage area, Palmdale seeks to improve access to quality medical and mental healthcare services and facilities by attracting physicians, maintaining the Palmdale Regional Medical Center, and expanding services
- **Housing options for residents at different stages of life and ability.** The residents of Palmdale desire to preserve and expand affordable housing and diversify housing types across the city that support residents of all abilities through different stages of life
- **High quality and accessible educational opportunities.** Citizens of Palmdale seek to promote and expand educational opportunities in the City including higher education, trade school, and formal and informal training programs

- **Beautiful natural setting.** The Palmdale community values its natural setting and seeks to improve connectivity to trails and open space, maintain mountain views, healthy air quality, and dark night sky
- **Forefront of transportation innovations.** On the cusp of major regional transportation improvements, Palmdale seeks to leverage planned investments and improve local transit opportunities
- **General Plan implementation.** Residents of Palmdale value the long-term vision of the General Plan Update and desire regular review and update of the Plan including metrics for tracking implementation

Palmdale 2045 identifies major strategies and physical improvements for the City over the next 23 years. These strategies include creating a vibrant downtown near the future multimodal transit station, establishing three health and wellness districts and two education districts, transforming Palmdale Boulevard into a mixed-use corridor, promoting a diversity of housing types in the City, forming village centers that offer a mix of residential choices and daily goods and services near existing neighborhoods, and building off existing industrial and aerospace business opportunities. These strategies will support existing and future employees, businesses, and residents by improving quality of life in Palmdale.

The following actions will also be taken by the City in connection with the General Plan Update and are also considered part of the proposed project to be analyzed in the forthcoming EIR:

- Adoption and implementation of the General Plan Update (Palmdale 2045 Plan)
- Adoption and implementation of the Climate Action Plan
- Adoption and implementation of the Comprehensive Zoning Ordinance Amendment
- A slight expansion of the boundary of the Palmdale Transit Area Specific Plan. Currently, many of the parcels along the external boundary of this Specific Plan area have split zoning because they are partly inside and partly outside the Specific Plan area. This proposed expansion would fully include these parcels within the Specific Plan area. Because the Specific Plan area is in the core of the city, this action would not affect the Planning Area of the proposed General Plan Update or require annexations.

Palmdale 2045 also includes an update of the City's Housing Element, in compliance with the requirements of State Housing Element law, which required the City to adopt an updated Housing Element by October 2021. A description of City actions taken to date in connection with the Housing Element Update is included in Section 2.3.2 of this EIR. While an Addendum was prepared for the Housing Element Update, the Housing Element Update is also analyzed in this EIR, as necessary, in the context of the overall Plan. The Housing Element Update will be readopted as part of the Plan after certification by the California Department of Housing and Community Development (HCD).

2.3.2 General Plan Organization

Palmdale 2045 is organized into chapters, including Introduction; Vision and Guiding Principles; and twelve topical chapters. The Introduction chapter provides context and background information on the City and the Plan itself, and the Vision and Guiding Principles chapter establishes the overall concepts for the future. The twelve topical element chapters encompass all the elements required by California General Plan law. The Housing Element update is provided under separate cover but is a part of the overall General Plan. Each topical chapter is summarized below:

- **Land Use and Community Design.** This chapter of the Plan provides a long-term vision, goals, and policies for Palmdale over the next 20 to 30 years. The overall focus is on how to accommodate change and growth in the City, while preserving and enhancing the features and attributes that make it such a desirable place to live. The future of Palmdale is dependent on the mix of residential, commercial, employment, and industrial uses which provide the foundation for a fiscally healthy community; as well as the design and quality of buildings, streets, and public spaces, which make Palmdale an attractive and highly livable place for its residents.
- **Circulation and Mobility.** This chapter of the Plan outlines goals and policies related to transportation and transit within Palmdale. This chapter provides policy direction for building and maintaining a transportation system that is safe, equitable, and accommodates future growth and planned land uses within the City.
- **Economic Development.** The purpose of the Economic Development chapter is to establish policies essential to the economic success of the City of Palmdale and its residents. This chapter provides policy direction and metrics to grow and diversify the City's economy and promote fiscal sustainability by attracting new businesses and residents, retaining, and nurturing existing industries, and expanding workforce development opportunities. Topics addressed in this chapter include jobs and workforce development, housing and community amenities, transportation and infrastructure investment and fiscal health.
- **Military Compatibility**. The Military Compatibility chapter of the Plan outlines goals and policies related to land use and noise compatibility of current and increasing operations at Plant 42. This chapter also establishes goals and policies related to increased communication between the military, the City, and its residents, as well as coordination of future development and infrastructure improvements.
- **Equitable, Resilient, and Healthy Community.** The purpose of this chapter of the Plan is to establish policies that promote equitable access to economic opportunities, education, public facilities, and affordable housing to residents of Palmdale. This chapter also provides policy guidance related to air quality, health, and public safety in the City.
- **Parks, Recreation, Open Space.** The Parks, Recreation, and Open Space chapter of the Plan outlines goals and policies related to the provision of parks and recreation facilities in Palmdale. This chapter establishes targets for the location and accessibility of parks, active modes of transportation, and providing recreational opportunities for all city residents.
- **Conservation, Natural and Cultural Resources.** This chapter of the Plan outlines the goals and policies related to the conservation of natural and cultural resources in Palmdale. Topics addressed include Natural Resources, Land Resources, Cultural Resources, and Water Resources.
- **Public facilities, services, and infrastructure.** This section of the Palmdale General Plan outlines the goals and policies related to public facilities, services, and infrastructure in Palmdale. Topics discussed include Public Facilities, Emergency Services, Water Utilities and Infrastructure and Dry Utilities and Infrastructure.
- **Safety.** The Safety Element chapter of the Palmdale General Plan outlines the goals and policies related to hazards and safety in Palmdale. Topics addressed in this chapter include Geologic and Seismic Hazards, Flooding, Hazardous Materials and Climate Change.
- **Sustainability, Climate Action, and Resilience.** This chapter of the Plan provides policy guidance related to the provision and implementation of a climate action plan, making Palmdale a carbon neutral community by 2045, and decreasing emissions and environmental impacts related to energy, the built environment, transportation, waste, and water.

- **Air Quality.** The Air Quality Chapter of the Palmdale General Plan outlines goals and policies related to air quality within Palmdale. Topics addressed include Climate and Topography, Air Pollutants of Primary Concern, Existing Ambient Air Quality, Source Categories and Greenhouse Gas Emissions.
- **Noise.** The Noise Element outlines the goals and policies related to the noise environment in the Palmdale community. Topics discussed include Noise Generators and Sensitive Receptors.

Each chapter also discusses its overall purpose, or vision, as it relates to the Plan as a whole. The goals and policies in each chapter then outline how the City plans to achieve this vision. Finally, implementation actions designed to help achieve the goals and policies are contained at the end of each topical chapter.

The City and its consultant team is currently working on updating the City's Housing Element. This 6th Cycle Housing Element Update was analyzed in an Addendum to the EIR for the City's 5th Cycle Housing Element. The City submitted a draft Housing Element Update for HCD review on September 17, 2021. A meeting was held on November 10, 2021 between City staff, its consultant team and HCD in which HCD gave feedback to the City regarding the draft Housing Element Update. HCD sent a letter to the City on November 16, 2021 stating that the City's draft Housing Element Update did not meet all statutory requirements and would need to be revised. The City submitted a revised draft Housing Element Update dated December 7, 2021 to HCD that had revisions meant to address HCD's comments. HCD provided feedback on this draft and determined that changes would be necessary to bring the City's housing element into compliance with State law. The City of Palmdale is currently in the process of submitting the Housing Element Update for it's third review, and will readopt the element with the Plan. All proposed population and housing growth relative to the updated Housing Element will be accounted for in the projected population and housing growth discussed in the Plan and this EIR, and thus this EIR provides CEQA analysis for the updates to the Housing Element.

2.3.3 Overarching Purposes and Goals

As explained in Section 2.3.1, the Plan's objectives are enhancing community identity, building on planned infrastructure investments, improving multi-modal active transportation and connectivity, integrating health and equity, and capitalizing on the City's unique location in the region. Based on these objectives and input from the community, the Plan includes the overarching purposes to guide Plan policies and City decision-making. The overarching purpose is a vision statement that provides general direction for the chapter. The goals in each chapter specify ends that help achieve the overarching purpose. The policies are specific statements that guide decision-making.

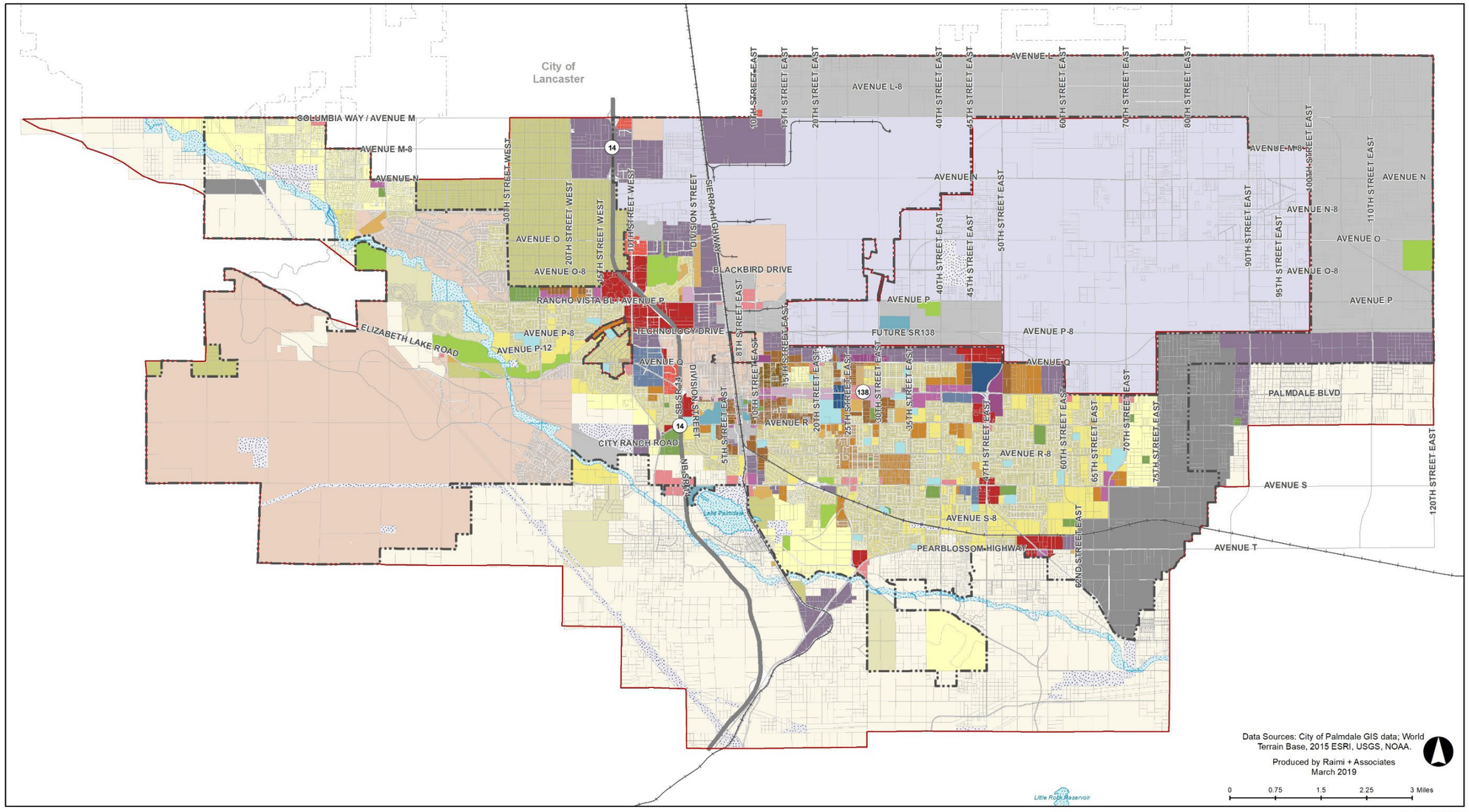
2.3.4 General Plan Land Use Map

The purpose of the General Plan land use map, shown in Figure 2-3, is to guide the general distribution, location, and extent of the various land uses in the City. The Palmdale 2045 land use map includes the land use designations proposed under the Plan. Specific land use regulations for parcel development will continue to be defined in the City's Zoning Ordinance, which will be updated following adoption of the Plan.

The proposed land use map (Figure 2-3) specifies land use designations for all areas of the city. Figure 2-3 shows the proposed breakdown of land use designations under the proposed Plan compared to the current General Plan.

The existing General Plan has 24 land use designations, while the proposed Plan has 28 land use designations. Some land use designations that exist under the current General Plan have been removed from the proposed Plan, and some new land use designations have been added to the proposed Plan. For example, four residential land use designations from the current General Plan (Medium Residential, Medium High Density Residential, Multi-family Residential, and High Density Residential) have been replaced with four new residential designations in the proposed Plan (Neighborhood Residential 1, 2, 3, and 4). In the commercial land use categories, the proposed Plan does not include the current Community Commercial, Downtown Commercial, Office Commercial, and Business Park designations, but the proposed Plan introduces a new Visitor Commercial designation, three new Mixed Use designations, a Health and Wellness District designation, and an Educational Flex designation. The current Airport and Related Uses category has been replaced with the proposed Aerospace Industrial category. The proposed Plan eliminates the current Commercial Manufacturing and Special Development categories but adds a Utilities category. The Plan eliminates the current Public Facility category but adds Public Facility categories for Civic, Park, and School uses. The proposed Plan reduces the amount of land designated Open Space from 1,002 to 889 acres, but the proposed Open Space and Public Facility-Park designations together total 1,236 acres.

Figure 2-3 Proposed General Plan Land Use Map



This page intentionally left blank.

Table 2-1 Comparison of Existing and Proposed Land Use Designations

	Existing General Plan		Proposed General Plan Update	
Land Use	Acres	Percentage (%)	Acres	Percentage (%)
Equestrian Residential	3,169	3.0	3,524	3.3
Low Density Residential (LDR)	23,358	22.0	21,367	20.2
Single Family Residential 1 (SFR-1)	1,491	1.4	1,662	1.6
Single Family Residential 2 (SFR-2)	3,305	3.1	3,599	3.4
Single Family Residential 3 (SFR-3)	7,682	7.2	7,163	6.8
Medium Residential (MR)	404	0.4		
Medium High Density Residential (MHDR)	219	0.2		
Multi-family Residential (MFR)	381	0.4		
High Density Residential (HDR)	81	0.1		
Neighborhood Residential 1			358	0.3
Neighborhood Residential 2			971	0.9
Neighborhood Residential 3			646	0.6
Neighborhood Residential 4			109	0.1
Community Commercial (CC)	999	0.9		
Downtown Commercial (DC)	163	0.2		
Office Commercial (OC)	329	0.3		
Neighborhood Commercial (NC)	163	0.2	364	0.3
Regional Commercial (RC)	511	0.5	997	0.9
Visitor Commercial			164	0.2
Business Park (BP)	4,244	4.0		
Airport and Related Uses (AR)	20,891	19.7		
Aerospace Industrial			21,467	20.2
Mineral Resource Extraction (MRE)	4,756	4.5	4,229	4.0
Commercial Manufacturing (CM)	342	0.3		
Industrial (IND)	13,678	12.9	13,174	12.4
Employment Flex			4,240	4.0
Specific Plan (SP)	16,102	15.2	14,986	14.1
Mixed Use 1			186	0.2
Mixed Use 2			300	0.3
Mixed Use 3			204	0.2
Educational Flex			167	0.2
Health and Wellness District			267	0.3
Special Development (SD)	103	0.1		
California Aqueduct	886	0.8	1,399	1.3
Utilities			2,516	2.4
Public Facility (PF)	1,897	1.8		
Public Facility-Civic			234	0.2
Public Facility-Park			347	0.3

Land Use	Existing General Plan		Proposed General Plan Update	
	Acres	Percentage (%)	Acres	Percentage (%)
Public Facility-School			497	0.5
Open Space (OS)	1,002	0.9	889	0.8
Total[1]	**106,028**	**100**	**106,028**	**100**

[1] Totals arrived at by adding up the individual rows above may differ slightly from the number shown here, due to rounding.

Due to alterations of land use designations included in the Plan, several existing Specific Plans in the City and its Sphere of Influence will be rescinded. The following existing Specific Plans will be rescinded with adoption of the Plan:

- Joshua Hills Specific Plan
- Hillside Residential Specific Plan
- Palmdale Trade and Commerce Center Specific Plan
- Foothill Ranch Specific Plan
- Palmdale Business Park Center Specific Plan

2.3.5 Residential and Employment Growth

Table 2-2 shows City and County employment, housing, and population estimates and forecasts from the Southern California Association of Governments (SCAG) 2020-2045 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) Demographics & Growth Forecast. SCAG projects that the City's population will increase by 48,400 persons (30 percent) between 2016 and 2045, to an estimated 2045 population of 207,000 residents. SCAG projects that the number of households in the city will increase by 18,000 between 2016 and 2045 to an estimated 61,800 households in 2045. According to SCAG estimates, there were 0.8 jobs per household in the city in 2016 and there will be 0.7 jobs per household in 2045. This 2045 ratio is about 12.5 percent lower than the 2016 ratio. The fact that Palmdale's jobs per household ratio is projected to decrease, and remain below a 1 to 1 ratio, suggests that Palmdale is and will remain a "jobs poor" community in which more workers commute from the city to other communities for their jobs than residents commute to points inside the city for their jobs. Many residents who work outside the community have long commutes into areas such as the Los Angeles metropolitan area.

As shown in Table 2-3, development carried out under the Plan is projected to result in approximately 22,000 new homes. Based on Palmdale's estimated average household size of 3.44 persons (DOF, 2022), this would lead to an increase of approximately 75,756 residents in the city. Adding 75,756 new residents to the city's estimated 2022 population of 167,398, future residential growth carried out under the Plan is predicted to increase the City's total population to 243,154, which is above SCAG's 2045 population forecasts of 207,000 from the 2020-2045 RTP/SCS (SCAG, 2020). The addition of approximately 75,756 residents would lead to an approximately 45% population increase between 2022 and 2045.

Table 2-2 SCAG Population, Housing, and Jobs Forecasts

Year	Population	Households	Jobs	Jobs/Household Ratio
2016	158,600	43,800	36,700	0.8
2045	207,000	61,800	45,900	0.7
Change, 2016-2045	48,400	18,000	9,200	-0.1

Source: SCAG 2020

Table 2-3 Plan Population and Housing Forecasts

Year	Population	Housing Units
2022	167,398	49,882
2045	243,154	71,882
Increase, 2022-2045	75,756	22,000

Source: California Department of Finance (DOF) 2022; Plan forecasts1

2.3.6 Commercial/Industrial and Employment Growth by Land Use Type

Based on forecasts for square footage growth estimates for nonresidential development carried out under the Plan[1], Palmdale is forecast to gain 26,391 jobs between 2016 and 2045, as shown in Table 2-4. Most development under the Plan would be in the industrial and office space land use designations and as a result those sectors would experience the most job growth. As shown in Table 2-4, job growth carried out under the Plan is forecast to exceed SCAG employment forecasts by 17,191 jobs.

Table 2-4 Plan and SCAG Forecasts for Commercial/Industrial Development and Job Growth, 2016-2045

Land Use	Forecast New Jobs[1]	Forecast New Development
Retail + Restaurant	3,050	1,372,465 square feet
Hotel	168	252,000 square feet
Office	9,796	3,428,498 square feet
Industrial	11,820	10,046,865 square feet
Public (schools/education and civic/government)	1,557	1,168,047 square feet
Total	**26,391**	**16,267,875 square feet**
SCAG-forecast new jobs	**9,200**	

[1] These forecasts are available in the Background Reports/Existing Conditions Reports (especially the Socio-Economic Profile and Market Analysis) available on the project website (https://www.palmdale2045.org/resources) and upon request from the City of Palmdale, and in a June 2021 Growth Projections Methodology Memo produced for the Plan (Raimi + Associates, 2021).

2.4 Required Discretionary Actions

With recommendations from the City's Planning Commission, the Palmdale City Council will need to take the following discretionary actions in conjunction with or subsequent to the Plan:

- Certification of the 2045 General Plan Update EIR
- Adopt the General Plan Update (Palmdale 2045)
- Adopt the Climate Action Plan
- Adopt any Zoning Ordinance Amendments required to make the Zoning Ordinance consistent with the General Plan Update
- Adopt the HCD-certified Housing Element Update, in compliance with the requirements of State Housing Element law
- Adopt revisions to the Palmdale Transit Area Specific Plan to slightly expand the boundary of this Specific Plan. Currently, many of the parcels along the external boundary of the Specific Plan area have split zoning because they are partly inside and partly outside the Specific Plan area. This proposed expansion would fully include these parcels within the Specific Plan area. Because the Specific Plan area is in the core of the city, this action would not affect the Planning Area of the proposed General Plan Update or require annexations.

Palmdale 2045 does not involve any annexation of lands or adjustments to the City's Sphere of Influence. If annexation is pursued in the future, it would require approval from the Los Angeles Local Agency Formation Commission. The California Department of Conservation, Division of Mines and Geology, has no discretionary authority over the Plan, but will review the plans and policies relating to seismic safety for compliance with state regulations.

3 Environmental Setting

This section provides a general overview of the environmental setting for the proposed General Plan Update. More detailed descriptions of the environmental setting for each environmental issue area can be found in Section 4, *Environmental Impact Analysis*.

3.1 Introduction

According to Section 15125 of the CEQA Guidelines, an EIR must include a description of the existing, physical environmental conditions in the vicinity of the project to provide the "baseline condition" against which project-related impacts are compared.

3.2 Regional Setting

The General Plan Update will serve all land within the City limits, the City's Sphere of Influence (SOI), and the unincorporated County areas surrounded by the City of Palmdale. Palmdale is an incorporated city in the Antelope Valley located in north Los Angeles County, approximately 60 freeway miles northeast of downtown Los Angeles. Los Angeles County is one of the nation's largest counties, spanning approximately 4,084 square miles (County of Los Angeles 2021) with a population of approximately 10,044,458 people in 2021 (California Department of Finance [DOF] 2021). The County is topographically diverse, with mountain ranges, valleys, agricultural land, deserts, the Channel Islands, marshlands, coastal zones and densely populated urban areas. Palmdale, encompassing approximately 104 square miles, has a population of approximately 167,398 people as of 2022, according to the most recent estimates produced by the California Department of Finance (DOF 2022). Palmdale is in the Antelope Valley, which covers approximately 3,000 square miles across northern Los Angeles County and southern Kern County. Temperatures in the area average lows and highs of 71 degrees Fahrenheit (°F) and 95°F, respectively, in the summer months and 36°F and 58°F, respectively in the winter months. The Antelope Valley experiences a semi-arid climate. Rainfall occurs in the winter months but is minimal year-round, with an average of 27 days per year experiencing precipitation (National Oceanic and Atmospheric Administration [NOAA] 2021). The region is subject to various natural hazards, including earthquakes, landslides, flooding, and wildfires (City of Palmdale 1993). Like many cities in Southern California, Palmdale is rapidly growing and changing, presenting needs to diversify land use and employment opportunities, increase housing stock, update infrastructure to coordinate with new development, and revitalize the downtown area (City of Palmdale 1993).

3.3 General Geographic Setting

Palmdale is situated in northern Los Angeles County within the Antelope Valley. The Antelope Valley is disconnected from the Southern California coastal and Central California valley regions by the Tehachapi Mountains to the northwest and by the San Gabriel Mountains to the south. The far western portions of the City and the Planning Area are in the foothills of the San Gabriel Mountains. Nearby communities include the city of Lancaster and the unincorporated community of Quartz Hill to the north; other unincorporated communities such as Lake Los Angeles to the east and Sun Village, Littlerock, and Pearblossom to the southeast; Acton to the south and Agua Dulce to the

southwest; and Leona Valley to the west. While Palmdale has evolved into an urbanized area, the city still contains an abundance of open space and vacant lands (Raimi & Associates 2020a). State Route 14 (SR-14), also known as the Antelope Valley Freeway, traverses the city from north to south, and State Highway 138 (SR-138) traverses the city from east to west.

Palmdale historically had an agricultural economic base because many farmers were attracted to the area after the California Aqueduct was completed in 1913. While still retaining some of its agricultural elements, Palmdale's economic emphasis has shifted to the aerospace and defense industry, which provides many jobs to its residents (Raimi and Associates 2020b). About 13 percent of the Planning Area is occupied by residential uses, with 98 percent of residential uses being single family detached. Commercial, office, and other retail uses account for about 1.6 percent of the Planning Area and are located mainly along Palmdale Boulevard, Rancho Vista Boulevard, and other isolated clusters. Industrial, extraction, and manufacturing account for 11.6 percent of the Planning Area, with Plant 42 covering about 5,000 acres alone. Nearly 300 parcels contain civic uses, public facilities such as schools and libraries, and private institutions such as churches and private clubs, accounting for 1.5 percent of the Planning Area. Palmdale has 19 community parks totaling around 360 acres and accounting for less than 1 percent of the Planning Area. The remaining land is designated as vacant (about 62 percent) and natural conservation land (about 5 percent) (Raimi & Associates 2020c).

3.4 Topography and Drainage

Palmdale lies within the Antelope Valley, with the San Gabriel Mountains located at the southern boundary of the city. The Antelope Valley floor is relatively flat, gently sloping downward toward Lancaster. This is where Palmdale has seen most of its development (Raimi and Associates 2020c), while steeper slopes can be found in the southern and western portions of the Planning Area (City of Palmdale 1993). City Hall is located at an elevation of 2,600 feet above sea level, while the San Gabriel Mountains at the southern edge of the Planning Area reach up to 4,500 feet in elevation (Raimi & Associates 2020c). Soils in Palmdale, as in most of the Antelope Valley, consist of alluvial soils in the valley floor and in streambeds. Hard, consolidated rocks lay beneath alluvial soils in the valley floor and also make up the surrounding mountainous and rocky buttes (City of Palmdale 1993). The main soil type in Palmdale is the Adelanto Association, which is nearly level to gently sloping, very deep, well drained, and has a loamy sand to gravelly sandy loam surface layer and exists on alluvial fans and terraces. Most of the city contains level topography where soil erosion is not an issue, however, steep and unstable slopes exist on hillside areas in the southern and western edges of the city and these slopes are subject to erosion. Areas with slopes that range from 10 to 25 percent are subject to stricter, hillside construction techniques, while areas with slopes greater than 25 percent are discouraged for development (City of Palmdale 1993).

3.5 Cumulative Project Setting

Because the proposed project is a general plan update, cumulative impacts are treated somewhat differently than they would be for a project-specific development. Section 15130 of the CEQA Guidelines provides the following direction relative to cumulative impact analysis:

> Impacts should be based on a summary of projections contained in an adopted general plan or related planning document, or in a prior environmental document which has been adopted or

certified, which described or evaluated regional or areawide conditions contributing to the cumulative impact.

By its nature, a general plan considers cumulative impacts insofar as it considers cumulative development that could occur within a city's plan area. Therefore, the analysis of project impacts also constitutes the cumulative analysis, and this EIR does not contain a separate analysis of cumulative impacts. Where applicable, cumulative impacts are discussed at the end of each impact area, and cumulative impacts could occur due to future projects that may occur in or outside of the Planning Area that are not under the jurisdiction of the City (e.g., High Speed Rail).

In addition to cumulative development within the Planning area, the analysis of transportation and related impacts (such as air quality, greenhouse gases and noise) considers the effects of regional traffic growth, based on existing and future traffic volumes from the current regional growth model maintained by the Southern California Association of Governments (SCAG). As explained in SCAG's 2020 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS), SCAG's Demographics and Growth Forecast is based on three major indicators: population, households, and employment (SCAG 2020). This socioeconomic input data for the transportation model is processed at the Transportation Analysis Zone (TAZ) level. TAZs, often referred to as Tier 2 analysis, are generally equivalent to census block groups.

While, as explained above, the analysis of Plan impacts also constitutes the cumulative analysis because a general plan is cumulative in nature, a list of major approved projects is shown in Table 3-1 and a list of the development/build-out status of the City's Specific Plans is shown in Table 3-2. The information in these tables is taken from Table 3.17 and Table 3.18 of the City's Land Use and Urban Form Final Report (Raimi & Associates 2020c) and is shown for informational purposes. This information was considered by the City and the public during the Plan development process and is taken into account by, and reflected in, the Plan.

Table 3-1 Development Status of Major Approved Projects

Location or Name	Single Family Units	Multi-Family Units	Commercial Square Feet	Industrial Square Feet
Southeast corner of Avenue M and 70th Street West	97			
South side of Palmdale Boulevard and 650 feet west of 55th Street East	75			
Falcon Glen (North side of Ave S, east of 20th Street West)	400			
Northwest corner and northeast corner of Tierra Subida and Avenue S		100		
Southwest corner of Avenue Q and SR 14			125,000	
Northeast corner of Avenue R and 60th Street East	28			
308 East Avenue R-8	15			
38821 30th Street East				80,000
South of East Avenue Q-4 between 9th and 10th Streets East		150		
Between 70th and 75th Streets West on Avenue M-8	155			
Southeast corner/northeast corner of 20th Street West and Rancho Vista Boulevard	48	336		

Location or Name	Single Family Units	Multi-Family Units	Commercial Square Feet	Industrial Square Feet
North side of Rancho Vista Boulevard, west of 15th Street West		344		
NWC of 15th Street West and Rancho Vista Boulevard			43,000	
Quail Valley (South of Avenue S; 1.2 miles west of SR-14)	791			
SEC of Avenue S and 42nd Street East		18		
5th Street East and Avenue Q-12		80		
20th Street West, Amargosa Channel	28			
SEC of Avenue R and Division Street		101		
South of Avenue S, west side of 47th Street East			240,000	
West of 9th Street East between Avenues Q-11 and Q-12		120		
Southeast corner of Avenue R and 65th Street East	162			
Southwest corner of Palmdale Blvd and 70th Street East	41			
Ritter Ranch	579			
West side of La Quinta Lane, south of Avenue O				30,000
Total	**2,419**	**1,249**	**408,000**	**110,000**

Source: City of Palmdale GIS Data 2019

Table 3-2 Development Status of Approved Specific Plans

Name	Entitled Units	Built Units	Entitled Non-Residential	Built Non-Residential
Antelope Valley Business Park			1,800,000	
Antelope Valley Auto Center			680,000	400,000
City Ranch (Anaverde)	5,200	1,000	350,000	
Foothill Ranch (College Park)	380		100,000	
Hillside Residential	407	350		100,000
Joshua Hills	1,425	1,425	120,000	100,000
Lockheed Plant 10			3,100,000	2,180,000
Palmdale Trade and Commerce Center			3,500,000	1,700,000
Palmdale Transit Village	1,027	227	500,000	75,000
Rancho Vista	5,268	4,600	500,000	120,000
Ritter Ranch	7,200		450,000	
Palmdale Business Park Center			2,500,000	
Total	**20,907**	**7,602**	**13,600,000**	**4,675,000**

Source: City of Palmdale GIS Data 2019

4 Environmental Impact Analysis

This section discusses the possible environmental effects of the project for the specific issue areas identified as having the potential to experience significant impacts. “Significant effect” is defined by CEQA Guidelines Section 15382 as:

> A substantial, or potentially substantial, adverse change in any of the physical conditions within the area affected by the project including land, air, water, minerals, flora, fauna, ambient noise, and objects of historic or aesthetic significance. An economic or social change by itself shall not be considered a significant effect on the environment, but may be considered in determining whether the physical change is significant.

The assessment of each issue area begins with an introduction summarizing the environmental effects considered for that issue area. This is followed by the setting and impact analysis. In the impact analysis, the first subsection identifies the methodologies used and the “significance thresholds,” which are those criteria adopted by the City, other agencies, universally recognized, or developed specifically for this analysis, to determine whether potential effects are significant. The next subsection describes each impact of the proposed project, mitigation measures for significant impacts, and the level of significance after mitigation. Each effect under consideration for an issue area is listed separately in bold text, with the discussion of the effect and its significance following. Each bolded impact listing also contains a statement of the significance determination for the environmental impact as follows:

- **Significant and Unavoidable.** An impact that cannot be reduced to below the significance threshold level with implementation of reasonably available and feasible mitigation measures. Such an impact requires a Statement of Overriding Considerations to be issued if the project is approved per Section 15093 of the CEQA Guidelines.
- **Less than Significant with Mitigation.** An impact that can be reduced to below the significance threshold level with implementation of reasonably available and feasible mitigation measures. Such an impact requires findings to be made under Section 15091 of the CEQA Guidelines.
- **Less than Significant.** An impact that may be adverse, but does not exceed the significance threshold levels and does not require mitigation measures. Mitigation measures that could further lessen the environmental effect may be suggested if readily available and easily achievable.
- **No Impact or Beneficial.** No impact would occur or the Plan would have a beneficial effect.

Following each environmental effect discussion, a list is provided of recommended mitigation measures (if required) and the residual effects or level of significance remaining after the implementation of the measures. In those cases where the mitigation measure for an impact could have a significant environmental impact in another issue area, this impact is discussed as a residual effect. Please refer to Table ES-1 in the Executive Summary of this EIR for a summary of all impacts and mitigation measures that apply to the project.

The impact analysis concludes with a discussion of cumulative effects that evaluates the impacts associated with the project in conjunction with other future development in the area near Palmdale. This EIR’s approach to cumulative impacts analysis is further described in Section 3.3, *Cumulative Project Setting*, of this EIR.

This page intentionally left blank.

4.1 Aesthetics

This section describes current visual conditions in and around Palmdale and evaluates the potential aesthetic and visual impacts of the Plan.

4.1.1 Environmental Setting

Visual resources are an important component of the quality of life of any community. As residents, workers, and/or visitors experience a place, their primary sensory interaction with that place is visual, and a wide variety of visual elements form the aesthetic character. These elements include scenic vistas, scenic resources, light and glare, and the visual character and quality of the area's topography, natural features, and urban form.

a. Scenic Resources

Scenic Streets

While the City has no designated scenic streets, streets in Palmdale can and sometimes do enhance the aesthetic environment of the community, if they are well-designed. They can also serve an open space function by providing walking, jogging, bicycling, and relaxation opportunities, when they are configured with adequate sidewalks, bike paths, street trees, landscaped planting areas, and other streetscape amenities. This is further extended if they connect to other amenities with potential scenic value, such as parks and open space.

Scenic Highways

California's Scenic Highway Program was created in 1963. Its purpose is to preserve and protect scenic highway corridors from changes that would diminish the aesthetic value of lands adjacent to highways. Scenic corridors typically pertain to highways and visible lands outside the highway right-of-way, generally described as the view from the road. There are no officially designated scenic highways in the Planning Area. Angeles Crest Highway (Route 2), which is approximately 25 miles south of Palmdale, is an officially designated state scenic highway and Interstate 210, which is approximately 26 miles south of the of Palmdale, is eligible for state scenic highway designation (Caltrans 2019).

Scenic Vistas

A scenic vista is a viewpoint that provides expansive views of a highly valued landscape for the benefit of the public. Scenic vistas encompass long-range views and often emphasize large-scale natural features. The following is a discussion of scenic vistas in the Planning Area.

Scenic views of the desert and local mountains are the predominant scenic vistas in Palmdale. Desert views are primarily available along the edges of the City, particularly in the undeveloped northern portions. Leona Valley (approximately 4 miles to the west) is a scenic area. Distant views of the San Gabriel Mountains (approximately 34 miles to the southeast), Sierra Pelona Mountains (approximately 11 miles to the west), and Tehachapi Mountains (approximately 36 miles to the northwest) are available across the Planning Area, but the best views of these mountains are from large areas of unobstructed open space. In other areas, views of the mountains are fully to partially obstructed by existing trees and buildings.

Ritter Ridge and the San Gabriel Mountains provide views from their heights down into the rest of the Antelope Valley. Similarly, the hills behind Foothill Ranch offer scenic vistas. Most of the principal north-south avenues (especially 30th Street West, 20th Street West, Division Street, 10th Street East, 25th Street East, 30th Street East, 40th Street East, and 47th Street East) provide views southward of the mountains themselves. New development can potentially frame and accentuate some of these views.

b. Urban Visual Character and Quality

While scenic vistas encompass long-range views and often emphasize large-scale natural features, views are also affected by more immediate visual surroundings. As stated in the Plan, local aesthetics, typically on a neighborhood level, also contribute to the Planning Area's urban visual character. Development densities and types, distinctive neighborhoods and commercial districts, unique architectural elements, prominent public institutions/landmarks, and other elements all contribute to the Planning Area's aesthetic quality.

Development Patterns

The Land Use Element of the City's current General Plan describes Palmdale as a city with low densities and a rural lifestyle. The developed portions of the City occupy a compact area bounded by Littlerock Wash on the east, the California aqueduct on the south, and 70th Street West on the west. Littlerock Wash forms a natural boundary between urban residential development in Palmdale and rural residential uses in the eastern portion of the Planning Area. Palmdale is also characterized by industrial development, as a large portion of the Planning Area is within Air Force and City of Los Angeles Division of Airports property. While industrial development related to aerospace has occurred at Air Force Plant 42, the airport property Is largely vacant, supporting minor agricultural uses and sewage treatment facilities.

Residential Character

Palmdale's residential developments are separated by rural residential development and suburban residential development. Rural residential development is characterized by large lots, agricultural accessory uses such as horses and farm animals, and rural standards for streets and other public improvements. This area is typically zoned Light Agriculture (A-1) and is designed to maintain a rural lifestyle. The suburban development pattern is characterized by single family detached dwelling units constructed by tract builders on land which was previously subdivided, at densities ranging from three to six units per acre. This development contains older tracts developed in the post-war housing boom of the 1950's to golf course subdivisions and planned unit developments, Palmdale's single family housing stock reflects development patterns shaped by federal regulations, financing and marketing considerations, and building industry practices.

AVENUE Q

Historically, residential land uses were concentrated in the core area bounded by Avenue Q, Avenue S, 47th Street East, and State Route (SR) 14 (Antelope Valley Freeway). This area contains the widest diversity of residential development, including apartments, townhomes, mobile home parks, and medium-lot single family detached homes.

Industrial/ Agricultural

Palmdale's largest industries in terms of both land and jobs are manufacturing, defense, and aerospace. Industrial, extraction, and agriculture uses occupy over 12,000 acres within the Planning Area, around one-tenth of the overall area. The two uses that command the most acreage are agriculture and military industrial (Plant 42). Plant 42 is a United States Air Force facility. It is the Antelope Valley's second-largest employer, spreading across nearly 5,000 acres, and operates as a component of Edwards Air Force Base 23 located miles to the northeast. Most of the facilities are operated by private contractors and serve as a manufacturing plant for aircraft used by the United States government. Other large-format employment uses are found west and south of Plant 42, while smaller warehouse, wholesale, manufacturing, and industrial business parks are located along 6th Street East, Avenue O, or within the area bounded by Avenue P/Avenue Q/Division Street/30th Street East.

Commercial Areas

Palmdale provides businesses and a range of restaurants for the community. Non-residential rehabilitation activities serve to promote the retention, stabilization, and/or expansion of viable commercial activities, enhance the visual character of those areas, replace outdated or incompatible design elements, and respond to any infrastructure or related constraints that serve as disincentives to the improvement of those areas. Palmdale Boulevard has identifiable aesthetic styles described in more detail below.

PALMDALE BOULEVARD

Palmdale Boulevard is a major east-west arterial roadway that runs through the central portion of the Planning Area. East of the SR 14, Palmdale Boulevard is mostly developed and contains a strip mall until 47th Street. Past 47th Street Palmdale Boulevard contains large portions of vacant land and some residential development. Palmdale Boulevard from SR 14 to 47th Street is part of SR 138 and under Caltrans jurisdiction.

California High Speed Rail System

The future California High Speed Rail system will include a multi-modal high-speed rail station near the existing Palmdale Transportation Center. High-speed rail service to the San Fernando Valley and the Los Angeles basin will provide travel options for commuters. High-speed rail combined with Brightline West high-speed rail, expanded Metrolink, Amtrak, Greyhound, FlixBus, other bus/transit services, and improvements to key arterials and freeways will help reduce congestion and air pollution, and provide better travel options for residents. Funding and construction details are yet to be determined (City of Palmdale 2022a).

Open Space and Recreational Facilities

Open space provides visual relief from urbanized areas, including views for motorists, bicyclists, and pedestrians. Open space is provided in the form of parks and street medians interspersed throughout the city. Palmdale has a recreation center that offers programs and classes for the community.

PARKS

Currently, the City maintains 20 parks that total 365 acres throughout the Planning Area. Examples of these parks include the Amargosa Creek Natural Park, which has 52 acres of habitat that preserve

and enhance the century-old Western Joshua and California Juniper trees on-site (City of Palmdale 2003); and Joe Davies Heritage Airpark at Palmdale Plant 42, which is a family friendly, uniquely Palmdale destination centered around displays of aircraft that portray aerospace heritage and present the historical significance of United States Air Force Plant 42 (City of Palmdale 2022b).

c. Light and Glare

Palmdale contains some built urbanized areas but also contains a variety undeveloped parcels. Therefore, a small amount of nighttime ambient light from urban uses already exists. Typical contributors to nighttime ambient light levels include both stationary and mobile sources. Stationary sources include exterior structure illumination, light spillover from interior lighting, lighting for outdoor uses such as sports fields and courts, parking lot lighting, streetlights, and illuminated signage such as billboards. In an urban setting, even with some undeveloped portions like in Palmdale, the principal mobile contributor to nighttime light is vehicle headlights. While exterior lighting is important for safety and wayfinding in an urban setting, excessively high, ambient nighttime light levels can have various negative effects, including reduction of night sky visibility, and annoyance or interference with sleep when the light intrudes into interior spaces.

Glare is a separate but related phenomenon and can be defined as excessive and uncontrolled brightness from a particular source, with the viewer being exposed to a direct or reflected view of the light source (Rensselaer Polytechnic University 2007). During the day, the primary source of glare is sunlight reflected by highly reflective surfaces such as glass and metal on buildings and cars, while nighttime light and glare comes from the same sources of nighttime ambient light, discussed above.

4.1.2 Regulatory Setting

a. State

State Scenic Highways

The California Department of Transportation (Caltrans) defines a scenic highway as any freeway, highway, road, or other public right-of-way, that traverses an area of exceptional scenic quality. Suitability for designation as a State scenic highway is based on vividness, intactness, and unity, as described in Caltrans Scenic Highway Guidelines (2008):

- Vividness is the extent to which the landscape is memorable. This is associated with the distinctiveness, diversity, and contrast of visual elements. A vivid landscape makes an immediate and lasting impression on the viewer.
- Intactness is the integrity of visual order in the landscape and the extent to which the natural landscape is free from visual intrusions (e.g., buildings, structures, equipment, grading).
- Unity is the extent to which development is sensitive to and visually harmonious with the natural landscape.

There are no officially designated scenic highways within the Planning Area. The closest state scenic highway as identified by Caltrans is Angeles Crest Highway (Route 2), approximately 25 south of Palmdale and Interstate 210, approximately 26 miles south of Palmdale, is eligible for state scenic highway designation (Caltrans 2019). A state scenic highway changes from “eligible” to “officially designated” when the local jurisdiction adopts a scenic corridor protection program, applies to

Caltrans for scenic highway approval, and receives notification from Caltrans that the roadway has been designated as a Scenic Highway.

City of Palmdale Municipal Code

Title 17 of the Palmdale Municipal Code (PMC), *Zoning*, includes the City's zoning regulations and standards. The purpose of Title 17 is to designate, regulate, and control the location, use, height, and alteration of buildings, structures, and land for residence, commerce, trade and industry, or other purposes. Section 17.86.030 of the PMC includes lighting standards for protecting the aesthetic character of the City. Examples of these standards include requiring lighting fixtures within residential zones not to exceed 15 feet in height to avoid glare and light spread. The City is divided into various zones, with standards for each zone regulating these qualities. Such regulations are deemed necessary to encourage the most appropriate use of land and preserve the aesthetic qualities of the City. Examples include requiring development to provide adequate open spaces for light and air, limiting the density of development, and implementing landscaping standards.

The City has adopted plans with established zones that help govern development in various parts of Palmdale where zoning regulations and standards may differ from the PMC. The specific plans range from one development (e.g., a specific site) to a large geographic area. The City's specific plans include the following:

- Antelope Valley Auto Center Specific Plan
- Antelope Valley Business Park Specific Plan
- City Ranch Specific Plan
- Foothill Ranch Specific Plan (to be rescinded)
- Hillside Specific Plan (to be rescinded)
- Joshua Hills Specific Plan (to be rescinded)
- Lockheed Plant Specific Plan
- Palmdale Business Park Center Specific Plan (to be rescinded)
- Palmdale Transit Area Specific Plan (PTASP)
- Palmdale Trade and Commerce Center Specific Plan (rescinded when the PTASP was adopted)
- Rancho Vista Specific Plan
- Ritter Ranch Specific Plan

Hillside Management

Chapter 17.100 of the PMC, *Hillside Management*, includes provisions that allow for development in hillside areas in conjunction with the preservation of natural open space on steeper terrain. The City's skyline backdrop provides views of significant natural ridgelines and prominent landforms. Natural landforms and features forming this backdrop include Ritter Ridge, Portal Ridge, Verde Ridge, the Ana Verde Hills, the Sierra Pelona mountains, and secondary ridges associated with the San Andreas Rift Zone and the lower foothills of the San Gabriel mountains. The City considers hillsides as a scenic skyline backdrop, which is visible from the Antelope Valley floor, or adjacent valleys.

4.1.3 Impact Analysis

a. Methodology and Significance Thresholds

The assessment of aesthetic impacts involves qualitative analysis inherently subjective in nature. Viewers react to views and aesthetic conditions differently. This evaluation measures the existing visual environment of the Planning Area, described above, against implementation of the Plan, analyzing the nature of the anticipated change. It is important to underscore that the Plan does not contain specific development proposals. This analysis therefore focuses on land use changes envisioned under the Plan and the aesthetic impacts on the community in terms of arrangement of built to open space, density and intensity of development, and height according to the thresholds of significance discussed below. The existing visual character and context of the Planning Area is shown and described in Section 4.1.1, *Environmental Setting,* of this EIR.

According to CEQA Guidelines Appendix G, impacts related to aesthetics would be potentially significant if implementation of the Plan would:

1. Have a substantial adverse effect on a scenic vista
2. Substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway
3. In non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings; or, in urbanized areas, conflict with applicable zoning and other regulations governing scenic quality
4. Create a new source of substantial light or glare that would adversely affect day or nighttime views in the area

b. Project and Cumulative Impacts

Threshold 1:	Would implementation of the Plan have a substantial adverse effect on a scenic vista?

Impact AES-1 FUTURE DEVELOPMENT CARRIED OUT UNDER THE PLAN MAY AFFECT PUBLIC VIEWS ALONG DESIGNATED SCENIC CORRIDORS. ADHERENCE TO DEVELOPMENT REVIEW PROCEDURES AND PLAN POLICIES WOULD REDUCE POTENTIAL IMPACTS TO SCENIC VISTAS TO A LESS THAN SIGNIFICANT LEVEL.

The Plan would allow for increased development in the Planning Area, which could include increased building heights. Increased heights could create adverse effects on scenic vistas of the San Gabriel Mountains in portions of the Planning Area. Views of scenic vistas would change gradually and incrementally because the Plan covers approximately the next 20 years and development would occur gradually according to market demand over that time. However, future developments would undergo further environmental and design review on a project-by-project basis, as applicable and as they are proposed, to identify and address project-specific impacts to scenic vistas. Additionally, the following three General Plan policies would limit building heights in two specific geographic areas of the Planning Area and for industrial land uses:

- **Policy LUD-10.5: Avenue Q Revitalization.** Reinforce Avenue Q with development patterns that create a "Main Street" environment. Design the buildings facing Avenue Q (and to a lesser extent 6th Street East and 3rd Street East) to reflect the vision for a new "Main Street" – active uses, street-oriented entrances, tall floor-to-ceiling heights, reduced setbacks (unless adjacent to a plaza or park).

- **Policy LUD-17.3 Industrial Development Standards**. Adopt development standards for industrial uses near residential uses, to ensure compatibility and aesthetically pleasing views from adjacent rights of way, including but not limited to standards for screening of outdoor storage, locations of loading and refuse disposal areas, height, bulk, impervious surface area, architectural enhancement, landscaping, and other measures as deemed appropriate.
- **Policy LUD-24.4 Avenue S and State Route 14.** Require that development near the intersection of Avenue S and State Route 14 is complementary to Lake Palmdale, surrounding hillside, and mountain views by minimizing building heights and viewshed impacts; and is consistent with sound water quality management practices by providing a minimum 100-foot setback from the historical high-water mark of Lake Palmdale and meeting other relevant environmental standards.

The Plan does not propose specific development projects that would have a substantial negative impact on public views or scenic vistas. In addition, there are no adopted scenic vistas in the Planning Area. Development and redevelopment that may occur under the Plan would be governed by the policies listed above as well as design standards contained in the PMC, which would be applied and enforced through the City's standard development review procedures that concern the protection of public views or scenic vistas. Impacts to scenic vistas would therefore be less than significant.

Mitigation Measures

No mitigation measures are required.

Threshold 2:	Would implementation of the Plan substantially damage scenic resources, including, but not limited to, trees, rock outcroppings, and historic buildings within a state scenic highway?

Impact AES-2 FUTURE DEVELOPMENT CARRIED OUT UNDER THE PLAN MAY IMPACT SCENIC RESOURCES, INCLUDING TREES, ROCK OUTCROPPINGS, AND HISTORIC BUILDINGS. THIS DEVELOPMENT COULD RESULT IN DIRECT IMPACTS TO SCENIC RESOURCES SHOULD CONSTRUCTION RESULT IN THE PHYSICAL DEMOLITION, DESTRUCTION, RELOCATION, OR ALTERATION OF A SCENIC RESOURCE. COMPLIANCE WITH PLAN GOALS AND POLICIES WOULD REDUCE POTENTIAL IMPACTS TO SCENIC VISTAS TO A LESS THAN SIGNIFICANT LEVEL.

Future development carried out under the Plan may impact scenic resources, including trees, rock outcroppings, and historic buildings. This development could result in direct impacts to scenic resources should construction result in the physical demolition, destruction, relocation, or alteration of a scenic resource. Scenic resources in the Planning Area include scenic tree resources, hillsides, and historic buildings. As identified in PMC Section 14.04.20 scenic tree resources include Joshua trees or those designated as 'desert vegetation' such as the California juniper. PMC Chapter 17.100 identifies hillsides (including, Ritter Ridge, Portal Ridge, Verde Ridge, the Ana Verde Hills, the Sierra Pelona Mountains, and the lower foothills of the San Gabriel Mountains) as scenic resources if visible from the Antelope Valley floor. As discussed in Section 4.5, *Cultural Resources*, there are five state-designated and 14 locally recognized historical resources located in Palmdale. Four of these resources are buildings located on the property of U.S. Air Force Plant 42. Any future development of these historical resources would be subject to future CEQA review to ensure no impact to that historic resource. Future development in the Planning Area may impact desert vegetation, hillsides, and historic buildings through the destruction or alteration of such resources.

The following goals and policies in the Conservation Element of the Plan would ensure that potential impacts to desert vegetation and hillsides are reduced and minimized in conjunction with future development:

- **Goal CON-1: Protect Significant Ecological Areas in and around the City, including, but not limited to, sensitive flora and fauna habitat areas.**
  - **Policy CON-1.2: Joshua and Juniper trees**. Continue enforcing the City's Native Vegetation Ordinance to protect western Joshua Trees and Juniper Trees.
- **Goal CON-2: Preserve designated natural hillsides and ridgelines in the Planning Area, to maintain the aesthetic character of the Antelope Valley.**
  - **Policy CON-2.1: Hillside land management.** Establish a systematic approach to the management of land uses and development in hillside areas.
  - **Policy CON-2.2: Natural ridgelines.** Retain the integrity of the natural ridgelines of Ritter Ridge, Portal Ridge, Verde Ridge, the Ana Verde Hills, the Sierra Pelona Mountains, and the lower foothills of the San Gabriel Mountains.
  - **Policy CON-2.3: Density transfers.** Encourage density transfers where appropriate so that the density of development respects and is reflective of the natural terrain.
  - **Policy CON-2.4: Development in suitable locations.** Facilitate development in more suitable locations while retaining significant natural slopes and areas of environmental sensitivity as natural open space.

The following goals and policies in the Conservation Element of the Plan would ensure that impacts to historic buildings are reduced and minimized in conjunction with future development:

- **Goal CON-8: Protect historical and culturally significant resources, which contribute to the community's sense of history.**
  - **Policy CON-8.1: Historic landmark.** Identify and recognize historic landmarks from Palmdale's past.
  - **Policy CON-8.2: Cultural and historic buildings.** Identify and preserve unique cultural and historic buildings and features in order to enhance community character.
  - **Policy CON-8.3: Identified landmarks.** Maintain, rehabilitate, and appropriately reuse identified landmarks where feasible.
  - **Policy CON-8.4: Preservation in new development.** Require that new development preserve significant historic, paleontological, or archaeological resources.
  - **Policy CON-8.5: Tribal consultation.** Conduct Native American consultation consistent with most recent regulations when new development is proposed in potentially culturally sensitive areas.
  - **Policy CON-8.6: Discovery coordination with Tribal groups.** When human remains suspected to be of Native American origin are discovered, coordinate with the Native American Heritage Commission and any local Native American groups to determine the most appropriate course of action.
  - **Policy CON-8.7: Cooperation with preservation entities**. Cooperate with private and public entities whose goals are to protect and preserve historic landmarks and important cultural resources.
  - **Policy CON-8.8: Recognition of local historic resources.** Promote respect and recognition of unique historical resources within the community by identifying significant cultural

resources with landmark designation plaques, directional signage, self-guided tours, school curriculum, programs, and events.

- **Policy CON-8.9: Maintain cultural assets.** Discourage historic landmark properties from being altered in such a manner as to significantly reduce their cultural value to the community.

- **Goal CON-9: Promote community design that reflects Palmdale's history and preserves Palmdale's cultural resources.**
  - **Policy CON-9.1: Design elements.** Promote use of design elements, which reflect the various periods of history and settlement in Palmdale.
  - **Policy CON-9.2: Locally relevant community design.** Community design should reflect the community's roots, rather than simulating historic periods or events, which did not occur in the Antelope Valley.
  - **Policy CON-9.3: Locally appropriate landscape design**. Preserve the natural heritage of the region through landscape design by ensuring the local stock of native trees and vegetation is replenished and protected.

Implementation of specific Plan policies such as those under Goal CON-1, Goal CON-2, Goal CON-8, and Goal CON-9 would ensure that desert vegetation is conserved and adequate study and identification of historic structures occur. Adherence to these policies would ensure that impacts to historic and scenic resources are less than significant.

As discussed in Section 4.1.1, *Environmental Setting*, there are no officially designated scenic highways in the Planning Area. The closest state scenic highway as identified by Caltrans is Angeles Crest Highway (Route 2), approximately 25 south of Palmdale and Interstate 210, approximately 26 miles south of Palmdale, is eligible for state scenic highway designation (Caltrans 2019). A state scenic highway changes from "eligible" to "officially designated" when the local jurisdiction adopts a scenic corridor protection program, applies to Caltrans for scenic highway approval, and receives notification from Caltrans that the roadway has been designated as a Scenic Highway. The Planning Area is not visible from Interstate 210 (or vice versa) because of intervening mountains. While the Planning Area may be visible from portions of Route 2, implementation of the Plan would not substantially affect scenic resources in the viewshed of this state scenic highway in a noticeable way because development carried out under the Plan would not be highly noticeable or obtrusive from this distance or substantially affect scenic resources in the viewshed of Route 2. Impacts would be less than significant.

Future development would be required to comply with the Plan policies and regulations that concern the preservation of scenic resources, including PMC (Chapter 17.100). Adherence to specific Plan policies, such as Goal CON-1, Goal CON-2, Goal CON-8, and Goal CON-9 listed above, would ensure that new developments, when proposed, preserve and take into consideration significant resources such as trees, hillsides, and historical resources. Regulations governing historical resources are also discussed in Section 4.5, *Cultural Resources*.

For all the reasons discussed above, potential impacts to scenic resources associated with the Plan would be less than significant.

Mitigation Measures

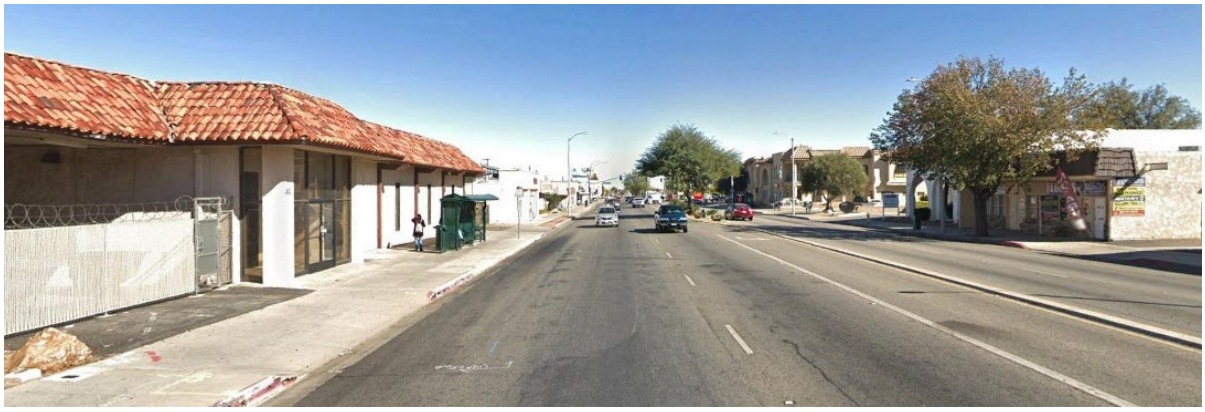
No mitigation measures are required.

Threshold 3:	Would implementation of the Plan, in non-urbanized areas, substantially degrade the existing visual character or quality of public views of the site and its surroundings? (Public views are those that are experienced from a publicly accessible vantage point.) In urbanized areas, would the Plan conflict with applicable zoning and other regulations governing scenic quality?

Impact AES-3 WHILE DEVELOPMENT UNDER THE PLAN COULD CHANGE THE VISUAL CHARACTER AND QUALITY OF PORTIONS OF THE PLANNING AREA, THE PLAN CONTAINS GOALS AND POLICIES SPECIFICALLY DESIGNED TO PROTECT AREAS OF HIGH VISUAL CHARACTER AND QUALITY AND IMPROVE AREAS OF LOW VISUAL CHARACTER AND QUALITY. IMPACTS WOULD BE LESS THAN SIGNIFICANT.

The land use changes envisioned under the Plan may affect the aesthetic character of various areas in Palmdale. While all land uses would be required to adhere to the design, density, and height guidelines applicable to particular land use designations, the Plan would also establish goals and policies that would help define and guide the desired visual character and quality of specific districts, village centers, and corridors in the community, described in Section 2, *Project Description*, of this EIR. The vision established by the Plan places a greater emphasis on enhancing community identity, building on planned infrastructure investments, integrating health and equity, and capitalizing on the Planning Area's unique location in the region. The vision established by the Plan places a greater emphasis on an active and vibrant downtown and transforming Palmdale Boulevard (the current streetscape of which is shown in Figure 4.1-1) into a mixed-use corridor. These corridors are highly visible and can help to define the character of the Planning Area. As discussed below, the Plan defines (both physically and visually) the desired character and quality of these areas and sets policies in place to ensure that the Planning Area retains the unique aesthetic qualities valued by its residents. The Plan does not call for substantial changes to established residential neighborhoods, and includes specific policies aimed at retaining the character of rural areas as stated in Goal LUD-22 listed below.

Figure 4.1-1 Palmdale Boulevard Current Streetscape





Source: Land Use + Urban Form Existing Conditions Report (City of Palmdale 2020)

The Plan would foster a high level of visual character and quality in various ways. For example, as stated in Section 2.3.1 of this EIR, the Plan would focus on enhancing community identity through the following goals related to visual character and quality that are in turn part of the Plan's vision themes:

- Seek to promote Palmdale's positive reputation while boosting community beautification (unified and welcoming community vision theme)
- Create a future downtown that fosters a sense of place, promotes local businesses, provides gathering spaces, and events, and improves the overall appearance of Palmdale (active and vibrant downtown vision theme)
- Improve connectivity to trails and open space, maintain mountain views, healthy air quality, and dark night sky (beautiful natural setting vision theme)

Public projects to enhance the Planning Area include the Palmdale Transportation Center Transit & Design Project, Avenue Q Complete Streets Project, and the Digitized Utilities Inventory Project.

The goals and policies in the Land Use and Community Design Element of the Plan related to visual character and quality include:

- **Goal LUD-10: Growth of a transit-oriented community near high-speed rail that combines high-quality mixed-use development, a Downtown 'feel,' office employment, affordable housing, and improved mobility.**
  - **Policy LUD-10.2: Places for the Community**. Develop community gathering spaces including plazas and neighborhood parks near the future multimodal transit station, in order to evolve the relocated Palmdale Transportation Center into an attractive and unique transit gateway.
  - **Policy LUD-10.5: Avenue Q Revitalization**. Reinforce Avenue Q with development patterns that create a "Main Street" environment. Design the buildings facing Avenue Q (and to a lesser extent 6th Street East and 3rd Street East) to reflect the vision for a new "Main Street" – active uses, street-oriented entrances, tall floor-to-ceiling heights, reduced setbacks (unless adjacent to a plaza or park).
  - **Policy LUD-10.6: Pedestrian-Oriented Design**. Implement urban design guidelines and features that encourage pedestrian activity and reduce automobile use.

- **Goal LUD-17: Facilitation of industrial areas that support and buffer Plant 42 while maintaining compatibility with adjacent non-industrial uses.**
  - **Policy LUD-17.2: Infrastructure Master Planning**. Encourage master planning and infrastructure funding districts within industrial areas to ensure adequate and comprehensive provision of infrastructure and efficient, attractive designs, through cohesive planning of larger development projects.
  - **Policy LUD-17.3: Industrial Development Standards**. Adopt development standards for industrial uses near residential uses, to ensure compatibility and aesthetically pleasing views from adjacent rights of way, including but not limited to standards for screening of outdoor storage, locations of loading and refuse disposal areas, height, bulk, impervious surface area, architectural enhancement, landscaping, and other measures as deemed appropriate.
- **Goal LUD-24: Maintain the character of rural areas**.
  - **Policy LUD-24.1: Appropriate Densities**. Avoid designating land for higher density uses where prevailing existing development patterns are rural residential with lot sizes of one acre or more.
  - **Policy LUD-24.2: Commercial Developments**. Permit neighborhood commercial development within rural areas to serve the needs of these areas, provided that such projects include safe, logical, and functional access from the adjacent neighborhoods for pedestrian and equestrian users.
  - **Policy LUD-24.3: Septic Requirements**. Enforce Los Angeles County standards and requirements regarding septic systems.
  - **Policy LUD-24.4: Avenue S and State Route 14**. Require that development near the intersection of Avenue S and State Route 14 is complementary to Lake Palmdale, surrounding hillside, and mountain views by minimizing building heights and viewshed impacts; and is consistent with sound water quality management practices by providing a minimum 100-foot setback from the historical high-water mark of Lake Palmdale and meeting other relevant environmental standards.
  - **Policy LUD-24.5: Landfill Buffer**. Provide a 1,000-foot buffer between Antelope Valley Landfill operations and residential developments.
  - **Policy LUD-24.6: Potential Annexation**. Consider annexation as a last resort option and only as a logical extension of the City boundaries as neighboring properties are annexed and adjacent properties are developed. Before initiating annexation, evaluate the fiscal, infrastructural and land use impacts of proposed annexations to the City, as well as the desires of inhabitants within the areas to be annexed.

Development and redevelopment that may occur under the Plan would be governed by these policies, which would be applied and enforced through the City's standard development review procedures. These plans and procedures work together to protect Palmdale's aesthetic resources and are a means to retain the community's character, while providing enhancements in certain areas of the city. Impacts to the visual character and quality of the Planning Area would therefore be less than significant with implementation of applicable policies and regulations.

Mitigation Measures

No mitigation measures are required.

Threshold 4:	Would implementation of the Plan create a new source of substantial light or glare that would adversely affect day or nighttime views in the area?

Impact AES-4 NEW DEVELOPMENT CARRIED OUT UNDER THE PLAN WOULD ADD NEW SOURCES OF LIGHT AND GLARE TO THE PLANNING AREA, BUT DEVELOPMENT WOULD BE REQUIRED TO COMPLY WITH THE CITY'S LIGHTING REGULATIONS AND IMPACTS WOULD THEREFORE BE LESS THAN SIGNIFICANT.

The Plan proposes development changes include creating a vibrant downtown near the future multimodal transit station, establishing three health and wellness districts and two education districts, transforming Palmdale Boulevard into a mixed-use corridor, promoting a diversity of housing types in the City, forming village centers that offer a mix of residential choices and daily goods and services near existing neighborhoods, and building off existing industrial and aerospace business opportunities. This planned development could create new sources of light from exterior building illumination, outdoor lighting, and glare from reflective building surfaces and vehicle surfaces or the headlights of vehicular traffic. As a result, these new sources of light or glare could affect adjacent light-sensitive land uses.

Portions of the Planning Area are already developed and a substantial amount of ambient light from urban uses already exists. As discussed in chapter *4.11 Land Use*, implementation of the Plan includes goals that facilitate the development of complete neighborhoods; and promote high quality mixed use development that includes office employment, affordable housing and improved transit and pedestrian linkages near existing transit. Such development would occur in areas that are already at least partly developed. Thus, the Plan would not in itself significantly increase light and glare beyond existing conditions or levels already allowed under the current Plan. As discussed in Section 4.1.2, *Regulatory Framework*, PMC 17.86.030 addresses design standards that apply to lighting in Palmdale. Examples of these standards include requiring lighting fixtures within residential zones not to exceed 15 feet in height to avoid glare and light spread. Lastly, the Plan contains the following goal related to maintaining a dark night sky that is in turn part of the Plan's vision themes:

- Improve connectivity to trails and open space, maintain mountain views, healthy air quality, and dark night sky (beautiful natural setting vision theme)

For all the reasons discussed above, the Plan would not create new sources of substantial light or glare that would adversely affect day or nighttime views in the area, and this impact would be less than significant.

Mitigation Measures

No mitigation measures are required.

Cumulative Analysis

Future development carried out under the Plan, in an existing developed area, could result in aesthetic impacts. Such impacts would be site-specific and would require evaluation on a case-by-case basis at the project level in accordance with each proposed project. Each discretionary project would require separate discretionary approval and evaluation under CEQA, which would address potential impacts to visual resources and identify necessary mitigation measures, where appropriate. Even ministerial (non-discretionary) projects carried out in the City would be subject to the City's ministerial development review procedures. These projects taken together as a whole would increase the impression of urbanization and development in the Planning Area but, as

discussed throughout this chapter of the EIR (and especially Impact AES-3) and in Chapter 2, *Project Description* of this EIR, this development would be in response to market demand, and is intended to enhance community identity, build on planned infrastructure investments, improve multi-modal active transportation and connectivity, integrate health and equity, and capitalize on the City's unique location in the region. This development would also be strategically focused in areas that have been determined by the community through the Plan development process (including public involvement) to preserve existing neighborhoods and improve the focus areas. Consequently, future development carried out under the Plan would not result in significant cumulative environmental impacts in conflict with aesthetics requirements for preserving visual character, public views, scenic vistas and resources, or requirements for minimizing and controlling potential light and glare. Therefore, the Plan would not cause a cumulatively considerable impact on aesthetics, and no mitigation is required.

4.2 Agriculture and Forestry Resources

This section evaluates the agriculture and forestry resource impacts of the proposed Plan. This section is based in part on information from the Land Use and Urban Form Background Report prepared for the proposed Plan (Raimi & Associates 2020c).

4.2.1 Setting

Important Farmland

To characterize the environmental baseline for agricultural resources, Important Farmland Maps produced by the California Department of Conservation's (DOC) Farmland Mapping and Monitoring Program (FMMP) were reviewed. Unless otherwise expressed, the future use of "Farmland" specifically includes the following definitions provided by the DOC (DOC 2019):

- Prime Farmland: Land which has the best combination of physical and chemical characteristics for producing crops. It has the soil quality, growing season, and moisture supply needed to produce sustained high yields of crops when treated and managed, including water management, according to current farming standards.
- Unique Farmland: Land of lesser quality soils used for the production of specific high economic value crops. It has the special combination of soil quality, location, growing season, and moisture supply needed to produce sustained high quality or high yields of a specific crop when treated and managed according to current farming methods. It is usually irrigated but may include non-irrigated orchards or vineyards as found in some climatic zones in California. Examples of crops include oranges, olives, avocados, rice, grapes and cut flowers.
- Farmland of Local Importance: Land of importance to the local agricultural economy as determined by each county's board of supervisors following recommendations by a local advisory committee.

Forestry Resources

The Planning Area does not contain forestry resources. Forestry resources include forestland, timberland, and timberland production zones. Definitions used for forest land and timberland are those found in the California Public Resources Code (PRC) Sections 12220(g) and 4789.2(g) and California Government Code (CGC) Section 51104(g). These codes define forestland, timberland, and timberland production zones as follows:

- Forest Land: Forest land is land that can support, under natural conditions, 10 percent native tree cover of any species, including hardwoods, and that allows for the preservation or management of forest-related resources such as timber, aesthetic value, fish and wildlife, biodiversity, water quality, recreational facilities, and other public benefits (PRC Section 12220(g)).
- Timberland: Timberland means land, other than land owned by the federal government and land designated by the board as experimental forest land, which is available for, and capable of, growing a crop of trees of a commercial species used to produce lumber and other forest products, including Christmas trees. Commercial species are determined by the board on a district basis (PRC Section 4526(g)).

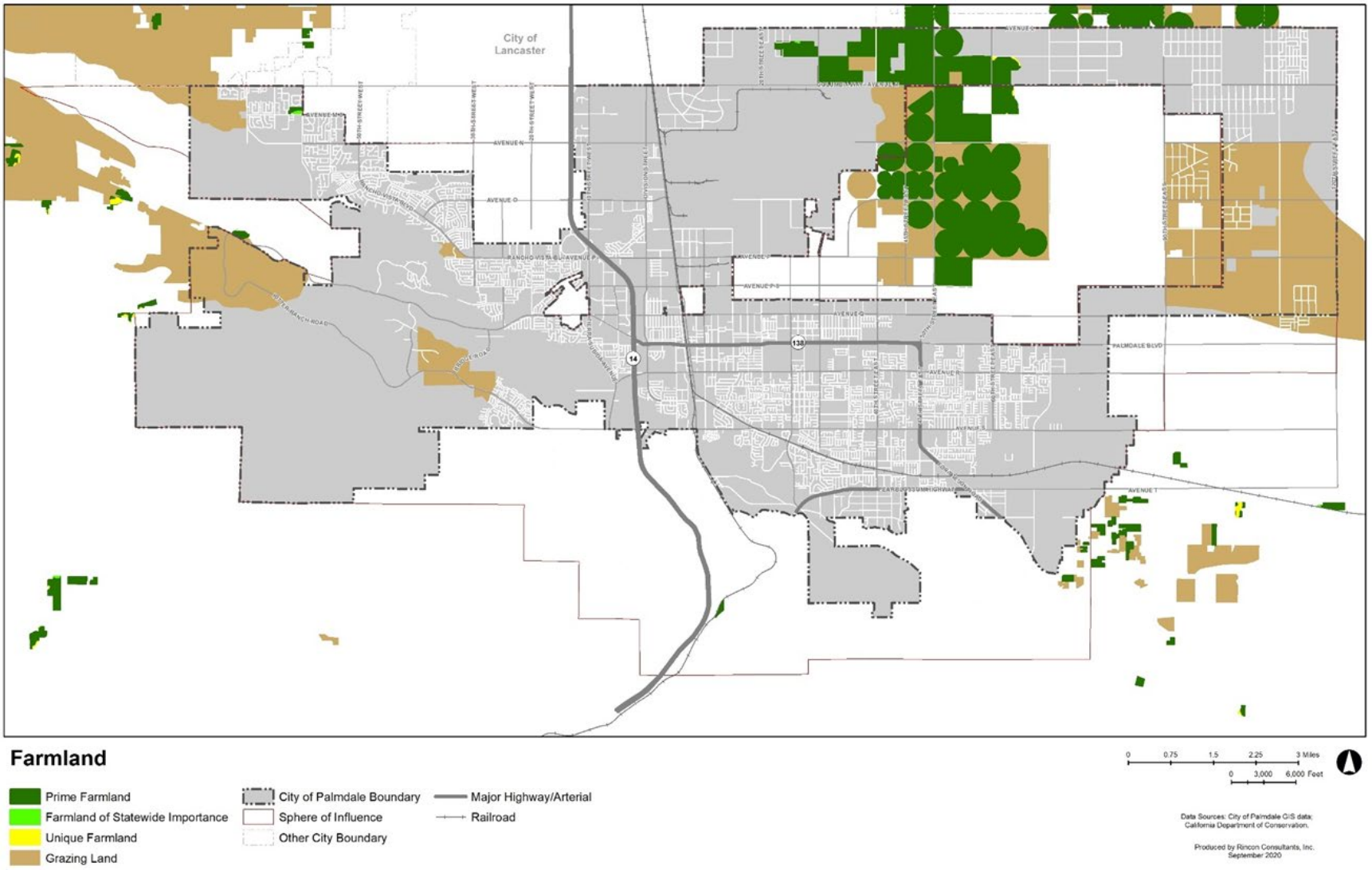
- Timberland Production Zones: Timberland production zones means an area which has been zoned pursuant to Section 51112 or 51113 and is devoted to and used for growing and harvesting timber, or for growing and harvesting timber and compatible uses, as defined in subdivision (h) (CGC Section 51104).

4.2.2 Environmental Setting

Most of the area within Palmdale city limits is classified as Urban and Built-Up land according to FMMP maps prepared by the DOC. However, parts of the Planning Area (mostly outside city limits) contain approximately 4,898 acres of agricultural land, accounting for approximately 4.6 percent of the Planning Area (Raimi & Associates 2020c). Most of this farmland is designated as Prime Farmland, with a few small parcels in the Planning Area designated as Farmland of Statewide Importance or Unique Farmland. Farmland within the Planning Area is shown in Figure 4.2-1. Grazing lands, while not within the category of "Farmland," surround much of the Prime Farmland and occur on their own in various parts of the Planning Area including in hillside areas in the western and southwestern parts of the Planning Area and in the far eastern part of the City and Planning Area near the Alpine Butte Wildlife Sanctuary.

As shown on Figure 4.2-1, the area that contains most of the Planning Area's agricultural land is in the vicinity of Palmdale Regional Airport/Plant 42. This area is currently designated as Industrial (IND) or as Airport and Related Uses in the City's existing General Plan and is zoned as Planned Industrial in the City's municipal code (City of Palmdale 2016; 2018). The proposed Plan would designate this area as Aerospace Industrial and Industrial. There are also a few small areas of agricultural land in the Planning Area outside the vicinity of the airport, but these amount to much less agricultural land than the area near the airport. For example, a small parcel containing Prime Farmland and Farmland of Statewide Importance, located inside City limits in the northwest portion of the Planning Area, is designated and zoned as Single Family Residential (City of Palmdale 2016; 2018). The proposed Plan would designate this area as Single Family Residential 2. There are also a few parcels of agricultural and grazing land outside City limits but inside the City's Sphere of Influence (SOI) in the southeast part of the Planning Area, and one parcel of agricultural land outside City limits but inside the SOI in the southern central part of the Planning Area bordering the railroad tracks east of SR-14. These parcels do not have a land use designation on the City's current General Plan Land Use Map (Figure 4.11-1). Under the proposed Plan, these parcels would be designated as Low Density Residential, as shown on Figure 2-3. None of the agricultural land in the Planning Area is currently enrolled in a Williamson Act Contract (DOC 2016b). There are no timber resources or timberland production zones in the Planning Area (California Department of Fish and Wildlife 2019).

Figure 4.2-1 Farmland in the Planning Area



4.2.3 Regulatory Setting

Various policies and regulations are enforced at the federal, State, and local level to protect forestry, timberland, and agriculture resources.

a. Federal

Farmland Protection Policy Act (FPPA)

The FPPA is intended to minimize the impact Federal programs have on the unnecessary and irreversible conversion of farmland to nonagricultural uses. It assures that to the extent possible, federal programs are administered to be compatible with state and local units of government and private programs and policies to protect farmland. Projects are subject to FPPA requirements if they may irreversibly convert farmland (directly or indirectly) to nonagricultural use and are completed by a Federal agency or with assistance from a Federal agency.

Federal Forest Legacy Program

The Federal Forest Legacy Program was a part of the 1990 Farm Bill. Its purpose is to identify and protect environmentally important forestlands that are threatened by present or future conversion to non-forest uses. The program provides conservation easements and gives priority to lands that can be effectively protected and managed, as well as lands that have significant scenic, recreational, timber, riparian, fish and wildlife, threatened and endangered species, and other cultural or environmental values. Properties that are "working forests," whereby the forestland is managed for the production of forest products, are also eligible under this program. Involvement in this program by private landowners is voluntary.

b. State Regulations

Farmland Mapping and Monitoring Program (FMMP)

The DOC, under the Division of Land Resource Protection, developed the FMMP to monitor the conversion of the state's farmland to and from agricultural use. Data is collected at the county level to produce a series of maps identifying eight land use classifications using a minimum mapping unit of 10 acres. The program also produces a biannual report on the amount of land converted from agricultural to non-agricultural use. The program maintains an inventory of state agricultural land and updates the "Important Farmland Series Maps" every two years (DOC 2016a).

Right to Farm Act 1981

The Right to Farm Act (Civil Code Section 3482.5) is designed to protect commercial agricultural operations from nuisance complaints that may arise when an agricultural operation is conducting business in a "manner consistent with proper and accepted customs." The code specifies that established operations that have been in business for 3 or more years that were not nuisances at the time they began shall not be considered a nuisance as a result of new land use.

Williamson Act

The California Land Conservation Act of 1965, Sections 51200 et seq. of the California Government Code, commonly referred to as the "Williamson Act", enables local governments to restrict the use of specific parcels of land to agricultural or related open space use. Landowners enter into contracts

with participating cities and counties and agree to restrict their land to agriculture or open space use for a minimum of 10 years. In return, landowners receive property tax assessments that are much lower than normal because they are based upon farming and open space uses as opposed to full market (speculative) value.

Forest Practice Act of 1973

The California Department of Forestry and Fire Protection (CAL FIRE) enforces the laws that regulate logging on privately owned lands in California under the Forest Practice Act. Under the Forest Practice Act, timber operations may only be conducted pursuant to an approved Timber Harvesting Plan (THP), an environmental review document prepared by a Registered Professional Forester and submitted by landowners to CAL FIRE. The THP outlines the timber they want to harvest, how it will be harvested, and the steps that will be taken to prevent damage to the environment. Because a THP is the functional equivalent of an EIR for tree removal activities, the approval of a THP could depend on the inclusion of required mitigation.

A landowner that proposes to carry out a project that will result in timberland being converted to a non-timber growing use must apply for either a Timberland Conservation Program (TCP) or a notice of exemption. Grounds for exemption include conversions of less than three acres, conversions to construct or maintain a right–of-way by a public agency or a public or private utility, and development of subdivisions on forest land where approved by local government. When a TCP is issued, restocking of the timber resources is not required, as the land is converted to a non-timber growing use.

c. Local Regulations

PMC Chapter 17.30) establishes Zone A-1, Light Agriculture, and zones intended to maintain the rural character of portions of the Planning Area. Typical uses in this zone include truck farming, field and tree crops, and low density residential uses.

4.2.4 Impact Analysis

a. Methodology and Significance Thresholds

According to CEQA Guidelines Appendix G, impacts related to agriculture and forestry resources would be potentially significant if implementation of the Plan would:

1. Convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use
2. Conflict with existing zoning for agricultural use or a Williamson Act contract
3. Conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code Section 12220[g]); timberland (as defined by Public Resources Code Section 4526); or timberland zoned Timberland Production (as defined by Government Code Section 51104[g])
4. Result in the loss of forest land or conversion of forest land to non-forest use
5. Involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agricultural use or conversion of forest land to non-forest use

b. Project and Cumulative Impacts

Threshold 1:	Would the Plan convert Prime Farmland, Unique Farmland, or Farmland of Statewide Importance (Farmland), as shown on maps prepared pursuant to the Farmland Mapping and Monitoring Program of the California Resources Agency, to non-agricultural use?
Threshold 2:	Would the Plan conflict with existing zoning for agricultural use or a Williamson Act contract?
Threshold 5:	Would the Plan involve other changes in the existing environment which, due to their location or nature, could result in conversion of Farmland to non-agricultural use or conversion of forest land to non-forest use?

Impact AG-1 THE PLAN WOULD NOT CONVERT FARMLAND TO NON-AGRICULTURAL USE, CONFLICT WITH EXISTING ZONING OR A WILLIAMSON ACT CONTRACT, OR INVOLVE OTHER CHANGES THAT COULD RESULT IN THE CONVERSION OF FARMLAND TO NON-AGRICULTURAL USE. THERE WOULD BE NO IMPACT.

The City's current General Plan land use map (shown in Figure 4.11-1) designates Farmland within the Planning Area (shown in Figure 4.2-1) as Industrial (IND) or as Airport and Related Uses (AR) (City of Palmdale 2016). As shown in Figure 4.11-2, this area is zoned as Planned Industrial (M-4) or Light Agriculture (A-1) under the City's Municipal Code (City of Palmdale 2018). A small parcel containing Prime Farmland and Farmland of Statewide Importance, located in the northwest portion of the Planning Area, is designated and zoned as Single Family Residential (City of Palmdale 2016; 2018). The agricultural land to the south and southeast of the City limits but within the Planning Area do not currently have a City of Palmdale land use designation; however, Los Angeles County designates these lands as Agricultural Resource Areas (County of Los Angeles 2022).

As shown in the proposed Plan land use map in Figure 2-3, the Plan would not involve land use designation changes to agricultural lands, and the Farmland within the Planning Area would continue to be designated as Industrial or Aerospace Industrial in the vicinity of the Palmdale Regional Airport. The Prime Farmland currently designated and zoned as Single Family Residential would remain designated as Single Family Residential under the proposed Plan land use map. The parcels of Farmland to the south and southeast of the City within the Planning Area would be designated as Low Density Residential under the Plan. Additionally, the City has adopted and is developing several specific plans, none of which are proposed to occur in areas that contain Prime Farmland. Therefore, the Plan would not conflict with existing zoning for agricultural use. There would be no impact. Furthermore, as shown on maps prepared by the DOC (DOC 2016b), there are no parcels in the Planning Area that are currently enrolled in a Williamson Act contract. Therefore, the Plan would not conflict with Williamson Act contracts and there would be no impact.

The Plan would not change the land use designation of other property in the Planning Area shown on Figure 4.2-1 from an agricultural to a non-agricultural designation. Furthermore, the Plan does not specifically call for non-agricultural development in any of these areas. Future development carried out under the Plan would be subject to the existing Federal and State laws and regulations discussed in Section 4.2.3, *Regulatory Framework*, which aim to conserve and protect farmland; as well as proposed Plan policies that would discourage development in agricultural areas and the conversion of Farmland to non-agricultural use. Therefore, the Plan would not result in or involve other changes in the environment that would result in the conversion of Farmland to non-agricultural use. There would be no impact.

As shown in the proposed Plan land use map in Figure 2-3 in Chapter 2, *Project Description,* of this EIR, the Plan focuses on infill and urban development. The Plan would not involve specific development on Farmland. The Plan also contains Policy LUD-21.4, which is to strive to create an undeveloped or rural greenbelt around the City comprised of natural areas, parks and open space, and agricultural/utility lands.

For all the reasons discussed above, the Plan would not convert Farmland to non-agricultural use, conflict with existing zoning or a Williamson Act Contract, or involve other changes that could result in the conversion of Farmland to non-agricultural use. There would be no impact.

Mitigation Measures

No mitigation measures are required.

Threshold 3:	Would the Plan conflict with existing zoning for, or cause rezoning of, forest land (as defined in Public Resources Code Section 12220[g]); timberland (as defined by Public Resources Code Section 4526); or timberland zoned Timberland Production (as defined by Government Code Section 51104[g])?
Threshold 4:	Would the Plan result in the loss of forest land or conversion of forest land to non-forest use?

Impact AG-2 THERE IS NO LAND IN THE PLANNING AREA DESIGNATED OR ZONED AS FOREST LAND, TIMBERLAND, OR TIMBERLAND PRODUCTION. THEREFORE, THE PLAN WOULD NOT CONFLICT WITH ZONING FOR FOREST LAND, TIMBERLAND, OR TIMBERLAND PRODUCTION, OR RESULT IN THE CONVERSION OF FOREST LAND TO NON-FOREST USE. THERE WOULD BE NO IMPACT.

According to the California Department of Fish and Wildlife (CDFW), the Planning Area does not include areas of forest land, timberland, or timberland zoned Timberland Production (CDFW 2019). As shown in Figure 4.11-1 and Figure 2-3, no lands within the Planning Area are currently designated, or would be designated under the Plan, as forest land or timberland in the City's General Plan (City of Palmdale 2016). As shown in Figure 4.11-2, no lands within the City are zoned for timberland production (City of Palmdale 2018). Therefore, the Plan would not conflict with existing zoning or cause rezoning of forest land, timberland, or areas zoned for timberland production. The Plan would not result in or involve other changes in the environment that would result in the loss of forest land or conversion of forest land to non-forest use. There would be no impact.

Mitigation Measures

No mitigation measures are required.

4.2.5 Cumulative Impacts

As described in the above analysis, the Planning Area does not contain agricultural land or forest land that would be impacted by the Plan, and implementation of the Plan would therefore result in no impact to these resources. Areas surrounding the Planning Area have a variety of land uses, from neighboring urbanized areas such as the City of Lancaster, to open desert areas, to hillsides and mountains. There is some Farmland to the northeast of the Planning Area in the eastern portion of the City of Lancaster and north of that in unincorporated Los Angeles County. Cumulative development in the region has the potential to result in the conversion of nearby Farmland or forest

land to urban uses, but individual projects in these areas would be assessed for potential impacts to agriculture and forestry resources and would be required to implement mitigation in accordance with any applicable state and local policies. Additionally, because the Plan would not directly or indirectly contribute to farmland or forestland conversion, it would not contribute to cumulative impacts to these resources. Implementation of the Plan would not result in a considerable contribution to a significant cumulative impact to agriculture and forestry resources.

4.3 Air Quality

This section describes existing air quality conditions in Palmdale and the Plan's potential impacts on air quality. Information for this section is based in part on data from the Antelope Valley Air Quality Management District (AVAQMD), the Mojave Desert Air Quality Management District, and the California Air Resources Board (CARB).

4.3.1 Environmental Setting

a. Climate

Palmdale is located in the Mojave Desert Air Basin (MDAB), which is under the jurisdiction of the AVAQMD. The AVAQMD is the local air quality management agency responsible for monitoring the local air pollutant levels to ensure that state and federal air quality standards are met. The MDAB is characterized by mountain ranges and valleys, with frequent prevailing winds originating from coastal and central regions.

Palmdale is located in the northeast Los Angeles County portion of the district. Temperatures in the area average lows and highs of 71 degrees Fahrenheit (°F) and 95°F, respectively, in the summer months and 36°F and 58°F, respectively in the winter months. Average annual precipitation is eight inches. This pattern is broken only by occasional winter storms and infrequent Santa Ana winds from the mountains west of the district. Usually warm, dry, and dusty, Santa Ana winds are particularly strong in passes and at the mouths of canyons. Sustained winds of 60 miles per hour with higher gusts are common for these conditions. On average, Santa Ana wind conditions occur five to 10 times per year, with each event lasting up to a few days. Palmdale is sheltered from import of inter-basin pollution by mountain barriers extending on the north and south. Air quality is generally good; however, the city receives windborne air pollutants from the greater Los Angeles area via canyons, such as the Newhall Pass and Soledad Canyon, which lie to the south of the city.

b. Air Pollutants

Air pollutant emissions in the MDAB are generated by stationary, mobile, and natural sources. The characteristics of these sources are discussed below. Stationary sources can be divided into two major subcategories: point and area sources. Point sources occur at a specific location and are often identified by an exhaust vent or stack. Examples include boilers or combustion equipment that produce electricity or generate heat. Area sources are widely distributed and include such sources as residential and commercial water heaters, painting operations, lawn mowers, agricultural fields, landfills, and some consumer products. Mobile sources refer to emissions from motor vehicles, including tailpipe and evaporative emissions, and are classified as either on-road or off-road. On-road sources may be legally operated on roadways and highways. Off-road sources include aircraft, ships, trains, and self-propelled construction equipment. Air pollutants can also be generated by the natural environment, such as when high winds suspend fine dust particles.

The definitions of the six primary criteria pollutants, including ozone, carbon monoxide (CO), nitrogen dioxide (NO_2), sulfur dioxide (SO_2), particulate matter equal to or less than 10 and 2.5 microns in diameter (PM_{10} and $PM_{2.5}$, respectively), and lead (Pb) are provided below. Ozone is considered a secondary criteria pollutant because it is created by atmospheric chemical and photochemical reactions between reactive organic gases (ROG) and nitrogen oxides (NO_X).

- **Ozone.** Ozone is a highly oxidative unstable gas produced by a photochemical reaction (triggered by sunlight) between NO_X and ROG/VOC. VOC is composed of non-methane hydrocarbons (with specific exclusions), and NO_X is composed of different chemical combinations of nitrogen and oxygen, mainly nitric oxide and NO_2. NO_X is formed during the combustion of fuels, while VOC is formed during the combustion and evaporation of organic solvents. As a highly reactive molecule, ozone readily combines with many different atmosphere components. Consequently, high ozone levels tend to exist only while high VOC and NO_X levels are present to sustain the ozone formation process. Once the precursors have been depleted, ozone levels rapidly decline. Because these reactions occur on a regional rather than local scale, ozone is considered a regional pollutant. In addition, because ozone requires sunlight to form, it mainly occurs in concentrations considered serious between April and October. Groups most sensitive to ozone include children, the elderly, people with respiratory disorders, and people who exercise strenuously outdoors (United States Environmental Protection Agency [USEPA] 2021). Depending on the level of exposure, ozone can cause coughing and a sore or scratchy throat; make it more difficult to breathe deeply and vigorously and cause pain when taking a deep breath; inflame and damage the airways; make the lungs more susceptible to infection; and aggravate lung diseases such as asthma, emphysema, and chronic bronchitis.
- **Carbon Monoxide.** CO is a localized pollutant found in high concentrations only near its source. The primary source of CO, a colorless, odorless, poisonous gas, is automobile traffic's incomplete combustion of petroleum fuels. Therefore, elevated concentrations are usually only found near areas of high traffic volumes. Other sources of CO include the incomplete combustion of petroleum fuels at power plants and fuel combustion from wood stoves and fireplaces during the winter. When CO levels are elevated outdoors, they can be of particular concern for people with some types of heart disease. These people already have a reduced ability to get oxygenated blood to their hearts in situations where they need more oxygen than usual. As a result, they are especially vulnerable to the effects of CO when exercising or under increased stress. In these situations, short-term exposure to elevated CO may result in reduced oxygen to the heart accompanied by chest pain, also known as angina (USEPA 2021).
- **Nitrogen Dioxide.** NO_2 is a by-product of fuel combustion. The primary sources are motor vehicles, industrial boilers, and furnaces. The principal form of NO_x produced by combustion is nitric oxide, but nitric oxide reacts rapidly to form NO_2, creating the mixture of nitric oxide and NO_2, commonly called NO_x. NO_2 is a reactive, oxidizing gas and an acute irritant capable of damaging cell linings in the respiratory tract. Breathing air with a high concentration of NO_2 can irritate airways in the human respiratory system. Such exposures over short periods can aggravate respiratory diseases leading to respiratory symptoms (such as coughing, wheezing, or difficulty breathing), hospital admissions, and visits to emergency rooms. Longer exposures to elevated concentrations of NO_2 may contribute to the development of asthma and potentially increase susceptibility to respiratory infections. People with asthma and children and the elderly are generally at greater risk for the health effects of NO_2 (USEPA 2021). NO_2 absorbs blue light and causes a reddish-brown cast to the atmosphere and reduced visibility. It can also contribute to the formation of ozone/smog and acid rain.
- **Suspended Particulates.** Suspended atmospheric PM_{10} and $PM_{2.5}$ are comprised of finely divided solids and liquids such as dust, soot, aerosols, fumes, and mists. Both PM_{10} and $PM_{2.5}$ are emitted into the atmosphere as by-products of fuel combustion and wind erosion of soil and unpaved roads. The atmosphere, through chemical reactions, can form particulate matter. The characteristics, sources, and potential health effects of PM_{10} and $PM_{2.5}$ can be very different. PM_{10} is generally associated with dust mobilized by wind and vehicles. In contrast, $PM_{2.5}$ is

generally associated with combustion processes and formation in the atmosphere as a secondary pollutant through chemical reactions. PM_{10} can cause increased respiratory disease, lung damage, cancer, premature death, reduced visibility, and surface soiling. For $PM_{2.5}$, short-term exposures (up to 24-hours duration) have been associated with premature mortality, increased hospital admissions for heart or lung causes, acute and chronic bronchitis, asthma attacks, emergency room visits, respiratory symptoms, and restricted activity days. These adverse health effects have been reported primarily in infants, children, and older adults with preexisting heart or lung diseases (CARB 2022a).

- **Sulfur Dioxide (SO_2).** SO_2 is included in a group of highly reactive gases known as "oxides of sulfur." The largest sources of SO_2 emissions are from fossil fuel combustion at power plants (73 percent) and other industrial facilities (20 percent). Smaller sources of SO_2 emissions include industrial processes such as extracting metal from ore and burning fuels with a high sulfur content by locomotives, large ships, and off-road equipment. Short-term exposures to SO_2 can harm the human respiratory system and make breathing difficult. People with asthma, particularly children, are sensitive to these effects of SO_2 (USEPA 2021).
- **Lead (Pb).** Pb is a metal found naturally in the environment, as well as in manufacturing products. The major sources of lead emissions historically have been mobile and industrial. However, due to the USEPA's regulatory efforts to remove lead from gasoline, atmospheric Pb concentrations have declined substantially over the past several decades. The most dramatic reductions in Pb emissions occurred before 1990 due to the removal of Pb from gasoline sold for most highway vehicles. Pb emissions were further reduced substantially between 1990 and 2008, with reductions occurring in the metals industries at least partly due to national emissions standards for hazardous air pollutants (USEPA 2013). As a result of phasing out leaded gasoline, metal processing is currently the primary source of Pb emissions. The highest Pb level in the air is generally found near Pb smelters. Other stationary sources include waste incinerators, utilities, and Pb-acid battery manufacturers. Pb can adversely affect the nervous system, kidney function, immune system, reproductive and developmental systems, and cardiovascular system depending on exposure. Pb exposure also affects the oxygen-carrying capacity of the blood. The Pb effects most likely encountered in current populations are neurological in children. Infants and young children are susceptible to Pb exposures, contributing to behavioral problems, learning deficits, and lowered IQ (USEPA 2021).
- **Toxic Air Contaminants.** In addition to the criteria pollutants, toxic air contaminants (TACs) are a diverse group of air pollutants that may cause or contribute to an increase in deaths or serious illness, or that may pose a present or potential hazard to human health. TACs include both organic and inorganic chemical substances that may be emitted from a variety of common sources, including gasoline stations, motor vehicles, dry cleaners, industrial operations, painting operations, and research and teaching facilities. One of the main sources of TACs in California is diesel engine exhaust that contains solid material known as diesel particulate matter (DPM). More than 90 percent of DPM is less than one micron in diameter (about $1/70^{th}$ the diameter of a human hair) and thus is a subset of $PM_{2.5}$. Because of their extremely small size, these particles can be inhaled and eventually trapped in the bronchial and alveolar regions of the lungs (CARB 2022a). TACs are different than criteria pollutants because ambient air quality standards have not been established for TACs. TACs occurring at extremely low levels may still cause health effects and it is typically difficult to identify levels of exposure that do not produce adverse health effects. TAC impacts are described by carcinogenic risk and by chronic (i.e., long duration) and acute (i.e., severe but of short duration) adverse effects on human health. People exposed to toxic air pollutants at sufficient concentrations and durations may have an increased chance

of getting cancer or experiencing other serious health effects. These health effects can include damage to the immune system, as well as neurological, reproductive (e.g., reduced fertility), developmental, respiratory, and other health problems (USEPA 2020).

c. Current Ambient Air Quality

The AVAQMD monitors air pollutant levels to assure that air quality standards are met, and, if they are not met, develops strategies to meet the standards. Depending on if the standards are met or exceeded, the air district is classified as being in "attainment" or in "nonattainment." Current attainment status is shown in Table 4.3-2. The AVAQMD is in nonattainment for both the federal and state standards for ozone and $PM_{2.5}$, as well as the state standard for PM_{10}. In 2020, the AVAQMD did not exceed the standards for CO, NO_2, or SO_2. Nonattainment status in the MDAB is a result of several factors, primarily the naturally adverse meteorological conditions that limit the dispersion and diffusion of pollutants (surface and subsidence inversions), the limited capacity of the local airshed to eliminate pollutants from the air, and the number, type, and density of emission sources in the MDAB.

To monitor the various concentrations of air pollutants throughout the MDAB, the AVAQMD currently operates six monitoring stations located at different sites throughout the MDAB. Ambient air pollutant concentrations in Palmdale are monitored in the City of Lancaster. Table 4.3-1 provides a summary of ambient air quality measured from 2018 to 2020. As of 2020, ambient ozone concentrations in the AVAQMD regularly exceeded both national and state standards, while standards for the other criteria pollutants have not been exceeded during this period. Neither CO or SO_2 are monitored in the Palmdale area and therefore are not reported.

Table 4.3-1 Summary of Ambient Air Quality in the AVAQMD

Pollutant	Air Quality Standards	Year		
		2018	2019	2020
Ozone				
Maximum 1-hour concentration in ppm		0.125	0.096	0.099
Number of days exceeding State 1-hour standard	>0.09 ppm	5	1	4
Maximum 8-hour concentration in ppm		0.105	0.082	0.084
Number of days exceeding State 8-hour standard	>0.070 ppm	49	14	8
Nitrogen Dioxide (NO_2)				
Maximum 1-hour concentration in ppm		0.048	0.049	0.052
Number of days exceeding State 1-hour standard	>0.18 ppm	0	0	0
Particulate Matter <10 microns (PM_{10})				
Maximum 24-hour concentration in $\mu g/m^3$		89.3	26.1	192.3
Number of days exceeding State 24-hour standard	> 50 $\mu g/m^3$	N/A	15	28.8
Number of days exceeding national 24-hour standard	> 150 $\mu g/m^3$	0	2	1
Particulate Matter <2.5 microns ($PM_{2.5}$)				
Maximum 24-hour concentration in $\mu g/m^3$		40.4	13.6	74.7
Number of days exceeding national 24-hour standard	>0.25 $\mu g/m^3$	1	0	9

Source: CARB2022b.

d. Sensitive Receptors

Ambient air quality standards have been established to represent the levels of air quality considered sufficient, with an adequate margin of safety, to protect public health and welfare. They are designed to protect that segment of the public most susceptible to respiratory distress, including children under 14, persons aged over 65, persons engaged in strenuous work or exercise, and people with cardiovascular and chronic respiratory diseases. Most sensitive receptor locations are therefore schools and hospitals. The Palmdale Regional Medical Center is located south of West Palmdale Boulevard and east of Tierra Subida Avenue and several urgent clinics are located throughout the City. School locations are identified in Section 4.15, *Public Services.*

4.3.2 Regulatory Setting

The federal and state governments have been empowered by the federal and state clean air acts (CAA) to regulate the emission of airborne pollutants. The USEPA is the federal agency designated to administer air quality regulation, while CARB is the state equivalent. Local control in air quality management is provided by CARB through multi-county and county-level Air Pollution Control Districts (APCD). CARB establishes statewide air quality standards and is responsible for the control of mobile emission sources, while the local APCDs are responsible for enforcing standards and regulating stationary sources. Palmdale is under the jurisdiction of the AVAQMD.

a. Federal Regulations

The USEPA is responsible for enforcing the federal CAA. The USEPA is also responsible for establishing National Ambient Air Quality Standards (NAAQS). The NAAQS are required under the 1977 CAA and subsequent amendments. The USEPA regulates emission sources that are under the exclusive authority of the federal government, such as aircraft, ships, and certain types of locomotives. The agency has jurisdiction over emission sources outside state waters (e.g., beyond the outer continental shelf) and establishes various emission standards, including those for vehicles sold in states other than California. Automobiles sold in California must meet the stricter emission standards established by the CARB.

b. State Regulations

In California, CARB, which became part of the California Environmental Protection Agency in 1991, is responsible for meeting the State requirements of the federal CAA, administering the California CAA, and establishing the California Ambient Air Quality Standards (CAAQS). The California CAA, as amended in 1992, requires all air districts in the state to endeavor to achieve and maintain the CAAQS. The CAAQS are generally more stringent than the corresponding federal standards and incorporate additional standards for sulfates, hydrogen sulfide, vinyl chloride and visibility reducing particles. CARB regulates mobile air pollution sources, such as motor vehicles. The agency is responsible for setting emission standards for vehicles sold in California and for other emission sources, such as consumer products and certain off-road equipment. CARB established passenger vehicle fuel specifications, which became effective in March 1996. CARB oversees the functions of local APCDs, which in turn administer air quality activities at the regional and county level. CARB has established 15 air basins statewide, including the MDAB.

The USEPA has set primary NAAQS for ozone, CO, NO_2, SO_2, PM_{10}, $PM_{2.5}$, and Pb. Primary standards are those levels of air quality deemed necessary, with an adequate margin of safety, to protect public health. In addition, California has established health-based CAAQS for these and other

pollutants, some of which are more stringent than the federal standards. Table 4.3-2 lists the current federal and state standards for regulated pollutants.

Table 4.3-2 Current Federal and State Ambient Air Quality Standards & Attainment Status

Pollutant	Federal Standard	Attainment Status	California Standard	Attainment Status
Ozone (O_3)	0.075 ppm (8-hr avg)	Non Attainment	0.07 ppm (8-hr avg) 0.09 ppm (1-hr avg)	Non Attainment
Carbon Monoxide (CO)	9.0 ppm (8-hr avg) 35.0 ppm (1-hr avg)	Attainment/ Unclassified	9.0 ppm (8-hr avg) 20.0 ppm (1-hr avg)	Attainment
Nitrogen Dioxide (NO_2)	100 ppb (1-hr avg) 0.053 ppm (annual avg)	Attainment/ Unclassified	0.18 ppm (1-hr avg) 0.03 ppm (annual avg)	Attainment
Sulfur Dioxide (SO_2)	0.03 ppm (annual avg) 0.14 ppm (24-hr avg) 75 ppb (1-hr avg)	Attainment/ Unclassified	0.25 ppm (1-hr avg) 0.04 ppm (24-hr avg)	Attainment
Lead (Pb)	1.5 μg/m^3 (3-month avg)	Attainment/ Unclassified	1.5 μg/m^3 (30-day avg)	Attainment
Particulate Matter (PM_{10})	150 μg/m^3 (24-hr avg)	Attainment/ Unclassified	20 μg/m^3 (annual avg) 50 μg/m^3 (24-hr avg)	Non Attainment
Fine Particulate Matter ($PM_{2.5}$)	15 μg/m^3 (annual avg) 35 μg/m^3 (24-hr avg)	Attainment/ Unclassified	12 μg/m^3 (annual avg)	Unclassified

ppb = parts per billion; ppm = parts per million; μg/m^3 = micrograms per cubic meter

Source: CARB 2016; AVAQMD 2017a

State Implementation Plan

The State Implementation Plan (SIP) is a collection of documents that set forth the state's strategies for achieving the NAAQS. In California, the SIP is a compilation of new and previously submitted plans, programs (such as monitoring, modeling, and permitting), district rules, state regulations, and federal controls. The CARB is the lead agency for all purposes related to the SIP under state law. Local air districts and other agencies, such as the Department of Pesticide Regulation and the Bureau of Automotive Repair, prepare SIP elements and submit them to CARB for review and approval. CARB then forwards SIP revisions to the USEPA for approval and publication in the Federal Register. The items included in the California SIP are listed in the Code of Federal Regulations (CFR) at 40 CFR 52.220.

As the regional air quality management district, the AVAQMD is responsible for preparing and implementing the portion of the SIP applicable to the portion of the MDAB within its jurisdiction. The air pollution control district for each county adopts rules, regulations, and programs to attain federal and state air quality standards and appropriates money (including permit fees) to achieve these objectives.

California Code of Regulations

The California Code of Regulations (CCR), is the official compilation and publication of the regulations adopted, amended or repealed by state agencies pursuant to the Administrative Procedure Act (APA) (State of California, 2022). The following California Code of Regulations would be applicable to the project:

- **Engine Idling.** In accordance with Section 2485 of Title 13 of the California Code of Regulations, the idling of all diesel-fueled commercial vehicles (weighing over 10,000 pounds) during construction shall be limited to five minutes at any location.
- **Emission Standards.** In accordance with Section 93115 of Title 17 of the California Code of Regulations, operation of any stationary, diesel-fueled, compression-ignition engines shall meet specified fuel and fuel additive requirements and emission standards.

California Building Standards Code

California Code of Regulations Title 24 is referred to as the California Building Standards Code. It consists of a compilation of several distinct standards and codes related to building construction including plumbing, electrical, interior acoustics, energy efficiency, and handicap accessibility for persons with physical and sensory disabilities. The current iteration is the 2019 Title 24 standards. The California Building Standards Code's energy-efficiency and green building standards are outlined below.

PART 6 – BUILDING ENERGY EFFICIENCY STANDARDS/ENERGY CODE

California Code of Regulations Title 24, Part 6 is the Building Energy Efficiency Standards or California Energy Code. This code, originally enacted in 1978, establishes energy-efficiency standards for residential and non-residential buildings to reduce California's energy demand. New construction and major renovations must demonstrate their compliance with the current Energy Code through submittal and approval of a Title 24 Compliance Report to the local building permit review authority and the California Energy Commission. The 2019 Title 24 standards are the applicable building energy efficiency standards for the Plan because they became effective on January 1, 2020.

The voluntary standards require:

- **Tier I:** stricter energy efficiency requirements, stricter water conservation requirements for specific fixtures, 65 percent reduction in construction waste with third-party verification, 10 percent recycled content for building materials, 20 percent permeable paving, and 20 percent cement reduction.
- **Tier II:** stricter energy efficiency requirements, stricter water conservation requirements for specific fixtures, 75 percent reduction in construction waste with third-party verification, 15 percent recycled content for building materials, 30 percent permeable paving, and 25 percent cement reduction.

c. Local Regulations

Antelope Valley Air Quality Management District

As the local air quality management agency, the AVAQMD is required to monitor air pollutant levels to ensure that State and federal air quality standards are met and, if they are not met, to develop

strategies to meet the standards. In areas designated as non-attainment for one or more air pollutants, a cumulative air quality impact exists for those air pollutants, and the human health impacts described under *Air Pollutants* discussed above are already occurring in that area as part of the environmental baseline condition.

Under state law, air districts are required to prepare a plan for air quality improvement for pollutants for which the district is in non-compliance. The AVAQMD adopted the Federal 75 parts per billion (ppb) Ozone Attainment Plan for the Western Mojave Desert Nonattainment Area in March 2017 to reach attainment for federal and state standards. The Ozone Attainment Plan incorporates new scientific data and notable regulatory actions that have occurred since adoption of the 2010 Ozone Attainment Plan including the approval of the new federal 8-hour ozone standard of 0.070 parts per million (ppm) that was finalized in 2015. The Final 2017 Ozone Attainment Plan addresses several state and federal planning requirements and incorporates new scientific information, primarily in the form of updated emissions inventories, ambient measurements, and meteorological air quality models. The Southern California Association of Governments' (SCAG) projections for socio-economic data (e.g., population, housing, employment by industry) and transportation activities from the 2016 Regional Transportation Plan/Sustainable Communities Strategy (2016 RTP/SCS) are integrated into the 2017 Ozone Attainment Plan.

Project-level significance thresholds established by local air districts set the level at which a project would cause or have a cumulatively considerable contribution to an exceedance of a federal or state ambient air quality standard. Therefore, if a project's air pollutant emissions exceed the significance thresholds, the project could cause or contribute to the human health impacts.

To minimize potential impacts from project emissions, the AVAQMD implements rules and regulations for emissions that may be generated by various uses and activities. The rules and regulations detail pollution-reduction measures that must be implemented during construction and operation of projects. Rules and regulations relevant to the Plan include the following:

- **Rule 403 (Fugitive Dust).** The purpose of this rule is to reduce the amount of Particulate Matter entrained in the ambient air as a result of anthropogenic (man-made) Fugitive Dust sources by requiring actions to prevent, reduce or mitigate Fugitive Dust emissions. The new construction would be required to comply with all provisions of Rule 403, including, but not limited to, the following measures:
  - Pre-activity:
    - Pre-water the site sufficiently to limit Visible Dust Emissions (VDE) to 20 percent opacity; and,
    - Phase work to reduce the amount of Disturbed Surface Area at any one time.
  - During Activity:
    - Apply water or chemical/organic stabilizers/suppressants sufficient to limit VDE to 20 percent opacity;
    - Construct and maintain wind barriers sufficient to limit VDE to 20 percent opacity. If utilizing wind barriers, control measure (a) above shall also be implemented; or,
    - Apply water or chemical/organic stabilizers/suppressants to unpaved haul/access roads and unpaved vehicle/equipment traffic areas sufficient to limit VDE to 20 percent opacity and meet the requirements of section (C)(9).

  - Temporary Stabilization during Periods of Inactivity:
    - Restrict vehicular access to the area; and,
    - Apply water or chemical/organic stabilizers/suppressants, sufficient to limit VDE to 20 percent opacity, or to comply with the conditions of a Stabilized Surface. If an area having one-half acres or more of Disturbed Surface Area remains unused for seven or more days, the area must comply with the conditions for a Stabilized Surface area.

- **Rule 402 (Nuisance).** A person shall not discharge from any source whatsoever such quantities of air contaminants or other material which cause injury, detriment, nuisance, or annoyance to any considerable number of persons or to the public, or which endanger the comfort, repose, health or safety of any such persons or the public, or which cause, or have a natural tendency to cause, injury or damage to business or property.
- **Rule 1113 (Architectural Coatings).** This rule limits the content of VOCs in architectural coatings that are supplied, sold, offered for sale, and manufactured within the Air District. Effective January 6, 2014, all building envelope coatings were limited to a VOC content of 50 grams per liter for flat coatings and 150 g/l for nonflat-high gloss coatings.

2020-2045 Regional Transportation Plan/Sustainable Communities Strategy

SCAG is the regional planning agency for Los Angeles, Orange, Ventura, Riverside, San Bernardino, and Imperial Counties, and addresses regional issues relating to transportation, the economy, community development and the environment. On September 3, 2020, SCAG's Regional Council formally adopted the 2020-2045 RTP/SCS (titled Connect SoCal). The 2020-2045 RTP/SCS builds upon the progress made through implementation of the 2016-2040 RTP/SCS and includes 10 goals focused on promoting economic prosperity, improving mobility, protecting the environment, and supporting healthy/complete communities. The SCS implementation strategies include focusing growth near destinations and mobility options, promoting diverse housing choices, leveraging technology innovations, and supporting implementation of sustainability policies. The SCS establishes a land use vision of center-focused placemaking, concentrating growth in and near Priority Growth Areas, transferring of development rights, urban greening, creating greenbelts and community separators, and implementing regional advance mitigation (SCAG 2020).

Palmdale General Plan

The Plan includes numerous goals and policies in the Air Quality Element through which air quality would be improved and regional impacts reduced, as follows:

- **Goal AQ-1: Minimize local air pollution caused by motor vehicles.**
  - **Policy AQ 1-1: Reduced work-related trips**. Reduce the number and length of work-related trips through such means as providing a balance of jobs and housing in the community, promoting alternate work schedules, telecommuting, teleconferencing, company-sponsored ride-share and alternative fuel vehicle programs, use of commuter trains and other alternative modes of transportation to the workplace, creation of additional park and ride facilities, and improving the fiber optic network and connectivity.
  - **Policy AQ 1-2: Reduced Non-Work Trips**. Reduce motor vehicle non-work trips through such means as location of residences in proximity to shopping and recreation/entertainment destinations, transit system improvements, and promoting merchant transportation incentives, and distance learning.

- **Policy AQ 1-3: Improve Traffic Flow**. Reduce vehicle emissions by maintaining and improving traffic flow per the Mobility Element.
- **Policy AQ 1-4: High Occupancy Vehicle Lanes.** Coordinate with Caltrans to promote high occupancy vehicle lanes on State Route 14.
- **Policy AQ 1-5: Reduced Tailpipe Emissions**. As technology allows, reduce tailpipe emissions from City vehicles by replacing them with alternative fuel vehicles and encourage reduction of emissions from private vehicles through such means as reducing parking requirements and providing preferential parking for alternative fuel vehicles and bicycles.
- **Policy AQ 1-6: Airport Emissions Control.** To the extent practicable, reduce emissions from the future Palmdale Regional Airport by purchasing renewable energy, installing airport renewable energy systems, reducing energy consumption, monitoring the efficiency of heating, ventilation, and colling systems, and purchasing low or zero emission vehicles and ground support equipment.
- **Policy AQ 1-7: Expand Dial-A-Ride**. Expand services of the existing dial-a-ride program, resulting in reduced need for automobiles and parking by seniors and those with disabilities.
- **Policy AQ 1-8: Environmentally Review New Development**. Use the environmental review process for new development applications to assess and, as necessary, mitigate the impacts of new development related to increased vehicle miles traveled.
- **Policy AQ 1-9: Encourage transit and bike use**. Provide incentives to residents who bike or use public transportation such as free or discounted public transit or employer-provided subsidies or reimbursements for residents willing to bike or use public transit.
- **Policy AQ 1-10: Truck routes**. Restrict freight to certain routes and times by adopting rules and regulations that prohibit the use of trucks in certain areas within Palmdale.

- **Goal AQ-2: Minimize particulates less than 10 microns in size (PM_{10}) and minimizes activities that generate dust.**
  - **Policy AQ 2-1: Vegetative Stabilization**. Reduce roadway dust by requiring paving or vegetative stabilization of unpaved roads and parking lots.
  - **Policy AQ 2-2: Construction Site Requirements**. Require measures at construction sites to prevent deposition of soil onto public rights-of-way.
  - **Policy AQ 2-3: Natural Contours**. Encourage developers to maintain natural contours to the greatest degree possible, to eliminate the need for extensive land clearing, blasting, ground excavation, grading and cut and fill operations.
  - **Policy AQ 2-4: Erosion and Dust Control Measures**. Require erosion and dust control measures for new construction, including covering soil with straw mats or use of chemical soil and dust binders during site grading, followed by hydroseeding and watering disturbed construction areas as soon as possible after grading to prevent fugitive dust.

- **Goal AQ-3: Reduction and/or elimination of unnecessary sources of air pollution.**
  - **Policy AQ 3-1: AVAQMD and Proven Technologies**. Promote the AVAQMD program to encourage local entities to install public electric vehicle charging stations to offer incentivize residents to purchase electric vehicles (e.g., vehicle buy-back program), and the Carl Moyer program, which aims to improve the local air quality by funding local, cost-effective projects to upgrade heavy-duty equipment (Gross Vehicle Weight Rating greater than 14,000 lbs.) using proven technologies.

- **Policy AQ 3-2: Eliminate Emissions**. Promote the AVAQMD's efforts to eliminate emissions from such sources as excessive car dealership cold starts, excessive curb idling, emissions from advertising vehicles, and emissions from leaf blowers, among others, through assisting with implementation and enforcement of AVAQMD programs and rules.
- **Policy AQ 3-3: Complete Streets**. Design a more effective street system by emphasizing complete streets which accommodate all modes of transportation.
- **Policy AQ 3-4: Reduce Reactive Organic Gas**. Reduce reactive organic gas (ROG) and particulate emissions from building materials and construction methods, by promoting the use of nonsolvent-based, high-solid, or water-based coatings, and requiring compliance with all pertinent AVAQMD rules.
- **Policy AQ 3-5: Minimize Emissions**. Minimize emissions of toxic air contaminants that contribute to climate change and ozone depletion, and that create potential health risks for residents, workers, and visitors.
- **Policy AQ 3-6: Community Awareness**. Promote community awareness of the effects of climate change and ozone depleting gases, as well as methods to minimize the creation of those gases, by preparing and distributing educational materials, and cooperating with AVAQMD in establishing regional programs.
- **Policy AQ 3-7: Environmentally Review New Development Applications**. Through the environmental review process for new development applications, ensure that emissions of toxic air contaminants are minimized and that any significant health effects associated with such contaminants are appropriately mitigated.
- **Policy AQ 3-8: Green Technology Companies**. Encourage non-polluting industry and clean green technology companies to locate in the city.

- **Goal AQ-4: Reduce air pollution caused by energy consumption.**
  - **Policy AQ 4-1: EPIC Participation**. Encourage residents and business owners to participate in Energy for Palmdale's Independent Choice (EPIC).
  - **Policy AQ 4-2: Energy Conservation**. Encourage energy conservation from all sectors of the community by promoting and/or requiring the use of energy efficient appliances, processes, and equipment, and promoting energy audits and retrofits of existing structures.
  - **Policy AQ 4-3: Recycling**. Require local government, Palmdale citizens, and local businesses and industries to recycle, as mandated by state law, and to otherwise recycle to the maximum extent possible in accordance with the requirements of the Palmdale Municipal Code.
  - **Policy AQ 4-4: Solar Energy**. Require new developments to minimize obstruction of direct sunlight for solar energy systems on adjacent properties.

4.3.3 Impact Analysis

a. Significance Thresholds

The analysis of the Plan's air quality impacts follows the guidance and methodologies recommended in the AVAQMD *California Environmental Quality Act (CEQA) and Federal Conformity Guidelines* (2016), as well as Appendix G of the CEQA Guidelines.

According to CEQA Guidelines Appendix G, impacts related to air quality would be potentially significant if implementation of the Plan would:

1. Conflict with or obstruct implementation of the applicable air quality plan.
2. Result in a cumulatively considerable net increase of any criteria pollutant for which the Plan region is in nonattainment under an applicable federal or state ambient air quality standard.
3. Expose sensitive receptors to substantial pollutant concentrations; and/or
4. Result in other emissions (such as those leading to odors) adversely affecting a substantial number of people.

The AVAQMD has adopted numeric significance thresholds for individual development projects. However, these thresholds are project specific and while not generally appropriate for plan level analysis, are used to determine significance for the analysis as the AVAQMD has not adopted plan level thresholds.

AVAQMD guidance states that a project would conform to the applicable attainment or maintenance plans if the project is consistent with the existing land use plan (AVAQMD 2016).[1] Zoning changes, specific plans, general plan amendments and similar land use plan changes which do not increase dwelling unit density, vehicle trips, and vehicle miles traveled are also deemed to be consistent with the applicable attainment or maintenance plans.

The AVAQMD recommends quantitative regional significance thresholds for temporary construction activities and long-term project operation in the MDAB, shown in Table 4.3-3.

Table 4.3-3 AVAQMD Regional Project Level Significance Thresholds

	Annual Thresholds (tons/year)	Daily Thresholds (lbs/day)
CO	100	548
NO_X	25	137
VOC	25	137
SO_X	25	137
PM_{10}	15	82
$PM_{2.5}$	12	65

NO_x = Nitrogen Oxides; VOC = Volatile Organic Compounds; PM_{10} = Particulate Matter with a diameter no more than 10 microns; $PM_{2.5}$ = Particulate Matter with a diameter no more than 2.5 microns; SO_x = Sulfur Oxide; CO = Carbon Monoxide

Source: AVAQMD 2016

b. Methodology

The California Emissions Estimator Model (CalEEMod), version 2020.4.0. was used to model emissions from buildout of the Plan. CalEEMod uses default and project-specific information, including the project's land uses, square footages for different uses (e.g., multi-family residence, parking lot), and location, to estimate a project's construction and operational emissions. Detailed assumptions and modeling output is included in Appendix B.

Construction Emissions

Development carried out under the Plan is anticipated to be constructed over approximately 25 years. It is anticipated that several individual projects could be constructed at any given time. To

[1] For this analysis the existing land use plan would be the 1993 General Plan.

provide an estimate of construction emissions, the analysis conservatively assumes that up to eight projects and 1/20th of the total land use would be constructed per year.[2]

Construction emissions modeled include emissions generated by construction equipment used on-site and emissions generated by vehicle trips associated with construction, such as worker and vendor trips. Based on the eight sample projects and development of 1/20th of the total land use growth, the analysis models one single family residential project of up to 56 units, one multi-family residential project up to 1,045 units, one retail/restaurant development of up to 68,623 square feet, one hotel of up to 58 rooms, one office development project of up to 171,275 square feet, one industrial project of up to 502,343 square feet, school development of up to 51,102 square feet, and one government office project of up to 7,300 square feet.[3] Construction phases would include demolition, grading, building construction, paving, and architectural coating. It is assumed that the majority of growth under the Plan would be associated with the re-development of existing sites, however as it is unknown exactly where the new development would occur or what buildings would need to be removed, thus the extent of demolition needed is unknown. Therefore, as a conservative estimate of demolition activity, demolition for each individual project modeled assumes the removal of building area the same square footage as the development to be constructed (i.e. a 1:1 replacement of building area). Construction was assumed to last one year for each "project".

Other details such as construction equipment, worker trips, and vendor trips were based on CalEEMod defaults. Development facilitated by the Plan would comply with all applicable regulatory standards, including AVAQMD Rule 403, Rule 402, and Rule 1113. AVAQMD Rules 402 and 1113 are defaults in the CalEEMod model. Rule 402 is associated with the emission factors incorporated for construction equipment and Rule 1113 is incorporated as the standard unmitigated emission factors for VOCs associated with architectural coating. Rule 403 is incorporated into the modeling using CalEEMod's mitigation settings through watering exposed areas twice a day and replacing ground cover in disturbed areas as soon as possible.

Operational Emissions

Operational emissions for growth within the Planning Area was modeled similarly using CalEEMod. Emissions represent buildout of the Plan in 2045 over the next 25 years. Therefore, consistent with the analysis of construction impacts, sample individual projects account for the development of one single family residential project of up to 56 units, one multi-family residential project up to 1,045 units, one retail/restaurant development of up to 68,623 square feet, one hotel of up to 58 rooms, one office development project of up to 171,275 square feet, one industrial project of up to 502,343 square feet, school development of up to 51,102 square feet, and one government office project of up to 7,300 square feet.

In CalEEMod, operational sources of criteria pollutant emissions include area, energy, and mobile sources. Emissions were based on CalEEMod defaults for each land use type with the following exceptions:

1. New residential units were assumed not to have any hearths or fireplaces based on 100% electric development.

[2] Emissions were estimated for sample projects for each land use type that has the potential to occur in one year. As there is growth withing 8 different land use types, there are eight sample projects used in the analysis.
[3] Hotel growth was assumed at 58 rooms in one year, this annual construction estimate was multiplied by 3 to determine total emissions from the construction of up to 174 new hotel rooms throughout the city

2. Minimal to no natural gas use for new development due to consistency with the climate action plan targets.[4]
3. Title 24 compliance for the Plan was based on compliance with 2019 Title 24.
4. Modeling for water and wastewater were based on the information in Section 4.19-7, *Utilities and Service Systems*.
5. Mobile source emissions consist of emissions generated by vehicles to and from the project sites. Average daily vehicle miles traveled was derived from the Plan-specific Traffic Report prepared by Parsons (Appendix D) and used to estimate mobile source emissions.

c. Project Impacts

Threshold 1:	Would the Plan conflict with or obstruct implementation of the applicable air quality plan?

Impact AQ-1 INDIVIDUAL DEVELOPMENT PROJECTS CARRIED OUT UNDER THE PLAN WOULD GENERATE CONSTRUCTION AND OPERATIONAL-RELATED EMISSIONS. SUCH EMISSIONS MAY CONFLICT WITH OR OBSTRUCT THE IMPLEMENTATION OF THE AVAQMD'S OZONE ATTAINMENT PLAN. IMPLEMENTATION OF PLAN POLICIES, COMPLIANCE WITH EXISTING REGULATIONS, AND IMPLEMENTATION OF MITIGATION WOULD REDUCE CONSTRUCTION- AND OPERATIONAL EMISSIONS, BUT NOT BELOW APPLICABLE EMISSIONS THRESHOLDS. IMPACTS WOULD BE SIGNIFICANT AND UNAVOIDABLE.

The applicable air quality plan for the AVAQMD is the Ozone Attainment Plan. As detailed under the thresholds section above, a general plan amendment/update would be consistent if it does not increase dwelling unit density, vehicle trips, and vehicle miles traveled.

As detailed in Section 4.14, *Population and Housing*, development facilitated by the Plan is projected to result in approximately 22,000 additional housing units in the Planning Area over the next 25 years. Based on Palmdale's estimated average household size of 3.44 persons (California Department of Finance 2021), this would lead to an increase of approximately 75,756 residents. Adding the 75,756 new residents cited above to the city's 2022 population of 167,398, future residential growth facilitated by the proposed project is predicted to increase the city's total population to 243,154, which is above SCAG's 2040 population forecasts of 207,000 (SCAG 2016). Therefore, the Plan would induce substantial population growth in the area, either directly or indirectly.

The Plan calls for redevelopment and increased residential density through infill and mixed-use development. Specifically, the Air Quality Chapter of the Plan include Goals 1 through 4 as identified in the *Regulatory Section* to promote re-use, infill, and mixed-use development. By increasing the overall population density of the community, encouraging mixed land uses, and improving the city's jobs/housing balance, implementation of the Plan would largely reduce per capita automobile trips and travel distances as compared to existing conditions or lower density development more widely distributed throughout the community. Therefore, the Plan would generally reduce per capita air pollutant emissions associated with vehicle use. Consistency with the Ozone Attainment Plan is also a function of consistency with applicable Ozone Plan control measures. The Ozone Plan includes specific control measures to reduce air pollutant emissions to meet Federal and State air quality standards. One of the main methods the Plan relies on to achieve its goals is the use of

[4] CAP targets within Chapter 14 of the Plan intend that all new development would be all-electric and energy efficient (Raimi and Associates 2022 [Sustainability, Climate and Resilience])

Transportation Control Measures (TCM) (AVAQMD 2017b). TCMs provide strategies and measures as options to offset growth in emissions from VMT growth.

Given the above discussion, population growth associated with the Plan would exceed SCAG population growth forecasts, and the project would therefore be inconsistent with the underlying assumptions of the emissions forecasts contained in the Ozone Attainment Plan. Therefore, impacts from the Plan related to consistency with emissions forecasts in the AQMP would be significant and unavoidable.

However, although the Plan would facilitate development beyond what is forecast in the current Ozone Attainment Plan, the new population forecast based on the Plan will be incorporated into AVAQMD's next attainment plan, and therefore the Plan would not be anticipated to obstruct implementation of the attainment plan.

Mitigation Measures

There are no feasible mitigation measures that can be implemented to reduce growth under the Plan and maintain the nature of the Plan. However, the Plan would not obstruct the implementation of the air quality plan.

Significance After Mitigation

There are no feasible mitigation measures that can be implemented to reduce growth under the Plan and maintain the nature of the Plan, even though the Plan would not obstruct the implementation of the air quality plan. Therefore, impacts remain significant and unavoidable.

Threshold 2:	Would the Plan result in a cumulatively considerable net increase of any criteria pollutant for which the Plan region is nonattainment under an applicable federal or state ambient air quality standard?

Impact AQ-2 INDIVIDUAL DEVELOPMENT PROJECTS FACILITATED BY THE PLAN WOULD GENERATE CONSTRUCTION AND OPERATIONAL EMISSIONS. SUCH EMISSIONS MAY RESULT IN ADVERSE IMPACTS TO LOCAL AIR QUALITY. IMPLEMENTATION OF PLAN POLICIES AND COMPLIANCE WITH EXISTING REGULATIONS WOULD REDUCE EMISSIONS, BUT NOT BELOW APPLICABLE LEVELS OF SIGNIFICANCE. IMPACTS WOULD BE SIGNIFICANT AND UNAVOIDABLE.

Construction

Construction activity facilitated by the Plan would cause temporary emissions of various air pollutants. Ozone precursors NO_x and CO would be emitted by the operation of construction equipment, while fugitive dust (PM_{10}, and $PM_{2.5}$) would be emitted by activities that disturb the soil, such as grading and excavation, road construction, and building construction.

As shown in Table 4.3-4, emissions from construction activities for individual industrial/retail, office, and residential projects are anticipated to exceed regulatory thresholds for ROG emissions, therefore emissions would be potentially significant.

Table 4.3-4 Regional Daily Unmitigated Construction Emissions by Land Use Type

	Estimated Emissions (lbs/day)					
Emissions Source	**ROG**	**NO_X**	**CO**	**SO_X**	**PM_{10}**	**$PM_{2.5}$**
SFR	50	39	34	<1	6	3
MFR	**286**	39	62	<1	10	4
Retail / Restaurant	50	21	25	<1	4	2
Hotel	35	22	25	<1	4	2
General Office	69	28	33	<1	4	2
Industrial	**179**	52	42	<1	19	4
School	38	21	25	<1	4	2
Government Office	12	14	17	<1	3	2
AVAQMD Thresholds	*137*	*137*	*548*	*137*	*82*	*82*
Threshold Exceeded?	**Yes**	**No**	**No**	**No**	**No**	**No**

See Appendix B for summaries and CalEEMod results. Note: Totals may not add up due to rounding.

Depending upon the type, size, and timeframe of development, maximum daily emissions associated with individual projects could potentially exceed AVAQMD significance thresholds. Plan Goal 2 and Goal 3, as identified in Section 4.3.2, *Regulatory Framework*, would reduce the overall level of air quality impacts related to construction during the Plan period by minimizing PM_{10}, fugitive dust, and by reducing or eliminating unnecessary sources of air pollution. In addition, the AVAQMD has established Rules 402 and 403, which strive to eliminate emissions of airborne pollutants and require project-specific control measures designed to reduce the level of fugitive dust entrainment, respectively. Rule 403 specifically requires the use of best available control measures for all construction activities. The major construction phases or elements specifically addressed by Rule 403 to reduce fugitive dust include earth moving, disturbed surface areas, unpaved roads, open storage piles, demolition, and other various construction activities. Compliance with Rule 403 by individual property owners, developers, or contractors would further reduce temporary construction-related air pollutant emissions. However, emissions would remain significant and mitigation would be required.

Operation

As shown in Table 4.3-5, development facilitated by the Plan would result in annual emissions in exceedance of the AVAQMD's regional thresholds for individual projects for all pollutants except SO_x. Emissions from individual projects under the Plan would result in operational emissions based on the activities of each project. Table 4.3-6 shows regional operational emissions based on sample projects identified to provide for a conservative amount of annual growth as detailed in the *Methodology*. Individual sample projects used to determine annual construction emissions under the Plan are shown here separately to provide an idea of the range of emissions anticipated for potential individual projects and how they may compare to the regulatory thresholds. As shown, none of the individual projects would result in emissions above AVAQMD regulatory thresholds, however as the "project" being analyzed consists of all annual development under the Plan, consistency is determined by the Plan's conformance to the thresholds.

Table 4.3-5 Regional Daily Unmitigated Plan Operational Emissions

	Estimated Emissions (tons/year)					
Emissions Source	**ROG**	**NO_X**	**CO**	**SO_X**	**PM_{10}**	**$PM_{2.5}$**
Area	174	2	163	0	1	1
Energy	2	0	0	0	0	0
Mobile	53	53	552	1	173	47
Total Daily	**229**	**55**	**715**	**1**	**174**	**47**
AVAQMD Thresholds	*25*	*25*	*100*	*25*	*25*	*25*

See Appendix B for summaries and CalEEMod results. Note: Totals may not add up due to rounding.

Table 4.3-6 Regional Daily Unmitigated Operational Emissions by Example Project

	Estimated Emissions (tons/year)					
Emissions Source	**ROG**	**NO_X**	**CO**	**SO_X**	**PM_{10}**	**$PM_{2.5}$**
Single Family Residential	1	<1	3	<1	<1	<1
Multi-Family Residential	7	3	29	<1	6	2
Retail/Restaurant	<1	<1	1	<1	<1	<1
Hotel	<1	<1	1	<1	<1	<1
Office	1	<1	4	<1	1	<1
Industrial	3	<1	5	<1	1	<1
School	<1	<1	2	<1	<1	<1
Government Office	<1	<1	<1	<1	<1	<1
Max Daily	7	3	29	<1	6	2
AVAQMD Thresholds	*25*	*25*	*100*	*25*	*25*	*25*
Exceed Thresholds	**No**	**No**	**No**	**No**	**No**	**No**

See Appendix B for summaries and CalEEMod results. Note: Totals may not add up due to rounding.

Depending upon the type, size, and timeframe of development, maximum daily emissions associated with individual projects could potentially exceed AVAQMD significance thresholds. Plan policies encouraging enhancements to building energy efficiencies and reduction in vehicle miles traveled, as detailed in Section 4.3.2, *Regulatory Framework*, would reduce the overall level of air quality impacts related to operational activities. In addition, the AVAQMD has established Rule 1113, which reduces ROG emissions from architectural coating activities. Adherence to applicable Plan policies and AVAQMD rules would reduce operational-related impacts to the greatest extent possible. However, given the unknown specifics of each project, there is the potential that even with implementation of AVAQMD measures and policies from the Plan, operational impacts would remain significant and unavoidable. Mitigation would be required.

Mitigation Measures

Implementation of Mitigation Measures AQ-1 and AQ-2 would reduce emissions for individual projects carried out under the Plan.

AQ-1 Architectural Coating

The City shall require that the following measures be implemented for all projects where unmitigated ROG impacts exceed regulatory thresholds. Implementation of these measures shall ensure that ROG emissions are reduced to below 137 lbs/day during construction activities.

- Project contractors shall use architectural coating materials that are zero-emission or has a low-ROG content (below 10 grams per liter). Where such ROG coatings are not available or feasible, the coating with the lowest ROG rating available shall be used. These measures shall be noted on all construction plans, and the City shall perform periodic site inspections during construction to verify compliance; and/or,
- All architectural coating phases shall be extended such that ROG emissions are reduced to below 137 lbs/day.

AQ-2 Operational Emissions Reductions

The City shall require that some or all of the following measures be implemented for individual projects under the Plan where unmitigated criteria pollutant impacts exceed regulatory thresholds. Applicable measures shall be incorporated such that emissions are fully reduced to below regulatory thresholds or the greatest extent feasible. The reduction measures shall include, as applicable to an individual project, but are not limited to, the following:

- Architectural coating materials that are zero-emission or have a low-ROG content (below 10 grams per liter). Where such ROG coatings are not available, the coating with the lowest ROG rating available shall be used
- Require new development to exceed the applicable Title 24 energy-efficiency requirements
- Projects shall incorporate outdoor electrical outlets such that 10 percent of outdoor landscaping equipment can be electrically powered
- All dock doors shall be equipped with electric plugs for electric TRUs
- Installation of electric vehicle charging stations at three percent beyond those required by State and local codes
- Provide infrastructure to allow for future electric vehicle charging stations for a minimum of 10 percent of the parking spaces beyond those already required to accommodate electric vehicle charging stations
- Require new development to implement circulation design elements in parking lots for non-residential uses to reduce vehicle queuing and improve the pedestrian environment
- Utilization of electric vehicles and/or alternatively fueled vehicles in company fleet
- Provision of dedicated parking for carpools, vanpool, and clean air vehicles
- Provision of vanpool and/or shuttle service for employees
- Implementation of reduced parking minimum requirements
- Implementation of maximum parking limits
- Provision of bicycle parking facilities beyond those required by State and local codes
- Provision of a bicycle-share program
- Expansion of bicycle routes/lanes along the project site frontage
- Provision of new or improved transit amenities (e.g., covered turnouts, bicycle racks, covered benches, signage, lighting) if the project site is located along an existing transit route

- Expansion of sidewalk infrastructure along the project site frontage
- Provision of safe, pedestrian-friendly, and interconnected sidewalks and streetscapes
- Provision of employee lockers and showers
- Provision of on-site services that reduce the need for off-site travel (e.g., childcare facilities, automatic teller machines, postal machines, food services)
- Provision of alternative work schedule options, such as telework or reduced working days per week (e.g., 9/80 or 10/40 schedules), for employees
- Implementation of transportation demand management programs to educate and incentivize residents and/or employees to use transit, smart commute, and alternative transportation options
- As applicable all industrial uses shall be required to enroll in U.S. EPA's SmartWay program and shall use carriers that are SmartWay carriers

Significance After Mitigation

As shown in Table 4.3-7, with incorporation of Mitigation Measure AQ-1, emissions from construction activities could be reduced to less than significant levels for the sample multi-family and industrial projects implemented under the Plan. As part of Mitigation Measure AQ-1, individual project architectural coating phases were extended as follows: Multi-family Residential from 35 days to 88 days; and industrial from 20 to 30 days. Adherence to applicable Plan policies, AVAQMD rules, and Mitigation Measure AQ-1 would reduce potential construction-related impacts to the greatest extent possible. However, given the unknown specifics of each individual project, there is the potential that even with these measures, construction impacts would remain significant. Therefore, impacts would be significant and unavoidable.

Table 4.3-7 Regional Daily Mitigated Construction Emissions by Land Use Type

	Estimated Emissions (lbs/day)					
Emissions Source	**ROG**	**NO_X**	**CO**	**SO_X**	**PM_{10}**	**$PM_{2.5}$**
Multi-Family Residential	118	39	62	0	10	4
Industrial	120	52	42	0	19	4
AVAQMD Thresholds	*137*	*137*	*548*	*137*	*82*	*82*
Threshold Exceeded?	**No**	**No**	**No**	**No**	**No**	**No**

See Appendix B for summaries and CalEEMod results. Note: Totals may not add up due to rounding.

Incorporation of Mitigation Measure AQ-2 would reduce operational emissions. However, given the unknown nature of future development under the Plan and the extent to which the measures identified in Mitigation Measure AQ-2 would be incorporated by each project is unknown, therefore reductions from these measures cannot be quantified. Due to the level of exceedance and the uncertainty of implementation under future Plan development, even with this mitigation it is anticipated the emissions would continue to exceed regulatory thresholds. Therefore, operational impacts would remain significant and unavoidable.

Threshold 3: Would the Plan expose sensitive receptors to substantial pollutant concentrations?

Impact AQ-3 INDIVIDUAL DEVELOPMENT PROJECTS CARRIED OUT UNDER THE PLAN WOULD GENERATE CONSTRUCTION- AND OPERATIONAL-RELATED EMISSIONS. SUCH EMISSIONS MAY RESULT IN ADVERSE IMPACTS TO LOCAL AIR QUALITY. HOWEVER, IMPLEMENTATION OF PLAN POLICIES AND COMPLIANCE WITH EXISTING REGULATIONS, WOULD REDUCE CONSTRUCTION AND OPERATIONAL EMISSIONS SUCH THAT IT WOULD NOT EXPOSE SENSITIVE RECEPTORS TO SUBSTANTIAL POLLUTANT CONCENTRATIONS. IMPACTS WOULD BE LESS THAN SIGNIFICANT.

Carbon Monoxide Hotspots

A CO hotspot is a localized concentration of CO that is above a CO ambient air quality standard. Localized CO hotspots can occur at intersections with heavy peak hour traffic. Specifically, hotspots can be created at intersections where traffic levels are sufficiently high such that the local CO concentration exceeds the federal one-hour standard of 35.0 parts per million (ppm) or the federal and state eight-hour standard of 9.0 ppm (CARB 2016).

The entire MDAB is in conformance with state and federal CO standards, no air quality monitoring stations report CO levels in the AVAQMD jurisdiction. Additionally, CARB no longer reports CO concentrations anywhere in California. Based on the low background level of CO in the Planning Area (indicated by the lack of monitoring at state or local levels), and the ever-improving vehicle emissions standards for new sources in accordance with state and federal regulations, the Plan would not create new CO hotspots. Therefore, the Plan would not expose sensitive receptors to substantial CO concentrations, and localized air quality impacts related to CO hot spots would be less than significant.

Toxic Air Contaminants

Sources of operational TAC's typically include, but are not limited to, land uses such as freeways and high-volume roadways, truck distribution centers, ports, rail yards, refineries, chrome plating facilities, dry cleaners using perchloroethylene, and gasoline dispensing facilities. Individual projects may include operation of permitted sources, such as emergency back-up generators, and gasoline stations, but these would be regulated under AVAQMD permits requiring emissions to be at levels that would not expose sensitive receptors to substantial health risk. Additionally, Plan Air Quality Goal 3 promotes minimizing idling and traffic congestion as well as minimizing the emissions of toxic air contaminants therefore further reducing the potential for TAC impacts to local receptors. As such, operations of individual projects carried out under the Plan would not be a substantial source of TACs. Therefore, impacts would be less than significant.

Mitigation Measures

No mitigation measures are required.

Threshold 4:	Would the Plan result in other emissions (such as those leading to odors) adversely affecting a substantial number of people?

Impact AQ-4 INDIVIDUAL DEVELOPMENT PROJECTS CARRIED OUT UNDER THE PLAN WOULD GENERATE CONSTRUCTION- AND OPERATION-RELATED ODORS. SUCH EMISSIONS MAY RESULT IN TEMPORARY IMPACTS TO LOCAL AIR QUALITY. IMPLEMENTATION OF PLAN POLICIES AND COMPLIANCE WITH EXISTING REGULATIONS WOULD REDUCE ODOR EMISSIONS TO A LESS THAN SIGNIFICANT LEVEL.

Construction activities for projects carried out under the Plan would generate odors that would be short-term in nature and subject to AVAQMD Rule 402 Nuisance. This rule prohibits the discharge of contaminants that could be detrimental or would cause a nuisance. Construction activities would be temporary and transitory and associated odors would cease upon construction completion. Accordingly, construction of individual projects under the Plan would not create objectionable odors affecting a substantial number of people during construction, and short-term impacts would be less than significant.

Common sources of operational odor complaints include sewage treatment plants, landfills, recycling facilities, and agricultural uses. Implementation of individual projects under the Plan would not include these land uses as the Plan would result in residential, office, hotel, industrial, educational, and retail uses that do not typically emit odors that would be perceived by receptors as being a nuisance. Solid waste generated by the operations would be collected by a contracted waste hauler, ensuring that any odors resulting from on-site waste would be managed and collected in a manner to prevent the proliferation of odors. Operational odor impacts would be less than significant.

Mitigation Measures

No mitigation measures are required.

4.3.4 Cumulative Impacts

Plan related air pollution may combine with other cumulative projects (past, present, and reasonably foreseeable future) to violate criteria pollutant standards if the existing background sources cause nonattainment conditions. Air districts manage attainment of the criteria pollutant standards by adopting rules, regulations, and attainment plans, which comprise a multifaceted programmatic approach to such attainment.

The Plan itself is cumulative in nature as it represents growth through the Planning Area over approximately 25 years. The Plan is not one individual project, but a number of undefined future projects that may occur under the Plan. Therefore, cumulative impacts with respect to air quality would be identical to the individual impacts addressed above for the Plan. The Plan may cumulatively increase the potential for impacts resulting from increased air pollutant emissions. Implementation of the Plan policies and compliance with existing laws and regulations would reduce cumulative impacts, but not to a less than significant level. Cumulative impacts would be significant and unavoidable.

This page intentionally left blank.

4.4 Biological Resources

This section describes the existing biological resources in the Planning Area and evaluates the significance of potential impacts to sensitive biological resources (including impacts to special status species, habitats, and local policies or ordinances protecting biological resources) that would result from implementation of the proposed Plan and feasible mitigation measures to reduce these potential impacts. Sources utilized in this discussion include data provided by the U.S. Fish and Wildlife Service (USFWS), the California Native Plant Society (CNPS), and the California Department of Fish and Wildlife (CDFW).

4.4.1 Environmental Setting

a. Environmental Setting

The Planning Area is in the Antelope Valley in northern Los Angeles County. The region is bounded by the southern portion of the Sierra Nevada Mountain range to the north, the Tehachapi Mountains to the northwest, the Sierra Pelona Mountains to the southwest, and the San Gabriel Mountains to the southeast. To the east and northeast it is bounded by the Mojave Desert. The climate and ecological region of the Planning Area is unique to Los Angeles County because it is in the Mojave Desert Ecological Section. Specifically, the Planning Area is within the Western Mojave Mountains and Valleys Zone. This portion of the Mojave Desert contains more saltbush (*Atriplex* spp.) and other chenopod scrub than any other region in the Mojave area. Sparse western Joshua tree (*Yucca brevifolia*) and California juniper (*Juniperus californica*) are found within the Planning Area.

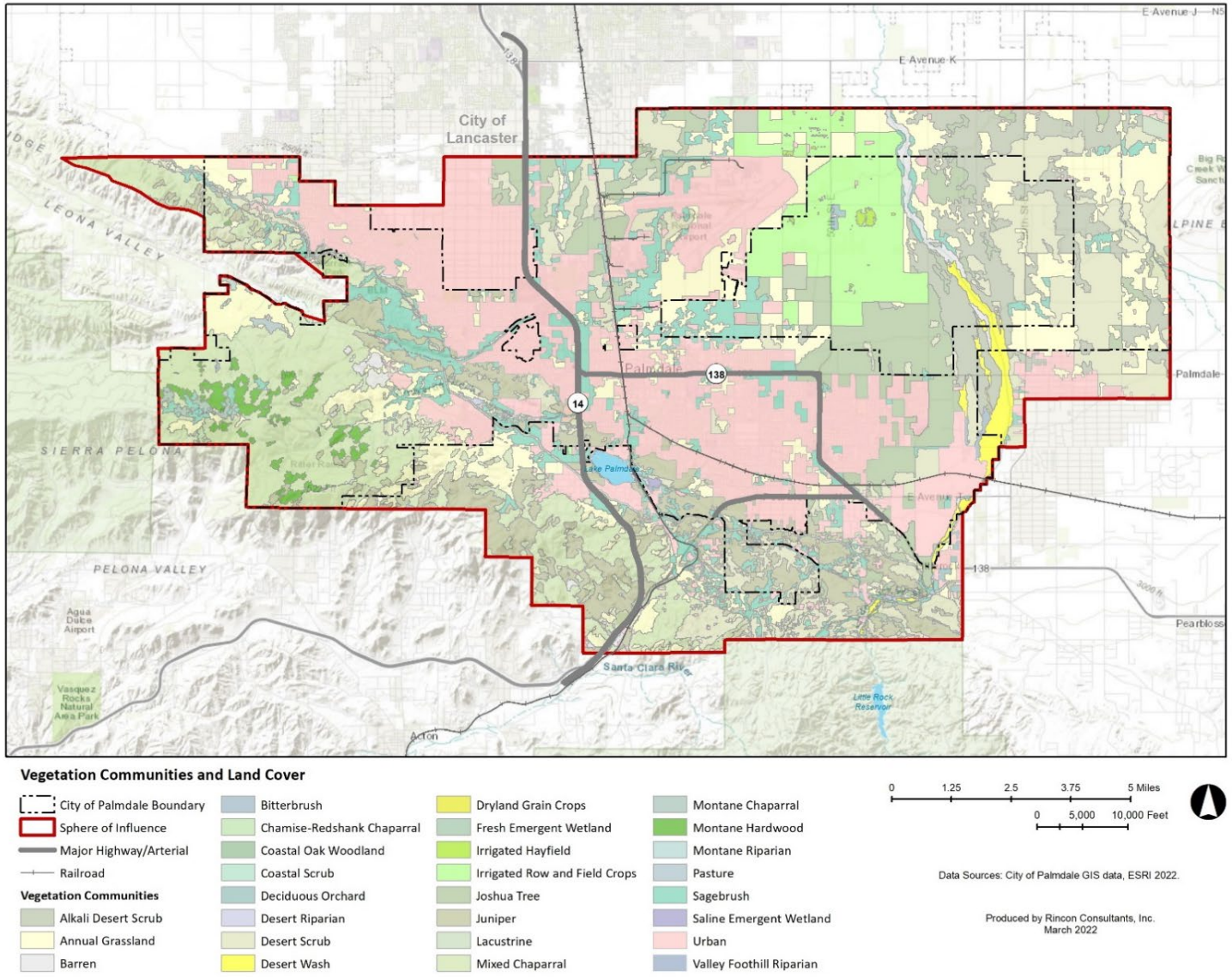
The Planning Area and the surrounding area has a relatively low percentage of vegetation cover due to the harsh temperature variation, low amount of precipitation, and low topographical variation. The area also was historically farmed and abandoned, creating large areas of non-native habitat.

The Planning Area encompasses approximately 174 square miles and abuts the unincorporated Los Angeles County community of Acton to the south and the City of Lancaster to the north. The developed parts of the Planning Area are predominantly developed with landscaped open spaces, residential, commercial, and airport industrial uses. There is also undeveloped, vacant land in the area, and mature ornamental and native trees are scattered throughout the Planning Area.

Vegetation Communities and Land Cover Types

The natural community descriptions listed below are based on the California Department of Fish and Wildlife (CDFW) California Wildlife Habitat Relationships classification scheme (CWHR) (Mayer and Laudenslayer 1988) (CDFW 2022). Figure 4.4-1 shows the habitat types/natural communities for the Planning Area. This information is based on data from the CDFW Vegetation Classification and Mapping Program. Primary habitat for plants and wildlife in the Planning Area consists of desert scrub, Joshua tree woodlands, ruderal and landscape, and developed/disturbed areas. The list below includes a discussion of natural communities in the Planning Area.

Figure 4.4-1 Vegetation Communities and Land Cover in the Planning Area



Alkali Desert Scrub

Alkali Scrub vegetation generally occurs at lower to middle elevations and interdigitates with a number of other arid and semiarid wildlife habitats. Alkali Scrub types can generally be found surrounding the receding shores of large prehistoric lakes or alkali playas that mark the locations of dry lake beds. Climatic conditions associated with Alkali Scrub generally include low precipitation and relative humidity, and high summer temperatures. Alkali Scrub vegetation occurs in California throughout the Mojave Desert, parts of the Colorado Desert, parts of northeastern California within the Great Basin, and in the southern San Joaquin Valley.

Barren

Barren habitat is defined by the absence of vegetation. Any habitat with less than two percent total vegetation cover by herbaceous, desert, or nonwild land species and less than 10 percent cover by tree or shrub species is defined this way. Barren habitat may be found in juxtaposition with many different habitats, depending on the region of the state. Where there is little or no vegetation, the structure of the non-vegetated substrate becomes a critical component of the habitat. The physical settings for permanently barren habitat represent extreme environments for vegetation.

Bitterbrush

Bitterbrush stands range from small, widely spaced shrubs to large, closely spaced shrubs with more than 90 percent canopy cover. Bitterbrush is only occasionally found in pure stands. Bitterbrush reproduces sexually by seeds, vegetatively by stem layering, and by sprouting after fire or mechanical damage. Several bitterbrush stands over 125 years old have been found on deep, well-drained soils. Bitterbrush is highly digestible and contains desirable levels of moisture, calcium, phosphorus, and fat. Bitterbrush is found on flats and slopes with deep, well-drained, rapidly permeable soils having a slightly acid reaction (ph 6.0 to 7.0). The elevation of bitterbrush varies with latitude, exposure, soil, and precipitation.

Chamise-Redshank Chaparral

Fire occurs regularly in Chamise-Redshank Chaparral and influences habitat structure. Chamise-Redshank Chaparral may consist of nearly pure stands of chamise or redshank, a mixture of both, or with other shrubs. Fire is the primary disturbance initiating secondary succession in Chamise-Redshank Chaparral. Chamise-Redshank Chaparral generally occurs below and grades into Mixed Chaparral. Chamise-dominated stands are most common on south- and west-facing slopes; redshank is found on all aspects. This habitat is usually found below 1,200 m (4,000 ft) on mountain ranges outside the deserts.

Coastal Oak Woodland

Coastal oak woodlands are extremely variable. The overstory consists of deciduous and evergreen hardwoods (mostly oaks 4.5-21 m [15 to 70 ft]) tall, sometimes mixed with scattered conifers. Composition of both overstory trees and understory of coastal oak woodland varies and reflects the environmental diversity over which this habitat occurs. Coastal oak woodlands are comprised of slow growing, long-lived trees, so succession requires a long time. Coastal oak woodlands are common to mesic coastal foothills of California. Coastal oak woodlands occupy a variety of Mediterranean type climates that vary from north to south and west to east. (The climate becomes

hotter and drier toward the south and east). Precipitation occurs in the milder winter months, almost entirely as rainfall, followed by warm to hot, dry summers.

Coastal Scrub

Structure of the plant associations that comprise Coastal Scrub is typified by low to moderate-sized shrubs with mesophytic leaves, flexible branches, semi-woody stems growing from a woody base, and a shallow root system. Disturbances such as road cuts or landslides create areas often invaded by both northern and southern Coastal Scrub. Coastal Scrub seems to tolerate drier conditions than its associated habitats. It is typical of areas with steep, south-facing slopes; sandy, mudstone or shale soils; and average annual rainfall of less than 30 cm (12 in). However, it also regularly occurs on stabilized dunes, flat terraces, and moderate slopes of all aspects where average annual rainfall is up to 60 cm (24 in).

Deciduous orchards

Deciduous orchards in California are typically open single species tree dominated habitats. Depending on the tree type and pruning methods they are usually low, bushy trees with an open understory to facilitate harvest. The understory in deciduous orchards often has herbaceous annuals and perennials during the winter months. Deciduous orchards are planted in uniform patterns and intensively managed. Orchards have been planted on deep fertile soils that once supported productive and diverse natural habitats. Larger and more diverse populations of wildlife were also supported by these native habitats. Deciduous orchards can be found on flat alluvial soils in the valley floors, in rolling foothill areas, or on relatively steep slopes.

Desert Riparian

Desert Riparian habitats are characterized as dense groves of low, shrublike trees or tall shrubs to woodlands of small to medium-sized trees. These habitats support more bird species at greater densities than other desert habitats. Soils vary from silty alluvial to rocky, sandy, well-drained substrates. Soils generally are moist, but some are dry at the surface with moisture beginning at a depth of several meters. Desert Riparian habitats are found along permanent streams and at seeps and springs in the Mojave and Sonoran deserts, and in desert canyons of the Peninsular ranges. These habitats generally are found at elevations less than 900 m (3,000 ft); however, willow thickets may be found well above that level in mountains.

Desert Scrub

Desert scrub is a generic habitat characterized by sandy soils that are dominated by shrubs with a minimal understory. The species associated with this habitat type are highly adapted to survive under harsh environmental conditions, specifically high temperatures and low rainfall. Annual species occur during years with adequate moisture, but these landscapes typically consist of perennial shrubs. There are different categories of desert scrub based on species assemblages, such as Mojave creosote bush scrub (*Larrea tridentata*), saltbush scrub (*Atriplex confertifolia*), rabbitbush scrub (*Ericameria nauseosa*), and shadescale scrub (*Atriplex confertifolia)*. Desert scrub habitat occurs in small, undeveloped locations in the Planning Area, typically in narrow strips along parking lots or paved areas. This vegetation community is also common in vacant lands and areas of existing residential development in the Planning Area.

Desert Wash

Desert Wash habitats are characterized by the presence of arborescent, often spiny, shrubs generally associated with intermittent streams (washes) or drier bajadas (alluvial deposits adjacent to washes), especially in the Sonoran Desert. The composition of desert wash plant assemblages depends on variables such as latitude, elevation, and precipitation. Soils of Desert Wash habitats tend to be sandy to gravelly; some wash plants (e.g., mesquite) may be found on a variety of soils. These habitats are found at elevations between 760 meters (about 2,500 ft) and 2,000 meters (6,600 feet).

Dryland grain and seed crops

Vegetation in the dryland grain and seed crops habitat includes seed producing grasses, primarily barley, cereal rye, oats, and wheat. Dryland grain and seed crops in California are annuals. Dryland grain and seed crops occur in association with orchards, vineyards, pasture, urban, and other wildlife habitats such as riparian, chaparral, wetlands, desert, and herbaceous types. Dryland grain and seed crops are usually established on fertile soils, which historically supported an abundance of wildlife. Grain crops have reduced the wildlife habitat richness and diversity. Non-irrigated grain and seed crops are often located on flat to gently rolling terrain.

Fresh Emergent Wetlands

Fresh Emergent Wetlands are characterized by erect, rooted herbaceous hydrophytes. Fresh emergent wetlands are among the most productive wildlife habitats in California. Fresh emergent wetland habitats occur on virtually all exposures and slopes, provided a basin or depression is saturated or at least periodically flooded. However, they are most common on level to gently rolling topography. Fresh emergent wetlands are found throughout California at virtually all elevations but are most prevalent below 2,270 meters (7,500 feet).

Irrigated Hayfield (IRH)

Except for an initial growing period of 2-6 months, depending on climate and soil, this habitat is dense, with nearly 100 percent cover. This habitat includes alfalfa fields and grass hayfields. This habitat occurs in variable climates, from hot and dry to cool and wet to cold and snowy. IRH requires relatively flat topography that allows irrigation or water spreading. Soils are highly variable but usually more than one meter (3.3 feet) deep and often of alluvial origin.

Joshua Tree

Joshua Tree habitats generally occur at moderate elevations in the Mojave Desert between creosotebush scrub and pinyon-juniper woodlands. Joshua Tree habitats occur in broad valleys where soils are deep, on alluvial or rocky slopes, and on pediments with minimal runoff surrounding desert mountains and mesas. Soils must be well drained but may vary considerably in other characteristics. Typical soils may be loose, porous, loamy, sandy, or fine gravelly and are more permeable with lower salt concentrations and more organic matter than other soils, especially those at lower elevations. Hot, dry summers and cool to cold, moist winters are characteristic of areas occupied by Joshua trees and their associates. The sharp spiny leaves provide protective havens for birds and lizards.

Juniper

Juniper habitats are characterized as woodlands of open to dense aggregations of junipers (Western Juniper, California Juniper, or Utah Juniper) in the form of arborescent shrubs or small trees. Junipers are relatively slow growing, and the successional sequence is relatively long. Juniper berries are an important food source for wintering birds. Western Juniper Woodland occurs on gentle slopes, alluvial fans, canyon slopes, and steep, rocky escarpments. Elevational range of juniper is 100 to 3,100 meters (330 to 10,170 feet).

Lacustrine

Lacustrine habitats are inland depressions or dammed riverine channels containing standing water. Depth can vary from a few centimeters to hundreds of meters. Suspended organisms such as plankton are found in the open water of lacustrine habitats. Dominant are the phytoplankton, including diatoms, desmidsx, and filamentous green algae. The relatively calm waters of lakes and ponds offer environmental conditions that contrast sharply with those of running water. Light penetration is dependent on turbidity. Temperatures vary seasonally and with depth. Because only a small proportion of the water is in direct contact with the air and because decomposition is taking place on the bottom, the oxygen content of lake water is relatively low compared to that of running water. In some lakes, oxygen may decrease with depth, but there are exceptions. These gradations of oxygen, light and temperature along with the currents and seiches, influence the vertical distribution of lake organisms. Lacustrine habitats are found throughout California at virtually all elevations but are less abundant in arid regions.

Mixed Chaparral

Mixed chaparral is a structurally homogeneous brushland type dominated by shrubs with thick, stiff, heavily cutinized evergreen leaves. Shrub height and crown cover vary with age since last burn, precipitation, aspect, and soil type. At maturity, cismontane mixed chaparral typically is a dense, nearly impenetrable thicket. On serpentine soils or transmontane slopes, shrub cover may be considerably reduced, and shrubs may be shorter. Leaf litter and standing dead material may accumulate in stands that have not burned for several decades. Mixed chaparral can correspond to multiple alliances as described by Sawyer et al. (2009) depending upon the species composition. These alliances can include, but are not limited to, *Ceanothus cuneatus* Shrubland Alliance and the *Arctostaphylos* spp. Shrubland Alliances.

Montane Chaparral

Montane chaparral varies markedly throughout California. Species composition changes with elevational and geographical range, soil type, and aspect. Montane chaparral can be found on shallow to deep soils, on all exposures, and from gentle to relatively steep slopes. It may dominate on more xeric sites but occurs locally throughout the coniferous forest zone. Generally, climate is like that associated with the coniferous forest zone, cold winter temperatures with substantial precipitation. Summers are typically hot and dry. Montane chaparral is associated with mountainous terrain from mid to high elevation at 914 to 3,047 meters (3,000-10,000 feet).

Montane Hardwood

Montane hardwood habitat is typically composed of a pronounced hardwood tree layer, with an infrequent and poorly developed shrub stratum, and a sparse herbaceous layer. The montane hardwood habitat ranges throughout California mostly west of the Cascade-Sierra Nevada crest.

East of the crest, it is found in localized areas of Placer, El Dorado, Alpine and San Bernardino Counties. Elevations range from 300 feet near the Pacific Ocean to 9,000 feet in southern California. In the Planning Area, the canyon live oak (*Quercus chrysolepis*) alliance is the representative montane hardwood community. In the Coast Range and Klamath Mountains, canyon live oak often forms pure stands on steep canyon slopes and rocky ridge tops. Canyon live oak and associates are found on a wide range of slopes, especially those that are moderate to steep. Soils are for the most part rocky, alluvial, coarse textured, poorly developed, and well drained. Soil depth classes range from shallow to deep. Canyon live oak, along with a few of its associates are also found on ultrabasic soils. Mean summer temperatures in the montane hardwood habitat vary between 68- and 77-degrees Fahrenheit (°F) and mean winter temperatures between 37 and 45°F. Annual precipitation varies from 110 inches in the northern Coast Range to 36 inches in the mountains of southern California.

Montane Riparian

Usually, the montane riparian zone occurs as a narrow, often dense grove of broad-leaved, winter deciduous trees up to 30 meters (98 feet) tall with a sparse understory. All riparian habitats have an exceptionally high value for many wildlife species. Such areas provide water, thermal cover, migration corridors and diverse nesting and feeding opportunities. The shape of many riparian zones, particularly the linear nature of streams, maximizes the development of edge which is so highly productive for wildlife. Riparian areas are found associated with montane lakes, ponds, seeps, bogs, and meadows as well as rivers, streams, and springs.

Pasture

Pasture vegetation is a mix of perennial grasses and legumes that normally provide 100 percent canopy closure. Pastures often occur in association with agricultural habitats. Pastures are used by a variety of wildlife depending upon geographic area and types of adjacent habitats. Pastures are planted on flat and gently rolling terrain. Flat terrain is irrigated by the border and check method of irrigation, except on sandy soils or where water supplies are limited.

Sagebrush

Sagebrush stands are typically large, open, discontinuous stands of big sagebrush of fairly uniform height. Big sagebrush tends to have a single short, thick, stem that branches into a nearly globular crown. Plant heights range from one half to three meters (1.6 to 9.8 feet) and density ranges from very open, widely spaced, small plants to large, closely spaced plants with canopies touching. The sagebrush habitat can exist in any of the structural stages. The most common disturbance factors are wildfire, prescribed burning, seeding to grasses, livestock grazing, and defoliation by larvae of the sagebrush defoliator moth. Sagebrush occurs at a wide range of middle and high elevations. The Sagebrush type is important to wildlife because it serves as habitat for game animals and occupies a vast area. Sagebrush occupies dry slopes and flats from about 500 meters (1,600 feet) to 3,200 (10,500 feet) in elevation.

Saline Emergent Wetland

Saline Emergent Wetlands (SEW) are characterized as salt or brackish marshes consisting mostly of perennial graminoids and forbs, the latter often succulent and suffrutescent, ranging in height from 0.2 to 2 meters (0.7-6.6 feet) or more. SEW becomes established as low marsh on intertidal flats and advances seaward as plant detritus and sediments accrete, gradually causing a change to high

marsh. SEW occur above intertidal sand and mud flats and below upland communities not subject to tidal action. The upper part of estuaries grade into brackish and freshwater marshes. SEW provide food, cover and nesting and roosting habitat for a variety of birds, mammals, reptiles, and amphibians. SEW occur along the margins of bays, lagoons, and estuaries sheltered from excessive wave action. SEW occur in the upper intertidal zone from about the level of mean lower high water to extreme high water. Maximum elevation is about 3.1 m (10.3 ft) above mean lower low water or one m (3.3 ft) above mean high water.

Urban

The structure of urban vegetation varies, with five types of vegetative structure defined: tree grove, street strip, shade tree/lawn, lawn, and shrub cover. The juxtaposition of urban vegetation types within cities produces a rich mosaic with considerable edge areas. The overall mosaic may be more valuable as wildlife habitat than the individual units in that mosaic. Species composition in urban habitats varies with planting design and climate. Detwyler has classified urban vegetation into four major types: the interstitial forest, consisting of trees growing between man's constructions (buildings, streets, etc.); parks and green zones, existing in blocks or sizable patches that are relatively unbroken by human construction; gardens, in which are green ornamental plants as well as food plants; and lawns, or interstitial grasslands. Most units of urban vegetation are relatively static in species composition because of maintenance. Unmaintained units often include exotic and native species.

Urban development has occurred in or adjacent to most other habitats in California, with the highest density at lower elevations. Most urban developments exceeding 10,000 in population were developed in grassland or scrub (coastal sagebrush or chaparral) vegetation. Three urban categories relevant to wildlife are distinguished: downtown, urban residential, and suburbia. The heavily developed downtown is usually at the center, followed by concentric zones of urban residential and suburbs. Urban habitats occur throughout California. Urban habitats are the result of modifying pre-settlement vegetation and introducing new species.

Valley Foothill Riparian

Riparian habitats are associated with rivers and streams as well as lakes, ponds, seeps, bogs, meadows, and springs. Valley foothill riparian habitats occur in the Central Valley and the lower foothills of the Cascade, Sierra Nevada, and Coast ranges. They are also found in lower slopes at the bases of the Peninsular and Transverse ranges. A few lower elevation locations are on the desert side of the southern California mountains. Valley foothill riparian habitats range from sea level to 3,000 feet, reaching an elevation of 5,000 feet on south-facing slopes. Valley-foothill riparian habitats are found in valleys bordered by sloping alluvial fans, slightly dissected terraces, lower foothills, and coastal plains. They are generally associated with low velocity flows, flood plains, and gentle topography. Valleys provide deep alluvial soils and a high-water table. Average precipitation ranges from 6 to 30 inches, with little or no snow. Mean summer maximum temperatures are 75 to 102°F, mean winter minimum temperatures are 29 to 44 °F. Valley Foothill Riparian habitats are characterized by hot, dry summers, mild and wet winters. Valley-foothill riparian habitats provide food, water, migration and dispersal corridors, and escape, nesting, and thermal cover for an abundance of wildlife.

Wetlands and Aquatic Resources

In accordance with Section 1602 of the CFGC, the CDFW has jurisdiction over lakes and streambeds (including adjacent riparian resources). CDFW regulates wetland areas that are part of a river, stream, or lake, but also temporary wetland features such as vernal pools. Under Section 404 of the Clean Water Act (CWA), the United States Army Corps of Engineers (USACE) has authority to regulate activities that discharge dredge or fill material into wetlands or other "waters of the United States" through issuance of a Section 404 Permit. Wetlands and water features in Palmdale have been highly altered and are presently very scarce, due to the urbanized nature of the area. The major watercourses flowing through Palmdale are Amargosa Creek, Anaverde Creek, Little Rock Wash, and Big Rock Wash. The primary potential jurisdictional feature in the southern portion of the Planning Area is Lake Palmdale.

The area outside Palmdale city limits but within its Sphere of Influence, contains wetlands and waters mapped by the U.S. Fish and Wildlife's (USFWS) National Wetland Inventory (NWI) (2022). These include freshwater emergent wetland, freshwater forested/shrub wetland, freshwater ponds, and riverine features. Wetland and water features located in the Planning Area and surrounding area are shown in Figure 4.4-2 and discussed below.

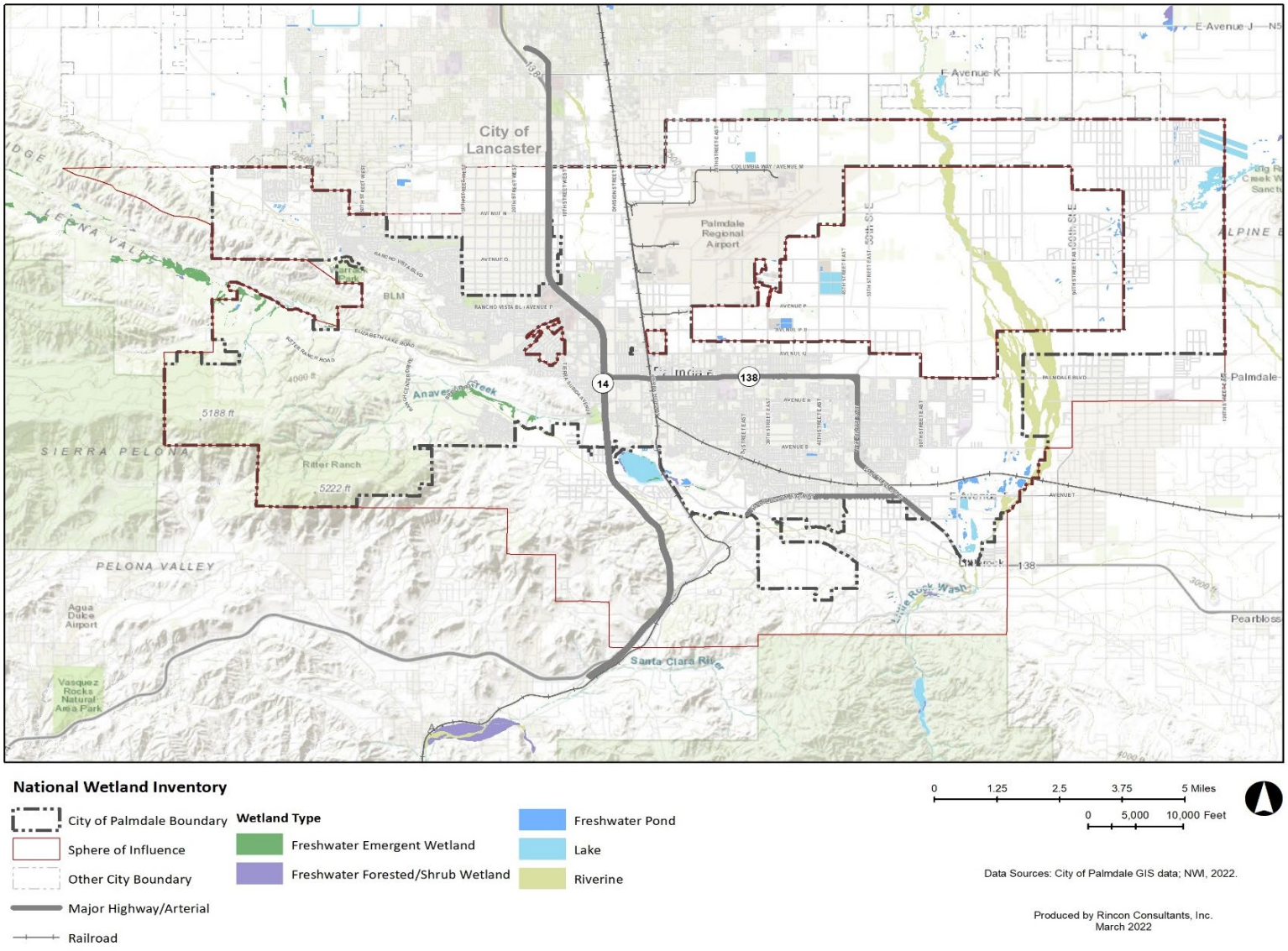
Freshwater Emergent Wetland

Freshwater emergent wetlands are characterized by erect, rooted herbaceous hydrophytes. Within the Planning Area, this habitat is dominated by perennial monocots up to 6.6 feet tall (Cheatham and Haller 1975, Cowardin et al. 1979). All emergent wetlands are flooded frequently, enough so that the roots of the vegetation prosper in an anaerobic environment (Gosselink and Turner 1978). On the upper margins of freshwater emergent wetlands, saturated or periodically flooded soils support several moist soil plant species including big leaf sedge (*Carex amplifolia*), baltic rush (*Juncus balticus*), redroot nutgrass (*Cyperus erythrorhizos*) and on more alkali sites, saltgrass (*Distichlis spicata*). On wetter sites, common cattail (*Typha latifolia*), tule bulrush (*Schoenoplectus acutus*), and river bulrush (*Bolboschoenus fluviatilis*) are potential dominant species (Cheatham and Haller 1975, U.S. Army Corps of Engineers [USACE] 1978, Wentz 1981).

Freshwater emergent wetlands are found throughout California at virtually all elevations but are most prevalent below 7,500 feet (Cheatham and Haller 1975). The largest acreage of fresh emergent wetlands occurs in the Klamath Basin, Sacramento Valley, San Joaquin Valley, Sacramento-San Joaquin Delta, and Imperial Valley-Salton Sea. Freshwater emergent wetland habitats occur on virtually all exposures and slopes, provided a basin or depression is saturated or at least periodically flooded. However, they are most common on level to gently rolling topography. They are found in various landscape depressions or at the edge of rivers or lakes (Wentz 1981). Soils are predominantly silt and clay, although coarser sediments and organic material may be intermixed (Cowardin et al. 1979). In some areas organic soils (peat) may constitute the primary growth medium (USACE 1978).

Freshwater emergent wetlands are among the most productive wildlife habitats in California. They provide food, cover, and water for more than 160 species of birds (U.S. Comptroller General 1979), and numerous mammals, reptiles, and amphibians. Many species rely on Freshwater emergent wetlands for their entire life cycle. The endangered California red-legged frog (*Rana draytonii*), and vernal pool fairy shrimp (*Branchinecta lynchi*)) require pond water with associated emergent vegetation for breeding, and tricolored blackbird (*Agelaius tricolor*) use Freshwater emergent wetlands as feeding areas.

Figure 4.4-2 National Wetlands Inventory



Freshwater Forested/Shrub Wetland

Shrub wetland includes areas dominated by woody vegetation less than 20 feet tall. The species include true shrubs, young trees, and trees or shrubs that are small or stunted because of environmental conditions. All water regimes except subtidal and regularly flooded-tidal fresh are included. Shrub wetlands may represent a successional stage leading to forested wetland, or they may be relatively stable communities. They occur only in the Estuarine and Palustrine Systems but are one of the most widespread classes in the U.S. (Shaw and Fredine 1956).

Forested wetland is characterized by woody vegetation that is 20 feet or taller. Forested wetlands are most common in the eastern U.S. and in those sections of the West where moisture is relatively abundant, particularly along rivers and in the mountains. Like shrub wetland, they only occur in the Palustrine and Estuarine Systems and normally possess an overstory of trees, an understory of young trees or shrubs, and an herbaceous layer. Tricolored blackbirds and the endangered western yellow-billed cuckoo (*Coccyzus americanus occidentalis*) use freshwater forested/shrub wetlands as nesting sites.

Freshwater Pond

In the Planning Area, freshwater pond features are generally seasonal, lasting only a few months out of the year. Freshwater ponds may have limited species diversity since they are often isolated from one another and from other water sources like rivers and oceans. Producers in freshwater ponds generally include rooted plants and phytoplankton. Water lilies (*Nymphaea* spp.) are common rooted plants in many freshwater ponds, especially in man-made ponds. Curly pondweed (*Potamogeton crispus*) and duck weed (*Lemna* spp.) are common elements of freshwater ponds. Phytoplankton grows in freshwater pond habitats and is one of the biggest contributors to the production of oxygen in a pond ecosystem.

Temperature varies in freshwater ponds seasonally. During the summer, the temperature can range from 40°F near the bottom to 72°F at the top. During the winter, the temperature at the bottom can be 40°F while the top is 32°F (ice). There are also many freshwater ponds throughout California that do not freeze during the winter.

Freshwater ponds are commonly used as a foraging location for many species including aquatic and semi-aquatic amphibians and reptiles, fish, and waterfowl. Specifically, western pond turtle (*Emys marmorata*) uses freshwater ponds for all life stages.

Riverine

Riverine habitat features include intermittent or continually running water such as rivers and streams. A stream originates at some elevated source, such as a spring or lake, and flows downward at a rate relative to slope or gradient and the volume of surface runoff or discharge. Rivers and streams occur statewide, mostly between sea level and 8,000 feet. Riverine habitats can occur in association with many terrestrial habitats. Riparian habitats are found adjacent to many rivers and streams. Riverine habitats are also found contiguous to lacustrine and fresh emergent wetland habitats.

The open water zones of large rivers provide resting and escape cover for many species of waterfowl. Gulls (*Larus* spp.), terns (*Sterna* spp.), and osprey hunt in open water. Near-shore waters provide food for waterfowl, herons, shorebirds, belted-kingfisher, and American dipper. Many species of insectivorous birds (swallows, swifts, flycatchers) hawk their prey over water. Some of the

more common mammals found in riverine habitats include river otter (*Lontra canadensis*), mink (*Neovison vison*), and muskrat (*Ondatra zibethicus*).

Special-Status Species

Special-status species include those listed as rare, threatened, or endangered by CDFW or the USFWS, or are candidates for either state or federal listing, or have been designated as "fully protected" or "species of special concern" by USFWS and CDFW, or are other species that are tracked by the *California Natural Diversity Database* (CNDDB) or California Native Plant Society (CNPS), but do not fall into any of the categories cited above. Information regarding the occurrences of special-status species in the Planning Area was obtained from searching the CDFW CNDDB (CDFW 2022), USFWS *Information for Planning and Conservation* (IPaC) (February 2022), and CNPS's Inventory of Rare and Endangered Plants (CNPS 2022) searching for the U. S. Geological Survey (USGS) *Palmdale* and eight surrounding 7.5-minute quadrangles. These databases contain records of reported occurrences of federal- or State-listed endangered, threatened, rare, or proposed endangered or threatened species, federal species of concern, State species of special concern, or otherwise sensitive species or habitat that may occur in the Planning Area. Lists from the USFWS and CDFW were also reviewed and tables of common and sensitive wildlife and plant species potentially occurring within the Planning Area were generated and provided in Appendix C. This search range encompasses a sufficient distance to accommodate for regional habitat diversity and to overcome the limitations of the CNDDB (the CNDDB is based on reports of actual occurrences and does not constitute an exhaustive inventory of every resource). See Appendix C for detailed species lists.

Listed Species

Federal, State, and local authorities under a variety of legislative acts share regulatory authority over biological resources. The CDFW has direct jurisdiction under law for biological resources through the California Fish and Game Code and under the California Endangered Species Act (CESA). The federal Endangered Species Act (FESA) also provides direct regulatory authority over special-status species and their habitats to the USFWS. These acts specifically regulate listed and candidate endangered species and candidate threatened species, which are defined as follows:

- **Endangered Species**: any species in danger of extinction throughout all or a significant portion of its range
- **Threatened Species:** any species likely to become an endangered species within the foreseeable future throughout all or a significant part of its range

Special-Status Wildlife

Invertebrate, fish, amphibian, reptile, bird, and mammal species of concern are known or possibly found in the Planning Area, based on a search of the CNDDB. Appendix C identifies animal species with the potential to occur in the Planning Area based on a search of the CNDDB and USFWS IPaC and presence of suitable habitat within or adjacent to the Planning Area. Three of these species have federal and State listing status. These include:

- Federally Endangered and State Endangered
  - Southern mountain yellow-legged frog (*Rana muscosa*)
  - Least Bell's vireo (*Vireo bellii pusillus*)

- Federally Threatened and State Threatened Desert tortoise (*Gopherus agassizii*)

Six wildlife species with the potential to occur in the Planning Area have either federal or State protection status. These include:

- Federally Threatened
  - Coastal California gnatcatcher (*Polioptila californica californica)*
  - Vernal pool fairy shrimp (*Branchinecta lynchi)*
  - California red-legged frog (*Rana draytonii*)
- State Threatened
  - Tricolored blackbird
  - Swainson's hawk (*Buteo swainsoni*)
  - Mohave ground squirrel *(Xerospermophilus mohavensis*)

State or federally listed species are afforded the highest protection status.

Special-Status Plant Species

Special-status plant species are defined as listed as endangered or threatened under FESA or CESA, or rare under the California Native Plant Protection Act or considered to be rare (but not formally listed) by resource agencies and the scientific community. CDFW and local governmental agencies may also recognize special-status listings developed by focal groups (i.e., Audubon Society Blue List, CNPS Rare and Endangered Plants, U.S. Forest Service regional lists). A total of 43 special-status plant species have been observed or have the potential to occur within the nine-quad search area of the Planning Area. Appendix C shows the special-status species and habitat requirements for each species within the vicinity of the Planning Area.

Sensitive Natural Communities

Special-status habitats are vegetation communities, associations, or sub-associations that support concentrations of special-status plant and/or wildlife species, are of relatively limited distribution, or are of particular value to wildlife. Although special-status habitats are not afforded legal protection unless they support special-status species, potential impacts to them may trigger the prescription of mitigation measures by resource agencies for those habitats.

Sensitive habitats are special-status plant communities considered sensitive by federal, State, and local agencies due to their rarity or value in providing habitat for vegetation, fish, and wildlife. Sensitive habitats present within the Planning Area include Amargosa Creek, Anaverde Creek, Little Rock Wash, and Big Rock Wash. The primary jurisdictional feature within the Planning Area is Lake Palmdale.

Joshua tree habitats are considered a threatened California habitat by CDFW and recognized as a sensitive habitat by the City of Palmdale. They are characterized as open woodlands with scattered Joshua trees and, generally, little herbaceous understory. They are rarely found as pure stands and are associated with other trees and shrubs such as California juniper, single-leaf pinyon, and Mojave yucca. At lower elevations or areas that are less suitable for dense stands, the Joshua tree woodlands integrate with desert scrub habitats. There is Joshua Tree Woodland habitat across West Avenue K in Rawley Duntley Park and the Prime Desert Woodland Preserve in the City of Lancaster.

Significant Ecological Areas (SEAS)

Several Significant Ecological Areas (SEAs), are present in the Planning Area, including the Antelope Valley SEA to the northeast, San Andreas SEA west of the City, and the Santa Clara River SEA to the south of the City and east of SR-14. In the eastern portions of the City, there is a large community of western Joshua Trees in and around the Antelope Valley SEA. The San Andreas SEA includes communities of Sagebrush and Juniper providing habitat for select protected species like the Ferruginous Hawk and the Short-joint Beavertail. Goal CON-1 of the Conservation and Open Space Element of the proposed Plan is to protect Significant Ecological Areas in and around the City, including, but not limited to, sensitive flora and fauna habitat areas.

b. Critical Habitat

Critical habitat is defined in the FESA as a specific geographic area(s) that contains features essential for the conservation of a threatened or endangered species and that may require special management and protection. Critical habitat may include an area that is not currently occupied by the species but that will be needed for its recovery. An area is designated as "critical habitat" after USFWS publishes a proposed federal regulation in the Federal Register and then receives and considers public comments on that proposal. The final boundaries of a critical habitat area, once identified, are published in the Federal Register. There are no critical habitats in the Planning Area. Arroyo toad (*Anaxyrus californicus*) is the nearest critical habitat located three miles south of the Planning Area.

c. Wildlife Movement Corridors

Wildlife movement corridors, or habitat linkages, are generally defined as connections between habitat patches that allow for physical and genetic exchange between otherwise isolated animal populations. Such linkages may serve a local purpose, such as providing a linkage between foraging and denning areas, or they may be regional in nature. Some habitat linkages may serve as migration corridors, wherein animals periodically move away from an area and then subsequently return. Others may be important as dispersal corridors for young animals. A group of habitat linkages in an area can form a wildlife corridor network.

The California Essential Habitat Connectivity Project: A Strategy for Conserving Connected California (Spencer et al. 2010) evaluates critical wildlife movement corridors throughout California. Essential Connectivity Areas (ECA) represent the most critical wildlife movement areas for long-term conservation of California's special-status wildlife species. While ECAs do not occur in the Planning Area, Los Angeles County contains ECAs approximately 15 miles south of Palmdale, along the San Gabriel Mountains.

Small scale corridors that facilitate wildlife movement are also present in the Planning Area, many of which are not mapped as ECAs. These include the various rivers, creeks, drainages, and other topographic features that facilitate movement, such as Amargosa Creek, Anaverde Creek, Little Rock Wash, and Big Rock Wash. These corridors provide a means to facilitate regional connectivity for a number of wildlife species as a wildlife corridor. These areas are identified as important movement corridors for species such as San Joaquin pocket mouse (*Perognathus inornatus*), coast horned lizard (*Phrynosoma blainvillii*), riparian birds, and other small carnivores.

4.4.2 Regulatory Setting

This section describes federal, State, regional, and local regulations that provide for protection and management of biological resources associated with the proposed Plan. Biological resources include plant and wildlife species, terrestrial and aquatic habitats, and habitats of concern.

Federal Regulations

Federal Endangered Species Act

The USFWS and the National Marine Fisheries Service (NMFS) are responsible for implementing the federal Endangered Species Act (FESA) (16 U.S.C. §1531 et seq.). The Act protects fish and wildlife species that are listed as threatened or endangered, and their habitats. "Endangered" species, subspecies, or distinct population segments are those that are in danger of extinction throughout all or a significant portion of their range; "threatened" species, subspecies, or distinct population segments are those that are likely to become endangered in the near future.

Section 9 of the FESA prohibits the "take" of any fish or wildlife species listed as endangered, including the destruction of habitat that prevents the recovery of a species. Take is defined as an action or attempt "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to attempt to engage in any such conduct." Section 9 prohibitions also apply to threatened species unless a special rule has been defined with regard to take at the time of listing. Under Section 9 of the FESA, the take prohibition applies only to wildlife and fish species. However, Section 9 does prohibit the unlawful removal and reduction to possession, or malicious damage or destruction, of any endangered plant from federal land. Section 9 prohibits acts to remove, cut, dig up, damage, or destroy an endangered plant species in nonfederal areas in knowing violation of any State law or in the course of criminal trespass. Candidate species and species that are proposed, or under petition for listing, receive no protection under Section 9.

Clean Water Act of 1972

The purpose of the Clean Water Act is to restore and maintain the chemical, physical, and biological integrity of all waters of the U.S. In accordance with Section 404 of the Clean Water Act (CWA), USACE regulates the discharge of dredged or fill material into waters of the U.S. Permitting is required for filling waters of the U.S. (including wetlands). Permits may be issued on an individual basis or may be covered under approved nationwide permits. The term "waters of the United States" is defined as:

- All waters currently used, or used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters subject to the ebb and flow of the tide;
- All interstate waters, including interstate wetlands;
- All other waters such as intrastate lakes, rivers, streams (including intermittent streams), mudflats, sandflats, wetlands, sloughs, prairie potholes, wet meadows, playa lakes or natural ponds; the use, degradation, or destruction of which could affect foreign commerce including any such waters: (1) which could be used by interstate or foreign travelers for recreational or other purposes; or (2) from which fish or shell fish are, or could be taken and sold in interstate or foreign commerce; or (3) which are used or could be used for industries in interstate commerce;
- All other impoundments of waters otherwise as defined as waters of the United States under the definition;

- Tributaries of waters identified above;
- The territorial seas; and,
- Wetlands adjacent to waters (other than waters that are themselves wetlands) identified in the paragraphs above.

Migratory Bird Treaty Act

The USFWS is also responsible for implementing the Migratory Bird Treaty Act (MBTA) (16 U.S.C. §703-712 et seq.). The MBTA implements a series of treaties between the United States, Mexico, and Canada that provide for the international protection of migratory birds. According to the MBTA, most actions that result in "taking" or possession (permanent or temporary) of a protected species can be a direct violation of the Act. The word "take" is defined as "pursue, hunt, shoot, wound, kill, trap, capture, or collect, or attempt to pursue, hunt, shoot, wound, kill, trap, capture, or collect." The provisions of the MBTA are nearly absolute; "except as permitted by regulations" is the only exception. Examples of permitted actions that do not violate the law are the possession of a hunting license to pursue specific game birds, legitimate research activities, display in zoological gardens, bird-banding, and similar activities.

State Regulations

California Endangered Species Act

The California Endangered Species Act (CESA) establishes State policy to conserve, protect, restore, and enhance threatened or endangered species and their habitats. CESA mandates that State agencies should not approve projects that jeopardize the continued existence of threatened or endangered species, if reasonable and prudent alternatives are available that would avoid jeopardy. For projects that would affect species on the federal and State endangered species lists, compliance with the federal ESA satisfies CESA if the CDFW determines that the federal incidental take authorization is consistent with CESA under California Fish and Game Code Section 2080.1. For projects that would result in take of species that are only State-listed, the project proponent must apply for a take permit under Section 2081(b) of the California Fish and Game Code.

California Fish and Game Code

The CDFW derives its authority from the Fish and Game Code of California. The CESA (Fish and Game Code Section 2050 *et. seq.)* prohibits take of State-listed threatened and endangered species. Take under CESA is restricted to direct harm of a listed species and does not prohibit indirect harm by way of habitat modification. The CDFW additionally prohibits take for species designated as Fully Protected under the CFGC under various sections.

California Fish and Game Code Sections 3503, 3503.5, and 3511 describe unlawful take, possession, or destruction of birds, nests, and eggs. Fully protected birds (CFGC Section 3511) may not be taken or possessed except under specific permit. Section 3503.5 of the Code protects all birds-of-prey and their eggs and nests against take, possession, or destruction of nests or eggs. Species of Special Concern (SSC) is a category used by the CDFW for those species considered to be indicators of regional habitat changes or potential future protected species. Species of Special Concern do not have any special legal status except that which may be afforded by the Fish and Game Code as noted above. The SSC category is intended by the CDFW for use as a management tool to include these species into special consideration when decisions are made concerning the development of natural lands, and these species are considered sensitive as described under the CEQA Appendix G

questions. The CDFW also has authority to administer the Native Plant Protection Act (NPPA) (CFGC Section 1900 *et seq.*). The NPPA requires the CDFW to establish criteria for determining if a species, subspecies, or variety of native plant is endangered or rare. Under Section 1913(c) of the NPPA, the owner of land where a rare or endangered native plant is growing is required to notify the department at least 10 days in advance of changing the land use to allow for salvage of the plant(s).

Lakes, ponds, perennial and intermittent streams and associated riparian vegetation, when present, also fall under the jurisdiction of the CDFW. Section 1600 et seq. of the Fish and Game Code (Lake and Streambed Alteration Agreements) gives the CDFW regulatory authority over work within the bed or bank of a lake or stream consisting of, but not limited to, the diversion or obstruction of the natural flow or changes in the channel, bed, or bank of any river, stream, or lake.

California Native Plant Protection Act

The California Native Plant Protection Act of 1977 (CNPPA) prohibits importation of rare and endangered plants into California, take of rare and endangered plants, and sale of rare and endangered plants. CESA defers to the CNPPA, which ensures that State-listed plant species are protected when State agencies are involved in projects subject to CEQA. In this case, plants listed as rare under the CNPPA are not protected under CESA; however, impacts to endangered, rare, or threatened species, including plants, are evaluated under CEQA. The following kinds of activities are exempt from CNPPA: agricultural operations; fire control measures; timber harvest operations; mining assessment work; removal of plants by private landowners on private land for construction of canals, ditches, buildings, roads, or other rights-of-way; and removal of plants for performance of a public service by a public agency or a publicly- or privately-owned public utility.

Porter-Cologne Water Quality Control Act

The SWRCB and RWQCBs maintain independent regulatory authority over the placement of waste, including fill, into waters of the State under the Porter-Cologne Water Quality Act of 1969. This Act is similar to and largely based off the federal Clean Water Act and is intended to preserve and enhance all beneficial uses of the waters of the State. The RWQCB currently employs the USACE procedures and definitions for defining the physical boundaries of wetlands and waters. However, there are differences in the State and federal ability to regulate these features. In order to be subject to federal regulation as waters of the United States, wetlands and waters must demonstrate that water is, or is adjacent to, a navigable waterway or a tributary to a navigable waterway, or have an interstate or foreign commerce connection. Under the Porter-Cologne Act, the State has regulatory authority over what are termed “isolated” waters and wetlands, in addition to waters of the U.S.

Regional and Local Regulations

West Mojave Coordinated Management Plan

The West Mojave Coordinated Management Plan (Conservation Plan) is a habitat conservation plan that acts as a comprehensive strategy to conserve the desert tortoise, Mohave ground squirrel, and over 100 sensitive plants, animals, and natural communities. The plan provides for a streamlined program for complying with the requirements of the California and federal Endangered Species Acts. It encompasses a 9,357,929-acre (14,621-square mile) planning area located to the north of the Los Angeles metropolitan area and applies to public and private land (U.S. Department of the Interior 2004).

Palmdale Native Desert Vegetation Ordinance

PMC Chapter 14.04, Joshua Tree and Native Desert Vegetation Preservation, establishes regulations and standards to preserve desert vegetation in the City. This ordinance is designed to protect western Joshua trees and California Junipers in the City. Joshua Trees and California Junipers both provide a unique natural desert aesthetic to the community, which the City aims to maintain. The Ordinance was originally adopted in 1992 and was amended by Emergency Ordinance No. 1556 in 2020 in response to the California Fish and Game Commission's vote to list the western Joshua tree as a candidate species under the CESA. Per the Ordinance, western Joshua Trees (dead trees or dead limbs) and California Junipers trees shall not be removed from any parcel of land unless a permit has been obtained from the City. Furthermore, any development proposal on a parcel of land containing native desert vegetation requires a desert vegetation preservation plan prepared in compliance with the Palmdale Municipal Code. Listing of the western Joshua tree under the CESA gives that species additional legal protections, such that any take of the species (including removal of western Joshua tree or similar actions) requires a permit from CDFW.

County of Los Angeles General Plan

The County of Los Angeles General Plan Natural Environment element provides the following policies and specific actions related to biological resources. Although the proposed Plan would not be subject to the County's General Plan policies, the following policies from the County of Los Angeles General Plan Natural Environment element pertain to biological resources in unincorporated parts of the Planning Area:

- **Policy C/NR 3.1:** Conserve and enhance the ecological function of diverse natural habitats and biological resources.
- **Policy C/NR 3.2:** Create and administer innovative County programs incentivizing the permanent dedication of SEAs and other important biological resources as open space areas.
- **Policy C/NR 3.3:** Restore upland communities and significant riparian resources, such as degraded streams, rivers, and wetlands to maintain ecological function—acknowledging the importance of incrementally restoring ecosystem values when complete restoration is not feasible.
- **Policy C/NR 3.6:** Assist state and federal agencies and other agencies, as appropriate, with the preservation of special status species and their associated habitat and wildlife movement corridors through the administration of the SEAs and other programs.
- **Policy C/NR 3.7:** Participate in inter-jurisdictional collaborative strategies that protect biological resources.

4.4.3 Impact Analysis

Significance Thresholds

Based on Appendix G of the *CEQA Guidelines* a project may be deemed to have a significant impact on biological resources if it would:

1. Have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special-status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service

2. Have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service
3. Have a substantial adverse effect on State or Federally protected wetlands (including, but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means
4. Interfere substantially (i.e., direct/indirect reduction) with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites
5. Conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance;
6. Conflict with the provisions of an adopted Habitat Preservation Plan, Natural Community Conservation Plan, or other approved local, regional, or State habitat conservation plan

Methodology

The following impact analysis is based on available literature regarding the existing biological resources within the Planning Area. Impacts on biological resources were assessed using significance criteria from federal, State, and local regulations. Impacts to flora and fauna may be determined to be significant even if they do not directly affect rare, threatened, or endangered species because development carried out under the proposed Plan may result in indirect impacts to species.

CEQA Statutes, Public Resource Section 21001 (c) states that it is the policy of the State of California to "[p]revent the elimination of fish and wildlife species due to man's activities, insure that fish and wildlife populations do not drop below self-perpetuating levels, and preserve for future generations representations of all plant and animal communities and examples of the major periods of California history." Impacts to biological resources are assessed using impact significance criteria encompassing *CEQA Guidelines* and federal, State, and local plans, regulations, and ordinances.

a. Project and Cumulative Impacts

Threshold 1:	Would the Plan have a substantial adverse effect, either directly or through habitat modifications, on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?
Threshold 2:	Would the Plan have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, regulations, or by the CDFW or USFWS?

Impact BIO-1 DEVELOPMENT CARRIED OUT UNDER THE PLAN WOULD HAVE THE POTENTIAL TO ADVERSELY AFFECT SPECIAL-STATUS SPECIES, INCLUDING NESTING BIRDS, OR THEIR HABITAT. IMPACTS WOULD BE LESS THAN SIGNIFICANT WITH MITIGATION.

Areas that may provide habitat for special-status species in the Planning Area are primarily located in SEAs. Based on the review of applicable databases, 32 special-status animal species and 43 special-status plant species have been observed or have the potential to occur in the 9-quadrangle search area surrounding the Planning Area, as detailed in Appendix C. These include the desert tortoise and Mohave ground squirrel. Generally, these species are associated with desert scrub

habitats. Ornamental trees and vegetation in the Planning Area have the potential to support nesting birds that are protected under the Migratory Bird Treaty Act (MBTA) and/or California Fish and Game Code. In addition, the Planning Area is located approximately 1.5 miles south of the Prime Desert Woodland Preserve and 2 miles south of the Rawley Duntley Park, which contain Joshua tree woodland habitat. Potential impacts such as loss of habitat through vegetation removal or disturbance could occur if construction activities occur during nesting bird season (generally February 1 – September 15). These impacts would be potentially significant.

The proposed Plan designates Ritter Ridge, Portal Ridge, Verde Ridge, the Ana Verde Hills, the Sierra Pelona Mountains, and secondary ridges as hillsides. Development of these hillside areas is governed by PMC Chapter 17.100, *Hillside Management*. The General Plan does not facilitate new areas of development within hillsides. Habitat for special-status species in hillside area would not be affected by the development under the proposed Plan because no changes to the current land use designations that would accommodate development in this area are proposed.

The proposed Plan does not include changes to existing Open Space land use designations, including along creeks and waterways in the Planning Area. Therefore, the proposed Plan would not facilitate permanent development in riparian vegetation along these creeks.

Under the proposed Plan, development that could alter biological habitats could occur in portions of the Planning Area, but all development would be subject to the provisions of the various federal and State natural resources regulations discussed in Section 4.4.2, *Regulatory Setting* and their respective permitting processes. These regulations include requirements for biological studies where potential habitat exists, identification of potential jurisdictional waters, and consultation with applicable regulatory agencies where special-status resources are found. Plan goals and policies that would encourage the conservation and protection of public open space and natural resources and reduce potential impacts to special-status species and sensitive habitats include the following:

- **Goal CON-1: Protect Significant Ecological Areas in and around the city, including, but not limited to, sensitive flora and fauna habitat areas.**
  - **Policy CON-1.1: Endangered species protection**. Ensure local compliance with the California Endangered Species Act and the Federal Endangered Species Act (ESA).
  - **Policy CON-1.2: Joshua and Juniper trees**. Continue enforcing the City's Native Vegetation Ordinance to protect western Joshua Trees and Juniper Trees.
  - **Policy CON-1.3: West Mojave Plan**. Comply with the required implementation of the West Mojave Plan for protection of desert tortoise and Mohave ground squirrel.
  - **Policy CON-1.4: Significant ecological areas**. Identify and preserve to the greatest extent feasible significant ecological areas (SEA's) as shown in Figure 11.3. Areas to consider for open space preservation include, but are not limited to, Tejon Park, Barrel Springs Southern Trailhead, and the Una Lake area
  - **Policy CON-1.5: Preserve ecological resource areas**. Preserve natural drainage courses and riparian areas where ecological resources exist in significant concentrations.
  - **Policy CON 1-6: Increase conservation areas**. Coordinate with state agencies to help achieve the goals of 30x30 to protect 30% of California's land by 2030 by identifying optimal sites for land conservation.
  - **Policy CON-1.7: Wetland and floodplain areas**. Solicit and utilize all available sources of local, regional, state and federal funds to acquire significant wetland areas and floodplains

to minimize disturbance and prevent damage from erosion, turbidity, siltation, a loss of wildlife and vegetation, or the destruction of the natural habitat.

- **Goal CON-2: Preserve designated natural hillsides and ridgelines in the Planning Area, to maintain the aesthetic character of the Antelope Valley.**
  - **Policy CON-2.4: Development in suitable locations**. Facilitate development in more suitable locations while retaining significant natural slopes and areas of environmental sensitivity as natural open space.
- **Goal CON-3: Plan for safe operations of mineral resource extraction areas and reduce unreasonable impacts.**
  - **Policy CON-3.1:** Reduce mineral resource extraction impacts. Reduce impacts to human and environmental health caused by mineral resource extraction including:
    - Ground water contamination
    - Removal or demise of sensitive Ecological Areas of flora and fauna
    - Excessive noise or dust
- **Goal CON-9: Promote community design that reflects Palmdale's history and preserves Palmdale's cultural resources.**
  - **Policy CON-9.3: Locally appropriate landscape design**. Preserve the natural heritage of the region through landscape design by ensuring the local stock of native trees and vegetation is replenished and protected.

Implementation of these goals and policies would ensure that projects carried out under the proposed Plan would be completed in accordance with protecting and preserving SEAs. While these goals and polices generally aim at protecting special-status species, if vegetation and trees are to be trimmed or removed during project construction or if construction would occur near trees and vegetation, nesting birds could be impacted. Therefore, impacts related to nesting birds would be potentially significant and Mitigation Measure BIO-1 would be required for projects where mature trees and other habitat are present and construction activities are scheduled from early spring to late summer. With implementation of Plan goals and policies and Mitigation Measure BIO-1, potential impacts to special-status species and sensitive habitat would be reduced to a less than significant level.

Mitigation Measures

BIO-1 Pre-Construction Nesting Bird Surveys

To avoid disturbance of nesting and special-status birds, including raptorial species protected by the MBTA and CFGC, activities related to construction projects carried out under the Plan, including, but not limited to, vegetation removal, ground disturbance, and construction and demolition shall occur outside of the bird breeding season, February 15 through September 15 (as early as January 1 for some raptors) ~~(February 1 through August 31)~~. If construction must begin during the breeding season, then a pre-construction nesting bird survey shall be conducted no more than three days prior to initiation of ground disturbance and vegetation removal activities. The nesting bird pre-construction survey shall be conducted on foot inside the area of proposed development, including a 300-foot buffer (500-foot for raptors), and in inaccessible areas (e.g., private lands) from afar using

binoculars to the extent practical. The survey shall be conducted by a biologist familiar with the identification of avian species known to occur in southern California desert communities.

If nests are found, an avoidance buffer (dependent upon the species, the proposed work activity, and existing disturbances associated with land uses outside of the site) shall be determined and demarcated by the biologist with bright orange construction fencing, flagging, construction lathe, or other means to mark the boundary. All construction personnel shall be notified as to the existence of the buffer zone and to avoid entering the buffer zone during the nesting season. No ground disturbing activities shall occur within this buffer until the avian biologist has confirmed that breeding/nesting is completed and the young have fledged the nest. Encroachment into the buffer shall occur only at the discretion of the qualified biologist.

Significance After Mitigation

Implementation of Mitigation Measure BIO-1 would reduce potential impacts to nesting birds and associated habitat to a less than significant level by requiring pre-construction surveys and avoidance measures.

Threshold 2:	Would the Plan have a substantial adverse effect on any riparian habitat or other sensitive natural community identified in local or regional plans, policies, or regulations, or by the California Department of Fish and Wildlife or U.S. Fish and Wildlife Service?
Threshold 3:	Would the Plan have a substantial adverse effect on state or federally protected wetlands (including but not limited to, marsh, vernal pool, coastal, etc.) through direct removal, filling, hydrological interruption, or other means?

Impact BIO-2 PROJECTS CARRIED OUT UNDER THE PLAN MAY ADVERSELY AFFECT RIPARIAN HABITAT OR OTHER SENSITIVE NATURAL COMMUNITIES DURING PROJECT CONSTRUCTION. IMPLEMENTATION OF FEDERAL, STATE, AND OR LOCAL POLICIES (INCLUDING PLAN POLICIES) WOULD ENSURE THAT RIPARIAN HABITAT AND WETLANDS ARE NOT SIGNIFICANTLY IMPACTED. IMPACTS WOULD BE LESS THAN SIGNIFICANT.

As stated in Section 4.3.1, *Environmental Setting*, riparian habitats have been recorded in and around the Planning Area. According to the National Wetlands Inventory database (see Figure 4.4-2), Lake Palmdale in the southern portion of the Planning Area is the primary potential jurisdictional feature. Amargosa Creek, Anaverde Creek, Little Rock Wash, and Big Rock Wash in the southeastern portion of the Planning Area are designated as Freshwater Ponds (USFWS 2022). Development in the Planning Area, along with other sites near or bisected by waterways and other tributaries and drainages throughout the Planning Area, may be subject to USACE, CDFW, and RWQCB permitting requirements.

Under the Plan, new development would generally result from re-use of properties, infill development on vacant lots, conversion of uses in response to market demand (e.g., mixed use developments), and more intense use of land in defined areas. While most development carried out under the Plan would be infill development in already urbanized areas not near wetlands or waterways, development could reasonably occur in undeveloped areas due to the significantly undeveloped nature of the Planning Area. Therefore, a jurisdictional delineation would be required in accordance with CWA Section 404 for development that would occur in areas near wetlands or waterways. More specifically, any proposed development in areas identified as jurisdictional waters and/or wetlands, streambed/banks, or riparian vegetation would be subject to the permit requirements of the USACE, RWQCB, and CDFW, pursuant to Section 404 of CWA and the Porter-

Cologne Water Quality Control Act. Actual jurisdictional areas are determined by the State and federal authorities at the time that permits are requested.

Development in or adjacent to sensitive habitats could result in potential direct impacts through removal of vegetation, filling of wetland habitat, compaction of soils, and/or indirectly through dust and vegetation thinning. As stated in PMC Section 8.04.265, Chapter 70, *Excavation and Grading*, the issuance of a grading permit by the building official or City Engineer for ministerial and discretionary projects requires obtaining other permits required by State or federal agencies. These include but are not limited to streambed alteration permits from the CDFW and permits for grading in the vicinity of wetlands and certain watercourses from the USACE. These permit clearances may also be required as conditions of approval for grading work to commence. Approval of permits also requires findings that the proposed grading will not result in erosion, stream sediment, or other adverse off-site effects to riparian habitat.

On sites one acre or larger, implementation of the required Stormwater Pollution Prevention Plan (SWPPP) Best Management Practices (BMPs), in accordance with the NPDES construction general permit, during project construction would reduce the potential for eroded soil and any contaminants attached to that soil to contaminate a waterbody following a storm event. Additionally, PMC Section 15.28.004 provides design standards to address erosion and sedimentation. Future developments carried out under the proposed Plan would employ low impact development techniques and stormwater control measures as outlined in PMC Section 14.05.200 to reduce, capture, and treat stormwater pollution to reduce impacts to waterways, including water quality. Impacts related to drainage and pollution are further discussed in Section 4.10, *Hydrology and Water Quality*.

The proposed Plan contains goals and policies that would further reduce impacts to riparian and wetland habitats. The following goals and policies address development in or near riparian habitat:

- **Goal CON-1: Protect Significant Ecological Areas in and around the city, including, but not limited to, sensitive flora and fauna habitat areas.**
  - **Policy CON-1.5: Preserve ecological resource areas**. Preserve natural drainage courses and riparian areas where ecological resources exist in significant concentrations.
  - **Policy CON-1.7: Wetland and floodplain areas**. Solicit and utilize all available sources of local, regional, state and federal funds to acquire significant wetland areas and floodplains to minimize disturbance and prevent damage from erosion, turbidity, siltation, a loss of wildlife and vegetation, or the destruction of the natural habitat.
- **Goal CON-4: Plan for mineral resource extraction site remediation and end users.**
  - **Policy CON-4.1: Mining reclamation plan**. Require mining operators to establish a reclamation plan that indicates what the various properties will be used for when mining operations cease, what the target land use designation and zoning shall be for the reclaimed lands, and how the transition to new uses shall be implemented.
  - **Policy CON-4.3: Plan remediation and restoration of sites**. Plan for remediation and restoration of extraction sites after operations cease, including adequate areas for groundwater recharge.
- **Goal CON-5: Protect the quality and quantity of local water resources.**
  - **Policy CON-5.1: Ground water recharge**. Ensure that ground water supplies are recharged and protect natural recharge areas such as the Little Rock and Big Rock Washes, and

Amargosa and Anaverde Creeks from pollutants or other materials, which might degrade groundwater supplies.

- **Policy CON-5.4: Flood control measures**. Maximize groundwater recharge capabilities with flood control measures.

- **Goal CON-6: Minimize the impacts of urban development of groundwater supplies.**
  - **Policy CON-6.5: Monitoring and coordination**. Coordinate with local water agencies to monitor ground water levels, State water allocations and development approvals, to assure that development does not outpace long-term water availability.

- **Goal CON-7: Maintain and further the City's commitment to long-term water management within the Antelope Valley by planning for the conservation and managed use of water resources, including groundwater, imported water, and reclaimed water.**
  - **Policy CON-7.1: Reclaimed water irrigation**. Assess and implement, when feasible, reclaimed water for landscape irrigation.
  - **Policy CON-7.2: Water run-off capture.** Work with local water purveyors to assess the potential for capturing local run-off and utilization of imported water (water banking) for groundwater recharge within the Planning Area.
  - **Policy CON-7.3: Retain recharge areas.** Through the land use planning process, ensure that important recharge areas are retained.
  - **Policy CON-7.4: Water management**. Continue to seek out long-range water management techniques as new technology is developed.
  - **Policy CON-7.5: Implementation**. Promote implementation of systems that are feasible and appropriate to the Planning Area.
  - **Policy CON-7.6: Water recycling**. Encourage residents and businesses to recycle water where feasible, and where water recycling does not result in health and safety concerns,.
  - **Policy CON-7.7: Water sources**. Participate in regional efforts to retain imported water allocations and seek out other sources as they become available.

Implementation of these goals and policies would reduce direct impacts to riparian habitat during construction and operation by reducing direct and indirect modifications to creeks, embankments, and other waterways in the Planning Area. Furthermore, if jurisdictional waters occur on any site developed under the proposed Plan, jurisdictional delineation and RWQCB permits would be required that would address potential impacts to those waters. Adherence to state and federal regulations, the PMC, and implementation of Plan goals and polices would reduce impact to a less than significant level.

Mitigation Measures

No mitigation measures are required.

Threshold 4:	Would the Plan interfere substantially with the movement of any native resident or migratory fish or wildlife species or with established native resident or migratory wildlife corridors, or impede the use of native wildlife nursery sites?

Impact BIO-3 DEVELOPMENT CARRIED OUT UNDER THE PLAN WOULD AVOID IMPACTS TO WILDLIFE MOVEMENT CORRIDORS BY CONSERVING NATURAL AREAS IN THE PLANNING AREA, AS DIRECTED BY POLICIES IN THE PLAN. IMPACTS WOULD BE LESS THAN SIGNIFICANT WITH MITIGATION.

While most development carried out under the Plan would be infill development in already urbanized areas, development could reasonably occur in undeveloped areas due to the significantly undeveloped nature of the Planning Area, including riparian corridors (such as Amargosa Creek and Anaverde Creek) that may provide corridors for wildlife movement, including migratory birds and California red legged frog. If construction occurs during migration periods in or near habitat and breeding habitat, impacts would be potentially significant.

The California Essential Habitat Connectivity Project does not show any areas inside Palmdale's city limits that are in an essential connectivity area, a natural landscape block, or an interstate connection (CDFW 2021), but SEAs in the Planning Area have more intact habitat that may facilitate and allow for the movement of wildlife and may connect to habitat areas outside the Planning Area such as the San Gabriel Mountains and Tehachapi Mountains. There are also habitat patches and SEAS surrounding the Planning Area that can provide suitable spaces for migrating wildlife, especially birds and more mobile species, to utilize as they travel. For example, the Prime Desert Woodland Preserve, Rawley Duntley Park within the City of Lancaster, and vacant land to the west and northwest of the Planning Area contain desert scrub and individual Joshua trees and can potentially harbor migrating species. As noted in Plan Goal CON-1 and its associated policies listed under Impact BIO-1, habitat preservation and endangered species protection is a priority for the City. Riparian corridors, which provide corridors for resident and migratory species through the Planning Area, would be protected by implementation of Plan policies listed under Impact BIO-1, including Policy CON-1.1.

In summary, development carried out under the Plan would not impact any established wildlife corridors, and with implementation of Mitigation Measure BIO-1 to prevent impacts to migrating and nesting birds, the Plan would not interfere substantially with the movement of wildlife species. Impacts would be less than significant with mitigation.

Mitigation Measures

See Mitigation Measure BIO–1.

Significance After Mitigation

With implementation of Mitigation Measure BIO-1, impacts to wildlife corridors and species would be less than significant.

Threshold 5:	Would the Plan conflict with any local policies or ordinances protecting biological resources, such as a tree preservation policy or ordinance?

Impact BIO-4 WITH IMPLEMENTATION OF PLAN GOALS AND POLICIES AND REGULATIONS CONTAINED IN THE PALMDALE MUNICIPAL CODE, THE PLAN WOULD NOT CONFLICT WITH AN ADOPTED HABITAT CONSERVATION PLAN, NATURAL COMMUNITY CONSERVATION PLAN, OR OTHER APPROVED LOCAL, REGIONAL, OR STATE HABITAT CONSERVATION PLAN. THERE WOULD BE NO IMPACT.

Some development carried out under the proposed Plan could occur on sites that have mature street trees along their boundaries and/or mature trees on the site. Removal of these trees would be subject to the provisions of PMC Chapter 8.44, which addresses minimum obligations by a property owner with respect to the maintenance of street trees, including damage to any septic tank, public sewer, water main, electrical, gas, or telecommunications utility facility. Development facilitated by the proposed project would be required to comply with the PMC Chapter 8.44 – *Maintenance of Steet Trees*. The Ordinance further defines street trees permitted and the owner's civil liability to maintain trees. PMC Section 8.44.020 addresses tree preservation, including maintaining tree cover on private lands and ensuring new development projects include tree planting in their landscape plans submitted and reviewed as part of the project permitting process.

Additionally, goals and policies included in the proposed Plan are designed to protect trees and other vegetation in Palmdale as follows:

- **Goal CON-1: Protect Significant Ecological Areas in and around the city, including, but not limited to, sensitive flora and fauna habitat areas.**
  - **Policy CON-1.2: Joshua and Juniper trees**. Continue enforcing the City's Native Vegetation Ordinance to protect western Joshua Trees and Juniper Trees.

PMC Chapter 14.04 prohibits the removal of any desert vegetation unless a native desert vegetation removal permit has been issued from the City. Section 14.04.040 protects desert vegetation and allows for its removal only if it creates an imminent threat to public health or safety. The Ordinance was originally adopted in 1992 and was amended by Emergency Ordinance No. 1556 in 2020 in response to the California Fish and Game Commission's vote to list the western Joshua tree as a candidate species under the CESA. Per the Ordinance, western Joshua Trees (dead trees or dead limbs) and California Junipers trees shall not be removed from any parcel of land unless a permit has been obtained from the City. Furthermore, any development proposal on a parcel of land containing native desert vegetation requires a desert vegetation preservation plan prepared in compliance with the PMC. Listing of the western Joshua tree under the CESA gives that species additional legal protections, such that any take of the species (including removal of western Joshua tree or similar actions) requires a permit from CDFW. Development carried out under the proposed Plan would be required to adhere to City ordinances and CDFW requirements protecting desert vegetation such as Joshua Trees, which would ensure that such vegetation is not damaged or removed unless properly permitted.

Compliance with applicable regulations and implementation of Plan goals and policies would prevent potential conflicts with any adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan. There would be no impact.

Mitigation Measures

No mitigation measures are required.

Threshold 6:	Would the Plan conflict with the provisions of an adopted Habitat Conservation Plan, Natural Community Conservation Plan, or other approved local, regional, or state habitat conservation plan?

IMPACT BIO-5 THE PLANNING AREA IS IN THE WEST MOJAVE COORDINATED MANAGEMENT PLAN PLANNING AREA. IMPACTS TO AREAS IDENTIFIED IN THE WEST MOJAVE COORDINATED MANAGEMENT PLAN STRATEGY WOULD BE REDUCED THROUGH COMPLIANCE WITH CONSERVATION STRATEGIES CONTAINED IN GOALS AND POLICIES OF THE PROPOSED PLAN. IMPACTS WOULD BE LESS THAN SIGNIFICANT.

The Planning Area is in the Conservation Plan planning area, which is administered by the Bureau of Land Management (BLM). The Conservation Plan proposes several amendments to the BLM's California Desert Conservation Area Plan. The Conservation Plan presents a comprehensive strategy to conserve and protect the desert tortoise, the Mohave ground squirrel, and nearly 100 other sensitive plants and animals and the natural communities of which they are a part, and provides a streamlined program for complying with the requirements of the CESA and FESA.

Most of the Conservation Areas identified in the Conservation Plan are located outside Palmdale city limits but within the SOI. As discussed in Section 2, *Project Description*, no development is proposed outside city limits but within the SOI as part of the Plan. The following Conservation and Open Space Element policies of the proposed Plan would further ensure that impacts resulting from conflicts with the Conservation Plan are taken into consideration and reduced or minimized and ensure the Plan is consistent with the Conservation Plan:

- **Goal CON-1: Protect Significant Ecological Areas in and around the city, including, but not limited to, sensitive flora and fauna habitat areas.**
  - **Policy CON-1.3: West Mojave Plan**. Comply with the required implementation of the West Mojave Plan for protection of desert tortoise and Mohave ground squirrel.

Furthermore, future development subject to discretionary approval would be required to undergo project-specific environmental review pursuant to CEQA, which requires an evaluation of impacts with respect to conflict with the Conservation Plan and mitigation for significant impacts. Even projects not subject to discretionary approval would be subject to the City's standard development review process, during which the City could evaluate such projects for consistency with the Conservation Plan and applicable Plan policies. As future projects are planned, they must adhere to applicable Plan policies; therefore, future development would not conflict with the Conservation Plan, and impacts associated with growth forecast under the General Plan would be less than significant.

Mitigation Measures

No mitigation measures are required.

Cumulative Impacts

By its nature, a general plan considers cumulative impacts insofar as it considers cumulative development that could occur. Therefore, the analysis of Plan impacts also constitutes the cumulative analysis, at least at the level of the Planning Area discussed in this chapter of the EIR.

While the preceding impact discussion focuses on potential impacts of the proposed Plan on biological resources, the following cumulative impacts discussion focuses on potential cumulative impacts of the proposed Plan in a more regional context.

Significant adverse cumulative biological resources impacts may occur where the construction or operation of cumulative projects would encroach into areas containing sensitive biological resources, affect the movement of wildlife species, or affect the functionality of a planned conservation area. For further discussion of the cumulative project setting and lists of the development status of major approved projects and approved specific plans, see Section 3.5, *Cumulative Project Setting* of this EIR. Future development in the Planning Area that could impact biological resources is considered in the impact analysis provided in Section 4.4.4 of this EIR. This cumulative extent is used to evaluate potential direct and indirect, and permanent and temporary impacts to special-status species, sensitive habitats, wildlife movement, local policies and ordinances protecting biological resources, and approved habitat conservation plans within the context of regional diminishment of these resources.

Potential biological resources impacts resulting from cumulative development would include direct and indirect impacts to sensitive/special status species or their habitat; impacts to riparian, wetland, or other sensitive natural communities; or interference with wildlife movement. Similarly, development pursuant to other local and regional planning efforts within the cumulative impact analysis area would impact these resources, and as a result, cumulative impacts would be significant. Due to the potential direct and indirect impacts that may occur, the proposed Plan would contribute considerably to this significant cumulative impact.

Mitigation Measure BIO-1 would reduce impacts from reasonably foreseeable development under the Plan by requiring project applicants to avoid, minimize, or mitigate for impacts to nesting birds. Thus, the Plan would not make a substantial contribution to cumulatively considerable impacts. Therefore, cumulative impacts related to sensitive species and habitats would be less than significant.

Projects carried out under the Plan and other projects within the cumulative impact analysis area would be required to comply with ordinances and requirements protecting biological resources, such as the PMC in the city of Palmdale, and other ordinances and regulations in areas outside the Planning Area, as described in Section 4.4.3, *Regulatory Setting*.

The proposed Plan, for all the reasons discussed above, including the fact that it would not have any impacts to biological resources that could not be mitigated to a less than significant level, would not make a substantial contribution to any cumulative biological resources impact.

4.5 Cultural Resources

This section analyzes the potential impacts of the Plan on cultural resources. Impacts to historical resources, archaeological resources, and human remains are addressed herein. Data used to prepare this section was also sourced from the California Office of Historic Preservation's (OHP) Historic Property Data File. The analysis of tribal cultural resources is included in Section 4.18, *Tribal Cultural Resources*.

4.5.1 Cultural Setting

Prehistoric Context

Over the past century, various chronological sequences have been proposed by archaeologists to describe cultural change within southern California (Jones and Klar 2007; Moratto 2004). Most recently, Sutton et al. (2007) devised an updated Mojave Desert cultural history, dividing it into four temporal periods: Pleistocene, Early Holocene, Middle Holocene, and Late Holocene (Table 4.5-1).

Table 4.5-1 Mojave Desert Chronology (after Sutton et al. 2007:236)

Cultural Complex	Period	Approximate Dates
Pre-Clovis	Pleistocene	Pre-10,000 cal B.C.
Paleo-Indian		10,000-8000 cal B.C.
Lake Mojave	Early Holocene	8000-6000 cal B.C.
Pinto		
	Middle Holocene	7000-3000 cal B.C.
Gypsum	Late Holocene	2000 cal B.C.-cal A.D. 200
Rose Spring		cal A.D. 200-1100
Late Prehistoric		cal A.D. 1100-Contact

Pleistocene Period (ca. 10,000 to 8000 B.C.)

The climate of the Pleistocene Period in the Mojave Desert is generally characterized as cool and wet (Sutton et al. 2007: 231). During this time, the Antelope Valley featured several pluvial lakes such as Lake Thomson and Lake China. The presence of lakes generally indicates an environment with plentiful food and water resources suitable for early human habitation, especially as compared to the harsher desert environment now present. However, claims of pre-Clovis archaeological sites in the Mojave Desert remain controversial and generally not accepted by most professional archaeologists. Nonetheless, it is possible that such occupation did occur and sites with reliable early dates may yet be found, as has happened elsewhere in the Americas.

The Clovis Complex is the earliest and only Paleo-Indian cultural complex widely accepted in the Mojave Desert (Sutton et al. 2007:233-234). This complex is predominantly defined by large lanceolate-shaped bifaces with fluting, prepared to thin and flatten the base of the artifact for hafting. Other tools associated with the Clovis Complex include large side scrapers, blades derived from prepared cores, and a mixture of expedient flaked tools (Justice 2002:73). Paleo-Indian populations associated with fluted point technology consisted of small, mobile groups who hunted and gathered near permanent sources of water such as pluvial lakes. The tools associated with

these populations are most commonly found in the drainage basins of the pluvial lakes (Sutton et al. 2007: 234).

Fluted points have traditionally been interpreted as tools used for hunting Pleistocene megafauna due to their clear association with megafauna remains in the Great Plains and Southwest, but most fluted points found in California have lacked corroborating Pleistocene radiocarbon dates (Arnold et al. 2004). One exception was found during excavations at China Lake in the early 1970s, where fluted points associated with burned, extinct megafaunal material were uncovered (Davis 1975). As Davis and Panlaqui (1978:31) noted, the sites at China Lake demonstrate that Paleo-Indians exploited many available resources, not just megafauna.

Evidence of terminal Pleistocene and early Holocene habitation in the Antelope Valley has remained sparse until recently. Evidence of late Pleistocene occupation was identified on the southern slopes of the Tehachapi Mountains near Cottonwood Creek in the form of a basal fragment of a fluted Clovis projectile point (Glennan 1971, 1987). Basgall and Overly (2004) have found evidence of occupation near Pleistocene China Lake and Fort Irwin yielding radiocarbon dates from 9,500-8,000 ybp (years before present).

Locus KER-4050 of the Bean Spring Archaeological Site Complex (KER-2821/H), located in the Antelope Valley to the northwest of the Planning Area, yielded two Tivela stultorum clam shell beads on the surface of the site. One of the beads submitted for radiocarbon assay produced one of the earliest known calibrated dates attained in the Antelope Valley with a date range between 9020-9430 Radiocarbon Years Before Present (RCYBP) and temporally diagnostic artifacts supporting this early date can be identified (Way 2009).

Early Holocene (8000 to 6000 B.C.)

The onset of the early Holocene was marked by warmer temperatures, reduced precipitation, and the eventual drying up of the pluvial lakes of the Pleistocene. These changes are believed to have caused an irregular distribution of resources available to the early Holocene inhabitants (Sutton et al. 2007:237). The shallow lakes and marshes of the Mojave Desert during this period were biologically very productive but surrounded by desert vegetation typical of later time periods, initially dominated by white bursage and later creosote bush (Grayson 1993:199-200). The Lake Mojave Complex is the only clear complex in the region during this time and reflects an increasingly diversified subsistence strategy that was necessary for successful adaptation to climatic changes.

The Lake Mojave Complex is identified primarily by heavy, stemmed projectile points of the Great Basin Stemmed series such as Lake Mojave and Silver Lake. Other tools include bifaces, steep-edged unifaces, crescents, the occasional cobble-core tool, and, infrequently, ground stone implements (Justice 2002:91). Settlement organization components include extensive residential accumulations, workshops, and small camps containing handfuls of tools (Sutton et al. 2007: 237).

While earlier research presumed a dependence on lacustrine subsistence strategies, recent studies have found Lake Mojave Complex sites in other contexts (e.g., Basgall 2005; Basgall and Jurich 2006; Giambastiani and Berg 2008:14). Sutton et al. (2007:237) stated that the Lake Mojave assemblages included tools that are “consistent with long-term curation and transport.” The presence of exotic lithic materials and marine shell beads in Lake Mojave Complex assemblages further supports the assertion that these people were highly mobile and possibly traded with groups over long distances.

The Bean Spring Archaeological Site Complex (KER-2821/H) dates to at least as early as the Early Holocene, as indicated by the presence of Lake Mojave artifact types. Various loci within the site indicate habitation during each Mojave Desert prehistoric temporal periods. Artifact concentrations

suggest that the springs and remnant marshlands of Pleistocene Lake Thompson offered inhabitants a wide variety of resources for prolonged occupation. The presence of two Tivela sp. beads and Olivella biplicata disc and spire-removed beads indicate that interaction reached at least as far as the Santa Barbara Channel Area. Temblor Range chert indicates trade networks reaching well into the western San Joaquin Valley (Way 2009).

Middle Holocene (7000 to 3000 B.C.)

The middle Holocene climate was generally more arid than periods before and after, but experienced multiple oscillations between wetter and drier conditions throughout its 4000 years. The desiccation of the lakes and marshes of the Pleistocene and early Holocene required the region's inhabitants to rely on streams and springs for water, resulting in lower occupational densities (Aikens 1978; Basgall 2000; Cleland and Spaulding 1992; Sutton 1996; Warren 1984). As average temperatures and aridity increased, peaking between 6000 and 5000 B.C., settlement patterns adapted, including a shift to upland settings where sources of water still existed and changes in tool assemblage content and diversity marked the emergence of the Pinto Complex (Sutton 1996).

The Pinto Complex was defined by Campbell and Campbell (1935) based on their work at the Pinto Basin site, but it has a wider distribution throughout the Mojave Desert than previous complexes. During the latter part of the Early Holocene, archaeological data indicate that the Pinto Complex overlaps the Lake Mojave Complex (Sutton et al., 2007:237). The Pinto Complex reflects shifts in subsistence patterns and adaptation to the shriveling of the Pleistocene lakes, including a greater emphasis on the exploitation of plants, with the continued pursuit of artiodactyls and smaller game. The broad distribution of this complex implies a high degree of residential mobility. The Bean Spring site shows evidence of occupation during the Pinto period in at least one locus (Way 2009). Pinto occupation appears to be associated with springs and extinct rivers and is most commonly identified in the northern portion of the Antelope Valley (Norwood 1987).

The hallmarks of the Pinto Complex tool assemblage include concave base and bifurcate base projectile points with strong basal ears and more gradual shoulders (Justice 2002:126; Zyniecki 2003:12). Other diagnostic artifacts of this complex include domed and keeled scrapers, large and small leaf-shaped bifaces, core/cobble tools, large metates and milling slabs, and shaped and unshaped handstones.

Near the end of the middle Holocene the climate became increasingly hotter and arid. Very few sites date to during this time, between 3,000 and 2,000 B.C., suggesting that populations were very low. It is possible that some areas were abandoned during this hot period (Sutton et al. 2007:241).

Late Holocene (2000 B.C. to European Contact)

The climate of the prehistoric late Holocene was similar to current conditions; cooler and more moist than the middle Holocene, but not as cool and moist as the early Holocene. The climate remained highly variable with periods that included the Mojave lakes refilling to levels of earlier high stands, contrasted with at least two major droughts, circa A.D. 892 to 1112, and circa A.D. 1209 to 1350 (Stine 1994). A cooler and wetter period occurred between 600 and 150 years ago (Cleland and Spaulding 1992:4). These climatic changes at the onset of the late Holocene once again resulted in modified subsistence strategies and correlating tool kits of three progressive cultural complexes: Gypsum Complex, Rose Spring Complex, and Late Prehistoric Complex (or period).

Dart-point size projectile points including notched or eared (Elko), concave base (Humboldt), and small-stemmed (Gypsum) types characterized the projectile points of the Gypsum Complex. In addition to these diagnostic points, Gypsum Complex sites included leaf-shaped points, rectangular-based knives, flake scrapers, drills, and occasionally, large scraper planes, choppers, and hammerstones (Warren 1984:416). Manos and milling stones were common, but the mortar and pestle were also introduced during this period. Other artifacts found at Gypsum Complex sites include split-twig animal figurines, Olivella shell beads, and Haliotis beads and ornaments, which are indicative of trade with people of the southern California coast and southern Great Basin. The inhabitants of the Mojave Desert exported high quality locally available cryptocrystalline tool stone such as obsidian, chalcedony, and chert in exchange for exotic materials.

By A.D. 200, a slightly cooler climate appears to have provided for an increased population, based on a higher frequency of archeological sites. The Rose Spring Complex was present from approximately A.D. 200 to 1100, with regional temporal variations known as the Saratoga Springs, Haiwee, or Amargosa periods (Sutton 1996; Sutton et al. 2007:236). A Rose Spring Series projectile point was found at Locus A of the Bean Spring site (Way 2009). The smaller Rose Spring projectile points replaced the dart-size points of previous complexes and heralded the introduction of the bow and arrow (Yohe 1998). The bow and arrow provided its user a way to rapidly fire multiple projectiles during hunting or warfare and from a position of relative security compared to the atlatl or spear. This technological innovation appears to correspond with the onset of the Numic expansion westward to the coast, which some researchers believe started from southeastern California (Bettinger and Baumhoff 1982; Grayson 1993). Bedrock milling features supplement portable milling stones in villages and ancillary sites within the California deserts.

The Late Prehistoric period (circa A.D. 1100–1769) corresponds to the introduction of ceramic artifacts in the Mojave Desert region as well as replacement of Rose Spring projectile points with even smaller Desert Side-notched points and Cottonwood series points, an example of which was identified at the Bean Spring site (Way 2009). The mortar and pestle became more widespread during this period and evidence of food storage facilities becomes increasingly common. In the central Mojave Desert, the Mojave River became a primary focus of occupation, and trade networks increased along the Mojave River and over the San Gabriel Mountains (Sutton 1996).

Archeological evidence left by highly mobile hunter-gatherers in the Mojave Desert during the Late Prehistoric period is typified by sparse scatters of flaked stone, ground stone, and ceramic artifacts and features such as hearths, rock rings, and trails.

Historical Setting

Post-Contact history for the state of California is generally divided into three periods: the Spanish Period (1769–1822), Mexican Period (1822–1848), and American Period (1848–present). Although Spanish, Russian, and British explorers visited the area for brief periods between 1529 and 1769, the Spanish Period in California begins with the establishment in 1769 of a settlement at San Diego and the founding of Mission San Diego de Alcalá, the first of 21 missions constructed between 1769 and 1823. Independence from Spain in 1821 marks the beginning of the Mexican Period, and the signing of the Treaty of Guadalupe Hidalgo in 1848, ending the Mexican-American War, signals the beginning of the American Period when California became a territory of the United States.

Spanish Period (1769 – 1822)

In 1542, Juan Rodriguez Cabrillo led the first European expedition to observe what is now called southern California (Bean and Smith 1978). For more than 200 years, Cabrillo and other Spanish,

Portuguese, British, and Russian explorers sailed the Alta (upper) California coast and made limited inland expeditions, but they did not establish permanent inland settlements (Bean 1968, Rolle 2003).

Gaspar de Portolá and Franciscan Father Junípero Serra established the first Spanish settlement along the west coast of the modern United States in what was known as Alta California at Mission San Diego de Alcalá in 1769. Mission San Diego was the first of 21 missions established by the Spanish between 1769 and 1823. The missions were responsible for controlling the native populations as well as converting the population to Christianity (Engelhardt 1927a). No Spanish missions were established in the Antelope Valley, but local Native Americans were influenced by other native populations migrating to the area, driven from their homelands by the encroaching Spanish.

Although Portolá may have encountered a group of Tataviam during the 1769 explorations, the first known Spanish explorers to enter the Antelope Valley were a group of soldiers led by Pedro Fages in 1772. In 1776, Friar Francisco Garcés traveled through the valley coming from the Colorado River (Hoover et al. 2002:321). During the Juan Batista de Anza expedition, Friar Francisco Garcés reported "interaction with the Kitanemuk but very little historical information has been recorded on them" (Pacific Legacy, Inc. 2008:14).

During this period, Spain also deeded a limited number of ranchos to prominent citizens and soldiers, few in comparison to the following Mexican Period. To manage and expand herds of cattle on these large ranchos, colonists enlisted the labor of the surrounding Native American population (Engelhardt 1927b). The increased local population density and contact with European-brought diseases significantly reduced the Native American population (McCawley 1996). Native American populations in the Antelope Valley were less affected by the missions and the problems associated with European settlement of California. However, in some cases, individuals were taken from their tribes to be educated at one of the missions before being sent back (Morgan 1914). By 1810, for example, the Tataviam "almost all had been baptized at the San Fernando Mission" located approximately 28 miles southwest of the Palmdale Civic Center.

Mexican Period (1822 – 1848)

The Mexican period commenced when news of the success of the Mexican Revolution (1810-1821) against the Spanish crown reached California in 1822. This period was an era of extensive interior land grant development and exploration by American fur trappers west of the Sierra Nevada Mountains. The California missions declined in power and were ultimately secularized in 1834. The hallmark of the Mexican period was large ranchos deeded to prominent Mexican citizens, frequently soldiers, by the governor. These ranchos became important economic and social centers; however, no ranchos were claimed in the arid Antelope Valley. Rancho La Liebre, straddling present Los Angeles and Kern counties was the closest land grant located in the mountains west of the valley. Governor Pío Pico and his predecessors made more than 600 rancho grants between 1833 and 1846, putting most of the state's lands into private ownership for the first time (Gumprecht 1999). Gold was found on Rancho San Francisco in 1842 at Placerita Canyon, the first to be found in California.

American Period (1848 – Present)

The American Period officially began with the signing of the Treaty of Guadalupe Hidalgo in 1848, in which the United States agreed to pay Mexico $15 million for conquered territory including

California, Nevada, Utah, and parts of Colorado, Arizona, New Mexico, and Wyoming. In 1850, California was admitted as the 31st state.

The discovery of gold in the foothills east of Sacramento led to the California Gold Rush in 1848, despite the first California gold being discovered in Placerita Canyon near the San Fernando Mission in 1842 (Guinn 1977). Cattle ranches continued to dominate Southern California in the early American period, though droughts and increasing population resulted in farming and more urban professions. These new developments increasingly supplanted ranching through the late nineteenth century. By 1853, the population of California exceeded 300,000. Thousands of settlers and immigrants continued to move into the state, particularly after the completion of the transcontinental railroad in 1869.

During the Gold Rush, thousands of people traveled the Mojave River Trail from the east attempting to reach the fabled goldfields of California. The Mojave River Trail was called the Old Spanish Trail by Captain John C. Frémont, until he met a group of Native Americans northeast of Victorville who told Frémont they had lived along the Mojave River and the mountains to the north and traded with other indigenous peoples in the region along the Mojave River Trail (Frémont 1845:260).

The construction of the Southern Pacific Railroad in 1876 was a major development in the Antelope Valley and proved to be the foundation for development. By 1920, upward of 80 towns were founded in the Antelope Valley area. Most of these towns were located along the railroad. However, a major component of the economy was ranching and agriculture (County of Los Angeles Public Library 2013). Key themes in Antelope Valley history include transportation, mining, military use, and agriculture.

City of Palmdale

The Palmdale area was largely undeveloped prior to the completion of the Southern Pacific Railroad through the Antelope Valley. In 1886, farming families predominantly from the Midwest settled in the Antelope Valley, and, mistaking the region's native joshua trees for palms, named the settlement Palmenthal. When drought in the valley's desert climate made many agricultural homesteads unviable, many settlers moved closer to the Southern Pacific Railroad Station in the present-day location of Palmdale's civic center. The completion of the Los Angeles Aqueduct in 1914 brought needed irrigation to the Antelope Valley which allowed for the cultivation of pears, apples, and alfalfa.

Palmdale remained a predominantly agricultural community until the growth of the aerospace sector during WWII. The town's proximity to Edwards Airforce Base, and the establishment of U.S. Air Force Plant 42 in 1953, made Palmdale a center of the U.S. aerospace industry. Plant 42 and the adjacent Los Angeles/Palmdale Regional Airport employ thousands of military personnel and aerospace workers and host manufacturing and flight test facilities for Northrop Grumman, Boeing, and Lockheed Martin.

Historical Resources in Palmdale

A review of the National Register of Historic Places (NRHP), California Register of Historical Resources (CRHR), and the California State Office of Historic Preservation Built Environment Directory, in addition to consultation with City staff, revealed there are five state-designated, and 14 locally recognized, historical resources located in Palmdale. Four of these resources are buildings located on the property of U.S. Air Force Plant 42 the other is a portion of the Southern Pacific Railroad along State Route 138. Each of these has been assigned a California State Office of Historic

Preservation status code or 2S2, meaning it was determined eligible for inclusion on the NRHP and is listed on the CRHR. Plant 42 is located on federal property within the City's boundaries. A series of Southern Pacific Railroad tracks have also been assigned a California State Office of Historic Preservation status code or 2S2. Fourteen structures are listed in the Palmdale General Plan, 1993, as recognized by the Antelope Valley Historical Society as historically significant, but the listed resources were not evaluated for eligibility for either the NRHP or the CRHR.

Archeological Resource Sensitivity

No record search or archeological surveys were conducted in the preparation of the Plan because individual project sites within the Planning Area have not been selected at this point, and these activities were not feasible due to the extent of the Planning Area.

4.5.2 Regulatory Setting

The regulatory background below offers an overview of federal, state, and local criteria used to assess historic significance, as well as Palmdale's existing regulatory process pertaining to development projects that may impact historical resources.

National Register of Historic Places

The National Register of Historic Places (NRHP) is an authoritative guide to be used by federal, state, and local governments, private groups, and citizens to identify the nation's cultural resources and to indicate what properties should be considered for protection from destruction or impairment (36 Code of Federal Regulations [CFR] 60, Section 60.2). The National Park Service (NPS) administers the NRHP program.

The criterion for listing in the NRHP follows guidelines established by the NPS for determining the significance of properties. The quality of significance in American history, architecture, archaeology, engineering, and culture is present in districts, sites, buildings, structures, and objects that do the following:

1. Are associated with events that have made a significant contribution to the broad patterns of our history; or
2. Are associated with the lives of persons who are significant in our past; or
3. Embody the distinctive characteristics of a type, period, or method of construction, or represents the work of a master, or possesses high artistic values, or represents a significant and distinguishable entity whose components may lack individual distinction; or,
4. Have yielded, or may be likely to yield, information important in prehistory or history (36 CFR 60, Section 60.3).

In addition to meeting any or all of the eligibility criteria listed above, properties must also possess historic integrity to be eligible for listing in the NRHP. Historic integrity is the ability of a property to convey its significance through "the essential physical features that enable it to convey its historic identity. The essential physical features are those features that define both why a property is significant… and when it was significant" (NPS 1995). The NPS defines seven aspects of integrity: location, design, setting, materials, workmanship, feeling, and association. These qualities are defined as follows:

- Location is the place where the historic property was constructed or the place where the historic event occurred.

- Design is the combination of elements that create the form, plan, space, structure, and style of a property.
- Setting is the physical environment of a historic property.
- Materials are the physical elements that were combined or deposited during a particular period of time and in a particular pattern or configuration to form a historic property.
- Workmanship is the physical evidence of the crafts of a particular culture or people during any given period in history or prehistory.
- Feeling is a property's expression of the aesthetic or historic sense of a particular period of time.
- Association is the direct link between an important historic event or person and a historic property.

California Register of Historic Resources

A cultural resource could be considered significant if it is eligible for listing in the California Register of Historical Resources (CRHR). The CRHR helps government agencies identify, evaluate, and protect California's historical resources, and indicates which properties are to be protected from substantial adverse change (Public Resources Code [PRC] Section 5024.1[a]). The CRHR is administered through the State Office of Historic Preservation, which is part of the California State Parks system.

A resource is evaluated under four CRHR criteria to determine its historical significance. To be eligible for the CRHR, a resource must be significant at the local, state, or national level in accordance with one or more of the following criteria, as set forth in the CEQA Guidelines Section 15064.5(a)(3):

(A) It is associated with events that have made a significant contribution to the broad pattern of California's history and cultural heritage;

(B) It is associated with the lives of persons important in our past;

(C) It embodies the distinctive characteristics of a type, period, region, or method of construction, or represents the work of an important creative individual, or possesses high artistic values; or,

(D) It has yielded, or may be likely to yield, information important in prehistory or history. [CEQA Guidelines Section 15064.5(a)(3)]

The CRHR also requires a resource to possess integrity, defined as "the authenticity of a historical resource's physical identity evidenced by the survival of characteristics that existed during the resource's period of significance. Integrity is evaluated with regard to the retention of location, design, setting, materials, workmanship, feeling, and association."

Archaeological resources can sometimes qualify as "historical resources" (CEQA Guidelines Section 15064.5[c][1]). PRC Section 21083.2(g) defines a unique archaeological resource as an artifact, object, or site about which it can be clearly demonstrated that, without merely adding to the current body of knowledge, there is a high probability that it:

(1) Contains information needed to answer important scientific research questions and that there is a demonstrable public interest in that information.

(2) Has a special and particular quality such as being the oldest of its type or the best available example of its type.

(3) Is directly associated with a scientifically recognized important prehistoric or historic event or person. (PRC Section 21083.2[g])

Two other programs are administered by the State: California Historical Landmarks and California Points of Historical Interest. California Historical Landmarks are buildings, sites, features, or events that are of statewide significance and have anthropological, cultural, military, political, architectural, economic, scientific or technical, religious, experimental, or other historical value, whereas California Points of Historical Interest are of local (city or county) significance. Resources listed as Landmarks or Points of Historical Interest are automatically considered eligible for listing in the CRHR.

State Health and Safety Code

State Health and Safety Code (HSC) Section 7050.5 (PRC Section 5097.9) contain provisions for the treatment of human remains contained in archaeological sites. Under HSC Section 7050.5, if human remains are discovered during any project activity, the county coroner must be notified immediately. If human remains are exposed, HSC Section 7050.5 states that no further disturbance shall occur until the county coroner has made the necessary findings as to origin and disposition pursuant to PRC Section 5097.98. Construction must halt in the area of the discovery of human remains, the area of the discovery shall be protected, and consultation and treatment shall occur as prescribed by law. If the remains are determined by the coroner to be Native American, the coroner is responsible for contacting the Native American Heritage Commission (NAHC) within 24 hours. NAHC, pursuant to Section 5097.98, will immediately notify those persons it believes to be most likely descended from the deceased person so they can inspect the burial site and make recommendations for treatment or disposal.

Local

City of Palmdale Municipal Code

The City of Palmdale Municipal Code (PMC) does not include statutes regarding the preservation of cultural and historic resources.

4.5.3 Impact Analysis

a. Methodology and Significance Thresholds

According to CEQA Guidelines Appendix G, impacts related to cultural resources would be potentially significant if implementation of the Plan would:

1. Cause a substantial adverse change in the significance of a historical resource pursuant to CEQA Guidelines Section 15064.5
2. Cause a substantial adverse change in the significance of an archaeological resource pursuant to CEQA Guidelines Section 15064.5
3. Disturb any human remains, including those interred outside of formal cemeteries

A “substantial adverse change” in the significance of a historical resource is defined as “physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of an historical resource would be materially impaired” (PRC Section

5020.1[q]). Further, according to CEQA Guidelines Section 15064.5(b)(2), the significance of a historical resource is "materially impaired" when a project:

(A) Demolishes or materially alters in an adverse manner those physical characteristics of an historical resource that convey its historical significance and that justify its inclusion in, or eligibility for, inclusion in the CRHR; or

(B) Demolishes or materially alters in an adverse manner those physical characteristics that account for its inclusion in a local register of historical resources... or its identification in a historical resources survey... unless the public agency reviewing the effects of the project establishes by a preponderance of evidence that the resource is not historically or culturally significant; or

(C) Demolishes or materially alters in an adverse manner those physical characteristics of a historical resource that convey its historical significance and that justify its eligibility for inclusion in the CRHR as determined by a lead agency for purposes of CEQA. (CEQA Guidelines Section 15064.5[b][2])

According to CEQA Guidelines Section 15064.5(a), the term "historical resources" shall include the following:

(1) A resource listed in, or determined to be eligible by, the State Historical Resources Commission, for listing in the CRHR (PRC Section 5024.1, Title 14 California Code of Regulations [CCR], Section 4850 et seq.).

(2) A resource included in a local register of historical resources, as defined in PRC Section 5020.1(k) or identified as significant in an historical resource survey meeting the requirements of PRC Section 5024.1(g), shall be presumed to be historically or culturally significant. Public agencies must treat any such resource as significant unless the preponderance of evidence demonstrates that it is not historically or culturally significant.

(3) Any object, building, structure, site, area, place, record, or manuscript which a lead agency determines to be historically significant or significant in the architectural, engineering, scientific, economic, agricultural, educational, social, political, military, or cultural annals of California, may be considered to be a historical resource, provided the lead agency's determination is supported by substantial evidence in light of the whole record. Generally, a resource shall be considered by the lead agency to be "historically significant" if the resource meets the criteria for listing in the CRHR (PRC Section 5024.1, Title 14 CCR, Section 4852), as described above under "Regulatory Setting."

b. Project and Cumulative Impacts

Threshold 1:	Would the Plan cause a substantial adverse change in the significance of a historical resource pursuant to CEQA Guidelines Section 15064.5?

Impact CUL-1 THE PLAN MAY CAUSE A SIGNIFICANT IMPACT TO HISTORICAL RESOURCES BECAUSE SITE PREPARATION, DEMOLITION, AND CONSTRUCTION ASSOCIATED WITH DEVELOPMENT CARRIED OUT UNDER THE PLAN MAY CAUSE SUBSTANTIAL ADVERSE CHANGES IN THE SIGNIFICANCE OF A HISTORICAL RESOURCE. HOWEVER, IMPLEMENTATION OF PLAN POLICIES AND IMPLEMENTATION ACTIONS INCLUDED IN THE CONSERVATION ELEMENT AND FURTHER MITIGATION WOULD REDUCE THIS IMPACT SIGNIFICANT BUT MITIGABLE.

Based on CEQA Guidelines Section 15064.5, future development carried out under the Plan would have a significant impact on historical resources if it would cause a substantial adverse change in the significance of a historical resource. Historical resources as defined by CEQA include properties eligible for listing on the NRHP, the CRHR, or a local register of historical resources. In addition, as explained in Section 15064.5, "[s]ubstantial adverse change in the significance of an historical resource means physical demolition, destruction, relocation, or alteration of the resource or its immediate surroundings such that the significance of an historical resource would be materially impaired."

As discussed in Section 4.5.1, there are five resources determined eligible for the NRHP and listed in the CRHR. In addition to these known historical resources, there may be other yet unidentified resources which are eligible for inclusion in the NRHP or CRHR or for designation as a local Landmark. The Plan would guide the general distribution, location, and extent of the various land uses in the Planning Area. New residential, commercial, and industrial uses allowed under the Plan would be implemented by new development and the conversion of existing properties to new uses. Changes to the transportation network would include the redesign of streets and streetscapes to improve connectivity for all modes of transportation. The city's historic downtown would be enhanced through the development of entertainment uses, a civic center, and public parks, while new midrise mixed-use development may emerge near the planned multimodal high-speed rail station.

The Plan includes a Conservation Element that contains goals and policies intended to protect historical and culturally significant resources, which contribute to the community's sense of history. Goal 8.1 and policies relevant to historical resources include:

- **Goal CON-8 Protect historical and culturally significant resources, which contribute to the community's sense of history.**
  - **Policy CON-8.1: Historic landmark identification**. Identify and recognize historic landmarks from Palmdale's past.
  - **Policy CON-8.2: Cultural and historic buildings**. Identify and preserve unique cultural and historic buildings and features in order to enhance community character.
  - **Policy CON-8.3: Identified landmarks**. Maintain, rehabilitate, and appropriately reuse identified landmarks where feasible.
  - **Policy CON-8.4: Preservation in new development**: Require that new development preserve significant historic, paleontological, or archaeological resources.
  - **Policy CON-8.7: Cooperation with preservation entities**. Cooperate with private and public entities whose goals are to protect and preserve historic landmarks and important cultural resources.
  - **Policy CON-8.8: Recognition of local historic resources**. Promote respect and recognition of unique historical resources within the community by identifying significant cultural resources with landmark designation plaques, directional signage, self-guided tours, school curriculum, programs, and events.
  - **Policy CON-8.9: Maintain cultural assets**. Discourage historic landmark properties from being altered in such a manner as to significantly reduce their cultural value to the community.

Even with the inclusion of the above polices, damage to or destruction of known or previously unknown historical resources could occur because of the Plan, if preservation is infeasible. Potential

future development occurring under the Plan may include site preparation, demolition, and construction activities. These activities could have the potential to result in the physical demolition, destruction, relocation, or alteration of potential historical resources. Therefore, mitigation would be required.

Mitigation Measures

The following mitigation measure is intended to provide additional measures to complement the policies listed above to ensure that when development may occur in close proximity to historic resources in Palmdale, impacts can be reduced and/or avoided to the extent feasible.

CUL-1 Historical Resources

A historical resources evaluation shall be prepared for all discretionary projects carried out under the Plan involving a property which includes buildings, structures, objects, sites, landscape/site plans, or other features that are 45 years of age or older. The evaluation shall be prepared by a qualified architectural historian or historian who meets the Secretary of the Interior's Professional Qualifications Standards (PQS) in architectural history or history. The qualified architectural historian or historian shall conduct an intensive-level evaluation in accordance with the guidelines and best practices promulgated by the State Office of Historic Preservation to identify any potential historical resources within the proposed development site. All structures 45 years of age or older shall be evaluated within their historic context and documented in a report meeting the State Office of Historic Preservation guidelines. All evaluated properties shall be documented on Department of Parks and Recreation Series 523 Forms. The report shall be submitted to the City for review and concurrence. If the property is already listed in the NRHP, CRHR, or as a Landmark in Palmdale, the historical resources evaluation described above shall not be required.

If historical resources are identified within the project area of a proposed development, efforts shall be made to the extent feasible to ensure that impacts are mitigated. Application of mitigation shall generally be overseen by a qualified architectural historian or historic architect meeting the PQS, unless unnecessary in the circumstances (e.g., preservation in place). In conjunction with any development application that may affect the historical resource, the historical resources evaluation report shall also identify and specify the treatment of character-defining features and construction activities.

Efforts shall be made to the greatest extent possible to ensure that the relocation, rehabilitation, or alteration of the resource is consistent with the Secretary of the Interior's Standards for the Treatments of Historic Properties (Standards). In accordance with CEQA, a project that has been determined to conform with the Standards generally would not cause a significant adverse direct or indirect impact to historical resources (14 CCR § 15126.4(b)(1)). Application of the Standards shall be overseen by a qualified architectural historian or historic architect meeting the PQS. In conjunction with any development application that may affect the historical resource, a report identifying and specifying the treatment of character-defining features and construction activities shall be provided to the City for review and concurrence. As applicable, the report shall demonstrate how the project complies with the Standards and be submitted to the City for review and approval prior to the issuance of any permits.

If significant historical resources are identified on a development site and compliance with the Standards and or avoidance is not possible, appropriate site-specific mitigation measures shall be established and undertaken. Mitigation measures may include documentation of the historical resource in the form of a Historic American Building Survey (HABS)-Like report. The report shall

comply with the Secretary of the Interior's Standards for Architectural and Engineering Documentation and shall generally follow the HABS Level III requirements, including digital photographic recordation, detailed historic narrative report, and compilation of historic research. The documentation shall be completed by a qualified architectural historian or historian who meets the PQS and be submitted to the City prior to issuance of any permits for demolition or alteration of the historical resource.

Significance After Mitigation

Implementation of Mitigation Measure CUL-1 would reduce impacts to historical resources by identifying and evaluating significant historical resources and managing relocation, rehabilitation, or alteration in compliance with the Standards as applicable HABS documentation would also reduce these impacts to the greatest extent feasible in cases where compliance with the Standards or avoidance is not possible. Therefore, impacts would be less than significant with implementation of Plan policies and Mitigation Measure CUL-1.

Threshold 2:	Would the Plan cause a substantial adverse change in the significance of an archaeological resource pursuant to CEQA Guidelines Section 15064.5?

Impact CUL-2 THE PLAN MAY CAUSE A SIGNIFICANT IMPACT IF GROUND DISTURBANCE ASSOCIATED WITH DEVELOPMENT CARRIED OUT UNDER THE PLAN WOULD CAUSE A SUBSTANTIAL ADVERSE CHANGE IN THE SIGNIFICANCE OF AN ARCHAEOLOGICAL RESOURCE, INCLUDING THOSE THAT QUALIFY AS HISTORICAL RESOURCES. THIS IMPACT WOULD BE SIGNIFICANT BUT MITIGABLE.

Ground-disturbing activities associated with development carried out under the Plan have the potential to damage or destroy archaeological resources that may be present on or below the ground surface, particularly in areas not studied in a cultural resources investigation or when excavation depths exceed those attained previously for past development.

The Plan includes a Conservation, Natural and Cultural Resources element that contains goals and policies intended to protect historical and culturally significant resources, which contribute to the community's sense of history. The Plan includes policies that require new development to preserve historic, paleontological, and archeological resources through collaboration with public, private, and tribal entities. Implementation actions associated with these policies include:

- Municipal Code Review. Review the existing survey protocol and report/mapping requirements for the protection of paleontological and archeological resources within the Municipal Code to ensure that the most recent legislation and best practices are utilized.
- Cultural Sensitivity Map. Develop and maintain a cultural sensitivity map. Require special studies/surveys to be prepared for any development proposals in areas reasonably suspected of containing cultural resources, or as indicated on the sensitivity map.

Still, damage to or destruction of known or previously unknown archaeological resources could occur because of the project if preservation is infeasible. Therefore, mitigation measures would be required.

Mitigation Measures

CUL-2 Phase I Archaeological Resources Study

For all projects that involve ground disturbance carried out under the Plan, the City and/or project applicant shall investigate the potential to disturb archaeological resources. If a project would solely involve the refurbishment of an existing building and no ground disturbance would occur, this measure shall not be required. In addition, if the project site is within soils that can be reliably demonstrated as being non-native or artificial fill, this measure shall not be required.

If the project will involve ground disturbance (other than under the conditions listed above) a Phase I cultural resources study shall be performed by a qualified professional meeting the Secretary of the Interior's (SOI's) Professional Qualifications Standards (PQS) for archaeology (National Park Service 1983). A Phase I cultural resources study shall include a pedestrian survey of the project site and sufficient background research and field sampling to determine whether archaeological resources may be present. Archival research shall include a records search of the South Central Coastal Information Center (SCCIC) no more than two years old and a Sacred Lands File search with the NAHC. The Phase I technical report documenting the study shall include recommendations that must be implemented prior to and/or during construction to avoid or reduce impacts on archaeological resources. The report shall be submitted to the City for review and approval prior to the issuance of any grading or construction permits. Recommendations in the Phase I technical report shall be made Conditions of Approval and shall be implemented throughout all ground disturbance activities.

CUL-3 Extended Phase I Testing

For any projects proposed within 100 feet of a known archaeological site and/or in areas identified as sensitive by an updated cultural sensitivity map or in a Phase I study [Mitigation Measure CUL-2], the project applicant shall retain a qualified archaeologist to conduct an Extended Phase I (XPI) study to determine the presence/absence and extent of archaeological resources on the project site. XPI testing shall comprise a series of shovel test pits and/or hand augured units and/or mechanical trenching to establish the boundaries of archaeological site(s) on the project site. If the boundaries of the archaeological site are already well understood from previous archaeological work, an XPI shall not be required. If the archaeological resource(s) of concern are Native American in origin, the qualified archaeologist shall confer with local California Native American tribe(s).

All archaeological excavation shall be conducted by a qualified archaeologist(s) under the direction of a principal investigator meeting the SOI's PQS for archaeology (National Park Service 1983). If an XPI report is prepared, it shall be submitted to the City of Palmdale for review and approval prior to the issuance of any grading or construction permits. Recommendations contained therein shall be implemented for all ground disturbance activities.

CUL-4 Archaeological Site Avoidance

Any identified archaeological sites (determined after implementing Mitigation Measures CUL-2 and/or CUL-3) shall be avoided by project-related construction activities, where feasible. A barrier (temporary fencing) and flagging shall be placed between the work location and any resources within 60 feet of a work location to minimize the potential for inadvertent impacts.

CUL-5 Phase II Site Evaluation

If the results of any Phase I and/or XPI (Mitigation Measures CUL-2 and/or CUL-3) indicate the presence of archaeological resources that cannot be avoided by the project (Mitigation Measure CUL-4) and that have not been adequately evaluated for the NRHP or CRHR listing at the project site, the qualified archaeologist shall conduct a Phase II investigation to determine if intact deposits remain and if they may be eligible for the CRHR or qualify as unique archaeological resources. If the archaeological resource(s) of concern are Native American in origin, the qualified archaeologist shall confer with local California Native American tribe(s).

A Phase II evaluation shall include any necessary archival research to identify significant historical associations and mapping of surface artifacts, collection of functionally or temporally diagnostic tools and debris, and excavation of a sample of the cultural deposit. The sample excavation shall characterize the nature of the sites, define the artifact and feature contents, determine horizontal and vertical boundaries, and retrieve representative samples of artifacts and other remains.

If the archeologist and, if applicable, a Native American monitor (see Mitigation Measure TCR-2) or other interested tribal representative determine it is appropriate, cultural materials collected from the site shall be processed and analyzed in a laboratory according to standard archaeological procedures. The age of the materials shall be determined using radiocarbon dating and/or other appropriate procedures; lithic artifacts, faunal remains, and other cultural materials shall be identified and analyzed according to current professional standards. The significance of the sites shall be evaluated according to the criteria of the CRHR. The results of the investigations shall be presented in a technical report following the standards of the California Office of Historic Preservation publication "Archaeological Resource Management Reports: Recommended Content and Format (1990 or latest edition)." The report shall be submitted to the City of Palmdale for review and approval prior to the issuance of any grading or construction permits. Recommendations in the Phase II report shall be implemented prior to all ground disturbance activities.

CUL-6 Phase III Data Recovery

Should the results of the Phase II site evaluation (Mitigation Measure CUL-5) yield resources that meet CRHR significance standards and if the resource cannot be avoided by project construction in accordance with CUL-4, the project applicant shall ensure that all feasible recommendations for mitigation of archaeological impacts are incorporated into the final design and approved by the City of Palmdale prior to construction. Any necessary Phase III data recovery excavation, conducted to exhaust the data potential of significant archaeological sites, shall be carried out by a qualified archaeologist meeting the SOI PQS for archaeology according to a research design reviewed and approved by the City of Palmdale prepared in advance of fieldwork and using appropriate archaeological field and laboratory methods consistent with the California Office of Historic Preservation Planning Bulletin 5 (1991), Guidelines for Archaeological Research Design, or the latest edition thereof. If the archaeological resource(s) of concern are Native American in origin, the qualified archaeologist shall confer with local California Native American tribe(s). If applicable, a Native American monitor shall be present.

As applicable, the final Phase III Data Recovery reports shall be submitted to the City of Palmdale prior to issuance of any grading or construction permit. Recommendations contained therein shall be implemented throughout all ground disturbance activities.

CUL-7 Cultural Resources Monitoring

If recommended by Phase I, XPI, Phase II, or Phase III studies [Mitigation Measures CUL-2, CUL-3, CUL-5, and/or CUL-6], the project applicant shall retain a qualified archaeologist to monitor project-related, ground-disturbing activities. If archaeological resources are encountered during ground-disturbing activities, Mitigation Measures CUL-4 through CUL-6 shall be implemented, as appropriate.

CUL-8 Unanticipated Discovery of Archaeological Resources

If archaeological resources are encountered during ground-disturbing activities, work within 60 feet shall be halted and the project archaeologist meeting the SOI's Professional Qualification Standards for archaeology (National Park Service 1983) shall immediately to evaluate the find. If necessary, the evaluation may require preparation of a treatment plan and archaeological testing for CRHR eligibility. If the discovery proves to be significant under CEQA and cannot be avoided by the project, additional work may be warranted, such as data recovery excavation, to mitigate any significant impacts to historical resources. Any reports required to document and/or evaluate unanticipated discoveries shall be submitted to the City of Palmdale for review and approval. Recommendations contained therein shall be implemented throughout the remainder of ground disturbance activities.

Significance After Mitigation

Implementation of Mitigation Measures CUL-2 through CUL-8 would reduce impacts to archaeological resources to less than significant levels by ensuring the avoidance of archeological resources to the extent feasible, or by identifying, evaluating, and conducting data recovery archaeological resources that may be impacted by future projects in a timely manner.

Threshold 3:	Would the Plan disturb any human remains, including those interred outside of formal cemeteries?

Impact CUL-3 THE DISCOVERY OF HUMAN REMAINS IS ALWAYS A POSSIBILITY DURING GROUND-DISTURBING ACTIVITIES. GROUND DISTURBANCE ASSOCIATED WITH DEVELOPMENT CARRIED OUT UNDER THE PLAN MAY DISTURB OR DAMAGE KNOWN OR UNKNOWN HUMAN REMAINS. THIS IMPACT WOULD BE LESS THAN SIGNIFICANT WITH ADHERENCE TO EXISTING REGULATIONS.

Regulations exist to address the discovery of human remains. If human remains are found, the State of California Health and Safety Code Section 7050.5 states that no further disturbance shall occur until the county coroner has made a determination of origin and disposition pursuant to PRC Section 5097.98. If an unanticipated discovery of human remains occurs, the county coroner must be notified immediately. If the human remains are determined to be of Native American origin, the coroner must notify the NAHC, which will determine and notify a most likely descendant, who shall complete an inspection of the site and provide recommendations for treatment to the landowner within 48 hours of being granted access. With adherence to existing regulations impacts would be less than significant.

Mitigation Measures

Because impact would be less than significance due to required regulations, mitigation measures would not be required.

Significance After Mitigation

Compliance with existing regulations and archaeological resources mitigation measures would reduce Plan impacts to human remains to less than significant levels by ensuring proper identification and treatment of any human remains that may be present.

Cumulative Analysis

Cumulative development across the Planning Area could disturb areas that may potentially contain historical and archaeological resources. The potential for impacts from individual projects is generally site-specific and depends on the location and nature of each individual project. Individual projects implemented under the proposed Plan would continue to be subject to applicable federal, state, and local requirements. As discussed above, individual projects implemented under the Plan have the potential to result in impacts to historical and archaeological resources. Implementation of Plan policies and mitigation measures would reduce impacts to archaeological and historical resources to the greatest extent feasible. Therefore, the potential for cumulative impacts to historical and archaeological resources is significant but mitigable, and the proposed program's contribution to such impacts would not be cumulatively considerable.

This page intentionally left blank.

4.6 Energy

This chapter assesses potential impacts on energy from the Plan. The physical environmental impacts associated with the generation of electricity and burning of fuels have been accounted for in Section 4.3, *Air Quality*, and Section 4.8, *Greenhouse Gas Emissions*.

4.6.1 Environmental Setting

Energy relates directly to environmental quality. Energy use, when sourced from fossil fuels, can adversely affect air quality, and generate greenhouse gas (GHG) emissions that contribute to climate change. Fossil fuels are burned to create electricity to power residences and commercial/industrial buildings, heat and cool buildings, and power vehicles. Transportation energy use is related to the fuel efficiency of cars, trucks, and public transportation; choice of different travel modes such as auto, carpool, and public transit; and miles traveled by these modes. Construction and routine operation and maintenance of transportation infrastructure also consume energy.

Energy Fundamentals

Energy is generally transmitted either in the form of electricity, measured in kilowatt-hours (kWh) or gigawatt-hours (GWh), or natural gas measured in British thermal units (BTU), or cubic feet. Fuel, such as gasoline or diesel, is measured in gallons or liters.

Electricity

Electricity is used primarily for lighting, appliances, cooking purposes, and other uses associated with building and vehicle operations. Electricity sources range from renewable (e.g., hydroelectric, solar, wind, geothermal, biomass) to nonrenewable (e.g., natural gas, oil, nuclear, coal).

Natural Gas

Natural gas is used primarily for heating, water heating, and cooking purposes and is typically associated with building operations.

Fuel

Fuel is used primarily for powering off-road equipment and vehicles (commercial trucks and other vehicles). The typical fuel types used are diesel and gasoline.

a. Energy Demand

California

GENERATION

According to the California Energy Commission (CEC), California generated approximately 190,913 gigawatt-hours (GWh) of electricity in 2020. As shown in Table 4.6-1, approximately 48 percent of this electricity was sourced from natural gas, 32 percent from renewable sources (i.e., solar, wind, geothermal, biomass, small hydroelectric), nine percent from large hydroelectric sources, and the remaining 11 percent was sourced from coal, nuclear, oil, other and unspecified sources (CEC 2022).

Table 4.6-1 California 2020 Total System Electric Generation

Fuel Type	In-State Generation (GWh)	Percent of In-State Generation	Northwest Imports (GWh)	Southwest Imports (GWh)	State Energy Mix (GWh)	State Power Mix
Coal	317	0.17%	194	6,963	7,474	2.74%
Large Hydro	17,938	9.40%	14,078	1,259	33,275	12.21%
Natural Gas	92,298	48.35%	70	8,724	101,022	37.06%
Nuclear	16,280	8.53%	672	8,841	25,434	9.33%
Oil	30	0.02%	0	0	30	0.01%
Other (Petroleum/Waste Heat)	384	0.20%	125	9	518	0.19%
Renewables	63,665	32.35%	13,184	13,359	90,208	33.09%
Biomass	5,680	2.97%	975	25	6,679	2.45%
Geothermal	11,345	5.94%	166	1,825	13,336	4.89%
Small Hydro	3,476	1.82%	320	2	3,798	1.39%
Solar	29,456	15.43%	284	6,312	36,052	13.23%
Wind	13,708	7.18%	11,438	5,197	30,403	11.13%
Unspecified	N/A	N/A	12,870	1,745	14,615	5.36%
TOTAL	**190,913**	**100.00%**	**41,193**	**40,471**	**272,576**	**100.00%**

Source: CEC 2022

DISTRIBUTION

Electricity is distributed through the various electric load-serving entities (LSEs) in California. These entities include investor-owned utilities, publicly owned LSEs, rural electric cooperatives, community choice aggregators, and electric service providers (CEC 2021a).

USE

According to the California Energy Commission (CEC 2021), total electricity direct consumption in California in 2020 was 279,510.001 GWh, down approximately three percent, compared to 288,281.751 GWh, consumed in 2017. California electricity consumption in 2020 represented approximately 6.7 percent of total U.S. electricity consumption in 2020 (USEIA 2020).

California is one of the top producers of petroleum in the nation, with drilling operations occurring throughout the State but with greater concentrations in some areas such as the San Joaquin Valley and the Los Angeles basin. A network of crude oil pipelines connects production areas to oil refineries in the Los Angeles area, the San Francisco Bay area, and the Central Valley. California oil refineries also process Alaskan and foreign crude oil received in ports in Los Angeles, Long Beach, and the San Francisco Bay area. Crude oil production in California and Alaska is in decline, in part due to recent California statewide direction to phase out oil extraction by 2045 (California Office of the Governor 2021), and California refineries have become increasingly dependent on imports (CEC 2021c). Led by Saudi Arabia and Ecuador, foreign suppliers now produce more than half of the crude oil refined in California (CEC 2021d). According to the United States Energy Information Administration (USEIA), California's field production of crude oil totaled 144.3 million barrels in 2020 (USEIA 2021).

Petroleum fuels are generally purchased by individual users such as residents and employees. According to the Division of Oil, Gas, and Geothermal Resources (DOGGR) there are approximately 2,500 petroleum wells and hundreds of gas stations in Los Angeles County (DOGGR 2021). Los Angeles County has transmission pipelines for both natural gas and hazardous liquid transmission pipelines (National Pipeline Mapping System 2021).

Alternative Fuels

A variety of alternative fuels are used to reduce petroleum-based fuel demand. The use of these fuels is encouraged through various statewide regulations and plans, such as the Low Carbon Fuel Standard and Senate Bill 32. Conventional gasoline and diesel may be replaced, depending on the capability of the vehicle with transportation fuels including the following:

Hydrogen

Hydrogen is being explored for use in combustion engines and fuel cell electric vehicles. The interest in hydrogen as an alternative transportation fuel stems from its clean-burning qualities, its potential for domestic production, and the fuel cell vehicle's potential for high efficiency, which is two to three times more efficient than gasoline vehicles. However, hydrogen fuel production is costly, and the weight and efficiency of hydrogen fuel systems is not yet compatible with typical vehicles and driving ranges (USDOE 2022). There are 10 hydrogen fueling stations in Los Angeles County, with the closest station to Palmdale in Pasadena (USDOE 2021a).

Biodiesel

Biodiesel is a renewable alternative fuel that can be manufactured from vegetable oils, animal fats, or recycled restaurant greases. Biodiesel is biodegradable and cleaner-burning than petroleum-based diesel fuel. Biodiesel can run in any diesel engine generally without alterations but the lack of fueling stations have inhibited its general availability. There are currently four biodiesel fueling stations in Los Angeles County, with the closest station to Palmdale in Ontario (USDOE 2021b).

Electric Vehicles

Electricity can be used to power electric and plug-in hybrid electric vehicles directly from the power grid. Electricity used to power vehicles is generally provided by the electricity grid and stored in the vehicle's batteries. Fuel cells are being explored to use electricity generated onboard the vehicle to power electric motors. There are hundreds of electrical charging stations throughout Los Angeles County and several in Palmdale (USDOE 2021c). The CEC's Building Energy Efficiency Standards (Title 24 of the California Code of Regulations) also require installation of electric vehicle charging spaces in new construction projects. Additionally, the 2021 Federal Infrastructure Bill allocates approximately $384 million dollars to California over the next five years to support the expansion of an electric vehicle charging network and includes a provision that allows the State to apply for the $2.5 billion in grant funding dedicated to EV charging infrastructure.

Electricity

California

CALIFORNIA'S 2020 INTEGRATED ENERGY POLICY REPORT

Every two years, the CEC prepares the Integrated Energy Policy Report (IEPR). The most recent update to the IEPR identifies actions the state and others can take to ensure a clean, affordable, and reliable energy system. California's innovative energy policies strengthen energy resiliency, reduce GHG emissions, improve air quality, and contribute to an equitable future (CEC 2020). Volume II of the 2020 IEPR, examines microgrids, lessons learned from a decade of state-supported research, and stakeholder feedback on the potential of microgrids to contribute to a clean and resilient energy system. Volume III reports California's energy demand outlook, updated to reflect the global pandemic and plan for a growth in zero-emission plug in electric vehicles.

City of Palmdale

Southern California Edison (SCE) provides electricity to the City of Palmdale and surrounding areas. In 2020, SCE generated approximately 83,533 gigawatts of electricity (California Energy Commission 2020). As of 2019, approximately 35 percent of SCE's power mix was sourced from renewable resources, including solar, wind, eligible hydroelectric, and geothermal. Approximately 32 percent of SCE's power mix was purchased through open market transactions, and the remainder was sourced from natural gas, large hydroelectric, and nuclear resources (SCE 2019).

Natural Gas

California

Natural gas plays an important and varied role in California. The most recent report provided by the DOGGR stated the net natural gas production for 2019 was 148.2 billion cubic feet, or approximately 155,222 billion British thermal units (Btu). These figures indicate a decrease of 8.1 percent from 2018 production (DOGGR 2021).

2020 CALIFORNIA GAS REPORT

The 2020 California Gas Report presents a comprehensive outlook for natural gas requirements and supplies for California through the year 2035. The report is prepared in even-numbered years, followed by a supplemental report in odd-numbered years, in compliance with California Public Utilities Commission (CPUC) Decision D.95-01-039. The projections contained in the California Gas Report are for long-term planning and do not necessarily reflect the day-to-day operational plans of the utilities (California Gas and Electric Utilities [CGEU] 2020).

California natural gas demand, including volumes not served by utility systems, is expected to decrease at a rate of one percent per year from 2020 to 2035. The forecasted decline is due to a combination of moderate growth in the natural gas vehicle market and across-the-board declines in all other market segments: residential, commercial, electric generation, and industrial markets (CGEU 2020).

Residential gas demand is expected to decrease at an annual average rate of two percent. Demand in the commercial and industrial markets are expected to decrease slightly at a similar rate of one to one and a half percent. Stricter codes and standards coupled with more aggressive energy efficiency programs and new goals laid out in Senate Bill 350, discussed further under *Regulatory Setting*, are

making a significant impact on the forecasted load for the residential, commercial, and industrial markets (CGEU 2020).

California's existing natural gas supply portfolio is regionally diverse. It includes supplies from California onshore and offshore sources, Southwestern United States supply sources, the Rocky Mountains, and Canada.

Biogas

There is growing interest regarding biogas[1] production potential in California from the following activities:

- Non-hazardous-waste landfills
- Landfill diversion of organic waste material
- Wastewater treatment
- Concentrated animal feeding operations
- Food and green waste processing

Implementation of Senate Bill 1383, which requires a 75 percent reduction in organic waste disposal by 2025, will also contribute to biogas production potential in California. When biogas is conditioned and upgraded to pipeline quality specifications, it can be interconnected to a gas utility's pipeline and distributed to a specific customer. Biomethane may also be consumed on-site for a variety of uses, including electrical power generation from internal combustion engines, fuel cells, and turbines, or as a fuel source for natural gas vehicles. Currently, there are instances where biogas is being vented naturally or flared to the atmosphere, rather than being utilized as a valuable renewable resource (CGEU 2020).

b. Energy Demand

Petroleum

California

According to the EIA, transportation accounted for nearly 40 percent of California's total energy demand, amounting to approximately 3,170 trillion Btu in 2018 (EIA 2020). The CEC produces the California Annual Retail Fuel Outlet Report, which is a compilation of gasoline and diesel fuel sales data from across the State available at the county level. According to the CEC, California's 2020 fuel sales totaled 15,365 million gallons of gasoline and 3,086 million gallons of diesel (CEC 2021e).

City of Palmdale

The baseline year for petroleum fuel demand in Palmdale is 2017, as the vehicle miles traveled (VMT) baseline year used throughout this EIR is 2017 (see Chapter 4.17, *Transportation* of this EIR for further explanation of the VMT modeling performed for this project). Fuel consumption for Palmdale, Los Angeles County, and California are outlined below in Table 4.6-2. With a population of 188,488 in 2017, the per capita gasoline consumption in Palmdale was approximately 317 gallons. Although the Plan applies only to the Planning Area (Palmdale and its Sphere of Influence), the smallest scale to which diesel consumption information is available is at the county level. Therefore,

[1] Biogas is a mixture of methane and carbon dioxide produced by the bacterial degradation of organic matter.

the 2017 per capita consumption of diesel, approximately 30 gallons, is calculated with the 2017 population of 10,181,162 in Los Angeles County.

Table 4.6-2 2017 Annual Gasoline and Diesel Consumption

Fuel Type	Palmdale	Los Angeles County	California	Proportion of Statewide Consumption	Per Capita Consumption	per Capita Consumption (MMBtu)
Gasoline (gallons)	59,783,349	–	13,936,000,000	0.4%	317	35
Diesel (gallons)	–	301,000,000	1,937,000,000	16%	30	3.8

Notes: Diesel and gasoline volumes are expressed in gallons while Btu volumes are expressed in millions of Btu (MMBtu).
Source: CEC 2021f, 2021g

Electricity

California

According to the latest data provided by the CEC, California consumed approximately 279,510,000 kilowatt-hours of electricity (KWh) in 2020, or approximately 953,688 billion Btu (CEC 2020). According to the CEC's Energy Consumption Database, residential electricity demand accounted for approximately 33.7 percent of California's electricity consumption in 2020 while non-residential demand accounted for approximately 66.3 percent (CEC 2021f).

Los Angeles County

In 2020, Los Angeles County consumed approximately 65,650 GWh of electricity, or approximately 24 percent of statewide electricity consumption. Approximately 65 percent of energy in Los Angeles County was used in the non-residential sector, with 35 percent consumed by residential uses. With a population of 10,135,614 in 2020 (DOF 2021), energy consumption per capita in Los Angeles County was approximately 647 kilowatt-hours (KWh). This information is summarized in Table 4.6-3.

Table 4.6-3 2020 Annual Electricity Consumption

	Los Angeles County (GWh)	California (GWh)	Proportion of Statewide Consumption	County per Capita Consumption (kWh)	County per Capita Consumption (MMBtu)
Electricity (GWh)	65,650	279,510	23%	647	71.03

Note: Electricity consumption volumes for Los Angeles County and California are expressed in gigawatt-hours (GWh) while County per capita consumption is expressed in kilowatt-hours (kWh) and millions of Btu (MMBtu).

Natural Gas

California

In 2020, California consumed a total of 12,331 million U.S. Therms of natural gas, or approximately 1,146 trillion Btu (CEC 2021g). According to the CEC's Energy Consumption Database, residential natural gas demand accounted for approximately 38.7 percent of California's total natural gas demand while non-residential natural gas demand accounted for approximately 61.3 percent (CEC 2021h).

Los Angeles County

Although the Plan applies only to the Planning Area, the smallest scale to which natural gas consumption information is available is at the county level. Therefore, natural gas consumption in Los Angeles County is used herein to characterize Palmdale's natural gas consumption. According to the CEC, Los Angeles County consumed approximately 2,937 million US Therms in 2020, or approximately 273,065 billion Btu (CEC 2021h). With a population of 10,135,614 in 2020 (DOF 2021), Los Angeles County's 2020 per capita natural gas consumption was approximately 290 US Therms. This information is summarized in Table 4.6-4.

Table 4.6-4 2020 Annual Natural Gas Consumption

Energy Type	Los Angeles County (Millions of US Therms)	California (Millions of US Therms)	Proportion of Statewide Consumption	County per Capita Consumption (US Therms)	County per Capita Consumption (MMBtu)
Natural Gas	2,937	12,331	24%	290	27

Notes: Natural gas consumption volumes for Los Angeles County and California are expressed in millions of US Therms while County per capita consumption is expressed in US Therms and millions of Btu (MMBtu).
Source: CEC 2021h

4.6.2 Regulatory Setting

a. Federal

Energy Independence and Security Act of 2007

The Energy Independence and Security Act, enacted by Congress in 2007, is designed to improve vehicle fuel economy and help reduce U.S. dependence on foreign oil. It expands the production of renewable fuels, reducing dependence on oil, and confronting global climate change. Specifically, it does the following:

- Increases the supply of alternative fuel sources by setting a mandatory Renewable Fuel Standard, requiring fuel producers to use at least 36 billion gallons of biofuel in 2022, which represents a nearly five-fold increase over current levels
- Reduces U.S. demand for oil by setting a national fuel economy standard of 35 miles per gallon by 2020 – an increase in fuel economy standards of 40 percent

Energy Policy and Conservation Act

Enacted in 1975, this legislation established fuel economy standards for new light-duty vehicles sold in the U.S. The law placed responsibility on the National Highway Traffic and Safety Administration, a part of the U.S. Department of Transportation, for establishing and regularly updating vehicle standards. The USEPA administers the Corporate Average Fuel Economy program, which determines vehicle manufacturers' compliance with existing fuel economy standards. Since the inception of the Corporate Average Fuel Economy program, the average fuel economy for new light-duty vehicles steadily increased from 13.1 miles per gallon for the 1975 model year to 30.7 miles per gallon for the 2014 model year and is proposed to increase to 54.5 by 2025. Light-duty vehicles include autos, pickups, vans, and sport-utility vehicles.

Safer Affordable Fuel-Efficient Vehicles Rule

On September 27, 2019, the USEPA and the National Highway Safety Administration published the Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule Part One: One National Program, revoking California's authority to set its own GHG emissions standards and zero-emission vehicle mandates in California. On June 29, 2020, Part Two of the SAFE Vehicles Rule became effective, revising Corporate Average Fuel Economy and CO2 emissions standards for model years 2021-2026 passenger cars and trucks, such that the standards increase by approximately one and a half percent each year through model year 2026 as compared to the 2012 standards, which required an approximately five percent annual increase (National Highway Traffic Safety Administration 2021).

Energy Star Program

In 1992, USEPA introduced Energy Star as a voluntary labeling program designed to identify and promote energy-efficient products to reduce GHG emissions. The program applies to major household appliances, lighting, computers, and building components such as windows, doors, roofs, and heating and cooling systems. Under this program, appliances that meet the specifications for maximum energy use established under the program are certified to display the Energy Star label. In 1996, USEPA joined with the Energy Department to expand the program, which now also includes qualifying commercial and industrial buildings, and homes.

Construction Equipment Fuel Efficiency Standard

The USEPA sets emission standards for construction equipment. The current iteration of emissions standards for construction equipment are the Tier 4 efficiency requirements contained in 40 Code of Federal Regulations Parts 1039, 1065, and 1068. Emissions requirements for new off-road Tier 4 vehicles were completely phased in by the end of 2015 (USEPA 2022).

b. State

California Energy Plan

The CEC is responsible for preparing the California Energy Plan, which identifies emerging trends related to energy supply, demand, conservation, public health and safety, and the maintenance of a healthy economy. The 2008 California Energy Plan calls for the state to assist in the transformation of the transportation system to improve air quality, reduce congestion, and increase the efficient use of fuel supplies with the least environmental and energy costs. To further this policy, the plan identifies a number of strategies, including assistance to public agencies and fleet operators in implementing incentive programs for zero-emission vehicles and addressing their infrastructure needs; and encouragement of urban designs that reduce VMT and accommodate pedestrian and bicycle access.

California Energy Efficiency Action Plan

The CEC is responsible for preparing the California Energy Efficiency Action Plan, which covers issues, opportunities, and savings estimates related to energy efficiency in California's building, industrial, and agricultural sectors. The 2019 California Energy Efficiency Action Plan focuses on three goals:

1. Doubling energy efficiency savings by 2030 (SB 350)

2. Removing and reducing barriers to energy efficiency in low-income and disadvantaged communities
3. Reducing GHG emissions from the building sector

The plan offers several recommendations to advance these goals, including expanding funding sources for energy efficiency programs beyond ratepayer portfolios, improving energy efficiency data, integrating energy efficiency into long-term utility planning, enhancing the energy efficiency workforce, improving demand flexibility, and expanding building decarbonization (CEC 2019).

Assembly Bill 2076: Reducing Dependence on Petroleum

Pursuant to Assembly Bill (AB) 2076 (Chapter 936, Statutes of 2000), the CEC and CARB prepared and adopted a joint agency report in 2003, *Reducing California's Petroleum Dependence*. Included in this report are recommendations to increase the use of alternative fuels to 20 percent of on-road transportation fuel use by 2020 and 30 percent by 2030, significantly increase the efficiency of motor vehicles, and reduce per capita VMT. One of the performance-based goals of AB 2076 is to reduce petroleum demand to 15 percent below 2003 demand. Furthermore, in response to the CEC's 2003 and 2005 *Integrated Energy Policy Reports*, the Governor directed the CEC to take the lead in developing a long-term plan to increase alternative fuel use.

Integrated Energy Policy Report

SB 1389 (Chapter 568, Statutes of 2002) required the CEC to conduct assessments and forecasts of all aspects of energy industry supply, production, transportation, delivery and distribution, demand, and prices. The CEC uses these assessments and forecasts to develop energy policies that conserve resources, protect the environment, ensure energy reliability, enhance the state's economy, and protect public health and safety. The most recent assessment, the *2018 Integrated Energy Policy Report*, contains two volumes. Volume I highlights the implementation of California's innovative policies and the role they have played in establishing a clean energy economy. Volume II, scheduled for completion in February 2019, will provide more detail on several key energy issues and will encompass new analyses, as well as significant opportunities for public participation (CEC 2018d).

Senate Bill 1078: California Renewables Portfolio Standard Program

SB 1078 (Chapter 516, Statutes of 2002), and as expanded under SB 2, established the RPS for electricity supply. The RPS requires that retail sellers of electricity, including investor-owned utilities and community choice aggregators, provide 20 percent of their supply from renewable sources by 2017. SB 2 expanded this law and required procurement from eligible renewable energy resources to 33 percent by 2020. In addition, electricity providers subject to the RPS must increase their renewable share by at least one percent each year.

Senate Bill X1-2: California Renewable Energy Portfolio Standard

In 2011, the Governor signed SB X1-2, which requires retail sellers of electricity, including investor-owned utilities and community choice aggregators, to provide at least 33 percent of their electricity supply from renewable sources by 2020. The California Public Utilities Commission (CPUC) and CEC jointly implement the statewide RPS program through rulemakings and monitoring the activities of electric energy utilities in the State.

Senate Bill 350: Clean Energy and Pollution Reduction Act of 2015

The Clean Energy and Pollution Reduction Act of 2015 (SB 350) requires the amount of electricity generated and sold to retail customers per year from eligible renewable energy resources to be increased to 50 percent by December 31, 2030. This act also requires doubling of the energy efficiency savings in electricity and natural gas for retail customers through energy efficiency and conservation by December 31, 2030.

Senate Bill 100: California Renewable Energy Portfolio Standard Program: Emissions of Greenhouse Gases

Approved by the Governor on September 10, 2018, SB 100 amends the State's RPS program, which originally called for electricity retailers to ensure 33 percent of electricity generation was sourced from renewable sources by 2020, 40 percent by 2024, 45 percent by 2027, and 50 percent by 2030. With implementation of SB 100, electricity retailers must ensure 33 percent of electricity generation is sourced from renewable sources by 2020, 44 percent by 2024, 50 percent by 2026, 52 percent by 2027, and 60 percent by 2030. SB 100 further requires electricity retailers to provide 100 percent zero-carbon electricity generation by 2045.

Assembly Bill 1493: Reduction of Greenhouse Gas Emissions

AB 1493 (Chapter 200, Statutes of 2002), known as the Pavley bill, amended Health and Safety Code Sections 42823 and 43018.5 requiring CARB to develop and adopt regulations that achieve maximum feasible and cost-effective reduction of GHG emissions from passenger vehicles, light-duty trucks, and other vehicles used for noncommercial personal transportation in California.

Implementation of new regulations prescribed by AB 1493 required that the State of California apply for a waiver under the federal Clean Air Act. Although the USEPA initially denied the waiver in 2008, EPA approved a waiver in June 2009, and in September 2009, CARB approved amendments to its initially adopted regulations to apply the Pavley standards that reduce GHG emissions to new passenger vehicles in model years 2009 through 2016. According to CARB, implementation of the Pavley regulations is expected to reduce fuel consumption while also reducing GHG emissions.

2017 Climate Change Scoping Plan

On December 14, 2017, the CARB adopted the 2017 Scoping Plan, which provides a framework for achieving the State's 2030 GHG emissions reduction target of 40 percent below 1990 levels. The 2017 Scoping Plan relies on the continuation and expansion of existing policies and regulations, such as the Cap-and-Trade Program, and implementation of recently adopted policies and legislation. The 2017 Scoping Plan includes a wide variety of goals related to energy efficiency and renewable energy that are intended to help meet the State's 2030 target (CARB 2017).

Energy Action Plan

In the October 2005 *Energy Action Plan (EAP) II*, the CEC and CPUC updated their energy policy vision by adding some important dimensions to the policy areas included in the original EAP, such as the emerging importance of climate change, transportation-related energy issues and research and development activities. The CEC adopted an update to the EAP II in February 2008 that supplements the earlier EAPs and examines the State's ongoing actions in the context of global climate change.

Assembly Bill 1007: State Alternative Fuels Plan

AB 1007 (Chapter 371, Statutes of 2005) required the CEC to prepare a plan to increase the use of alternative fuels in California. The CEC prepared the State Alternative Fuels Plan in partnership with CARB and in consultation with other federal, State, and local agencies. The State Alternative Fuels Plan presents strategies and actions California must take to increase the use of alternative non-petroleum fuels in a manner that minimizes costs to California and maximizes the economic benefits of in-state production. The State Alternative Fuels Plan assessed various alternative fuels and developed fuel portfolios to meet California's goals to reduce petroleum consumption, increase alternative fuels use, reduce GHG emissions, and increase in-state production of biofuels without causing a significant degradation of public health and environmental quality.

Bioenergy Action Plan, Executive Order S-06-06

Executive Order (EO) S-06-06, April 25, 2006, establishes targets for the use and production of biofuels and biopower, and directs State agencies to work together to advance biomass programs in California while providing environmental protection and mitigation. The EO establishes the following target to increase the production and use of bioenergy, including ethanol and biodiesel fuels made from renewable resources: produce a minimum of 20 percent of its biofuels in California by 2010, 40 percent by 2020, and 75 percent by 2050. EO S-06-06 also calls for the State to meet a target for use of biomass electricity. The 2011 Bioenergy Action Plan identifies those barriers and recommends actions to address them so that the State can meet its clean energy, waste reduction, and climate protection goals. The 2012 Bioenergy Action Plan updates the 2011 Plan and provides a more detailed action plan to achieve the following goals:

- Increase environmentally and economically sustainable energy production from organic waste
- Encourage development of diverse bioenergy technologies that increase local electricity generation, combined heat and power facilities, renewable natural gas, and renewable liquid fuels for transportation and fuel cell applications
- Create jobs and stimulate economic development, especially in rural regions of the state
- Reduce fire danger, improve air and water quality, and reduce waste

California Building Energy Efficiency Standards – California Code of Regulations, Title 24, Part 6

California Code of Regulations, Title 24, Part 6, is California's Energy Efficiency Standards for Residential and Non-residential Buildings. The CEC established Title 24 in 1978 in response to a legislative mandate to create uniform building codes to reduce California's energy consumption and provide energy efficiency standards for residential and nonresidential buildings. The standards are updated on an approximately three-year cycle to allow consideration and possible incorporation of new efficient technologies and methods. In 2019, the CEC updated Title 24 standards with more stringent requirements effective January 1, 2020. All buildings for which an application for a building permit is submitted on or after January 1, 2020, must follow the 2019 standards. Energy efficient buildings require less electricity; therefore, increased energy efficiency reduces fossil fuel consumption and decreases GHG emissions. The 2019 Building Energy Efficiency Standards move toward cutting energy use in new homes by more than 50 percent. The building efficiency standards are enforced through the local plan check and building permit process. Local government agencies may adopt and enforce additional energy standards for new buildings as reasonably necessary due

to local climatologic, geologic, or topographic conditions, provided these standards exceed those provided in Title 24.

California Green Building Standards Code (2019), California Code of Regulations Title 24, Part 11

California's Green Building Code, referred to as CALGreen, was developed to provide a consistent approach to green building in the State. Having taken effect in January 2020, the most recent version of CALGreen lays out the minimum requirements for newly constructed residential and nonresidential buildings to reduce GHG emissions through improved energy efficiency and process improvements. It also includes voluntary tiers to further encourage building practices that improve public health, safety, and general welfare by promoting a more sustainable design.

Advanced Clean Trucks Regulation

On June 25, 2020, CARB approved the Advanced Clean Trucks Regulation, which requires truck manufacturers (any manufacturer that certifies vehicles over 8,500 pounds gross vehicle weight rating) with sales in California to transition from diesel trucks and vans to electric zero-emission trucks beginning in 2024. By 2045, all new trucks sold in California must be zero-emission (CARB 2022).

c. Local

City of Palmdale Energy Action Plan

Palmdale adopted its Energy Action Plan (EAP) in August 2011. The EAP included a GHG emissions inventory for the baseline year 2005 and a GHG emissions forecast to the horizon year of 2035. The EAP establishes reduction goals, measures, and an implementation program to reduce energy demand, water consumption, and transportation trips, and to promote the use of renewable energy. The EAP contains municipal and community-wide goals, each of which are supported by several measures. Goals and applicable measures from the EAP are listed below.

- **Goal 1: Reduce energy demand through energy conservation and efficiency.**
  - **Measure 1.1:** Implement energy efficiency improvements (i.e., retrofits) in existing City buildings and facilities.
  - **Measure 1.2:** Exceed Title 24 energy efficiency standards in new City facilities as feasible.
  - **Measure 1.3:** Encourage new development to exceed Title 24 energy use requirements by 15%.
  - **Measure 1.4:** Reduce the urban heat island effect to reduce energy consumption and cool the local climate through increased shading on private property, cool surfaces, and high albedo surfaces for sidewalks and parking lots.
  - **Measure 1.6:** Promote energy efficiency improvements in the city's housing stock.
  - **Measure 1.7:** Facilitate comprehensive home energy retrofits.
- **Goal 2: Reduce water consumption for energy conservation.**
  - **Measure 2.1:** Reduce municipal water consumption to reduce energy consumption and conserve water resources.
  - **Measure 2.3:** Facilitate a 20% reduction in water use by 2020 to exceed the 20X2020 initiative to reduce energy consumed for water conveyance and treatment.

- **Goal 3: Promote renewable energy generation and use.**
  - **Measure 3.1:** Demonstrate City leadership in renewable energy by supplying 100% of City energy needs with renewable sources by 2035.
  - **Measure 3.2:** Encourage the commercial and industrial sector to meet energy needs through on-site renewable energy sources.
  - **Measure 3.3:** Encourage the residential sector to meet energy needs through on-site renewable energy sources.
  - **Measure 3.4:** Facilitate the establishment of large-scale solar facilities to supply regional energy needs.
- **Goal 4: Reduce transportation emissions through alternative vehicles, trip reduction and** consolidation, and efficient flow.
  - **Measure 4.1:** Continue to promote ride sharing and TDM programs to reduce use of traditional motor vehicles for work commutes.
  - **Measure 4.3:** Reduce emissions from mobile sources through efficient vehicle flow.
  - **Measure 4.5:** Reduce emissions from on-road vehicle sources.
- **Goal 5: Implement smart land use to reduce vehicular trips.**
  - **Measure 5.1:** Promote accessible housing near transit and services.
  - **Measure 5.2:** Pursuant to SB 375, support the development and implementation of a regional Sustainable Communities Strategy with the Southern California Association of Governments through local plans and programs.
- **Goal 6: Reduce waste.**
- **Goal 7: Support the buy-local movement.**

The EAP is consistent with Assembly Bill 32, which requires a 15 percent reduction in emissions compared to 1990 levels, and Executive Order S-3-05, which requires an 80 percent reduction in emissions compared to 1990 levels by 2050. To meet these targets, the EAP plans to reduce local emissions by 61 percent below the projected "business as usual" emissions forecasts by 2035 (City of Palmdale 2011).

The EAP includes implementation chapters which includes specific actions for the City to facilitate implementation of the GHG and energy reduction measures and evaluate the EAP's success. It also establishes criteria for staff to use when determining if a proposed development project is consistent with the EAP for CEQA purposes.

4.6.3 Impact Analysis

a. Methodology and Significance Thresholds

Significance Thresholds

The following thresholds of significance were developed in accordance with Appendix G of the CEQA Guidelines. Energy-related impacts would be significant if the Plan would:

1. Result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation.

2. Conflict with or obstruct a State or local plan for renewable energy or energy efficiency.

Methodology

Energy consumption is categorized herein in terms of "direct" and "indirect" energy. Direct energy accounts for energy consumed during operation of the transportation system and land use scenario envisioned under the Plan, such as fuel consumed by vehicles, natural gas consumed for heating and/or power, and electricity consumed for power. Indirect energy is the energy needed for construction and maintenance of the transportation system and land use scenario facilitated by the Plan. The analysis of direct energy involves the quantification of anticipated transportation fuel, natural gas, and electricity consumption under the Plan and a qualitative discussion of the efficiency, necessity, and wastefulness of the energy consumption. Analysis of indirect energy involves a qualitative discussion of construction and maintenance energy requirements anticipated for development carried out under the Plan.

Direct Energy Consumption

The direct energy analysis for transportation fuel demand under the Plan is based on 2017 to be consistent with the 2017 VMT baseline used in the transportation analysis for the Plan. The 2017 gasoline and diesel fuel consumption data for Palmdale and Los Angeles County was converted to annual per capita MMBtu consumption (as shown in Table 4.6-2), converted to daily per capita Btu consumption, and divided by the region-wide daily VMT of 8,028,726 (as shown in Table 4.6-5) to derive a regional Btu/VMT conversion factor of 0.014 Btu per capita per daily VMT.

It should be noted that the Btu/VMT factor is forecast to continue to decrease in the future as a result of improved fuel economy, particularly if the fleet-wide goal of 35 miles per gallon by year 2020 proposed under the Energy Independence and Security Act is met. Applying the 2020-based factor to 2045 VMT therefore provides a conservative evaluation of per capita energy consumption for transportation fuels as the energy efficiency of vehicles in 2045 is likely to be higher than current fuel efficiency of vehicles.

For 2045 natural gas and electricity consumption under buildout of the land use scenario envisioned by the Plan, consumption factors were drawn from the California Emissions Estimator Model (CalEEMod) Version 2020.4.0. The CalEEMod data is provided as Appendix B. Natural gas and electricity per capita consumption in 2045 is presented in comparison to 2020 per capita consumption for informational purposes.

b. Project and Cumulative Impacts

Threshold 1:	Would the Plan result in a potentially significant environmental impact due to wasteful, inefficient, or unnecessary consumption of energy resources, during project construction or operation?

Impact E-1 WITH COMPLIANCE WITH APPLICABLE REGULATIONS AND PLAN POLICIES, THE PLAN WOULD NOT RESULT IN SIGNIFICANT ENVIRONMENTAL IMPACTS DUE TO WASTEFUL, INEFFICIENT, OR UNNECESSARY CONSUMPTION OF ENERGY RESOURCES DURING CONSTRUCTION OR OPERATION OF PROJECTS CARRIED OUT UNDER THE PLAN. THEREFORE, IMPACTS WOULD BE LESS THAN SIGNIFICANT.

Development carried out under the Plan would involve the use of energy during construction and operation. Energy use during construction would be primarily in the form of fuel consumption to

operate heavy equipment, light-duty vehicles, machinery, and generators for lighting. Temporary grid power may also be provided to construction trailers or electric construction equipment.

Long-term operation of development projects would require permanent grid connections for electricity. Consistent with the Climate Action Plan, or the Sustainability, Climate, and Resilience chapter of the Plan, projects facilitated by the Plan would be required to be 100 percent electric and would not utilize natural gas. In addition, the increase in vehicle trips associated with potential development would increase fuel consumption.

Daily operation of the regional transportation system uses energy in the form of fuel consumed by passenger vehicles, including automobiles, vans and trucks, and transit vehicles including buses and trains. Increases in motor vehicle trips are primarily a combined function of population and employment growth. Table 4.6-5 shows daily VMT and estimated fuel consumption translated into energy use (Btu) in Palmdale under 2017 conditions and future 2045 conditions with implementation of the Plan.

Table 4.6-5 Direct Transportation Energy Use in Palmdale

Year	Daily VMT	Per Capita Btu/ VMT Factor	Direct Energy Consumption (Daily Per Capita MBtu)
2017	8,028,726	0.014	112
2045	7,727,110	0.014	108

Notes: Daily VMT for the 2017 base and the 2045 base (as provided by Parsons in Appendix D) were applied to the 2017 and 2045 scenarios, respectively. Daily VMT and county-level fuel consumption information was used to derive a per capita daily Btu per VMT consumption factor. Per Capita Btu/VMT Factor is expressed in singular Btu while Daily Per Capita Direct Energy Consumption is expressed in thousands of Btu (MBtu).

As shown in Table 4.6-5, direct transportation energy demand would decrease from approximately 112 MBtu per capita to approximately 108 MBtu per capita, a decrease of approximately three percent over a 28-year period. Further, proposed Plan policies listed below would improve the availability of alternative transportation modes and help reduce congestion and overall demand for transportation fuels.

LAND USE AND COMMUNITY DESIGN

- **Goal LUD-1: Complete Neighborhoods where residents can reach daily amenities, local retail, services, parks, and public facilities within a short 20-minute walk.**
  - **Policy LUD-1.1: Balanced Land Uses**. Maintain a balanced land use pattern to support a broad range of housing choices, retail businesses, employment opportunities, educational and cultural institutions, entertainment spaces, and other supportive uses within long-established Palmdale neighborhoods and new growth areas.
  - **Policy LUD-1.2: New Complete Neighborhoods.** Facilitate the construction of new mixed-use neighborhoods that are well connected to services, transit, amenities, public buildings, and parks and recreational facilities.
  - **Policy LUD-1.3: Access to Amenities.** Strive to create development patterns such that the majority of residents are within twenty minutes or less walking distance of a variety of neighborhood-serving uses in Village Centers, such as parks, grocery stores, restaurants, places of worship, cafes, dry cleaners, laundromats, banks, hair care, pharmacies, civic uses, and similar uses.

- **Goal LUD-5: All new major development in the city is designed to support high-quality neighborhoods.**
  - **Policy LUD-5.1: New Complete Neighborhoods.** Require new development to provide multiple amenities, a beautiful public realm, and be consistent with the City's vision for complete neighborhoods.
  - **Policy LUD-5.2: Walkability of New Neighborhoods**. Require all new neighborhoods to be pedestrian friendly by including features, such as short blocks, wide sidewalks, shaded streets, buildings that define and are oriented to streets or public spaces, traffic-calming features, convenient pedestrian street crossings, and safe streets designed for pedestrians, cyclists, and vehicles.
  - **Policy LUD-5.3: Public Services in New Neighborhoods**. Require new developments to be designed for and provided with adequate public services and infrastructure. Require that these public facilities and services be provided concurrently with development to ensure a high quality of life for residents.
  - **Policy LUD-5.4: Access to Retail/Services.** Strive for a high level of connectivity of residents to neighborhood services through site design, open space linkages, and bicycle facilities. Plan for 90 percent of residents (except for in rural residential designations) to be within a fifteen to twenty minute walking distance of retail and neighborhood services.
  - **Policy LUD-5.5: Trail Networks**. Provide new trails systems that connect to the regional system.
- **Goal LUD-9: Thriving, active Village Centers and Multi-Use Centers at regular intervals outside of the city core.**
  - **Policy LUD-9.1: Activity Centers**. Support a network of vibrant Village Centers that are mixed-use activity centers located throughout the City's residential areas to create 20-minute neighborhoods, implemented through new mixed-use land use designations, which provide a mix of residential uses and daily goods/services.
  - **Policy LUD-9.5: Mobility Connections**. Seek to improve walk, bike, and transit access to Village Centers by connecting to the larger/regional pedestrian and bicycle networks.

CIRCULATION AND MOBILITY

- **Goal TM-2: Build and maintain a transportation system that accommodates future growth and maintains transportation networks for all modes.**
  - **Policy TM-2.2: Multimodal travel.** Prioritize safety, operations, and comfort for active and transit modes on streets that have been identified as part of the multimodal network.
  - **Policy TM-2.5: Multimodal comfort**. Prioritize quality of multimodal facilities with respect to a user's experience of stress, connectivity, and safety for streets with a non-automobile priority, and ensure the appropriate balance with vehicular operations.
- **Goal TM-3: Build and maintain a transportation system that provides affordable, equitable, and efficient access to employment centers and essential services.**
  - **Policy TM-3.1: Transit reliability**. Make public transit a convenient and reliable option for daily trip making on a local and regional basis.
  - **Policy TM-3.2: Transit access.** Encourage investments and Capital Projects that reduce first/last-mile barriers to transit stops.

- **Policy TM-3.3: Access to employment**. Encourage investments and Capital Projects that improve the safety and multimodal options for access to high quality jobs.
- **Policy TM-3.4: Transit coordination**. Work with AVTA to enhance the deployment of fixed-route and flex-route transit services, including increased frequency and service spans.
- **Policy TM-3.5: Regional rail**. Work with Metrolink to increase the frequency of on-peak services and later service hours.
- **Policy TM-3.6: Transit information**. Work with transit providers to improve the delivery of transit service availability and real-time information in an easy, dependable, and accessible means.
- **Policy TM-3.7: Commute trip reduction**. Work with large employers to implement programs that expand access to non-drive alone commute options for all commuters, including hourly staff and contract workers.
- **Policy TM-3.8: Multimodal Station.** Maximize access to downtown via transit and other modes through the Palmdale Transportation Center and future relocation to accommodate a station for high-speed rail.

- **Goal TM-4: Build and maintain a transportation system that enhances quality of life and public health.**
  - **Policy TM-4.1: Access to essential services**. Prioritize investments that improve access to healthcare and social services.
  - **Policy TM-4.2: Access to healthy foods**. Improve mobility in neighborhoods with limited access to healthy food sources.
  - **Policy TM-4.3: Access to parks and open space.** Prioritize investments that expand access to Palmdale's parks and trails and support physical activity.
  - **Policy TM-4.4 Neighborhood streets.** Create neighborhood streets that unify neighborhoods, reduce vehicle speeds, reduce barriers for people walking, biking, and riding transit, and provide connectivity to connector and regional routes.
  - **Policy TM-4.5: Active friendly design.** Design multimodal facilities to a standard that will increase physical activity.
  - **Policy TM-4.6: Lighting.** Provide human scale lighting along pedestrian thoroughfares, in commercial districts, on trails, and at transit stops.

- **Goal TM-5: Build and maintain a transportation system that fosters a more active and vibrant downtown.**
  - **Policy TM-5.1: Public space.** Encourage wider sidewalks and plazas on downtown streets to enhance placemaking, improve public safety, and support local businesses.
  - **Policy TM-5.2: Parking supply**. Promote and support creative and flexible approaches to parking, including maximizing use of existing public supply and sharing between uses to create a "park once environment."
  - **Policy TM-5.3: Walkability.** Enhance the safety and comfort of existing pedestrian street crossings and reduce the distance between crossings.
  - **Policy TM-5.4: Streetscaping**. Implement streetscape design that improves the pedestrian environment and appearance of downtown corridors.
  - **Policy TM-5.5: Secure bicycle parking.** Install secure short- and long-term bicycle parking near key destinations, civic buildings, and transit facilities.

- **Policy TM-5.6: Reduced parking minimums.** Study reducing minimum on-site parking requirements for new development in districts of the City that can support shared parking between land uses and achieve parking demand reductions through transit and multimodal improvements.
- **Policy TM-5.7: Compact development**. Encourage the development of a healthy mix of land uses within proximity to promote internal capture, shared-parking, and de-emphasize the need for single-occupant vehicular travel.
- **Policy TM-5.8: Context sensitive development**. Balance development intensity and roadway capacity.

- **Goal TM-6: Build and maintain a transportation system that leverages the City's natural setting and reduces impacts to the environment.**
  - **Policy TM-6.1:** Vehicle miles traveled. Prioritize transportation investments and strategies that create opportunities for residents to reduce Vehicle Miles Traveled.
  - **Policy TM-6.2:** Multimodal development. Encourage the development of dense, mixed-use, pedestrian-oriented land uses that link affordable housing options to daily needs.
  - **Policy TM-6.3**: Transportation demand management. Promote trip reduction strategies, including telecommuting, through land-use decisions and TDM programming strategies.
  - **Policy TM-6.4:** Commute trip reduction. Require TDM Plans for major employers, as defined by the Air Quality Management District.

ECONOMIC DEVELOPMENT

- **Goal ED-5: Diversify housing options for residents at different stages of life and ability, to continue making Palmdale an affordable place to live.**
  - **Policy ED-5.3: Transit-oriented development**. Encourage transit-oriented development that meets community needs in the proposed downtown near the future multi- modal high speed rail station and at other transit nodes.

- **Goal ED-6: Remain at the forefront of transportation innovations that connect residents and workers to the regional and national economy.**
  - **Policy ED-6.1: Transportation investments**. Support opportunities to bring more transportation investments such as a High-Speed rail station and opening commercial air services.
  - **Policy ED-6.2: Infrastructure investment**. Prioritize infrastructure and development that unlocks economic investment around the City and increase usage of transportation facilities.
  - **Policy ED-6.3: Neighborhood transportation connections**. Improve local transit and last mile connectivity between neighborhoods and regional transportation hubs/corridors.

EQUITABLE, AND HEALTHY COMMUNITY

- **Goal EHC-11: Encourage neighborhoods that support safe pedestrian, bicycle, and public transit access for people of all ages, income levels, and cultural backgrounds.**
  - **Policy EHC-11.1: Near-universal walk access to retail and services**. Plan for 90 percent of residents (except for equestrian residential areas) to be within a 20-minute walking distance of a Village Center with retail and neighborhood services.

- **Policy EHC-11.2: Complete streets investments.** Prioritize transportation system improvements that promote Complete Streets objectives, incorporate universal design principles, and encourage walking, biking, and transit use in disadvantaged communities.
- **Policy EHC-11.3: Improve connectivity**. Strive for a high level of connectivity of residents to Village Centers and neighborhood services through site design, open space linkages, and bicycle facilities. Integrate land use and transportation infrastructure to support a connected system of sidewalks, bikeways, greenways, and transit.
- **Policy EHC-11.4: Streetscape enhancements**. Enhance existing streetscapes to include greater sidewalk coverage, walkway connectivity, street trees and shade, street lighting, street crossing safety features, traffic calming measures, transit shelters, and other design elements, especially in disadvantaged communities.
- **Policy EHC-11.5: Safe routes for older adults**. Develop safe routes for aging adults, particularly routes to transit and shopping centers.

SUSTAINABILITY

- **Goal SCR-4: Reduced greenhouse gas emissions from transportation (SB 379, EO N-79-20).**
  - **Policy SCR-4.1: Bike Facilities**. Promote bicycle use with new private development projects through requirements for bicycle parking, lockers and showers, bike share facilities, and when feasible, connections to City bike lanes.
  - **Policy SCR-4.2: Public Transit.** Expand the public transit system, increase frequency of service, and provide shade at transit stops.
  - **Policy SCR-4.3: Public EV Chargers**. Install EV chargers at suitable public facilities, including any parking structures, the future multi-modal High Speed Rail station, and community parks.
  - **Policy SCR-4.4: EV Reach Code**. Adopt EV requirements beyond CALGreen in both number of chargers and charger capacity.
  - **Policy SCR-4.5: ZEV Purchasing**. When purchasing City vehicles give preference to fuel efficient vehicles, including the use of zero emission vehicles.
  - **Policy SCR-4.6: Clean Fuels**. Require use of clean fuels for City construction and maintenance vehicles and lawn/garden equipment.
  - **Policy SCR-4.7: Pedestrian and Cyclist Safety**. Promote bicycle and pedestrian modes of travel by improving pedestrian and cyclist safety. Example techniques include increasing the number of sidewalks, pending connected and protected bike lanes, and redesigning high incidence intersections.

AIR QUALITY

- **Goal AQ-1: Minimize local air pollution caused by motor vehicles.**
  - **Policy AQ 1-1: Reduced work-related trips.** Reduce the number and length of work-related trips through such means as providing a balance of jobs and housing in the community, promoting alternate work schedules, telecommuting, teleconferencing, company-sponsored ride-share and alternative fuel vehicle programs, use of commuter trains and other alternative modes of transportation to the workplace, creation of additional park and ride facilities, and improving the fiber optic network and connectivity.

- **Policy AQ 1-2: Reduced Non-Work Trips.** Reduce motor vehicle non-work trips through such means as location of residences in proximity to shopping and recreation/entertainment destinations, transit system improvements, and promoting merchant transportation incentives, and distance learning.
- **Policy AQ 1-3: Improve Traffic Flow**. Reduce vehicle emissions by maintaining and improving traffic flow per the Mobility Element.
- **Policy AQ 1-4: High Occupancy Vehicle Lanes**. Coordinate with Caltrans to promote high occupancy vehicle lanes on State Route 14.
- **Policy AQ 1-9: Encourage transit and bike use**. Provide incentives to residents who bike or use public transportation such as free or discounted public transit or employer-provided subsidies or reimbursements for residents willing to bike or use public transit.

Construction and maintenance of future land use development envisioned under the Plan would result in short-term consumption of energy resulting from the use of construction equipment and processes. CALGreen includes specific requirements related to recycling, construction materials, and energy efficiency standards that would apply to construction of future development envisioned by the Plan and would minimize wasteful, inefficient, and unnecessary energy consumption. Construction and operation of projects facilitated by the Plan would be required to comply with relevant provisions of CALGreen and Title 24 of the California Energy Code, as well as the City's Water Efficiency Landscaping Ordinance, which would further avoid wasteful, inefficient, and unnecessary energy consumption. Per applicable regulatory requirements such as CALGreen, development under the Plan would comply with construction waste management practices to divert a minimum of 65 percent of construction debris. In addition, construction contractors would be required to comply with the provisions of California Code of Regulations Title 13 Sections 2449 and 2485, which prohibit diesel-fueled commercial motor vehicles and off-road diesel vehicles from idling for more than five minutes, which would minimize unnecessary fuel consumption.

Operation of the development carried out under the Plan would consume electricity for building heating and power, lighting, and water conveyance, among other operational requirements. Table 4.6-6 displays per capita natural gas and electricity consumption under 2045 with Plan conditions compared to 2020 per capita consumption. Development carried out under the Plan would be all electric and would therefore not utilize natural gas. As shown in Table 4.6-6, per capita natural gas consumption for the anticipated population growth and land use scenario envisioned under the Plan would be approximately 27 million Btu less than 2020 per capita natural gas consumption. However, per capita electricity consumption for the anticipated population growth and land use scenario envisioned under the Plan would be 13.16 million Btu more than 2020 per capita electricity consumption, an increase of approximately 500 percent compared to existing electricity usage.

Table 4.6-6 Annual Natural Gas and Electricity Consumption in Palmdale

Year	Population	Per Capita Consumption	Direct Energy Consumption (Per Capita MMBtu)
Natural Gas		**US Therms**	
2020	156,910	290	27
2045 (Net New Only)	78,880	0	0
Electricity		**kWh**	
2020	156,910	647	2.21
2045 (Net New Only)	78,880	3,858	13.16

Notes: 2020 per capita consumption is available only on a countywide basis. Therefore, the 2020 per capita consumption is based on the population of all of Los Angeles County in 2020. The 2045 energy consumption shown in this table represents net new consumption only. Per capita consumption in 2045 is derived from dividing net new energy consumption by net new population anticipated by 2045 (78,540 people). Per capita energy consumption is expressed in US Therms for natural gas, kilowatt-hours (kWh) for electricity, and thousands of Btu (MBtu) for both.

While 2045 natural gas and electricity per capita consumption rates in Palmdale would change under the implementation of the Plan, the per capita consumption rates shown in Table 4.6-6 do not precisely represent the existing per capita consumption as they are based on county-wide information. However, the natural gas and electricity per capita consumption rates for the net new population growth and land use scenario envisioned under the Plan are presented above to illustrate the Plan's relative energy efficiency compared to current conditions. As shown in Table 4.6-6, Palmdale's anticipated growth in combination with the land use scenario envisioned by the Plan would substantially decrease per capita natural gas consumption but substantially increase per capita electricity consumption in Palmdale.

The Plan contains goals and policies that would help minimize the occurrence of inefficient, wasteful, and unnecessary energy consumption during construction and operation of development carried out under the Plan. The Plan goals and policies that present the greatest potential for reducing wasteful, inefficient, and unnecessary energy consumption are as follows:

PUBLIC FACILITIES, SERVICES, AND INFRASTRUCTURE

- **Goal PFSI-1: Maintain superior public facilities to support the Palmdale community.**
  - **Policy PFSI-1.7: City Facility Efficiency**. Install energy efficient lighting and promote energy conservation practices in all city-owned facilities.
- **Goal PSFI-3: Ensure that all development in Palmdale is served by adequate water distribution and sewage facilities.**
  - **Policy PFSI-3.9: Renewable Energy Project Disposal Systems**. Allow the use of private sewage disposal systems on nonresidential renewable energy projects with domestic discharge only on property with an IND (Industrial) General Plan Land Use designation located between Avenue L and M between 50th Street East and 120th Street East, and on property with an IND (Industrial) General Plan Land Use designation on property located south of Avenue M, north of Avenue P-8, between 90th Street East and 120th Street East. The maximum daily estimated discharge shall not exceed 500 gallons/acre/day wastewater flow with a maximum discharge of 5,000 gallons per day.
  - **Policy PFSI-3.18**: Water Conservation. Support and promote water conservation across all facets of City water infrastructure.

SUSTAINABILITY, CLIMATE AND RESILIENCE

- **Goal SCR-1: Achieve a carbon neutral community by 2045 (EO B-55-18).**
  - **Policy SCR-1.1: CAP Maintenance.** Maintain and regularly update a Climate Action Plan to reduce GHGs generated within the City.
  - **Policy SCR-1.2: GHG Inventory.** Conduct community GHG inventories every 3-5 years to track progress toward achieving the City's GHG reduction goal.
  - **Policy SCR-1.3: Funding Sources**. Seek funding to support implementation of GHG reduction projects for the City, residents, and businesses.
  - **Policy SCR-1.4: Community Engagement**. Develop and implement comprehensive community engagement including educational outreach, issue-specific awareness campaigns, and technical assistance.
- **Goal SCR-2: Utilize a fossil fuel free energy system (SB 100).**
  - **Policy SCR-2.1: Carbon Free Energy**. Direct EPIC to provide 75% carbon-free or renewable electricity to residents and businesses by 2030, achieving 100% carbon-free electricity by 2045.
  - **Policy SCR-2.2: Community Solar.** Explore the development of community solar projects and microgrids.
  - **Policy SCR-2.3: Battery Permitting**. Establish a streamlined approval process for battery storage systems.
- **Goal SCR-3: Green and decarbonized buildings for new construction and major renovations.**
  - **Policy SCR-3.1: Energy Efficient New Construction.** Integrate CALGreen Tier 1 and Tier 2 green building and energy efficiency standards into new construction and major remodels.
  - **SCR-3.2: All-Electric Reach Code.** Consider adopting a local reach code to encourage new buildings to be all-electric.
  - **Policy SCR-3.3: Solar and Storage.** Require installation of photovoltaic panels and battery storage on all residential new construction and nonresidential new construction over 5,000 sq. ft.
  - **Policy SCR-3.4: Energy Efficient Existing Buildings.** Establish an energy and water efficiency upgrade program for existing buildings, focusing resources on the most underserved populations.
  - **Policy SCR-3.5: Benchmarking Energy and Water Use.** Register municipal buildings with Energy Star Portfolio Manager and report energy and water use (AB 802).

AIR QUALITY

- **Goal AQ-4: Reduce air pollution caused by energy consumption.**
  - **Policy AQ 4-1: EPIC Participation**. Encourage residents and business owners to participate in Energy for Palmdale's Independent Choice (EPIC).
  - **Policy AQ 4-2: Energy Conservation**. Encourage energy conservation from all sectors of the community by promoting and/or requiring the use of energy efficient appliances, processes, and equipment, and promoting energy audits and retrofits of existing structures.
  - **Policy AQ 4-3: Recycling.** Require local government, Palmdale citizens, and local businesses and industries to recycle, as mandated by state law, and to otherwise recycle to the

maximum extent possible in accordance with the requirements of the Palmdale Municipal Code.

- **Policy AQ 4-4: Solar Energy**. Require new developments to minimize obstruction of direct sunlight for solar energy systems on adjacent properties.

In addition to the above goals and policies, the Plan encourages infill and transit-oriented development and active transportation to reduce overall energy consumption and result in greater energy efficiency throughout the Planning Area. For example, the Plan contains land-use strategies to encourage higher-density and mixed-use development along transit corridors and near job centers. Mixed-use, transit-oriented, and higher-density development improve energy efficiency because it places residents closer to places of employment, businesses those residents patronize, and public transit facilities. Therefore, the Plan would not result in potentially significant environmental effects from wasteful, inefficient, or unnecessary consumption of energy. This impact would be less than significant.

Mitigation Measures

No mitigation measures are required.

Threshold 2: Would the Plan conflict with or obstruct a state or local plan for renewable energy or energy efficiency?

Impact E-2 THE PLAN WOULD BE CONSISTENT WITH ENERGY EFFICIENCY GOALS CONTAINED IN THE PALMDALE ENERGY ACTION PLAN. CONSTRUCTION AND OPERATION OF PROJECTS CARRIED OUT UNDER THE PLAN WOULD COMPLY WITH RELEVANT PROVISIONS OF THE STATE'S CALGREEN AND TITLE 24 OF THE CALIFORNIA ENERGY CODE. IMPACTS WOULD BE LESS THAN SIGNIFICANT.

As discussed under 4.6.2, *Regulatory Framework,* several State plans as well as the City's adopted Energy Action Plan include energy conservation and energy efficiency strategies intended to enable the State and the City to achieve GHG reduction and energy conservation goals. A full discussion of the proposed Plan's consistency with GHG reduction plans is included in Section 4.7, *Greenhouse Gas Emissions*. As shown in Table 4.6-7, the Plan would be consistent with State renewable energy and energy efficiency plans. Furthermore, as shown in Table 4.6-8, the Plan would be consistent with the EAP's goals and measures that specifically target energy efficiency.

Table 4.6-7 Consistency with State Renewable Energy and Energy Efficiency Plans

Renewable Energy or Energy Efficiency Plan	Proposed Project Consistency
Assembly Bill 2076: Reducing Dependence on Petroleum. Pursuant to AB 2076, the CEC and CARB prepared and adopted a joint-agency report, *Reducing California's Petroleum Dependence,* in 2003. Included in this report are recommendations to increase the use of alternative fuels to 20 percent of on-road transportation fuel use by 2020 and 30 percent by 2030, significantly increase the efficiency of motor vehicles, and reduce per capita VMT. One of the performance-based goals of AB 2076 is to reduce petroleum demand to 15 percent below 2003 demand.	**Consistent.** The Plan would encourage development in infill locations, which would result in lower VMT, and development would be located near existing services. The Plan would include Policy TM-6.3,, which would promote trip reduction strategies thrugh land-use decisions and TDM programming strategies. The Plan would also include Policy TM-6.3, which would require TDM plans for major employers as defined by the Air Quality Management District. Furthermore, the Plan would include several land use and circulation and mobility policies discussed under Impact E-1 which would reduce transportation fuel use.

Renewable Energy or Energy Efficiency Plan	Proposed Project Consistency
2019 Integrated Energy Policy Report. The 2019 report highlights the implementation of California's innovative policies and the role they have played in establishing a clean energy economy, as well as provides more detail on several key energy policies, including decarbonizing buildings, increasing energy efficiency savings, and integrating more renewable energy into the electricity system.	**Consistent.** The Plan would include Goal SCR-3, which would aim to make all new construction and major renovation green and result in decarbonized buildings. The Plan would include Policy SCR-2.1, which would involve pursuing options to provide 100 percent carbon-free or renewable energy to residents and businesses. The Plan would also include Policies SCR-3.2 and SCR-3.3, which would encourage new buildings to be all-electric through a local reach code and require installation of solar panels and battery storage on all new construction.
California Renewable Portfolio Standard. California's RPS obligates investor-owned utilities, energy service providers, and community choice aggregators to procure 33 percent total retail sales of electricity from renewable energy sources by 2020, 60 percent by 2030, and 100 percent by 2045.	**Consistent.** SCE supplies electricity in the Planning Area and is required to generate electricity that would increase renewable energy resources to 60 percent by 2030 and 100 percent by 2045. Because SCE would supply power to development carried out under the Plan, the Plan would not conflict with or obstruct implementation of the California Renewable Portfolio Standard. Further, the Plan also includes Policy SCR-2.1: which directs EPIC to provide 75% carbon-free or renewable electricity to residents and businesses by 2030, achieving 100% carbon-free electricity by 2045, thus meeting the RPS standards.
Energy Action Plan. In the October 2005, the CEC and CPUC updated their energy policy vision by adding some important dimensions to the policy areas included in the original EAP, such as the emerging importance of climate change, transportation-related energy issues, and research and development activities. The CEC adopted an update to the EAP II in February 2008 that supplements the earlier EAPs and examines the State's ongoing actions in the context of global climate change. The nine major action areas in the EAP include energy efficiency, demand response, renewable energy, electricity adequacy/reliability/infrastructure, electricity market structure, natural gas supply/demand/infrastructure, transportation fuels supply/demand/infrastructure, research/development/demonstration, and climate change.	**Consistent.** Development carried out under the Plan would be required to comply with Palmdale Municipal Code Chapter 8.04, which mandates implementation of Title 24. Compliance would include rooftop solar on all residential building types that are three stories or less in height. Electricity would be provided by SCE or EPIC which source some or all its power from renewable sources. Given these features, the Plan would facilitate implementation of the nine major action areas in the EAP. Furthermore, as demonstrated below in Table 4.6-8, the Plan would be consistent with the policies of the City's own EAP, which overlaps with the action areas of the State Energy Action Plan. Therefore, the Plan would not conflict with or obstruct implementation of the EAP.
AB 1007: State Alternative Fuels Plans. The State Alternative Fuels Plan assessed various alternative fuels and developed fuel portfolios to meet California's goals to reduce petroleum consumption, increase alternative fuels use, reduce GHG emissions, and increase in-State production of biofuels without causing a significant degradation of public health and environmental quality. Bioenergy Action Plan, EO S-06-06. The EO establishes the following targets to increase the production and use of bioenergy, including ethanol and biodiesel fuels made from renewable resources: produce a minimum of 20 percent of its biofuels in California by 2010, 40 percent by 2020, and 75 percent by 2050.	**Consistent**. The Plan would not interfere with or obstruct the production of biofuels in California. Vehicles used by residents of the Planning Area would be fueled by gasoline and diesel fuels blended with ethanol and biodiesel fuels as required by CARB regulations. Therefore, the Plan would not conflict with or obstruct implementation of the Bioenergy Action Plan or the State Alternative Fuels Plan.

Renewable Energy or Energy Efficiency Plan	Proposed Project Consistency
Title 24, CCR – Part 6 (Building Energy Efficiency Standards) and Part 11 (CALGreen). The 2019 Building Energy Efficiency Standards move toward cutting energy use in new homes by more than 50 percent and will require installation of solar photovoltaic systems for single-family homes and multi-family buildings of three stories and less. The CALGreen Standards establish green building criteria for residential and nonresidential projects. The 2019 Standards include the following: increasing the number of parking spaces that must be prewired for electric vehicle chargers in residential development; requiring all residential development to adhere to the Model Water Efficient Landscape Ordinance; and requiring more appropriate sizing of HVAC ducts.	**Consistent.** Development carried out under the Plan would be required to comply with Palmdale Municipal Code Chapter 8.04, which mandates implementation of Title 24. Therefore, the Plan would not conflict with or obstruct implementation of Title 24 standards.

Table 4.6-8 Plan Consistency with the Palmdale Energy Action Plan

EAP Measure	Plan Consistency
Goal 1 Reduce energy demand through energy conservation and efficiency.	
Measure 1.1. Implement energy efficiency improvements (i.e., retrofits) in existing City buildings and facilities.	**Consistent.**. The Plan would include Policy PFSI-1.7, which is to install energy efficient lighting and promote energy conservation practices in all City-owned facilities.
Measure 1.2. Exceed Title 24 energy efficiency standards in new City facilities as feasible.	**Consistent.** The Sustainability Element of the Plan contains several goals and policies related to energy efficiency, including SCR-3.1, which would integrate CALGreen green building and energy efficiency standards into new construction and major remodels.
Measure 1.3. Encourage new development to exceed Title 24 energy use requirements by 15%	**Consistent.** The Plan includes Policy SCR-3.4, which is to establish an energy and water efficiency upgrade program for existing buildings, and SCR-3.1, which is to integrate CALGreen green building and energy efficiency standards into new construction and major remodels.
Measure 1.4. Reduce the urban heat island effect to reduce energy consumption and cool the local climate through increased shading on private property, cool surfaces, and high albedo surfaces for sidewalks and parking lots.	**Consistent.** The Plan includes Policy SCR-7.1, which is to plant trees along streets, in parks, and in other public spaces to provide shade. The Plan also includes Policy SCR-7.3, which is to encourage tree planting on private property.
Measure 1.6. Promote energy efficiency improvements in the city's housing stock.	**Consistent.** The Sustainability Element of the Plan contains several goals and policies related to energy efficiency, including SCR-3.1, which is to integrate CALGreen green building and energy efficiency standards into new construction and major remodels.
Measure 1.7. Facilitate comprehensive home energy retrofits.	**Consistent.** The Plan includes Policy SCR-3.4 which is to establish an energy and water efficiency upgrade program for existing buildings.
Goal 2 Reduce water consumption for energy conservation.	
Measure 2.1. Reduce municipal water consumption to reduce energy consumption and conserve water resources.	**Consistent.**. The Plan would include Policy SCR-3.4, which aim to establish an energy and water efficiency upgrade program for existing buildings.

EAP Measure	Plan Consistency
Measure 2.3. Facilitate a 20% reduction in water use by 2020 to exceed the 20X2020 initiative to reduce energy consumed for water conveyance and treatment.	**Consistent.** The Sustainability Element of the Plan contains several goals and policies related to energy efficiency, including Policy SCR-3.1, which is to integrate CALGreen green building and energy efficiency standards into new construction and major remodels.
Goal 3 Promote renewable energy generation and use.	
Measure 3.1. Demonstrate City leadership in renewable energy by supplying 100% of City energy needs with renewable sources by 2035.	**Consistent.** The Plan includes Policy SCR-2.1, which involves pursuing options to provide 100 percent carbon-free or renewable energy to residents and businesses. The Plan also includes Policies SCR-3.2 and SCR-3.3, which are to encourage new buildings to be all-electric through a local reach code and require installation of solar panels and battery storage on all new construction.
Measure 3.2. Encourage the commercial and industrial sector to meet energy needs through on-site renewable energy sources.	**Consistent.** The Plan includes Policy SCR-3.1, which is to integrate CALGreen green building and energy efficiency standards into new construction and major remodels. The Plan also includes Policy SCR-3.3, which is to require installation of solar panels and battery storage on all new construction.
Measure 3.3. Encourage the residential sector to meet energy needs through on-site renewable energy sources.	**Consistent.** The Plan includes Policy SUS-3.1, which is to integrate CALGreen green building and energy efficiency standards into new construction and major remodels. The Plan also includes Policy SUS-3.3, which is to require installation of solar panels and battery storage on all new construction.
Measure 3.4. Facilitate the establishment of large-scale solar facilities to supply regional energy needs.	**Consistent.** The Plan includes Policy SCR-2.3, which is to establish a streamlined approval process for battery storage systems.
Goal 4 Reduce transportation emissions through alternative vehicles, trip reduction and consolidation, and efficient flow.	
Measure 4.1. Continue to promote ride sharing and TDM programs to reduce use of traditional motor vehicles for work commutes.	**Consistent.** The Plan includes Policy TM-6.3, which is to promote trip reduction strategies through land-use decisions and TDM programming strategies. The Plan also includes Policy TM-6.4, which is to require TDM plans for major employers as defined by the Air Quality Management District.
Measure 4.3. Reduce emissions from mobile sources through efficient vehicle flow.	**Consistent.** The Plan includes Policy AQ-1.3, which is to improve traffic flow and reduce vehicle emissions by maintaining and improving traffic flow pursuant to the Transportation and Mobility Element. Also, Chapter 4.17, *Transportation* of this EIR finds that implementation of the Plan would maintain efficient vehicle flow in the Planning Area.
Measure 4.5. Reduce emissions from on-road vehicle sources.	**Consistent.** The Plan includes Policy AQ-1.5, which is to, as technology allows, reduce tailpipe emissions from City vehicles by replacing them with alternative fuel vehicles.
Goal 5 Implement smart land use to reduce vehicular trips.	
Measure 5.1. Promote accessible housing near transit and services.	**Consistent.** The Plan includes Policy PFSI-1.2, which is to promote accessibility for all residents.

As shown above, the Plan would be consistent with Palmdale's EAP and the energy efficiency strategies contained therein. As described in Impact E-1, construction and operation of projects carried out under the Plan would be required to comply with relevant provisions of CALGreen and Title 24 of the California Energy Code. Therefore, this impact would be less than significant, and no mitigation is required.

Mitigation Measures

No mitigation measures are required.

4.6.4 Cumulative Impacts

A project's environmental impacts are "cumulatively considerable" if the "incremental effects of an individual project are significant when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects" (*CEQA Guidelines* Section 15065[a][3]). The Plan's geographic scope for energy consumption is the Planning Area. This geographic scope is appropriate because the Plan would guide development within the Planning Area, and cumulative development under the Plan is considered part of this cumulative analysis.

Cumulative development would increase demand for energy resources but as described in this chapter of the EIR, those resources would not be consumed in a wasteful, inefficient, or unnecessary manner. It is also reasonable to assume that future iterations of the California Building Energy Efficiency Standards and CALGreen will require increasingly more efficient appliances and building materials that reduce energy consumption in new development. In addition, vehicle fuel efficiency is anticipated to continue improving through implementation of the existing Pavley Bill regulations under AB 1493.

As described under Impact E-1, development carried out under the Plan would be constructed in accordance with the California Building Energy Efficiency Standards and CALGreen. Additionally, the Plan would focus development in infill locations, which lower VMT due to the proximity to existing services. Therefore, the Plan's contribution to a significant cumulative energy impact is not cumulatively considerable.

For these reasons, development carried out under the Plan would not result in a wasteful, inefficient, or unnecessary consumption of energy, and operation of new structures carried out under the Plan would not result in potentially significant environmental effects due to the wasteful, inefficient, or unnecessary consumption of energy. Therefore, the Plan would not make a cumulatively considerable contribution to a significant cumulative impact related to energy consumption.

The geographic scopes for the cumulative impact analysis of consistency with renewable energy and energy efficiency plans are, respectively, the State of California and the Planning Area. Projects throughout the State of California are required to adhere to applicable renewable energy and energy efficiency laws, programs, and policies such as California's RPS, AB 1493, and Title 24 standards. All other pending and future projects in the Planning Area would be required to adhere to Plan policies to mitigate energy impacts where feasible. In addition, all pending and future projects would be reviewed for consistency with the Plan and the City's EAP. Therefore, cumulative impacts would be less than significant. As discussed under Impact E-2, development carried out under the Plan would be consistent with the energy-related goals, policies, and actions of the Statewide plans and measures of the Palmdale EAP; therefore, the Plan would not make a

cumulatively considerable contribution to a significant cumulative impact with respect to consistency with renewable energy and energy efficiency plans.

4.7 Geology and Soils

This section of the EIR analyzes the potential physical environmental effects of Plan implementation related to seismic hazards, underlying soil characteristics, slope stability, erosion, and paleontological resources. Data used to prepare this section was obtained from the existing City of Palmdale General Plan (Palmdale 1993), the California Department of Conservation (DOC), the California Geological Survey (CGS), and other sources.

4.7.1 Environmental Setting

a. Regional Topography

Palmdale is in the high desert region of Los Angeles County approximately 60 miles north of downtown Los Angeles. It is located at an elevation of approximately 2,655 feet above sea level and is generally flat (Palmdale 1993). It is separated from the City of Los Angeles by the San Gabriel mountain range, which forms the southern edge of the Antelope Valley.

b. Regional Geologic Setting

The Planning Area is 106,634 acres, or approximately 166 square miles located between the foothills of the San Gabriel and Sierra Pelona mountains, and the Mojave Desert (Mojave) to the north and east.

Palmdale is in the southern part of the Mojave geomorphic province. The Mojave is a broad interior region of isolated mountain ranges separated by stretches of desert plains. There are two important fault trends that control topography in the Mojave: a prominent northwest-southeast trend and a secondary east-west trend (apparent alignment with Transverse Ranges is significant). The Mojave province is wedged in a sharp angle between the Garlock Fault (southern boundary Sierra Nevada) and the San Andreas Fault, where it bends east from its northwest trend. The northern boundary of the Mojave is separated from the prominent Basin and Range geomorphic province by the eastern extension of the Garlock Fault (CGS 2002).

Figure 4.7-1 shows a topographic map of the Planning Area, and Figure 4.7-2 shows soil types in the Planning Area.

Figure 4.7-1 Topographic Map of Palmdale

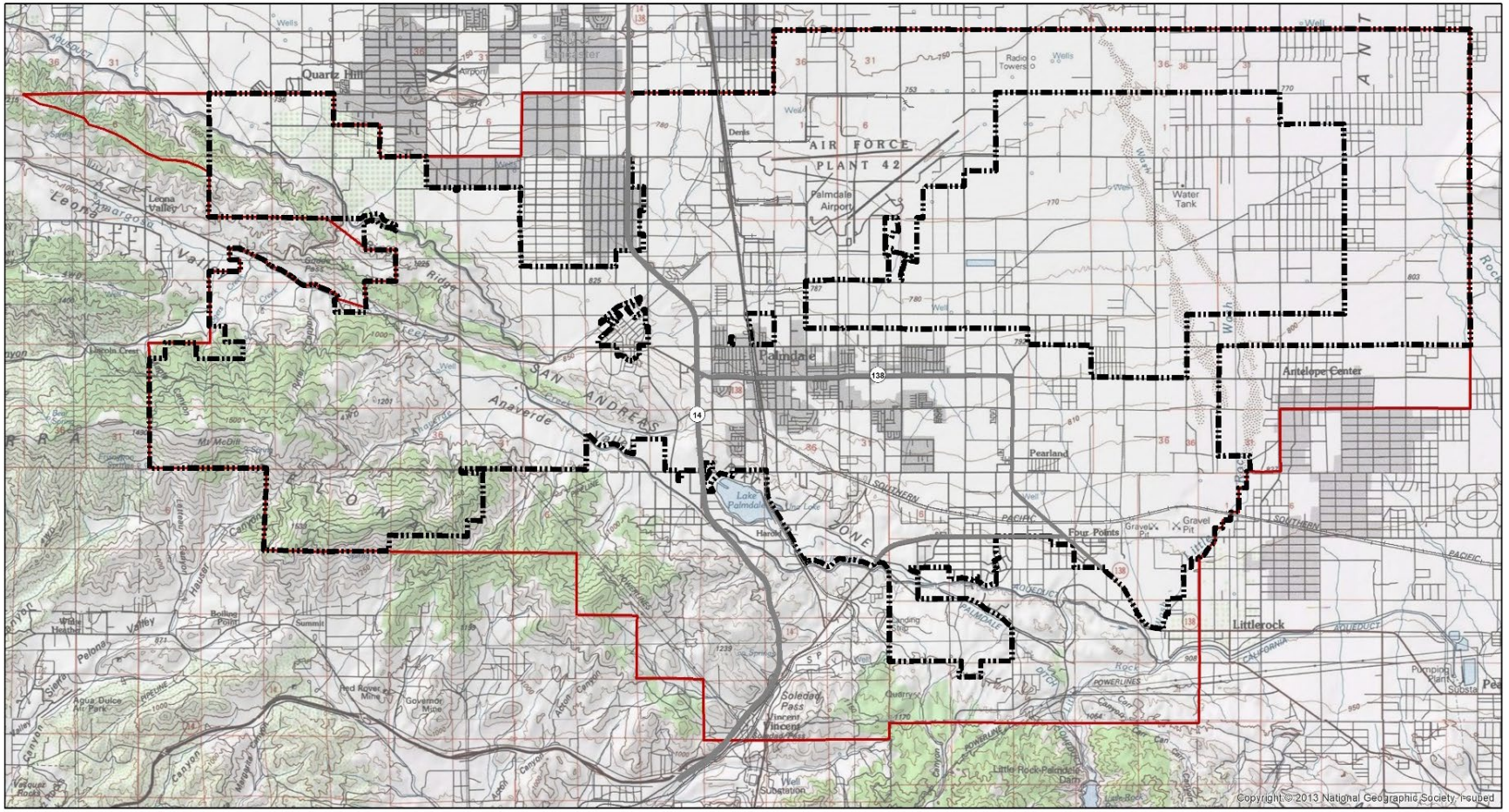
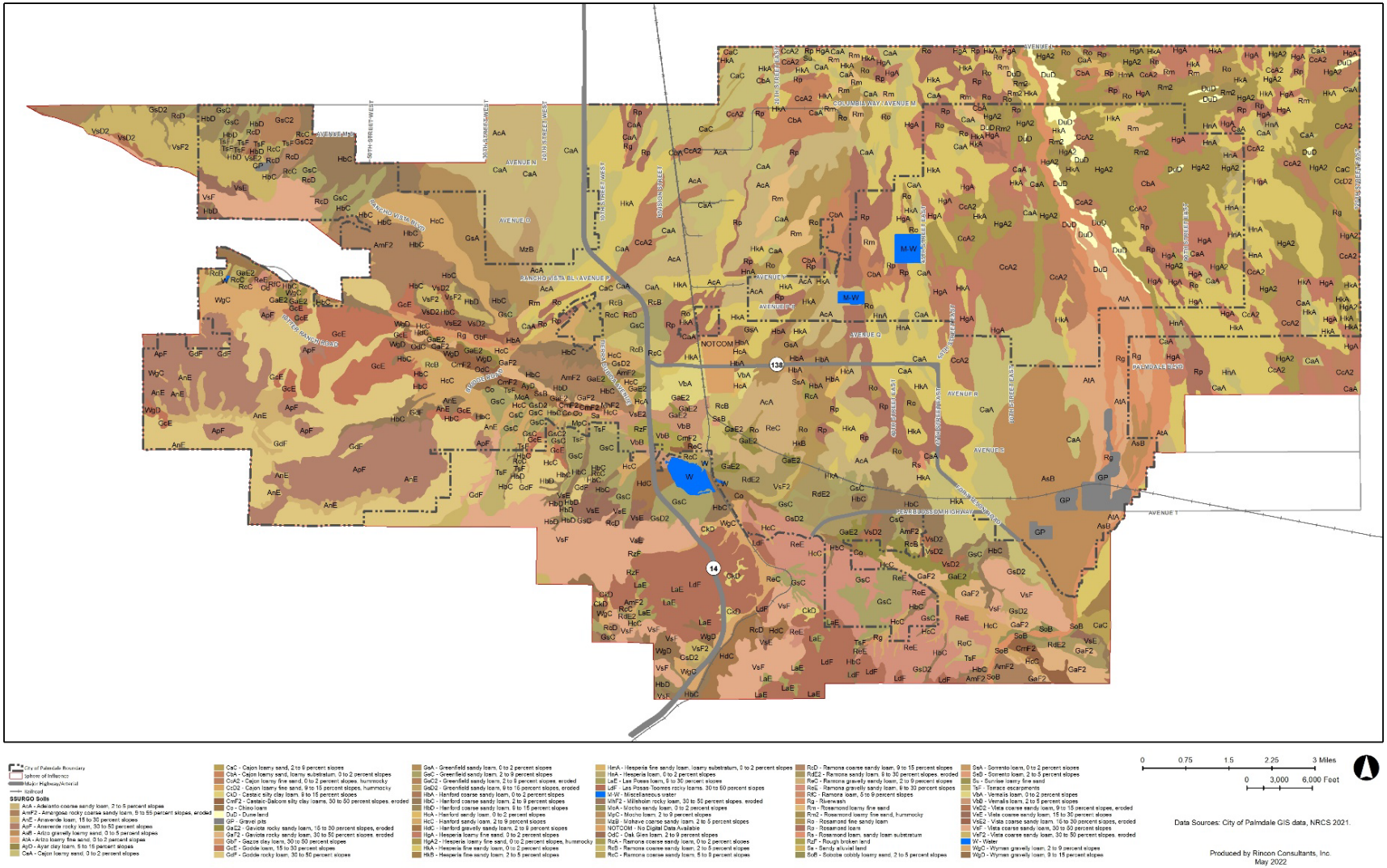


Figure 4.7-2 Soil Types in Palmdale



c. Seismic Setting

Faults generally produce damage in two ways: surface rupture and seismically induced ground shaking. Surface rupture is limited to areas very near the fault, while ground shaking can affect a wide area.

The U.S. Geological Survey defines active faults as those that have had surface displacement in Holocene time (about the last 11,000 years). Surface displacement can be recognized by the existence of cliffs in alluvium, terraces, offset stream courses, fault troughs and saddles, the alignment of depressions, sag ponds, and the existence of steep mountain fronts. Potentially active faults are those that have had surface displacement during the last 1.6 million years.

A map of faults closest to the Planning Area is shown in Figure 4.7-3. The San Andreas Fault Zone traverses the southwest portion of the City and crosses State Route 14 (SR-14). The San Andreas Fault is an active fault and is included as a special seismic zone established by the Alquist-Priolo Special Studies Zones Act of 1972. The San Andreas Fault is expected to be the source of major earthquakes within the next 30 years with a Richter magnitude exceeding 8.0. Other faults in the region, but outside the Planning Area capable of producing ground shaking, which could impact Palmdale include the Sierra Madre-San Fernando, Garlock, Owens Valley, and White Wolf faults. In addition to known faults, there are potentially additional faults below the surface that have not yet been charted (Palmdale 2016). Seismic activity from other nearby faults could also cause substantial damage from ground shaking in the event of a major earthquake.

The level of impact resulting from any seismic activity will depend on factors such as distance from epicenter, earthquake magnitude, and characteristics of soils and subsurface geology.

d. Seismic and Soil-Related Hazards

As described above, faults generally produce damage in two ways: ground shaking and surface rupture. Seismically induced ground shaking covers a wide area and is greatly influenced by the distance of the site to the seismic source, soil conditions, and depth to groundwater. Surface rupture is limited to very near the fault. Other hazards associated with seismically induced ground shaking include earthquake-triggered landslides, seiches, and tsunamis. Tsunamis and seiches are associated with ocean surges and inland water bodies, respectively. Soil related hazards include expansive soils, subsidence, settlement, liquefaction, and landslides. Figure 4.7-4 depicts liquefaction seismic hazard zones near the City of Palmdale, as delineated by the California Department of Conservation. These types of hazards and the areas of the City that have the potential for such failure are discussed on the following pages.

Figure 4.7-3 Fault Map of Palmdale

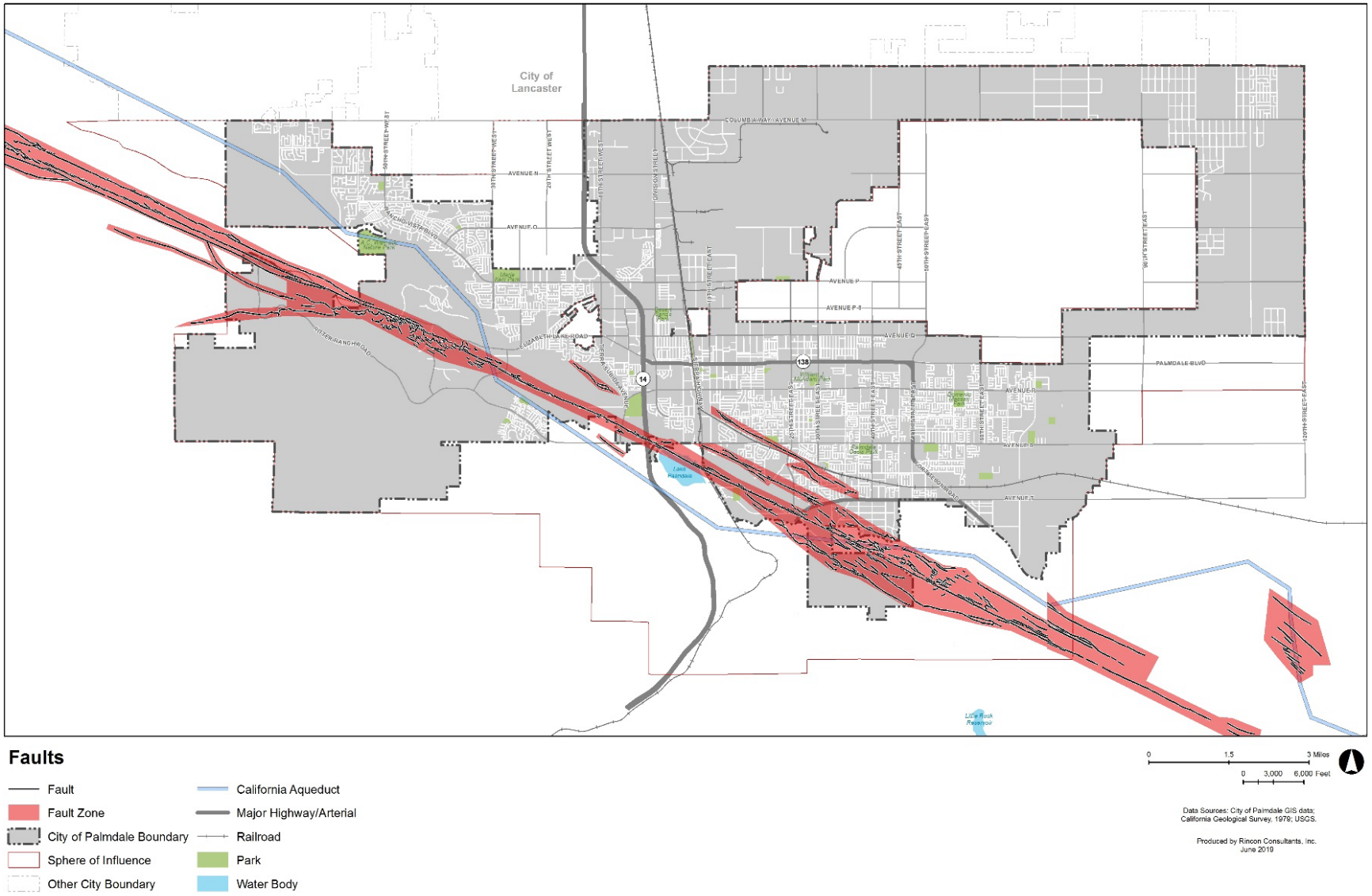


Figure 4.7-4 Slope Map of Palmdale

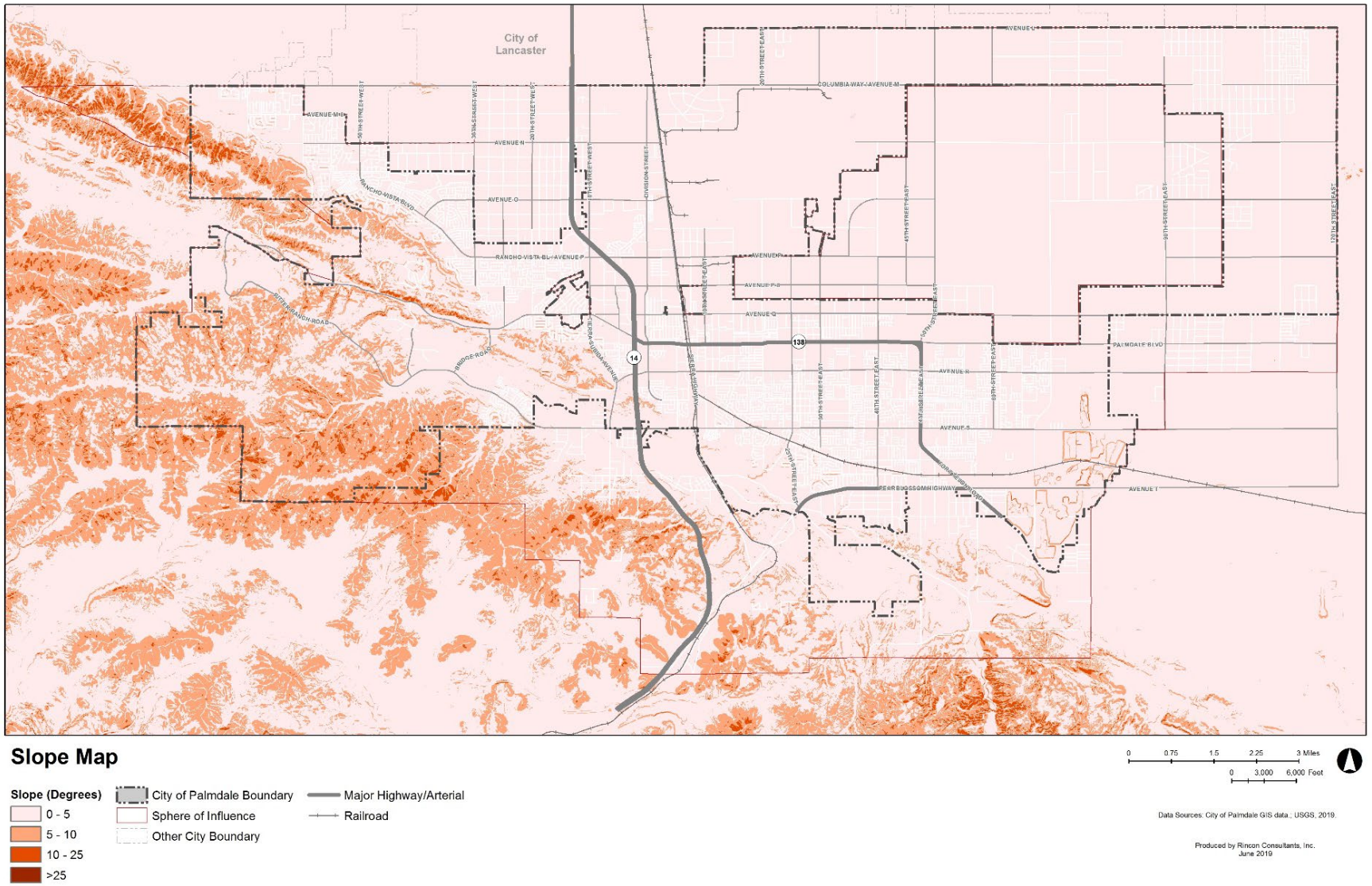
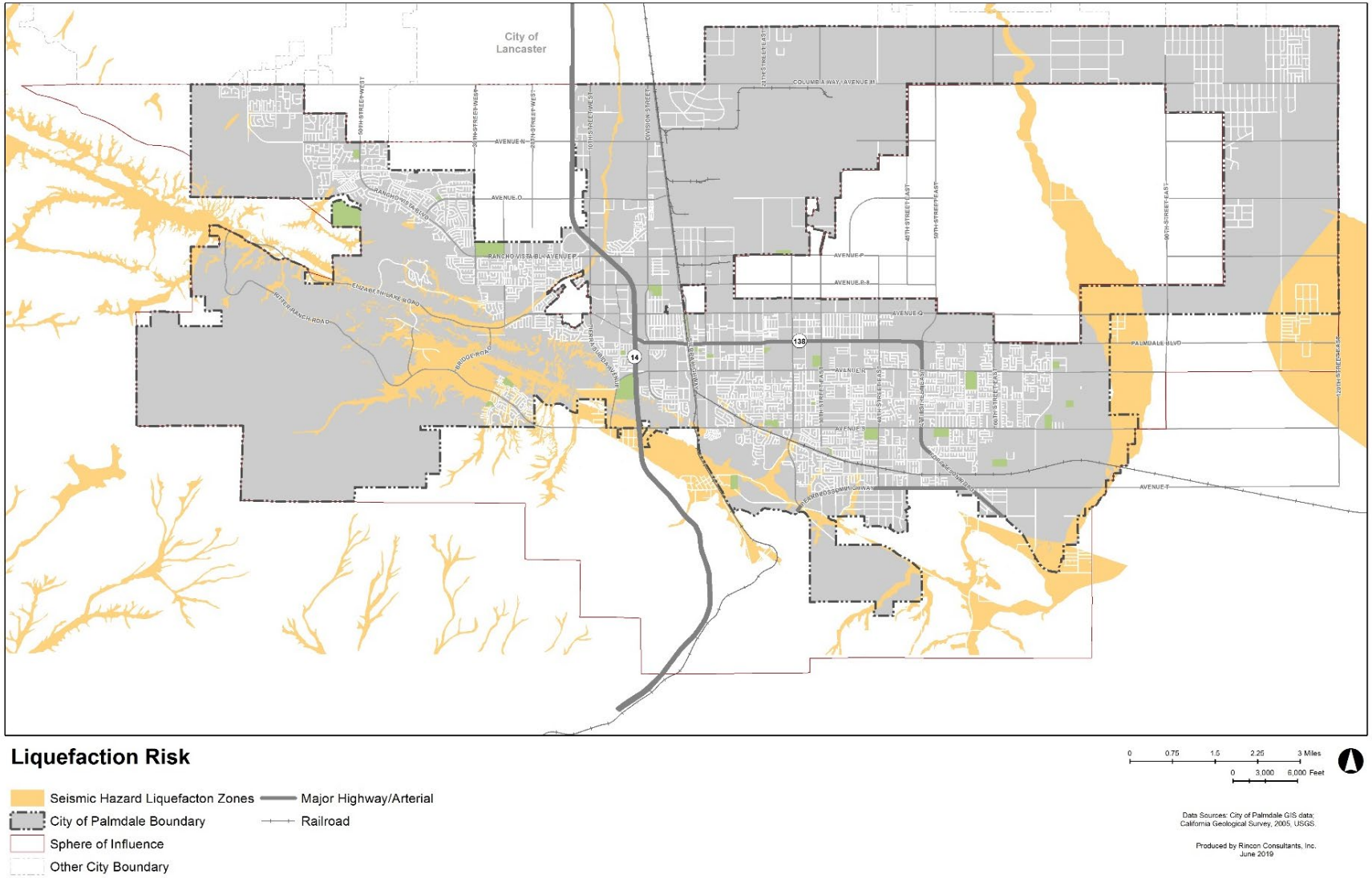


Figure 4.7-5 Liquefaction Hazard Zones of Palmdale



Seismically Induced Ground-Shaking

The potential severity of ground shaking during an earthquake depends on a variety of factors. Seismic zones are used to describe an area where earthquakes tend to focus. The Planning Area is located in Seismic Zone 4, meaning that there is a one in 10 chance that an earthquake with an active peak acceleration level of 0.4g will occur within 50 years. A region's susceptibility to the highest potential levels of seismic shaking are generally those areas closest to the active earthquake-generating faults and areas underlain by thick unconsolidated deposits, particularly soft, saturated mud and fill. Seismic ground-shaking could be experienced in the Planning Area due to seismic activity along the San Andreas Fault and other faults in southern California, depending upon the location of the earthquake epicenter and the character and duration of the seismic event. Specific effects of a seismic event on the Planning Area would depend upon characteristics of the underlying soil and rock, as well as the building materials and techniques used in construction. Soil types in the Planning Area are shown in Figure 4.7-2.

Liquefaction

Liquefaction is defined as the sudden loss of soil strength due to a rapid increase in soil pore water pressures resulting from seismic ground shaking. Liquefaction potential is dependent on such factors as soil type, depth to ground water, degree of seismic shaking, and the relative density of the soil. During ground shaking, the alluvial grains are packed into a tighter configuration. Pore water is squeezed from between the grains, thereby increasing the pore pressure. As the pore pressure increases, the load bearing strength of the material decreases. When liquefaction of the soil occurs, buildings and other objects on the ground surface may tilt or sink, and lightweight buried structures (such as pipelines) may float toward the ground surface. Liquefied soil may be unable to support its own weight or that of structures that could result in loss of foundation bearing or differential settlement. As a result, structures built on this material can sink into the alluvium, buried structures may rise to the surface or materials on sloped surfaces may run downhill. Liquefaction may also result in cracks in the ground surface followed by the emergence of a sand-water mixture. Other effects of liquefaction include lateral spread, flow failures, ground oscillations, and loss of bearing strength. There are a few liquefaction zones within the Planning Area, particularly in its southwestern portion, as well as a liquefaction zone that transverses through its eastern portion. These zones are depicted in Figure 4.7-5.

Lateral Spreading

Lateral spreading, closely related to liquefaction, occurs when a subsurface layer liquefies and gravitational and inertial forces cause the layer, and the overlying non-liquefied material, to move in a downslope direction. The potential for lateral spreading is highest in areas underlain by soft, saturated materials, especially were bordered by sloping banks or inclined planes to an adjacent open face bank or slope. A slope map of the Planning Area is shown in Figure 4.7-4

Lurching

Ground-lurching is the horizontal movement of soil, sediments, or fill located on relatively steep embankments or scarps, forming irregular ground surface cracks as a result of seismic activity. Like lateral spreading, the potential for lurching is highest in areas underlain by soft, saturated materials, especially where bordered by steep banks or adjacent hard ground. A slope map of the Planning Area is shown in Figure 4.7-4.

Tsunamis

Tsunamis occur when large areas of the submerged continental shelf or slope are rapidly displaced vertically. The Planning Area is approximately 80 miles northeast of the Pacific Ocean at an elevation of 2,655 feet above sea level.

Dam Inundation

Parts of the Planning Area are subject to potential dam inundation resulting from dam failure of the Little Rock Dam located south of the Planning Area, or the Lake Palmdale Dam located in the southwestern portion of the Planning Area. If these dams were to fail and a large release of water were to occur, the southern and eastern regions of the city would be inundated and impacts would be severe. While there is low potential for dam failure in the Planning Area, inundation would most likely be caused by a large influx in rains in combination with many other technological failures, erosion, and other factors causing flooding of the Little Rock Dam or the Palmdale Lake Dam.

Seiche

Seiches are earthquake-generated waves in enclosed or restricted bodies of water. Lake Palmdale has the potential to generate seiches during an earthquake event. However, the design report for the dam states that wave volume above the dam would not be substantial and would not result in damaging floods. Therefore, overpour on the downstream side of the dam would not cause damage by erosion because the existing rockfill was designed to withstand it. The Sheriff's Department is responsible for notification and local evacuation in the event of dam failure (Palmdale 2016).

Expansive Soils

During periods of water saturation, soils with high clay content tend to expand. Conversely, during dry periods, the soils tend to shrink. The amount of volume change depends upon the soil swell potential (amount of expansive clay in the soil), availability of water to the soil, and soil confining pressure. Soil swelling occurs when the soils containing clay become wet due to excessive water from poor surface drainage, over irrigation of lawns and planters, and sprinkler or plumbing leaks. These volume changes with moisture content can cause cracking of structures built on expansive soils. In addition, swelling clay soils can cause distress to lightly loaded structures, walks, drains, and patio slabs. As shown in Figure 4.7-2, while most of the Planning Area, especially the “desert floor” portion, in which most development is located and which would continue to be located under the Plan, is predominantly non-clayey soils. In addition, there are a few areas of clayey soils within the Planning Area. Additionally, Figure 4.7-2 shows soil types at a “macro level” scale and small areas of clayey soils may occur that are not shown on this map.

Subsidence

Subsidence is the lowering of ground surface. It often occurs as a result of withdrawal of fluids (such as water and oil), and gas, from the subsurface. When these materials are removed from the subsurface, the overburden weight, which they had previously helped support through buoyant forces, is transferred to the soil structure. Subsidence typically occurs over a long period of time and results in a number of structural impacts. Facilities most affected by subsidence are long, surface infrastructure facilities such as canals, sewers, and pipelines.

The extraction of groundwater from an aquifer beneath an alluvial valley can result in subsidence or settlement of the alluvial soils. The factors that influence the potential occurrence and severity of

alluvial soil settlement due to groundwater withdrawal include degrees of groundwater confinement; thickness of aquifer systems; individual and total thickness of fine-grained beds; and compressibility of the fine-grained layers. A very small area of land subsidence occurs in the northern region of the Planning Area as a result of groundwater pumping (USGS 2021).

Slope Stability and Landslides

Landslides result when the driving forces that act on a slope (such as the weight of the slope material, and the weight of objects placed upon it) are greater than the slope's natural resisting forces (i.e., the shear strength of the slope material). Slope instability may result from natural processes, such as the erosion of the toe of a slope by a stream, from ground shaking caused by an earthquake, or from artificial modification such as grading or addition of water or structures to a slope. Development on a slope can substantially increase the frequency and extent of potential slope stability hazards. Steep, unstable slopes in weak soil/bedrock units that have a record of previous slope failure typically characterize areas susceptible to landslides. Numerous factors affect the stability of the slope, including slope height and steepness, type of materials, material strength, structural geologic relationships, ground water level, and level of seismic shaking. Potential landslide hazard areas in the Planning Area are depicted on Figure 4.7-4. Landslide zones in the Planning Area are predominantly located west of SR-14 in the Sierra Pelona Mountains.

Erosive Soils

Soil erosion is the removal of soil by water and wind. The rate of erosion is estimated from four soil properties: texture, organic matter content, soil structure, and permeability. Other factors that influence erosion potential include the amount of rainfall and wind, the length and steepness of the slope, and the amount and type of vegetative cover. Portions of the Planning Area include hillside terrain, thus there is some erosive soil potential in these areas.

e. Paleontological Resources

Paleontology is a science dealing with the life of past geological periods as known from fossil remains. Paleontological resources in the City of Palmdale include five sedimentary rock units of high potential dating back to from 12 million to 10,000 years. These include the Punchbowl, Ana Verde, Harold Formations, the Nadeau Gravels/Pleistocene Old Alluvium, and Pleistocene Lacustrine and Fluvial Sediments. Additionally, there are five igneous and metamorphic rock units in the City with low potential to produce significant palaeontologic resources. These units include the Precambrian Pelona Schist, mesozoic metavolcanics, Mesozoic granite, quartz monzonite, and diorits. Historic paleontology records have confirmed that vertebrate paleontology localities have been recorded in the southeast corner of the Planning Area between the intersection of Pearblossom Highway and the California Aqueduct and Little Rock Wash. Furthermore, the Ana Verde formation along the San Andreas rift zone was found to be an ancient lake deposit containing fossil plants (Palmdale 1993).

4.7.2 Regulatory Setting

a. State

California Building Code

The California Building Code (CBC) is contained in the California Code of Regulations (CCR), Title 24, Part 2, which is a portion of the California Building Standards Code. Title 24 is assigned to the California Building Standards Commission, which by law is responsible for coordinating all building standards. The CBC incorporates by reference the federal Uniform Building Code with necessary California amendments. The CBC is the regulatory tool that includes building code standards to address geologic and seismic hazards. Approximately one-third of the text in the CBC has been tailored for California earthquake conditions. The Los Angeles County Building Code is based on the California Building Codes. The Planning Area, like all of southern California, is in Seismic Zone 4, the area of greatest seismic risk subject to the strictest building standards.

Alquist-Priolo Earthquake Fault Zoning Act

The Alquist-Priolo Earthquake Fault Zoning Act of 1972 was passed into law following the destructive February 9, 1971, magnitude 6.6 San Fernando earthquake. The Act provides a mechanism for reducing losses from surface fault rupture on a Statewide basis. The intent of the Act is to ensure public safety by prohibiting the siting of most structures for human occupancy across traces of active faults that constitute a potential hazard to structures from surface faulting or fault creep. The Act groups faults into active, potentially active, and inactive categories. Historic and Holocene age faults are considered active, Late Quaternary and Quaternary age faults are considered potentially active, and pre-Quaternary age faults are considered inactive.

The Alquist-Priolo Earthquake Fault Zoning Act regulates development near the surface traces of active faults to mitigate the hazard of surface fault rupture. Essentially, this Act contains two requirements: (1) it prohibits the location of most structures for human occupancy across the trace of active faults; and (2) it establishes Earthquake Fault Zones and requires geologic/seismic studies of most proposed development within 50 feet of the zone. The Earthquake Fault Zones are delineated and defined by the State Geologist and identify areas where potential surface rupture along a fault could occur.

Seismic Hazards Mapping Act

The Seismic Hazards Mapping Act (the Act) of 1990 was passed into law following the destructive October 17, 1989, magnitude 6.9 Loma Prieta earthquake. The Act directs the CGS to delineate Seismic Hazard Zones. The purpose of the Act is to reduce the threat to public health and safety and to minimize the loss of life and property by identifying and mitigating seismic hazards, such as liquefaction, landslides, amplified ground shaking, and inundation by tsunami or seiche. Cities, counties, and State agencies are directed to use seismic hazard zone maps developed by CGS in their land-use planning and permitting processes. The Act requires that site-specific geotechnical investigations be performed prior to permitting most urban development projects within seismic hazard zones. CGS maintains these required maps.

b. Local

The Palmdale General Plan, the City of Palmdale Municipal Code (PMC), and the Local Hazard Mitigation Plan (LHMP) are intended to safeguard the life, health, property, and public welfare of Palmdale and are described below.

Palmdale Hazard Mitigation Plan

The LHMP analyzes natural and manmade hazards and mitigation procedures to help protect those who reside in Palmdale. Mitigation activities include adoption of disaster resistant ordinances and regulations, habitat restoration in streams, identifying hazard-prone areas, storage of excess runoff, fuel reduction in forests, and hardening structures and facilities at risk using structural and non-structural means.

City of Palmdale Municipal Code

PMC, Chapter 8.04 contains health, safety, and technical construction codes, which include requirements for construction near a known active earthquake fault. Additionally, the PMC requires an engineering geology and/or geotechnical engineering report containing a finding regarding the safety of the building site for the proposed structure against hazard from landslide, settlement or slippage and a finding regarding the effect that the proposed building or grading construction will have on the geologic stability of property outside of the building site.

4.7.3 Impact Analysis

a. Methodology and Significance Thresholds

According to CEQA Guidelines Appendix G, impacts related to geology and soils would be potentially significant if implementation of the Plan would:

1. Directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving:
    a. Rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault
    b. Strong seismic ground shaking
    c. Seismic-related ground failure, including liquefaction; and/or
    d. Landslides
2. Result in substantial soil erosion or the loss of topsoil
3. Be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the project, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse
4. Be located on expansive soil, as defined in Table 1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property
5. Have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater
6. Directly or indirectly destroy a unique paleontological resource or site or unique geologic feature.

b. Project and Cumulative Impacts

Threshold 1.a:	Would the Plan directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving rupture of a known earthquake fault, as delineated on the most recent Alquist-Priolo Earthquake Fault Zoning Map issued by the State Geologist for the area or based on other substantial evidence of a known fault?
Threshold 1.b:	Would the Plan directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving strong seismic ground shaking?
Threshold 1.c:	Would the Plan directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving seismic-related ground failure, including liquefaction?
Threshold 1.d:	Would the Plan directly or indirectly cause potential substantial adverse effects, including the risk of loss, injury, or death involving landslides?

Impact GEO-1 FUTURE SEISMIC EVENTS COULD PRODUCE GROUND SHAKING IN THE PLANNING AREA THAT COULD DAMAGE STRUCTURES AND/OR RESULT IN ADVERSE HEALTH AND SAFETY EFFECTS. HOWEVER, WITH IMPLEMENTATION OF PLAN POLICIES AND REQUIRED COMPLIANCE WITH BUILDING CODES, IMPACTS WOULD BE LESS THAN SIGNIFICANT.

The San Andreas fault traverses the southwestern portion of the Planning Area. A major seismic event on the San Andreas Fault could cause considerable damage to critical facilities and infrastructure. Additionally, the entire southern California region is susceptible to strong ground shaking from severe earthquakes, and, development could expose people and structures to strong seismic ground shaking. Therefore, projects carried out under the Plan have the potential to be subject to strong ground shaking in the event of an earthquake at one of the abovementioned faults.

Faults generally produce damage in two ways: surface rupture and seismically induced ground shaking. Surface rupture is generally limited to areas very near the fault, while ground shaking is typically reduced to the ground motion components, wave velocity and acceleration over a wider area. The velocity, acceleration, and predominant period of groundshaking at a given site are dependent upon the distance to the fault, the magnitude of the earthquake, and the fracture mechanics of the earthquake. Groundshaking also depends on the nature of the bedrock, alluvium, and soil through which shock waves must travel. Generally, shock waves attenuate with distance from the focus of the earthquake. Since the Planning Area lies along a portion of the San Andreas Fault, the area could be subject to surface rupture and seismically induced ground shaking in the event of a seismic activity along the San Andreas Fault.

As described in Section 2.3.5 and Section 2.3.6 of this EIR, the Plan would increase the amount of development carried out in the Planning Area compared to SCAG forecasts, but the Plan's approach to future development, as described in Chapter 2 and elsewhere throughout this EIR, would not involve substantial expansion of development opportunities outside already-developed parts of the Planning Area and to what is already allowed under the City's current General Plan.

Projects carried out under the Plan would be required to be designed and constructed in accordance with state and local building codes to reduce the potential for exposure of people or structures to seismic risks to the maximum extent possible. These projects would be required to comply with the seismic safety requirements in the latest California Building Code (CBC) and the PMC. Compliance

with such requirements would reduce seismic ground shaking impacts to the maximum extent practicable with current engineering practices. Furthermore, these projects would not increase ground shaking hazards at adjacent properties.

The Safety chapter of the Plan includes the following goals and policies intended to minimize the risks associated with seismic related hazards:

- **Goal SE-1: A city with minimal public health, safety, and welfare impacts resulting from seismic hazards.**
  - **Policy SE-1.2: California Building Code.** Require appropriate structural setbacks from active fault rupture traces in accordance with Alquist-Priolo standards and continue to follow California Building Code.
  - **Policy SE-1.3: Utility Lines Design.** Design utility lines crossing active fault traces to withstand the expected movement of the earth in these locations. Utility lines as defined here include, but are not to be limited to, electricity, water, internet, natural gas, and sewer.
  - **Policy SE-1.5: Local Hazard Mitigation Plan.** Implement the policies and mitigation strategies outlined within the Palmdale Local Hazard Mitigation Plan.
- **Goal SE-4: Minimize damage from catastrophic failure of infrastructure.**
  - **Policy SE-4.1: Evaluate inundation hazards.** As appropriate, evaluate inundation hazards related to the potential rupture of the California Aqueduct or failure of the Palmdale or Littlerock dams or location of proposed basins when reviewing development proposals.
- **Goal SE-7: Ensure safe evacuation of residents in the event of an emergency requiring evacuation.**
  - **Policy SE-7.1: Maintain Emergency Evacuation Map.** Maintain and, as necessary, update a map of designated emergency evacuation routes for various types of disasters (e.g., earthquake, wildfire, hazardous material release, dam failure) and disaster scenarios.
  - **Policy SE-7.2: Evacuation Route Information.** Make information regarding emergency evacuation routes readily available to all city residents.
  - **Policy SE-7.3: Review Development Consistency.** Review all new development for consistency with applicable evacuation plans and ensure access to at least two evacuation routes.
  - **Policy SE-7.4: Emergency Evacuation Evaluation.** Continue to evaluate evacuation route capacity, safety, and viability under a range of emergency scenarios.

Implementation of the policies above would serve to reduce the environmental impacts associated with earthquake zone faults and seismic shaking hazards. Through implementation of these policies, and for all the other reasons discussed above, this impact would be less than significant, and no mitigation is required.

Mitigation Measures

No mitigation measures are required.

Threshold 2:	Would implementation of the Plan result in substantial soil erosion or the loss of topsoil?

Impact GEO-2 THE PLAN WOULD NOT RESULT IN SUBSTANTIAL SOIL EROSION OR LOSS OF TOPSOIL. IMPACTS WOULD BE LESS THAN SIGNIFICANT.

While foothill areas within and adjacent to the Planning Area contain significant slopes, the majority of the Planning Area is relatively flat terrain with no significant hillside areas or slopes. However, the area west of SR-14, in the Sierra Pelona Mountains, contains landslide zones.

Development associated under the proposed Plan may include earthwork activities that could expose soils to the effects of erosion or loss of topsoil. Once disturbed, soils, if not managed appropriately are left exposed to the effects of wind and water. Though no specific developments are being proposed under the Plan, implementation of the proposed Plan has the potential to expand the City's residential and commercial and Industrial development. As a result, excavation, grading, construction activities, and site preparation for future development may result in the removal of topsoil or disturb and potentially expose underlying soils to wind and water erosion. Poorly designed projects may also potentially destabilize buildings or roadway foundations due to long-term soil erosion and loss of underlying supporting soils. Future development may also include paving and other site improvements that could increase amounts of impervious surfaces and result in higher levels of urban runoff. Generally, construction activities on more than one acre are subject to the National Pollutant Discharge Elimination System (NPDES) permit. As a requirement under the NPDES permit, all such development activities have to follow best management practices that reduce soil erosion, loss of topsoil, and pollution of waterways. In addition, earthwork and ground-disturbing activities typically require grading permits, compliance with which minimizes erosion. Once construction is complete and exposed areas are revegetated or covered by buildings, asphalt, or concrete, the erosion hazard is substantially eliminated or reduced.

The City of Palmdale follows the California Building Code and has also established geologic and geotechnical policies and codes to review geologic and geotechnical studies for future projects. These policies and codes include the preparation of geological and geotechnical reports when deemed necessary for the safety of the site by building officials. All geotechnical studies must also be reviewed and approved by the City. Additionally, the City has also established the Palmdale Building Code to provide minimum standards to preserve the public peace, health and safety by regulating the design, construction, quality of materials, use, occupancy, location and maintenance of all buildings, structures, grading and certain equipment as specifically set forth herein. Furthermore, work requiring a building or grading permit is not permitted in an area determined by the Building Official or City Engineer to be subject to hazard from landslide, settlement or slippage. Geological hazards from future development under the Plan has the potential to include hazards such as those from loose debris, slope wash and the potential for mudflows from natural slopes or graded slopes. As such, the City will continue to ensure that the landslide hazards are analyzed, and that appropriate recommendations and remedial measures are implemented. Impacts would therefore be less than significant.

Mitigation Measures

No mitigation measures are required.

Threshold 3:	Would the projects carried out under the Plan be located on a geologic unit or soil that is unstable, or that would become unstable as a result of the Plan, and potentially result in on- or off-site landslide, lateral spreading, subsidence, liquefaction, or collapse?

Impact GEO-3 FUTURE SEISMIC EVENTS ARE UNLIKELY TO RESULT IN LIQUEFACTION AND LATERAL SPREADING OF SOILS IN THE PLANNING AREA. ADDITIONALLY, DEVELOPMENT IN THE PLANNING AREA WOULD BE SUBJECT TO COMPLIANCE WITH APPLICABLE BUILDING CODES. IMPACTS WOULD BE LESS THAN SIGNIFICANT.

The Planning Area contains landslide zones on steep slopes (see Figure 4.7-4) and liquefaction zones (see Figure 4.7-5), but these areas cover a very small portion of the west and northwest of the Planning Area (LHMP 2016). These areas also tend not to be in areas that are currently developed or would be developed under the Plan. Additionally, any future structures that would be built on steep slopes could be exposed to an existing risk of landslide or if improperly constructed could exacerbate existing landslide conditions. However, all future development would be subject to the City's codes and requirements relative to geotechnical impacts. Though future development projects carried out under the Plan could be subject to structural damage, all new development would have to be constructed in compliance with California Building Code engineering design and construction measures. Foundations and other structural support features would be designed to resist or absorb damaging forces from strong ground shaking and liquefaction. Additionally, PMC, Chapter 8.04 of the requires an engineering geology and/or geotechnical engineering report, when the Building Official determines that these reports are essential for the evaluation of the safety of the site. Geotechnical reports must contain findings regarding the safety of the building site for the proposed structure against hazard from landslide, settlement or slippage and findings regarding the effect that the proposed building or grading construction will have on the geologic stability of property outside of the building site. Furthermore, new development facilitated by the Plan would be required to comply with the following policies from the Safety Element:

- **Goal SE-1: A city with minimal public health, safety, and welfare impacts resulting from seismic hazards.**
  - **Policy SE-1.2: California Building Code.** Require appropriate structural setbacks from active fault rupture traces in accordance with Alquist-Priolo standards and continue to follow California Building Code.
  - **Policy SE-1.3: Utility Lines Design.** Design utility lines crossing active fault traces to withstand the expected movement of the earth in these locations. Utility lines as defined here include, but are not to be limited to, electricity, water, internet, natural gas, and sewer.
  - **Policy SE-1.5: Local Hazard Mitigation Plan.** Implement the policies and mitigation strategies outlined within the Palmdale Local Hazard Mitigation Plan.

Compliance with the California Building code, the PMC, and applicable Plan policies would reduce impacts to less than significant.

Mitigation Measures

Mitigation beyond compliance with applicable Plan policies, provisions of the applicable building codes, and PMC is not required.

Threshold 4:	Would projects carried out under the Plan be located on expansive soil, as defined in Table 1-B of the Uniform Building Code (1994), creating substantial direct or indirect risks to life or property?

Impact GEO-4 DEVELOPMENT CARRIED OUT UNDER THE PLAN MAY RESULT IN THE CONSTRUCTION OF STRUCTURES ON EXPANSIVE SOILS THAT COULD CREATE A SUBSTANTIAL RISK TO LIFE OR PROPERTY. HOWEVER, ALL NEW DEVELOPMENT WOULD BE REQUIRED TO COMPLY WITH THE STANDARDS OF THE CBC, WHICH WOULD ENSURE THAT EXPANSIVE SOILS ARE REMEDIATED OR THAT FOUNDATIONS AND STRUCTURES ARE ENGINEERED TO WITHSTAND THE FORCES OF EXPANSIVE SOIL. COMPLIANCE WITH THE REQUIREMENTS OF THE CBC WOULD REDUCE THIS IMPACT TO A LESS THAN SIGNIFICANT LEVEL.

As discussed under section 4.7.1, *Environmental Setting*, expansive soils could potentially be encountered throughout the Planning Area. However, Figure 4.7-2 shows that the majority of the Planning Area consists of soils that have little (less than 50%) or no swelling potential. New development under the Plan would be concentrated on the central and southeastern portion of the City. Future development projects that may be constructed on expansive soils could be subject to damage or could become unstable when the underlying soil shrinks or swells. Soils with high clay content have the highest potential for shrink-swell. The California Building Code includes requirements to address soil-related hazards. Typical measures to treat hazardous soil conditions involve removal, proper fill selection, and compaction. In cases where soil remediation is not feasible, the California Building Code requires structural reinforcement of foundations to resist the forces of expansive soils. Compliance with the requirements of the California Building Code would reduce impacts related to expansive soils to a less than significant level.

Mitigation Measures

No mitigation measures are required.

Threshold 5:	Would projects carried out under the Plan have soils incapable of adequately supporting the use of septic tanks or alternative wastewater disposal systems where sewers are not available for the disposal of wastewater?

Impact GEO-5 PROJECTS CARRIED OUT UNDER THE PLAN WOULD NOT INCLUDE THE USE OF SEPTIC TANKS OR ALTERNATIVE WASTEWATER SYSTEMS; THEREFORE, THERE WOULD BE NO IMPACT RELATED TO SOIL STABILITY FOR WASTEWATER SYSTEMS.

Development carried out under the Plan would connect to the City's existing wastewater system. In accordance with PMC Section 13.08.020, development located within 200 feet of public sewers is required to connect to public sewers. Development carried out under the Plan would be focused in areas containing existing development. New development would therefore have access to existing public sewers and would be required to connect with existing wastewater systems under PMC Section 13.08.020. Development carried out under the Plan would therefore connect to existing public sewers and would not require the addition of septic tanks. The Plan would not include the use of septic tanks or alternative wastewater systems, therefore there would be no impact related to soil stability for wastewater systems.

Mitigation Measures

None required beyond compliance with applicable Plan policies.

Threshold 6:	Would projects carried out under the Plan directly or indirectly destroy a unique paleontological resource or site or unique geologic feature?

Impact GEO-6 IMPACTS TO UNIQUE PALEONTOLOGICAL RESOURCES OR UNIQUE GEOLOGICAL FEATURES WOULD BE LESS THAN SIGNIFICANT WITH MITIGATION.

Paleontological resources may be present in fossil-bearing sediments and geologic units either at or below the ground surface. Ground-disturbing activities in geologic units with high paleontological sensitivity have the potential to damage or destroy paleontological resources that may be present. Therefore, activities resulting from implementation of the proposed Plan, including construction-related and earth-disturbing actions, could damage or destroy fossils in these geologic units resulting in a significant impact.

Effects on paleontological resources are only knowable once a specific project has been proposed because the effects are highly dependent on both the individual project site conditions (in this case, the geologic setting) and the characteristics of the proposed ground disturbing activities. Ground-disturbing activities associated with development would occur particularly in areas that have not previously been developed, have not been studied through a paleontological resource's investigation, or when excavation depths exceed those previously attained. Such future development projects have the potential to damage or destroy paleontological resources that may be present on or below the ground surface. To ensure that development within the Planning Area does not have a detrimental effect on paleontological resources, each project would need to be assessed for geology and soils impacts prior to project approval.

The City of Palmdale has does not currently have a Historical Preservation Ordinance but does have goals and policies in place to protect paleontological and geological resources. New development under the Plan would be required to follow the following goal and policies from the Conservation Element to minimize impacts to paleontological resources or geologic features:

- **Goal CON-8: Protect historical and culturally significant resources, which contribute to the community's sense of history**.
  - **Policy CON-8.1: Historic landmark identification.** Identify and recognize historic landmarks from Palmdale's past.
  - **Policy CON-8.4: Preservation in new development.** Require that new development preserve significant historic, paleontological, or archaeological resources.
  - **Policy CON-8.5: Tribal consultation**. Conduct Native American consultation consistent with the applicable regulations when new development is proposed in potentially culturally sensitive areas.
  - **Policy CON-8.6: Discovery coordination with Tribal groups.** When human remains suspected to be of Native American origin are discovered, coordinate with the Native American Heritage Commission and any local Native American groups to determine the most appropriate course of action.
  - **Policy CON-8.7: Cooperation with preservation entities**. Cooperate with private and public entities whose goals are to protect and preserve historic landmarks and important cultural resources.

Compliance with the Plan policies would reduce the potential for projects carried out under the Plan to have a substantial impact on unique paleontological resources or sites or unique geologic features. Still, there would be potential for development under the Plan to adversely impact

paleontological resources through construction-related and earth-disturbing activities and Mitigation Measure GEO-1 would be required to reduce impacts.

Mitigation Measures

GEO-1 Unanticipated Discovery of Paleontological Resources

If paleontological resources are encountered during ground-disturbing activities, work within 60 feet shall be halted and the project paleontologist shall immediately evaluate the find. If necessary, the evaluation may require preparation of a treatment plan and paleontological testing. If the discovery proves to be significant under CEQA and cannot be avoided by the project, additional work may be warranted, such as data recovery excavation, to mitigate any significant impacts to historical resources. Any reports required to document and/or evaluate unanticipated discoveries shall be submitted to the City of Palmdale for review and approval. Recommendations contained therein shall be implemented throughout the remainder of ground disturbance activities.

Significance After Mitigation

Implementation of Mitigation Measure GEO-1 would reduce impacts to paleontological resources to less than significant levels by ensuring the avoidance of paleontological resources to the extent feasible, or by identifying, evaluating, and conducting data recovery paleontological resources that may be impacted by future projects in a timely manner.

4.7.4 Cumulative Impacts

By its nature, a general plan considers cumulative impacts insofar as it considers cumulative development that could occur within a jurisdiction's planning area. Therefore, the analysis of Plan impacts also constitutes the cumulative analysis. Exposure to geologic hazards is site-specific. For example, development on one property would not increase exposure to hazards such as fault rupture and seismic shaking on another property, and therefore there would be no potential for cumulative impacts. Potential impacts to paleontological resources are also site-specific. Other hazards discussed in this chapter, such as soil erosion or loss of topsoil, are more cumulative in nature. For example, development on multiple properties in a watershed may combine to create a cumulative impact related to increased runoff and erosion from impervious surfaces. As discussed in this impact analysis, projects carried out under the Plan may increase the potential for runoff, soil erosion or unstable soils, but implementation of the policies and actions contained in the Plan, combined with compliance with existing laws, regulations, and Mitigation Measure GEO-1, would reduce project-level impacts to a less than significant level. For all the reasons discussed above, the Plan would not make a substantial contribution to cumulative geology and soils and impacts would be less than cumulatively significant/cumulatively less than significant.

This page intentionally left blank.

4.8 Greenhouse Gas Emissions

This section analyzes the potential impacts of the Plan related to greenhouse gas (GHG) emissions and climate change. This analysis herein is based partially on the growth forecasts as described in Section 2, *Project Description*, as well as transportation modeling and vehicle miles traveled (VMT) data provided by Traffic Report prepared by Parsons in February 2022 (Appendix D.)

4.8.1 Environmental Setting

a. The Greenhouse Effect and Greenhouse Gases

Climate change is the observed increase in the average temperature of the Earth's atmosphere and oceans along with other substantial changes in climate (such as wind patterns, precipitation, and storms) over an extended period. The term "climate change" is often used interchangeably with the term "global warming," but climate change is preferred because it conveys other changes are happening in addition to rising temperatures. The baseline against which these changes are measured originates in historical records that identify temperature changes that occurred in the past, such as during previous ice ages. The global climate is changing continuously, as evidenced in the geologic record, which indicates repeated episodes of substantial warming and cooling. The rate of change has typically been incremental, with warming or cooling trends occurring over the course of thousands of years. The past 10,000 years have been marked by a period of incremental warming, as glaciers have steadily retreated across the globe. However, scientists have observed acceleration in the rate of warming over the past 150 years. The United Nations Intergovernmental Panel on Climate Change (IPCC) expressed that the rise and continued growth of atmospheric CO_2 concentrations is unequivocally due to human activities in the IPCC's Sixth Assessment Report (2021). Human influence has warmed the atmosphere, ocean, and land, which has led the climate to warm at an unprecedented rate in the last 2,000 years. It is estimated that between the period of 1850 through 2019, that a total of 2,390 gigatons of anthropogenic CO_2 was emitted. It is likely that anthropogenic activities have increased the global surface temperature by approximately 1.07 degrees Celsius (°C) between the years 2010 through 2019 (IPCC 2021). Emissions resulting from human activities are thereby contributing to an average increase in the temperature of Earth.

Gases that absorb and re-emit infrared radiation in the atmosphere are called GHGs. The gases widely seen as the principal contributors to human-induced climate change include carbon dioxide (CO_2), methane (CH_4), nitrous oxides (N_2O), fluorinated gases such as hydrofluorocarbons (HFCs) and perfluorocarbons (PFCs), and sulfur hexafluoride (SF_6). Water vapor is excluded from the list of GHGs because it is short-lived in the atmosphere, and natural processes, such as oceanic evaporation, largely determine its atmospheric concentrations.

GHGs are emitted by natural processes and human activities. Of these gases, CO_2 and CH_4 are emitted in the greatest quantities from human activities. Emissions of CO_2 are usually by-products of fossil fuel combustion, and CH_4 results from off-gassing associated with agricultural practices and landfills. Human-made GHGs, many of which have greater heat-absorption potential than CO_2, include fluorinated gases and SF_6 (USEPA 2022a).

Different types of GHGs have varying global warming potentials (GWP). The GWP of a GHG is the potential of a gas or aerosol to trap heat in the atmosphere over a specified timescale (generally, 100 years). Because GHGs absorb different amounts of heat, a common reference gas (CO_2) is used to relate the amount of heat absorbed to the amount of the gas emitted, referred to as "carbon

dioxide equivalent" (CO_2e), which is the amount of GHG emitted multiplied by its GWP. Carbon dioxide has a 100-year GWP of one. By contrast, methane has a GWP of 30, meaning its global warming effect is 30 times greater than CO_2 on a molecule per molecule basis (IPCC 2021).[1]

The accumulation of GHGs in the atmosphere regulates the earth's temperature. Without the natural heat-trapping effect of GHGs, the earth's surface would be about 33 degrees °C cooler (World Meteorological Organization 2020). However, since 1750, estimated concentrations of CO_2, CH_4, and N_2O in the atmosphere have increased by 47 percent, 156 percent, and 23 percent, respectively, primarily due to human activity (IPCC 2021). GHG emissions from human activities, particularly the consumption of fossil fuels for electricity production and transportation, are believed to have elevated the concentration of these gases in the atmosphere beyond the level of concentrations that occur naturally.

b. Greenhouse Gas Emissions Inventory

In 2015, worldwide anthropogenic GHG emissions totaled 47,000 billion MT of CO_2e, which is a 43 percent increase from 1990 GHG levels (USEPA 2022b). Specifically, 34,522 million metric tons (MMT) of CO_2e of CO_2, 8,241 MMT of CO_2e of CH_4, 2,997 MMT of CO_2e of N_2O, and 1,001 MMT of CO_2e of fluorinated gases were emitted in 2015. The largest source of GHG emissions were energy production and use (includes fuels used by vehicles and buildings), which accounted for 75 percent of global GHG emissions. Agriculture uses and industrial processes contributed 12 percent and six percent, respectively. Waste sources contributed for three percent and two percent was due to international transportation sources. These sources account for approximately 98 percent because there was a net sink of two percent from land-use change and forestry (USEPA 2022b).

United States Emissions Inventory

Total U.S. GHG emissions were 6,558 MMT of CO_2e in 2019. Emissions decreased by 1.7 percent from 2018 to 2019; since 1990, total U.S. emissions have increased by an average annual rate of 0.06 percent for a total increase of 1.8 percent between 1990 and 2019 (USEPA 2021). The decrease from 2018 to 2019 reflects the combined influences of several long-term trends, including population changes, economic growth, energy market shifts, technological changes such as improvements in energy efficiency, and decreased carbon intensity of energy fuel choices. In 2019, the industrial and transportation end-use sectors accounted for 30 percent and 29 percent, respectively, of nationwide GHG emissions while the commercial and residential end-use sectors accounted for 16 percent and 15 percent of nationwide GHG emissions, respectively, with electricity emissions distributed among the various sectors (USEPA 2021).

California Emissions Inventory

Based on the CARB California Greenhouse Gas Inventory for 2000-2019, California produced 418.2 MMT of CO_2e in 2019, which is 7.2 MMT of CO_2e lower than 2018 levels. The major source of GHG emissions in California is the transportation sector, which comprises 40 percent of the state's total GHG emissions. The industrial sector is the second largest source, comprising 21 percent of the state's GHG emissions while electric power accounts for approximately 14 percent (CARB 2021). The magnitude of California's total GHG emissions is due in part to its large size and large population compared to other states. However, a factor that reduces California's per capita fuel use and GHG

[1] The Intergovernmental Panel on Climate Change's (2021) *Sixth Assessment Report* determined that methane has a GWP of 30. However, the 2017 Climate Change Scoping Plan published by the California Air Resources Board uses a GWP of 25 for methane, consistent with the Intergovernmental Panel on Climate Change's (2007) *Fourth Assessment Report*. Therefore, this analysis utilizes a GWP of 25.

emissions as compared to other states is its relatively mild climate. In 2016, the State of California achieved its 2020 GHG emission reduction target of reducing emissions to 1990 levels as emissions fell below 431 MMT of CO_2e (CARB 2021). The annual 2030 statewide target emissions level is 260 MMT of CO_2e (CARB 2017).

Local Emissions Inventory

The City of Palmdale prepared a GHG inventory for the City using 2017 as its baseline year (City of Palmdale 2020). Community wide emissions totaled 1,042,248 MT CO_2e in 2017. Table 4.8-1 summarizes the results of the 2017 GHG inventory. On-road transportation was the major source accounting for 59 percent of the total, largely due to passenger vehicles.

Table 4.8-1 Palmdale Community Energy Consumption by Sector 2017

Community Sector	Subsector	Subsector ($MTCO_2e$)	Sector ($MTCO_2e$)	Percent of Total
Transportation	On-Road Transportation	615,601	615,601	59%
Nonresidential Energy	Electricity	119,700	162,010	16%
	Natural Gas	42,310		
Residential Energy	Electricity	90,470	197,650	19%
	Natural Gas	107,080		
Water	Water Use	27,900	27,900	3%
Solid Waste	Landfilled Waste	30,490	30,490	3%
Off-Road	Lawn and Garden Equipment	1	681	1%
	Construction Equipment	680		
Total		**1,042,248**		**100%**

*Totals may not add directly due to rounding

Source (City of Palmdale 2020)

c. Potential Effects of Climate Change

Globally, climate change has the potential to affect numerous environmental resources though impacts related to future air temperatures and precipitation patterns. Scientific modeling predicts that continued GHG emissions at or above current rates would induce more extreme climate changes during the 21st century than were observed during the 20th century. Each of the past three decades has been warmer than all previous decades in the instrumental record, and the years 2013–2021 all rank among the 10 warmest years on record. The global annual temperature has increased at an average rate of 0.08°C (0.14 degrees Fahrenheit [°F]) per decade since 1880 and over twice that rate (0.18°C / 0.32°F) since 1981. (National Oceanic and Atmospheric Administration 2022). Furthermore, several independently analyzed data records of global and regional Land-Surface Air Temperature (LSAT) obtained from station observations jointly indicate that LSAT and sea surface temperatures have increased.

According to *California's Fourth Climate Change Assessment*, statewide temperatures from 1986 to 2016 were approximately 0.6 to 1.1°C higher than those recorded from 1901 to 1960. Potential impacts of climate change in California may include reduced water supply from snowpack, sea level rise, more extreme heat days per year, more large forest fires, and more drought years (State of California 2018). In addition to statewide projections, *California's Fourth Climate Change*

Assessment includes regional reports that summarize climate impacts and adaptation solutions for nine regions of the state and regionally specific climate change case studies (State of California 2018). However, while there is growing scientific consensus about the possible effects of climate change at a global and statewide level, current scientific modeling tools are unable to predict what local impacts may occur with a similar degree of accuracy. The following information summarizes some of the potential effects that could be experienced in California as a result of climate change.

Air Quality

Scientists project that the annual average maximum daily temperatures in California could rise by 2.4 to 3.2°C in the next 50 years and by 3.1 to 4.9°C in the next century (State of California 2018). Higher temperatures are conducive to air pollution formation, and rising temperatures could therefore result in worsened air quality in California. As a result, climate change may increase the concentration of ground-level ozone, but the magnitude of the effect, and therefore its indirect effects, are uncertain. In addition, as temperatures have increased in recent years, the area burned by wildfires throughout the state has increased, and wildfires have occurred at higher elevations in the Sierra Nevada Mountains (State of California 2018). If higher temperatures continue to be accompanied by an increase in the incidence and extent of large wildfires, air quality could worsen. Severe heat accompanied by drier conditions and poor air quality could increase the number of heat-related deaths, illnesses, and asthma attacks throughout the state. With increasing temperatures, shifting weather patterns, longer dry seasons, and more dry fuel loads, the frequency of large wildfires and area burned is expected to increase (California Natural Resources Agency 2021).

Water Supply

Analysis of paleoclimatic data (such as tree-ring reconstructions of stream flow and precipitation) indicates a history of naturally and widely varying hydrologic conditions in California and the west, including a pattern of recurring and extended droughts. Uncertainty remains with respect to the overall impact of climate change on future precipitation trends and water supplies in California. Year-to-year variability in statewide precipitation levels has increased since 1980, meaning that wet and dry precipitation extremes have become more common (California Department of Water Resources 2018). This uncertainty regarding future precipitation trends complicates the analysis of future water demand, especially where the relationship between climate change and its potential effect on water demand is not well understood. The average early spring snowpack in the western U.S., including the Sierra Nevada Mountains, decreased by about 10 percent during the last century. During the same period, sea level rose over 0.15 meter along the central and southern California coasts (State of California 2018). The Sierra snowpack provides the majority of California's water supply as snow that accumulates during wet winters is released slowly during the dry months of spring and summer. A warmer climate is predicted to reduce the fraction of precipitation that falls as snow and the amount of snowfall at lower elevations, thereby reducing the total snowpack (State of California 2018). Projections indicate that average spring snowpack in the Sierra Nevada and other mountain catchments in central and northern California will decline by approximately 66 percent from its historical average by 2050 (State of California 2018).

Hydrology and Sea Level Rise

Climate change could affect the intensity and frequency of storms and flooding (State of California 2018). Furthermore, climate change could induce substantial sea level rise in the coming century.

Rising sea level increases the likelihood of and risk from flooding. The rate of increase of global mean sea levels between 1993 to 2020, observed by satellites, is approximately 100.8 millimeters (3.4 millimeters per year), double the 20th century trend of 1.6 millimeters per year (World Meteorological Organization 2013; National Aeronautics and Space Administration 2020). Global mean sea levels in 2013 were about 0.23 meter higher than those of 1880 (National Aeronautics and Space Administration 2020). Sea levels are rising faster now than in the previous two millennia, and the rise will probably accelerate, even with robust GHG emission control measures. The most recent IPCC report predicts a mean sea level rise ranging between 0.25 to 1.01 meters by 2100 with the sea level ranges dependent on a low, intermediate, or high GHG emissions scenario (IPCC 2021). A rise in sea levels could erode 31 to 67 percent of southern California beaches and cause flooding of approximately 370 miles of coastal highways during 100-year storm events. This would also jeopardize California's water supply due to saltwater intrusion and induce groundwater flooding and/or exposure of buried infrastructure (State of California 2018). Furthermore, increased storm intensity and frequency could affect the ability of flood-control facilities, including levees, to handle storm events.

Agriculture

California has an over $50 billion annual agricultural industry that produces over a third of the country's vegetables and two-thirds of the country's fruits and nuts (California Department of Food and Agriculture 2020). Higher CO_2 levels can stimulate plant production and increase plant water-use efficiency. However, if temperatures rise and drier conditions prevail, certain regions of agricultural production could experience water shortages of up to 16 percent, which would increase water demand as hotter conditions lead to the loss of soil moisture. In addition, crop yield could be threatened by water-induced stress and extreme heat waves, and plants may be susceptible to new and changing pest and disease outbreaks (State of California 2018). Temperature increases could also change the time of year certain crops, such as wine grapes, bloom or ripen, and thereby affect quality (California Climate Change Center 2006).

Ecosystems and Wildlife

Climate change and the potential resultant changes in weather patterns could have ecological effects on the global and local scales. Soil moisture is likely to decline in many regions due to higher temperatures, and intense rainstorms are likely to become more frequent. Rising temperatures could have four major impacts on plants and animals: timing of ecological events; geographic distribution and range of species; species composition and the incidence of nonnative species within communities; and ecosystem processes, such as carbon cycling and storage (Parmesan 2006; State of California 2018).

4.8.2 Regulatory Setting

The following regulations address both climate change and GHG emissions.

a. Federal Regulations

Federal Clean Air Act

The U.S. Supreme Court determined in Massachusetts et al. v. Environmental Protection Agency et al. ([2007] 549 U.S. 05-1120) that the USEPA has the authority to regulate motor vehicle GHG emissions under the federal Clean Air Act. The USEPA issued a Final Rule for mandatory reporting of

GHG emissions in October 2009. This Final Rule applies to fossil fuel suppliers, industrial gas suppliers, direct GHG emitters, and manufacturers of heavy-duty and off-road vehicles and vehicle engines and requires annual reporting of emissions. In 2012, the USEPA issued a Final Rule that established the GHG permitting thresholds that determine when Clean Air Act permits under the New Source Review Prevention of Significant Deterioration and Title V Operating Permit programs are required for new and existing industrial facilities.

In Utility Air Regulatory Group v. Environmental Protection Agency (134 Supreme Court 2427 [2014]), the U.S. Supreme Court held the USEPA may not treat GHGs as an air pollutant for purposes of determining whether a source can be considered a major source required to obtain a Prevention of Significant Deterioration or Title V permit. The Court also held that Prevention of Significant Deterioration permits otherwise required based on emissions of other pollutants may continue to require limitations on GHG emissions based on the application of Best Available Control Technology.

Safer Affordable Fuel-Efficient Vehicles Rule

On September 27, 2019, the USEPA and the National Highway Traffic Safety Administration published the Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule Part One: One National Program. The SAFE Rule Part One revokes California's authority to set its own GHG emissions standards and to adopt its own zero-emission vehicle mandates. On April 30, 2020, the USEPA and the National Highway Traffic Safety Administration published Part Two of the SAFE Vehicles Rule, which revised corporate average fuel economy and CO_2 emissions standards for passenger cars and trucks of model years 2021-2026 such that the standards increase by approximately 1.5 percent each year through model year 2026 as compared to the approximately five percent annual increase required under the 2012 standards (National Highway Traffic Safety Administration 2020). To account for the effects of the SAFE Vehicles Rule, CARB released off-model adjustment factors on June 26, 2020, to adjust GHG emissions outputs from the EMFAC model (CARB 2020a).

b. State Regulations

CARB is responsible for the coordination and oversight of state and local air pollution control programs in California. There are numerous regulations aimed at reducing the state's GHG emissions. These initiatives are summarized below.

Executive Order S-3-05

In 2005, the governor issued Executive Order (EO) S-3-05, which identifies statewide GHG emission reduction targets to achieve long-term climate stabilization as follows:

- Reduce GHG emissions to 1990 levels by 2020; and,
- Reduce GHG emissions to 80 percent below 1990 levels by 2050.

In response to EO S-3-05, CalEPA created the Climate Action Team (CAT), which in March 2006 published the Climate Action Team Report (the "2006 CAT Report") (CalEPA 2006). The 2006 CAT Report identified a recommended list of strategies that the state could pursue to reduce GHG emissions. These are strategies that could be implemented by various state agencies to ensure that the emission reduction targets in EO S-3-05 are met and can be met with existing authority of the state agencies. The strategies include the reduction of passenger and light duty truck emissions, the reduction of idling times for diesel trucks, an overhaul of shipping technology/infrastructure, increased use of alternative fuels, increased recycling, and landfill methane capture, etc.

California Global Warming Solutions Act of 2006 (Assembly Bill 32 and Senate Bill 32)

The "California Global Warming Solutions Act of 2006," (Assembly Bill [AB] 32), outlines California's major legislative initiative for reducing GHG emissions. AB 32 codifies the statewide goal of reducing GHG emissions to 1990 levels by 2020 and requires CARB to prepare a Scoping Plan that outlines the main state strategies for reducing GHG emissions to meet the 2020 deadline. In addition, AB 32 requires CARB to adopt regulations to require reporting and verification of statewide GHG emissions. Based on this guidance, CARB approved a 1990 statewide GHG level and 2020 target of 431 MMT CO_2e, which was achieved in 2016. CARB approved the Scoping Plan on December 11, 2008, which included GHG emission reduction strategies related to energy efficiency, water use, and recycling and solid waste, among others (CARB 2008). Many of the GHG reduction measures included in the Scoping Plan (e.g., Low Carbon Fuel Standard, Advanced Clean Car standards, and Cap-and-Trade) have been adopted since the Scoping Plan's approval.

The CARB approved the 2013 Scoping Plan update in May 2014. The update defined the CARB's climate change priorities for the next five years, set the groundwork to reach post-2020 statewide goals, and highlighted California's progress toward meeting the "near-term" 2020 GHG emission reduction goals defined in the original Scoping Plan. It also evaluated how to align the State's longer term GHG reduction strategies with other state policy priorities, including those for water, waste, natural resources, clean energy, transportation, and land use (CARB 2014).

On September 8, 2016, the governor signed Senate Bill (SB) 32 into law, extending the California Global Warming Solutions Act of 2006 by requiring the state to further reduce GHG emissions to 40 percent below 1990 levels by 2030 (the other provisions of AB 32 remain unchanged). On December 14, 2017, the CARB adopted the 2017 Scoping Plan, which provides a framework for achieving the 2030 target. The 2017 Scoping Plan relies on the continuation and expansion of existing policies and regulations, such as the Cap-and-Trade Program, and implementation of recently adopted policies and legislation, such as SB 1383 and SB 100 (discussed later). The 2017 Scoping Plan also puts an increased emphasis on innovation, adoption of existing technology, and strategic investment to support its strategies. As with the 2013 Scoping Plan update, the 2017 Scoping Plan does not provide project-level thresholds for land use development. Instead, it recommends that local governments adopt policies and locally appropriate quantitative thresholds consistent with statewide per capita goals of six MT CO_2e by 2030 and two MT CO_2e by 2050 (CARB 2017). As stated in the 2017 Scoping Plan, these goals may be appropriate for plan-level analyses (city, county, sub-regional, or regional level), but not for specific individual projects because they include all emissions sectors in the state (CARB 2017).

The Draft 2022 Scoping Plan Update has been prepared to assess the progress toward the 2030 target as well as to outline a plan to achieve carbon neutrality no later than 2045. The 2022 Scoping Plan Update focuses on outcomes needed to achieve carbon neutrality by assessing paths for clean technology, energy deployment, natural and working lands, and others, and is designed to meet the State's long-term climate objectives and support a range of economic, environmental, energy security, environmental justice, and public health priorities (CARB 2022).

Senate Bill 375

The Sustainable Communities and Climate Protection Act of 2008 (SB 375), signed in August 2008, enhances the State's ability to reach AB 32 goals by directing the CARB to develop regional GHG emission reduction targets to be achieved from passenger vehicles by 2020 and 2035. SB 375 aligns

regional transportation planning efforts, regional GHG reduction targets, and affordable housing allocations. Metropolitan Planning Organizations (MPOs) are required to adopt a Sustainable Communities Strategy (SCS), which allocates land uses in the MPO's Regional Transportation Plan (RTP). Qualified projects consistent with an approved SCS or Alternative Planning Strategy (categorized as "transit priority projects") can receive incentives to streamline CEQA processing.

On March 22, 2018, CARB adopted updated regional targets for reducing GHG emissions from 2005 levels by 2020 and 2035. The Southern California Association of Governments (SCAG) was assigned targets of an eight percent reduction in per capita GHG emissions from passenger vehicles by 2020[2] and a 19 percent reduction in per capita GHG emissions from passenger vehicles by 2035. In the SCAG region, SB 375 also provides the option for the coordinated development of subregional plans by the subregional councils of governments and the county transportation commissions to meet SB 375 requirements.

Senate Bill 350

Adopted on October 7, 2015, SB 350 supports the reduction of GHG emissions from the electricity sector through a number of measures, including requiring electricity providers to achieve a 50 percent renewables portfolio standard by 2030, a cumulative doubling of statewide energy efficiency savings in electricity and natural gas by retail customers by 2030.

Senate Bill 1383

Adopted in September 2016, SB 1383 requires CARB to approve and begin implementing a comprehensive strategy to reduce emissions of short-lived climate pollutants. The bill requires the strategy to achieve the following reduction targets by 2030:

- Methane – 40 percent below 2013 levels
- Hydrofluorocarbons – 40 percent below 2013 levels
- Anthropogenic black carbon – 50 percent below 2013 levels

The bill also requires the California Department of Resources Recycling and Recovery (CalRecycle), in consultation with the State board, to adopt regulations that achieve specified targets for reducing organic waste in landfills.

Senate Bill 100

Adopted on September 10, 2018, SB 100 supports the reduction of GHG emissions from the electricity sector by accelerating the state's Renewables Portfolio Standard Program, which was last updated by SB 350 in 2015. SB 100 requires electricity providers to increase procurement from eligible renewable energy resources to 33 percent of total retail sales by 2020, 60 percent by 2030, and 100 percent by 2045.

Executive Order B-55-18

On September 10, 2018, the former Governor Brown issued Executive Order (EO) B-55-18, which established a new statewide goal of achieving carbon neutrality by 2045 and maintaining net negative emissions thereafter. This goal is in addition to the existing statewide GHG reduction targets established by SB 375, SB 32, SB 1383, and SB 100.

[2] SCAG met 2020 GHG reduction but confirmation from CARB is still pending.

Executive Order N-79-20

On September 23, 2020, Governor Newsom issued Executive Order (EO) N-79-20, which established the following new statewide goals:

- All new passenger cars and trucks sold in-state to be zero-emission by 2035;
- All medium- and heavy-duty vehicles in the state to be zero-emission by 2045 for all operations where feasible and by 2035 for drayage trucks; and,
- All off-road vehicles and equipment to be zero-emission by 2035 where feasible.

EO N-79-20 directs CARB, the Governor's Office of Business and Economic Development, the CEC, the California Department of Transportation, and other state agencies to take steps toward drafting regulations and strategies and leveraging agency resources toward achieving these goals.

California Building Standards Code

The California Code of Regulations Title 24 is referred to as the California Building Standards Code. It consists of a compilation of several distinct standards and codes related to building construction including plumbing, electrical, interior acoustics, energy efficiency, and handicap accessibility for persons with physical and sensory disabilities. The current iteration is the 2019 Title 24 standards. The California Building Standards Code's energy-efficiency and green building standards are outlined below.

Part 6 – Building Energy Efficiency Standards/Energy Code

The California Code of Regulations Title 24, Part 6 is the Building Energy Efficiency Standards or California Energy Code. This code, originally enacted in 1978, establishes energy-efficiency standards for residential and non-residential buildings in order to reduce California's energy demand. New construction and major renovations must demonstrate their compliance with the current Energy Code through submittal and approval of a Title 24 Compliance Report to the local building permit review authority and the California Energy Commission (CEC). The 2019 Title 24 standards are the applicable building energy efficiency standards for the project because they became effective on January 1, 2020.

Part 11 – California Green Building Standards

The California Green Building Standards Code, referred to as CALGreen, was added to Title 24 as Part 11, first in 2009 as a voluntary code, which then became mandatory effective January 1, 2011 (as part of the 2010 California Building Standards Code). The 2019 CALGreen includes mandatory minimum environmental performance standards for all ground-up new construction of residential and non-residential structures. It also includes voluntary tiers (Tiers I and II) with stricter environmental performance standards for these same categories of residential and non-residential buildings. Local jurisdictions must enforce the minimum mandatory CALGreen standards and may adopt additional amendments for stricter requirements.

The mandatory standards require:

- 20 percent reduction in indoor water use relative to specified baseline levels;[3]
- 65 percent construction/demolition waste diverted from landfills;
- Inspections of energy systems to ensure optimal working efficiency;
- Low-pollutant emitting exterior and interior finish materials such as paints, carpets, vinyl flooring, and particleboards;
- Dedicated circuitry to facilitate installation of electric vehicle (EV) charging stations in newly constructed attached garages for single-family and duplex dwellings;
- Installation of electric vehicle charging stations at least three percent of the parking spaces for all new multi-family developments with 17 or more units; and,
- PV systems battery, storage systems, and solar ready for newly constructed residential dwellings, including single-family, and low-rise (three or fewer habitable floors) multifamily buildings.

The voluntary standards require:

- **Tier I:** stricter energy efficiency requirements, stricter water conservation requirements for specific fixtures, 65 percent reduction in construction waste with third-party verification, 10 percent recycled content for building materials, 20 percent permeable paving, and 20 percent cement reduction; and,
- **Tier II:** stricter energy efficiency requirements, stricter water conservation requirements for specific fixtures, 75 percent reduction in construction waste with third-party verification, 15 percent recycled content for building materials, 30 percent permeable paving, and 25 percent cement reduction.

California Integrated Waste Management Act (Assembly Bill 341)

The California Integrated Waste Management Act of 1989 (initially passed as AB 939), as modified by AB 341 in 2011, requires each jurisdiction's source reduction and recycling element to include an implementation schedule that shows: (1) diversion of 25 percent of all solid waste by January 1, 1995 through source reduction, recycling, and composting activities and (2) diversion of 50 percent of all solid waste on and after January 1, 2000.

c. Regional and Local Regulations

2020 - 2045 SCAG Regional Transportation Plan

On September 3, 2020, the SCAG's Regional Council formally adopted the 2020-2045 RTP/SCS entitled Connect SoCal. The 2020-2045 RTP/SCS builds upon the progress made through implementation of the 2016-2040 RTP/SCS and includes 10 goals focused on promoting economic prosperity, improving mobility, protecting the environment, and supporting healthy/complete communities. The SCS implementation strategies include focusing growth near destinations and mobility options, promoting diverse housing choices, leveraging technology innovations, and supporting implementation of sustainability policies. The SCS establishes a land use vision of center-

[3] Similar to the compliance reporting procedure for demonstrating Energy Code compliance in new buildings and major renovations, compliance with the CALGreen water reduction requirements must be demonstrated through completion of water use reporting forms. Buildings must demonstrate a 20 percent reduction in indoor water use by either showing a 20 percent reduction in the overall baseline water use as identified in CALGreen or a reduced per-plumbing-fixture water use rate.

focused placemaking, concentrating growth in and near Priority Growth Areas, transferring of development rights, urban greening, creating greenbelts and community separators, and implementing regional advance mitigation (SCAG 2020a).

City of Palmdale General Plan 2045

The City of Palmdale has established a series of goals and policies in the 2045 City of Palmdale General Plan to reduce GHG emissions and increase sustainability. The Sustainability, Climate, and Resilience chapter of the Plan serves as the Climate Action Plan (CAP) for the City of Palmdale. The City of Palmdale developed the CAP to reduce emissions and make Palmdale a more sustainable, healthier, and resilient community. Pursuant with CEQA Guidelines Section 15183.5, the CAP would meet the requirements of a qualified CAP and future residential projects developed under the Plan would be able to tier from the CAP for analysis purposes. The following CAP policies are being introduced to reduce the City's emissions in conjunction with the State reduction goals:

SUSTAINABILITY, CLIMATE ACTION, AND RESILIENCE

Maintain and Implement CAP

- **Goal SCR-1: Achieve a carbon neutral community by 2045 (EO B-55-18).**
  - **SCR-1.1 CAP Maintenance**. Maintain and regularly update a Climate Action Plan to reduce GHGs generated within the City.
  - **SCR-1.2 GHG Inventory**. Conduct community GHG inventories every 3-5 years to track progress toward achieving the City's GHG reduction goal.
  - **SCR-1.3 Funding Sources**. Seek funding to support implementation of GHG reduction projects for the City, residents, and businesses.
  - **SCR-1.4 Community Engagement**. Develop and implement comprehensive community engagement including educational outreach, issue-specific awareness campaigns, and technical assistance.

Clean Energy

- **Goal SCR-2: Utilize a fossil fuel free energy system (SB 100).**
  - **SCR-2.1 Carbon Free Energy**. Direct EPIC to provide 75% carbon-free or renewable electricity to residents and businesses by 2030, achieving 100% carbon-free electricity by 2045.
  - **SCR-2.2 Community Solar**. Explore the development of community solar projects and microgrids.
  - **SCR-2.3 Battery Permitting.** Establish a streamlined approval process for battery storage systems.

Buildings

- **Goal SCR-3: Green and decarbonized buildings for new construction and major renovations.**
  - **SCR-3.1 Energy Efficient New Construction**. Integrate CALGreen Tier 1 and Tier 2 green building and energy efficiency standards into new construction and major remodels.
  - **SCR-3.2 All-Electric Reach Code.** Consider adopting a local reach code to encourage new buildings to be all-electric.

- **SCR-3.3 Solar + Storage.** Require installation of photovoltaic panels and battery storage on all residential new construction and nonresidential new construction over 5,000 sq. ft.
- **SCR-3.4 Energy Efficient Existing Building**s. Establish an energy and water efficiency upgrade program for existing buildings, focusing resources on the most underserved populations.
- **SCR-3.4 Benchmarking Energy and Water Use.** Register municipal buildings with Energy Star Portfolio Manager and report energy and water use (AB 802).

Transportation

- **Goal SCR-4: Reduced greenhouse gas emissions from transportation (SB 379, EO N-79-20).**
  - **SCR-4.1 Bike Facilities.** Promote bicycle use with new private development projects through requirements for bicycle parking, lockers and showers, bike share facilities, and when feasible, connections to City bike lanes.
  - **SCR-4.2 Public Transit.** Expand the public transit system, increase frequency of service, and provide shade at transit stops.
  - **SCR-4.3 Public EV Chargers.** Install EV chargers at suitable public facilities, including Downtown parking structures, the future multi-modal High Speed Rail station, and community parks.
  - **SCR-4.4 EV Reach Code**. Adopt EV requirements beyond CALGreen in both number of chargers and charger capacity.
  - **SCR-4.5 ZEV Purchasing.** When purchasing City vehicles give preference to fuel efficient vehicles, including the use of zero emission vehicles.
  - **SCR-4.6 Clean Fuels.** Require use of clean fuels for City construction and maintenance vehicles and lawn/garden equipment.
  - **SCR-4.7 Pedestrian and Cyclist Safety**. Improve bicycle and pedestrian modes of travel by improving pedestrian and cyclist safety. Example techniques include increasing the number of sidewalks, pending connected and protected bike lanes, and redesigning high incidence intersections.

Solid Waste

- **Goal SCR-5: Increased resource capture and reduced waste sent to landfills (SB 1383).**
  - **SCR-5.1 Zero Waste Plan.** Create a zero-waste plan that institutes cost-effective diversion programs for municipal operations and the community.
  - **SCR-5.2 Organic Waste Diversion.** Establish programs to comply with State-established requirements for organics and food waste diversion.
  - **SCR-5.3 Waste Diversion Education and Assistance.** Develop an education and technical assistance program for residents and businesses on composting, recycling, and reuse of materials.
  - **SCR-5.4 Nonresidential Collection Efficiency.** Explore modifying waste franchise agreements to establish rate structures that encourage less frequent nonresidential collection.

Water and Wastewater

- **Goal SCR-6: Safe and secure water supply.**
  - **SCR-6.1 Recycled Water.** Increase availability of local recycled water.
  - **SCR-6.2 Water Efficiency Standards.** Establish water efficiency standards that are more stringent than CALGreen and model water efficient landscape ordinance (MWELO).
  - **SCR-6.3 Low-Water Use Plant List.** Implement the City's landscape plant list and use of low-water plants in new or renovated landscaped areas.
  - **SCR-6.4 Rainwater Capture.** Encourage rainwater capture and use of cisterns for outdoor watering purposes.
  - **SCR-6.5 Greywater Permitting.** Establish a streamlined permitting process for greywater systems.

Ecosystems

- **Goal SCR-7: Open spaces designed to provide multiple climate and sustainability functions.**
  - **Policy SCR-7.1: Tree Planting in Public Spaces**. Plant additional trees on streets, parks, and other public spaces to sequester carbon, provide shade, contribute to stormwater management, provide habitat, and enhance community character.
  - **Policy SCR-7.2: Preferred Tree and Plant List**. Establish a preferred tree list of species appropriate for the urban forest which are more resilient to drought, heat, and pests. Prioritize native plants and pollinator-friendly plants.
  - **Policy SCR-7.3: Tree Planting on Private Property**. Adopt a tree preservation ordinance to encourage tree preservation and additional planting on private property as appropriate.
  - **Policy SCR-7.4: Green Infrastructure**. Integrate green infrastructure stormwater management practices into the design of open spaces and public rights-of-way.
  - **Policy SCR-7.5: Cool Pavement**. Incorporate cool pavement practices into street maintenance activities to reduce the urban heat island effect.

Community Resilience and Awareness

- **Goal SCR-8: Proactively advance community resilience.**
  - **Policy SCR-8.1: Local Hazard Mitigation Plan.** Build on the existing LHMP and acknowledge the LHMP in the General Plan per AB 2140.
  - **Policy SCR-8.2: Areas of Physical and Social Vulnerability**. Focus investments on areas of high vulnerability, exposure, and sensitivity for both physical infrastructure and social communities.
  - **Policy SCR-8.3**: **Public Safety Power Shutoffs.** Work with Southern California Edison (SCE) to minimize the impacts of Public Safety Power Shutoffs.
  - **Policy SCR-8.4: Resilience Features.** Add resilience features to community facilities to provide basic services during disruptive events or disasters.
  - **Policy SCR-8.5: Pre-Disaster Recovery Plan**. Create a pre-disaster recovery plan that sets up post-disaster policies and programs indicating which areas will be replanned and when, and that shows where and how rebuilding will occur.

- **Policy SCR-8.6: Disaster Rebuilding and Recovery.** Develop policies to ensure that housing units damaged during a natural disaster are repaired or replaced in ways that advance the policies, objectives, and actions of the General Plan.
- **Policy SCR-8.7: Heat and wildfire mitigation**. Develop policies and building standards that reduce the urban heat island effect and the risk and damage of wildfire such as:
  - Encourage the use of high-albedo roofs and paving
  - Incorporate more robust temperature and air quality controls in facility retrofits and designs
  - Provide consolidated public messaging about wildfire preparation, evacuation, and communications avenues in multiple languages
  - Encourage fire-wise landscaping including alternatives to wood fencing
  - 8Require ember-resistant attic ventilation openings
  - Encourage the installation of air filters to protect against indoor air quality impacts during wildfire smoke exposure events
  - Identify and modify vulnerable infrastructure in high wildfire risk areas, such as replacing wooden utility poles or undergrounding utility lines

- **Goal SCR-9: Awareness of Palmdale's environmental past and present.**
  - **Policy SCR-9.1: Integration of Sustainability**. Integrate environmental and sustainability issues into City decision-making processes, operations, community activities, and criteria in budgeting and prioritization efforts through a "triple bottom line" approach.
  - **Policy SCR-9.2: Acknowledge Indigenous History**. Acknowledge and celebrate the Indigenous history and tradition of the area now known as Palmdale.
  - **Policy SCR-9.3: Raise Awareness about Natural Systems**. Provide interpretive displays and other information on natural systems at parks, nature centers, and trailheads.

4.8.3 Impact Analysis

a. Significance Thresholds

According to CEQA Guidelines Appendix G, impacts related to GHG emissions would be potentially significant if implementation of the Plan would:

1. Generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment; and/or
2. Conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs.

The majority of individual projects do not generate sufficient GHG emissions to directly influence climate change. However, physical changes caused by a project can contribute incrementally to cumulative effects that are significant, even if individual changes resulting from a project are limited. The issue of climate change typically involves an analysis of whether a project's contribution towards, an impact would be cumulatively considerable. "Cumulatively considerable" means that the incremental effects of an individual project are significant when viewed in connection with the effects of past projects, other current projects, and probable future projects (CEQA Guidelines Section 15064[h][1]).

Section 15064.4 of the *CEQA Guidelines* recommends that lead agencies quantify GHG emissions of projects and consider several other factors that may be used in the determination of significance of GHG emissions from a project, including the extent to which the project may increase or reduce GHG emissions; whether a project exceeds an applicable significance threshold; and the extent to which the project complies with regulations or requirements adopted to implement a plan for the reduction or mitigation of GHG emissions. The AVAQMD does not have adopted GHG emissions thresholds. The City of Palmdale has prepared a qualified CAP pursuant to CEQA Guidelines Section 15183.5(b). The CAP will serve as a "qualified plan for the reduction of greenhouse gases" and provide a mechanism for tiering and streamlining of GHG emissions analysis for projects that are consistent with such a plan.

As part of the CAP, the City of Palmdale has established GHG reduction targets consistent with the statewide goal of reducing GHG emissions to 40 percent below 1990 levels by 2030 (478,418 $MTCO_2e$). Additionally, the CAP provides additional reductions beyond what is needed to achieve the 2017 Scoping Plan 2030 goal and advances the City's progress toward the ultimate goal of carbon neutrality by 2045. As discussed in the 2017 Scoping Plan, technology is not currently available to reach the 2050 goal of 80 percent below 1990 levels and thus that the technology to reach carbon neutrality by 2045 is also not available (CARB 2017). Therefore, exceedance of the 2030 goal is used to determine significance for this analysis. While there is a Draft 2022 Scoping Plan, the Plan has not been adopted at the time of this analysis and therefore, compliance relies on the existing adopted 2017 Scoping Plan.

This analysis uses the emissions forecasts in the City's CAP to develop per-service population emissions targets. City specific emissions targets provide an easy tiering mechanism while allowing the City to support the State's overall reduction goals. The following goals have been established and would be adopted by the City as part of the Plan. Per service-population targets for Palmdale are as follows: 2 MT CO_2e per service population by 2030, 1.3 MT CO_2e per service population by 2035, and 1.2 MT CO_2e per service population by 2045. Per-service population emissions are calculated by dividing total community emissions by the residents plus employees. Table 4.8-2 shows the per-service population thresholds based on the CAP emissions estimates for 2030, 2035, and 2045.

Table 4.8-2 Per-Service Population Thresholds

	2030	2035	2045
BAU[1]	1,179,398	1,236,709	1,352,322
Adjusted BAU[2]	813,335	753,932	706,943
Reductions from CAP Measures	334,917	375,107	336,987
Total City Emissions	478,418	378,825	369,956
Service Population	241,962	296,562	296,562
Per-Service Population Threshold	2.0	1.3	1.2

[1] The BAU scenario projects future emissions based on current population and regional growth trends, climate patterns and their impacts on energy use, and regulations (Federal, State, and local) introduced before the 2017 inventory year

[2] The Adjusted BAU forecast shows how Palmdale's emissions are anticipated to change while accounting for the impacts of adopted State climate-related policies if no action is taken at the local level

Source: Raimi and Associates 2022 (Sustainability, Climate and Resilience); Appendix B

b. Methodology

Construction Emissions

Although construction activity is addressed in this analysis, CAPCOA does not discuss whether any of the suggested threshold approaches adequately address impacts from temporary construction activity. As stated in the CEQA and Climate Change white paper, "more study is needed to make this assessment or to develop separate thresholds for construction activity" (CAPCOA 2008). Nevertheless, air districts have recommended amortizing construction-related emissions over a 30-year period in conjunction with the proposed project's operational emissions.

Construction of projects carried out under the Plan would generate temporary GHG emissions primarily from the operation of on-site construction equipment, as well as from vehicles transporting construction workers to and from the project site and heavy trucks to export earth materials off site. Site preparation and grading typically generate the greatest amount of emissions due to the use of grading equipment and soil hauling.

Construction related GHG emissions associated with the Plan were calculated using the California Emissions Estimator Model (CalEEMod) version 2020.4.0 (Appendix B). Emissions were based on the estimated annual growth anticipated under the Plan. Growth for land uses were annualized over 20 years to provide a conservative estimate of the amount of growth that might occur in one year. Emissions were estimated for sample projects for each land use type that has the potential to occur in one year ($1/20^{th}$ of all land uses except for hotel). Annual emissions were then multiplied by 20 to determine total construction emissions anticipated from buildout. Hotel growth was assumed at 58 rooms in one year, this annual construction estimate was multiplied by three to determine total emissions from the construction of up to 174 new hotel rooms throughout the City. Construction emissions were based on average fleet emissions in 2022. This represents a conservative estimate of construction emissions that will occur over the Plan buildout as emissions from construction fleets are anticipated to be reduced as older equipment is replaced by newer-more efficient equipment in later years.

Operational Emissions

A GHG emissions inventory identifies the major sources and quantities of GHG emissions produced by community-wide activities within a jurisdiction's boundaries for a given year. The CAP includes a 2017 baseline inventory of GHG emissions from community-wide activities within the city, as well as a 2030, 2040, and 2045 "business-as-usual" forecast of how emissions in Palmdale would change if consumption trends and behavior continue as they did through 2017, absent any new federal, State, regional, or local policies or action that would reduce those emissions.

However, since 2017, several State regulations (i.e., SB 1, SB 100, AB 1493) have been enacted that would reduce future local emissions. The CAP incorporated these regulations into an adjusted forecast, which provides a more accurate picture of future emissions growth and the emission reductions community would be responsible for after State regulations have been implemented.

After analyzing the City's baseline inventory and forecast scenarios, emission targets were set to create quantitative goals that would further the City's ability to measure emission reduction progress from the baseline scenario, based on the emissions inventories provided in the CAP.

This analysis relies on the operational emissions quantifications in the CAP because buildout under the CAP would be identical to buildout under the Plan. Full methodology and calculations for the quantification of operational emissions can be found in Appendix B.

c. Project and Cumulative Impacts

Threshold 1:	Would the Plan generate GHG emissions, either directly or indirectly, that may have a significant impact on the environment?

Impact GHG-1 IMPLEMENTATION OF PROJECTS CARRIED OUT UNDER THE PLAN WOULD NOT INCREASE PER SERVICE POPULATION GHG EMISSIONS. THE CAP IS PART OF THE PLAN AND SHOWS PER SERVICE POPULATION EMISSIONS REDUCTIONS OVER TIME. ALL FUTURE PROJECTS WOULD BE REQUIRED TO COMPLY WITH THE CAP. THE PLAN WOULD THEREFORE HAVE A LESS THAN SIGNIFICANT IMPACT ON GHG EMISSIONS.

Construction

Construction emissions were quantified based on annualized growth assumptions as detailed in the methodology section above. Construction emissions for the Plan are identified in Table 4.8-3. Amortized total emissions are added to the operational emissions estimates from the CAP to determine significance.

Table 4.8-3 Amortized Construction Emissions[1]

Land Use	Annual Emissions (MT CO_2e) [2]	Total Plan Emissions (MT CO_2e)[3]
SFR	394	7,871
MFR	1,240	24,807
Retail/Restaurant	266	5,314
Hotel	281	844
Office	443	8,870
Industrial	799	15,985
School	255	5,091
Government Office	63	1,269
Total		70,052

MT CO_2e = metric tons of carbon dioxide equivalents.

[1] Amortized emissions are total construction emissions divided by a 30 year estimated lifetime of the land uses developed under the Plan.

[2] Annual emissions represent one year of construction emissions by land-use type.

[3] Total Plan emissions represent the total emissions required to fully build out the Plan.

Source: Appendix B

Operation

The City of Palmdale has forecasted GHG emissions inventory for the City for the years 2030, 2035, and 2045, which is summarized in Table 4.8-2. As part of the CAP, Palmdale is committed to an emissions reduction target of 40 percent below 1990 levels by 2030 and working toward reaching a longer-term goal of carbon neutrality by 2045. This 2030 GHG emissions goal is selected to be consistent with EO-B-3-05 State emissions targets and CEQA Guidelines Section 15183.5 for a qualified GHG emissions reduction strategy as well as to be achievable by City-supported measures identified in the CAP. The CAP includes a business-as-usual (BAU) forecast of GHG emissions that would enable the City to estimate the amount of emissions reductions needed to meet its goal. shows the projected community emissions by year under the BAU scenario, the adjusted emissions

accounting for implementation of State actions to reduce GHG emissions, emissions reductions achieved by implementation of the CAP, and the GHG emissions targets.

The CAP includes a list of 43 measures intended to reduce Palmdale's GHG emissions. Implementation of the CAP would result in the reduction of community and municipal operational GHG emissions. Additionally, the CAP would serve as a pathway to reduce GHG emissions and introduce other beneficial environmental and sustainability effects. These benefits include reduction in building energy consumption and VMT (and thus air pollution), water consumption, and solid waste generation. Therefore, the CAP would result in a less-than-significant impact related to generation of GHG emissions as it attains the 2030 goal of reducing emissions to 40 percent below 1990 levels.

Construction emissions generated by development under the Plan, added to the existing CAP estimates for the years 2030, 2035, and 2045 would result in annual emissions of 480,752 MT CO_2e, 381,159 MTCO_2e, and 371,244 MT CO_2e respectively, as shown in Table 4.8-4. These totals, divided by the estimated service population for the associated years would equate to estimated 2.0 MT CO_2e per service population, 1.3 MT CO_2e per service population, and 1.3 MT CO_2e per service population annual emissions, respectively. The estimated emissions per service population are consistent with the significance thresholds for 2030 and 2045. While the Plan's 2045 service population emissions with construction emissions exceed the operational only service population target of 1.2 MT CO_2e by 2045, the threshold was developed without accounting for temporary construction emissions amortized over the life of the Plan. Additionally, the amortized construction emissions do not take into account GHG emissions reductions to the standard fleet used due to the turn-over of older equipment between 2022 and 2045, nor does it take into account the use of alternative fueled equipment (such as electric) that may be required on a project-by-project basis to meet threshold requirements for Plan projects that may be required to undergo the CEQA process independent of this analysis. Further, the 2045 estimated emissions and CAP reductions are subject to change as the CAP is updated as required by the CAP itself (Policy SCR-1.1 CAP Maintenance), therefore the projected emissions reductions needed and the per-service threshold for 2045 would ultimately change between the adoption of this document and Plan buildout. Given that the technology does not currently exist to reach carbon neutrality by 2045, the anticipated updates to the CAP, and that construction emissions were not accounted for in the CAP emissions projections, the reduction of per service population emissions to 1.3 MT CO_2e annually by 2045 when including plan related construction emissions, satisfies the emissions reduction requirement of below 2 MT CO_2e per service population threshold and the combined construction and operational plan emissions would be less than significant.

Table 4.8-4 Palmdale Estimated Plan wide emissions by year

	2030	2035	2045
Amortized construction Emissions	2,334	2,334	2,334
Cap Operational Emissions	478,418	378,825	369,956
Total Emissions	480,752	381,159	372,290
Service Population	241,962	260,162	296,562
Per service population Emissions	2.0	1.5	1.3
Thresholds	2.0		

Source: Raimi and Associates 2022 (Sustainability, Climate and Resilience), Appendix B

Mitigation Measures

No mitigation measures are required.

Threshold 2:	Would the Plan conflict with an applicable plan, policy, or regulation adopted for the purpose of reducing the emissions of GHGs?

Impact GHG-2 THE PLAN WOULD NOT CONFLICT WITH ANY APPLICABLE PLAN, POLICY, OR REGULATION ADOPTED FOR THE PURPOSE OF REDUCING THE EMISSIONS OF GHGS. THE PLAN WOULD THEREFORE HAVE A LESS THAN SIGNIFICANT IMPACT ON GHG EMISSIONS.

2017 Scoping Plan

The principal state plans and policies are AB 32, the California Global Warming Solutions Act of 2006, and the subsequent legislation, SB 32. The quantitative goal of AB 32 is to reduce GHG emissions to 1990 levels by 2020 and the goals of SB 32 are to reduce GHG emissions to 40 percent below 1990 levels by 2030 and 80 percent below 1990 levels by 2050. Pursuant to the SB 32 goal, the 2017 Scoping Plan was created to outline goals and measures for the state to achieve the 2030 goals and further the State's ability to attain the 2050 goal. The 2017 Scoping Plan does not outline a strategy required to meet the 2050 goal as the technology needed to reach these goals is currently unavailable (CARB 2017).

The 2017 Scoping Plan's strategies that are applicable to the Plan include reducing fossil fuel use, energy demand, and VMT; maximizing recycling and diversion from landfills; and increasing water conservation. All policies contained in the Sustainability, Climate, and Resilience Chapter of the Plan and listed in the *Regulatory Setting* of this section, would be consistent with the goals in the 2017 Scoping Plan as they provide for the reduction of GHG emissions from the City. Furthermore, individual projects facilitated by the Plan would be required to comply with the State's recycling and composting requirements for commercial businesses under AB 341 and AB 1826. AB 341 requires businesses generating four or more cubic yards of solid waste per week to recycle recyclable materials and AB 1826 requires businesses generating two or more cubic yards of solid waste per week to recycle organic waste. Compliance with these state laws would maximize the recycling and solid waste diversion for development under the Plan.

The Planning Area would be served by Southern California Edison, which is required to increase its renewable energy procurement in accordance with SB 100 targets. SB 100 supports the reduction of GHG emissions from the electricity sector by accelerating the state's Renewables Portfolio Standard Program. It requires electricity providers to increase procurement from eligible renewable energy resources to 33 percent of total retail sales by 2020, 60 percent by 2030, and 100 percent by 2045.

As stated in Impact GHG-1, the Plan would facilitate development that does not exceed the locally applicable efficiency threshold of 2 MT CO_2e per service population by 2030 and is therefore consistent with the 2017 Scoping Plan. Impacts would be less than significant.

SCAG 2020-2045 RTP/SCS

SB 375 requires CARB to set regional targets for GHG emissions from use of light duty vehicles associated with land use decisions. Metropolitan Planning Organizations (MPOs) must address their regional GHG reductions targets in an SCS as part of the MPO's RTP. SCAG's 2020-2045 RTP/SCS provides land use and transportation strategies to reduce regional GHG emissions, such as:

- Reflect the Changing Population and Demands

- Focus New Growth Around Transit
- Provide More Options for Short Trips
- Encouraging Active Transportation for Short Trips
- Promote Safety and Security
- Active Transportation

The 2020-2045 RTP/SCS includes goals with corresponding implementation strategies for focusing growth near destinations and mobility options, promoting diverse housing choices, leveraging technology innovations, and supporting implementation of sustainability policies. Table 4.8-5 summarizes policies contained in SCAG's RTP/SCS that are applicable to the Plan and evaluates the Plan's consistency with these policies. By promoting infill and mixed-use development, and alternative transportation modes, the Plan would be consistent with the major initiatives identified in the 2020-2045 RTP/SCS to reduce GHG emissions. In addition, as discussed under Impact GHG-1, the Plan would result in per-capita GHG emissions consistent with statewide targets, including the 2030 target codified in EO-B-30-15, and additional reductions toward the 2045 carbon neutrality goal. Because the Plan is consistent with adopted plans, policies, and regulations to reduce GHG emissions, impacts would be less than significant.

Table 4.8-5 Plan Consistency with 2020 RTP/SCS Land Use Policies

Strategy/Action	Project Consistency
Focus Growth Near Destinations & Mobility Options	
▪ Emphasize land use patterns that facilitate multimodal access to work, educational and other destinations ▪ Focus on a regional jobs/housing balance to reduce commute times and distances and expand job opportunities near transit and along center-focused main streets ▪ Plan for growth near transit investments and support implementation of first/last mile strategies. ▪ Promote the redevelopment of underperforming retail developments and other outmoded nonresidential uses ▪ Prioritize infill and redevelopment of underutilized land to accommodate new growth, increase amenities and connectivity in existing neighborhoods ▪ Encourage design and transportation options that reduce the reliance on and number of solo car trips (this could include mixed uses or locating and orienting close to existing destinations) ▪ Identify ways to "right size" parking requirements and promote alternative parking strategies (e.g., shared parking or smart parking)	**Consistent.** The Plan would provide employment opportunities for the local workforce through the added commercial, public, retail, office, and hotel development. The Plan would create estimated 26,391 jobs through 2045. Generally, new development would result from re-use of properties, conversion of uses in response to market demand (e.g., select industrial to commercial), and more intense use of land in defined areas including areas in close proximity to existing and planned future transit. The following goals and policies from the Plan would support this initiative: ▪ **Goal SCR-4: Reduced greenhouse gas emissions from transportation (SB 379, EO N-79-20).** ▫ **SCR-4.1 Bike Facilities.** Promote bicycle use with new private development projects through requirements for bicycle parking, lockers and showers, bike share facilities, and when feasible, connections to City bike lanes. ▫ **SCR-4.2 Public Transit.** Expand the public transit system, increase frequency of service, and provide shade at transit stops. ▫ **SCR-4.3 Public EV Chargers.** Install EV chargers at suitable public facilities, including Downtown parking structures, the future multi-modal High Speed Rail station, and community parks. ▫ **SCR-4.4 EV Reach Code**. Adopt EV requirements beyond CALGreen in both number of chargers and charger capacity. ▫ **SCR-4.5 ZEV Purchasing.** When purchasing City vehicles give preference to fuel efficient vehicles, including the use of zero emission vehicles.

Strategy/Action	Project Consistency
	▫ **SCR-4.6 Clean Fuels.** Require use of clean fuels for City construction and maintenance vehicles and lawn/garden equipment. ▫ **SCR-4.7 Pedestrian and Cyclist Safety**. Improve bicycle and pedestrian modes of travel by improving pedestrian and cyclist safety. Example techniques include increasing the number of sidewalks, pending connected and protected bike lanes, and redesigning high incidence intersections.
Leverage Technology Innovations	
▪ Promote low emission technologies such as neighborhood electric vehicles, shared rides hailing, car sharing, bike sharing and scooters by providing supportive and safe infrastructure such as dedicated lanes, charging and parking/drop-off space ▪ Improve access to services through technology—such as telework and telemedicine as well as other incentives such as a "mobility wallet," an app-based system for storing transit and other multi-modal payments ▪ Identify ways to incorporate "micro-power grids" in communities, for example solar energy, hydrogen fuel cell power storage and power generation	**Consistent.** The following goals and policies would support this initiative by tracking the progress of CAP implementation and focusing future reduction strategies on the areas of need such as increasing the use of alternative modes of transportation, and incorporating more solar and other renewable energy available from development within the City. ▪ **Goal SCR-1: Achieve a carbon neutral community by 2045 (EO B-55-18).** ▫ **SCR-1.1 CAP Maintenance**. Maintain and regularly update a Climate Action Plan to reduce GHGs generated within the City. ▫ **SCR-1.2 GHG Inventory**. Conduct community GHG inventories every 3-5 years to track progress toward achieving the City's GHG reduction goal. ▫ **SCR-1.3 Funding Sources**. Seek funding to support implementation of GHG reduction projects for the City, residents, and businesses. ▫ **SCR-1.4 Community Engagement**. Develop and implement comprehensive community engagement including educational outreach, issue-specific awareness campaigns, and technical assistance. ▪ **Goal SCR-2: Utilize a fossil fuel free energy system (SB 100).** ▫ **SCR-2.1 Carbon Free Energ**y. Direct EPIC to provide 75% carbon-free or renewable electricity to residents and businesses by 2030, achieving 100% carbon-free electricity by 2045. ▫ **SCR-2.2 Community Solar**. Explore the development of community solar projects and microgrids. ▫ **SCR-2.3 Battery Permitting.** Establish a streamlined approval process for battery storage systems.
Promote a Green Region.	
▪ Support development of local climate adaptation and hazard mitigation plans, as well as project implementation that improves community resiliency to climate change and natural hazards ▪ Support local policies for renewable energy production, reduction of urban heat islands and carbon sequestration ▪ Integrate local food production into the regional landscape	**Consistent.** The following Plan policies would support this initiative. ▪ **Goal SCR-3: Green and decarbonized buildings for new construction and major renovations.** ▫ **SCR-3.1 Energy Efficient New Construction**. Integrate CALGreen Tier 1 and Tier 2 green building and energy efficiency standards into new construction and major remodels. ▫ **SCR-3.2 All-Electric Reach Code.** Consider adopting a local reach code to encourage new buildings to be all-electric. ▫ **SCR-3.3 Solar + Storage.** Require installation of photovoltaic panels and battery storage on all residential new

Strategy/Action	Project Consistency
▪ Promote more resource efficient development focused on conservation, recycling, and reclamation ▪ Preserve, enhance, and restore regional wildlife connectivity ▪ Reduce consumption of resource areas, including agricultural land ▪ Identify ways to improve access to public park space	construction and nonresidential new construction over 5,000 sq. ft. ▫ **SCR-3.4 Energy Efficient Existing Building**s. Establish an energy and water efficiency upgrade program for existing buildings, focusing resources on the most underserved populations. ▫ **SCR-3.4 Benchmarking Energy and Water Use.** Register municipal buildings with Energy Star Portfolio Manager and report energy and water use (AB 802). ▪ **Goal SCR-5: Increased resource capture and reduced waste sent to landfills (SB 1383).** ▫ **SCR-5.1 Zero Waste Plan.** Create a zero-waste plan that institutes cost-effective diversion programs for municipal operations and the community. ▫ **SCR-5.2 Organic Waste Diversion.** Establish programs to comply with State-established requirements for organics and food waste diversion. ▫ **SCR-5.3 Waste Diversion Education and Assistance.** Develop an education and technical assistance program for residents and businesses on composting, recycling, and reuse of materials. ▫ **SCR-5.4 Nonresidential Collection Efficiency.** Explore modifying waste franchise agreements to establish rate structures that encourage less frequent nonresidential collection. ▪ **Goal SCR-7: Open spaces designed to provide multiple climate and sustainability functions.** ▫ **Policy SCR-7.1: Tree Planting in Public Spaces**. Plant additional trees on streets, parks, and other public spaces to sequester carbon, provide shade, contribute to stormwater management, provide habitat, and enhance community character. ▫ **Policy SCR-7.2: Preferred Tree and Plant List**. Establish a preferred tree list of species appropriate for the urban forest which are more resilient to drought, heat, and pests. Prioritize native plants and pollinator-friendly plants. ▫ **Policy SCR-7.3: Tree Planting on Private Property**. Adopt a tree preservation ordinance to encourage tree preservation and additional planting on private property as appropriate. ▫ **Policy SCR-7.4: Green Infrastructure**. Integrate green infrastructure stormwater management practices into the design of open spaces and public rights-of-way. ▫ **Policy SCR-7.5: Cool Pavement**. Incorporate cool pavement practices into street maintenance activities to reduce the urban heat island effect.

Source: SCAG 2020; Raimi and Associates 2022 (Sustainability, Climate and Resilience)

Mitigation Measures

No mitigation measures are required.

4.8.4 Cumulative Impacts

"Cumulatively considerable" means that the incremental effects of an individual project are significant when viewed in connection with the effects of past projects, other current projects, and probable future projects (CEQA Guidelines, Section 15355). The vast majority of projects do not generate sufficient GHG emissions to create a project-specific impact through a direct influence on climate change. Therefore, the issue of climate change for the Plan involved an analysis of whether a Plan's contribution toward an impact is cumulatively considerable. The Plan itself is cumulative in nature as it represents growth through the Planning Area over approximately the next 23 years. The Plan is not one individual project, but a number of undefined future projects that may occur under the Plan. Therefore, cumulative impacts with respect to GHG emissions would be to the same as the individual impacts addressed above for the Plan, less than significant.

This page intentionally left blank.

4.9 Hazards and Hazardous Materials

The following section analyzes impacts associated with exposure to hazards and hazardous materials. It addresses impacts relating to hazardous materials use, transportation, and development on contaminated sites.

4.9.1 Environmental Setting

a. Definitions

The United States Environmental Protection Agency (USEPA) defines hazardous waste as a substance that (1) may cause or significantly contribute to an increase in mortality or an increase in serious, irreversible, or incapacitating illness and (2) poses a substantial present or potential future hazard to human health or the environment when it is improperly treated, stored, transported, disposed of, or otherwise managed. The USEPA has developed a list of specific types of hazardous waste that are in the form of solids, semi-solids, liquids, and gases. Producers of such waste include private businesses and federal, state, and local government agencies.

A material may also be classified as a hazardous material if it contains defined amounts of toxic chemicals. The USEPA regulates the production and distribution of commercial and industrial chemicals to protect human health and the environment. The USEPA also prepares and distributes information to further the public's knowledge about these chemicals and their effects, and provides guidance to manufacturers on pollution prevention measures, such as more efficient manufacturing processes and recycling used materials (USEPA 2021a).

Hazard Versus Risk

Workers and the general public are potentially at risk whenever hazardous materials have been used or where there could be an exposure to such materials. Ecological communities, such as avian and terrestrial habitats and the aquatic environment, may also be at risk, depending on the type of populations and locations relative to potential exposure sources. Inherent in the setting and analyses presented in this section are the concepts of the "hazard" of these materials and the "risk" they pose to human health and the ecological environment.

Exposure to some chemical substances may harm internal organs or systems in the human body, ranging from temporary effects to permanent disability or death. Aquatic, terrestrial, or avian species may also be similarly adversely affected. Hazardous materials that result in adverse effects are generally considered "toxic." However, other chemical materials may be corrosive, or react with other substances to form other hazardous materials, but they are not considered toxic because organs or systems are not affected. Because toxic materials can result in adverse health effects, they are considered hazardous materials, but not all hazardous materials are necessarily "toxic." For purposes of the information and analyses presented in this section, the terms hazardous substances and hazardous materials are used interchangeably and include materials that are considered toxic.

The risk to human health and the ecological environment is determined by the probability of exposure to a hazardous material and the severity of harm such exposure would pose. That is to say, the likelihood and means of exposure, in addition to the inherent toxicity of a material, are used to determine the degree of risk to human health or the ecosystem. For example, a high probability of exposure to a low-toxicity chemical would not necessarily pose an unacceptable human health or

ecological risk, whereas a low probability of exposure to a very high-toxicity chemical might adversely affect the human and ecological communities. Various regulatory agencies, such as the USEPA, California Environmental Protection Agency (CalEPA), State Water Resources Control Board (SWRCB), California Department of Toxic Substances Control (DTSC), United States Occupational Safety and Health Administration (OSHA), and California Department of Industrial Regulations Division of Occupational Safety and Health (Cal/OSHA), are responsible for developing and/or enforcing risk-based standards to protect the public and the environment.

b. Potential Hazardous Materials

Hazardous materials in the Planning Area are routinely used, stored, and transported with industrial operations and processes, in commercial/retail businesses as well as in educational facilities, hospitals, and households. Agricultural operations in the Planning Area also use, store, and transport hazardous materials. Such materials range from home and pool related chlorine products, chemical fertilizers, herbicides and pesticides, stored fuels and waste oil, chemical solvents and lubricants, and a variety of medical materials. Federal, state, and local agency databases maintain comprehensive information on the locations of facilities using large quantities of hazardous materials, as well as facilities generating hazardous waste. Some of these facilities use certain classes of hazardous materials that require accidental release scenario modeling and risk management plans to protect surrounding land uses.

The California Highway Patrol (CHP) and the California Department of Transportation (Caltrans) are the enforcement agencies for hazardous materials transportation regulations. Transporters of hazardous materials and waste are responsible for complying with all applicable packaging, labeling, and shipping regulations. The Office of Emergency Services (OES) also provides emergency response services involving hazardous materials incidents. Both federal and state governments require all businesses that handle more than a specified amount of hazardous materials to submit a business plan to a regulating agency.

Construction Materials

Asbestos

Asbestos is a naturally occurring fibrous mineral found in certain types of rock formations. Asbestos is commonly mixed during processing with a material that binds fibers together so that it can be used in different projects. Any buildings constructed or remodeled between 1930 and 1981 have the potential to incorporate asbestos-containing building materials (ACBM). Asbestos became popular since it is durable, fire retardant, resists corrosion, and a good insulator. Asbestos becomes a problem when it is damaged, disturbed, or deteriorates over time, and the material releases fibers into the air. Asbestos fibers can cause serious health problems if inhaled (USEPA 2021b).

According to the California Code of Regulations (CCR), Title 8, Section 1529, presumed asbestos-containing material means “thermal system insulation and surfacing material found in buildings constructed no later than 1980.” However, the designation of a material as presumed asbestos-containing material may be rebutted pursuant to subsection (k)(5) of Title 8, Section 1529.

Lead

Lead is a highly toxic metal that was used for many years in consumer products. Because of its toxic properties, lead is regulated as a hazardous material. Excessive exposure to lead can result in the accumulation of lead in the blood, soft tissues, and bones. Children are particularly susceptible to

potential lead-related health problems because it is easily absorbed into developing systems and organs. Lead is one of the most common hazards that humans are exposed to in their daily lives and may be present in hazardous concentrations in food, water, and air. Sources of lead include the manufacturing and recycling of batteries, paint, ink, ceramics, ammunition, urban dust, and secondary lead smelters. Lead is no longer permitted for gasoline (USEPA 2022a). Lead poisoning is the leading environmentally induced illness in children and poses a potential public health risk. In 1978, the federal government required the reduction of lead in house paint to less than 0.06 percent (600 parts per million) (USEPA 2009). However, houses in the Planning Area built prior to 1978 may contain lead-based paint at levels in excess of this limit. According to the Los Angeles County Department of Public Health, persons who own or perform repairs on a property built before 1978, are required to take the following actions (Los Angeles County Public Health n.d.):

- Test painted surfaces for lead-based paint prior to beginning the work, or assume the surfaces contain lead-based paint and use lead-safe work practices
- Do not use belt-sander, propane torch, high temperature heat gun, dry scraper, or dry sandpaper to remove lead-based paint
- Maintain painted surfaces in good repair
- Check impact or friction surfaces (windows and doors) for dust or deterioration
- Landlords are required to disclose known information on lead-based paint and lead-based paint hazards before leases take effect
- Sellers must disclose known information on lead-based paint and lead-based paint hazards before selling a house
- Renovators disturbing paint surfaces have to give out the USEPA's Renovate Right pamphlet

Contractors that disturb lead-based paint in homes built before 1978 must be certified and follow specific work practices to prevent lead contamination pursuant to 40 CFR 745, Subpart E.

Household Hazardous Waste

The USEPA defines household hazardous waste as “leftover products such as paints, cleaners, oils, batteries, and pesticides that contain potentially hazardous ingredients that could be corrosive, toxic, ignitable, or reactive.” Methods of improper disposal of household hazardous waste commonly include pouring them down the drain, on the ground, into storm sewers, or in some cases putting them out with the trash. Though the dangers of such disposal methods might not be immediately obvious, improper disposal of these forms of waste can pollute the environment and pose a threat to human health (USEPA 2021c).

Los Angeles County provides residents a cost-free way to dispose of unwanted household chemicals Including temporary disposal and collection events and permanent collection centers with information posted on the Los Angeles County Public Works website. Seven Household Hazardous Waste (HHW) collection centers are located in Los Angeles County (Los Angeles County Public Works 2022)

- Nicole Bernson (Balboa) S.A.F.E. Center in Northridge
- Gaffey Street S.A.F.E. Center in San Pedro
- Los Angeles-Glendale S.A.F.E. Center in Northeast Los Angeles
- Hyperion S.A.F.E. Center in Playa Del Rey
- Randall Street S.A.F.E. Center in Sun Valley

- UCLA S.A.F.E. Center in West Los Angeles
- Washington Blvd. S.A.F.E. Center in East Los Angeles

The County also operates two permanent collection centers, located at the Antelope Valley Public Landfill and the EDCO Recycling and Transfer Center.

Radon Gas

Radon is a cancer-causing natural radioactive gas that is invisible, odorless, and tasteless. Radon forms from the radioactive decay of small amounts of uranium naturally present in rocks and soil. It can affect indoor air quality, particularly in mountainous areas. Radon gas from natural sources can accumulate in buildings and is a leading cause of non-smoking related lung cancer deaths (USEPA 2022d). The USEPA has created the USEPA Map of Radon Zones for the State of California, created using data on indoor radon measurements, geology, aerial radioactivity, soil parameters, and foundation types and has assigned Los Angeles County with a Zone 2 Radon zone, and has a moderate potential meaning average indoor radon levels may range from 2 to 4 pCi/L (USEPA n.d.). The radon level at which the USEPA recommends considering remedial actions for radon reduction in residences is 4.0 pCi/L. According to the Los Angeles County Department of Public Health, it is believed that only one percent of homes have an indoor radon level above 4 pCi/L (County of Los Angeles Public Health n.d.) and according to CityData.com, the City had no radon test levels that were greater than 4pCi/L (CityData.com 2022).

Existing Hazardous Materials Sites

A database search conducted in September 2021 through the DTSC EnviroStor Hazardous Waste and Substances Site List website (DTSC 2021) did not find any hazardous materials sites in Palmdale. One location in the Planning Area is listed by the USEPA under the Superfund Amendments and Reauthorization Act (SARA), Title III, as shown in Table 4.9-1, but it is not listed in the National Priorities List.

With respect to investigation and cleanup of known contaminated sites, the DTSC and SWRCB are the two primary state agencies responsible for issues pertaining to hazardous materials release sites. The DTSC has developed standards for the investigation of sites where hazardous materials contamination has been identified or could exist based on current or past uses. The standards identify approaches to determine if a release of hazardous waste/substances exists at a site and delineate the general extent of contamination, estimate the potential threat to public health and/or the environment from the release and provide an indicator of relative risk, determine if an expedited response action is required to reduce an existing or potential threat, and complete preliminary project scoping activities to determine data gaps and identify possible remedial action strategies to form the basis for development of a site strategy.

Comprehensive Environmental Response, Compensation, and Liability Information System

The Comprehensive Environmental Response, Compensation, and Liability Act of 1980 (CERCLA) was developed to protect water, air, and land resources from risks created by past chemical disposal practices. This act is also referred to as the Superfund Act, and the sites listed under it are referred to as Superfund sites. Under CERCLA, the USEPA maintains the Comprehensive Environmental Response, Compensation and Liability Information System (CERCLIS), which lists all contaminated sites in the United States that have in the past undergone or are currently undergoing clean-up

activities. CERCLIS contains information on current hazardous waste sites, potentially hazardous waste sites, and remedial activities. This includes sites that are on the National Priorities List (NPL) or being considered for the NPL. The NPL is the list of sites of national priority among the known releases or threatened releases of hazardous substances, pollutants, or contaminants throughout the United States and its territories. The NPL is intended primarily to guide the USEPA in determining which sites warrant further investigation (USEPA 2022b). The Planning Area contains one CERCLIS site—Air Force Plant 42 Superfund Site—listed in Table 4.9-1. The Air Force Plant 42 Superfund Site has a status of "Open – Assessment and Interim Remedial Action as of 11/23/2015" and has no specified potential contaminants of concern (SWRCB 2022).

Table 4.9-1 CERCLIS Sites in the Palmdale Area

Site Name	Site Location	EPA ID	Status
Air Force Plant 42	20TH ST E & AVES O & M	CA7570090079	Not on NPL

Source: USEPA 2021

Toxics Release Inventory

The Toxics Release Inventory (TRI) is an USEPA database that contains information on toxic chemical releases and other waste management activities reported annually by certain industry groups, as well as federal facilities. TRI sites are known to release toxic chemicals into the air. The USEPA monitors the emissions from these facilities to ensure that their annual limits are not exceeded. TRI reports provide accurate information about potentially hazardous chemicals and their uses to the public in an attempt to give communities more power to hold companies accountable for their actions and to make informed decisions about how such chemicals should be managed. As of 2019, the TRI has listed the Lockheed Martin Aeronautics Co as the only toxic release facility in the Planning Area with a total release category ranging from 101-10,000 pounds (USEPA 2022c).

Leaking Underground Storage Tanks

Leaking underground storage tanks (LUSTs) are one of the greatest environmental concerns of the past several decades. According to the SWRCB's GeoTracker database, there are no active LUST's or underground storage tanks (USTs) in the Planning Area; all sites, except for Air Force Plant 42, have a status of "Completed - Case Closed" (SWRCB 2022), which means that a closure letter or other formal closure decision document has been issued for the site. Most closed sites in the Planning Area occur along major transportation corridors, such State Route 138, Palmdale Boulevard, and Sierra Highway.

Plugged, Abandoned, and Unrecorded Wells

An abandoned well is a gas, oil, or gas and oil well that has halted operation and is in the process of being plugged. Once plugged, the well is officially decommissioned. An orphaned well has no responsible party that authorities can mandate to properly abandon the well. Plugged, abandoned, and unrecorded wells can cause environmental damage by leaking pollutants into the atmosphere or into water supplies. Important determinants of how much orphaned or abandoned wells impact the environment include the techniques used and precautions taken when first drilling the well, whether it is a gas well, oil well, or combined oil and gas well, and if and how the well was sealed. If wells are not properly sealed when orphaned or abandoned, oil and gas can contaminate groundwater. It is also possible for orphaned and abandoned wells to be significant emitters of methane into the atmosphere. Furthermore, brine present in wells dug into shale formations can

contain some radioactive and toxic substances that contaminate groundwater if the well leaks. Plugging wells can reduce the risk of explosions and protect groundwater but does not always prevent methane emissions. In the United States, it is possible for wells to have been orphaned or abandoned for over a century, and information about them, if it exists at all, can be difficult to locate.

According to the Well Finder search tool hosted by the California Department of Conservation's Division of Oil, Gas, and Geothermal Resources (DOGGR), there are no plugged wells located within the Planning Area (DOC 2022).

Hazardous Waste Generators

Many types of businesses can be producers of hazardous waste. Small businesses such as dry cleaners, auto repair shops, medical facilities or hospitals, photo processing centers, and metal-plating shops are usually generators of small quantities of hazardous waste. Generally, small-quantity generators are facilities that produce between 100 and 1,000 kilograms (kg) of hazardous waste per month (approximately equivalent to between 220 and 2,200 pounds, or between 27 and 275 gallons). Larger businesses such as chemical manufacturers, large electroplating facilities, and petroleum refineries, can generate large quantities of hazardous waste. The USEPA defines a large-quantity generator as a facility that produces over 1,000 kg (2,200 pounds or about 275 gallons) of hazardous waste per month. Both small and large quantity generators are fully regulated under the Resources Conservation and Recovery Act of 1976 (RCRA). The goal of RCRA is to assure adequate tracking of hazardous materials from generation to disposal. California Fire Code (CFC) Articles 79, 80, et al., which augment the RCRA, are the primary regulatory guidelines used by cities to govern the storage and use of hazardous materials. The CFC also serves as the principal enforcement document from which corresponding violations are determined.

c. Urban Fires

Many factors contribute to an area being at risk of structural fires and local fire departments' capabilities to control them, including the construction size and type, built-in protection, density of construction, street widths, and occupancy size. Many older structures built prior to 1950 are susceptible to urban fires because they were built according to older building standards and fire codes, with no internal sprinklers and other fire safety systems in place and made from non-fire-resistive construction materials. Additionally, daytime traffic congestion from commuter and other traffic may contribute to difficulty of ingress and egress for emergency response vehicles in these areas. Weather is also a factor affecting fire safety in the Planning Area, which frequently experiences hot, dry weather during summer and fall months. This is especially true during Santa Ana wind conditions, when hot, dry desert air can combine with high winds, increasing the possibility of quick-spreading fires.

d. Wildland Fires

The California Department of Forestry and Fire Protection (CAL FIRE) works in cooperation with OES, as well as neighboring state governments through a network of mutual aid agreements to fight wildland fires. CAL FIRE is the largest multipurpose fire protection agency in the United States, responsible for wildland fire protection of over 31 million acres of California's privately owned wildlands (CAL FIRE 2022a), as well as providing full-service fire protection through 118 cooperative fire protection agreements in 30 counties, 41 cities, 30 fire districts and 49 other special districts and service areas in the State of California (CAL FIRE 2022b). CAL FIRE responds to over 5,400

wildland fires each year and commands a force of approximately 5,300 full-time fire professionals, 1,783 seasonal personnel, and approximately 600 volunteers (CAL FIRE 2016).

Fire risk in southern California is determined by a number of factors, including drought, the availability and type of fuels, Santa Ana Winds, and development in the wildland-urban interface. The area is characterized by a Mediterranean climate of hot, dry summers and mild, wet winters. As with much of the western United States, the region has seen significantly below-average rainfall in recent years, leaving parched brush and trees extremely dry and fire prone.

The Planning Area is susceptible to wildland fires because of the area's vegetation, climate and slope of surrounding mountain areas, hillsides, and grasslands. Within the planning area, chaparral and grasslands are native vegetation that act as fuel for wildfires, allowing wildfires to spread rapidly. The climate of the Antelope Valley is hot and dry, making local vegetation highly combustible, combined with Santa Ana winds, which will accelerate the speed at which wildfires travel, and steep slopes which bring grass and brush within reach of upward flames and make it difficult for firefighters to reach. Fire Hazard Zones within the Planning Area are in the southern and western portions of the Planning Area (City of Palmdale 2016).

e. Emergency Medical and Other Services

The Los Angeles County Fire Department is divided into divisions including air and wildland, lifeguards, forestry, health hazardous materials divisions and fire prevention, which responds to all types of emergency situations with emergency call volumes including emergency and medical services, fire, false alarms, mutual aid, hazardous materials and miscellaneous. The Los Angeles County Fire Department firefighters and paramedics are therefore trained and prepared to respond to a wide variety of situations. The fire prevention division is also responsible for inspections relating to land entitlement, new construction, commercial and industrial facilities, schools and institutions, and specialized inspections related to film permits (Los Angeles County Fire Department 2021).

f. Emergency Response

The California Emergency Services Act provides the basic authority for conducting emergency operations following proclamations of emergencies by the Governor or other local authority. All local emergency plans are extensions of the California Emergency Plan (CalOES 2021). The Planning Area is part of Region I in the OES Southern Administrative Region, one of the six mutual aid regions that exist in California (City of Palmdale 2012).

The City of Palmdale's Emergency Operations Plan was approved by the State Office of Emergency Services in February of 2012. The plan provides guidance for emergency response with a multi-hazard perspective specific to the city and is compliant with the National Incident Management System (NIMS) and the Standardized Emergency Management System (SEMS) in regard to emergency management. There are five parts; Part One, "Basic Plan" is an overview of operational concepts, relations of the City's emergency/disaster management organization to the Standardized Emergency Management System (SEMS) and the National Incident Management System (NIMS) and federal, state and local responsibilities for protecting life, property and assuring safety within the community; Part Two, "Emergency Organization Functions Overview" is an overview of the emergency/disaster response organization; Part Three, "Hazard Assessments" provides threat assessments for hazards that could potentially affect the Planning Area; Part Four "EOC Forms" provides a list of FEMA's ICS form series forms to assist EOC staff; and Part Five, "Acronym" lists out all the acronyms in the plan for reference (City of Palmdale 2012).

4.9.2 Regulatory Setting

a. Federal

The USEPA is the lead agency responsible for enforcing federal regulations that affect public health or the environment. The primary federal laws and regulations include the RCRA of 1976 and the Hazardous and Solid Waste Amendments enacted in 1984; CERCLA; and SARA. Federal statutes pertaining to hazardous materials and wastes are contained in the CFR Title 40 - Protection of the Environment.

Toxic Substances Control Act

The Toxic Substances Control Act of 1976 (15 U.S. Code Section 2601 et seq.) grants USEPA the authority to develop reporting, record-keeping, and testing requirements for, as well as restrictions on, the manufacture, use, and sale of chemical substances. Pursuant to Title II of the Toxic Substances Control Act, the USEPA adopted the Asbestos Model Accreditation Plan in 1994. The Model Accreditation Plan requires that all persons who inspect for asbestos-containing materials or design or conduct response actions with respect to friable asbestos obtain accreditation by completing a prescribed training course and passing an exam. Section 403 of the Toxic Substances Act establishes standards for lead-based paint hazards in paint, dust, and soil.

Resource Conservation and Recovery Act

Resource Conservation and Recovery Act (RCRA) Subtitle C regulates the generation, transportation, treatment, storage, and disposal of hazardous waste by LQGs (1,000 kilograms per month or more) through comprehensive life cycle or “cradle to grave” tracking requirements. The requirements include maintaining inspection logs of hazardous waste storage locations, records of quantities being generated and stored, and manifests of pick-ups and deliveries to licensed treatment/storage/disposal facilities. RCRA also identifies standards for treatment, storage, and disposal, which is codified in 40 CFR 260.

Comprehensive Environmental Response Compensation and Liability Act

Congress enacted CERCLA, setting up what has become known as the Superfund program, in 1980 to establish prohibitions and requirements concerning closed and abandoned hazardous waste sites; provide for liability of persons responsible for releases of hazardous waste at these sites; and establish a trust fund to provide for cleanup when no responsible party can be identified. Generally, CERCLA authorizes two kinds of response actions:

- Short-term removals, where actions may be taken to address releases or threatened releases requiring prompt response.
- Long-term remedial response actions that permanently and significantly reduce the dangers associated with releases or threats of releases of hazardous substances that are serious, but not immediately life threatening.

Superfund Amendments and Reauthorization Act

SARA amended the CERCLA in 1986, emphasizing the importance of permanent remedies and innovative treatment technologies to clean up hazardous waste sites; requiring Superfund actions to consider the standards and requirements found in other state and federal environmental laws and regulations; providing new enforcement authorities and settlement tools; increasing involvement of

the states in every phase of the Superfund program; increasing the focus on human health problems posed by hazardous waste sites; encouraging greater citizen participation in making decisions on how sites should be cleaned up; and increasing the size of the trust fund to $8.5 billion.

Hazardous Materials Transportation Act

The transportation of hazardous materials is regulated by the Hazardous Materials Transportation Act (49 CFR Section 101 et seq.), which is administered by the Research and Special Programs Administration of the U.S. Department of Transportation (DOT). The Hazardous Materials Transportation Act governs the safe transportation of hazardous materials by all modes. The DOT regulations that govern the transportation of hazardous materials are applicable to any person who transports, ships, causes to be transported or shipped, or who is involved in any way with the manufacture or testing of hazardous materials packaging or containers. The DOT regulations govern every aspect of the movement, including packaging, handling, labeling, marking, placarding, operational standards, and highway routing.

Emergency Planning Community Right-to-Know Act

The Emergency Planning Community Right-to-Know Act (EPCRA), or SARA Title III, was enacted in October 1986. SARA Title III requires any infrastructure at the State and local levels to plan for chemical emergencies, including identifying potential chemical threats. Reported information is then made publicly available so that interested parties may become informed about potentially dangerous chemicals in their community. EPCRA Sections 301–312 are administered by USEPA's Office of Emergency Management. USEPA's Office of Information Analysis and Access implements EPCRA's Section 313 program. In California, SARA Title III is implemented through the California Accidental Release Prevention Program (CalARP).

Federal Disaster Mitigation Act

The Disaster Mitigation Act of 2000 provided a new set of mitigation plan requirements that encourage state and local jurisdictions to coordinate disaster mitigation planning and implementation. States are encouraged to complete a "Standard" or an "Enhanced" Natural Mitigation Plan. "Enhanced" plans demonstrate increased coordination of mitigation activities at the state level and, if completed and approved, increase the amount of funding through the Hazard Mitigation Grant Program.

Code of Federal Regulations, Title 14, Part 77

The primary role of the FAA is to promote aviation safety and control the use of airspace. Public use airports that are subject to the FAA's grant assurances must comply with specific FAA design criteria, standards, and regulations. Land use safety compatibility guidance from the FAA is limited to the immediate vicinity of the runway, the runway protection zones at each end of the runway, and the protection of navigable airspace.

14 CFR 77, *Safe Efficient Use and Preservation of the Navigable Airspace*, establishes the federal review process for determining whether proposed development activities in the vicinity of an airport have the potential to result in a hazard to air navigation. 14 CFR Part 77 identifies standards for determining whether a proposed project would represent an obstruction "that may affect safe and efficient use of navigable airspace and the operation of planned or existing air navigation and communication facilities." Objects that are identified as obstructions based on these standards are presumed to be hazards until an aeronautical study conducted by the FAA determines otherwise.

b. State

Primary state agencies with jurisdiction over hazardous chemical materials management are the DTSC and Regional Water Quality Control Boards (RWQCB). Other state agencies involved in hazardous materials management are the Department of Industrial Relations (Cal/OSHA implementation), OES (California Accidental Release Prevention implementation), the California Department of Fish and Wildlife (CDFW), the California Air Resources Board (CARB), Caltrans, State Office of Environmental Health Hazard Assessment (Proposition 65 implementation), and the California Integrated Waste Management Board. The enforcement agencies for hazardous materials transportation regulations are the CHP and Caltrans. Hazardous materials and waste transporters are responsible for complying with all applicable packaging, labeling, and shipping regulations.

California Environmental Protection Agency

CalEPA has broad jurisdiction over hazardous materials management in the state. Within CalEPA, the DTSC has primary regulatory responsibility for hazardous waste management and cleanup. Enforcement of regulations has been delegated to local jurisdictions that enter into agreements with DTSC for the generation, transport, and disposal of hazardous materials under the authority of the Hazardous Waste Control Act.

Along with the DTSC, the RWQCB is responsible for implementing regulations pertaining to management of soil and groundwater investigation and cleanup. RWQCB regulations are contained in Title 27 of the CCR. Additional state regulations applicable to hazardous materials are contained in Title 22 of the CCR. Title 26 of the CCR is a compilation of those sections or titles of the CCR that are applicable to hazardous materials.

Department of Toxic Substances Control

The DTSC regulates hazardous waste in California primarily under the authority of the federal RCRA and the California Health and Safety Code. Other laws that affect hazardous waste are specific to handling, storage, transportation, disposal, treatment, reduction, cleanup, and emergency planning. In addition, DTSC reviews and monitors legislation to ensure that the legislation reflects DTSC goals. From these laws, DTSC major program areas develop regulations and consistent program policies and procedures. The regulations spell out what those who handle hazardous waste must do to comply with the laws. Under RCRA, DTSC has the authority to implement permitting, inspection, compliance, and corrective action programs to ensure that people who manage hazardous waste follow state and federal requirements. As such, management of hazardous waste in the Planning Area is regulated by the DTSC to ensure compliance with state and federal requirements pertaining to hazardous waste.

California law provides the general framework for regulation of hazardous wastes by the Hazardous Waste Control Act, passed in 1972. DTSC is the state's lead agency in implementing the Act. The Act provides for state regulation of existing hazardous waste facilities, which include "any structure, other appurtenances, and improvements on the land, used for treatment, transfer, storage, resource recovery, disposal, or recycling of hazardous wastes," and requires permits for, and inspections of, facilities involved in generation and/or treatment, storage, and disposal of hazardous wastes.

California Division of Occupational Safety and Health

Cal/OSHA is responsible for developing and enforcing workplace safety standards and assuring worker safety in the handling and use of hazardous materials. Among other requirements, Cal/OSHA obligates many businesses to prepare Injury and Illness Prevention Plans and Chemical Hygiene Plans. The Hazard Communication Standard requires that workers be informed of the hazards associated with the materials they handle. For example, manufacturers must appropriately label containers, Material Safety Data Sheets must be available in the workplace, and employers are to properly train workers.

Construction Site Well Review Program

DOGGR oversees the drilling, operation, maintenance, and plugging and abandonment of oil, natural gas, and geothermal wells. The regulatory program emphasizes the wise development of oil, natural gas, and geothermal resources in the state through sound engineering practices that protect the environment, prevent pollution, and ensure public safety. DOGGR is charged with implementing Public Resources Code (PRC) Section 3208.1. As a result, DOGGR developed the Construction Site Well Review program to assist local permitting agencies in identifying and reviewing the status of oil or gas wells located near or beneath proposed structures. Before issuing building or grading permits, local permitting agencies review and implement DOGGR's preconstruction well requirements.

The Construction Site Well Review Program provides important information on the current status of all known wells located on a development site, and it provides other important information when development occurs near oil or gas wells. DOGGR provides this information in an advisory role, so that responsible decisions can be made by the property owner, developer, and local permitting agency when development occurs near oil or gas wells. In a June 27, 2017, comment letter on the notice of preparation (NOP) for the Plan (Appendix A), DOGGR stated that its records indicate that there are at least two plugged and abandoned wells in or near the Planning Area, and that individual well records are available on the DOGGR website or by making an appointment with the division's Records Clerk. According to PRC Section 3208.1, if any property owner, developer, or local permitting agency either fails to obtain an opinion from DOGGR or fails to follow the advice of the division when development occurs near an oil or gas well, then the owner of the property on which the well is located may be responsible for abandonment costs should a future problem arise with the well.

Unified Hazardous Waste and Hazardous Materials Management

In January 1996, CalEPA adopted regulations implementing a "Unified Hazardous Waste and Hazardous Materials Management Regulatory Program" (Unified Program). The six program elements of the Unified Program are hazardous waste generators and hazardous waste on-site treatment, UST, above-ground storage tanks, hazardous material release response plans and inventories, risk management and prevention program, and Uniform Fire Code hazardous materials management plans and inventories. The program is implemented at the local level by a local agency—the Certified Unified Program Agency (CUPA). The CUPA is responsible for consolidating the administration of the six program elements within its jurisdiction. Participating agencies to the Los Angeles County CUPA for UST are the City of Burbank Fire Department, the City of Pasadena Fire Department, and the City of Torrance Fire Department (Los Angeles County Public Works n.d.).

California's Hazardous Materials Release Response Plans and Inventory Law, sometimes called the "Business Plan Act," aims to minimize the potential for accidents involving hazardous materials and

to facilitate an appropriate response to possible hazardous materials emergencies. The law requires businesses that use hazardous materials to provide inventories of those materials to designated emergency response agencies, to illustrate on a diagram where the materials are stored on-site, to prepare an emergency response plan, and to train employees to use the materials safely.

California Accidental Release Prevention Program

CalARP (CCR Title 19, Division 2, Chapter 4.5) covers certain businesses that store or handle more than a certain volume of specific regulated substances at their facilities. The CalARP program regulations became effective on January 1, 1997 and include the provisions of the Federal Accidental Release Prevention program (Title 40, CFR Part 68) with certain additions specific to California pursuant to Article 2, Chapter 6.95, of the Health and Safety Code.

The list of regulated substances is found in Article 8, Section 2770.5 of the CalARP program regulations. Businesses that use a regulated substance above the noted threshold quantity must implement an accidental release prevention program, and some may be required to complete a Risk Management Plan (RMP). An RMP is a detailed engineering analysis of the potential accident factors present at a business and the mitigation measures that can be implemented to reduce this accident potential. The purpose of an RMP is to decrease the risk of an off-site release of a regulated substance that might harm the surrounding environment and community. An RMP includes the following components: safety information, hazard review, operating procedures, training, maintenance, compliance audits, and incident investigation. The RMP must consider the proximity to sensitive populations located in schools, residential areas, general acute care hospitals, long-term health care facilities, and child day-care facilities, and must also consider external events such as seismic activity.

California Airport Land Use Compatibility Plan

The Airport Land Use Commission (ALUC) provides for orderly growth of an airport and the area surrounding the airport within the jurisdiction of the ALUC, excluding existing land uses. Its primary function is to safeguard the general welfare of the inhabitants within the vicinity of the airport and the public in general. Cities and/or counties have a responsibility to ensure the orderly development of the airports within their local jurisdiction and make sure all applicable planning documents and building regulations are consistent with the Airport Land Use Compatibility Plan (ALUCP).

Hazardous Waste Control Act

The 1972 Hazardous Waste Control Act (Health & Safety Code Section 25100 et seq.) is the seminal hazardous waste control law in California. It establishes standards for regulating the generation, handling, processing, storage, transportation, and disposal of hazardous wastes. The hazardous waste control program is administered by DTSC and local CUPAs.

Emergency Response to Hazardous Materials Incidents

The State of California has developed an Emergency Response Plan to coordinate emergency services provided by federal, state, and local government and private agencies. Response to hazardous materials incidents is one part of this plan. The Plan is managed by the State Office of Emergency Services (OES), which coordinates the responses of other agencies including CalEPA, CHP, and CDFW.

California Department of Transportation, Hazardous Materials Transportation

DOT regulates hazardous materials transportation between states. State agencies with primary responsibility for enforcing federal and state regulations and responding to hazardous materials transportation emergencies are the CHP and Caltrans. Together, these agencies determine container types used and license hazardous waste haulers for hazardous waste transportation on public roads. It is illegal to transport explosives or inhalation hazards on any public highway not designated for that purpose, unless the use of the highway is required to permit delivery, or the loading, of such materials (Cal. Vehicle Code Sections 31602(b) and 32104(a)). When transporting explosives through or into a jurisdiction for which a route has not been designated by CHP, drivers must follow routes as may be prescribed or established by local authorities (California Vehicle Code, Section 31614(a)). The transportation of explosives in quantities of 1,000 pounds or less, or other than on a public highway, is subject to the California Health and Safety Code (California Vehicle Code, Section 31601(a)).

California Health and Safety Code

CalEPA oversees the regulation and management of hazardous materials on a statewide level through the DTSC. In 1995, legislation went into effect that required CalEPA to consolidate permitting, inspection, and enforcement activities in several hazardous material and hazardous waste program areas. Additionally, Section 65962.5 of the Government Code directs DTSC to compile a list of all hazardous-waste facilities subject to corrective action pursuant to Section 25187.5 of the Health and Safety Code. California Code of Regulations Title 3 of the California Code of Regulations (CCR) pertain to the application of pesticides and related chemicals. Parties applying regulated substances must continuously evaluate application equipment, the weather, and all surrounding properties. Title 3 specifically prohibits any application that would:

- Contaminate people not involved in the application of the materials;
- Damage non-target crops, animals, or any other public or private property;
- Contaminate public or private property; and,
- Create health hazards on public or private property.

Title 17 of the CCR establishes regulations related to the use and disturbance of materials containing naturally occurring asbestos. Title 22 of the CCR sets forth definitions of hazardous waste and special waste. It also identifies hazardous waste criteria, and establishes regulations pertaining to the storage, transport, and disposal of hazardous waste. In addition to other criteria, Title 26 of the CCR establishes the requirements for the transport, containment, and disposal of hazardous materials. Title 27 of the CCR sets forth a number of regulations relating to the construction, operation, and maintenance of landfills in the State. It establishes a landfill classification system and identifies categories of waste. Each class and type of landfill may then be constructed to contain specific types of waste.

Disaster Mitigation Act

The Disaster Mitigation Act of 2000 (DMA2K) (Public Law 106-390) amended the Robert T. Stafford Disaster Relief and Emergency Assistance Act of 1988 to establish a Pre-Disaster Mitigation (PDM) program and new requirements for the federal post-disaster Hazard Mitigation Grant Program (HMGP). DMA2K encourages and rewards local and State pre-disaster planning by promoting sustainability and seeking to integrate State and local planning with an overall goal of strengthening

statewide hazard mitigation. This enhanced planning approach enables local, tribal, and state governments to identify specific strategies for reducing probable impacts of natural hazards such as floods, fire, and earthquakes. To be eligible for hazard mitigation funding after November 1, 2004, local governments are required to develop a Hazard Mitigation Plan that incorporates specific program elements of the DMA2K law.

California Emergency Plan

The California Office of Emergency Services (Cal OES) Emergency Plan outlines a state-level strategy to support local government efforts during a large-scale emergency (OES 2017). In accordance with the California Emergency Services Act, the State Emergency Plan describes methods for carrying out emergency operations, mutual aid processes, emergency services of governmental agencies, resource mobilization, emergency public information, and continuity of government. California also has a Master Mutual Aid Agreement between all state departments, established in 1950, and a separate Law Enforcement Mutual Aid Plan and California Fire Service and Rescue Emergency Mutual Aid Plan, both published in 2014 by Cal OES.

Seismic Hazards Mapping Act

The Seismic Hazards Mapping Act (SHMA) of 1990 (Public Resources Code, Chapter 7.8, Section 2690- 2699.6) directs the Department of Conservation (DOC), California Geological Survey to identify and map areas prone to earthquake hazards of liquefaction, earthquake-induced landslides, and amplified ground shaking. The purpose of the SHMA is to reduce the threat to public safety and to minimize the loss of life and property by identifying and mitigating these seismic hazards. The SHMA was passed by the legislature following the 1989 Loma Prieta earthquake. The SHMA requires the State Geologist to establish regulatory zones (Zones of Required Investigation) and to issue appropriate maps (Seismic Hazard Zone maps). These maps are distributed to all affected cities, counties, and state agencies for their use in planning and controlling construction and development. Single family frame dwellings up to two stories not part of a development of four or more units are exempt from the state requirements. However, local agencies can be more restrictive than state law requires.

Cal-OSHA Worker Safety Requirements

The California Occupational Safety and Health Administration (Cal-OSHA) assumes primary responsibility for developing and enforcing workplace safety regulations within California. Cal-OSHA regulations pertaining to the use of hazardous materials in the workplace, as detailed in CCR Title 8, include requirements for safety training, availability of safety equipment, accident and illness prevention programs, hazardous substance exposure warnings, and emergency action and fire prevention plan preparation. Cal-OSHA's hazard communication program requires that Material Safety Data Sheets be available to employees and that employee information and training programs be documented.

California Building Code

The California Building Code (CBC) is found in the California Code of Regulations (CCR) in Part 2 of Title 24, administered by the California Building Standards Commission, which, by law, is responsible for coordinating all building standards. Under state law, all building standards must be centralized in Title 24, or they are not enforceable. The purpose of the CBC is to establish minimum standards to safeguard the public health, safety, and general welfare through structural strength, means of

egress facilities, and general stability by regulating and controlling the design, construction, quality of materials, use and occupancy, location, and maintenance of all building and structures within a jurisdiction.

California Fire Code

The California Fire Code is Chapter 9 of CCR Title 24. It is the primary means for authorizing and enforcing procedures and mechanisms to ensure the safe handling and storage of any substance that may pose a threat to public health and safety. The California Fire Code regulates the use, handling, and storage requirements for hazardous materials at fixed facilities. The California Fire Code and the California Building Code use a hazard classification system to determine what protective measures are required to protect fire and life safety. These measures may include construction standards, separations from property lines and specialized equipment. To ensure that these safety measures are met, the California Fire Code employs a permit system based on hazard classification.

Standardized Emergency Management System

The Standardized Emergency Management System (SEMS) Multi-Hazard Functional Plan (MHFP) addresses the City's planned response to extraordinary emergency situations associated with natural disasters, technological incidents, and national security emergencies. The operational concepts reflected in the SEMS MHFP focus on potential large-scale disasters that can generate unique situations requiring unusual emergency responses. The intent of the SEMS law is to improve the coordination of state and local emergency response in California. It requires all jurisdictions in California to participate in the establishment of a standardized statewide emergency management system.

In an emergency, governmental response is an extension of responsibility and action, coupled with normal day-to-day activity. Normal governmental duties will be maintained with emergency operations carried out by those agencies assigned specific emergency functions. The SEMS has been adopted by the City of Palmdale for managing response to multi-agency and multi-jurisdiction emergencies and to facilitate communications and coordination between all levels of the system and among all responding agencies. Chapter 1 of Division 2 of Title 19 of the CCR establishes the standard response structure and basic protocols to be used in emergency response and recovery (City of Palmdale 2012).

Fully activated, the SEMS consists of five levels:

- **Field Response.** Consists of emergency response personnel and resources, under the command of an appropriate authority, and carries out tactical decisions and activities in direct response to an incident or threat.
- **Local Government.** Includes cities, counties, and special districts. Local governments manage and coordinate the overall emergency response and recovery activities with their jurisdiction and are required to use SEMS when their emergency operations center is activated or a local emergency is proclaimed in order to be eligible for state funding of response-related personnel costs.
- **Operational Area.** An intermediate level of the state's emergency services organization consisting of a county and all political subdivisions within the county area. Political subdivisions include cities, a city and county, counties, districts, or other local governmental agency or public agency as authorized by law.

- **Mutual Aid Regions.** Provides for the more effective application and coordination of mutual aid and other emergency-related activities. The state is divided into six mutual aid regions.
- **State Government.** Manages state resources in response to the emergency needs of the other levels and coordinates mutual aid among the mutual aid regions and between the regional level and state level. The state level also serves as the coordination and communication link between the state and the federal disaster response system.

National Incident Management System Implementation

Presidential Directive HSPD 5 identifies steps for improved coordination in response to incidents and requires a National Response Plan and a National Incident Management System (NIMS). NIMS is a comprehensive, national approach to incident management developed to improve the coordination of federal, state, and local emergency response nationwide. The State of California's NIMS Advisory Committee issued "California Implementation Guidelines for the National Incident Management System" to assist local governments and other entities to incorporate NIMS into already existing programs, plans, training, and exercises.

Mutual Aid Agreements

The foundation of California's emergency planning and response is a statewide mutual aid system which is designed to ensure that adequate resources, facilities, and other support is provided to jurisdictions whenever their own resources prove to be inadequate to cope with a given situation.

The California Disaster and Civil Defense Master Mutual Aid Agreement (California Government Code Sections 8555–8561) requires signatories to the agreement to prepare operational plans to use within their jurisdiction and outside their area. These plans include fire and non-fire emergencies related to natural, technological, and war contingencies. The State of California, all state agencies, all political subdivisions, and all fire districts signed this agreement in 1950.

Section 8568 of the California Government Code, the "California Emergency Services Act," states that "the State Emergency Plan shall be in effect in each political subdivision of the state, and the governing body of each political subdivision shall take such action as may be necessary to carry out the provisions thereof." The Act provides the basic authority for conducting emergency operations following the proclamations of emergencies by the Governor or appropriate local authority, such as a City Manager. The provisions of the act are further reflected and expanded on by appropriate local emergency ordinances. Therefore, local emergency plans are considered extensions of the California Emergency Plan.

As discussed, six mutual aid regions exist in the State of California, each region consisting of counties designated by the State Office of Emergency Services. The Planning Area is within Region I.

c. Local

Palmdale Municipal Code (PMC)

PMC Chapter 15.28, Floodplain Management, in Title 15 – Buildings and Construction , enforces regulations to minimize the loss of life and property within the City of Palmdale.

PMC Chapter 17.100, Hillside Management, in Title 17 – Zoning, implements goals and policies of the City's General Plan that relate to development and resource management on hillside areas in Palmdale.

PMC Chapter 17.96, Hazardous Waste Facilities, in Title 17 – Zoning, establishes a Conditional Use Permit application and review process that is consistent with Los Angeles County Hazardous Waste Management Plan to ensure health and safety for the community members and natural environment in Palmdale.

Palmdale General Plan Safety Element

The City of Palmdale's Safety Element provides goals and policies that address natural and manmade hazards within the community to ensure public safety and wellbeing for the community. Applicable goals and policies are referenced throughout Section 4.9.3, *Impact Analysis,* below.

Palmdale Emergency Operations Plan

The Palmdale Emergency Operations Plan was developed in 2012 to serve as a guiding document for emergency/disaster response in the City and is currently being updated with the goal of City adoption by December 2022. The Plan assigns responsibility to organizations and individuals for carrying out specific actions at projected times and places in an emergency that exceeds the capability or routine responsibility of any one agency. Sets forth lines of authority and organizational relationships and shows how all actions will be coordinated. Describes how people and property will be protected in emergencies and disasters. Identifies personnel, equipment, facilities, supplies, and other resources available--within the jurisdiction or by agreement with other jurisdictions--for use during response and recovery operations.

Palmdale Local Hazard Mitigation Plan

The City of Palmdale's Local Hazard Mitigation Plan identifies plans, policies, programs, and ordinances to protect the community and environment from, mitigate and reduce risk of natural and technological/manmade hazards in Palmdale.

4.9.3 Impact Analysis

a. Methodology and Significance Thresholds

The analysis in this section focuses on the use, disposal, transport, or management of hazardous or potentially hazardous materials resulting from development or redevelopment envisioned under the Plan, as well as other concerns such as hazards introduced by aviation activities. Disposal options, the probability for risk of upset, and the severity of consequences to people or property associated with the increased use, handling, transport, and/or disposal of hazardous materials associated with implementation of the Plan are also analyzed. The risks from development in the identified focus areas relative to the location of known contaminated sites are analyzed. Construction impacts would generally result from demolition of existing (usually older) structures, as well as from disturbance of contaminated soils. Operational impacts would generally be a function of the types of uses proposed and the materials that operation of these uses entails.

The analysis assumes that any development under the Plan would comply with relevant federal and state laws and regulations, as well as the requirements of the PMC and current General Plan.

According to CEQA Guidelines Appendix G, impacts related to hazards and hazardous materials would be potentially significant if implementation of the Plan would:

1. Create significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials

2. Create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment
3. Emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within 0.25 mile of an existing or proposed school
4. Be located on a site that is included on a list of hazardous material sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment
5. For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the Plan result in a safety hazard or excessive noise for people residing or working in the Planning Area
6. Impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan
7. Expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires

b. Project and Cumulative Impacts

Threshold 1:	Would the Plan create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials?
Threshold 2:	Would the Plan create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment?

Impact HAZ-1 IMPLEMENTATION OF THE PLAN COULD RESULT IN AN INCREMENTAL INCREASE OF THE OVERALL ROUTINE TRANSPORT, USE, STORAGE, AND DISPOSAL OF HAZARDOUS MATERIALS. COMPLIANCE WITH APPLICABLE REGULATIONS RELATED TO THE HANDLING, TRANSPORT, DISPOSAL, AND STORAGE OF HAZARDOUS MATERIALS AND ADHERENCE TO PLAN POLICIES WOULD MINIMIZE THE RISK OF SPILLS AND THE PUBLIC'S POTENTIAL EXPOSURE TO THESE SUBSTANCES AND REDUCE THE RISK OF ADVERSE IMPACTS OF HAZARDOUS MATERIALS. THIS IMPACT WOULD BE LESS THAN SIGNIFICANT.

While the Planning Area contains ample vacant land and room for growth, there are large areas of land in the Planning Area that are designated for industrial use. According to the Existing Conditions Report prepared by Raimi & Associates, *Land Use + Urban Form* (2019), nearly 14 percent of land use within the City limits is designated as Industrial, which includes Extraction, Agriculture, Wholesale/Warehousing and Industrial. Major projects that are under consideration for City approval anticipate 110,000 square feet of new industrial uses (Raimi & Associates 2021), however, new industrial square footage is proposed in areas that already contain industrial land uses.

The introduction of new mixed-use, commercial, and industrial uses in the Planning Area, may result in an incremental increase in the use of hazardous materials and/or the generation of hazardous materials. While there is a possibility that new industrial uses within the focus areas could transport, use, store, or dispose of hazardous materials, most areas identified for mixed-use development under the Plan would involve commercial and retail uses and would not involve the transport, use, storage, or disposal of hazardous materials associated with industrial activities. However, future industrial development could result in closer proximity of residences to the routine handling, use, storage, disposal, or transport of hazardous materials. This is especially true in areas where new

residential development could be introduced in areas in close proximity to existing and/or future industrial and commercial development.

Exposure of persons to hazardous materials could occur by improper handling or use of hazardous materials or hazardous wastes during construction or operation of future developments, particularly by untrained personnel; transportation accidents; environmentally unsound disposal methods; or fire, explosion, or other emergencies. The types and amounts of hazardous materials would vary according to the nature of the activity. In some cases, it is the type of material that is potentially hazardous; in others, it is the amount of material that could present a hazard.

Although the overall quantity of hazardous materials and waste generated in the Planning Area could incrementally increase under the Plan, all new developments that handle or use hazardous materials would be required to comply with regulations, standards, and guidelines established by the USEPA, State of California, Los Angeles County, and City of Palmdale related to storage, use, and disposal of hazardous materials.

Both the federal and state governments require all businesses that handle more than a specified number of hazardous materials to submit a business plan to a regulating agency. Specifically, any new business that meets the specified criteria must submit a full hazardous materials disclosure report that includes an inventory of the hazardous materials generated, used, stored, handled, or emitted; and emergency response plans and procedures to be used in the event of a significant or threatened significant release of a hazardous material. The emergency response plan needs to identify the procedures to follow for immediate notification to all appropriate agencies and personnel in the event of a release, identification of local emergency medical assistance appropriate for potential accident scenarios, contact information for all company emergency coordinators of the business, a listing and location of emergency equipment at the business, an evacuation plan, and a training program for business personnel. The Los Angeles County Fire Department, as the designated CUPA, conducts yearly inspections of all such businesses to confirm that their business plan is in order and up to date (Los Angeles County Fire Department 2022).

Because implementation of the Plan would primarily result in urban infill and redevelopment and intensification of development in specific focus areas in the Planning Area, existing structures may need to be demolished prior to the construction of new buildings. Demolition of existing structures in the Planning Area could result in exposure of construction personnel and the public to hazardous substances such as asbestos or lead-based paints. Long-term risks to occupants of buildings could result from other contaminants released from the soil, such as radon gas. In addition, disturbance of plugged, abandoned, and unrecorded oil and gas wells could result in the release of hazardous materials into the environment. Lastly, the accidental spill or leakage of hazardous materials during transport, use, storage, or disposal could result in the exposure of construction personnel and the public to health or safety risks.

Exposure to hazardous materials during construction and operation of projects facilitated by the Plan could potentially occur through any of the following:

- Direct dermal contact with hazardous materials
- Incidental ingestion of hazardous materials (usually due to improper hygiene, when people fail to wash their hands before eating, drinking, or smoking)
- Inhalation of airborne dust released from dried hazardous materials, or other hazardous materials such as radon gas

The Plan's Safety Element includes a variety of goals and policies to reduce the potential exposure of people and the environment to hazards and hazardous materials:

- **Goal SE-3: Minimize risks associated with the transport, storage, use, and disposal of hazardous materials.**
  - **Policy SE-3.1: Hazardous Materials**. Coordinate with the Los Angeles County Fire Department to maintain a list of hazardous waste generators that could affect City residents.
  - **Policy SE-3.2: Remediate Contaminated Sites**. Continue to support and encourage state and county efforts to identify and remediate contaminated sites.
  - **Policy SE-3.3: Soil and Groundwater Cleanup**. Require clean-up of soil and/or groundwater containing hazardous materials exceeding regulatory action levels to the satisfaction of the agency having jurisdiction prior to granting permits for new development.
  - **Policy SE-3.4: Hazardous Materials Transport**. Require transport of hazardous materials along designated routes that minimize risks to the public and sensitive environmental areas and cooperate with regional agencies in developing and maintaining such routes.
  - **Policy SE-3.5: Review Development Near Hazardous Materials**. Review proposed development in proximity to any existing or proposed facility that uses, stores, or transports large amounts of hazardous materials to ensure adequate mitigation of impacts related to hazardous materials (e.g., appropriate site design, setbacks, and buffering).
  - **Policy SE-3.6: Hazardous Waste Facility Compliance**. Require all proposed hazardous waste facilities to comply with the City's hazardous waste management plan and the Hazardous and Waste Facilities Section of the Palmdale Municipal Code.
- **Goal SE-5: Minimize damage from catastrophic failure of infrastructure**.
  - **Policy SE-5.1: Evaluate inundation hazards**. As appropriate, evaluate inundation hazards related to the potential rupture of the following when reviewing development proposals: California Aqueduct, Palmdale Dam, Littlerock Dams and/or proposed basins.
  - **Policy SE-5.2: Buffers for gas lines**. Require buffers for development in areas near high-pressure natural gas lines and that ensure such development is provided with alternative access/evacuation routes.
- **Goal SE-7: Ensure safe evacuation of residents in the event of an emergency requiring evacuation.**
  - **Policy SE-7.1: Maintain Emergency Evacuation Map.** Maintain and, as necessary, update a map of designated emergency evacuation routes for various types of disasters (e.g., earthquake, wildfire, hazardous material release, dam failure) and disaster scenarios.

These goals and policies would minimize risks from routine use, transport, handling, storage, and disposal of hazardous materials. Oversight by the appropriate federal, state, and local agencies and compliance with applicable regulations related to the handling and storage of hazardous materials would minimize the risk of public exposure to these substances.

The Plan would not create a significant hazard to the public or the environment through the routine transport, use, or disposal of hazardous materials or create a significant hazard to the public or the environment through reasonably foreseeable upset and accident conditions involving the release of hazardous materials into the environment. Therefore, impacts would be less than significant**.**

Mitigation Measures

No mitigation measures are required.

Threshold 3:	Would the Plan emit hazardous emissions or handle hazardous or acutely hazardous materials, substances, or waste within 0.25 mile of an existing or proposed school?

Impact HAZ-2 NEW DEVELOPMENT OF LAND USES FACILITATED BY THE PLAN COULD RESULT IN ACCIDENTAL RELEASE OF HAZARDOUS MATERIALS WITHIN ONE QUARTER MILE OF EXISTING SCHOOLS. COMPLIANCE WITH REGULATORY REQUIREMENTS OF THE CITY'S FIRE CODE, PLAN POLICIES, AND EXISTING APPLICABLE STATE AND FEDERAL REGULATIONS WOULD ENSURE THAT RISKS FROM HAZARDOUS EMISSIONS OR HANDLING OF HAZARDOUS MATERIALS, SUBSTANCES, OR WASTE NEAR EXISTING OR PROPOSED SCHOOLS WOULD REMAIN LESS THAN SIGNIFICANT.

Under the Plan, an increase in industrial land uses by approximately 110,000 square feet could increase the quantity of sensitive receptors (including schools) near areas designated for industrial land use, thereby potentially increasing the risk of exposure to hazardous materials, waste, or emissions within 0.25 mile of an existing or proposed school.

However, the locations for proposed industrial development under the Plan exist in areas already designated for industrial land uses and are greater than 0.25 mile from existing schools. However, accidental release or combustion of hazardous materials at both existing and new commercial and/or industrial developments in the City could endanger residents or students in the surrounding community.

All businesses that handle or have on-site transportation of hazardous materials are required to comply with the provisions of the City's Fire Code and any additional elements as required in the California Health and Safety Code Article 1, Chapter 6.95, *Hazardous Materials Release Response Plans and Inventory*. As described under Impact HAZ-1 above, both the federal and state governments require all businesses that handle more than a specified number of hazardous materials to submit a business plan to the regulating agency. Furthermore, the goals and policies of the Plan's Safety Element, listed above in Impact HAZ-1, would reduce the potential exposure of people and the environment to hazards and hazardous materials.

Compliance with the provisions of CalEPA, CalOSHA, and DTSC—as well as the City's Fire Code and Plan goals—would minimize the risks associated with exposure of sensitive receptors such as schools to hazardous materials. With continued implementation of these requirements on all new development in the Planning Area, this impact would be less than significant.

Mitigation Measures

No mitigation measures are required.

Threshold 4:	Would the Plan be located on a site that is included on a list of hazardous material sites compiled pursuant to Government Code Section 65962.5 and, as a result, would it create a significant hazard to the public or the environment?

Impact HAZ-3 IMPLEMENTATION OF THE PLAN COULD RESULT IN DEVELOPMENT OF SITES CONTAMINATED WITH HAZARDOUS MATERIALS. HOWEVER, COMPLIANCE WITH APPLICABLE REGULATIONS RELATING TO SITE CLEANUP AND ADHERENCE TO PLAN POLICIES WOULD MINIMIZE THE IMPACTS RELATED TO DEVELOPMENT ON A LISTED CONTAMINATED SITE. THIS IMPACT WOULD BE LESS THAN SIGNIFICANT.

The following databases and listings compiled pursuant to Government Code Section 65962.5 were checked (October 1, 2021) for known hazardous materials contamination in the Planning Area:

- **USEPA**
  - Comprehensive Environmental Response, Compensation, and Liability Information System (CERCLIS)/Superfund Enterprise Management System (SEMS)/Envirofacts database search
- **SWRCB**
  - GeoTracker search for leaking underground storage tanks (LUST) and other cleanup sites
- **DTSC**
  - EnviroStor database for hazardous waste facilities or known contamination sites
  - Cortese list of Hazardous Waste and Substances Sites

Soil and Groundwater Contamination

Unknown Contaminated Sites

Aside from the potential release of hazardous materials from demolition of existing structures in the Planning Area, grading and excavation of sites for future development in the Planning Area resulting from implementation of the Plan may also expose construction workers and the public to potentially unknown hazardous substances present in the soil or groundwater. If any unidentified sources of contamination are encountered during grading or excavation, the removal activities required could pose health and safety risks such as the exposure of workers, materials handling personnel, and the public to hazardous materials or vapors. Such contamination could cause various short-term or long-term adverse health effects in persons exposed to the hazardous substances.

The goals and polices of the Plan's Safety Element, listed above in Impact HAZ-1 and including Goals SE-3 through SE-7 and related policies, would reduce impacts involving unknown contaminated sites.

Known Contaminated Sites

Potential hazards to construction workers and the public could also result from construction activities on existing land uses that are known to be contaminated. As noted previously, there is one active site in the Planning Area (Air Force Plant 42) identified as containing or potentially containing hazardous waste contamination. According to the SWRCB, all other sites have a case-closed status, including LUSTs, Military UST, Cleanup Program and Military Cleanup sites (SWRCB 2022).

According to DTSC, hazardous waste sites in the Planning Area include Military Evaluation, State Response, School Investigation, Tiered Permit, School Cleanup, Voluntary Cleanup, Evaluation, and Corrective Action sites (DTSC 2022). The distribution of contaminated sites indicates that hazardous

materials are mostly located along major industrial and commercial corridors in the Planning Area. However, any new development occurring on these documented hazardous materials sites, depending on its status and subsequent required action, would be preceded by remediation and cleanup under the supervision of DTSC before construction activities could begin.

It is also possible that USTs that were in use prior to permitting and record keeping requirements may be present in the Planning Area. If an unidentified UST was uncovered or disturbed during construction activities, it would be closed in place or removed pursuant to existing hazard materials regulations. Removal activities could pose both health and safety risks, such as the exposure of workers, tank handling personnel, and the public to tank contents or vapors. Potential risks, if any, posed by USTs would be minimized by managing the tank according to existing Los Angeles County standards as enforced and monitored by the Department of Public Works. The extent to which groundwater may be affected, if at all, depends on the type of contaminant, the amount released, and depth to groundwater at the time of the release. If groundwater contamination is identified, remediation activities would be required by the RWQCB prior to commencement of any new construction activities. Additionally, if contamination exceeds regulatory action levels, the developer would be required to undertake remediation procedures prior to grading and development under the supervision of the County's Public Works Department, County Department of Toxic Substances Control, or RWQCB (depending upon the nature of any identified contamination).

Therefore, implementation of existing state and local regulations would reduce the potential significance of impacts related to contaminated sites to a less than significant level.

Mitigation Measures

No mitigation measures are required.

Threshold 5:	For a project located within an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the Plan result in a safety hazard or excessive noise for people residing or working in the Planning area?

Impact HAZ-4 DEVELOPMENT UNDER THE PLAN MAY RESULT IN CONSTRUCTION IN PROXIMITY TO THE PALMDALE REGIONAL AIRPORT AND UNITED STATES AIR FORCE PLANT 42. COMPLIANCE WITH EXISTING REGULATIONS, INCLUDING THE FEDERAL CODE OF REGULATIONS AND ALCUP POLICIES, WOULD REDUCE IMPACTS TO A LESS THAN SIGNIFICANT LEVEL.

Hazards associated with airports are generally related to construction of tall structures within a flight zone that could interfere with flight paths, increasing the number of people working or residing in areas subject to crash hazards and noise hazards to sensitive receptors within the vicinity of a flight path. The Palmdale Regional Airport is a 9,000-square-foot commercial airport within the City limits owned by the City of Los Angeles Department of Airports and operated under a joint agreement with the US Air Force Plant 42 (Raimi & Associates 2021 and County of Los Angeles Airport Land Use Commission 2003). There are currently plans to expand the airport as there is a strong transportation demand for commercial air passenger service in the City of Palmdale (City of Palmdale 2021).

Under the Plan, there is potential that residential, commercial, and industrial uses could be constructed in proximity to the Palmdale Regional Airport and future development of the airport. However, the Plan does not change the height limits that currently apply to both existing and new uses in these areas. Compliance with existing regulations, including polices in the California ALUCP,

would reduce potential hazards. According to the Federal Code of Regulations, 14 CFR 77 would require the proponent of any planned development to file notice with the FAA for any construction or alteration that exceeds an imaginary surface extending outward and upward at a slope of 25 to one for a horizontal distance of 5,000 feet from the nearest point of the nearest landing and takeoff area of a heliport described in 14 CFR 77.9(d). However, if future development in the vicinity of the Palmdale Regional Airport were "shielded by existing structures of a permanent and substantial nature of equal or greater height," a notice to the FAA under 14 CFR 77 would not be required. Compliance with 14 CFR 77, under its applicable conditions, and existing regulations that establish local consistency with the California ALUCP would reduce impacts to a less than significant level.

Mitigation Measures

No mitigation measures are required.

Threshold 6:	Would the Plan impair implementation of or physically interfere with an adopted emergency response plan or emergency evacuation plan?

Impact HAZ-5 POPULATION GROWTH AND INCREASED DEVELOPMENT AS A RESULT OF THE PLAN COULD IMPACT EVACUATION ROUTES IN THE EVENT OF AN EMERGENCY IN THE PLANNING AREA. PROPOSED GOALS IN THE PLAN WOULD ENSURE EFFECTIVE EMERGENCY RESPONSE FOLLOWING A NATURAL OR HUMAN CAUSED DISASTER. THEREFORE, THE PLAN WOULD NOT RESULT IN INTERFERENCE WITH AN ADOPTED EMERGENCY RESPONSE PLAN OR EMERGENCY EVACUATION PLAN. THIS IMPACT WOULD BE LESS THAN SIGNIFICANT.

The Plan would facilitate increased development and population growth in the Planning Area. Population growth would incrementally increase traffic which could impacting evacuation routes in the Planning Area. However, the Safety Element of the Plan includes a variety of goals and policies to ensure adequate emergency access, including:

- **Goal SE-2: Minimize public health, safety, and welfare impacts resulting from wildfire hazards.**
  - **Policy SE-2.7: Emergency Access Routes for Wildfire Hazard Zones**. Require all new development in or near designated wildfire hazard zones to identify multiple evacuation/emergency access routes and file with City.
- **Goal SE-7: Ensure safe evacuation of residents in the event of an emergency requiring evacuation**
  - **Policy SE-7.1: Maintain Emergency Evacuation Map**. Maintain and, as necessary, update a map of designated emergency evacuation routes for various types of disasters (e.g., earthquake, wildfire, hazardous material release, dam failure) and disaster scenarios.
  - **Policy SE-7.2: Evacuation Route Information.** Make information regarding emergency evacuation routes readily available to all city residents.
  - **Policy SE-7.3: Review Development Consistency**. Review all new development for consistency with applicable evacuation plans and ensure access to at least two evacuation routes.
  - **Policy SE-7.4: Emergency Evacuation Evaluation**. Continue to evaluate evacuation route capacity, safety, and viability under a range of emergency scenarios.
  - **Policy SE-7.5: Evacuation in VHFSZ and HFSZ.** Require developers proposing development on properties within VHFSZ and HFSZ areas to evaluate and provide adequate evacuation routes.

- **Goal SE-10: Reduce crime activity.**
  - **Policy SE-10.3: Maximize Safety and Security**. Through the development review process, ensure that sites are designed in order to maximize safety and security, considering such factors as visibility, lighting, emergency access, legibility of street numbers, and fencing.

There are seven fire stations that are part of the Los Angeles County Fire Department within the Planning Area (Station 24, Station 37, Station 93, Station 114, Station 131, Station 136, and Station 140) and two stations as part of the Plant 42 Fire Department. In addition, the only police station in the Planning Area is the Palmdale Sheriff's Station, part of the Los Angeles County Sheriff's Department. The Planning Area is part of the Los Angeles Operational Area, California Standardized Emergency Management System (SEMS) and National Incident Management System (NIMS). The Operational Area is responsible for coordinating information, resources and priorities among local governments, and using multi-agency or inter-agency coordination to conduct decisions for emergency response activities within the operational area as a whole (City of Palmdale 2012).

Fire Department review of new development applications for adequate emergency access and evacuation routes, in addition to implementation of the Safety Policy Framework for the Plan goals listed above, would ensure adequate emergency response. Therefore, potential impacts to emergency response and evacuation would be less than significant.

Mitigation Measures

No mitigation measures are required.

Threshold 7:	Would the Plan expose people or structures, either directly or indirectly, to a significant risk of loss, injury, or death involving wildland fires?

Impact HAZ-6 THE PLANNING AREA INCLUDES A DESIGNATED VERY HIGH FIRE HAZARD AREA. GOALS INCLUDED IN THE PLAN WOULD MINIMIZE EXPOSURE OF PEOPLE OR STRUCTURES TO RISK OF LOSS, INJURY, OR DEATH INVOLVING WILDFIRE AND WILDLAND FIRES. THIS IMPACT WOULD BE LESS THAN SIGNIFICANT.

The Planning Area is located in a Local Responsibility Area (LRA), which means local governments have financial responsibility for wildland fire protection (CAL FIRE 2022c). According to CAL FIRE's Fire Hazard Severity Zone Viewer, Very High Fire Hazard Severity Zones (VHFHSZ) only exist in the southwestern corner of the City limits. The Ritter Ranch and part of the Anaverde Nuevo Specific Plans would extend into the VHFHSZ. The Ritter Ranch Specific Plan proposed 7,200 new residential units, 73 acres of commercial use, 121 acres of schools, and 95 acres of parks. The Anaverde Nuevo Specific Plan proposed 5,200 residential units, 42 acres of commercial uses, and 42 acres of golf course, recreational, open space and community facility use (Raimi & Associates 2021). All future projects under the Plan would be required to comply with local, State, and federal requirements related to wildland fires, building standards and safety codes, as well as defensible space requirements, where applicable. Further, wildland fires typically are a potential hazard to development located in unmaintained open spaces. In the VHFHSZ within the Planning Area, residential areas south of Rancho Vista Boulevard and residential and commercial uses along West Avenue South are surrounded by open space to the west and south. However, the Plan does not specifically propose additional development within the VHFHSZ and would focus new development in already urbanized or infill sites. Therefore, the Plan would not expose people or structure to a risk of loss, injury, or death.

The following goals from the Safety Policy Framework for the Plan would reduce impacts involving wildland fires:

- **Goal SE-2: Minimize public health, safety, and welfare impacts resulting from wildfire hazards.**
  - **Policy SE-2.1: Critical Facilities**. Prohibit new public or critical facilities in Very High Fire Hazard Severity Zones, except when other options do not exist.
  - **Policy SE-2.2: Redevelopment Compliance.** After a large fire, ensure that re-development located in the in the High and Very High Fire Hazard Severity Zones complies with fire safety requirements for construction, accounting for any increased risk related to climate change.
  - **Policy SE-2.3: Wildland Development.** Require that developments located in wildland interface areas incorporate and enforce standards for construction, including a fuel modification program (i.e., brush clearance, planting of fire-retardant vegetation) to reduce the threat of wildfires, accounting for any increased risk related to climate change.
  - **Policy SE-2.4: Landscaped Buffer Zones.** Provide fire-resistant landscaped buffer zones between high-risk fire hazard areas and urban development with fire clearance located on private land and maintained by the property owner(s).
  - **Policy SE-2.5: Maintain Firesafe Zones.** Require property owners to clear brush and high fuel vegetation and maintain firesafe zones (a minimum distance of 30 feet from the structure or to the property line, whichever is closer) to reduce the risk of fires. For structures located within a Very High Fire Hazard Severity Zone, the required brush clearance distance is 200 feet from structures to the property line.
  - **Policy SE-2.6: Soils and Waterways.** Evaluate soils and waterways for risks from flooding, water quality, and erosion to ensure that they are suitable to support redevelopment following a large fire.
  - **Policy SE-2.9: Development Requirements.** Ensure that the requirements of the Los Angeles County Fire Department are incorporated into new development through the development review process.
  - **Policy SE-2.10: Water system requirements.** Require all new development to be served by a water system that meets applicable fire flow requirements.

New development in the Planning Area would be compliant with Plan goals, along with CAL FIRE Standards, the California Building Code, SB 99, and AB 3074. Therefore, impacts involving exposure of people or structures to wildland fires would be less than significant.

Mitigation Measures

No mitigation measures are required.

4.9.4 Cumulative Impacts

The analysis in this section examines impacts of the Plan on hazards and hazardous materials throughout the County of Los Angeles (the cumulative impact analysis area) and is cumulative in nature. Some types of hazards and hazardous materials impacts are related to site- and project-specific characteristics and conditions and would not be significantly affected by other development outside of the Planning Area. As discussed in Impacts HAZ-1 and HAZ-2, there are existing federal, State, and local regulations that effectively reduce the inherent hazard associated with routine transport, use, storage, and disposal of hazardous materials. Regulations and oversight, as outlined in the impacts analysis above, would also effectively reduce the potential for individual projects to

create a hazard to the public or the environment through reasonably foreseeable upset and accident conditions, within the Planning Area as well as in Los Angeles County. Thus, cumulative impacts related to the transport, use, storage, or disposal of hazardous materials, upset conditions, hazardous emissions near schools, and project locations on known or unknown hazardous materials sites, would be less than significant.

The Plan would have a less than significant impact related to airport hazards and would not contribute to a cumulative impact for this issue area.

Emergency response plans are generally specific to a particular city or county or parts thereof. For example, in the event of an imminent emergency in Palmdale, emergency response would typically be from police, ambulance and fire departments local to the City or County (through mutual aid agreements), and not from areas outside of Los Angeles County. Thus, the cumulative impacts related to conflict with emergency response plans would be less than significant.

Specific land use plans in the Plan would facilitate development near areas mapped as very high fire hazards. The risk of loss from existing development and the anticipated growth within Los Angeles County would result in cumulative impacts related to wildland fire hazards due to development in or near fire hazard zones. As described in Impact HAZ-6, the Plan would result in a less than significant impact to wildfire, and implementation of State requirements for very high fire hazard areas, California Fire Code standards for new structures, and fire hazard policies in the Plan would minimize potential cumulative wildland fire impacts. Therefore, the Plan would not have a considerable contribution to cumulative wildland fire risk.

This page intentionally left blank.

4.10 Hydrology and Water Quality

This section addresses the Plan's potential impacts on the Planning Area's drainage infrastructure, as well as its potential surface water quality impacts. The City of Palmdale obtains its water from the Palmdale Water District (PWD) and Los Angeles County Waterworks District No. 40 (LACW 40), which purchases water from Antelope Valley-East Kern Water Agency (AVEK). PWD serves the central and southern portions of Palmdale while LACWD 40 serves areas both east and west of State Route 14. Watershed, groundwater, and water quality information was obtained from the PWD 2020 Urban Water Management Plan (UWMP) and LACWD 40 UWMP, and other supplemental resources.

4.10.1 Environmental Setting

a. Watershed and Surface Water

A watershed (also known as a drainage or catchment basin) is an area of land that channels and drains all the streams, rivers, rainfall, and snowmelt, into reservoirs, bays, inland water bodies, or an ocean. The watershed could consist of surface water (lakes, streams, reservoirs, and wetlands) and groundwater, and its size is based on its geography. The Planning Area is part of the Antelope Valley Watershed, which is a part of the Antelope Valley Groundwater Basin. The Antelope Valley Watershed is unique in that it does not drain into the Pacific Ocean, but encompasses approximately 1,220 square miles within Los Angeles County. The Planning Area is located in the southern portion of the Antelope Valley Groundwater Basin, in the northern part of Los Angeles County.

The Littlerock Dam and Reservoir, just south of the Planning Area in the San Gabriel Mountains, serves as the PWD's local surface water supply. The Littlerock Dam and Reservoir receives water from natural runoff of the San Gabriel mountains, and intercepts flows from Littlerock and Santiago Canyons. The primary tributaries that supply water to the PWD service area are the Littlerock and Big Rock Creeks, which flow north from the San Gabriel Mountains (PWD 2020). The 65 square mile watershed is in the Angeles National Forest. The Littlerock Dam has a capacity of approximately 3,500-acre feet (PWD 2020).

LACWD 40 purchases water from AVEK, which receives surface water from the State Water Project (SWP) (LACWD 40 2021). AVEK has a maximum of 144,844 acre feet per year (AFY) available from the SWP each year, of which they allocate about 58 percent (LACWD 40 2021).

b. Topography

The Planning Area is in the southeastern portion of the Antelope Valley Groundwater Basin. The City is located in the high desert region of Los Angeles County, between the foothills on San Gabriel and the Sierra Pelona Mountains to the south and west, and the Mojave Desert to the north and east. The city's elevation is 2,655 feet above sea level and most of the developed portions of the city are generally flat (Palmdale 1993), but parts of the City and its Sphere of Influence (the Planning Area) do extend into the foothills of the San Gabriel and Sierra Pelona Mountains, as shown in Figure 2-2 of this EIR.

c. Groundwater

According to the California Department of Water Resources (DWR), the Antelope Valley Groundwater Basin encompasses 1,580 square miles of Los Angeles County, Kern County, and, less prominently, San Bernardino County, and has a storage capacity of approximately 70,000,000-acre feet (DWR 2004). The Antelope Valley Groundwater Basin is comprised of two primary aquifers: (1) the upper (principal) aquifer and (2) the lower (deep) aquifer. The U.S. Geological Survey has identified a series of subbasins in the Antelope Valley Groundwater Basin. The Planning Area is serviced by the PWD and LACWD 40. PWD's service area overlies the Lancaster, Buttes, and Pearland groundwater subbasins. LACWD 40's service area overlies West Antelope, Finger Buttes, Neenach, Willow Springs, Oak Creek, Gloster, Chaffee, Peerless, and North Muroc, in addition to PWD's three subbasins (LACWD 40 2021). The boundaries between the subbasins are determined by discontinuity or by steepening of the groundwater surface as measured in wells (PWD 2020).

Groundwater has accounted for 35 percent of the PWD water supply since 2016. The PWD has 22 active groundwater wells drawing from the Antelope Valley Aquifer (PWD 2020). The PWD is temporarily entitled to a share of a federal groundwater right, of up to 1,450 AFY until 2025. Additionally, the PDW will begin receiving a groundwater production right of 2,770 AFY starting in 2023. The PDW has produced an average of 6,380-acre feet of groundwater per year since 2015. LACWD 40 pumped a total of 14,266 AFY from the Antelope Valley Groundwater Basin in 2020, and average of 15,550 AFY per year between 2016 and 2020 (LACWD 40 2021).

The Lancaster subbasin is in the center of the Antelope Valley Groundwater Basin with its southernmost portions lying within the PWD service area. The Buttes subbasin is located southeast of the Lancaster subbasin where a small portion underlies the PWD service area. The PWD does not currently have any wells or pump water from the Buttes subbasin. The Pearland subbasin is also located southeast of the Lancaster Subbasin where the northern portion of the subbasin lies within the PWD service area. PWD operates 10 wells in the Pearland subbasin, with a pumping capability of 3,500 gallons per minute (gpm). Additionally, the PWD operates 10 wells in the Lancaster subbasin, with a pumping capability of approximately 12,500 gpm (PWD 2020).

The San Andreas rift zone, also known as the San Andreas Fault, has two general groundwater bearing areas. These areas generally lie east and west of the intersection of Pearblossom Highway and Barrel Springs Road in the south-central part of the Planning Area. While the area to the east has poor groundwater production potential, the area to the west has greater groundwater bearing deposits. The PWD has four wells in the San Andreas rift zone, two in the western area and two in the eastern area (PWD 2020).

PWD and LACWD 40 are involved in the adjudication of groundwater rights for the Antelope Valley Groundwater Basin that began in 2004. The adjudication allows groundwater banking between entities and allows PWD and LACWD 40 to take any additional groundwater banked. In late 2015, PWD and LACWD 40, as well as the majority of parties involved, agreed to a stipulated judgment for the adjudication of the Antelope Valley Groundwater Basin. Per the judgment, PWD is receiving a groundwater production right of 2,770 AFY. Prior to the judgment, PWD had an unquantified right to pump water for beneficial use and assumed projected pumping volumes of up to 12,000 AFY based on pumping capacity. In addition to its groundwater production right, PWD is entitled to a share of the unused federal reserved right. Currently, the average amount of PWD's share of unused Federal Reserved Water Right Production is 1,450 AFY. The PWD is also entitled to a pumping allocation for return flow credit of imported water used. Based on the analyses conducted in planning reports return flow credits are projected to range between approximately 4,900 AFY and

6,000 AFY through 2040 (PWD 2020). LACWD 40 was given the right to pump 6,789 AFY, use approximately 3,500 AFY of unused federal reserve rights, and return flows equivalent to 39 percent of LACWD 40's five-year average of purchased SWP water supply (39 percent of 26,657 AFY or 10,400 AFY). LACWD 40 also has the right to lease 2,600 AFY of groundwater rights from AVEK. Overall, LACWD 40's groundwater rights total of 23,289 AFY (LACWD 40 2021).

The antelope Valley Basin is exempt from the requirements of the Sustainable Groundwater Management Act (SGMA), which was passed by the State of California in 2014 and sets forth a statewide framework to help protect groundwater resources over the long-term (DWR 2022). The PWD has not adopted a groundwater management plan, and no regional groundwater management plan currently exists for the Basin (PWD 2020).

The DWR's Bulletin 118, California's Groundwater (2019), does not characterize the groundwater basin as overdrafted, however it was deemed a 'low-priority' basin by DWR (PWD 2020).

d. Flood Hazards

Flooding can cause widespread damage. Buildings and vehicles can be damaged or destroyed, while smaller objects can be buried in flood-deposited sediments. Floods can also cause drowning or isolation of people or animals. In addition, floodwaters can break utility lines, interrupting services and potentially affecting health and safety, particularly in the case of broken sewer or gas lines.

The secondary effects of flooding are due to standing water, which can result in crop damage, septic tank failure, and water well contamination. Standing water can also damage roads, foundations, and electrical circuits.

Inadequately-sized culverts and bridges can create impediments to the passage of high water flow in streams and gullies. Undersized infrastructure typically results in short-term back-ups behind the culvert or bridge, with pooling water in such areas, in effect, an unintended detention basin.

The Planning Area is subject to potential flooding from overflow of underground drainage channels or detention basins into low-lying areas as a result of heavy rainfall, inundation resulting from dam failure or a break in the California Aqueduct, which runs through the Planning Area from its northwest corner to its southeast corner as shown in Figure 2-3 of this EIR. The major causes of flooding over the past decade have been heavy winter rains and the accompanying high velocity flows within watercourses and the storm drainage infrastructure. Damages have included roadway and shoulder washouts, culvert inlet damage, retention basin damage, and sediment basin overload (LHMP 2016).

It is reasonable to assume that the probability of flood events will continue to increase as development continues in the Planning Area. Development has the potential to decrease permeable surfaces on a site and to increase runoff volume, which can impact the effectiveness of on-site detention and channel capacity. Additionally, any encroachment into the flood plain reduces flood storage and restricts conveyance.

The City of Palmdale has developed an "Emergency Services Notification System" that is implemented when a hazardous event may take place, including flooding events. Continued efforts are being made with the State to make sure that flooding information is up to date for its citizens and visitors. The City has made a concentrated effort to mitigate against circumstances contributing to flooding, using such tools as ordinances governing development in flood hazard areas. Additionally, the City has adopted a drainage master plan in order to divert floodwater. However, buildout of the plan will take approximately 20 years to complete (Palmdale 2016).

FEMA 100-Year Flood Hazard

The Federal Emergency Management Agency (FEMA) establishes base flood heights for 100-year and 500-year flood zones. As shown in Figure 4.10-1, the portion of the Planning Area east of SR-14 has some areas located in or in proximity to a 100-year or 500-year floodplain. Common flooding issues affecting the Planning Area are outlined in the previous section under "flood hazards."

Dam Inundation

Surface rupture and ground shaking from earthquakes can result in rupture of the Palmdale and Littlerock Dams, causing flooding. Floodwaters could get as deep as 50 feet immediately downstream of the Littlerock Dam. Failure of the Littlerock Dam could result in the inundation of a 300-foot-wide area for 0.25 mile north of the dam. Along this length, the water depth could vary from 50 to 15 feet. Ten minutes after failure, floodwater could diverge eastward to Avenue U where the depth would be reduced to 10 feet. Trending north from Avenue U, the water would eventually come to a depth that is no longer a risk to downstream developments (Palmdale 2016).

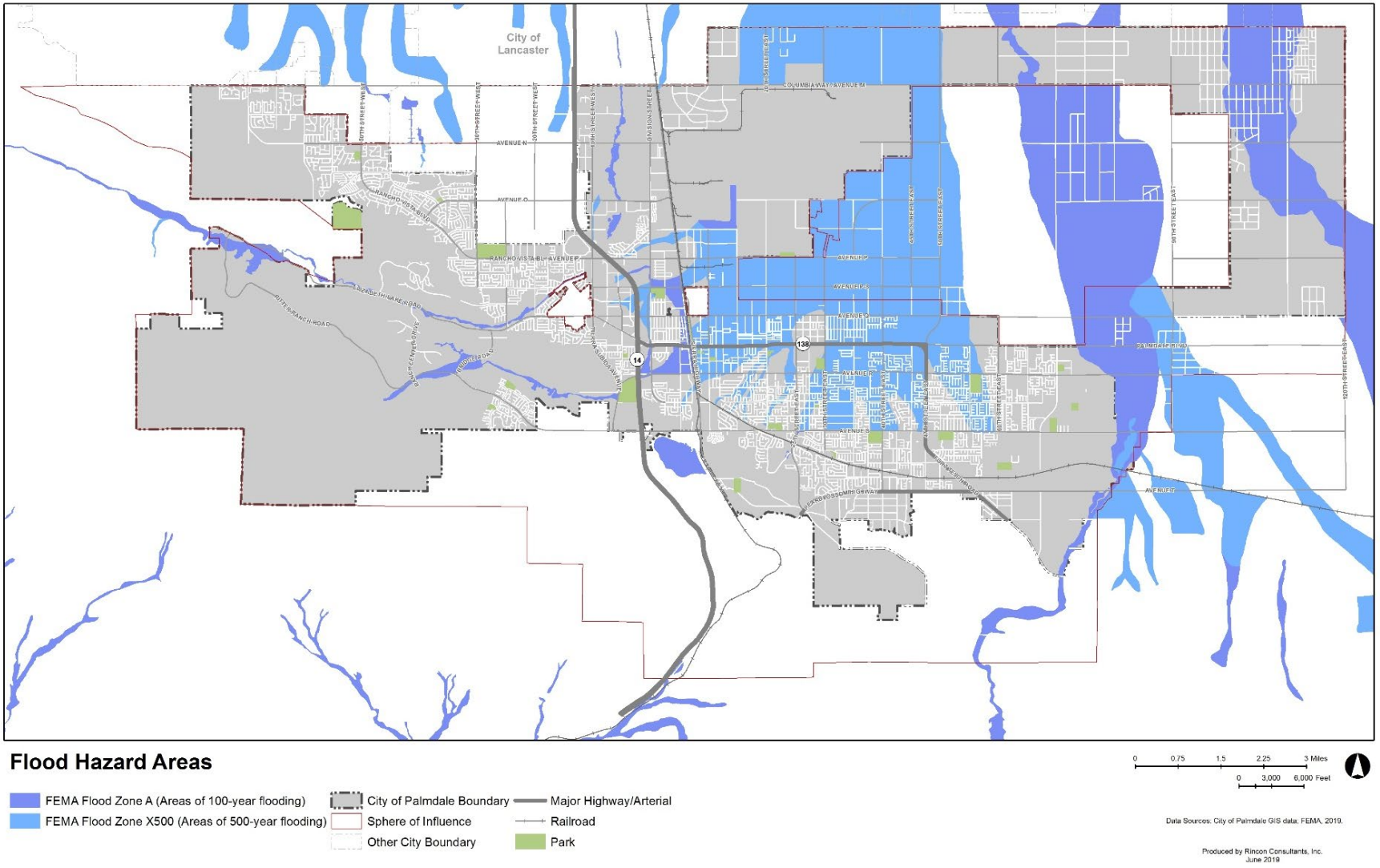
In addition, a seismic event could cause a water wave, or seiche, to occur at Lake Palmdale which, as shown in Figure 2-2 of this EIR, is in the south-central part of the Planning Area at the southeast corner of SR-14 and Avenue S. The design report for the dam considers a reflection of the wave on return unlikely. Furthermore, wave volume above the dam would not be substantial and would not result in damaging floods. Overpour on the downstream side of the dam will not cause any damage by erosion because the existing rockfill was designed to withstand it. The Sheriff's Department is responsible for notification and local evacuation in the event of dam failure (Palmdale 2016).

e. Water Quality

The primary sources of pollution to surface and groundwater resources include the following:

- Stormwater runoff from paved areas, which can contain hydrocarbons, sediments, pesticides, herbicides, toxic metals, and coliform bacteria
- Improperly placed septic tank leach fields, and properly placed septic tanks that do not have proper residence time or are not properly maintained or have improperly disposed of household cleaners and other materials
- Illegal waste dumping as well as stormwater runoff that can introduce contaminants such as gasoline, pesticides, herbicides, and other harmful chemicals
- The PWD owns and operates a water treatment plant known as the Leslie O. Carter Water Treatment Plant, which provides treatment for water extracted from Lake Palmdale. Lake Palmdale receives water from two of the water sources in the city, the SWP and Littlerock Dam and Reservoir. The treatment plant consists of chemical addition, flocculation, sedimentation, filtration, and disinfection. PWD has upgraded the treatment plant to meet more stringent water quality regulations. Groundwater quality meets state and federal drinking standards and thus does not require a stringent treatment process. Therefore, groundwater wells pump directly into the PWD's distribution system or into nearby holding tanks without the need for treatment, except for chlorination (Palmdale 2016).
- Based on current conditions and knowledge, water quality is not anticipated to affect water supply reliability (PWD 2020).

Figure 4.10-1 FEMA Flood Zones



4.10.2 Regulatory Setting

a. Federal

Clean Water Act

The federal Clean Water Act (CWA), enacted by Congress in 1972 and amended several times, is the primary federal law regulating water quality in the United States. The CWA established the basic structure for regulating discharges of pollutants into jurisdictional waters of the United States and forms the basis for several state and local laws throughout the country. The CWA gives the United States Environmental Protection Agency (USEPA) the authority to implement federal pollution control programs, such as setting water quality standards for contaminants in surface water, establishing wastewater and effluent discharge limits for various industry contaminants in surface water, establishing wastewater and effluent discharge limits for various industry categories, and imposing requirements for controlling nonpoint-source pollution. At the federal level, the CWA is administered by the USEPA and United States Army Corps of Engineers (USACE). At the state and regional levels in California, the CWA is administered and enforced by the California State Water Resources Control Board (SWRCB) and the nine Regional Water Quality Control Boards (RWQCBs). The project site is located within the jurisdiction of the lahontan RWQCB.

Clean Water Act Section 303(d): List of Impaired Water Bodies

Section 303(d) of the CWA requires states, territories, and tribes to identify water bodies that do not meet the water quality objectives (WQOs) for their designated beneficial uses. Each state must submit an updated biennial list of water quality impaired water bodies, called the 303(d) list, to the U.S. EPA. The 303(d) list also identifies the pollutant(s) or stressor(s) causing water quality impairment and establishes a priority for developing a control plan to address the impairment. If a water body is designated as “impaired,” then a Total Maximum Daily Load (TMDL) is developed and identified for the affected water body. A TMDL establishes the maximum daily amount of a pollutant allowed in an identified water body and is used as a planning tool in addressing water quality impairments and improving water quality. No water bodies in Palmdale were listed under the Clean Water Act Section 303 (d).

Clean Water Act Section 401

Under Section 401 of the CWA, the USEPA can approve State agencies to be the authority implementing the Acts’ provisions in that State, including implementation of Sections 303 and 402 (see below). The SWRCB is the USEPA-designated authority in California and delegates regional authority to the nine RWQCBS, which in turn have regulatory authority over actions in waters of the U.S. and Waters of the State of California through the issuance of water quality certifications, which are issued in conjunction with any federal permit (e.g., permits issued by the USACE under Section 404 of the CWA, described below). In effect, this section requires the issuance of certification by a RWQCB as a condition of issuance of such federal permits and provides that projects for which the State does not issue water quality certification cannot obtain other federal permits.

Clean Water Act Section 402 and the National Pollutant Discharge Elimination System

In 1987, amendments to the CWA added Section 402, which established the National Pollutant Discharge Elimination System (NPDES) program. This is a framework to protect water quality by regulating industrial, municipal, and construction-related sources of pollutant discharges to waters. In accordance with Section 402, the CWA prohibits discharges of stormwater from construction projects unless the discharge is in compliance with an NPDES permit. For a discussion of how Section 402 is implemented in California, please see *Clean Water Act Section 402: California NPDES* in Section 4.10.2b.

Clean Water Act Section 404

Under Section 404 of the CWA, proposed discharges of dredged or fill material into waters of the U.S. require USACE authorization. Waters of the U.S. generally include tidal waters, lakes, ponds, rivers, streams (including intermittent streams), and wetlands (with the exception of isolated wetlands). The USACE identifies wetlands using a multi-parameter approach, which requires positive wetland indicators in three distinct environmental categories: hydrology, soils, and vegetation. According to the USACE (1987) Wetlands Delineation Manual, except in certain situations, all three parameters must be satisfied for an area to be considered a jurisdictional wetland. Applications for CWA Section 404 permits must show the applicant has:

- Taken steps to avoid impacts to wetlands or waters of the U.S. where practicable
- Minimized unavoidable impacts on waters of the U.S. and wetlands; and,
- Provided mitigation for unavoidable impacts

Safe Drinking Water Act

The Federal Safe Drinking Water Act was enacted in 1974, allowing the USEPA to promulgate national primary drinking water standards specifying Maximum Contaminants Levels (MCLs) for each contaminant present in a public water system (any water system that provides drinking water to 25 or more people) with an adverse effect on human health. Primary MCLs have been established for approximately 90 contaminants in drinking water. The USEPA has also adopted secondary MCLs as non-enforceable guidelines for contaminants that may cause cosmetic or aesthetic effects. States have the discretion to adopt them as enforceable standards. USEPA has delegated to the SWRCB the responsibility for administering California's drinking-water program. In 1976, California adopted its own safe drinking water act (see *California Safe Drinking Water Act* in Section 4.10.2b).

National Flood Insurance Act/Flood Disaster Protection Act

The National Flood Insurance Act of 1968 made flood insurance available for the first time. The Flood Disaster Protection Act of 1973 made the purchase of flood insurance mandatory for the protection of property located in Special Flood Hazard Areas. These laws are relevant because they led to mapping of regulatory floodplains and to local management of floodplain areas according to guidelines that include prohibiting or restricting development in flood hazard zones.

b. State

Clean Water Act Section 401 and State RWQCBs

Under Section 401 of the CWA, the State RWQCBs have regulatory authority over actions in waters of the U.S. and the State of California through the issuance of water quality certifications, which are issued in conjunction with any federal permit (i.e., the federal permit will not be issued unless and until the State issues the required water quality certification). Some of the major federal licenses and permits subject to Section 401 include CWA Section 402 (described below) and CWA Section 404 (described above) permits issued by the USACE. Section 401 of the CWA provides the SWRCB (and the RWQCBs) with the regulatory authority to waive, certify, or deny any proposed activity that could result in a discharge to surface waters. To waive or certify an activity, the SWRCB and RWQCB must determine that the proposed discharge would comply with State water quality standards, including those protecting beneficial uses and water quality, as defined in the applicable Water Quality Control Plan(s) (described below, under "Porter-Cologne Water Quality Control Act"). If the SWRCB/RWQCB denies a proposed activity, the federal permit cannot be issued. As noted with respect to the CWA Section 404, a CWA Section 401 water quality certification is required for projects involving the discharge of dredge or fill material to wetlands or other bodies. Jurisdictional streambeds and associated riparian habitat are also regulated by the California Department of Fish and Wildlife (CDFW) under Section 1602 of the California Fish and Game Code.

Clean Water Act Section 402: California NPDES

In California, the NPDES program is administered by the SWRCB through the nine RWQCBs. The SWRCB has adopted an NPDES *General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities* (*Construction General Permit*) (Order 2009-0009, as amended by Orders 2010-0014-DWQ and 2012-006-DWQ). Compliance with the *Construction General Permit* is required for projects that result in more than one acre of ground disturbance, including through clearing, grading, grubbing, excavating, stockpiling, and removing or replacing existing facilities. The *Construction General Permit* requires the landowner and/or contractor to file permit registration documents prior to commencing construction and pay a fee annually throughout the duration of construction. These documents include a notice of intent, risk assessment, site map, stormwater pollution prevention plan (SWPPP), and signed certification statement. The *Construction General Permit* specifies minimum Best Management Practice (BMP) requirements for stormwater control based on the risk level of the site. The SWPPP must include measures to ensure the following:

- All pollutants and their sources are controlled
- Non-stormwater discharges are identified and eliminated, controlled, or treated
- Site BMPs are effective and result in the reduction or elimination of pollutants in stormwater discharges and authorized non-stormwater discharges
- BMPs are installed to reduce or eliminate pollutants post-construction are completed and maintained

Projects carried out under the Plan would be subject to the NPDES *Construction General Permit* and would require development and implementation of a SWPPP for project construction.

California Porter-Cologne Water Quality Control Act

The Porter Cologne Water Quality Control Act of 1967 requires the SWRCB and the nine RWQCBs to adopt water quality criteria to protect State waters. These criteria include the identification of beneficial uses, narrative and numerical water quality standards, and implementation procedures. The criteria for State waters within the city are contained in the Water Quality Control Plan for the Lahontan Region (LRWQCB). The Water Quality Control Plan, or Basin Plan, protects designated beneficial uses of State waters through the issuance of Waste Discharge Requirements (WDRs) and through the development of Total Maximum Daily Loads (TMDLs). Anyone proposing to discharge waste that could affect the quality of the waters of the State must make a report of the waste discharge to the RWQCB or SWRCB as appropriate, in compliance with Porter-Cologne.

California Safe Drinking Water Act

The USEPA has delegated to the California Department of Public Health responsibility for administering California's drinking-water program. In 1976, two years after the Federal Safe Drinking Water Act was passed, California adopted its own safe drinking water act (contained in the Health and Safety Code) and adopted implementing regulations (contained in California Code of Regulations Title 22). California's program sets drinking water standards that are at least as stringent as the Federal standards. Each community water system also must monitor for a specified list of contaminants, and the monitoring results must be reported to the state. Responsibility for the state's Drinking Water Program was transferred from the Department of Public Health to the Division of Drinking Water, which is a division of the SWRCB that was created in July 2014.

Sustainable Groundwater Management Act

In September 2014, the state passed legislation requiring that California's critical groundwater resources be sustainably managed by local agencies. The Sustainable Groundwater Management Act (SGMA, Water Code Section 10720 et seq.) gives local agencies the power to sustainably manage groundwater. It required DWR to establish priority levels for groundwater basins within the State based on their level of overdraft and required Groundwater Sustainability Agencies (GSAs) to form and develop Groundwater Sustainability Plans (GSPs) for medium- and high-priority groundwater basins that would bring the basins into sustainability by 2040 or 2042. Basins determined to be in critical overdraft were required to develop GSPs first. DWR is behind in the process of determining its approval of submitted GSPs for non-critical basins and was required to issue final notices of approval or disapproval by January 31, 2022.

Disaster Preparedness and Flood Prevention Bond Act of 2006 – Proposition 1E

This act rebuilds and repairs California's most vulnerable flood control structures to protect homes and prevent loss of life from flood-related disasters, including levee failures, flash floods, and mudslides. The Act also Protects California's drinking water supply system by rebuilding delta levees that are vulnerable to earthquakes and storms.

Cobey-Alquist Floodplain Management Act

The Cobey-Alquist Floodplain Management Act encourages local governments to plan, adopt, and enforce land use regulations for floodplain management to protect people and property from flooding hazards. This act also identifies requirements jurisdictions must meet to receive state and financial assistance for flood control.

c. Local

Palmdale Municipal Code Title 14, Chapter 14.05-Water Efficient Landscape

Title 14 Chapter 14.05 of the PMC establishes provisions for water management practices. It encourages stormwater best management practices to minimize run off and maximize infiltration to recharge groundwater. PMC Section 14.05.090 regulates landscape design plans for efficient water use including plant material, water features, and soil preparation. PMC Section 14.05.100 contains irrigation design criteria, specifications, and requirements. PMC Section 14.05.110 regulates grading design plans including recommendations for preventing excessive erosion and runoff. PMC Section 14.05.200 regulates stormwater management practices to minimize runoff and increase infiltration which recharges groundwater and improves water quality. PMC Section 14.05.080 requires project applicants to complete a soil management report in order to reduce runoff. This requires a project applicant to submit soil samples to a laboratory for analysis and recommendations. Soil would be tested for pH, total soluble salts, sodium, percent organic matter, and other physical or chemical properties.

Palmdale Municipal Code Title 15, Chapter 15.28-Floodplain Management

Chapter 15.28 of the PMC minimizes public and private losses due to flood conditions in specific areas by legally enforceable regulations applied uniformly throughout the community to all publicly and privately owned land within flood prone mudslide (i.e., mudflow) or flood related erosion areas. This chapter of the PMC contains the basis for obtaining a development permit in flood prone areas and construction standards intended to minimize impacts of flooding.

4.10.3 Impact Analysis

a. Methodology and Significance Thresholds

This section describes the potential environmental impacts of the Plan relevant to hydrology and water quality. The impact analysis is based on an assessment of baseline conditions for the Planning Area, including watershed and surface waters, topography, groundwater, flood hazards, and water quality, as described in Section 4.7.1, *Environmental Setting*. This analysis identifies potential impacts based on the predicted interaction between the affected environment and construction, operation, and maintenance activities related to the Plan. This section describes impacts in terms of location, context, duration, and intensity, and recommends mitigation measures, when necessary, to avoid or minimize impacts.

According to CEQA Guidelines Appendix G, impacts related to hydrology and water quality would be potentially significant if implementation of the Plan would:

1. Violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality
2. Substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin
3. Substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would:
    a. Result in substantial erosion or siltation on- or off-site

b. Substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site
c. Create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff; and/or
d. Impede or redirect flood flows

4. In flood hazard, tsunami, or seiche zones, risk release of pollutants due to project inundation; and/or
5. Conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan

b. Project and Cumulative Impacts

Threshold 1:	Would the Plan violate any water quality standards or waste discharge requirements or otherwise substantially degrade surface or ground water quality?

Impact HWQ-1 COMPLIANCE WITH APPLICABLE LAWS AND REGULATIONS AND IMPLEMENTATION OF THE GOALS AND POLICIES IN THE PLAN WOULD MINIMIZE THE POTENTIAL FOR WATER QUALITY DEGRADATION, ENSURE COMPLIANCE WITH WASTE DISCHARGE REQUIREMENTS, AND REDUCE IMPACTS TO A LESS THAN SIGNIFICANT LEVEL.

Construction activities carried out under the Plan could include road improvements and realignments, installation and realignment of utilities, demolition of existing structures for replacement, new development, and the potential replacement and/or improvement of drainage facilities. Water quality degradation from construction would be specific to each construction site. The topography of the site, the amount of soil disturbance, the duration that disturbed soil would be exposed, the amount of rainfall and wind that would occur during construction, and the proximity of the nearest waterbody all affect the potential for water quality degradation during construction. New development under the Plan would be limited to the Planning Area and infill development would be prioritized, which would minimize that amount of new infrastructure that would be required.

Construction of future developments could result in soil erosion due to earth-moving activities such as excavation and trenching for foundations and utilities, soil compaction and moving, cut and fill activities, and grading. If not managed properly, disturbed soils would be susceptible to high rates of erosion from wind and rain, resulting in sediment transport via storm water runoff from the construction sites. The types of pollutants contained in runoff from construction sites would be typical of urban areas, and may include sediments and contaminants such as oils, fuels, paints, and solvents. Additionally, other pollutants, such as nutrients, trace metals, and hydrocarbons, can attach to sediment and be transported to downstream drainages and ultimately into collecting waterways, contributing to degradation of water quality.

Individual construction activities that disturb one or more acres of land surface are subject to the NPDES General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities (Order No. 2012-0006-DWQ) adopted by the SWRCB. Compliance with the permit requires each qualifying development project to file a Notice of Intent with the SWRCB. Permit conditions require development of a SWPPP, which must describe the site, the facility, erosion and sediment controls, runoff water quality monitoring, means of waste disposal,

implementation of approved local plans, control of construction sediment and erosion control measures, maintenance responsibilities, and non-storm water management controls. Inspection of construction sites before and after storms is also required to identify storm water discharge from the construction activity and to identify and implement erosion controls, where necessary. Compliance with the Construction General Permit is reinforced through the PMC, which requires plans to show all mitigation measures required under the National Pollution Discharge Elimination System (NPDES) permit issued to the City of Palmdale. In addition, Chapter 14.05 Section 14.05.080 of the PMC requires project applicants to complete a soil management report in order to reduce runoff.

In addition to concerns about the discharge of contaminated groundwater, construction and operation of development projects carried out under the Plan could contaminate the groundwater basin through direct introduction of pollutants or through infiltration of contaminants. Common sources of groundwater contamination include leaking underground storage tanks, septic systems, oil fields, landfills, and general industrial land uses. In general, all new development projects would be required to discharge waste to a public sewer.

Compliance with mandatory Clean Water Act and PMC requirements, and Plan goals and policies would reduce the potential for water quality degradation. Implementation of the following Plan goals and policies would help to prevent discharges of contaminated storm water and reduce the potential for violations of water quality standards or waste discharge requirements:

CONSERVATION

- **Goal CON-5: Protect the quality and quantity of local water resources.**
  - **Policy CON-5.1: Ground water recharge**. Ensure that ground water supplies are recharged and protect natural recharge areas such as the Little Rock and Big Rock Washes, and Amargosa and Anaverde Creeks from pollutants or other materials, which might degrade groundwater supplies.
  - **Policy CON-5.2: Groundwater protection.** Ensure that no mineral resource recovery activities extend below the groundwater table.
  - **Policy CON-5.3: Regional monitoring cooperation.** Cooperate with Los Angeles County Health Department and the Regional Water Quality Control Board in monitoring industrial and commercial uses utilizing hazardous or potentially polluting materials and fluids, to prevent their discharge into the groundwater aquifer.
- **Goal CON-6: Minimize the impacts of urban development on groundwater supplies.**
  - **Policy CON-6.1: Encourage natural recharge.** Restrict building coverage and total impervious area in the vicinity of natural recharge areas.
  - **Policy CON-6.2: Reduce landscaping irrigation needs.** Require the use of water conserving native or drought resistant plants and drip irrigation systems where feasible.
  - **Policy CON-6.3: Reduce street runoff.** Design streets to incorporate vegetation, soil, and engineered systems to slow, filter, and cleanse stormwater runoff.
  - **Policy CON-6.4: New construction water conservation.** Require water conserving appliances and plumbing fixtures in all new construction.
  - **Policy CON-6.5: Monitoring and coordination.** Coordinate with local water agencies to monitor ground water levels, State water allocations and development approvals, to assure that development does not outpace long-term water availability.

Compliance with applicable laws and regulations and implementation of the Plan goals and policies discussed above would minimize the potential for water quality degradation, ensure compliance with waste discharge requirements, and reduce impacts to a less than significant level.

Mitigation Measures

No mitigation measures are required.

Threshold 2:	Would the Plan substantially decrease groundwater supplies or interfere substantially with groundwater recharge such that the project may impede sustainable groundwater management of the basin?

Impact HWQ-2 IMPACTS TO GROUNDWATER SUPPLIES WOULD BE REDUCED TO A LESS THAN SIGNIFICANT LEVEL WITH COMPLIANCE TO THE PALMDALE MUNICIPAL CODE, THE MS4 PERMIT, LID GOALS, AND PLAN POLICIES.

Construction activities carried out under the Plan would primarily occur as part of infill/redevelopment. Construction activities, such as dewatering, could encounter groundwater. Although the construction of support and foundation structures could contact groundwater in limited instances, the displaced volume would not be substantial relative to the existing volume of 7,600-acre feet in the Antelope Valley Groundwater Basin. Water use during construction, such as for dust suppression or concrete mixing, would be temporary and minimal and would not substantially lower the groundwater level in the Antelope Valley Groundwater Basin.

Development carried out under the Plan could potentially interfere with groundwater recharge through the creation of new impervious surfaces. For new developments and redevelopment projects, the amount of new impervious surfaces would be reduced through Low Impact Development (LID) goals and policies in the Plan. Furthermore, new development must comply with the MS4 permit by employing BMPs for on-site detention/retention of stormwater runoff erosion events and tracking. Thus, development carried out under the Plan would not substantially interfere with groundwater recharge.

Additionally, the PMC Title 14 Chapter 14.05, establishes provisions for water management practices. The PMC encourages stormwater best management practices to minimize run off and maximize infiltration to recharge groundwater. Pursuant to PMC Section 14.05.200, all planted landscapes are required to have friable soil in order to maximize water retention and infiltration. In accordance with PMC Section 14.05.090, Landscape Design Plans must be submitted to the City and must include plants approved by the City in order to ensure the use of low-water plants. Additionally, irrigation design plans must follow requirement under PMC Section 14.05.100 in order to practice efficient water use. Adherence to the PMC Title 14 Chapter 14.05 sections 14.05.200, 14.05.090, and 14.05.100 would reduce the use of groundwater and maximize infiltration.

New development carried out under the Plan would increase the demand for water. As mentioned above, approximately 35 percent of the PWD water supply is sourced from groundwater, while LACWD 40 has the right to use up to 23,289 AFY of groundwater. However, projects facilitated under the Plan would be required to implement LID and goals and BMPs in order to improve groundwater recharge. The Clean Water Act and California State Water Resources Control Board require any development, infrastructure, redevelopment, or improvement project over one acre in size, to be approved for a Storm Water Pollution Prevention Plan (SWPPP), a General Permit particularly implemented during construction activities, as well as implementation of BMPs and methods to prevent erosion and off-site tracking of mud and dirt.

Further, impacts to groundwater supplies would be reduced to less than significant with compliance to the PMC, the MS4 permit, LID goals, and the goals and policies listed above in Impact HWQ-1.

Mitigation Measures

No mitigation measures are required.

Threshold 3.a:	Would the Plan substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would result in substantial erosion or siltation on- or off-site?
Threshold 3.b:	Would the Plan substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would substantially increase the rate or amount of surface runoff in a manner which would result in flooding on- or off-site?
Threshold 3.c:	Would the Plan substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would create or contribute runoff water which would exceed the capacity of existing or planned stormwater drainage systems or provide substantial additional sources of polluted runoff?
Threshold 3.d:	Would the Plan substantially alter the existing drainage pattern of the site or area, including through the alteration of the course of a stream or river or through the addition of impervious surfaces, in a manner which would impede or redirect flood flows?

Impact HWQ-3 IMPACTS RELATED TO EROSION, FLOODING, AND STORMWATER DRAINAGE SYSTEM CAPACITY FROM SUBSTANTIAL ALTERATION OF DRAINAGE PATTERNS WOULD BE REDUCED TO A LESS THAN SIGNIFICANT LEVEL THROUGH COMPLIANCE WITH LIDS, THE NPDES, THE PMC, AND PROPOSED PLAN GOALS AND POLICIES.

Development carried out under the Plan would result in alterations to drainage patterns through structural changes to ground surface permeability and changes in topography from grading and excavation. As described under Impact HWQ-1, construction of future developments could result in soil erosion due to earth-moving activities such as excavation and trenching for foundations and utilities, soil compaction and moving, cut and fill activities, and grading. If not managed properly, disturbed soils would be susceptible to high rates of erosion from wind and rain, resulting in sediment transport and siltation of local streams via storm water runoff from construction sites. However, compliance with LID goals, the NPDES permit, and policies designed to maximize water infiltration should reduce erosion and salination. Additionally, PMC Section 14.05.110 requires grading of project sites to be designed in a way that minimizes soil erosion, runoff, and water waste and requires project applicants to submit a detailed grading plan to the City for approval. This includes grading so that all irrigation and normal rainfall remains within property lines and does not drain onto nonpermeable hardscapes, avoiding disruption of natural drainage patterns and undisturbed soil and avoiding soil compaction in landscape areas. Thus, compliance with PMC Section 14.05.110 would not only reduce runoff but would avoid the disruption of natural flows.

New development or redevelopment that would be facilitated by the Plan could incrementally increase the total impervious area within the Planning Area and increase storm water runoff. However, as described in the previous paragraph and Impact HWQ-1, implementation of Plan goals and policies, LID goals, and adherence to the requirements of PMC14 Chapter 14.05, specifically Section 14.05.110, would maximize the on-site infiltration capacity for new development and redevelopment projects and would minimize the offsite runoff that would leave those project sites.

In accordance with PMC Section 15.28.120, all areas of special flood hazard are required to meet construction standards to the satisfaction of the City Engineer. Construction standards include anchoring, the use of materials resistant to flood damage, the use of construction methods and practices that minimize flood damage, elevation above the base flood elevation, and floodproofing. Additionally, PMC Section 15.28.120 prohibits encroachment into floodways within area of special flood hazard, including fill, new construction, substantial improvements, and other development unless certification by a registered professional engineer is provided demonstrating that the proposed encroachments would not result in any increase in flood levels within the community during the occurrence of the base flood discharge. Furthermore, PMC Title 15 Section 15.28.120 prohibits construction, substantial development, or other development including fill where the floodway has not been determined in areas of special flood hazard, unless it is demonstrated that the cumulative effect of the proposed development, when combined with all other development, will not increase the water surface elevation of the base flood more than one foot at any point within the City of Palmdale.

In addition, the following proposed Plan goals and policies would also help reduce impacts related to run-off:

CONSERVATION

- **Goal CON-6 Minimize the impacts of urban development on groundwater supplies.**
  - **Policy CON-6.1: Encourage natural recharge.** Restrict building coverage and total impervious area in the vicinity of natural recharge areas.
  - **Policy CON-6.2: Reduce landscaping irrigation needs.** Require the use of water conserving native or drought resistant plants and drip irrigation systems where feasible.
  - **Policy CON-6.3: Reduce street runoff.** Design streets to incorporate vegetation, soil, and engineered systems to slow, filter, and cleanse stormwater runoff.

SAFETY

- **Goal SE-2: Minimize public health, safety, and welfare impacts resulting from wildfire hazards.**
  - **Policy SE-2.6: Soils and Waterways.** Evaluate soils and waterways for risks from flooding, water quality, and erosion to ensure that they are suitable to support redevelopment following a large fire.
- **Goal SE-4: Minimize impacts to public safety and/or property as a result of flooding.**
  - **Policy SE-4.1: Floodplain Management Ordinance.** Require development in designated flood hazard areas to meet standards outlined in the City's Floodplain Management Ordinance and related criteria in the City's Engineering Design Standards.
  - **Policy SE-4.2: Drainage Management Plan**. Implement the City's drainage management plan through the capital improvement program and development review process.

- **Policy SE-4.3 National Pollutant Discharge Elimination System and Low Impact Development.** Ensure that new development meets National Pollutant Discharge Elimination System (NPDES) and associated Low Impact Development (LID) standards that limit peak runoff to pre-development rates.
- **Policy SE-4.4 Recharge Areas.** As appropriate, use open space and recreational areas to serve as floodplains that reduce downstream flooding and aid in groundwater recharge.
- **Policy SE-4.5: Floodplains Value.** Preserve and restore the natural and beneficial values served by floodplains to the extent feasible, consistent with public health, safety, and welfare.
- **Policy SE-4.6: Localized Flooding.** Address localized flooding east of SR-14, particularly near Amargosa Creek, Anaverde Creek, Little Rock Wash, and Big Rock Wash.

Therefore, impacts related to erosion, flooding, and stormwater drainage system capacity from substantial alteration of drainage patterns would be reduced to a less than significant level through compliance with LIDs, the NPDES, the PMC, and proposed Plan goals and policies.

Mitigation Measures

No mitigation measures are required.

Threshold 4:	In flood hazard, tsunami, or seiche zones, would the Plan risk release of pollutants due to project inundation?

Impact HWQ-4 RISKS RELATED TO THE RELEASE OF POLLUTANTS DUE TO PROJECT INUNDATION WOULD BE LESS THANK SIGNIFICANT THROUGH COMPLIANCE WITH APPLICABLE PLAN POLICIES.

The Plan is not located in a designated Tsunami Inundation Area according to the California Department of Conservation's Tsunami Inundation Maps (CDOC 2021) and is therefore not at risk of being impacted by a tsunami.

A seismic event could cause a seiche to occur at Lake Palmdale, which could potentially overtop the dam. However, the design report for the dam considers a reflection of the wave on return unlikely. Also, wave volume above the dam would not be substantial and would not result in damaging floods. Overpour on the downstream side of the dam will not cause any damage by erosion as the existing rockfill was designed to withstand it (Palmdale 1993).

As shown in Figure 4.10-1, the FEMA Flood Map provides the site-specific Flood Hazard Map relevant to the Planning Area. The Plan does contain areas within the 100-year flood zone and the 500-year flood zone.

While the Planning Area is subject to flooding and seiches, the Plan does not propose or require the buildout of new landfills or wastewater facilities as mentioned in Section 4.19 *Utilities and Service Systems*. Additionally, compliance with the flowing Plan policies would further reduce impacts:

- **Goal SE-4: Minimize damage from catastrophic failure of infrastructure.**
  - **SE-4.1 Evaluate inundation hazards:** As appropriate, evaluate inundation hazards related to the potential rupture of the California Aqueduct or failure of the Palmdale or Littlerock dams or location of proposed basins when reviewing development proposals.

SE-4.2 Buffers for gas lines: Require buffers for development in areas near high-pressure natural gas lines and that ensure such development is provided with alternative access/evacuation routes.

For all the reasons discussed above, risks related to the release of pollutants due to inundation of any property that would pose a substantial risk of pollutant release would be less than significant.

Mitigation Measures

No mitigation measures are required.

Threshold 5:	Would the Plan conflict with or obstruct implementation of a water quality control plan or sustainable groundwater management plan?

Impact HWQ-5 THE PLAN WOULD BE CONSISTENT WITH THE LRWQCB BASIN PLAN AND PROJECTS CARRIED OUT UNDER THE PLAN WOULD BE SUBJECT TO PLAN POLICIES THAT WOULD HELP TO PROTECT LOCAL GROUNDWATER RESOURCES. IMPACTS WOULD BE LESS THAN SIGNIFICANT.

As discussed in Section 4.10.1c, *Groundwater*, the Antelope Valley Basin is exempt from the requirements of SGMA and the PWD and LACWD 40 have not adopted a groundwater management plan. No regional Groundwater Management Plan currently exists for the Basin. Thus, the Plan would not interfere with a sustainable groundwater management plan.

Water quality in the Planning Area is governed by the Lahontan Regional Water Quality Control Board (LRWQCB), which sets water quality standards in the Water Quality Control Plan for the Lahontan Region (Basin Plan). The Basin Plan identifies beneficial uses for surface water and groundwater and establishes water quality objectives to attain those beneficial uses, together known as water quality standards. The Plan would not interfere with the beneficial uses of local surface water, and as described in Impact HWQ-1, above, would not violate water quality standards or degrade surface water quality. Therefore, the Plan would be consistent with the LRWQCB Basin Plan.

Additionally, compliance with the following policy would further minimize impacts:

- **Goal CON-6: Minimize the impacts of urban development on groundwater supplies.**
  - **Policy CON-6.5: Monitoring and coordination**. Coordinate with local water agencies to monitor ground water levels, State water allocations and development approvals, to assure that development does not outpace long-term water availability.

Because the Plan would be consistent with the LRWQCB Basin Plan and projects carried out under the Plan would be subject to Plan policies that would help to protect local groundwater resources, impacts would be less than significant.

Mitigation Measures

No mitigation measures are required.

Cumulative Impacts

The analysis of impacts and regulations relating to hydrology and water quality discussed in this chapter apply to geographic levels at which the impacts could occur (local, regional, basin-wide, watershed-wide, and statewide). Therefore, impacts discussed in this chapter are cumulative in

nature because they are addressed at the level at which they would occur, either individually or in combination with other impacts inside or outside of the Planning Area. As discussed above, compliance with existing regulations and with proposed policies contained in the Plan would reduce impacts to hydrology and water quality to a less than significant level and thus the Plan would not make a substantial contribution to any cumulative hydrology and water quality impacts.

4.11 Land Use and Planning

This section analyzes the Plan's consistency with applicable local, regional, and state land use policies. Consistency with the South Coast Air Quality Management Plan (AQMP) is discussed in Section 4.3, *Air Quality*. Land use compatibility conflicts associated with Plan-facilitated growth are discussed in other sections of this EIR, including Sections 4.1, *Aesthetics*; 4.3, *Air Quality*; 4.9, *Hazards and Hazardous Materials*; and 4.13, *Noise*.

4.11.1 Environmental Setting

Most of Palmdale is currently designated for residential, commercial, and industrial uses. As described in Section 4.2.2 of this EIR, these areas are classified as Urban and Built-Up land according to maps prepared by the California Department of Conservation (DOC), but parts of the Planning Area (mostly outside city limits) contain approximately 4,898 acres of agricultural land, accounting for approximately 4.6 percent of the Planning Area.

4.11.2 Regulatory Setting

a. Regional

Agencies with direct roles in establishing and implementing land use policy and practice in the Planning Area are the Southern California Association of Governments (SCAG), the County of Los Angeles (in parts of the Planning Area outside city limits), and the City itself.

Southern California Association of Governments

The Planning Area is in the statutory planning area of the Southern California Association of Governments (SCAG). SCAG functions as the federally recognized Metropolitan Planning Organization (MPO) for Los Angeles, Orange, San Bernardino, Riverside, Ventura, and Imperial Counties (SCAG Region). According to the January 1, 2019, population estimates from the California Department of Finance (DOF), the SCAG region has an estimated 2017 population exceeding 19 million in an area of more than 38,000 square miles (SCAG2020). As the MPO, SCAG develops long-range regional transportation plans in cooperation with the California Department of Transportation (Caltrans) and the U.S. Department of Transportation (U.S. DOT) and, utilizing much of the same regional data, prepares and/or assists other agencies in developing the state-required regional Sustainable Communities Strategy (SCS); population, housing, and employment growth forecasts; regional transportation improvement programs; regional housing needs allocations (RHNA); and air quality management plans. Although SCAG has no direct land use authority, generalized land use planning consistency between local jurisdictions and SCAG is required by state law for purposes of meeting state-required environmental quality goals and/or for eligibility for a wide range of transportation and other types of intergovernmental grants and funding programs that have long-range positive environmental impacts.

Regional Comprehensive Plan

SCAG's 2008 Regional Comprehensive Plan (RCP) contains a general overview of federal, state, and regional plans applicable to the SCAG Region and serves as a comprehensive planning guide for forecasting long-range regional growth through 2035. The primary goals of the RCP are to improve the standard of living, enhance the environmental quality of life, and promote social equity. SCAG

member agencies adopted the most recent RCP in 2008. It set broad goals for the SCAG Region and identified strategies for all levels of government to use in local decision making. The RCP includes sections for each of the 13 SCAG-designated subregions. Palmdale is within the North Los Angeles County subregion. The RCP is advisory and does not have direct land use authority over cities and counties.

Regional Transportation Plan/Sustainable Communities Strategy

SCAG's 2020 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) is the companion long-range transportation and sustainability plan to the RCP that looks ahead to 2045 and provides a vision for the future of the regional multi-modal transportation system. The RTP/SCS is a long-range visioning plan that balances the region's projected future mobility and housing needs with economic, environmental, and public health goals. The RTP/SCS charts a course for closely integrating land use and transportation so that the region can accommodate projected growth. It outlines more than $638 billion in transportation system investments through 2045. In June 2020, SCAG received approval of the transportation conformity determination for the 2020-2045 RTP/SCS (Connect SoCal) from the Federal Highway Administration (FHWA) and the Federal Transit Administration (FTA).

AB 32, California's Global Warming Solutions Act of 2006, gave the California Air Resources Board (CARB) authority over sources of greenhouse gas emissions, including cars and light trucks. SB 375 was intended to help California achieve GHG reduction goals for cars and light trucks by changing land use patterns in tandem with regional and local transportation planning to generally reduce vehicle miles travelled (VMT) which, in turn, reduces GHG emissions. SB 375 required that the RTP include a Sustainable Communities Strategy (SCS) that demonstrates how the SCAG Region will meet its greenhouse gas (GHG) reduction CARB target. Therefore, there is a direct link between a local general plan being consistent with SCAG's 2020 RTP/SCS and GHG emission reduction.

The SCAG RTP/SCS vision for 2045 includes more compact development and seamless public transit options, including expanded bus and rail service. In this vision, people live closer to work, school, shopping and other destinations. Neighborhoods are more walkable and safer for bicyclists. Southern California's vast transportation network is preserved and maintained in a state of good repair, so that public tax dollars are not expended on costly repairs and extensive rehabilitation. Housing across the region is sufficient and affordable and meets forecasted demands of a growing population, largely due to natural increase.

b. Local

City of Palmdale

The City of Palmdale establishes land use policy and practice in Palmdale through its General Plan, various specific plans, and the Palmdale Municipal Code (PMC).

Palmdale General Plan

The proposed Plan is a comprehensive update of the City's current General Plan and would thus replace it in every respect. The proposed Plan would therefore not conflict with goals, policies, or standards established in the City's current General Plan and those goals, policies, and standards are therefore not listed here. The City's current General Plan land use map shown in Figure 4.11-1 would be replaced by the proposed General Plan land use map shown in Figure 2-3 of this EIR.

Palmdale Zoning Ordinance

The City of Palmdale Zoning Ordinance, contained within the PMC, is one of the primary means of implementing the General Plan. The Zoning Ordinance establishes standards for development of individual properties (through their zoning designation), including standards regulating allowed uses, setbacks from neighboring properties, and the intensity, height, and appearance of development. State law requires that a city's Zoning Ordinance be consistent with the City's General Plan and that the Zoning Ordinance be revised to reflect the adopted General Plan within a reasonable period of time from its adoption, which is typically one year. Figure 4.11-2 shows Palmdale's zoning map, which shows the zoning designation of all properties in the city.

County of Los Angeles Zoning Ordinance

In the parts of the Planning Area outside the City but within Palmdale's Sphere of Influence (SOI), the Zoning Ordinance of the County of Los Angeles applies. In these areas, however, uses must be consistent with local land use plans, which in this case include Palmdale's General Plan (Los Angeles County Department of Regional Planning 2009).

Palmdale Specific Plans

A Specific Plan is a tool for the systematic implementation of a jurisdiction's General Plan within particular geographic areas in a city. It serves as a link between General Plan policies and proposed development in a particular area. A Specific Plan can also be a good tool for creating a "sense of place" in an area, because it addresses issues such as the location and intensity of land uses, public streets, water and sewer improvements, development standards, and implementation within that area.

The City has adopted 13 specific plans to govern development in various parts of Palmdale. The following is a discussion of each Specific Plan, taken from the Land Use & Urban Form chapter of the Plan.

- The Antelope Valley Auto Center Specific Plan was adopted in 1989 and updated in 2005. The purpose of this plan is to establish policies and standards that will regulate the construction within the Antelope Valley Auto Center. The Specific Plan project area spans an area of 78 acres and is located west of the Antelope Valley Freeway, north of Avenue Q.
- The Antelope Valley Business Park Specific Plan was adopted in 1991 and updated in 1992. The specific plan is created to establish policies and standards that promote a balanced development of commercial, industrial and business park uses. The Specific Plan project area consists of 120 acres at the southeast corner of Avenue M and 10 Street West.
- The City Ranch Specific Plan was adopted in 1992 and serves as a regulatory tool setting forth policies and standards guiding development within the City Ranch project area. The Specific Plan was amended in 2021- (when the name was changed to Anaverde Nuevo). The project area consists of 1,400 acres located on generally south of Elizabeth Lake Road between Ranch Center Drive and Louise Lane and continuing south of Avenue S to the City boundary.
- The Foothill Ranch Specific Plan was adopted in 2009. The plan's purpose is to establish guidelines that facilitate balanced mixed-use development consisting of residential, commercial and open space uses within the specific plan project area. The project site is approximately 540 acres and is located within the southeast region of Palmdale at the southeast corner of Barrel Springs Road and 47th Street East.

- The Hillside Specific Plan was adopted in 1986 and amended in 1995. The specific plan was created to set forth policies and standards that facilitate the development of three residential communities. The Hillside Specific Plan consists of 223 acres and is in the northwestern region of Palmdale.
- The Joshua Hills Specific Plan, adopted in 1993, was created with the purpose of creating a planned community with policies and standards that promote the compatible development of residential, commercial and public facility uses within the Joshua Hills project site. The Specific Plan area consists of 435 acres located at the southeast corner of 25th Street East and Avenue S.
- The Lockheed Plant 10 Specific Plan was adopted in 1992 and amended in 1994. The specific plan establishes policies and standards that govern development within the project site. The project site comprises of approximately 539 acres located northwest of the intersection of Sierra Highway and Avenue P in Palmdale.
- The Palmdale Business Park Center Specific Plan was adopted in 1996. The specific plan's purpose is to establish regulations that facilitate the development of the master planned commercial industrial complex. The Specific Plan site consists of approximately 632 acres located at the southwest corner of Avenue M and 15th Street East
- The Palmdale Trade and Commerce Center Specific Plan was adopted in 1990 and updated in 2014 and 2017. The plan's purpose is to implement land use policies and standards that create a balanced mix of commercial, industrial and public uses to meet local and regional employment needs. The Palmdale Trade and Commerce Center Specific Plan consists of 118 parcels spanning an area of 756 acres within the central region of Palmdale.
- The Palmdale Transit Area Specific Plan (PTASP) was adopted in 2020. The PTASP establishes policies and standards that promote pedestrian-oriented, mixed-use development within the Palmdale transit area. The project boundary spans a total area of 746 acres and is bounded by Technology Drive to the north, East Palmdale Boulevard to the south, SR-14 to the west and 10th Street East along the eastern boundary.
- The Palmdale Transit Village Specific Plan was adopted in 2007. Through establishing land use policies and standards for the project area, the specific plan promotes Transit-Oriented Development within the Palmdale Transit Village. This specific plan was rescinded after the adoption of the PTASP..
- The Rancho Vista Specific Plan was adopted in 1986 and last amended in 2016. The purpose of the specific plan is to employ land use standards and policies that encourage the development of the Rancho Vista residential community. The specific plan project site consists of 1,379 acres and is located at the southwest corner of Avenue N-8 and 30th Street West within the northwest section of Palmdale.
- The Ritter Ranch Specific Plan was adopted in 1992. The specific plan encourages the development of a mixed-use project incorporating residential, open space, public facility, recreational, educational and commercial land uses. The project site spans an area of approximately 10,625 acres and is located south of Elizabeth Lake Road, west of 25th Street West.

Figure 4.11-1 Current Palmdale General Plan Land Use Map

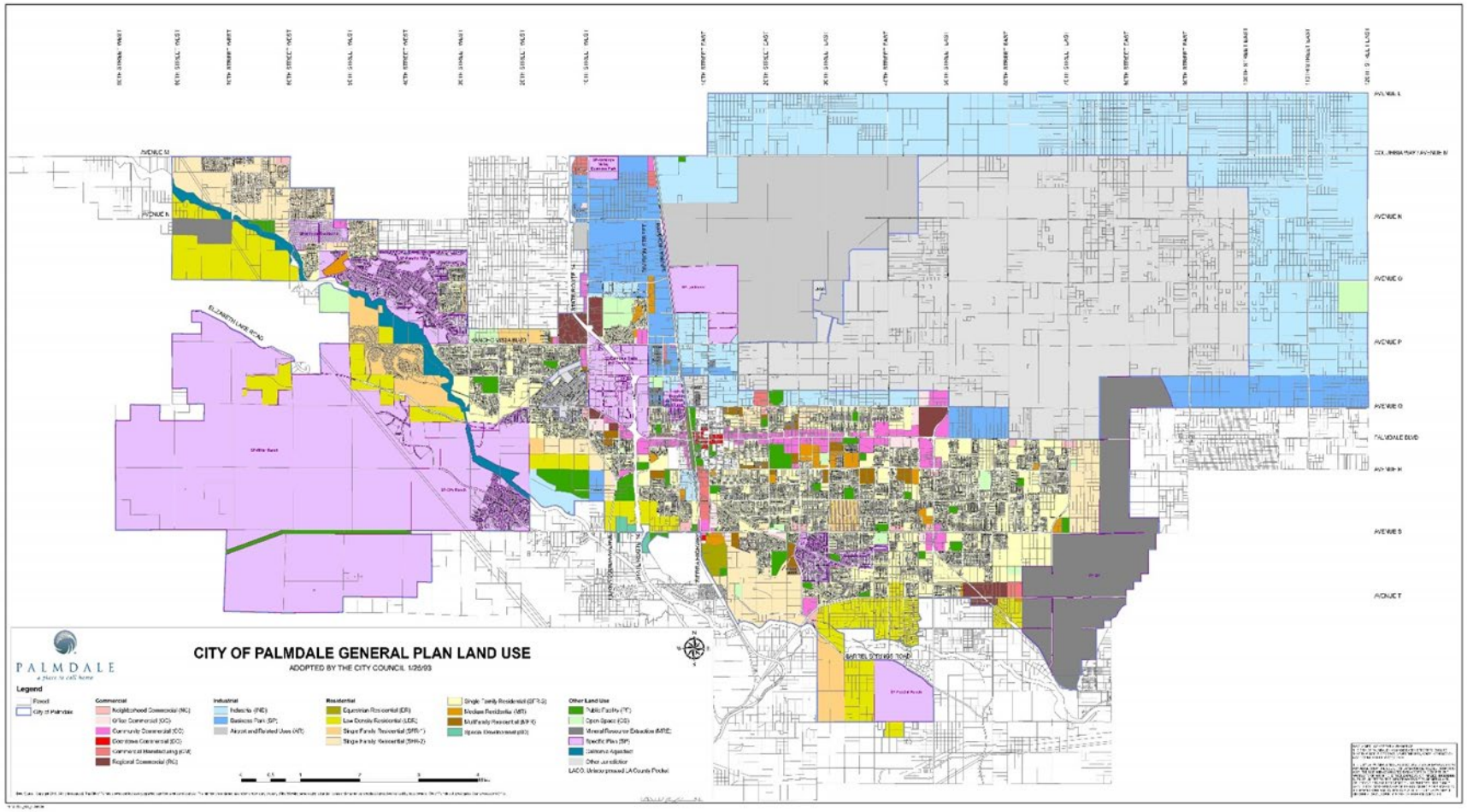
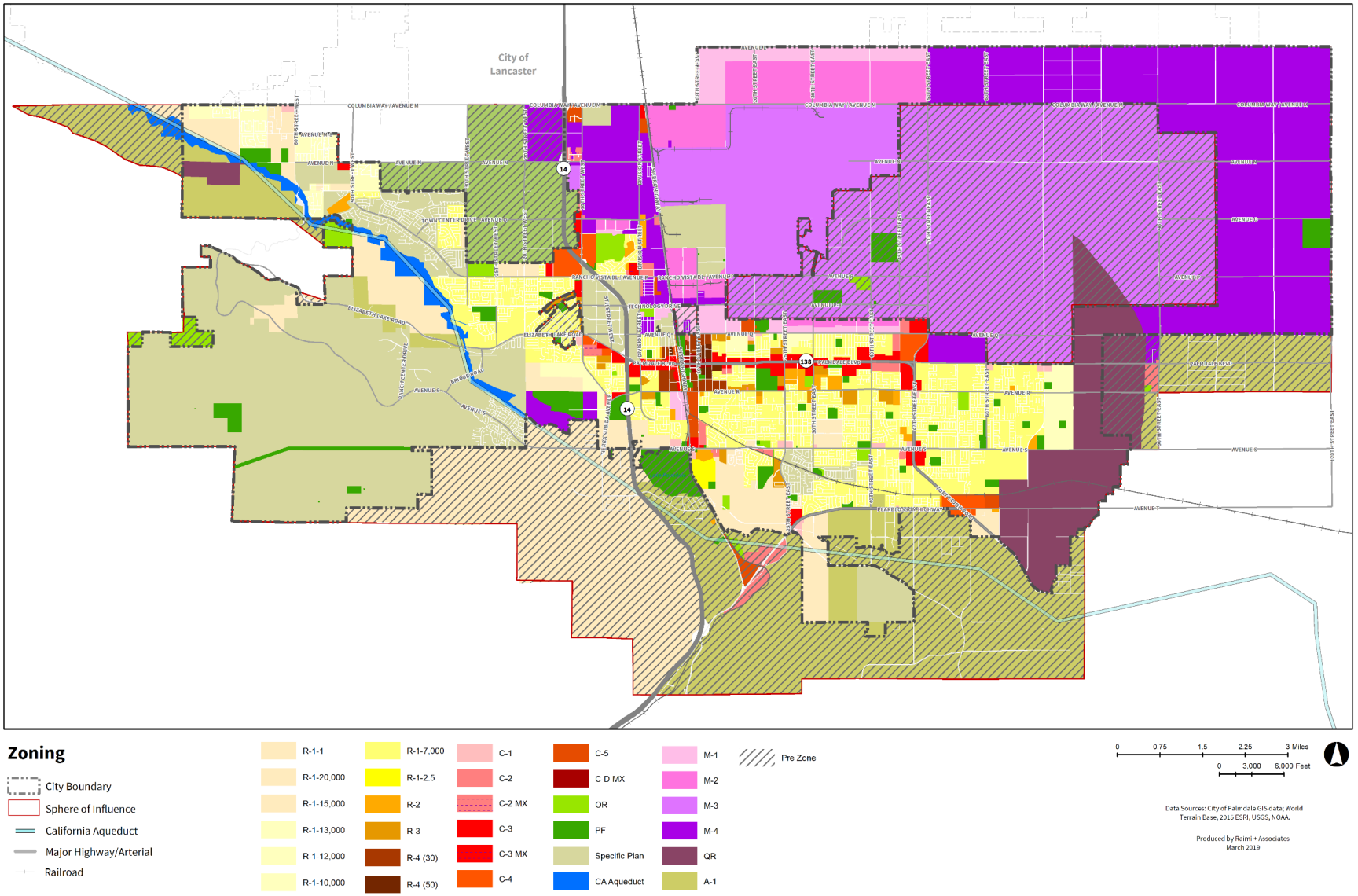


Figure 4.11-2 Current Palmdale Zoning Map



West Mojave Conservation Plan

The West Mojave Plan is a habitat conservation plan that acts as a comprehensive strategy to conserve the desert tortoise, Mohave ground squirrel, and over 100 sensitive plants, animals, and natural communities. The plan provides for a streamlined program for complying with the requirements of the California and federal Endangered Species Acts. It encompasses a 9,357,929-acre (14,621-square mile) planning area located to the north of the Los Angeles metropolitan area and applies to public and private land (U.S. Department of interior 2004).

4.11.3 Impact Analysis

a. Methodology and Significance Thresholds

According to CEQA Guidelines Appendix G, impacts related to land use and planning would be potentially significant if implementation of the Plan would:

1. Physically divide an established community; and/or,
2. Cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect.

To determine the Plan's potential to conflict with any land use plan, policy, or regulation (Threshold 2), the discussion of land use and planning impacts in this section of the EIR analyzes the Plan's consistency with City and SCAG plans and policies related to land use. Adoption of the Plan would result in a potentially significant land use impact only if the Plan would conflict with one or more applicable land use plans, policies, or regulations of the City or SCAG previously adopted for the purpose of avoiding or mitigating a regionally significant environmental impact. In general, SCAG incorporates well-established city-level general plans in its regional plans and actions. As long as a proposed local general plan is largely consistent with the most recently adopted SCAG plans or policies, adoption of an updated local general plan does not result in environmental impacts that are considered significant. SCAG ultimately has the discretion to determine consistency of the Plan with the policies, plans, and/or programs that fall within that agency's purview.

b. Project and Cumulative Impacts

Threshold 1:	Would the Plan physically divide an established community?

Impact LU-1 The Plan retains and continues the Planning Area's existing street system and protects its established communities. It would therefore not divide an established community and there would be no impact.

Comparison of the proposed Plan land use map shown in Figure 2-3 to the City's current land use map shown in Figure 4.11-1 shows that the Plan retains and continues the Planning Area's existing pattern of arterial highways and established communities in Palmdale. The Plan vision specifically includes goals that facilitate the development of complete neighborhoods, promote high quality mixed use development that includes office employment, affordable housing and improved transit and pedestrian linkages near existing transit. Therefore, the Plan would not divide an established community and there would be no impact.

Mitigation Measures

No mitigation measures are required.

Threshold 2:	Would the Plan cause a significant environmental impact due to a conflict with any land use plan, policy, or regulation adopted for the purpose of avoiding or mitigating an environmental effect?

Impact LU-2 BECAUSE THE PLAN AND ITS POLICIES ARE CONSISTENT WITH SCAG'S RCP AND RTP/SCS AND OTHER APPLICABLE PLANS, THE PLAN WOULD NOT CONFLICT WITH APPLICABLE LAND USE PLANS, POLICIES, OR REGULATIONS ADOPTED FOR THE PURPOSE OF AVOIDING OR MITIGATING AN ENVIRONMENTAL EFFECT. IMPACTS WOULD BE LESS THAN SIGNIFICANT.

2008 SCAG RCP Land Use Policies

The 2008 RCP has the following chapters, each of which includes goals and outcomes to measure progress toward a more sustainable region (SCAG 2017b):

- Land Use and Housing
- Open Space and Habitat
- Water
- Energy
- Air Quality
- Solid Waste
- Transportation
- Security and Emergency Preparedness
- Economy

Each of the topics listed above, other than Land Use and Housing, is addressed in other sections of this EIR. Consistency with the South Coast AQMP is discussed in Section 4.3, *Air Quality*. Land use compatibility conflicts associated with growth carried out under the Plan are discussed in other sections of this EIR, including Sections 4.1, *Aesthetics*, 4.3, *Air Quality*, 4.9, *Hazards and Hazardous Materials*, and 4.13, *Noise*. Housing is addressed in Section 4.14, *Population and Housing.* Therefore, the review below is focused on land use, with the acknowledgement that land use is inherently a major factor in the other listed topics.

Local consistency with RCP land use usually leads to consistency with the other RCP components that are based, to some extent, on underlying current and future land uses. The "Voluntary Local Government Best Practices" relating to local land use are listed on Page 21 of the RCP. The discussion below lists applicable voluntary best practices from the RCP and explains how the Plan relates to each of them.

LU-4 Local governments should provide for new housing, consistent with State Housing Element law, to accommodate their share of forecast regional growth.

LU-4.1 Local governments should adopt and implement General Plan Housing Elements that accommodate housing needs identified through the Regional Housing Needs Assessment (RHNA) process. Affordable housing should be provided consistent with RHNA income category distributions adopted for each jurisdiction. To provide housing, especially

affordable housing, jurisdictions should leverage existing state programs such as Housing and Community Development's (HCD) Workforce Incentive Program and density bonus law and create local incentives (e.g., housing trust funds, inclusionary zoning, tax-increment-financing districts in redevelopment areas and transit villages) and partnerships with non-governmental stakeholders.

The 2021-2029 Housing Element continues the City's focus on the preservation and maintenance of its housing stock, incorporates programs designed to facilitate the development of affordable housing and increase access to homeownership for all income groups within Palmdale. Additionally, the City will continue programs that identify adequate and sufficient sites for additional residential development aimed at meeting needs of lower-income households, special-needs populations and regional housing needs. The Housing Element identifies housing needs in the City and sets forth policies to guide future housing development consistent with General Plan goals and policies.

Table 4.11-1 provides an overview of the 2021-2029 Housing Element sites inventory compared to its RHNA. The sites inventory demonstrates that there are adequate vacant and underutilized sites to accommodate the City's 6th Cycle RHNA allocation of 6,640 units. Future RHNA planning cycles will require the City to update its Housing Element for the post-2029 period. Future Housing Element updates will be subject to subsequent CEQA review and are beyond the scope of this EIR.

Table 4.11-1 Comparison of Sites Inventory and RHNA

	Lower Income	Moderate Income	Above Moderate Income	Total
RHNA	2,712	1,004	2,924	6,640
Potential ADUs	110	2	48	160
Pipeline Projects	0	32	7,487	7,487
City Ranch SP (Anaverde)	0	0	2,318	2,318
Ritter Ranch SP	0	0	5,169	5,169
Remaining need	2,602	1,002	0	3,604
Sites Inventory	3,480	1,459	0	4,939

Source: City of Palmdale 2021

LU-6.3 Local governments and subregional organizations should develop ordinances and other programs, particularly in the older, more urbanized parts of the region, which will enable and assist in the cleanup and redevelopment of brownfield sites.

LU-6.4 Local governments and subregional organizations should develop adaptive reuse ordinances and other programs that will enable the conversion of vacant or aging commercial, office, and some industrial properties to housing and mixed-use with housing.

Several areas have been identified as key districts and centers where the private market, non-profits, and/or City-initiated projects would lead to reuse and conversion of properties in response to market demand or for various public and semipublic purposes. These areas are Downtown Palmdale, the Palmdale Regional Medical Center, the Antelope Valley Mall, Palmdale Boulevard, and the Village and Multiuse Centers. A recent example of a planning program involving the conversion of vacant and underutilized land to create a pedestrian-oriented mixed use development district

around the future multi-modal high speed rail station is the PTASP, which was approved in 2020. The PTASP encompasses an area of 746 acres.[1] Existing land uses within the PTASP project area included single- and multi-family residential, commercial, industrial and public facility designations. The PTASP employs a form-based code approach of development that focuses on the placement and form of buildings to achieve a vibrant urban core with walkable mixed-use neighborhoods. To improve streetscapes, connectivity to open spaces and landmarks within the PTASP project area, land uses are organized into three categories: districts, corridors and neighborhoods. The High Speed Rail (HSR) Station Area Core district, Regional Commercial district, and Business Mix district will help to transform the area into a distinctive, lively and active environment by enhancing pedestrian connectivity and multi-modal transportation within and throughout the surrounding area, contribute to neighborhood-scale commercial and retail services, and establish business parks comprised of mid-intensity offices and light-industrial complexes. Two commercial corridors, along Avenue Q and Palmdale Boulevard, will be improved to support pedestrian connectivity, moderately scaled buildings with ground floor retail, and provide sufficient space to accommodate amenities, outdoor dining, and pedestrian activity. Neighborhoods within the PTASP will be designed to include a variety of residential types and densities to create complete, compact and connected residential development. Potential site contamination, including cleanup of sites, if necessary, will be addressed through regulations described in Chapter 4.9, *Hazards and Hazardous Materials* of this EIR.

With implementation of these plans and policies, the Plan would be consistent with the SCAG 2008 RCP and this impact would be less than significant.

SCAG 2020 RTP/SCS

The RTP/SCS is a planning and strategy document with a focus on integrating major regional transportation infrastructure investments with land use planning. For cities like Palmdale that are largely continuing their existing land uses, development patterns, and transportation infrastructure, the RTP/SCS largely incorporates local land use plans provided to SCAG by local jurisdictions during development of the RTP/SCS.

The 2020 RTP/SCS has identified strategies, which are intended to guide and support member jurisdictions implement policies that achieve and advance the regional growth vision of the RTC/SCS. They are:

1. Focus growth near destinations and mobility Options
2. Promote diverse housing choices
3. Leverage technology innovations
4. Support the implementation of sustainability policies
5. Promote a green region

The Plan does not conflict with these strategies for the following reasons.

- Strategy 1: The Plan proposes development patterns that support well-connected mobility near the future multimodal transit station and the redesigning of key boulevards and neighborhood connectors to be constructed and operated as multimodal boulevards.

[1] As mentioned in Section 2, *Project Description,* the Plan would involve a slight expansion of the boundary of the PTASP. This proposed expansion would fully include many parcels with split zoning within the Specific Plan area. Because the Specific Plan area is in the core of the city, this action would not affect the Planning Area of the proposed Plan or require annexations.

- Strategy 2: The Plan encourages a variety of housing types developed at a range of densities to serve varying household types including, but not limited to, single-family attached and detached, accessory dwelling units, multi-family apartments, townhomes, duplexes, triplexes, quadplexes and condominiums.
- Strategy 3 and 4: The 2020 RTP/SCS states that it supports improving access to services through technology. The Plan encourages the implementation of innovative infrastructure that can accommodate emerging technologies such autonomous and connected vehicles, attract and increase sustainable businesses and opportunities for telecommuting in the city and encourage the use of alternative fuels to reduce tailpipe emissions from vehicles.
- Strategy 5: The Plan encourages the preservation of natural topographic features during the planning and development process and the creation of an undeveloped or rural greenbelt around the city that is comprised of natural areas, parks and open space, and agricultural lands. To improve access to public park space, the Plan supports the development of pedestrian and bicycle linkages to local trails and open space.

Based on the discussion above, the Plan is consistent with SCAG'S 2020 RTP/SCS and this impact would be less than significant.

City of Palmdale Specific Plans

The City of Palmdale has multiple specific plans outlined above. They are more specific than the underlying zoning requirement and define the permitted land uses and development standards for the unique characteristics of the planning area for each specific plan. The Plan has been designed to be consistent with (not conflict with) any of the City's specific plans.

Although the Plan would be generally consistent with the City's existing specific plans, upon adoption of the Plan, the City would review its currently adopted specific plans and revise them where necessary to reflect changes made in the Plan, such as land use, density/intensity, design, and development. State law requires all Area and Specific Plans to be consistent with the General Plan. As with the Zoning Ordinance, the statutes allow a "reasonable" time for these modifications, which the courts have generally interpreted to be one year from the date of General Plan adoption. The Plan also recognizes the existing land uses established by Specific Plans, reducing the potential of a conflict between the Plan and existing Specific Plans.

West Mojave Conservation Plan

Palmdale is in the West Mojave Conservation Plan area. As described in Section 4.4, *Biological Resources*, the West Mojave Plan is a habitat conservation plan that acts as a comprehensive strategy to conserve the desert tortoise, Mohave ground squirrel, and over 100 sensitive plants, animals, and natural communities. If there is any development carried out under the proposed Plan that is within the Conservation Areas, it would be required to follow the West Mojave Plan's land use and conservation policies to ensure that development is in accordance with the West Mojave Plan. As discussed in Section 4.4, *Biological Resources*, future development associated with proposed Plan would be subject to the City's standard development review process, during which the City could evaluate such projects for consistency with the West Mojave Plan and applicable General Plan policies; therefore, future development would not conflict with the West Mojave Plan. As discussed throughout this impact discussion, implementation of the proposed Plan would be generally consistent with applicable adopted plans, regulations, or policies. Therefore, impacts associated with potential inconsistencies with applicable land use plans for the city would be less than significant.

Mitigation Measures

No mitigation measures are required.

4.11.4 Cumulative Impacts

By its nature, a general plan considers cumulative impacts insofar as it considers cumulative development that could occur within a city's plan area. Additionally, the land use and planning impacts discussed in this chapter are cumulative in nature. As discussed in this chapter, the Plan is consistent with SGAG's regional policies including those in the 2020 RTP/SCS and the 2008 RCP. These SCAG policies in turn apply to local jurisdictions throughout the SCAG region and address the cumulative land use and planning impacts of future development across the region. Therefore, the Plan would not make a substantial contribution to any cumulative impact related to land use and planning.

4.12 Mineral Resources

This section of the EIR analyzes the potential physical environmental effects of Plan implementation related to mineral resources. Data used to prepare this section was obtained from the Plan and the Natural + Cultural Resources chapter of the Existing Conditions Report for the Plan, the existing City of Palmdale General Plan, the California Department of Conservation (DOC), the California Geological Survey (CGS), and other sources.

4.12.1 Environmental Setting

The Planning Area encompasses approximately 104 square miles located between the foothills of the San Gabriel Mountains and the Sierra Pelona Mountains, and the Mojave Desert to the north and east. State Route 14 traverses the eastern portion of the Planning Area and Highway 138 traverses the western portion of the Planning Area.

The Planning Area is in the southern part of the Mojave Desert geomorphic province. The Mojave Desert is a broad interior region of isolated mountain ranges separated by stretches of desert plains. There are two important fault trends that control topography: a prominent northwest-southeast trend and a secondary east-west trend (apparent alignment with Transverse Ranges is significant). The Mojave province is wedged in a sharp angle between the Garlock Fault (southern boundary Sierra Nevada) and the San Andreas Fault, where it bends east from its northwest trend. The northern boundary of the Mojave is separated from the prominent Basin and Range by the eastern extension of the Garlock Fault (CGS 2002).

Known and potential major deposits of sand and gravel, crushed rock, clay, limestone, and dolomite have been identified in the Planning Area by the State Division of Mines and Geology. Because transportation costs are high for these materials, their value depends on proximity to the user. The area's construction industries rely on local resources for aggregate supply in the region. Sand and gravel deposits are found extensively in flood plains and stream channels located north of the San Gabriel Mountains in the Little Rock and Big Rock Wash areas. The availability of aggregate deposits and their proximity to markets are factors in the strength of the region's economy (Palmdale 1993). Mineral resource locations are shown in Figure 4.12-1.

Palmdale lies within the Palmdale Production-Consumption region, which is a California Department of Conservation-designated Mineral Resource Zone encompassing 1,103 square miles, including Palmdale and Lancaster. Two MRZ-2 areas were classified within the Palmdale area. The mineral deposits within Palmdale are the Littlerock Fan and the Big Rock Creek Fan alluvial deposits. The Littlerock Fan is a 12 square mile area extending from the north flank of the San Gabriel Mountains for about 8 miles, which includes the Littlerock Wash floodplain and the fan area to the west (DOC 1984). The Big Rock Creek Fan encompasses a 26 square mile area extending northward from the San Gabriel Mountains for 8 miles. Both mineral deposits are composed of approximately 60% fine to coarse sand and silt, overlain by approximately 40% pebbly gravel.

Mineral resource extraction areas designated by the current General Plan (Palmdale 1993) are presented in Figure 4.12-2.

Figure 4.12-1 Mineral Resource Locations in and Around Palmdale

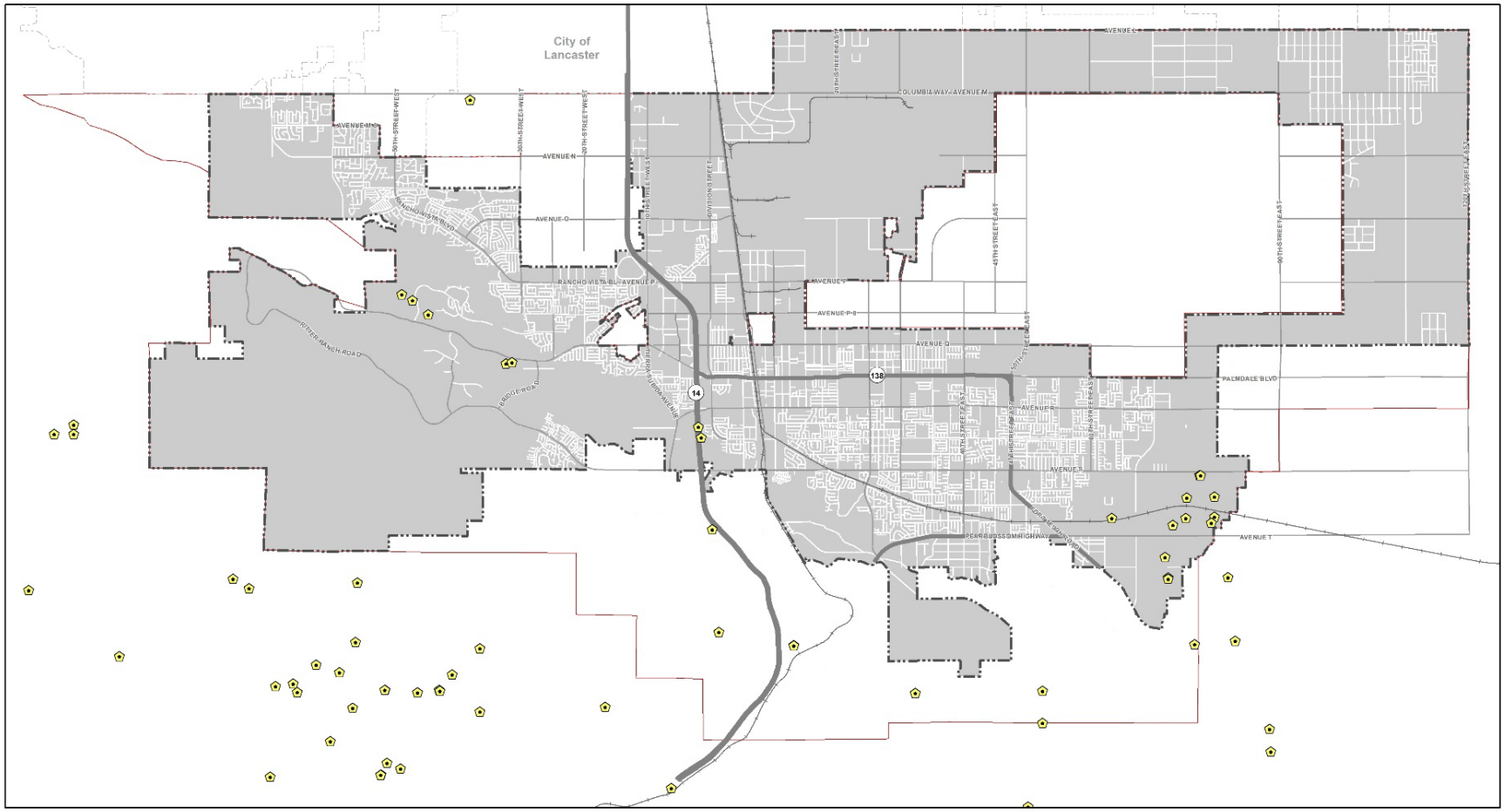
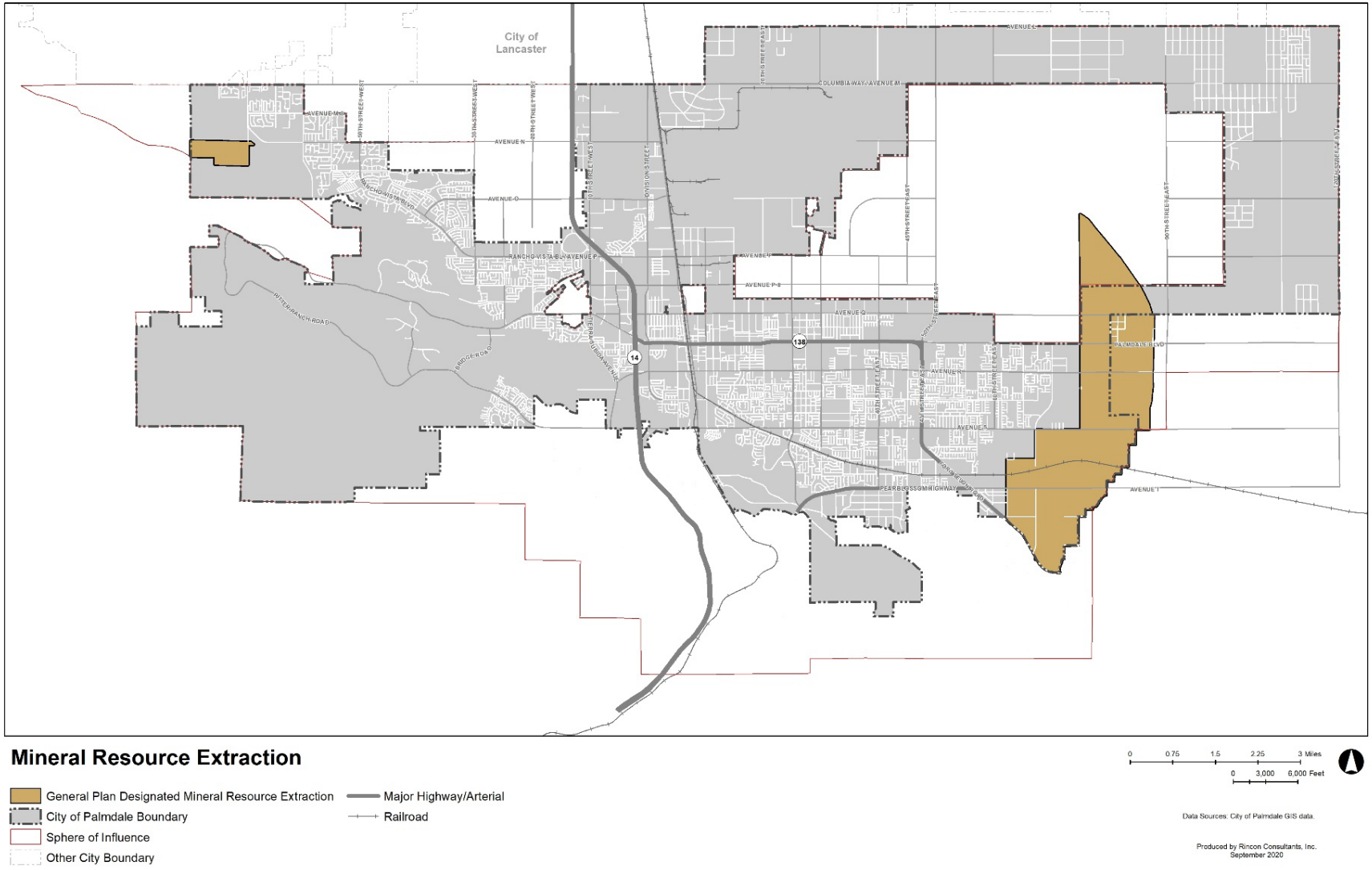


Figure 4.12-2 Mineral Resource Extraction in Palmdale



4.12.2 Regulatory Setting

Regulations on mining and mineral resources are a mix of federal, state, and local regulations and legislation, depending on where development/land is located.

a. State

Surface Mining and Reclamation Act of 1975

The California Surface Mining and Reclamation Act of 1975 (SMARA) requires geologists to identify mineral resource zones (MRZ) based on the known or predicted mineral resources of that particular area to assist in the protection and developmental uses of mineral resources in the state. MRZs are defined as follows:

- MRZ-1: Areas where adequate information indicates that no significant mineral deposits are present, or where it is judged that little likelihood exists for their presence.
- MRZ-2: Areas where adequate information indicates that significant mineral deposits are present or where it is judged that a high likelihood for their presence exists.
- MRZ-3: Areas containing mineral deposits the significance of which cannot be evaluated from available data.
- MRZ-4: Areas where available information is inadequate for assignment to any other MRZ zone.

b. Local

Surface Mining Ordinance

The City of Palmdale's Zoning Ordinance (PMC) constitutes the comprehensive zoning regulations in relation to SMARA. On January 20, 1994, the State Mining and Geology Board (SMGB) certified the City of Palmdale's mining ordinance (Ordinance No. 1023) under Resolution Number 94-54,

Surface Mining Administrative Review Procedures

PMC, Title 17 (Zoning), Chapter 17.102 provides information on Surface Mining and Reclamation procedures used within the City's jurisdiction. PMC Chapter 17.102 requires a Conditional Use Permit for surface mining operations and reclamation plans. Additionally, all reclamation plans must conform to statewide performance standards. Furthermore, PMC Chapter 17.72 establishes the Quarry and Reclamation Zone to preserve areas of the City that have been designated by the State of California as Significant Mineral Resource Areas, or which possess market grade mineral resources, to ensure long-term availability of these sites for the extraction and processing of rock, sand, gravel, and similar materials.

4.12.3 Impact Analysis

a. Methodology and Significance Thresholds

According to CEQA Guidelines Appendix G, impacts related to mineral resources would be potentially significant if implementation of the Plan would:

1. Result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state; or,

2. Result in the loss of availability of a locally important mineral resource recovery site delineated on a local general plan, specific plan, or other land use plan.

b. Project and Cumulative Impacts

Threshold 1:	Would the Plan result in the loss of availability of a known mineral resource that would be of value to the region and the residents of the state?
Threshold 2:	Would the Plan result in the loss of availability of a locally important mineral resource recovery site delineation on a local general plan, specific plan, or other Land use plan.

Impact MIN-1 BECAUSE THE PLAN WOULD NOT REDESIGNATE ANY AREAS CURRENTLY DESIGNATED AS MINERAL RESOURCE ZONES, AND PROJECTS CARRIED OUT UNDER THE PLAN WOULD BE REQUIRED TO ADHERE TO APPLICABLE REGULATIONS AND PLAN POLICIES RELATED TO MINERAL RESOURCES, IMPACTS RELATED TO THE LOSS OF AVAILABILITY OF A KNOWN MINERAL OR A LOCALLY IMPORTED MINERAL RESOURCE RECOVERY SITE DELINEATION WOULD BE LESS THAN SIGNIFICANT.

As mentioned above under in Section 4.12.1, *Environmental Setting*, the City of Palmdale contains two areas recognized by SMARA as MRZ-2 areas. As can be seen by comparing the proposed Plan Land Use Map shown in Figure 2-3 of this EIR to the City's current General Plan Land Use Map shown in Figure 4.11-1 of this EIR, the Plan would retain all areas designated Mineral Resource Extraction.

Projects carried out under the Plan would be required to adhere to SMARA regulations, PMC Title 17 Chapter 17.102 and Chapter 17.72 of the PMC(described in Section 4.12.2, *Regulatory Framework*). For example, Chapter 17.72 establishes the Quarry and Reclamation Zone to preserve areas of the City that have been designated by the State of California as Significant Mineral Resource Areas, or which possess market grade mineral resources, to ensure long-term availability of these sites for the extraction and processing of rock, sand, gravel, and similar materials.

Projects carried out under the Plan would also be required to be consistent with the Plan goals and policies relevant to mineral resources listed below.

CONSERVATION

- **Goal CON-3: Plan for safe operations of mineral resource extraction areas and reduce unreasonable impacts.**
  - **Policy CON-3.1: Reduce mineral resource extraction impacts.** Reduce impacts to human and environmental health caused by mineral resource extraction including:
    - Ground water contamination
    - Removal or demise of sensitive Ecological Areas of flora and fauna
    - Excessive noise or dust
  - **Policy CON-3.2: Land use buffers.** Maintain buffers between mineral resource extraction areas and other sensitive land uses (i.e., residential, public, institutional, open space and parks, among others) to reduce unnecessary impacts while in operation.

- **Goal CON-4: Plan for mineral resource extraction site remediation and end users.**
  - **Policy CON-4.1: Mining reclamation plan.** Require mining operators to establish a reclamation plan that indicates end users when mining operations cease and how the transition to new uses shall be implemented.
  - **Policy CON-4.2: Reclamation fund.** Establish a use-based mechanism for mining operators to begin contributing to a reclamation fund annually to be used after operations cease.
  - **Policy CON-4.3: Plan remediation and restoration of sites.** Plan for remediation and restoration of extraction sites after operations cease, including adequate areas for groundwater recharge.
- **Goal CON-5: Protect the quality and quantity of local water resources.**
  - **Policy CON-5.2: Groundwater protection.** Ensure that no mineral resource recovery activities extend below the groundwater table.

While none of these goals and their related policies directly address potential land use conflicts that could result in the loss of availability of a mineral resource, they would help avoid land use conflicts that could contribute to such an impact.

In summary, because the Plan would not redesignate any areas currently designated as mineral resource zones, and projects carried out under the Plan would be required to adhere to applicable regulations and Plan policies related to mineral resources, impacts related to the loss of availability of a known mineral or a locally imported mineral resource recovery site delineation would be less than significant.

Mitigation Measures

No mitigation measures are required.

Cumulative Analysis

By its nature, a general plan considers cumulative impacts insofar as it considers cumulative development that could occur within the Planning Area. Mineral resources are finite and demand for them extends beyond the Planning Area. Impacts from the loss of mineral resources could combine with such impacts in other geographical areas to create a cumulative impact. However, for the reasons discussed in Impact MIN-1, the Plan would not make a substantial contribution to any cumulative impacts related to mineral resources, and cumulative impacts would be less than significant.

4.13 Noise

This section describes existing ambient noise conditions within the Planning Area and analyzes the potential noise-related impacts from implementation of the Plan. Impacts related to noise from construction, building operations, and vehicular traffic are addressed.

4.13.1 Environmental Setting

a. Overview of Sound Measurement

Noise is defined as unwanted sound. Noise level measurements include intensity, frequency, and duration, as well as time of occurrence. Noise level (or volume) is generally measured in decibels (dB) using the A-weighted sound pressure level (dBA). The A-weighting scale is an adjustment to the actual sound pressure levels to be consistent with that of human hearing response, which is most sensitive to frequencies around 4,000 Hertz (about the highest note on a piano) and less sensitive to low frequencies (below 100 Hertz).

Sound pressure level is measured on a logarithmic scale with the 0 dBA level based on the lowest detectable sound pressure level that people can perceive (an audible sound that is not zero sound pressure level). Based on the logarithmic scale, a doubling of sound energy is equivalent to an increase of 3 dBA, and a sound that is 10 dBA less than the ambient sound level has no effect on ambient noise. Because of the nature of the human ear, a sound must be about 10 dBA greater than the ambient noise level to be judged as twice as loud. In general, a 3 dBA change in the ambient noise level is noticeable, while 1 to 2 dBA changes generally are not perceived. Quiet suburban areas typically have noise levels in the range of 40 to 50 dBA, while areas adjacent to arterial streets are typically in the 50 to 60 or more dBA range. Normal conversational levels are usually in the 60 to 65 dBA range and ambient noise levels greater than 65 dBA can interrupt conversations.

Noise levels from point sources, such as those from individual pieces of machinery, typically attenuate (or drop off) at a rate of 6 dBA per doubling of distance from the noise source. Noise levels from lightly traveled roads typically attenuate at a rate of about 4.5 dBA per doubling of distance. Noise levels from heavily traveled roads typically attenuate at about 3 dBA per doubling of distance. Noise levels may also be reduced by intervening structures. Generally, a single row of buildings between the receptor and the noise source can reduces noise levels by about 5 dBA, while a solid wall or berm can reduce noise levels by 5 to 10 dBA (Federal Transit Administration [FTA] 2006). The manner in which homes in California are constructed generally provides a reduction of exterior-to-interior noise levels of approximately 20 to 25 dBA with closed windows (FTA 2006).

The duration of noise is important because sounds that occur over a long period of time are more likely to be an annoyance or cause direct physical damage or environmental stress. One of the most frequently used noise metrics that considers both duration and sound power level is the equivalent noise level (Leq). The Leq is defined as the single steady A-weighted level that is equivalent to the same amount of energy as that contained in the actual fluctuating levels over a period of time (essentially, the average noise level). Typically, Leq is summed over a one-hour period. Lmax is the highest RMS (root mean squared) sound pressure level within the measurement period, and Lmin is the lowest RMS sound pressure level within the measurement period.

The time period in which noise occurs is also important since nighttime noise tends to disturb people more than daytime noise. Community noise is usually measured using the Day-Night Average Level (Ldn), which is the 24-hour average noise level with a 10-dBA penalty for noise occurring

during nighttime (10 p.m. to 7 a.m.) hours, or Community Noise Equivalent Level (CNEL), which is the 24-hour average noise level with a 5 dBA penalty for noise occurring from 7 p.m. to 10 p.m. and a 10 dBA penalty for noise occurring from 10 p.m. to 7 a.m. The Ldn and CNEL typically do not differ by more than 1 dBA. In practice, CNEL and Ldn are often used interchangeably.

b. Sensitive Receptors

Noise exposure goals for various types of land uses reflect the varying noise sensitivities associated with those uses. Residences, hospitals, schools, guest lodging, libraries, and religious institutions are most sensitive to noise intrusion and therefore have more stringent noise exposure targets than commercial or recreational uses that are not subject to impacts such as sleep disturbance. Sensitive land uses within the Planning Area are presented in Figure 4.13-1. Most residential noise-sensitive uses are located in relatively quiet areas lacking major noise sources. However, residences and other noise-sensitive receptors located along major arterial roadways, highways, and railroad lines may experience elevated noise levels.

c. Sources of Noise

The predominant source of noise in Palmdale is traffic. Other sources of noise include railroad operations, transit, and stationary operations from commercial and industrial uses, as described below. Information in the descriptions below was obtained from a variety of sources as cited throughout the discussion, including the City's 1993 General Plan, the proposed Plan, and the Background/Existing Conditions Reports.

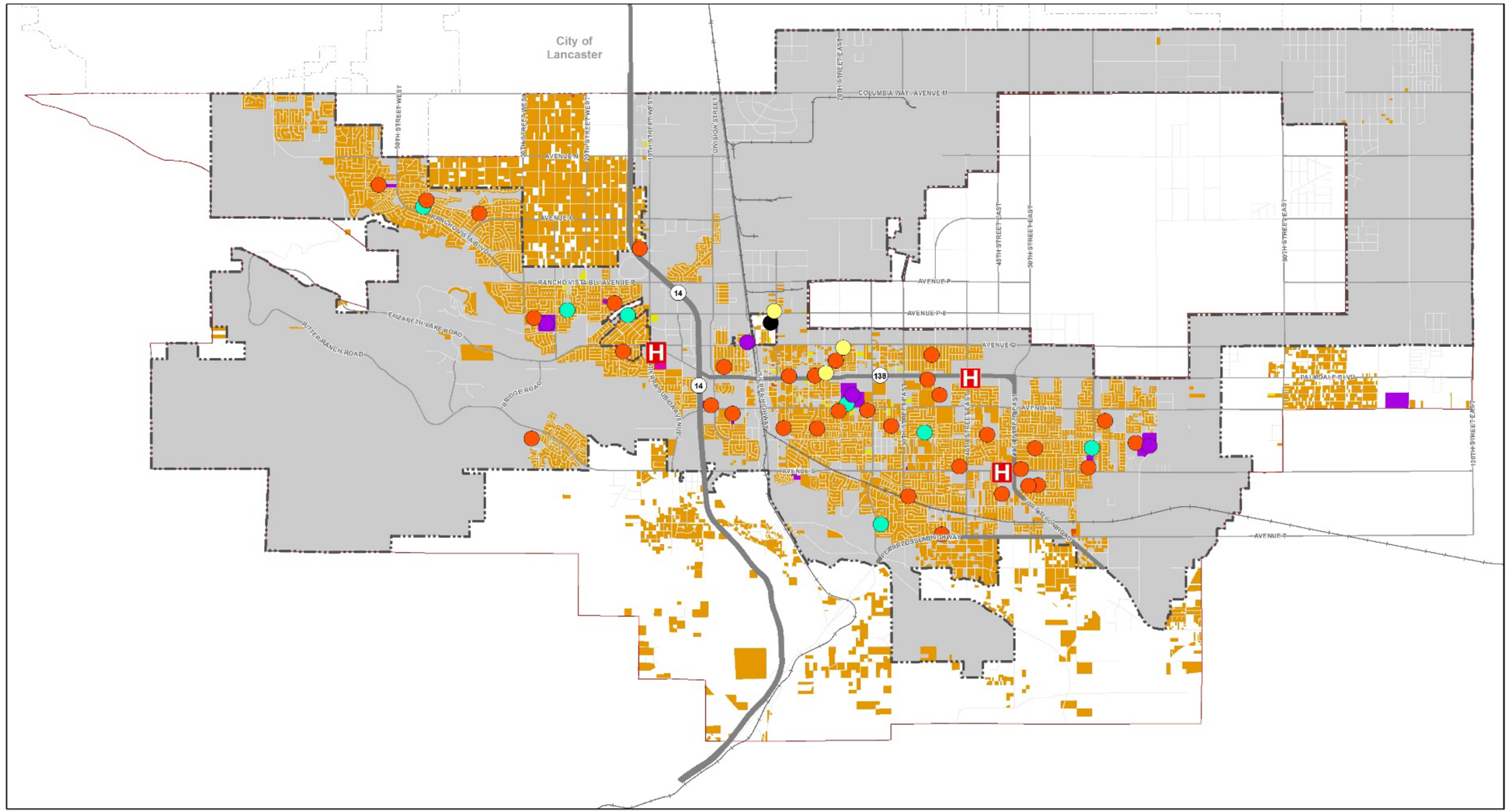
Roadways

Motor vehicle noise is of concern because it is characterized by a high number of individual events, which often create a sustained noise level, and because of its proximity to noise-sensitive uses. Roadways with the highest traffic volumes and the highest speeds produce the highest noise levels. These roadways include SR-14, SR-138, Sierra Highway and major streets such as 10th Street West, Avenue S, 47th Street East, Palmdale Boulevard, and Rancho Vista Boulevard. As shown in Figure 4.13-1, many residences are located adjacent to these roadways. These roadways run through the Planning Area and are surrounded by multiple sensitive land uses including schools, residential development, churches, and hospitals.

Transit

The City of Palmdale is served by the Antelope Valley Transit Authority (AVTA) which operates 13 local transit routes throughout the City. The highest ridership in Palmdale occurs along 10th Street West, Palmdale Boulevard, Avenue R, and Avenue S. Additionally, some of the busiest bus stop within AVTA occur within the City of Palmdale, these stops include the Antelope Valley Mall, Walmart at Avenue S/47th Street East, Avenue R/47th Street East, and the Palmdale Transportation Center. The Palmdale Transportation Center isa regional multimodal hub that offers connections between the AVTA and other commuter services such as Amtrak, the Metrolink commuter Rail Service, and Santa Clarita Transit.

Figure 4.13-1 Palmdale Noise Sensitive Land Uses



This page intentionally left blank.

Railroads

Rail traffic also contributes to noise. Metrolink is operated by the Southern California Regional Transit Authority (SCRRA) and serves five counties in the Los Angeles Region. Metrolink offers commuter rail service from the Antelope Valley to Santa Clarita, the San Fernando Valley, and other cities in the Los Angeles Basin. Palmdale's Metrolink commuter rail stop is at the Palmdale Transportation Center, which is located at 39000 Clock Tower Plaza Drive, in downtown Palmdale. The Amtrak Thruway bus also stops at the Palmdale Transportation Center.

Aircraft

Palmdale Regional Airport is located approximately two miles east of SR-14, north of Rancho Vista Boulevard. Surrounding land uses, which include open space, agricultural, and industrial uses, are not sensitive to noise. Palmdale Regional Airport contains Air Force Plant 42, which conducted an Air Installation Compatible Use Zone study in March 2012. Additionally, the airport does not operate commercial flights. There is currently no public airport within the Planning Area.

Commercial and Industrial Operations

Typical commercial and industrial noise sources include loading dock operations, parking lot activity, on-site equipment (including heating and air conditioning), heavy machinery, and heavy truck idling. Other stationary noise sources of concern typically include generators, pumps, air compressors, and outdoor speakers. These are often associated with trucking companies, tire shops, auto mechanic shops, metal shops, shopping centers, drive-up windows, and car washes. Noise-generating commercial uses are generally separated from noise-sensitive land uses by distance, topography, and other barriers.

Commercial and industrial operations can be substantial sources of noise, depending on the specific type of use and hours of operation. Commercial uses within the Planning Area primarily consist of retail and services, office, and auto retail. Commercial activity occurs primarily along 10th Street West, from around Avenue O-4 until south of Elizabeth Lake Road. Additional shopping centers have been established to meet the demands of Palmdale's growing population. These are located at 47th Street East and Avenue S, 25th Street East and Avenue S, 5th Street West and Palmdale Boulevard, 47th Street East and Avenue R, and other locations. Additionally, Antelope Valley Mall is located at 10th Street West and Rancho Vista Boulevard.

Industrial operations in the Planning Area primarily consist of manufacturing, defense, and aerospace. One of the largest industrial uses in the Planning Area is Plant 42. Plant 42 is a United States Air Force facility and accounts for 3.2 million square feet of industrial space. Other industrial uses include wholesale, manufacturing, and industrial business parks located along 6th Street East, along Avenue O, and within the area bounded by Avenue P/Avenue Q/Division Street/30th Street East.

d. Existing Noise Levels

To characterize the existing noise environment in Palmdale, noise levels were measured at 15 locations throughout the Planning Area in March of 2019. Measured noise levels and their respective location are shown in Figure 4.13-2 and Table 4.13-1. Noise levels are generally highest along or adjacent to major roadways and the highest noise level (76.0 dBA Leq) was measured along Avenue T at its intersection with (adjacent to) 70th Street East (Site No. 10).

Table 4.13-1 Measured Ambient Noise Levels[1]

Site No.	Location	Leq
1	Fifth Street W adjacent to Manzanita Heights Park	64.7
2	Clock Tower Plaza Drive E	62.7
3	50th Street E between Avenue L-8 and E Avenue M	70.0
4	Sierra Highway and W Avenue N	67.3
5	Callet Street adjacent to Highway 138	68.2
6	30th Street E adjacent to Williams J. MacAdam Park	67.5
7	E Avenue S adjacent to 30th Street E	69.2
8	E Avenue R between Hasting Street and 25th Street E	68.9
9	Sierra Highway adjacent to E Avenue S	67.7
10	East Avenue T adjacent to 70th Street	76.0
11	W Avenue N between 60th Street and Maple Street	67.8
12	Palmdale Boulevard adjacent to Sierra Highway	70.0
13	W Avenue S between The Groves and Mimosa Way	63.5
14	E Avenue R-8 between Penara Street and 42nd Street E	65.6
15	Rancho Vista Boulevard between 30th Street W and 27th Street W	66.8

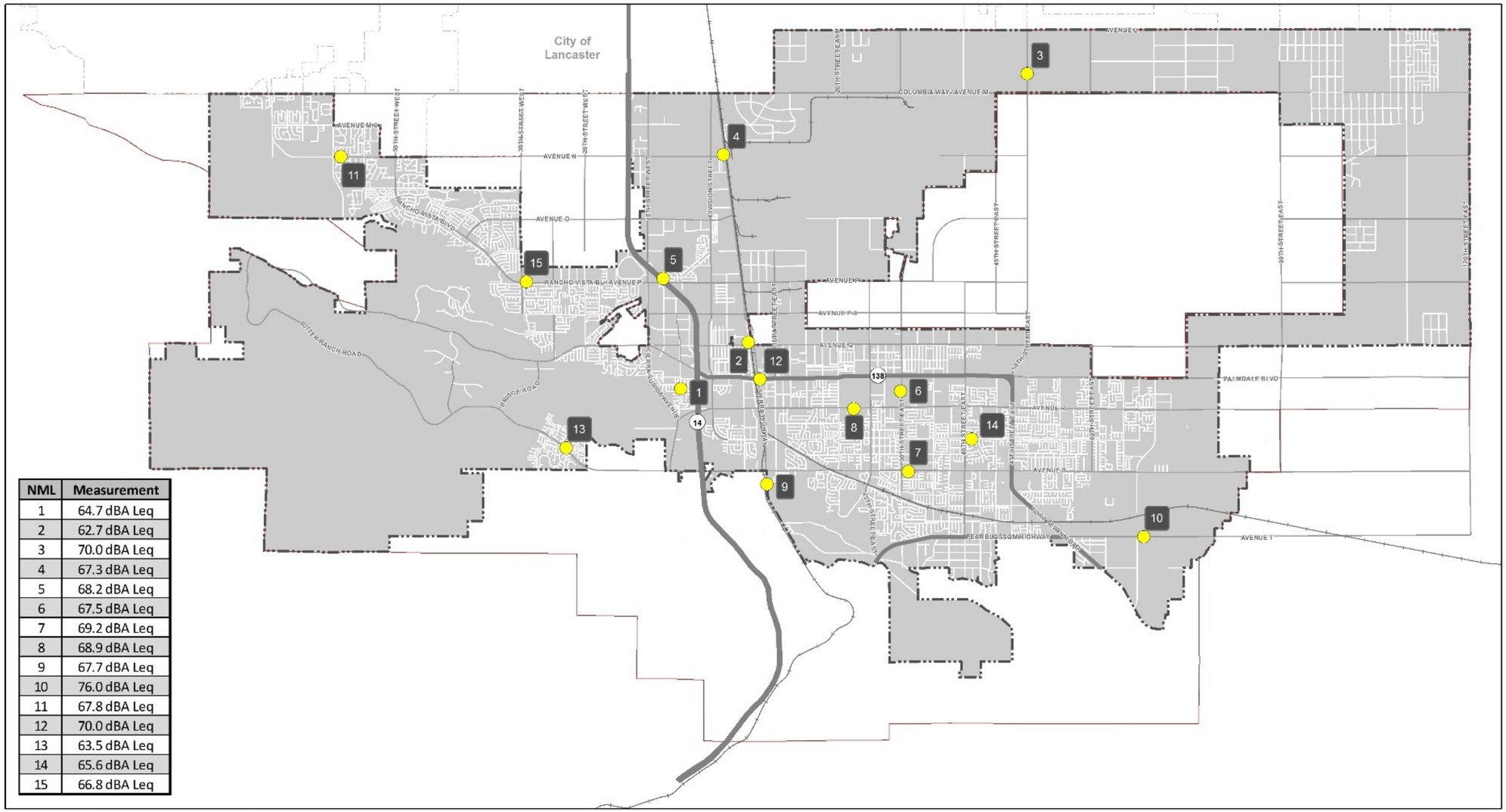
[1] See Figure 4.13-2 for noise measurement locations. Noise Measurements were taken on March 18, 2019.

Existing Noise Contours

Existing roadway noise levels were also quantified using the United States Department of Housing and Urban Development (HUD) Day/Night Noise Level (DNL) Calculator, based on ADT data obtained from a City-wide traffic study conducted by KOA Corporation in August 2017. The HUD DNL Calculator noise level estimates are based on traffic volume, vehicle mix, and vehicle speed to estimate roadway noise levels in CNEL (dBA) and generate roadway noise contours. Noise contours represent lines of equal noise exposure, just as the contour lines on a topographic map represent lines of equal elevation. The 60 dBA CNEL roadway contour was calculated using the HUD DNL Calculator for each modeled roadway and an attenuation rate of 4.5 dBA per doubling of distance was used to extrapolate the 65 dBA, 70 dBA, and 75 dBA CNEL noise contours. Roadway noise level estimates do not account for intervening barriers or topography that may shield individual receptors from the noise source. Therefore, the noise contours depicted in this section represent a reasonable, conservative worst-case estimate of noise levels and do not represent a specific estimate of sound levels at any particular location in the Planning Area. Refer to Appendix E for HUD DNL Calculator model output sheets.

The results of this noise contour modeling are depicted in Figure 4.13-3, a map of existing traffic noise contours along the roadways that are the major source of noise in Palmdale. As shown, SR-14 carries the most traffic through the Planning Area and is consequently the greatest contributor to noise within the Planning Area. Other roadways in and around Palmdale that carry sufficient traffic to produce audible noise at a substantial distance include SR-138, Sierra Highway, Avenue M, 47th Street East, 50th Street East, East Palmdale Boulevard, East Avenue S, and East Avenue P. The noise contour map also shows that noise levels exceed 60 dBA CNEL along all modeled roadways and generally reflect the measured noise levels shown in Table 4.13-1 and Figure 4.13-2. Comparing modeled noise contours to the City's exterior noise compatibility guidelines shown in

Figure 4.13-2 Noise Measurement Locations



NML	Measurement
1	64.7 dBA Leq
2	62.7 dBA Leq
3	70.0 dBA Leq
4	67.3 dBA Leq
5	68.2 dBA Leq
6	67.5 dBA Leq
7	69.2 dBA Leq
8	68.9 dBA Leq
9	67.7 dBA Leq
10	76.0 dBA Leq
11	67.8 dBA Leq
12	70.0 dBA Leq
13	63.5 dBA Leq
14	65.6 dBA Leq
15	66.8 dBA Leq

Figure 4.13-3 Existing Noise Contours

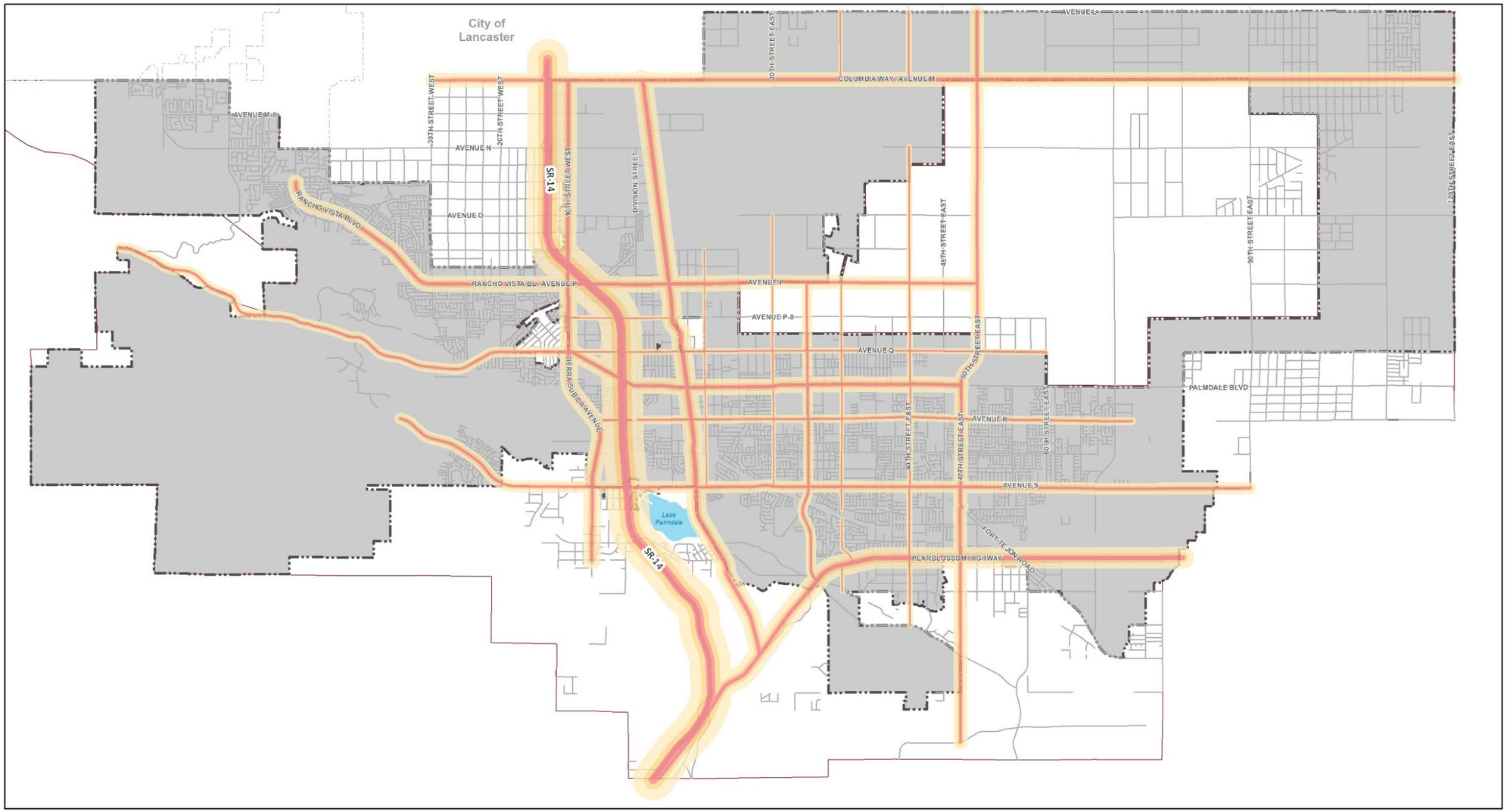


Figure 4.13-6,reveals that land uses in close proximity to these roads, such as residences, may currently be exposed to noise levels in exceedance of these City guidelines.

4.13.2 Regulatory Setting

a. Federal

Federal Transit Administration Ground borne Vibration Guidelines

Sections 5 and 6 of the Transit Noise and Vibration Impact Assessment Manual, adopted by the FTA in September 2018, addresses the federal guidelines used to evaluate a project for potential vibration impacts. The vibration impact analysis is a multi-step process used for determining vibration analysis level, determining vibration impact criteria, and evaluating vibration impact. FTA guidelines state that the threshold of perception for humans is approximately 65 vibration decibels (VdB). A vibration level of 85 VdB can result in strong annoyance, and a vibration level of 100 VdB is the threshold of potential damage (FTA 2018). Construction activity can result in varying degrees of ground vibration depending on the equipment and methods employed, and older and more fragile buildings must receive special consideration. These guidelines are advisory and should be used to assess the impacts of ground borne vibrations created from transit and construction sources.

b. State

California Building Code

CCR Title 24, Building Standards Administrative Code, Part 2, and the California Building Code codify the state noise insulation standards. These noise standards apply to new construction in California to control interior noise levels as they are affected by exterior noise sources. The regulations specify that interior noise levels for residential and school land uses should not exceed 45 CNEL.

California General Plan Guidelines

The California General Plan Guidelines, published by the Governor's Office of Planning and Research, indicate acceptable, specific land use types in areas with specific noise exposure. The guidelines also offer adjustment factors that may be used to arrive at noise acceptability standards that reflect the noise control goals of the community, the particular community's sensitivity to noise, and the community's assessment of the relative importance of noise pollution. These guidelines are advisory, and local jurisdictions, including the City of Palmdale, have the responsibility to set specific noise standards based on local conditions.

c. Local

Los Angeles County Airport Land Use Commission

The Los Angeles County Airport Land Use Commission (ALUC) is a county-level agency required by the State to develop a plan for promoting compatibility between local airports and surrounding land uses. The ALUC is responsible for designating an Airport Influence Area (AIA) for every airport within its jurisdiction. An AIA is an airport planning area boundary that consists of all areas in which current or future airport-related noise, over flight, safety, and/or airspace protection

factors may significantly affect land uses or necessitate restrictions on those areas. The Palmdale Regional AIA is shown in Figure 4.13-4. Development within these areas conform with the use, density, and intensity recommendations of the within the Accident Potential Zone (APZ) and Air Installations Compatible Use Zones (AICUZ) prepared by Edwards Air Force Base for Plant 42. The AICUZ map with Compatibility Zones (CZ) and APZs are shown in Figure 4.13-5.

City of Palmdale General Plan

The State of California requires each City and County to adopt a Noise Element as part of its General Plan. Such Noise Elements must contain a Land Use/ Noise Compatibility Matrix. The objective of noise compatibility guidelines is to provide the community with a means of judging the noise environment that it deems to be generally acceptable. A recommended (but not mandatory) matrix is presented in the "Guidelines for the Preparation and Content of Noise Elements of the General Plan" (Department of Health Services 2003). The City of Palmdale Land Use/Noise Compatibility Matrix in the existing General Plan Noise Element is based on, and is similar to the California Land Use/Noise Compatibility Matrix. The matrix is used to determine whether a proposed new use would be compatible with the ambient noise environment in which it is proposed as well as whether or not the proposed new use would create noise compatibility conflicts with established uses. The compatibility table, shown in Figure 4.13-6, illustrates the ranges of community noise exposure in terms of what is "normally acceptable," "conditionally acceptable," "normally unacceptable," and "clearly unacceptable."

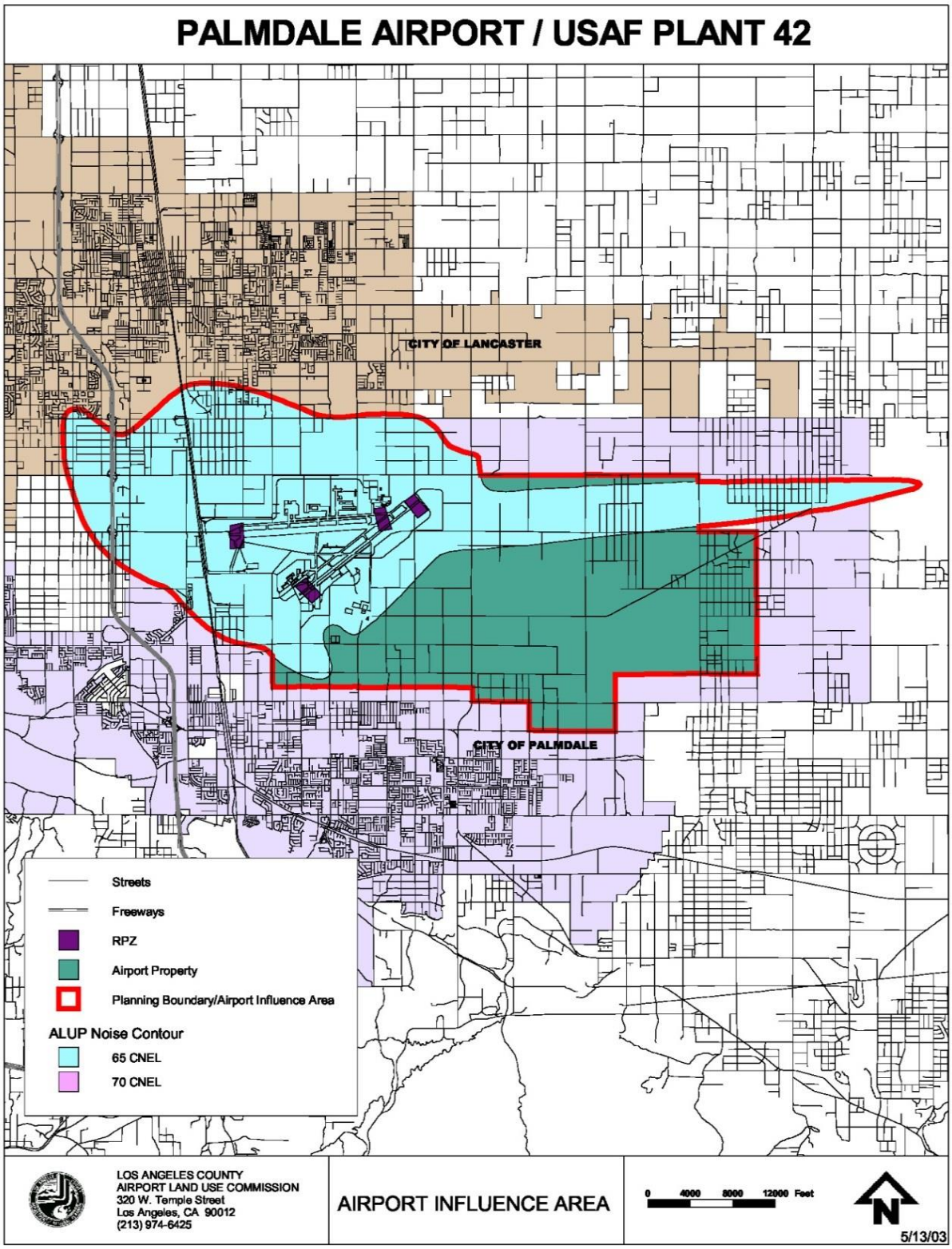
Denotation of a land use as "normally acceptable" implies that the highest noise level in that exposure level is the maximum desirable for existing or conventional construction that does not incorporate any special acoustical treatment. In general, evaluation of land use that falls into the "normally acceptable," "conditionally acceptable," or "normally unacceptable" noise environments should analyze other potential factors that would affect the noise environment. These include consideration of the types of noise source, the sensitivity of the noise receptor, the noise reduction likely to be provided by structures, and the degree to which the noise source may interfere with speech, sleep, or to other activities characteristic of the land use. Generally, the City's Land Use/Noise Compatibility Matrix is used as a guide to define where placement of certain land uses is considered acceptable. The Noise Element of the City's current General Plan also contains policies to maintain an acceptable noise environment in the City. Goals and policies from the proposed Plan relating to noise are listed in the impact analysis discussions in Section 4.13.3, *Impact Analysis*.

Palmdale Municipal Code

The City also implements and enforces noise control through its Municipal Code (PMC). PMC Chapter 9.18, *Disturbing, Excessive, Loud, or Offensive Noise*, sets both daytime and nighttime sound level limits for residential and commercial zones; prohibits any person or property owner in the City from creating any loud, unnecessary, or unusual noise which unreasonably disturbs the peace and quiet of any neighborhood or which causes discomfort or annoyance to any reasonable person of normal sensitiveness residing in the area.

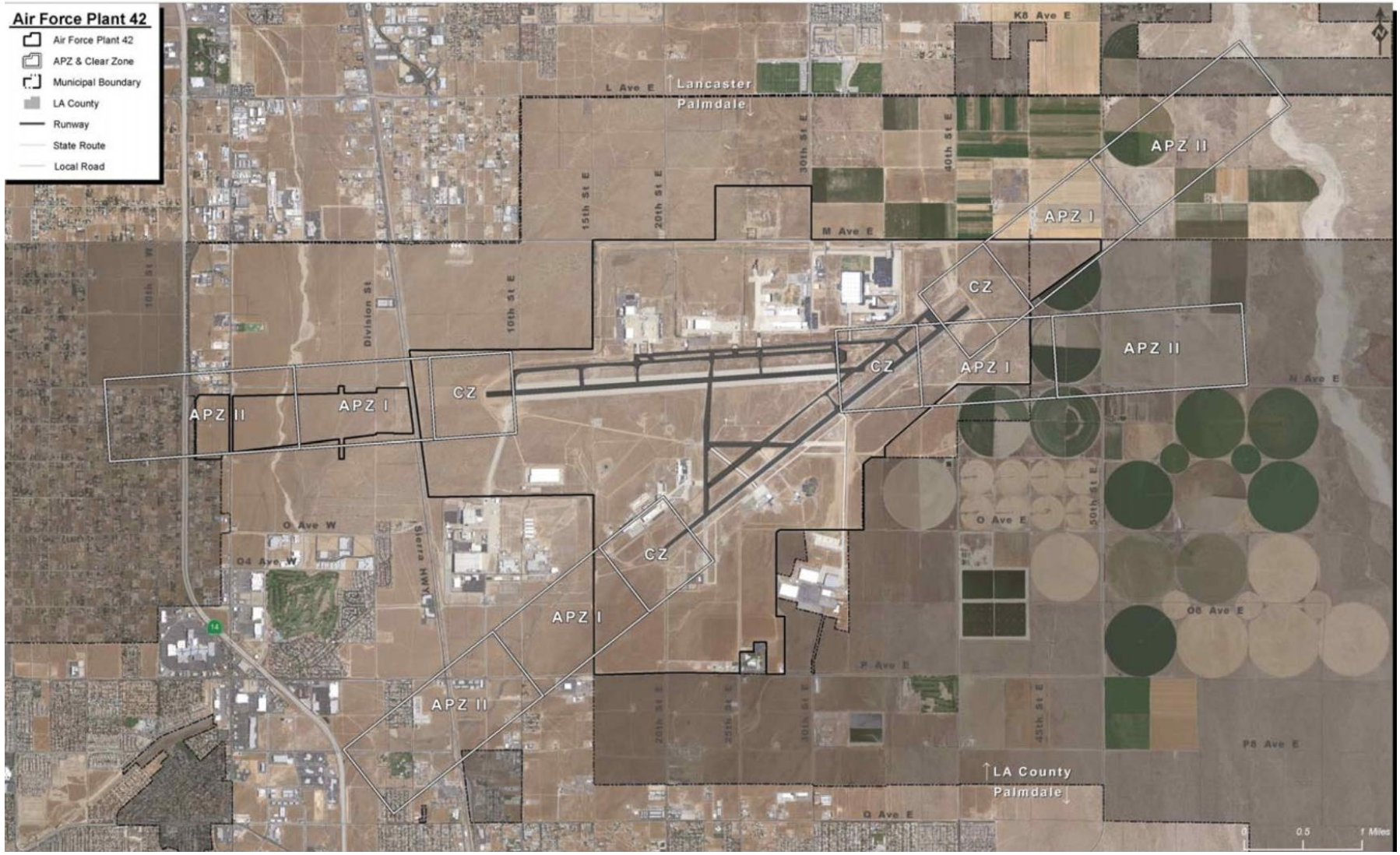
PMC Chapter 8.28, *Building Construction Hours of Operation and Noise Control* sets forth permitted hours for construction activities and property maintenances activities; prohibits any person or property owner in the City to perform any construction or repair work on any Sunday, or any other day after 8:00 p.m. or before 6:30 a.m., in any residential zone or within 500 feet of any residence, hotel, motel or recreational vehicle park.

Figure 4.13-4 Noise Contours map for Palmdale Airport/USAF Plant 42



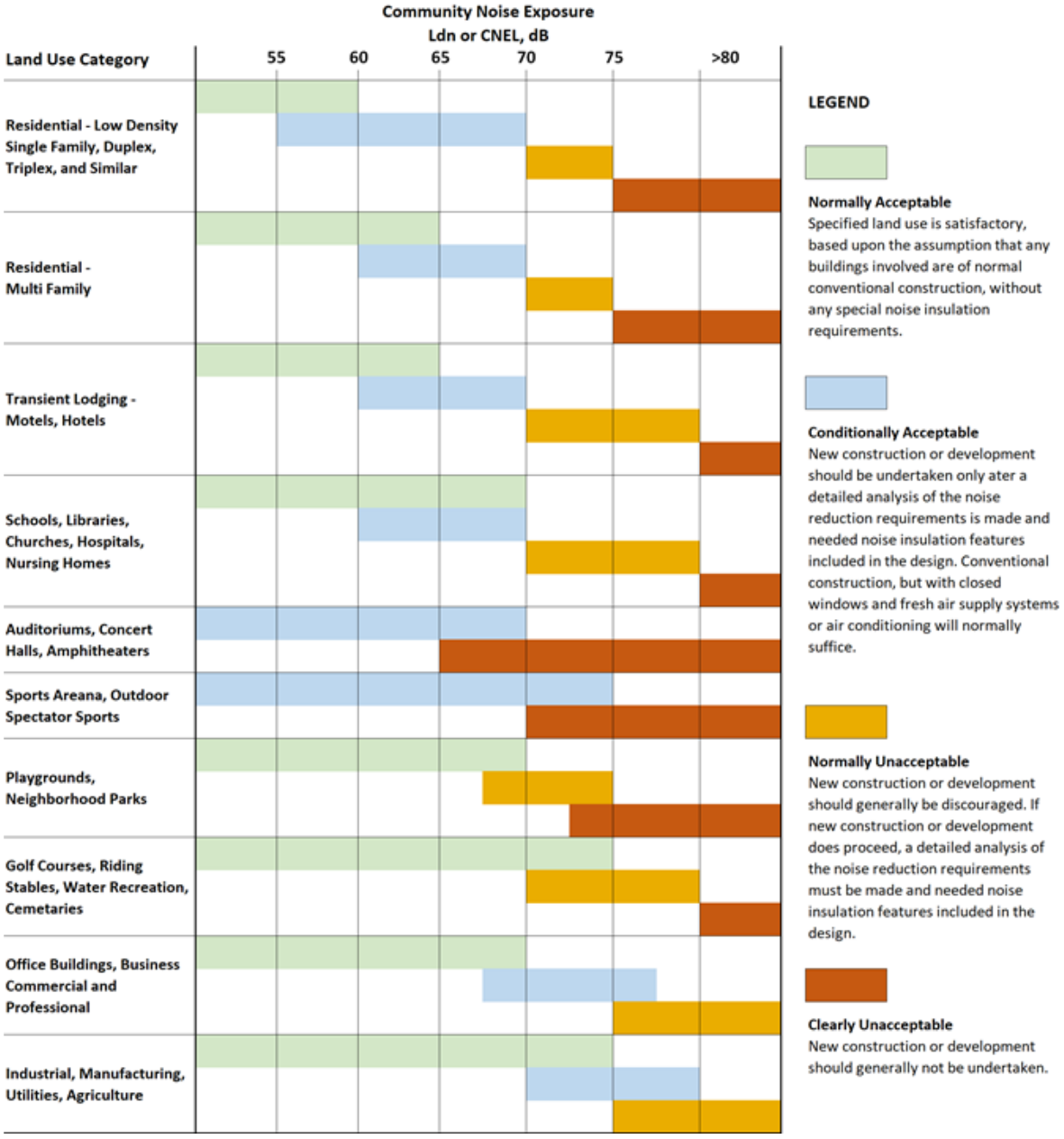
Source: Los Angeles County Airport Land Use Commission 2003

Figure 4.13-5 Air Installation Compatible Use Zones Map



Source: Edwards Air Force Base 2012

Figure 4.13-6 Palmdale General Plan Noise Level Guidance



4.13.3 Impact Analysis

a. Methodology and Significance Thresholds

According to CEQA Guidelines Appendix G, impacts related to noise would be potentially significant if implementation of the Plan would:

1. Result in generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies
2. Result in generation of excessive groundborne vibration or groundborne noise levels
3. For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the Plan expose people residing or working in the project area to excessive noise levels

b. Project and Cumulative Impacts

Threshold 1:	Would the Plan result in generation of a substantial temporary or permanent increase in ambient noise levels in the vicinity of the project in excess of standards established in the local general plan or noise ordinance, or applicable standards of other agencies?

Impact N-1 CONSTRUCTION OF INDIVIDUAL PROJECTS CARRIED OUT UNDER THE PLAN WOULD TEMPORARILY PRODUCE HIGH NOISE LEVELS, POTENTIALLY AFFECTING ADJACENT NOISE-SENSITIVE LAND USES. OPERATION OF INDIVIDUAL PROJECTS CARRIED OUT UNDER THE PLAN WOULD CREATE MORE PERMANENTLY INCREASED NOISE LEVELS, ALSO POTENTIALLY AFFECTING ADJACENT NOISE-SENSITIVE LAND USES. COMPLIANCE WITH REQUIREMENTS OF THE PALMDALE MUNICIPAL CODE AND IMPLEMENTATION OF PLAN POLICIES WOULD, HOWEVER, REDUCE THESE IMPACTS TO A LESS THAN SIGNIFICANT LEVEL.

Noise from individual construction projects carried out under the Plan would temporarily increase ambient noise levels on and adjacent to individual construction sites, including noise from construction traffic. Since the Plan contains no specific plans or time scales for individual development projects that would be carried out under the Plan, it is not possible to determine exact noise levels, locations, or time periods for construction of such projects. However, sites adjacent to areas where future development/redevelopment is anticipated to occur would be exposed to the highest levels of construction noise for the longest duration compared to areas where such development is not expected to occur.

Construction activities, including traffic, demolition, and reconstruction, would generate noise. Table 4.13-2 illustrates typical noise levels associated with construction equipment. At a distance of 50 feet from the construction site, noise levels similar to those shown in Table 4.13-2 would be expected to occur with individual development projects. Noise would typically drop off at a rate of about 6 dBA per doubling of distance; therefore, noise levels would be about 6 dBA lower than shown in the table at 100 feet from the noise source and 12 dBA lower at a distance of 200 feet from the noise source. It is assumed that due to the relatively low-rise nature of development expected to be carried out under the Plan, construction in Palmdale would not involve the operation of pile drivers, which are sometimes used in construction of multi-story buildings with pile foundations.

Table 4.13-2 Typical Noise Levels for Construction Equipment

	Estimated Noise Levels at Nearest Sensitive Receptors (dBA Leq)		
Equipment	**50 feet**	**100 feet**	**200 feet**
Air Compressor	81	75	69
Backhoe	80	74	68
Concrete Mixer	85	79	73
Dozer	85	79	73
Grader	85	79	73
Jackhammer	88	82	76
Paver	89	83	77
Saw	76	70	64
Scraper	89	83	77
Truck	88	82	76

Source: FTA 2006

As shown in Table 4.13-2, noise levels from construction activity could approach 90 dBA Leq at adjacent land uses located approximately 50 feet away. Construction noise would exceed ambient noise levels and may temporarily disturb people at neighboring properties.

PMC Chapter 8.28 restricts the timing of construction activities authorized by the City to the hours of 6:30 a.m. to 8 p.m. Monday through Saturday and prohibits construction on Sundays, in any residential zone or within 500 feet of any residence, hotel, motel or recreational vehicle park. These restrictions would apply to projects carried out in the City under the Plan.

The following Noise Element Plan goal and policy would also reinforce the PMC requirements discussed above and help reduce construction noise impacts:

- **Goal N-2: Maintain acceptable noise environments throughout the City.**
  - **Policy N-2.2: Restrict Construction Activities.** Restrict construction activities in the vicinity of sensitive receptors during the evening, early morning, and weekends and holidays.

Traffic Noise

Development carried out under the Plan would result in approximately 22,000 new residences, leading to additional vehicle trips on area roadways. By generating new vehicle trips, new development would incrementally increase the exposure of land uses along roadways to traffic noise.

According to the Traffic Report for the Plan (Appendix D), development carried out under the Plan would result in 7,727,110 vehicle miles traveled (VMT), while existing trips in the Planning Area currently generate 8,028,726 VMT. Therefore, implementation of the 2045 General Plan would result in an approximate 12 percent decrease in VMT on area roadways.

The market share of electric vehicles, which are quieter than traditional gasoline vehicles, is anticipated to increase over time, especially in response to Executive Order B-48-18, which promotes the use of zero-emission vehicles, electric vehicle charging stations, and hydrogen refueling infrastructure. The increased use of electric vehicles would decrease traffic noise compared to anticipated levels assuming only gasoline-powered vehicles.

The following Plan goals and policies would help reduce traffic noise impacts:

- **Goal N-2: Maintain acceptable noise environments throughout the City.**
  - **Policy N-2.1: Extreme Noise Sources.** Avoid locating new extreme noise sources adjacent to noise sensitive land uses unless mitigation measures can mitigate noise impacts to the sensitive uses.
  - **Policy N-2.3:** Maintain Acceptable Noise Environments. Utilize any or all the following measures to maintain acceptable noise environments throughout the city:
    - Control of noise at its source, including noise barriers and other muffling devices built into the noise source.
    - Provision of buffer areas and/or wide setbacks between the noise source and other development.
    - Reduction of densities, where practical, adjacent to the noise source (freeway, airport, railroad).
    - Use of sound insulation, blank walls, double paned windows and other design or architectural techniques to reduce interior noise levels.
    - Designation of appropriate land uses adjacent to known noise sources.
  - **Policy N-2.4:** Acoustical Analysis for Noise Sensitive Land Uses. Where deemed appropriate based upon available information, require acoustical analysis and appropriate mitigation for noise-sensitive land uses proposed in areas that may be adversely impacted by significant intermittent noise sources. Such noise sources may include but not be limited to railroads, racetracks, stadiums, aircraft overflights and similar uses.
  - **Policy N-2.5:** High Speed Rail and Palmdale Airport. As necessary, participate in future planning for the High-Speed Rail and the Palmdale Airport expansion to ensure that neither facility creates noise conditions that adversely affect residents, businesses, or visitors.
- **Goal N-4 Minimize adverse noise impacts associated with transportation.**
  - **Policy N-4.1: Coordinate with Caltrans.** Coordinate with Caltrans to implement noise mitigation measures, such as sound barrier walls, in the design, improvement, or expansion of freeways and major roadways.
  - **Policy N-4.2: Assess Noise Environment in Residential Areas**. Regularly assess the noise environment in residential areas related to heavy vehicle traffic to determine if adjustments should be made to transportation routes.
  - **Policy N-4.3: Insulate Sensitive Receivers.** Implement traffic calming and traffic diversion measures across the City to insulate sensitive land uses from freeway and roadway noise.
  - **Policy N-4.4: Protect Disadvantaged Community Members**. Prohibit new high noise generating uses in disadvantaged communities, as feasible.

Future Traffic Noise Contours

Future noise contour modeling is depicted in Figure 4.13-7, a map of traffic noise contours that is predicted to result from future development carried out under the Plan. As shown, SR-14 is projected to carry the most traffic throughout the Planning Area and contribute the most noise within the Planning Area. Other roadways in and around Palmdale, including SR-138, Sierra Highway, Avenue M, 50th Street East, East Palmdale Boulevard, East Avenue S, and East Avenue P,

are anticipated to carry a sufficient amount of traffic to produce noise at a substantial distance. The future noise contour map also depicts noise levels exceeding 60 Dba CNEL along all modeled roadways. A comparison of the existing and future noise contour maps shows noticeable traffic noise increases along SR-14 and Sierra Highway, although traffic noise increases along other modeled roadways may occur that are not visible at this scale. Comparing modeled noise contours to the City's exterior noise compatibility guidelines shown in Figure 4.13-6 reveals that land uses in close proximity to these roads, such as residences, may in the future be exposed to noise levels in exceedance of these City guidelines, although this exposure would not substantially increase compared to existing conditions as shown in Figure 4.13-3. Additionally, railway noise from the California High Speed Rail (HSR) project is discussed at the end of this section under *Cumulative Impacts.*

Stationary Noise

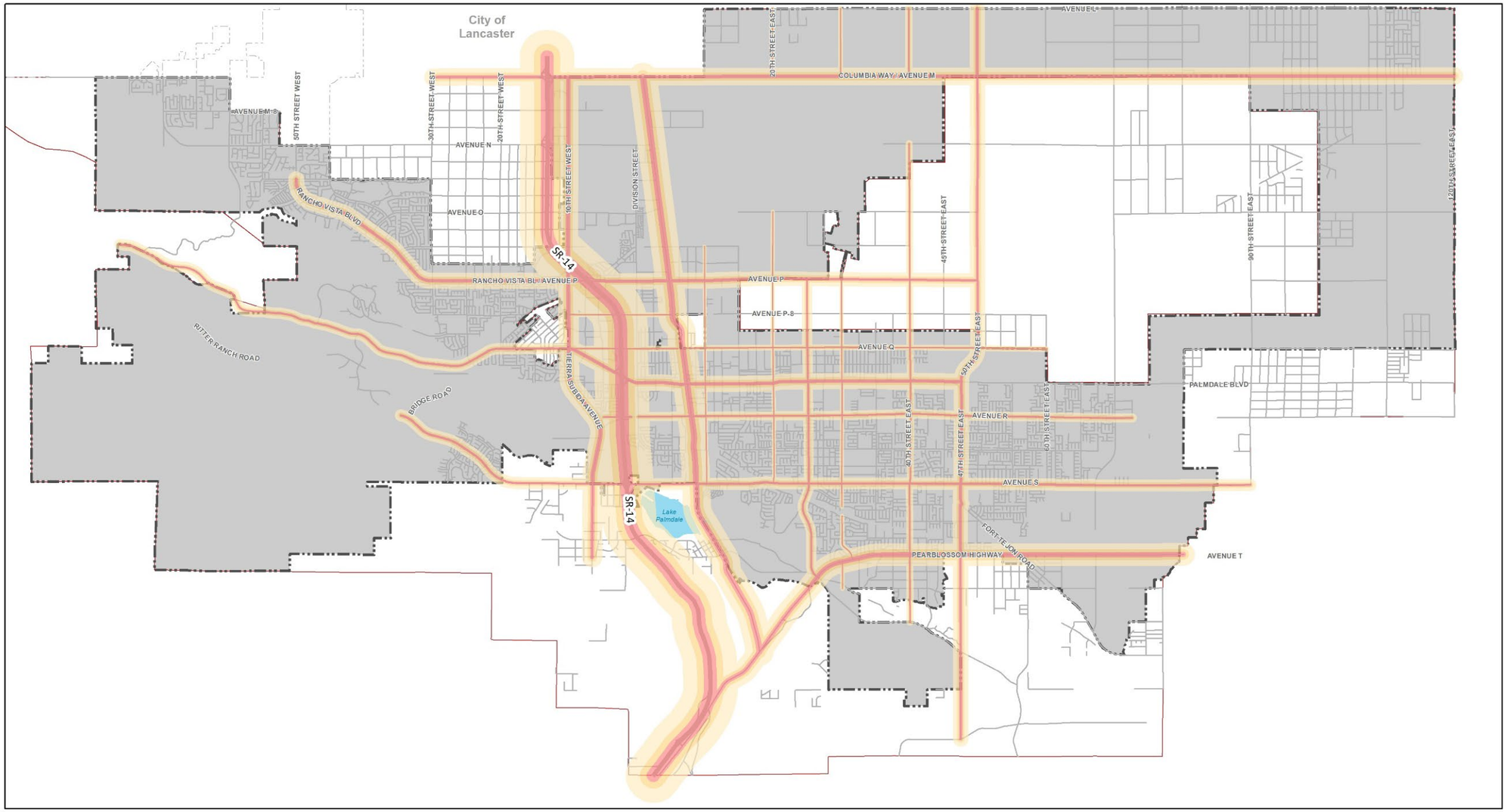
Development under the Plan would introduce sources of operational HVAC noise and other onsite equipment noise to the existing environment. Noise levels generated by onsite stationary sources, including HVAC units, would vary depending on the location of the source, shielding, and distance to the nearest receptors. Buildings developed under the Plan are expected to have an exterior-to-interior noise reduction of 12 dB with windows open and 24 dB with windows closed, assuming typical warm climate construction (USEPA 1978). Additionally, new development under the Plan would be required to comply with Plan goals and policies listed below relating to stationary noise, such as Policy NE 1-3 listed below. Therefore, a substantial noise increase would not occur, and stationary noise impacts would be less than significant.

Implementation the PMC and the following Plan goals and policies would help reduce noise impacts.

- **Goal N-2: Maintain acceptable noise environments throughout the City.**
  - **Policy N-2.1: Extreme Noise Sources.** Avoid locating new extreme noise sources adjacent to noise sensitive land uses unless mitigation measures can mitigate noise impacts to the sensitive uses.
  - **Policy N-2.3:** Maintain Acceptable Noise Environments. Utilize any or all the following measures to maintain acceptable noise environments throughout the city:
    - Control of noise at its source, including noise barriers and other muffling devices built into the noise source.
    - Provision of buffer areas and/or wide setbacks between the noise source and other development.
    - Reduction of densities, where practical, adjacent to the noise source (freeway, airport, railroad).
    - Use of sound insulation, blank walls, double paned windows and other design or architectural techniques to reduce interior noise levels.
    - Designation of appropriate land uses adjacent to known noise sources.
  - **Policy N-2.4:** Acoustical Analysis for Noise Sensitive Land Uses. Where deemed appropriate based upon available information, require acoustical analysis and appropriate mitigation for noise-sensitive land uses proposed in areas that may be adversely impacted by significant intermittent noise sources. Such noise sources may include but not be limited to railroads, racetracks, stadiums, aircraft overflights and similar uses.

This page intentionally left blank.

Figure 4.13-7 Future Noise Contours



This page intentionally left blank.

Construction and operation of projects carried out under the Plan could produce both temporary and permanent increases in noise levels, which could potentially affect adjacent sensitive land uses. However, projects carried out under the Plan would be required to comply with requirements of the PMC and Plan goals and polices that would reduce impacts to noise to a less than significant level. Impacts would be less than significant.

Mitigation Measures

No mitigation measures are required.

Threshold 2:	Would the Plan result in generation of excessive groundborne vibration or groundborne noise levels?

Impact N-2 CONSTRUCTION OF INDIVIDUAL PROJECTS CARRIED OUT UNDER THE PLAN COULD TEMPORARILY GENERATE GROUNDBORNE VIBRATION, POTENTIALLY AFFECTING ADJACENT SENSITIVE LAND USES. THIS IMPACT WOULD BE LESS THAN SIGNIFICANT WITH MITIGATION.

Individual construction projects carried out under the Plan could intermittently generate strong vibration on and adjacent to construction sites. Typical construction equipment that produces vibration includes vibratory rollers for paving, caisson drills, bulldozers, loaded trucks, and jackhammers. Table 4.13-3 shows estimated vibration levels from the use of typical construction equipment, based on reference levels provided by the FTA at a distance of 25 feet from the source.

Table 4.13-3 Vibration Levels for Typical Construction Equipment

	Estimated Noise Levels at Nearest Sensitive Receptors (dBA Leq)			
Equipment	**25 feet**	**50 feet**	**100 feet**	**200 feet**
Caisson Drilling	87	80	74	67
Jackhammer	79	72	66	59
Large Bulldozer	87	80	74	67
Loaded Trucks	86	79	73	66
Small Bulldozer	58	51	45	38
Vibratory Roller	94	87	81	74

Source: FTA 2006

Based on Table 4.13-3, noise-sensitive receptors could experience the strongest vibration during the use of vibratory rollers, caisson drills, and large bulldozers at neighboring construction sites. Vibration levels from vibratory rollers could approach 94 VdB at a distance of 25 feet from the source and 87 VdB at 50 feet.

Compliance with PMC Chapter 8.28 would restrict the timing of construction activities authorized by a City permit to the hours of 6:30 a.m. to 8 p.m. Monday through Saturday and prohibits construction on Sundays, in any residential zone or within 500 feet of any residence, hotel, motel or recreational vehicle park. This requirement for new development would protect residents from exposure to vibration during normal sleeping hours. Therefore, vibration would not exceed the FTA's thresholds of 72 VdB for residences and buildings where people normally sleep. However, vibration levels during daytime construction activity could potentially exceed the FTA threshold of

75 VdB for institutional land uses like schools, churches, or offices with primary daytime use. The use of vibratory rollers also could generate vibration levels that equal or exceed the FTA's thresholds of 90 VdB for buildings extremely susceptible to vibration damage and 94 VdB for non-engineered timber and masonry buildings. Additionally, railway vibration from the California High Speed Rail (HSR) project is discussed at the end of this section under *Cumulative Impacts.* Therefore, impacts related to vibration would be potentially significant.

Implementation of the Plan goals and policies listed in Impact N-1 would help reduce the Plan's potential vibration impacts, but Mitigation Measure N-1 is also required to more specifically address potential vibration impacts and reduce them to a less than significant level.

Mitigation Measures

N-1 Construction Vibration Control Measures

The following measures to minimize exposure to construction vibration shall be included as standard conditions of approval, as applicable, for construction projects carried out under the Plan within 50 feet of fragile buildings as defined in this mitigation measure:

1. Avoid the use of vibratory rollers within 50 feet of fragile buildings, which are buildings that are susceptible to damage from vibration as determined by the Palmdale Planning Department.
2. Schedule construction activities with the highest potential to produce vibration to hours with the least potential to affect nearby institutional, educational, and office uses that the Federal Transit Administration identifies as sensitive to daytime vibration (FTA 2006).
3. Notify neighbors of scheduled construction activities that would generate vibration.

Significance After Mitigation

Avoiding the use of vibratory rollers within 50 feet of fragile buildings would prevent potential structural damage from vibration. In addition, appropriate scheduling of construction activities and notification of neighbors would minimize disturbance of people from use of vibration-generating equipment. Compliance with the vibration control and notification measures in Mitigation Measure N-1 would reduce impacts to a less than significant level.

Threshold 3:	For a project located within the vicinity of a private airstrip or an airport land use plan or, where such a plan has not been adopted, within two miles of a public airport or public use airport, would the Plan expose people residing or working in the project area to excessive noise levels?

Impact N-3 Compliance with Plan policies would reduce impacts related to airport Noise to less than significant.

The City of Palmdale currently does not have a public airport. Palmdale Regional Airport/USAF Plant 42 is a private airport with two runways serving commercial uses and the USAF and is located approximately two miles east of SR-14, north of Rancho Vista Boulevard. Figure 4.13-4 show the noise contours map for Palmdale Airport/USAF Plant 42 prepared by the Los Angeles County ALUC, while Figure 4.13-5 shows CZs and APZs for the AICUZ. As noted in the Plan, noise generated by the airport is not substantial because surrounding land uses are not sensitive to

noise. Further, the Plan does not involve any land use changes that would change this. Additionally, the airport does not operate commercial flights.

Additionally, compliance with the following Plan goal and policies, in addition to goals and policies already listed above, would reduce airport-related noise impacts.

- **Goal N-3: Promote noise compatible land uses within the 65 dBA CNEL contour and the Frequent Overflight Area of Air Force Plant 42.**
  - **Policy N-3.1: Frequent Overflight Area**. Designate and permit employment flex, industrial, aerospace industrial, and similar uses within the 65 dBA CNEL contour and the Frequent Overflight Area.
  - **Policy N-3.2: Areas Within 65 dBA CNEL.** Restrict noise sensitive land uses (such as residential uses, religious institutions, schools, assisted living facilities, or similar uses) within areas designated within both the 65 dBA CNEL contour and the Frequent Overflight Area, unless mitigation measures prevent adverse health impacts from high noise emissions.
  - **Policy N-3.3: Areas Outside 65 dBA CNEL.** In areas outside of the 65 dBA CNEL contours but within the Frequent Overflight Area, encourage land uses that are not noise-sensitive, to the extent feasible.
  - **Policy N-3.4: Require Disclosure Statement**. Through the development review process, require a disclosure statement indicating that the property is subject to frequent overflight and aircraft noise upon sale of property within the Accident Potential Zone (APZ) and Air Installations Compatible Use Zones (AICUZ).
  - **Policy N-3.5: Aviation Easement.** Through conditions of approval, require that any owner of property within the 65 dBA CNEL noise contour or the low altitude overflight area of Plant 42 seeking a land use action from the City to provide an aviation easement to the Los Angeles Department of Airports, the U.S. Air Force, and the City of Palmdale.

Compliance with these Plan policies would reduce airport-related noise impacts to a less than significant level.

Mitigation Measures

No mitigation measures are required.

Cumulative Impacts

By its nature, a general plan considers cumulative impacts insofar as it considers cumulative development that could occur within the Planning Area. Construction noise and vibration are localized and rapidly attenuate within an urban environment, where most development carried out under the Plan is intended to occur. Although multiple development projects may be under construction at the same time, these projects would not typically be in sufficiently close proximity to each other such that noise and vibration from construction activities would significantly impact the same sensitive receivers and structures at the same time. Noise and vibration impacts to receivers that are not in the immediate vicinity of an individual project would be reduced due to existing intervening structures that would block the line of sight, distance attenuation, and would depend on sensitivity to noise for the affected land use. As analyzed in this EIR, compliance with requirements of the PMC and implementation of Plan policies would reduce construction noise impacts to a less than significant level. Therefore, noise impacts would not be cumulatively

considerable. Vibration impacts would be less than significant with mitigation and would not be cumulatively considerable.

Cumulative projects in the surrounding area would include similar operational noise sources as development expected under the Plan (e.g., HVAC, parking activities). Like construction noise and vibration, operational noise and vibration from these sources is localized and rapidly attenuates within an urbanized setting due to the effects of intervening structures and topography that block the line of sight and other noise sources closer to receivers that obscure project-related noise. It is not anticipated that multiple individual projects developed simultaneously under the Plan would be in sufficiently close proximity to each other such that operational noise and vibration would significantly impact the same sensitive receivers.

The HSR project has the potential to contribute to cumulative noise and vibration impacts. While this project may not be constructed or operational in the Planning Area by 2045, HSR is not part of the proposed Plan, and HSR impacts are not Plan impacts, the potential noise and vibration impacts of HSR, as analyzed in the Bakersfield to Palmdale Project Section Final EIR/EIS (EIR/EIS) are described below under *High Speed Rail Noise* (California High-Speed Rail Authority 2021). As discussed below under the heading of *High Speed Rail Noise*, the EIR/EIS concluded that operational noise impacts of HSR would remain significant and unavoidable even after mitigation. As discussed below under the heading of *High Speed Rail Vibration*, the EIR/EIS concluded that no vibration impacts from construction or operation of HSR would occur. The Plan would not substantially contribute to these impacts because of their localized nature and unique noise and vibration characteristics compared to other operational noise and vibration sources with which they could combine.

For all the reasons discussed above, the Plan would not make a substantial contribution to any cumulatively considerable noise or vibration impacts.

High Speed Rail Noise

California High Speed Rail (HSR) is a publicly funded high speed rail system that will connect San Francisco to Los Angeles. The Bakersfield to Palmdale segment of HSR will traverse the Planning Area. A Bakersfield to Palmdale Project Section Final EIR/EIS (EIR/EIS) was adopted in May 2021 that evaluated the impacts of HSR in relation to noise (California High-Speed Rail Authority 2021). While the proposed Plan does not include the construction of HSR and HSR may not be constructed or operational in the Planning Area by 2045, but once it is, there will be noise impacts in the Planning Area. Therefore, noise impacts previously analyzed in the EIR/EIS are summarized below.

Construction

The May 2021 EIR/EIS found that while operation of construction equipment and the transport of construction equipment and materials would incrementally raise noise levels on local roads leading to the HSR station site, the projected construction traffic volume would be minimal when compared to existing traffic volumes on affected local streets, and the change in noise would not be audible.

The EIR/EIS assumed that a small set of construction equipment would operate simultaneously during construction as a reasonable worst-case scenario. Under this assumption, residences and schools within a distance of 119 to 376 feet from the construction boundary of the rail line would be exposed to noise levels greater than the FRA construction noise criterion during daytime and

nighttime hours. Thus, construction-related impacts of HSR would be potentially significant due to construction noise levels exceeding the FRA construction noise level criteria during daytime and nighttime hours. However, impacts were found to be less than significant with the implementation of Mitigation Measure F-B LGA N&V-MM#1 and N&V-MM#1 presented in the EIR/EIS. Mitigation Measure F-B LGA N&V-MM#1, Construction Noise Mitigation Measures, would require a contractor to monitor construction noise to verify compliance with the noise limits in Table 3.4-1 of the EIR/EIS. The contractor would be given the flexibility to meet the FRA construction noise limits in the most efficient and cost-effective manner. Mitigation Measure N&V-MM#1, Construction Noise Mitigation Measures, would require the contractor to monitor construction noise to verify compliance with the noise limits shown in Table 3.4-7 of the EIR/EIS. Additionally, prior to construction (any ground disturbing activities), the contractor would be required to prepare a noise-monitoring program for Authority approval. In addition, the noise-monitoring program would be required to describe the actions required of the contractor to meet required noise limits.

Operation

As part of the May 2021 EIR/EIS a preliminary noise impact analysis was conducted for the long-term and short-term measurement locations to show potential noise impacts within the vicinity of HSR. The measured existing noise levels and the HSR noise levels were used to determine the total noise level and the HSR-related noise level increase at each measurement location. Various parameters were used to determine the operational noise impacts of the HSR including track elevation, receiver base elevation, land use, land use category, existing noise level, HSR noise level unmitigated, total noise level unmitigated, noise level increase, and FRA impact. The EIR/EIS concluded that the level of impact to sensitive noise receivers from operation of the HSR would be severe to moderate. Noise impacts from operation of the HSR to sensitive receivers would be significant due to the increase in noise levels over the existing conditions that fall into the severe category in the FRA criteria. Mitigation Measures F-B LGA N&V-MM#3 through F-B LGA N&V-MM#6 and N&V-MM#3 through N&V-MM#6 in the EIR/EIS would be implemented, but operational impacts of the HSR would remain significant and unavoidable.

Metrolink

The EIR/EIS analyzed design refinements to modify the Palmdale Boulevard grade separation to an undercrossing and raise the profile of the existing Union Pacific Railroad (UPRR) and Metrolink tracks. It was determined that the increase in noise associated with elevating the UPRR and Metrolink tracks would be nominal and there would be a reduction in noise due to lowering the profile of Palmdale Boulevard as is passed below all three rail lines. The changes related to noise resulting from these modifications would have no effect on the impact conclusions presented in the HSR EIR/EIS Plan Area. The analysis of traffic noise impacts associated with the Palmdale Boulevard grade separation design refinements has been updated and no new impacts were identified.

Freight Rail

The EIR/EIS Bakersfield to Palmdale Build Alternatives would replace existing railroad at-grade crossings with grade separations and/or roadway closures. Because this change would eliminate railroad horn warnings to oncoming vehicular and pedestrian traffic, the modeling for the HSR trains did not include the horn warnings. However, noise modeling in some cases was not done to analyze the effects of changes to the at-grade crossings on the existing noise levels from the

existing freight and passenger trains. Therefore, there are no changes to the noise levels from the freight trains at locations where they presently blow their horns.

High Speed Rail Vibration

Construction

The EIR/EIS used the damage criteria to evaluate potential vibration impacts from construction of HSR. Construction equipment may increase ground-borne vibration levels near sensitive receivers. No residential or fragile structures are within 79 feet of the construction boundary of the proposed Palmdale Station. Therefore, construction of the proposed Palmdale Station would not result in annoyance or damage to residential or fragile structures, and no vibration impacts from construction-related activities would occur. Additionally, as all schools within the HSR vicinity would be more than 63 feet from the construction boundary of the proposed Palmdale Station, construction-related vibration levels would not result in annoyance or damage to school structures. Therefore, the EIR/EIS concluded that no vibration impacts from construction-related activities would occur.

Operation

The EIR/EIS used the FRA Detailed Vibration Assessment to determine potential vibration impacts on vibration-sensitive land uses in the project vicinity from long-term operation of the HSR. The FRA Detailed Vibration Assessment is utilized in order to get an in-depth analysis. EIR/EIS conducted vibration propagation measurements at 10 locations. HSR vibration levels would range between 45.5 and 71.1 VdB at the nearest vibration-sensitive receiver. These vibration levels are below the FRA impact criteria of 72 VdB for residential land uses and 75 VdB for institutional land uses. Based on the project vibration levels calculated from the transfer of mobility measurements, no residential or institutional land uses adjacent to the HSR tracks would experience a vibration impact. Therefore, the EIR/EIS concluded that no vibration impacts from operation-related activities would occur.

4.14 Population and Housing

This section evaluates the potential impacts of the proposed project in terms of population and housing. Data used to prepare this section were taken from the United States Bureau of the Census, the California Department of Finance (DOF), and the Southern California Association of Governments (SCAG).

4.14.1 Environmental Setting

Population, housing, and employment data are available on a city, county, regional, and state level. This EIR uses data collected and provided at the city and county level to focus the analysis specifically on the Planning Area.

a. Population, Housing, and Employment

Table 4.14-1 shows the 2022 estimates of population and housing units for Palmdale and Los Angeles County. Palmdale's current (2022) estimated population is 167,398, a -0.9 percent decrease from its 2021 population of 168,895 (California Department of Finance [DOF] 2022). The City's population constitutes approximately 1.7 percent of the countywide population of 9,861,224; and the City's 46,462 households constitute approximately 1.3 percent of the County's 3,542,800 total households. The average number of persons per household in the City in 2022 is estimated at 3.44, which is about 21 percent higher than the countywide average of 2.80 persons per household in 2022.

Table 4.14-1 2022 Population, Households, and Housing Unit Estimates

	City of Palmdale	Los Angeles County
Population	167,398	10,044,458
Housing Units (Total)	46,462	3,542,800
Housing Units (Occupied) [1]	43,404	3,316,795
Persons/Household Ratio[2]	3.54	2.92

[1] Estimated by applying a derived civilian vacancy rate to the estimated civilian housing units. Vacancy rates are based on 2010 Census benchmark data, adjusted to incorporate the directional changes described by the latest available American Community Survey (ACS) data.

[2]This is a ratio of persons (household) to an occupied housing unit.

Source: California DOF 2022

Table 4.14-2 shows the City and County employment, housing, and population estimates and forecasts from the Southern California Association of Governments (SCAG) SCAG 2020-2045 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) Demographics & Growth Forecast. SCAG projects that the city's population will increase by 48,400 persons (30 percent) between 2016 and 2045, to 207,000 residents in 2045. SCAG projects that the number of households in the City will increase by 18,000 between 2016 and 2045, to 61,800 households in 2045. SCAG estimates that there were 0.8 jobs per household in the City in 2016 and there will be 0.7 jobs per household in 2045. This 2045 ratio is about 12.5 percent lower than the 2016 ratio. The fact that Palmdale's jobs per household ratio is projected to decrease, and remain below a 1 to 1 ratio, suggests that Palmdale is and will remain a "jobs poor" community in which more workers commute from the City to other communities for their jobs than residents commute into points

inside the City for their jobs. Many residents who work outside the community have long commutes into areas such as the Los Angeles metropolitan area.

Table 4.14-2 SCAG Population, Housing, and Jobs Forecasts

City of Palmdale	2016	2030	2035	2045
Population	158,600	–	–	207,000
Households	43,800	–	–	61,800
Employment	36,700	–	–	45,900
Jobs/Housing Ratio	0.8	–	–	0.7
Los Angeles County	**2016**	**2030**	**2035**	**2045**
Population	10,110,000	10,900,000	11,174,000	11,674,000
Housing Units	3,319,000	3,749,000	3,885,000	4,119,000
Employment	4,743,000	5,060,000	5,172,000	5,382,000
Jobs/Housing Ratio	1.4	1.4	1.3	1.3

Source: SCAG 2020b

4.14.2 Regulatory Setting

This section summarizes regulations that pertain to population, housing, and employment.

a. State

State Housing Element Statutes

State housing element statutes (Government Code Sections 65580-65589.9), also known as Housing Element law, mandate that local governments adequately plan to meet the existing and projected housing needs of all economic segments of the community. Housing Element law recognizes that in order for the private market to adequately address housing needs and demand, local governments must adopt land use plans and regulatory systems that provide opportunities for, and do not unduly constrain, housing development. As a result, state housing policy rests largely upon the effective implementation of local general plans and in particular, housing elements.

b. Regional/Local

Regional Housing Needs Assessment (RHNA)

California's Housing Element law requires that each county and city develop local housing programs to meet their "fair share" of existing and future housing growth needs for all income groups. SCAG is tasked with distributing the total state-projected housing need for the SCAG Southern California Region among SCAG's 197 cities and six counties by four income categories (extremely low and very low, low, moderate, and above moderate). This Regional Housing Needs Assessment (RHNA) allocation represents the minimum number of housing units by income level that each community is required to plan for through a combination of 1) zoning adequate sites at suitable densities that foster affordability and 2) housing programs to support retention, rehabilitation, and production of lower-income units with a reasonable degree of entitlement certainty.

The Housing Element is one of the required elements of the General Plan. The purpose of the Housing Element is to identify and analyze existing and projected housing needs in order to

preserve, improve, and develop housing for all economic segments of the community, consistent with the RHNA regulations described above. The City adopted its current Housing Element in 2021 as part of the 2021-2029 planning cycle. This Housing Element was submitted to the HCD for review and comment, and the City received certification of the Housing Element from HCD in 2022. Palmdale 2045 (the Plan) updates the Housing Element based on the 6th Cycle State requirements for the 2021-2029 planning horizon. The Plan thus includes revisions that bring the Housing Element in line with current legislation and that determine how the 6th Cycle RHNA, as determined by SCAG, is being addressed. Palmdale's 2021-2029 6th Cycle RHNA is shown in Table 4.14-3.

Table 4.14-3 Regional Housing Needs Assessment Allocation 2021-2029

Income Group	Palmdale Unit Needs	Percent of Total Units
Very Low	1,777	26.8
Low	935	14.0
Moderate	1,004	15.1
Above Moderate	2,924	44.0
Total	6,640	100.0

Source: City of Palmdale 2021

4.14.3 Impact Analysis

a. Methodology and Significance Thresholds

According to CEQA Guidelines Appendix G, impacts related to population and housing would be potentially significant if implementation of the Plan would:

1. Induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure); and/or
2. Displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere.

For purposes of analysis, "substantial" population growth is defined as growth exceeding the current SCAG population forecasts for the city. "Substantial" displacement would occur if allowed land uses would displace more residences than would be accommodated through growth facilitated by the Plan.

Changes to the population due to the normal operation of the housing market are speculative and not within the scope of this analysis. Both Plan-enabled and market-driven housing development and Plan implementation may change some population characteristics of a community. However, unless population characteristic changes lead to physical changes in the environment, population characteristic changes themselves do not constitute significant environmental effects.

b. Project and Cumulative Impacts

Threshold 1:	Would the Plan induce substantial unplanned population growth in an area, either directly (for example, by proposing new homes and businesses) or indirectly (for example, through extension of roads or other infrastructure)?

Impact PH-1 IMPLEMENTATION OF THE PLAN WOULD ACCOMMODATE MORE GROWTH THAN ENVISIONED IN SCAG'S LATEST REGIONAL TRANSPORTATION PLAN/SUSTAINABLE COMMUNITIES STRATEGY. HOWEVER, POLICIES AND ACTIONS INCLUDED IN THE PLAN WOULD ADEQUATELY ADDRESS THE PROJECTED POPULATION GROWTH. THUS THE PLAN IS DESIGNED FOR PLANNED AND ORDERLY GROWTH WHICH IMPROVES THE BALANCE OF JOBS AND HOUSING. THIS IMPACT WOULD BE LESS THAN SIGNIFICANT.

SCAG's Regional Comprehensive Plan (RCP) and Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) serve as a framework for addressing problems and creating a path to correct issues on a regional level through 2045. The RCP is broken up into nine chapters that include key areas where resource management is necessary due to the urban growth the region experiences. Population projections are made through the RTP/SCS and are the basis for growth for the RCP.

As explained in Section 2.3.5, *Residential and Employment Growth,* of this EIR, reasonably foreseeable development under the Plan is projected to result in approximately 22,000 new homes and 26,391 new jobs, which would move the city closer to a 1 to 1 jobs/housing ratio. Based on Palmdale's estimated average household size of 3.44 persons (DOF 2022), this would lead to an increase of approximately 75,756 residents in the city. Adding the 75,756 new residents cited above to the City's 2022 population of 167,398, future residential growth carried out under the proposed project is predicted to increase the City's total population to 243,154, which is above SCAG's 2045 population forecasts of 207,000 from the 2016-2040 RTP/SCS (SCAG 2016). The addition of approximately 75,756 residents constitutes a 45% population increase between 2022 and 2045. Therefore, the Plan would accommodate substantial population growth in the area. The following proposed General Plan goals and policies, however, address potential impacts from this population growth:

ECONOMIC DEVELOPMENT

- **Goal ED-2: Attract diverse and high-quality job options that contribute to the City's economic growth by diversifying the economic base.**
  - **Policy ED-2.1: Attract high growth industries.** Target economic activities from high growth industries, including film, media and entertainment production, and clean technologies, to diversify Palmdale's economic base.
  - **Policy ED-2.2: Smart City technology.** Maintain and enhance smart city technology in Palmdale to support local businesses and growth of telecommuting.
  - **Policy ED-2.3: Foreign Trade Zone.** Position the existing Foreign Trade Zone designations to attract export-oriented employers.
- **Goal ED-5: Diversify housing options for residents at different stages of life and ability, to continue making Palmdale an affordable place to live.**
  - **Policy ED-5.1: Affordable housing preservation.** Encourage and preserve affordable housing for the residents of Palmdale.

- **Policy ED-5.2: Supply and diversity of housing.** Increase the supply and diversity of housing options to support different types of households including seniors, young adults, families, empty nesters, individuals or families with special needs, and multigenerational families.
- **Policy ED-5.3: Transit-oriented development.** Encourage transit-oriented development that meets community needs in the proposed downtown near the future multi- modal high speed rail station and at other transit nodes.
- **Policy ED-5.4: Displacement**. Address displacement issues due to redevelopment and large-scale capital projects.
- **Policy ED-5.5: Assembly of parcels.** Encourage assembly of small parcels via incentives to facilitate infill development.

- **Goal ED-7: Identify partnerships and resources to incentivize and implement sustainable development projects.**
  - **Policy ED-7.1: Regional partnerships.** Initiate and sustain multi-jurisdictional partnerships to leverage regional assets.
  - **Policy ED-7.2: Development review process**. Encourage new development through simplifying the City's development review processes and exploring opportunities to create incentives for new development.
  - **Policy ED-7.3: Expand and diversify tax base.** Expand tax base and analyze opportunities to diversify tax revenues to reduce the reliance on Sales and Use tax.
  - **Policy ED-7.4: Infrastructure financing.** Explore and implement creative infrastructure financing and delivery mechanisms such as Public Private Partnerships and Community Benefit programs.
  - **Policy ED-7.5: Opportunity zone.** Support the viability of the City's Opportunity Zones to expand existing businesses and attract new investment.

LAND USE AND COMMUNITY DESIGN

- **Goal LUD-2: A City that supports and encourages new growth in the developed urban core.**
  - **Policy LUD-2.1: Focused Growth**. Direct future growth to areas closer to the center of town, which can accommodate development based upon topography, environmental factors, and availability of existing infrastructure.
  - **Policy LUD-2.2: Preferred Development Patterns.** In considering requests to amend the Land Use Map, encourage proposals for development in those areas which are functionally connected to developed portions of the city, have available infrastructure, and do not have significant topographic or jurisdictional barriers, or other similar constraints.
  - **Policy LUD-2.3: Discouraged Development Patterns.** In considering requests to amend the Land Use Map, discourage proposals for development in those areas which are functionally separated from developed portions of the city by lack of infrastructure, expanses of vacant land, significant topographic or jurisdictional barriers, or other similar constraints.

- **Goal LUD-5: All new major development in the city is designed to support high-quality neighborhoods.**
  - **Policy LUD-5.1: New Complete Neighborhoods.** Require new development to provide multiple amenities, a beautiful public realm, and be consistent with the City's vision for complete neighborhoods.

- **Policy LUD-5.2: Walkability of New Neighborhoods.** Require all new neighborhoods to be pedestrian friendly by including features, such as short blocks, wide sidewalks, shaded streets, buildings that define and are oriented to streets or public spaces, traffic-calming features, convenient pedestrian street crossings, and safe streets designed for pedestrians, cyclists, and vehicles.
- **Policy LUD-5.3: Public Services in New Neighborhoods.** Require new developments to be designed for and provided with adequate public services and infrastructure. Require that these public facilities and services be provided concurrently with development to ensure a high quality of life for residents.
- **Policy LUD-5.4: Access to Retail/Services.** Strive for a high level of connectivity of residents to neighborhood services through site design, open space linkages, and bicycle facilities. Plan for 90 percent of residents (except for in rural residential designations) to be within a fifteen to twenty minute walking distance of retail and neighborhood services.
- **Policy LUD-5.5: Trail Networks**. Provide new trails systems that connect to the regional system.
- **Policy LUD-5.6: Character of New Housing**. Provide a diversity of architectural styles; avoid entire blocks or neighborhoods with identical housing styles.
- **Policy LUD-5.7: Natural Topography.** To the greatest extent feasible, preserve natural topographic features during the planning and development process. Utilize physical advantages of the site to minimize visual impacts.
- **Policy LUD-5.8: Transfer of Development.** Require clustered single family and multifamily development in less constrained areas, transferring density from areas constrained by seismic, drainage, rights-of-way, or other conditions based on technical studies.

- **Goal LUD-10: Growth of a transit-oriented community near high-speed rail that combines high-quality mixed-use development, a Downtown 'feel', office employment, affordable housing, and improved mobility.**
  - **Policy LUD-10.1: Mix of Destinations.** Develop mixed-use retail, residential and office buildings in the vicinity of the future multimodal high speed rail station to establish the area as a regional and local destination.
  - **Policy LUD-10.2: Places for the Community.** Develop community gathering spaces including plazas and neighborhood parks near the future multimodal transit station, in order to evolve the relocated Palmdale Transportation Center into an attractive and unique transit gateway.
  - **Policy LUD-10.3: Transit-Supportive Densities**. Support minimum development densities/intensities in the PTASP area to promote sufficient development that allows active placemaking.
  - **Policy LUD-10.4: Station Access**. Enhance transit and pedestrian linkages to surrounding areas to create a multi-modal transit and pedestrian-oriented center.
  - **Policy LUD-10.5: Avenue Q Revitalization**. Reinforce Avenue Q with development patterns that create a "Main Street" environment. Design the buildings facing Avenue Q (and to a lesser extent 6th Street East and 3rd Street East) to reflect the vision for a new "Main Street" – active uses, street-oriented entrances, tall floor-to-ceiling heights, reduced setbacks (unless adjacent to a plaza or park).

- **Goal LUD-22: Neighborhoods with a range of housing opportunities that allow people of all ages, abilities, socio-economic status, and family size to live in Palmdale.**
  - **Policy LUD-22.1: Mixed-Density Residential**. Promote residential infill development, where appropriate, as indicated by the mixed-density Residential Neighborhood land use designations (RN1, RN2, RN3, RN4).
  - **Policy LUD-22.2: Infill Priority**. Maximize opportunities for residential development through infill and redevelopment of vacant parcels by facilitating parcel aggregation and streamlining permit processing for infill applications.
  - **Policy LUD-22.3: Distributed Higher Density**. Permit a range of residential densities and housing types throughout the city rather than concentrating higher densities in limited areas.
  - **Policy LUD-22.4: Transit-Oriented Density.** Direct the location of senior and multifamily housing to areas accessible to public transportation, supportive commercial uses, and community facilities.
  - **Policy LUD-22.5: Varying Housing Types.** Encourage and allow a variety of housing types developed at a range of densities to serve varying household types, including, but not limited to, single-family attached and detached, accessory dwelling units, multifamily apartments, townhomes, duplexes, triplexes, quadplexes, and condominiums.
  - **Policy LUD-22.6: Special Needs Housing**. Facilitate housing for special needs groups, including the developmentally disabled, and non-traditional family groups by allowing a diverse range of housing configurations that are Americans with Disabilities Act (ADA) compliant and flexible.
  - **Policy LUD-22.7 Senior Housing.** Promote development of housing types that support multi-generational households, senior housing, and opportunities for seniors to age in place.

As discussed in Section 4.14.1, Palmdale has a current jobs-housing ratio of 0.8, which means that workers must travel to other communities to find employment. Growth under the proposed project would result in a more balanced jobs-housing ratio in 2045 by increasing jobs available in Palmdale specifically with the new Business Improvement Districts in the Planning Area. Therefore, such growth would not result in substantial adverse effects associated with an increased imbalance of jobs and housing in the City. Thus, even though the community can be considered "jobs poor," one of the Plan's vision themes ("Diverse and high-quality job options," described in Section 2.3.1 of this EIR) is to retain and expand Palmdale's employment base through training for key industries, connecting residents to local jobs, and promoting telecommuting within the City, which would help address this issue.

Secondly, growth carried out under the Plan would be substantial, but would not be "unplanned." As discussed in Section 2.3.1 of this EIR, the Plan's vision for the City was developed with extensive community input and in recognition of the state's planning priorities. The Plan focuses on enhancing community identity, building on planned infrastructure investments, improving multi-modal active transportation and connectivity, integrating health and equity, and capitalizing on the City's unique location in the region. The Plan identifies major strategies and physical improvements for the City over the next 23 years. These strategies include creating a vibrant downtown near the future multimodal transit station, establishing three health and wellness districts and two education districts, transforming Palmdale Boulevard into a mixed-use corridor, promoting a diversity of housing types in the City, forming village centers that offer a mix of residential choices and daily goods and services near existing neighborhoods, and building off existing industrial and aerospace

business opportunities. These strategies will support existing and future employees, businesses, and residents. The potential environmental impacts of growth carried out under the Plan are analyzed throughout this EIR.

Finally, one purpose of the proposed Plan is to diversify the City's housing stock and provide more housing options, which minimizes pressure to develop on the remaining open space in the City by directing growth and redevelopment into the developed urban core, consistent with Plan Goal LUD-2 listed above. Therefore, because the Plan is designed for planned and orderly growth, as mandated by the State, and the Plan would help improve the City's balance of jobs and housing, impacts would be less than significant.

Mitigation Measures

No mitigation measures are required.

Threshold 2: Would the Plan displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere?

Impact PH-2 DEVELOPMENT CARRIED OUT UNDER THE PLAN WOULD ADD UP TO 22,000 NEW HOUSING UNITS TO THE CITY'S HOUSING STOCK AND 75,756 NEW RESIDENTS BY 2045. THE PLAN WOULD INCREASE THE NUMBER OF HOUSING UNITS, INCLUDING MULTIFAMILY HOUSING UNITS, AND WOULD NOT DIRECTLY REPLACE ANY EXISTING HOUSING. THEREFORE, THE PLAN WOULD NOT DISPLACE SUBSTANTIAL NUMBERS OF EXISTING PEOPLE OR HOUSING, NECESSITATING THE CONSTRUCTION OF REPLACEMENT HOUSING ELSEWHERE, AND THIS IMPACT WOULD BE LESS THAN SIGNIFICANT.

According to SCAG's 2020 RTP SCS, there were 43,800 household in Palmdale in 2016 and SCAG projects that there will be 61,800 households in Palmdale in 2045, an increase of 18,000 households. While the number of households reflects only occupied housing units and does not include vacant units, this increased number of households would still create a significant increase in population and housing demand. As explained in Section 2.3.5 of this EIR, development carried out under the Plan is projected to result in approximately 22,000 new homes, which would more than accommodate SCAG's projected 18,000-household increase.

The Plan makes affordable housing a priority in Palmdale and, pursuant to AB 1397 (which was passed in 2017), the City will amend its Zoning Ordinance to require by-right approval of housing development that includes 20 percent of the units as housing affordable to lower income households. The Plan's vision includes the theme of providing housing options for residents at different stages of life and ability. The residents of Palmdale desire to preserve and expand affordable housing and diversify housing types across the city that support residents of all abilities, and to preserve and improve the existing supply of affordable housing. The following Plan goals and policy address potential impacts from potential displacement:

- **Goal LUD-10 Growth of a transit-oriented community near high-speed rail that combines high-quality mixed-use development, a Downtown 'feel', office employment, affordable housing, and improved mobility.**
- **Goal LUD-22: Neighborhoods with a range of housing opportunities that allow people of all ages, abilities, socio-economic status, and family size to live in Palmdale.**
    - **Policy LUD-22.5: Varying Housing Types.** Encourage and allow a variety of housing types developed at a range of densities to serve varying household types, including, but not limited to, single-family attached and detached, accessory dwelling units, multifamily apartments, townhomes, duplexes, triplexes, quadplexes, and condominiums.

Assuming if there would be any displacement created by development carried out under the Plan, and where and to whom this displacement might occur, would be speculative, since the Plan does not include any specific proposals that would displace people or housing. However, with the Plan's projected net increase in housing of 22,000 units, any future displacement would be more than offset by new construction. The Plan does not propose any large-scale public works projects, such as new roadways, airports, reservoirs, utilities or other infrastructure that would result in the displacement of existing housing. Thus, the Plan would not displace substantial numbers of existing people or housing, necessitating the construction of replacement housing elsewhere, and this impact would be less than significant.

Mitigation Measures

No mitigation measures are required.

4.14.4 Cumulative Impacts

Cumulative development surrounding the Planning Area in combination with development facilitated by the Plan may result in increased population, job, and housing projections. Implementation of the project would increase density and intensity of existing land uses potentially resulting in increased growth and displacement of existing housing. Although the population facilitated by the Plan would exceed SCAG projections, adherence to applicable Plan goals and policies would ensure that the Plan would not result in cumulative impacts associated with population and housing. Therefore, the Plan would not result in significant cumulative impacts related to displacement of people or housing. Cumulative impacts would be less than significant.

This page intentionally left blank

4.15 Public Services

This section assesses potential impacts to public services, including fire and police protection, public schools, and libraries. Impacts to parks and recreational facilities are discussed in Section 4.16, *Recreation*.

4.15.1 Environmental Setting

a. Fire Protection and Emergency Medical Services

The City of Palmdale (City) contracts fire protection, first response emergency and medical services through the County of Los Angeles Fire Department (LACoFD). The Planning Area contains six fire stations. These emergency facilities are listed in Table 4.15-1 and are categorized under the North Regional Office, Division Five, within the Battalions 11 and 17, which are located at Massari Park (Palmdale LHMP, 2021).

Table 4.15-1 Emergency Fire Facilities

Facility	Address
Los Angeles County Fire Department Station #24	1050 West Avenue P
Los Angeles County Fire Department Station #37	38318 9th Street East
Los Angeles County Fire Department Station #93	5624 East Ave R
Los Angeles County Fire Department Station #114	39939 170th St E
Los Angeles County Fire Department Station #131	2629 East Ave S
Los Angeles County Fire Department Station #136	3650 Bolz Ranch Rd

Source: City of Palmdale LHMP, 2021

LACoFD maintains a response time goal of 4-6 minutes. As shown below in Table, although response times have generally decreased across all categories since 2015, response times are within the 4–6 minute goal.

Table 4.15-2 LACoFD Average Incident Response Times for Palmdale

Category	2015	2016	2017	2018
Structure Fire	4.82	4.48	4.66	4.55
Grass Fire	6.09	5.55	5.64	5.91
Mobile Property/Vehicle Fire	5.90	5.62	5.19	4.32
Motor Vehicle Accident	5.15	5.21	5.09	5.26
Heart Attack/Chest Pain	5.73	5.68	5.64	5.45
Difficulty Breathing	5.77	5.72	5.46	5.54

LACoFD also dedicates its manpower and resources to back up the fire stations located in the City. Fire protection needs in the Planning Area will be met by the entire department's resources as needed, regardless of the number of firefighters and equipment stationed in the Palmdale area (Palmdale LHMP, 2021). The staff from the individual stations within the area also conduct onsite inspections of new construction, as well as annual inspections of existing structures, to ensure compliance with the fire code. The City has several Very High Fire Hazard Zones and High and

Moderate hazard zones throughout the area. The Fire Hazards Zones are generally concentrated on the south and west parts of the City, on the foothills of the nearby mountains (California Department of Forestry and Fire Protection [CAL FIRE] 2017).

b. Police Protection

The City of Palmdale contracts with Los Angeles County for police services (City of Palmdale 2021). The Los Angeles County Sheriff's Department operates one station located at 750 East Avenue Q which serves the City and surrounding communities including Acton, Agua Dulce, Big Pines / Wrightwood, Green Valley, Juniper Hills, Lake Elizabeth, Lake Hughes, Leona Valley, Littlerock, Llano, Pearblossom, Sun Village, and Valyermo. The Sheriff's Department patrols 770 square miles and a population of approximately 200,000 people in and around the City (City of Palmdale 2020). Table 4.15-3 and Table 4.15-4 compare the Sherriff station's total reported incidents and arrests within the City of Palmdale from 2015 to 2018. Crimes are split into two categories: Part 1 Crime – which refers to violent crimes; homicide, rape, robbery, and aggravated assault; and Part 2 Crime refers to property crimes; burglary, motor vehicle theft, and larceny-theft.

Table 4.15-3 Palmdale Sheriff Response Synopsis (2015-2018)

Total Reported Crimes	Calendar Year 2015	Calendar Year 2016	Calendar Year 2017	Calendar Year 2017
Part 1 Crimes	3,915	3,507	3,402	3,087
Part 2 Crimes	5,268	5,349	5,411	4,944
Noncriminal Incidents	6,923	7,314	7,183	8,017
Total Reported Incidents	16,106	16,170	15,996	16,048
Adult Arrests	4,767	4,575	5,726	5,359
Juvenile Arrests	348	356	271	257
Total Arrests	5,115	4,931	5,997	5,616

Source: Palmdale Station Strategic Plan 2020

Table 4.15-4 Crime Rate Comparison

Crime Rate per 10,000 population	2015	2016	2017	2018
Part 1 Crimes	225.65	201.04	200.55	185.46
Part 2 Crimes	297.09	302.09	302.28	277.65

Source: Palmdale Station Strategic Plan 2020

The Palmdale Sheriff's station is an updated facility constructed in 2006 to replace the previous neighborhood sub-station. The sheriff's station includes a 47,000 square-foot main building, 7,800 square-foot jail, and 8,400 square-foot motor pool and storage building (Los Angeles County Sheriff's Department 2022).

c. Public Schools

Three school districts serve the Planning Area. These districts include two elementary school districts, Westside School District and Palmdale School District, and one high school district, Antelope Valley Union High School District. Three charter schools, Antelope Valley Learning Academy, Palmdale Academy Charter School and The Palmdale Aerospace Academy, also operate within the Planning Area.

There are a variety of higher education opportunities in the Planning Area. Antelope Valley Adult Education provides Career Technical Education programs for adults interested in starting a new career in the clerical, medical, dental, and technology fields. Additionally, the Aircraft Fabrication and Assembly (AFAB) program, housed at the Antelope Valley College Palmdale Center, prepares students with entry-level and upgraded skills for the aerospace industry. Table 4.15-5 lists each school serving the Planning Area by district, address, and grade or degree offered.

Table 4.15-5 Schools Serving the Planning Area

School	School District	Address	Grades/Degrees Offered
Highland High School	Antelope Valley Union High School District	39055 25th St West	9-12
Knight High School	Antelope Valley Union High School District	37423 70th St East	9-12
Palmdale High School	Antelope Valley Union High School District	2137 East Avenue R	9-12
R. Rex Parris Alternative High School	Antelope Valley Union High School District	38801 Clock Tower Plaza Dr East	9-12
Barrel Springs Elementary	Palmdale School District	3636 Ponderosa Way	K-5
Buena Vista Elementary	Palmdale School District	37005 Hillcrest Dr	K-5
Cactus Intermediate	Palmdale School District	3243 East Ave R-8	6-8
Chaparral Elementary	Palmdale School District	37500 50th St East	K-5
Cimarron Elementary	Palmdale School District	36940 45th St East	K-5
David G. Millen Intermediate	Palmdale School District	39221 22nd Street West	6-8
Desert Rose Elementary	Palmdale School District	37730 27th St East	K-5
Desert Willow Intermediate	Palmdale School District	36555 Sunny Lane	6-8
Dos Caminos Elementary	Palmdale School District	39147 Palm Tree Way	K-5
Golden Poppy Elementary	Palmdale School District	37802 Rockie Lane	K-5
Joshua Hills Elementary	Palmdale School District	3030 Fairfield Ave	K-5
Los Amigos Elementary	Palmdale School District	6640 East Ave R-8	K-5
Manzanita Elementary	Palmdale School District	38620 33rd St East	K-5
Mesquite Elementary	Palmdale School District	37622 43rd St East	K-5
Oak Tree Learning Center	Palmdale School District	38136 35th St East	
Palm Tree Elementary	Palmdale School District	326 East Avenue R	K-5
Palmdale Learning Plaza	Palmdale School District	38043 Division Street	
Palmdale Academy Charter School	Palmdale School District	3838 East Avenue R	9-12
Quail Valley Elementary Shadow Hills Intermediate	Palmdale School District	37236 58th St East 37315 60th Street East	K-5 6-8
Summerwind Elementary	Palmdale School District	39360 Summerwind Drive	K-5
Tamarisk Elementary	Palmdale School District	1843 East Ave Q-5	K-5
Tumbleweed Elementary	Palmdale School District	1100 E Avenue R-4	K-5
Yucca Elementary	Palmdale School District	38440 2nd St EAST	K-5
Anaverde Hills Elementary	Westside Union School District	2902 Greenbrier St	K-8

School	School District	Address	Grades/Degrees Offered
Cottonwood Elementary	Westside Union School District	2740 West Avenue P-8	K-5
Esparanza Elementary	Westside Union School District	40521 35th St West	K-5
Gregg Anderson Academy Elementary	Westside Union School District	5151 West Avenue N-8	K-8
Hillview Intermediate	Westside Union School District	40525 Peonza Lane	6-8
Rancho Vista Elementary	Westside Union School District	40525 Peonza Lane	K-5
Antelope Valley Learning Academy	Private and Charter Schools	37212 47th Street East	K-12
Antelope Valley YouthBuild	Private and Charter Schools	38626 9th Street East	
Berean Fellowship Christian School	Private and Charter Schools	38050 30th Street East	1-12
Empowered Church International/Empowered Learning Academy	Private and Charter Schools	2205 East Palmdale Boulevard, Suite B	K-12
The Palmdale Aerospace Academy (PSD, City of Palmdale, NASA)	Private and Charter Schools	37212 47th Street East	TK-12
Saint Mary School	Private and Charter Schools	1600 East Avenue R-4	K-8
Shepherd Christian School	Private and Charter Schools	1730 High Vista Ave	K-12
Westside Christian	Private and Charter Schools	40027 11th Street West	K-8
A Caring Touch Christian Family Center	Preschool	3035 East Avenue S	Preschool
Adventureland Preschool	Preschool	41337 10th Street West	Preschool
Bright Futures Preschool & Daycare	Preschool	1320 Date Palm Drive	Preschool
Eagle Vision Preschool	Preschool	2121 E Palmdale Blvd	Preschool
Head Start State Preschool	Preschool	975 East Avenue P-8	Preschool
Just Plane Kids	Preschool	2555 East Avenue P	Preschool
Kids World Daycare & Preschool	Preschool	1220 E Avenue R-3	Preschool
Leaps & Bounds Preschool	Preschool	2026 East Avenue Q	Preschool
Antelope Valley Adult Education	Higher Education	1156 East Avenue S	Trade School Certificates
Antelope Valley College Palmdale Center (Community College)	Higher Education	2301 East Palmdale Blvd	Certificates Trade School Associate Degree
Brandman University (Private)	Higher Education	39115 Trade Center Dr, Suite 203	Certificates & Courses Credentials & Authorizations Associate Degree Bachelor's Degree Master's Degrees Doctoral Degrees
DeVry University Keller Graduate School of Management (Private)	Higher Education	39115 Trade Center Dr, Suite 100	Master's Degree

School	School District	Address	Grades/Degrees Offered
Embry-Riddle Aeronautical University High Desert Campus (Private)	Higher Education	40015 North Sierra Hwy, Suite B-200	Certifications Associate Degree Bachelor's Degree Master's Degree

Source: Raimi & Associates 2020

d. Parks

Existing parks and recreational facilities are discussed in Section 4.16, *Recreation.*

e. Public Facilities and Services

The City's main governmental offices are located at the intersection of Palmdale Boulevard and Sierra Highway. Facilities included at this location include City Hall, located at 38300 Sierra Highway. City Hall contains the offices of the City Manager and elected officials, City Council chambers, and government offices includes City Attorney, City Manager Clerk, and Administrative Services. Development Services located at 38250 Sierra Highway and also includes Building and Safety, Planning, Public Works, Business License, Economic Development, and Neighborhood Services; Human Resources & Community Programs located at 823 E. Avenue Q-9, , and Chimbole Cultural Center located at 38350 Sierra Hwy.

The Palmdale City Library is located at 700 East Palmdale Boulevard. The library is currently open Monday through Saturday. The library also offer courses and events for the community.

Other facilities at this location include the Palmdale Playhouse, Recreation & Culture Offices, Legacy Commons, and Courson Park (which features a brand-new recreation pool), are located off 10th Street East. The City's Maintence Yard is located at 39110 3rd Street East, across from Desert Sands Park. Table 7.9 lists major publicly accessible services and or facilities in the Planning Area.

4.15.2 Regulatory Setting

a. State Regulations

Fire Services

California Fire Code (Title 24, Part 9, California Code of Regulations)

The California Fire Code incorporates the International Fire Code (IFC) with necessary California amendments. This Code prescribes regulations consistent with nationally recognized good practices for the safeguarding, to a reasonable degree, of life and property from the hazards of fire explosion. It also addresses dangerous conditions arising from the storage, handling, and use of hazardous materials and devices; conditions hazardous to life or property in the use or occupancy of buildings or premises; and provisions to assist emergency response personnel.

California Building Code

The 2019 California Building Code (CBC) became effective January 1, 2017, including Part 9 of Title 24, the California Fire Code. Section 701A.3.2 of the CBC requires that new buildings located in any

Fire Hazard Severity Zone in State Responsibility Areas, any Local Agency Very-High Fire Hazard Severity Zone, or any Wildland-Urban Interface Fire Area designated by the enforcing agency for which an application for a building permit is submitted, comply with all sections of the Chapter.

California Health and Safety Code (Sections 13000 et seq.)

This Code establishes State fire regulations, including regulations for building standards (also set forth in the California Building Code), fire protection and notification systems, fire protection devices such as extinguishers and smoke alarms, high-rise building and childcare facility standards, and fire suppression training.

Police Services

California Constitution Article XIII, Section 35

Section 35 of Article XIII of the California Constitution was adopted by the voters in 1993 under Proposition 172. Proposition 172 directed the proceeds of a 0.50-percent sales tax to be expended exclusively for local public safety services. California Government Code Sections 30051-30056 provide rules to implement Proposition 172. Public safety services include police protection. Section 30056 provides that cities are not allowed to spend less of their own financial resources on their combined public safety services in any given year compared to the 1992-93 fiscal year. Therefore, an agency is required to use Proposition 172 to supplement its local funds used on police protection, as well as other public safety services. Section 35 at subdivision (a)(2) provides: "The protection of public safety is the first responsibility of local government and local officials have an obligation to give priority to the provision of adequate public safety services." In City of Hayward v. Board of Trustees of California State University (2015) 242 Cal. App. 4th 833, the court found that Section 35 of Article XIII of the California Constitution requires local agencies to provide public safety services, including police protection, and that it is reasonable to conclude that the city will comply with that provision to ensure that public safety services are provided.

School Services

California Government Code Section 65995 (California Government Code, Title 7, Chapter 4.9)

California Government Code Section 65995 authorizes school districts to collect impact fees from developers of new residential, commercial, and industrial building space. Section 65995 was established under the School Facilities Act of 1986 and refined and amended by the Leroy F. Greene School Facilities Act of 1998 (SB 50) to provide further guidance and restrictions on fee limits and fee types. The maximum fees authorized under SB 50 apply to zone changes, general plan amendments, zoning permits and subdivisions. The payment of school impact fees by developers are deemed to provide full and complete mitigation of school facilities impacts, notwithstanding any contrary provisions in CEQA or other State or local laws.

Senate Bill 50

The Leroy F. Greene School Facilities Act of 1998 (known as the Greene Act), enacted in 1998, is a program for funding school facilities largely based on matching funds. For new school construction, grants provide funding on a 50/50 State and local match basis. For school modernization, grants provide funding on a 60/40 State and local match basis. Districts that are unable to provide some, or

all, of the local match requirement and are able to meet the financial hardship provisions may be eligible for additional State funding.

The Greene Act permits the local district to levy a fee, charge, dedication, or other requirement against any development project within its boundaries, for the purpose of funding the construction or reconstruction of school facilities. The Act also sets a maximum level of fees a developer may be required to pay. Pursuant to Government Code Section 65996, the payment of these fees by a developer serves to mitigate all potential impacts on school facilities that may result from implementation of a project to a less-than-significant level.

a. Local Regulations

Palmdale Fire Code

The Palmdale Fire Code was subsequently adopted in 2019 after the State's adoption of the 2019 California Fire Code (CFC). The Palmdale Fire Code incorporates the 2019 CFC as well as local amendments proposed by LACoFD. Local amendments increase street access improvements and requirements for sprinkler installations (Palmdale Municipal Code Section 8.04.400).

Palmdale Municipal Code Chapter 3.45

Palmdale imposes Development Impact Fees (Palmdale Municipal Code Chapter 3.45) for public facilities in order to mitigate environmental impacts that derive from projects. The fees would be imposed on applicable residential and non-residential developments, and funds collected via these fees would be used to construct, expand, or rehabilitate public facilities within the City.

4.15.3 Impact Analysis

a. Methodology and Significance Thresholds

According to CEQA Guidelines Appendix G, impacts related to public services would be potentially significant if implementation of the Plan would:

1. Result in substantial adverse physical impacts associated with the provision of new or physically altered governmental facilities, or the need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives for any of the public services:
    a. Fire protection;
    b. Police protection;
    c. Schools;
    d. Parks; and/or
    e. Other public facilities.

Fire Protection Service

The Plan establishes a goal of maintaining fire response times to six minutes or less. Impacts would be considered significant if development under the Plan would result in unacceptable response times, thus creating the need for new or physically altered governmental facilities, the construction of which would cause significant environmental impacts.

Police Protection Service

The Plan establishes a goal of maintaining police response times to six minutes or less. Therefore, impacts would be potentially significant if development facilitated by the Plan would result in unacceptable response times, thus creating the need for new police protection facilities, the construction of which may create significant secondary environmental effects.

Public Schools

Impacts would be significant if public schools in the City could not accommodate future student growth through the construction of new facilities, or expansion of existing facilities. However, any development within the City would be required to pay state-mandated school impact fees. Pursuant to Section 65995 (3)(h) of the California Government Code (Senate Bill 50, chaptered August 27, 1998), the payment of statutory fees "...is deemed to be full and complete mitigation of the impacts of any legislative or adjudicative act, or both, involving, but not limited to, the planning, use, or development of real property, or any change in governmental organization or reorganization."

Public Facilities

The Plan would result in potentially significant impacts if Plan implementation would result in substantial adverse physical impacts associated with provision of new or physically altered governmental facilities, or the need for new or physically altered governmental facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times, or other performance objectives.

Impacts to parks and recreational facilities are discussed in Chapter 4.16, *Recreation*.

b. Project and Cumulative Impacts

Threshold 1.a:	Would the Plan result in substantial adverse physical impacts associated with the provision of new or physically altered fire protection facilities, or the need for new or physically altered fire protection facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives?

IMPACT PS-1 DEVELOPMENT CARRIED OUT UNDER THE PROPOSED PLAN WOULD INCREASE THE CITY'S POPULATION. THIS WOULD INCREASE THE DEMAND FOR FIRE AND EMERGENCY MEDICAL SERVICES AND POTENTIALLY CREATE THE NEED FOR NEW FIRE SERVICE FACILITIES. HOWEVER, COMPLIANCE WITH POLICIES IN THE PLAN AND THE PALMDALE MUNICIPAL CODE AS WELL AS OTHER CITY PROGRAMS, WOULD REDUCE IMPACTS RELATED TO FIRE PROTECTION FACILITIES TO A LESS THAN SIGNIFICANT LEVEL.

The Plan would not expand Palmdale's city limits or extend development into undeveloped areas, but development could occur in the City that would increase the Planning Area's population by approximately 75,756 residents. While fire and emergency medical service capacity is primarily based on service areas, an increase in population could incrementally increase the number of service calls and could eventually necessitate the need for additional staff and possibly facilities.

Any new development that would occur under the Plan would be required to comply with all applicable federal, state, and local regulations governing the provision of fire protection services, including adequate fire access, fire flows, and number of hydrants. This includes the 2019 California Fire Code, which contains project-specific requirements such as construction standards in new

structures and remodels, road widths and configurations designed to accommodate the passage of fire trucks and engines, and requirements for minimum fire flow rates for water mains.

The following Plan goals and policies address fire and emergency medical service:

PUBLIC FACILITIES, SERVICES, AND INFRASTRUCTURE

- **Goal PSFI-2 Maintain superior public safety services to protect the community and meet the need of residents, businesses, and visitors.**
  - **Policy PFSI- 2.1: Response Times.** Maintain existing or superior average response times for fire and police services as the City's population expands.
  - **Policy PFSI-2.2: Fire Protection.** Coordinate with and assist the Los Angeles County Fire Department in planning for future fire station sites in Palmdale and facilitate location and construction of fire stations in conjunction with other City facilities (such as parks or municipal buildings) where feasible.
  - **Policy PFSI-2.3: Service Level Expansion.** Regularly assess the need for service level expansion for fire and police services as the City's population expands.
  - **Policy PFSI-2.5: County Fire Coordination**. Coordinate with the Los Angeles County Fire Department to ensure that service availability, resources, and staffing are appropriate for the community need.
- **Goal PSFI-5 Ensure that adequate public utilities are available to support development in an efficient and orderly manner.**
  - **Policy PFSI-5.3: Off-Site Fair Share Contribution.** Require all new development, including major modifications to existing development, to construct or provide a fair share contribution toward construction of required off-site improvements needed to support the project. This includes a fair share contribution toward development of regional master facility plans for roads, sewer, water, drainage, schools, libraries, parks, fire, and other community facilities, prior to granting approval of development applications.

SAFETY

- **Goal SE-1: A city with minimal public health, safety, and welfare impacts resulting from seismic hazards.**
  - Policy SE-1.4: Essential Service Buildings Location. As feasible, ensure that essential services buildings are not located in geologic hazard zones.
- **Goal SE-2 Minimize public health, safety, and welfare impacts resulting from wildfire hazards.**
  - **Policy SE-2.5: Maintain Firesafe Zones.** Require property owners to clear brush and high fuel vegetation and maintain firesafe zones (a minimum distance of 30 feet from the structure or to the property line, whichever is closer) to reduce the risk of fires. For structures located within a Very High Fire Hazard Severity Zone, the required brush clearance distance is 200 feet from structures to the property line.
  - **Policy SE-2.7: Emergency Access Routes for Wildfire Hazard Zones.** Require all new development in or near designated wildfire hazard zones to identify multiple evacuation/emergency access routes and file with City.

- **Policy SE-2.8: Los Angeles County Fire Department Coordination.** Continue to coordinate with the Los Angeles County Fire Department to provide emergency evacuation support and address fire hazards.
- **Policy SE-2.9: Development Requirements.** Ensure that the requirements of the Los Angeles County Fire Department are incorporated into new development through the development review process.

According to Chapter 3.45 of Palmdale's municipal code, the projected increase in population is reasonably expected to create a substantial increase in the demand placed upon public facilities, including fire protection facilities. The City's existing fire protection facilities will soon be inadequate to handle the projected population growth at existing levels of service. To counter this growth, fire protection facilities must be expanded.

Palmdale Municipal Code requires development applicants to pay development impact fees to mitigate the impacts of that development on the City's existing fire protection facilities. The amount of the fire facilities impact fees collected in accordance with Chapter 3.45 of Palmdale Municipal Code will be limited to the cost of the facilities attributable to new development. The amount of the fire facilities impact fees collected will not include the cost of fire facilities that serve existing development. Fire facility impact fees for residential buildings will be established by resolutions of the City Council, upon the date of final inspection, or the date the certificate of occupancy is issued.

Any new development under the Plan, including the development of fire protection facilities, would also be required to undergo the City's plan review process. The Fire Facilities Impact Fee Requirements and the goals and policies listed would reduce the environmental impacts of future projects to a less than significant level.

Mitigation Measures

No mitigation measures are required.

Threshold 1.b:	Would the Plan result in substantial adverse physical impacts associated with the provision of new or physically altered police protection facilities, or the need for new or physically altered police protection facilities, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios, response times or other performance objectives?

IMPACT PS-2 DEVELOPMENT CARRIED OUT UNDER THE PROPOSED PLAN WOULD INCREASE THE CITY'S POPULATION. THIS WOULD INCREASE DEMAND FOR POLICE SERVICES AND POTENTIALLY CREATE THE NEED FOR NEW POLICE SERVICE FACILITIES. HOWEVER, COMPLIANCE WITH POLICIES IN THE PLAN WOULD REDUCE IMPACTS RELATED TO POLICE PROTECTION SERVICES TO A LESS THAN SIGNIFICANT LEVEL.

Police protection services are not "facility-driven," meaning such services are not as reliant on facilities in order to effectively patrol a beat. An expansion of, or intensification of development within, a beat does not necessarily result in the need for additional facilities if police officers and patrol vehicles are equipped with adequate telecommunications equipment in order to communicate with police headquarters. However, if the geographical area of a beat is expanded, population increases, or intensification/redevelopment of an existing beat results in the need for new police officers, new or expanded facilities could be needed.

As described in Section 2, *Project Description*, the Plan would facilitate the development of approximately 22,000 housing units and the development of over 10 million square feet of commercial and industrial space in the Planning Area by 2045. The additional housing units would result in approximately 75,756 additional persons to the Planning Area and to the LACoSD service district (see Section 4.14, *Population and Housing*, for population estimation methodology). New structures facilitated by the Plan would be in the existing service area of LACoSD and would not require expansion of the service area or for the LACoSD to respond to calls in a new or more distant area.

Development of the Plan would not result in the need to construct new police facilities. Impacts to police protection service would be less than significant. In addition, implementation of the following Plan goals and policies would further ensure that impacts related to police protection services would be less than significant.

PUBLIC FACILITIES, SERVICES, AND INFRASTRUCTURE

- **Goal PSFI-2 Maintain superior public safety services to protect the community and meet the need of residents, businesses, and visitors.**
  - **Policy PFSI- 2.1: Response Times.** Maintain existing or superior average response times for fire and police services as the City's population expands.
  - **Policy PFSI-2.4: County Sheriff Coordination.** Coordinate with the Los Angeles County Sheriff's Department to ensure that service availability, resources, and staffing are appropriate for the community need.
  - **Policy PFSI-2.6: Community Policing.** Strengthen the relationship between law enforcement and the community by developing programs and initiatives focused on community policing.

SAFETY

- **Goal SE-1: A city with minimal public health, safety, and welfare impacts resulting from seismic hazards.**
  - **Policy SE-1.4: Essential Service Buildings Location.** As feasible, ensure that essential services buildings are not located in geologic hazard zones.
- **Goal SE-10: Reduce crime activity.**
  - **Policy SE-10.1: Crime Rate**. Track the rates of crime in the community on an ongoing basis and reallocate resources as necessary to address crime-related issues of concern.
  - **Policy SE-10.2: Crime Statistics**. Make up-to-date crime statistics readily available to the community via the City's website or other media.
  - **Policy SE-10.3: Maximize Safety and Security**. Through the development review process, ensure that sites are designed in order to maximize safety and security, considering such factors as visibility, lighting, emergency access, legibility of street numbers, and fencing.
  - **Policy SE-10.4: Adequate Lighting.** Require all commercial and industrial developments to provide adequate lighting for buildings and parking areas as well as sufficient visibility for patrol vehicles to assist in law enforcement surveillance.
  - **Policy SE-10.5: Watch Group Education**. Encourage the formation and continued education of neighborhood and business watch groups to assist in crime prevention and detection.
  - **Policy SE-10.6: Crime Prevention Efforts.** Coordinate with local partners to encourage community-based crime prevention efforts.

- **Policy SE-10.7: Safe Environment Programs.** Promote after school, volunteer, and Business and Neighborhood Watch programs, and other innovative programs to help maintain a safe environment.
- **Policy SE-10.8: Law Enforcement and Youth Interaction**. Expand opportunities for positive law enforcement and youth interaction.

Mitigation Measures

No mitigation measures are required.

Threshold 1.c:	Would the project result in substantial adverse physical impacts associated with the provision of new or physically altered schools, or the need for new or physically altered schools, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios or other performance objectives?

IMPACT PS-3 THE PLAN WOULD NOT RESULT IN SUBSTANTIAL ADVERSE PHYSICAL IMPACTS ASSOCIATED WITH THE PROVISION OF NEW OR PHYSICALLY ALTERED SCHOOLS, OR THE NEED FOR NEW OR PHYSICALLY ALTERED SCHOOLS, IN ORDER TO MAINTAIN ACCEPTABLE SERVICE RATIOS OR OTHER PERFORMANCE OBJECTIVES. THEREFORE, IMPACTS WOULD BE LESS THAN SIGNIFICANT.

The development facilitated by the Plan would increase the residential population and thus the need for new or physically altered schools might occur. As described in Section 2, *Project Description*, the Plan would facilitate the development of approximately 22,000 housing units by 2045 and development and redevelopment of commercial space in the Plan Area. The following Plan goals and policies would apply to the provision of public schools in the Plan Area:

LAND USE AND COMMUNITY DESIGN

- **Goal LUD-3 A City with high-quality services and facilities in all neighborhoods.**
  - **Policy LUD-3.4: Expansion of Public Facilities.** Maintain and expand public facilities and services to better support the community, including schools, libraries, utilities, and recreational spaces.

PUBLIC FACILITIES, SERVICES, AND INFRASTRUCTURE

- **Goal PSFI-5: Ensure that adequate public utilities are available to support development in an efficient and orderly manner**
  - **Policy PFSI 5.3 Off-Site Fair Share Contribution**. Require all new development, including major modifications to existing development, to construct or provide a fair share contribution toward construction of required off-site improvements needed to support the project. This includes a fair share contribution toward development of regional master facility plans for roads, sewer, water, drainage, schools, libraries, parks, fire, and other community facilities, prior to granting approval of development applications.

Any project associated with expanding school facilities, whether related to the construction of new facilities or modernization of existing facilities, would be subject to project-specific environmental review and mitigation pursuant to CEQA. It is the responsibility of the school districts to comply with CEQA requirements. Compliance with federal, State, and local regulations would be required prior to the construction of the new facilities. Further, individual projects facilitated by the Plan would be

subject to development impact fees, which pursuant to California Government Code Section 65995, payment of these fees by a developer serves to mitigate all potential impacts on school facilities that may result from implementation of a project to a less-than-significant level.

Therefore, the Plan would not result in significant environmental impacts associated with the need for the provision of new or physically altered schools, and impacts would be less than significant.

Mitigation Measures

No mitigation measures are required.

4.15.4 Cumulative Impacts

The environmental analysis above discusses all future public service facilities developed under the Plan. Therefore, the impacts discussed in this section are cumulative in nature. Policies contained in the Plan would reduce cumulative impacts to public services to a less than significant level, and the Plan would not make a substantial contribution to any cumulative public services impacts.

This page intentionally left blank.

4.16 Recreation

This section assesses potential impacts to recreational facilities including parks.

4.16.1 Environmental Setting

The City of Palmdale's Public Works Department maintains 20 parks totaling 371 acres throughout the Planning Area, as well as recreation centers, pools, and a skate park. Public recreational facilities include Legacy Commons, Best of the West Softball Complex, Palmdale Amphitheater, and Dry Town Water Park. The 38-acre Domenic Massari Park, in the eastern portion of the City, provides residents with multiple playgrounds, lighted basketball courts, tennis courts, and skatepark, as well as walking paths, softball fields, sand volleyball courts, picnic tables, and a community room. The largest of the four parks in the western region of Palmdale is Marie Kerr Park, which has various lighted sports facilities, including the Best of West softball fields and a skatepark, as well as a picnic pavilion, barbecues, walking paths and a pool. Yellen Park, opened in 2017, also in the eastern region of Palmdale, provides the City's off-leash, enclosed dog park. The central region of Palmdale has numerous parks, providing easy access to recreational facilities and amenities for a majority of residents.

The City of Palmdale Parks and Recreation Department offers a variety of recreational activities for all ages at community facilities. Services include community events, performing arts classes and events, youth and adult sports, senior citizen services, hobbies and special interest classes, mind and body classes, educational and library services, aquatic programming, and free community building services at select park locations.

Table 4.16-1 lists parks within the Planning Area and their size in acres. Figure 4.16-1 shows the locations of these parks throughout the Planning Area.

Table 4.16-1 Planning Area Park Areas

Park	Park Area (Acres)
American Indian Little League Fields	5
Anaverde Hills Park	6
Arnie Quinones Park	10 (3 developed)
Domenic Massari Park	38
Desert Sands Park	20
Dr. Robert C. St. Claire Parkway	9
Foothill Park	12
Joshua Hills Park	4
Legacy Commons Park	1
Manzanita Heights Park	4
Marie Kerr Park	77
William J. McAdam Park	19
Melville J. Courson Park	5
Palmdale Oasis Park	29
Palmdale Youth Pony League Fields*	5

Park	Park Area (Acres)
Pelona Vista Park	76
Poncitlan Square	2
Rancho Vista Neighborhood Park**	4
Sam Yellen Community Park	25 (12 developed)
Tejon Equestrian Park	20
Total	**371 (351 developed)**

Source: Raimi & Associates 2020

* Property not owned by the City of Palmdale and not operational

**Property not owned by the City of Palmdale

The City of Palmdale has an established parkland-to-population requirement of 5.0 acres of parkland per 1,000 persons. The City has a current population of 167,398 and maintains approximately 371 acres of parkland; therefore, the current parkland-to-population ratio is approximately 2.2 acres of parkland per 1,000 persons. Based on the current population, the City would need to add approximately 470 acres of parkland to meet the targeted parkland ratio.

4.16.2 Regulatory Setting

There are no federal regulations pertaining to parks and recreation that are applicable to this analysis. Applicable State and local regulations are described below.

a. State

State Public Park Preservation Act (California Public Resource Code Section 5400 – 5409)

The State Public Park Preservation Act is the primary instrument for protecting and preserving parkland in California. Under the Act, cities and counties may not acquire any real property that is in use as a public park for any non-park use unless compensation or land, or both, are provided to replace the parkland acquired. This ensures a no net loss of parkland and facilities.

Quimby Act (California Government Code Section 66477)

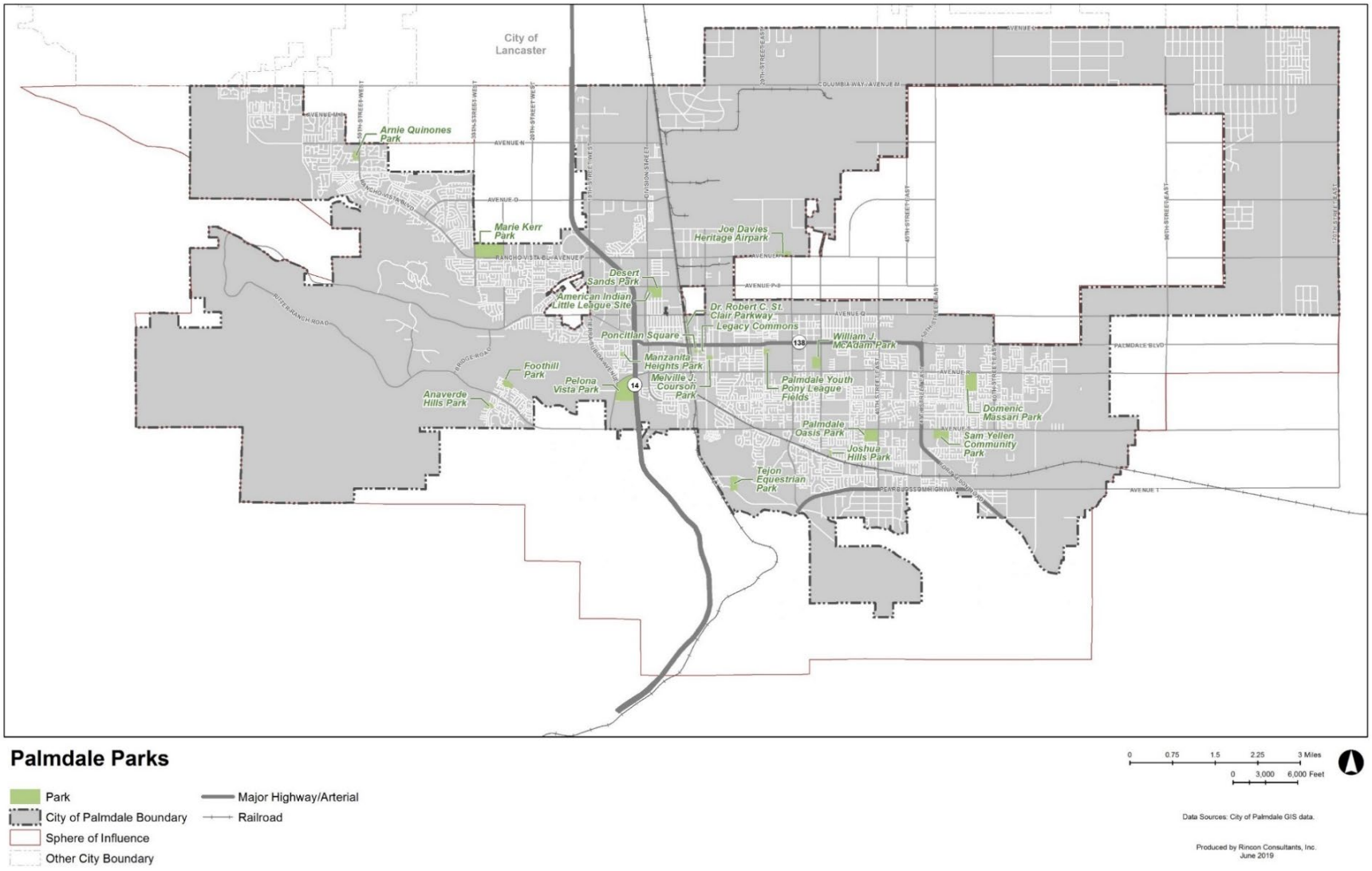
The Quimby Act allows cities and counties to adopt park dedication standards/ordinances requiring developers to set aside land, donate conservation easements, or pay fees towards parkland when property is subdivided.

b. Local

Palmdale Municipal Code (PMC)

Pursuant to PMC Chapter 3, Section 3.34.020, developers of most residential development projects requesting a subdivision or a zone change are required to either dedicate land for recreation and park purposes, pay an in-lieu fee as designated in the Palmdale Fee Resolution, or both. The in-lieu fees shall be spent on parks and recreation facilities to serve the development subject to the fee. These fees could be in the f

Figure 4.16-1 Planning Area Parks



orm of park dedication fees or development impact fees for new development projects.

4.16.3 Impact Analysis

a. Methodology and Significance Thresholds

According to CEQA Guidelines Appendix G, impacts related to recreation would be potentially significant if implementation of the Plan would:

1. Increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated; and/or
2. Include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment; and
3. Result in substantial adverse physical impacts associated with the provision of new or physically altered parks, or the need for new or physically altered parks, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios or other performance objectives.

Impacts are considered significant if Plan implementation would increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated, or if Plan implementation would include recreational facilities or require the construction or expansion of recreational facilities, which might have an adverse physical effect on the environment.

b. Project and Cumulative Impacts

Threshold 1:	Would the Plan increase the use of existing neighborhood and regional parks or other recreational facilities such that substantial physical deterioration of the facility would occur or be accelerated?
Threshold 2:	Would the Plan include recreational facilities or require the construction or expansion of recreational facilities which might have an adverse physical effect on the environment?
Threshold 3:	Would the Plan result in substantial adverse physical impacts associated with the provision of new or physically altered parks, or the need for new or physically altered parks, the construction of which could cause significant environmental impacts, in order to maintain acceptable service ratios or other performance objectives?

Impact REC-1 DEVELOPMENT FACILITATED BY THE PLAN MAY INCREASE THE USE OF EXISTING PARKS AND OPEN SPACE, BUT POLICIES IN THE PLAN FOR PROVIDING ADDITIONAL RECREATIONAL FACILITIES, AS WELL AS CITY PARK DEDICATION FEES AND DEVELOPMENT IMPACT FEES, WOULD HELP OFFSET THESE IMPACTS, AND SUBSTANTIAL PHYSICAL DETERIORATION OF RECREATIONAL FACILITIES WOULD NOT OCCUR. THIS IMPACT WOULD BE LESS THAN SIGNIFICANT.

As discussed in Section 4.14, *Population and Housing,* the Plan would accommodate the addition of approximately 75,756 residents to the Planning Area for a total population of 243,154 by 2045. Without additional parks, these residents would increase use of existing parks. Increases in the Planning Area's future population could therefore increase the use of existing neighborhood and regional parks and recreational facilities and result in eventual deterioration of such existing

facilities. In order to meet the 5.0 acres/1,000-person standard, the City would need to add approximately 850 acres of parkland, to achieve 1,215 acres of parkland overall to accommodate the anticipated population in the year 2045.

While the City has adequate acreage to fill this demand, however, half of the available park space has yet to be developed, and some sites are not approximate to current or future residents. The City's 2019 10-Year Capital Improvement Plan includes the development of sports fields in the drainage basin at Oasis Park, and 76 acres of new neighborhood parks. The City is also interested in potentially using natural stormwater drainage basins for recreation purposes.

The PMC requires the payment of in-lieu park fees and development impact fees, which would generate funds for additional parkland. Additionally, goals and policies of the Plan would facilitate the addition of parkland to comply with the target parkland-to-population ratio. Plan goals and policies related to parks and recreational facilities include:

LAND USE AND COMMUNITY DESIGN

- **Goal LUD-1: Complete Neighborhoods where residents can reach daily amenities, local retail, services, parks, and public facilities within a short 20-minute walk.**
  - **Policy LUD-1.3: Access to Amenities**. Strive to create development patterns such that the majority of residents are within twenty minutes or less walking distance of a variety of neighborhood-serving uses in Village Centers, such as parks, grocery stores, restaurants, places of worship, cafes, dry cleaners, laundromats, banks, hair care, pharmacies, civic uses, and similar uses.
  - **Policy LUD-1.4: Specific Plan Facilities**. Ensure Specific Plans are implemented with timely construction of supportive commercial uses and parks to support new residential uses.
- **Goal LUD-3: A City with high-quality services and facilities in all neighborhoods.**
  - **Policy LUD-3.4: Expansion of Public Facilities**. Maintain and expand public facilities and services to better support the community, including schools, libraries, utilities, and recreational spaces.
- **Goal LUD-5: All new major development in the city is designed to support high-quality neighborhoods.**
  - **Policy LUD-5.5: Trail Networks.** Provide new trails systems that connect to the regional system.
  - **Policy LUD-6.4: Recreational Spaces.** Improve existing parks and public spaces throughout the city to provide beautiful, comfortable, and inviting gathering spaces.
  - **Policy LUD-6.5: Amenities and Gathering Spaces.** Encourage new development to incorporate public plazas, seating, drinking fountains, and gathering places, especially in prominent locations and areas of pedestrian activity.
  - **Policy LUD-6.6: Ongoing Maintenance.** Require project developers to establish mechanisms, such as a Community Facilities District, to adequately maintain new parks, recreational facilities, and infrastructure.
- **Goal LUD-8: A place that encourages and supports its local arts and community culture.**
  - **Policy LUD-8.1: Arts and Cultural Programming.** Expand arts and cultural programming in public spaces, building off the existing Public Art Master Plan.

- **Policy LUD-8.2: Arts and Gathering Spaces.** Encourage new development, especially along Palmdale Boulevard and Avenue Q to incorporate public art in public plazas, seating, and gathering spaces along or near these corridors.

- **Goal LUD-9: Thriving, active Village Centers and Multi-Use Centers at regular intervals outside of the city core.**
  - **Policy LUD-9.1: Activity Centers**. Support a network of vibrant Village Centers that are mixed-use activity centers located throughout the City's residential areas to create 20-minute neighborhoods, implemented through new mixed-use land use designations, which provide a mix of residential uses and daily goods/services.
- **Goal LUD-23: Improve walkability and connectivity in existing neighborhoods, through increased permeability and access through large blocks.**
  - **Policy LUD-23.3: Connectivity Enhancements.** Introduce new public trail systems that connect to the regional system through Capital Improvement Projects and city/regional parks improvements.
  - **Policy LUD-23.4: Quarter-Mile Radius.** Work toward a goal of having 90 percent of residents living within twenty minutes walking distance of a dedicated park, school, or multi-use trail.

Circulation and Mobility

- **Goal TM-4: Build and maintain a transportation system that enhances quality of life and public health.**
  - **Policy TM-4.3: Access to parks and open space.** Prioritize investments that expand access to Palmdale's parks and trails and support physical activity.
  - **Policy TM-4.6: Lighting.** Provide human scale lighting along pedestrian thoroughfares, in commercial districts, on trails, and at transit stops.

Parks, Recreation, and Open Space

- **Goal PR-1: Provision of adequate park and recreation facilities to meet the needs of all existing and future residents.**
  - **Policy PR-1.1: Parks and Recreation Master Plan.** Prepare a Parks and Recreation Master Plan to address park conditions and needs, recreation programming, facilities, and funding opportunities. As a part of a Parks Master Plan, evaluate adopted park standards, including designations for type of parks and guidelines for the facilities to be developed in future parks.
  - **Policy PR-1.2: Park location.** Ensure that park sites are located equitably, throughout the city, to maximize access to parks for residents within a 20-minute walking distance.
  - **Policy PR-1.3: Parks accessibility.** Provide a variety of parks and recreational facilities accessible to all residents throughout the city, including community and neighborhood parks, to meet the needs of youth, adults, and senior citizens.
  - **Policy PR-1.4: Future parks priority areas.** As feasible, work with the private development community to facilitate creation of parks in the future parks priority areas as indicated in Figure 10.3.
  - **Policy PR-1.5: Prioritize underserved areas.** Prioritize development of new parks and recreation facilities in underserved areas of the city, encouraging access to free or low-cost recreation for all Palmdale residents.

- **Policy PR-1.6: Expand park amenities.** Encourage expansion of amenities at existing public parks.
- **Policy PR-1.7: ADA Design.** Incorporate all design features, required by the Americans with Disabilities Act, which improve access to parks and park facilities for citizens with different abilities and needs.
- **Policy PR-1.8: School and park synergy.** Co-locate schools and parks and partner with non-profit organizations to provide recreational opportunities that benefit both students and the public.
- **Policy PR-1.9: Parkland incentives.** Work with the private development community to incentivize creation of publicly accessible parkland either on-or-off-site.

- **Goal PR-3: Provide a broad range of recreational programs for all ages and activity levels to enrich the lives of residents.**
  - **Policy PR-3.1: Recreation education.** Collaborate with community partners to expand healthy, and educational recreation programs and services for youth and families.
  - **Policy PR-3.2: Culturally sensitive programming**. Provide culturally sensitive programming at various recreation facilities to serve the city's diverse population.
  - **Policy PR-3.3: Shared school amenities**. Work with local school districts to make campus recreation amenities (such as open grassy areas, basketball courts, baseball fields, gymnasiums, among others) available to surrounding neighborhoods and local sports leagues or organizations during off-school hours.
  - **Policy PR-3.4: Arts and culture programming.** Work with local schools, non-profits, local organizations, and artists to increase arts and culture programming (such as such as performing arts and theater, visual arts, youth, and senior programs) throughout Palmdale.

- **Goal PR-4: Explore various means of acquiring parkland and seek creative and flexible techniques to accomplish park goals.**
  - **Policy PR-4.1: Incorporate parkland.** Wherever feasible, incorporate uses that increase the public benefit of park land, and are compatible with the goal of providing active recreation opportunities.
  - **Policy PR-4.2: Non-traditional parks.** Consider non-traditional types of parks to extend the range of recreational opportunities available within the city, including linear parks, neighborhood parks, and remodeling vacant buildings for indoor activities, among others.
  - **Policy PR-4.3: Public input.** Seek public input on locations for and amenities in new neighborhood and community parks.
  - **Policy PR-4.4: Recreation, cultural and artistic opportunities.** Continue to work with public and private entities to provide opportunities for recreational, cultural, and artistic activities within the community.
  - **Policy PR-4.5: Park site considerations.** Account for physical, land use, and cost considerations when evaluating future park sites for acquisition or dedication.
  - **Policy PR-4.6: Dual purpose recreation.** Explore options to provide public recreation access (i.e., walking or picnicking) to utility and or drainage basin areas as safety permits.

- **Goal PR-5: Evaluate the need for establishing a funding mechanism for parks development and the need for satellite services.**

- **Policy PR-5.1: Park maintenance and improvements funding.** Provide sufficient funding for maintenance and improvements for all parks.
- **Policy PR-5.2: Park fees.** Collect park fees and review this fee annually, to provide financing for improvement of parkland.
- **Policy PR-5.3: Parks financing**. Consider formation of a citywide public financing district to provide funding for design, acquisition, construction, and maintenance of parks throughout Palmdale.
- **Policy PR-5.4: Parks planning**. Continue to use the City's Capital Improvement Program as the mechanism for short-term planning for acquisition of park land and construction of park and upgrades to existing facilities.
- **Policy PR-5.5: Grant funding opportunities.** Identify and pursue Quimby grant funding and other opportunities to finance future park development to meet parkland goals.

- **Goal PR-6: Provide a network of open space areas to provide for passive and active recreation opportunities, enhance the integrity of biological systems, and provide visual relief from the developed portions of the city.**
  - **Policy PR-6.1: Open Space network.** Develop an open space network through preservation of corridors along fault zones, natural drainage courses and in hillside areas to connect with the large areas of open space designated on the General Plan Land Use Map.
  - **Policy PR-6.2: Acquire natural open spaces.** Work with private property owners, conservation agencies, and Los Angeles County to expand and acquire natural open spaces and hillsides on the periphery of the city.
  - **Policy PR-6.3: Passive recreation use.** Encourage the use of open space areas for passive recreation with access points, multi-use trails, and interpretive information.
  - **Policy PR-6.4: Incentivize open space.** Work with the private development community to incentivize new publicly accessible open space through land dedications, land swaps, or other means.

- **Goal PR-7: Maintain a system of multi-use trails that provide connections to regional trails systems and residential neighborhoods.**
  - **Policy PR-7.1: Multi-use trails.** Provide and maintain multi-use trails, for use by pedestrians, bicyclists, and equestrians, connecting to existing or currently planned multi-use trails.
  - **Policy PR-7.2: Multi-use trail connections.** Prioritize multi-use trail connections to existing neighborhoods, public parks, and public facilities based on the modal priority network in the Mobility Element.
  - **Policy PR-7.3: Promote new multi-use trails**. When feasible, consider adding multi-use paths near or within areas used for water retention, like the aqueduct, or below transmission lines, to increase local walking and biking routes.
  - **Policy PR-7.4: Trail accessibility.** To the extent feasible, ensure that trails are accessible to all residents and incorporate ADA design features.
  - **Policy PR-7.5: Trail amenities and facilities.** Provide trail support facilities, such as benches, trash cans and trail heads/staging areas, as needed throughout the multi-use trails network.
  - **Policy PR-7.6: Trails acquisition.** Explore various means of acquiring trail easements or rights-of-way and pursue all available funding sources to provide trail acquisition and construction.

- **Policy PR-7.7: Trail financing.** To the extent feasible, use grant funding and private donations to finance trail construction.
- **Policy PR-7.8: Trails network adoption.** Incorporate the citywide multi-purpose trail network adopted under the General Plan into the regional trail system.

PUBLIC FACILITIES, SERVICES, AND INFRASTRUCTURE

- **Goal PFSI-1: Maintain superior public facilities to support the Palmdale community.**
  - **Policy PFSI-1.4: Access to Library Services.** Consider expanding library services to include branch locations in Village Centers (including retail centers), Education Districts, near public parks, and other similar settings to provide access to residents across Palmdale.
- **Goal PSFI-5: Ensure that adequate public utilities are available to support development in an efficient and orderly manner.**
  - **PFSI 5.3: Off-Site Fair Share Contribution.** Require all new development, including major modifications to existing development, to construct or provide a fair share contribution toward construction of required off-site improvements needed to support the project. This includes a fair share contribution toward development of regional master facility plans for roads, sewer, water, drainage, schools, libraries, parks, fire, and other community facilities, prior to granting approval of development applications.

While the Plan itself would not include the construction of specific parks or recreational facilities, impacts from the construction of new or expanded parks facilitated by the Plan would be similar to those identified in this EIR for construction or operations. Similar to other types of development, the construction of new or expanded park and recreation facilities could potentially contribute to the significant impacts including but not limited to biological resources, cultural resources, and construction noise impacts, as identified in Sections 4.4, *Biological Resources*, 4.5, *Cultural Resources*, and 4.13, *Noise*, of this EIR. Construction for any new parks or recreation facilities would be required to adhere to the policies contained in the proposed Plan and PMC. Policies include noise control during construction and operation of the project, air pollutant reduction by incorporating best available air quality and greenhouse gas mitigation in project design, and the prohibition of development that jeopardizes the integrity of sensitive or protected plant and animal communities. Based on the Planning Area's urban location and the limited land available, the construction or expansion of park facilities would result in less than significant impacts with adherence to the Plan policies and development review process.

Creating new parks and open space in the Planning Area would increase the ratio of park space per 1,000 residents (compared to conditions without such additional parks and open space), thus minimizing impacts on recreational facilities from increased use of existing parks from new development carried out under the Plan. Therefore, impacts on existing recreational facilities from the potentially increased use would be less than significant.

Mitigation Measures

No mitigation measures are required.

4.16.4 Cumulative Impacts

The environmental analysis above discusses all future parks and recreation facilities developed under the Plan. Therefore, the impacts discussed in this section are cumulative in nature. Policies contained in the Plan would reduce cumulative impacts to recreation to a less than significant level, and the Plan would not make a substantial contribution to any cumulative recreation impacts.

4.17 Transportation

This section evaluates the Plan's potential impact on the local and regional transportation and circulation system, including its impact on vehicle miles traveled (VMT). The analysis is based on the information included in the Traffic Report prepared by Parsons Engineering in February 2022 and included in Appendix D of this EIR.

4.17.1 Environmental Setting

a. Existing Street Network

The scope of the Traffic Report was developed by Parsons Engineering in coordination with Raimi and Associates, Rincon Consultants, and the City of Palmdale. The Traffic Report analyzed regional, major arterials, secondary arterials, and different roadway classifications for Planning Area roadways in the City of Palmdale and County of Los Angeles. The major East-West and major North-South roads in and in the vicinity of the Planning Area include:

1. State Route 14
2. State Route 138
3. Avenue L
4. Columbia Way/Avenue M
5. Avenue P/Rancho Vista Boulevard
6. Technology Drive/East Avenue P-8
7. Avenue P-8/Bulldog
8. Avenue Q
9. Palmdale Boulevard/SR 138
10. East Avenue R/Rayburn Road
11. Avenue S
12. 10th Street West/Tierra Subida
13. Division Street
14. Fifth Street East
15. Sierra Highway
16. Elizabeth Lake Road
17. Town Center Drive/Avenue O
18. 10th Street East
19. 15th Street East
20. 15th Street West/Summer Wind
21. 20th Street East
22. 20th Street West
23. 25th Street East
24. 25th Street West/Highland Street
25. 30th Street East

26. 30th Street West
27. 40th Street East
28. 50th Street East/47th Street East
29. 60th Street West/Goddee Hill Road
30. 70th Street East
31. 90th Street East/87th Street East

b. Methodology

The following discussion summarizes the key points related to the traffic analysis carried out in the Traffic Report. For a more detailed description of this methodology please refer to the Traffic Report (Appendix D).

The Southern California Association of Governments (SCAG) develops long-range regional transportation plans including sustainable community strategies and growth forecast components, regional transportation improvement programs, and regional housing needs allocations.

The SCAG region utilizes the SCAG 2016 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) Travel Demand Model (SCAG model) to produce forecasts for the region. The SCAG model used for the Palmdale General Plan Update (Plan) is consistent with the RTP assumptions for existing year and future year conditions because all projects in the RTP are included. The 2040 future year model datasets were used to produce the future conditions for the Plan scenarios analyzed in the Traffic Report. The external-to-internal (XI) and internal-to-external (IX) trips forecast by the SCAG model are terminated at the external zones known as gateways. For Palmdale, the nearest gateway is State Route (SR) 14 at the Kern County line. These external trips with one end in the SCAG region are fixed for each horizon year and do not vary with changes in socioeconomic data. The SCAG model roadway classifications are consistent with the Federal Highway Administration (FHWA) roadway classifications, which are more detailed and do not necessarily align with the City of Palmdale classifications but are generally similar in nature. The main roadway classifications for the SCAG model are listed below, where each of these roadway types are further sub-divided.

- Freeways
- HOV and express lanes
- Expressways/parkways
- Principal arterials
- Minor arterials
- Major collectors
- Minor collectors
- Ramps
- Centroid connectors

The SCAG model currently has the last horizon year as 2040, with a calibration year of 2012, and is used for the SCAG region outside of the Planning Area. It is always best to maintain consistency with the regional model to the extent possible. In addition, there is no basis for altering the land use for rest of the region, which comprises 99 percent of the population of the region. The SCAG model was run for the following scenarios with updated land use within the Planning Area:

- **Existing Year (2017) Conditions**. The Planning Area land use was updated based on input from the City, the four-step SCAG model procedures were run completely, and the trip tables were expanded to the Tier 3 zone system before performing the traffic assignments. The highway network assumptions are consistent with the SCAG regional assumptions.
- **2045 Base**. The Planning Area land use was updated based on input from the City, the four-step SCAG model procedures were run completely, and the trip tables were expanded to the Tier 3 zone system before performing the traffic assignments. The highway network assumptions are consistent with the SCAG regional assumptions.
- **2045 Base with High Desert Corridor Freeway (HDC).**The highway network was updated to include a proposed facility beginning at SR 14 and joining SR138/SR18 east of Longview Road. Traffic assignments were performed utilizing 2045 Base scenario trip tables. This scenario was run to illustrate the effects of the HDC facility on the Palmdale street system because the proposed HDC facility would be a major east–west freeway connecting Palmdale and Victorville. The HDC may not be built before 2050 or beyond as no funding sources are identified.
- **2045 Preferred Plan.** The Planning Area land use was updated based on the 2045 Preferred Plan scenario assumptions. The four-step SCAG model procedures were run completely, and the trip tables were expanded to the Tier 3 zone system before performing the traffic assignments. This scenario also included the addition of High-Speed Rail (HSR) trips at the Palmdale Station prior to performing the traffic assignments. The highway network assumptions are consistent with the SCAG regional assumptions. In addition, the network was updated based on review and recommendations by the City of Palmdale.

Level of Service

Consistent with the requirements of SB 743 (described in Section 4.17.2b), LOS is no longer considered as the basis for determining environmental impacts under CEQA. The Traffic Report gives LOS information for the purpose of assessing roadway and intersection impacts associated with project-generated traffic, but for informational purposes only, not for CEQA impact analysis. This information is therefore not presented in this chapter of the EIR but is available in the Traffic Report (Appendix D).

Existing VMT

The Traffic Report defines daily trips as having an origin, destination, or both within the Planning Area, not including pass-through trips. As shown in Table 4.17-1, Palmdale trips generate a VMT of 8,028,726 and a Vehicle Hours Travelled (VHT) of 272,454 on all the roadway facilities within the SCAG region. The Planning Area only accounts for 25.1 percent of the total VMT generated, Lancaster accounts for 12.9 percent, the High Desert region accounts for 3.8 percent, and the rest of Los Angeles County accounts for 36.4 percent.

The Palmdale transportation network as a "system," which includes all roadway facilities within the Planning Area, generates 4,275,533 VMT, 100,085 VHT, and 6,783 VHD daily. This accounts for all trips, including pass through trips, using the highway network within the Planning Area.

Existing Transit Network

The Antelope Valley Transit Authority (AVTA) serves a population of over 450,000 residents of Palmdale, Lancaster, and the unincorporated portions of northern Los Angeles County. The AVTA's total service area covers 1,200 square miles and is bound by the Kern County line to the north, the San Bernardino County line to the east, the Angeles National Forest to the south, and Interstate 5 to

the west. The fixed route service area consists of approximately 100 square miles. The AVTA is the City of Palmdale's primary transit provider, operating:

- 13 local transit routes
- 5 supplemental routes serving local schools or key employment destinations, such as Edwards Air Force Base
- 3 commuter services to regional job centers such as UCLA, CSUN, Downtown Los Angeles, Mojave, and Edwards Air Force Base.
- 1 TRANsporter service (Route 790), providing midday service to regional Metrolink service

The AVTA manages a total fleet of 75 transit buses, with 45 buses for local service and 30 buses for commuter service, surpassing the current peak requirements of 38 vehicles for local service and 25 vehicles for commuter service.

Table 4.17-2 shows all AVTA routes and key characteristics, including service type, span of service hours for weekdays and weekends, bus frequency, and key stops along each route. AVTA Routes include local services that operate daily, supplemental services that alleviate overcrowding on local routes during peak ridership times, and commuter routes meant to serve major commute patterns in the region. Additionally, special routes serve specific destinations, such as schools, or major employers. Most routes serve Palmdale directly, except for routes 4, 8, and 748. However, transfer opportunities make those routes accessible from other AVTA services.

Table 4.17-1 2017 Existing Planning Area (II, IX and XI*) Daily, VMT, VHT, Average Speed by Facility

Facility	VMT	VHT	Average Speed (mph)
Freeways	2,893,868	110,892	47.5
HOT facilities	11,431	364	54.4
HOV facilities	284,701	12,647	54.0
Expressways/parkways	4,381	145	53.9
Principal arterials	1,484,072	40,118	30.6
Minor arterials	1,631,560	42,584	31.7
Major collectors	1,067,379	29,211	25.1
Minor connectors	41,916	1,279	31.4
Freeway ramps	152,550	17,266	21.1
Truck lanes only	6,323	245	51.1
Centroid connectors	450,545	17,702	24.2
Total without centroid connectors	7,578,181	254,752	37.1
Total of All Links	**8,028,726**	**272,454**	**35.9**

*II = Internal-to-internal trips, where both ends of the trips are within the Planning Area

IX = Internal-to-external trips, where the origin of the trips is within the Planning Area and the destination of the trips could be anywhere in the SCAG region

XI = External-to-internal trips, where the origin of the trips could be anywhere in the SCAG region and the destination of the trips is within the Planning Area

Table 4.17-2 AVTA Route Characteristics

Route	Service Type	Weekday/Saturday/Sunday Span	Weekday/Saturday/Sunday Headways (min)	Key Destinations
1	Local	5:00am – 12:00am 6:00am – 11:30pm 7:00am – 8:31pm	15/30/60	Owen Memorial Park Palmdale Transportation Center Amargosa Commons
2	Local	5:55am – 10:43pm 6:30am – 8:13pm 6:30am – 7:18pm	30/60/60	Antelope Valley Mall Amargosa Commons
3	Local	5:55am – 10:44pm 6:30am – 8:14pm 6:30am – 7:18pm	30/60/60	Antelope Valley Mall Palmdale Transportation Center
4	Local	6:40am – 9:20pm 7:40am – 9:17pm Sat + Sun are the same	60/120	Owen Memorial Park
5	Local	6:05am – 9:23pm 7:05am – 7:03pm Sat + Sun are the same	60/60	Mayflower Gardens Owen Memorial Park
7	Local	5:00am – 10:29pm 6:55am – 8:50pm 6:55am – 6:53pm	60/60/60	AV Mall Palmdale Transportation Center Amargosa Commons
8 (express)	Local	6:35am – 6:05pm No weekend service	90	AV College Palmdale Transportation Center AVC Palmdale Center
9	Local	6:15am – 8:05pm 8:15am – 5:31pm Sat + Sun are the same	100/90	Quartz Hill High School AV Fairgrounds Owen Memorial Park
11	Local	5:15am – 11:55pm 5:45am – 7:57pm 6:45am – 6:57pm	30/60/60	AV Hospital Owen Memorial Park
12	Local	5:00am – 11:38pm 6:02am – 7:44pm 7:00am – 6:44pm	30/60/60	Owen Memorial Park

Route	Service Type	Weekday/Saturday/Sunday Span	Weekday/Saturday/Sunday Headways (min)	Key Destinations
50	Local	5:20am – 11:12pm 7:20am – 8:29pm 7:20am – 8:06pm	130/130/130	Owen Memorial Park Town Center Plaza
51	Local	5:30am – 10:33pm 7:25am – 8:16pm 7:25am – 7:48pm	130/130/130	Palmdale Transportation Center Town Center Plaza Littlerock High School
52	Local	5:30am – 11:24pm 7:30am – 7:26pm Sat + Sun are the same	120/120	Pete Knight High School
94 Special	Supplemental	M-F Eastbound 6:40am – 3:55pm M-F Westbound 2:27pm – 3:55pm W Westbound 1:12pm – 2:12pm	Only one run per day	Owen Memorial Park Eastside High School Antelope Valley High School
97 Special	Supplemental	M-F Westbound 6:35am – 7:10am M-F Eastbound 3:15pm – 3:45pm W Eastbound 1:20pm – 1:50pm	Only one run per day	Rancho Vista Blvd. & Town Center Drive AV Mall Palmdale Transportation Center Highland High School
98 Special	Supplemental	M-F Eastbound 6:30am – 7:15am M-F Westbound 2:52pm – 3:22pm W Westbound 1:04pm – 1:39pm	Only one run per day	Palmdale Transportation Center Pete Knight High School
747 Special	Supplemental	AM run 5:15am – 9:29am PM run 2:25pm – 6:45pm No weekend service	60	Palmdale Transportation Center Edwards Air Force Base
748 Special	Supplemental	AM run 4:50am – 7:00am PM run 4:45pm – 6:25pm No weekend service	AM 60/ PM 30	The Spaceship Company -79 The Spaceship Company – Faith Mojave Air & Space Port

Route	Service Type	Weekday/Saturday/Sunday Span	Weekday/Saturday/Sunday Headways (min)	Key Destinations
785	Commuter	AM run 3:50 am – 8:55 pm PM run 2:50 pm – 7:47 pm No weekend service	AM 15-20/ PM 20-25	Owen Memorial Park Palmdale Transportation Center LA Union Station Downtown LA
786	Commuter	AM run 4:00 am – 8:26 pm PM run 2:50 pm – 7:28 pm No weekend service	AM 20-30/ PM 30-40	Owen Memorial Park Palmdale Transportation Center UCLA/Westwood Century City
787	Commuter	AM run 4:00 am – 8:55 pm PM run 2:50 pm – 7:54 pm No weekend service	AM 10-20/ PM 20-30	Owen Memorial Park Palmdale Transportation Center CSUN Transit Center Warner Center Tarzana
790	Rail Connector	7:50 am – 5:50 pm No weekend service	80-210	Palmdale Transportation Center College of the Canyons Henry Mayo Memorial Hospital Newhall Metrolink Station McBean Regional Transit Center

Source: City of Palmdale 2020

According to data provided by AVTA for October 2018, on average AVTA sees over 51,300 boardings on weekdays and 8,240 boardings on weekends. Much of this ridership originates from Palmdale and Lancaster.

The highest AVTA ridership within Palmdale is observed along the following streets:

- 10th Street, providing connectivity to and from Lancaster
- Palmdale Boulevard, which has the highest activity along east/west corridors
- Avenue R and Avenue S

Four of the eight busiest bus stops within the AVTA system are in Palmdale. These stops are Palmdale Transportation Center, Antelope Valley Mall, Walmart at Avenue S/47th Street East, and Avenue R/47th Street East. While the Palmdale Transportation Center is the busiest of these stops, accounting for an average of 3,756 weekday boardings, the other stops listed serve a range of 470 to 650 weekday boardings each. Owens Memorial Park, located 1.5 miles north of Palmdale, is a key hub for commuter services–accounting for the most daily boardings on average (4,588).

Understanding where transit activity is highest helps inform how different modes of transportation should be prioritized along arterials in Palmdale.

Palmdale Transportation Center

The Palmdale Transportation Center (PTC), located at 39000 Clock Tower Plaza Drive, opened in April 2005. The PTC is a regional multi-modal hub including connections between Antelope Valley Transit Authority (AVTA) buses, Metrolink commuter rail service, Santa Clarita Transit service, Greyhound bus Service, and Amtrak Throughway bus service. Hours of operation for the PTC are from 3 a.m. to 10:30 p.m. Monday through Friday, and from 6 a.m. to 8 p.m. Saturday and Sunday. Eight centrally located bus stops connect regional service providers and local bus routes. The PTC has an indoor passenger waiting area with concessions, public telephones, seating, restrooms, and a security service. The PTC also provides parking for passengers using bus transit or commuter rail service; however, it is not designated as a Park-and-Ride facility. Metrolink passengers may also use a partially enclosed outdoor waiting area on the rail platform.

Park-and-Ride

The City of Palmdale has three designated Park-and-Ride facilities. They include the following:

- East Avenue S Park-and-Ride (210 East Avenue S)
- West Avenue S Park-and-Ride (434 West Avenue S)
- Pelona Vista Park-and-Ride (445 West Avenue R-8)

Dial-a-Ride Service

Dial-a-Ride provides curb-to-curb van service for seniors over the age of 65 and disabled residents of the Antelope Valley. Dial-a-ride is intended to fill transportation gaps between local, fixed route transit and ADA-mandated paratransit services, which are provided by Access Paratransit Services.

Paratransit Service

Paratransit is an alternative mode of flexible passenger transportation that does not follow fixed routes or schedules. Typically, vans or minibuses are used to provide paratransit service, but shared

taxis and jitneys are also important providers as a form of transportation. Complementary ADA paratransit is a federally mandated civil right of persons with disabilities who cannot ride the accessible public fixed route buses and trains.

Access Paratransit Services (Access Paratransit) is the name of the Los Angeles County Consolidated Transportation Services Agency administering the Los Angeles County Coordinated Paratransit Plan on behalf of the County's 45 public fixed route operators (i.e., bus and rail).

Access Paratransit must be available for any eligible person for any purpose and to or from any location within three-quarters of a mile of any fixed route bus, and within three-quarters of a mile around Metro rail stations during the hours that the systems are operational. The service area is divided into regions and extends into portions of the surrounding counties of San Bernardino, Orange, and Ventura that are served by Los Angeles County fixed-route bus lines.

Access Paratransit operates seven days a week, 24 hours of the day in most areas of Los Angeles County. It is a shared ride service that is curb-to-curb and utilizes a fleet of small buses, minivans and taxis. Personal care attendants may ride with the qualified rider free of charge.

Metrolink

Metrolink is operated by the Southern California Regional Rail Authority (SCRRA) on behalf of the five counties in the greater Los Angeles Metropolitan region.

Metrolink offers commuter rail service from the Antelope Valley to Santa Clarita, the San Fernando Valley, and Los Angeles Basin cities Monday through Saturday. Table 4.17-3 shows the weekday timetable for this service.

Individual fares are calculated with a distance-based formula using the shortest driving distance between stations, with substantial discounts available for weekly and monthly passes. The one-way fare from Palmdale to Los Angeles Union Station is $10.75. A seven-day pass is $75.25, while a monthly pass is $301.00. Assuming a commuter schedule of 22 working days per month, the monthly pass calculates to $6.84 per one-way trip to Union Station. Metrolink also offers a popular $10 weekend pass, featuring unlimited system-wide travel between 7 p.m. Friday and 11:59 p.m. Sunday.

Table 4.17-3 Metrolink Train Schedule: Palmdale to and from Union Station

	Southbound			Northbound	
Train No.	Depart	Arrive	Train No.	Depart	Arrive
200	3:54 a.m.	5:53 a.m.	201	6:19 a.m.	8:22 a.m.
202	4:56 a.m.	6:55 a.m.	205	8:29 a.m.	10:35 a.m.
204	5:26 a.m.	7:25 a.m.	209	11:06 a.m.	1:10 p.m.
282	5:58 a.m.	7:40 a.m.	215	3:28 p.m.	5:28 p.m.
206	6:08 a.m.	8:06 a.m.	219	4:44 p.m.	6:50 p.m.
208	6:58 a.m.	8:57 a.m.	285	5:34 p.m.	7:21 p.m.
212	9:11 a.m.	11:08 a.m.	221	5:58 p.m.	8:00 p.m.
216	11:45 a.m.	1:43 p.m.	223	6:38 p.m.	8:39 p.m.
220	1:55 p.m.	3:55 p.m.	225	7:36 p.m.	9:34 p.m.
226	6:26 p.m.	8:42 p.m.	227	9:25 p.m.	11:22 p.m.

Source: City of Palmdale 2020

Bicycle Network

The City of Palmdale bicycle network is anchored by a 4.7-mile Class 1 bicycle path along Sierra Highway from Technology Drive, continuing north into Lancaster. This facility provides regional connectivity and may benefit from improvements, such as shade trees to assist people on bicycles on warm days. The Sierra Highway bike path, which is made up of approximately 4 miles of combined Class 1 bicycle paths, Class 2 bicycle lanes, and Class 3 bicycle paths, serves communities in central Palmdale. Few multi-use paths across the city provide recreational amenities. The Avenue S bike path runs from SR-14 to 45th Street East.

Bicycle network connectivity is limited outside of a few neighborhoods within central Palmdale. The Bicycle Transportation Plan (2018 Draft) provides recommendations for an extensive network of bicycle facilities, ranging from bicycle paths to colored and/or buffered bicycle lanes. The Bicycle Transportation Plan (2018 Draft) includes maps of corridors for bicycle facilities and a design toolkit to inform detailed designs and implementation.

4.17.2 Regulatory Setting

a. Federal

The US Department of Transportation (US DOT) provides a number of grant programs, primarily for the construction and upgrading of major highways and transit facilities. Many of these grants are administered by the state and regional governments. Use of federal grant funding also invokes the National Environmental Protection Act (NEPA) in some cases. The Federal Highway Administration (FHWA) sets design standards (such as interchange spacing) for interstate highways such as the I-5 and I-210 freeways. The Federal Railroad Administration (FRA) within the US DOT establishes safety rules regarding the operation of railroads (e.g., maximum train speeds, maximum allowed highway crossing blockage time).

b. State

Senate Bill 743 – Transportation Impacts

Adopted in 2013, Senate Bill (SB) 743 required the Governor's Office of Planning and Research (OPR) to develop new CEQA Guidelines that address transportation impact metrics under CEQA. Section 15064.3 was added to the State CEQA Guidelines requiring transportation impact analysis be based on VMT, instead of a congestion metric (such as LOS) and stating that a project's effect on automobile delay shall not constitute a significant environmental impact, as previously required. In December 2018, OPR published a Technical Advisory on Evaluating Transportation Impacts, including guidance for VMT analysis (OPR 2018). The Office of Administrative Law approved the updated CEQA Guidelines and lead agencies were given until July 1, 2020, to implement the updated guidelines for VMT analysis.

Assembly Bill 1266 – Traffic Control Devices: Bicycles (2019)

Assembly Bill (AB) 1266 requires Caltrans to provide guidance on the ways in which to notify bicyclists that they are allowed to traverse straight through an intersection when a right-turn-only lane requires vehicles to turn. Caltrans will be required to develop standards on lane striping, regulatory signage, and pavement markings in these scenarios.

c. Local

Palmdale Municipal Code

Chapter 17.191 Transportation Demand Management

This section discusses the development standards for any development project. Prior to approval of any development project, the applicant must make provisions for all applicable transportation demand management and trip reduction measures. All facilities and improvements constructed or otherwise shall be maintained in a state of good repair. The property owner shall be responsible for complying with the provisions of this Chapter either directly or by delegating such responsibility as may be appropriate to a tenant or to an agent.

Chapter 17.87 Off-Street Parking

Chapter 17 discusses the amount, location, and design of parking and loading access for motor vehicles and bicycles. It also serves to ensure the provision of adequate, accessible, secure, properly lighted, and well maintained and screened off-street parking facilities. Properly provided and designed parking will facilitate the intended use of the property; reduce traffic congestion and safety concerns; protect the neighborhoods from the effects of vehicular noise and traffic generated by adjacent nonresidential land use district; assure maneuverability of emergency vehicles; and provide a positive visual experience.

4.17.3 Impact Analysis

a. Methodology and Significance Thresholds

Future Conditions Analysis

The future highway network analyzed in the Traffic Report is consistent with the SCAG model assumptions for the forecast year 2040, which is the farthest out horizon year available with the SCAG regional model. The 2040 horizon year is the basis for the future year 2045 forecasts for the Palmdale General Plan scenarios, with several roadway improvements additionally assumed for the 2045 horizon year. These include (noting some of them may have already been upgraded):

- Avenue P/Rancho Vista Boulevard
  - Three lanes per direction between west of 30th Street West and Division Street
  - Two lanes per direction between Division Street and 30th Street East
  - One lane per direction between 30th Street East and 50th Street East
- Technology Drive/East Avenue P-8
  - Two lanes per direction between Sierra Highway and 70th Street East
- East Avenue S
  - Three lanes per direction between 30th Street and 47th Street East
- East Avenue Q Corridor between 6th Street and Sierra Highway to facilitate better access to the proposed Palmdale High-Speed Rail Station

The 2045 Preferred Plan scenario also included the Palmdale High-Speed Rail Station boardings, which are integrated into the traffic assignment procedures. Daily boarding for the 2045 scenarios are reported to be 5,600 riders one way, per the Transportation Technical Report published by the California High-Speed Rail Authority Palmdale to Burbank Project Section and dated March 2019.

2045 Base

The 2045 Base scenario used the SCAG model forecast year 2040 dataset, and the network assumptions are consistent with the RTP assumptions. The 2045 socio-economic data for the Planning Area was updated with inputs from the City of Palmdale. The socio-economic data outside the Planning Area is consistent with the SCAG assumptions for the region for the year 2040. The SCAG four-step model procedures were run with the updated land use in the Planning Area.

The daily link-based VMT, VHT and the average speeds by facility types are shown in Table 4.17-4 for the Palmdale only trips. Table 4.17-4 shows the link-based VMT, VHT, VHD, and average speeds by facility for the Planning Area for all trips regardless of trip origin or destination. As shown in Table 4.17-4, the Palmdale trips generate a VMT of 8,862,268 and a VHT of 338,264 on all the roadway facilities within the SCAG region.

As shown in Table 4.17-5, the Palmdale transportation network as a system, which includes all roadway facilities within the Planning Area, generates 5,029,773 VMT, 123,190 VHT and 12,590 VHD daily under this scenario. This accounts for all trips, including pass through trips, using the highway network within the Planning Area.

Table 4.17-4 2045 Base Planning Area (II, IX and XI*) Daily, VMT, VHT, Average Speed by Facility

Facility	VMT	VHT	Average Speed (mph)
Freeways	2,945,756	129,261	44.7
HOT facilities	9,285	271	63.3
HOV facilities	284,422	17,684	47.7
Expressways/parkways	5,650	213	51.2
Principal arterials	1,671,644	47,215	29.8
Minor arterials	1,897,218	58,807	30.3
Major collectors	1,321,027	39,778	23.6
Minor connectors	43,307	1,357	29.0
Freeway ramps	156,041	22,220	20.1
Truck lanes only	7,485	730	22.2
Centroid connectors	520,432	20,729	24.4
Total without centroid connectors	8,341,835	317,535	35.2
Total of All Links	**8,862,268**	**338,264**	**34.2**

*II = Internal-to-internal trips, where both ends of the trips are within the Planning Area

*IX = Internal-to-external trips, where the origin of the trips is within the Planning Area and the destination of the trips could be anywhere in the SCAG region

*XI = External-to-internal trips, where the origin of the trips could be anywhere in the SCAG region and the destination of the trips is within the Planning Area

Source: Traffic Report, 2022

Table 4.17-5 2045 Base Planning Area VMT/VHT by Facility Type for All Trips

	AM Peak				PM Peak				Daily			
Facility	**VMT**	**VHT**	**Speed**	**Delay**	**VMT**	**VHT**	**Speed**	**Delay**	**VMT**	**VH**	**Speed**	**Delay**
Freeways	270,601	5,517	49.1	1,651	305,078	5,068	60.2	710	1,181,686	19,501	60.6	2,620
HOT facilities	0	0	0.0	0	0	0	0.0	0	0	0	0.0	0
HOV facilities	69,103	1,239	55.8	252	68,108	1,040	65.5	67	145,399	2,395	60.7	318
Expressways/parkways	0	0	0.0	0	0	0	0.0	0	0	0	0.0	0
Principal arterials	226,065	6,363	35.5	1,382	338,346	9,459	35.8	1,972	1,257,146	32,740	38.4	5,022
Minor arterials	262,555	6,673	39.3	658	419,648	10,697	39.2	1,065	1,401,721	34,643	40.5	2,427
Major collectors	123,229	3,449	35.7	489	180,141	4,873	37.0	519	568,232	14,924	38.1	1,182
Minor collectors	2,741	73	37.7	2	3,415	113	30.2	19	11,491	349	32.9	32
Freeway ramps	11,492	582	19.8	232	17,115	871	19.6	363	61,651	2,836	21.7	990
Truck lanes only	0	0	0.0	0	0	0	0.0	0	0	0	0.0	0
Centroid connectors	73,459	2,881	25.5	0	121,957	4,786	25.5	0	402,448	15,803	25.5	0
Total—All Links	**1,039,246**	**26,775**	**38.8**	**4,666**	**1,453,807**	**36,907**	**39.4**	**4,714**	**5,029,773**	**123,190**	**40.8**	**12,590**

2045 Base with High Desert Corridor Freeway

The 2045 Base with High Desert Corridor freeway used the 2045 Base year dataset and the network assumptions are consistent with the RTP except for the HDC facility. The 2045 socio-economic data for the Planning Area was updated with inputs from the City of Palmdale. The socio-economic data outside the Planning Area is consistent with the SCAG assumptions for the region for the year 2040. The High Desert Corridor Freeway was coded from SR 14 to SR 138. The 2045 Base scenario trip tables were used to perform traffic assignments only. This scenario was performed to illustrate the effects of the HDC on the Palmdale street system because the HDC would be a major east–west freeway connecting Palmdale and Victorville. The HDC may not be built before 2050 or beyond as no funding sources are identified.

Table 4.17-6 shows the link-based VMT, VHT, VHD, and average speeds by facility for the Planning Area for all trips regardless of the trip origin or destination under this scenario. As shown in Table 4.17-6, Palmdale trips generate a VMT of 8,868,517 and a VHT of 335,887 on all the roadway facilities within the SCAG region under this scenario. The Palmdale Planning Area only accounts for 27.5 percent of the total VMT generated, Lancaster accounts for 12.6 percent, and the High Desert region accounts for 3.3 percent. The rest of Los Angeles County accounts for 32.5 percent.

As shown in Table 4.17-7, the Palmdale transportation network as a system, which includes all roadway facilities within the Planning Area, generates 5,223,759 VMT, 120,023 VHT and 10,388 VHD daily under this scenario. This accounts for all trips, including pass through trips, using the highway network within the Planning Area.

Table 4.17-6 2045 Base with High Desert Corridor Planning Area (II,IX, and XI*) Daily, VMT, VHT, Average Speed by Facility

Facility	VMT	VHT	Average Speed (mph)
Freeways	3,068,071	131,896	44.8
HOT facilities	10,024	292	63.2
HOV facilities	282,077	17,774	47.7
Expressways/parkways	192,155	3,645	51.7
Principal arterials	1,579,551	44,131	29.8
Minor arterials1	1,696,186	53,626	30.2
Major collectors	1,301,285	39,251	23.6
Minor connectors	48,311	1,537	29.0
Freeway ramps	166,282	22,421	20.2
Truck lanes only	7,516	710	23.0
Centroid connectors	517,058	20,595	24.4
Total without centroid connectors	8,351,459	315,282	35.2
Total of All Links	**8,868,517**	**335,877**	**34.2**

*II = Internal-to-internal trips, where both ends of the trips are within the Planning Area

*IX = Internal-to-external trips, where the origin of the trips is within the Planning Area and the destination of the trips could be anywhere in the SCAG region.

Source: Traffic Report, 2022

Table 4.17-7 2045 Base with High Desert Corridor Planning Area VMT/VHT by Facility Type for All Trips

	AM Peak				PM Peak				Daily			
Facility	**VMT**	**VHT**	**Speed**	**Delay**	**VMT**	**VHT**	**Speed**	**Delay**	**VMT**	**VHT**	**Speed**	**Delay**
Freeways	312,614	6,131	51.0	1,665	373,363	6,101	61.2	768	1,403,737	22,764	61.7	2,711
HOT facilities	0	0	0.0	0	0	0	0.0	0	0	0	0.0	0
HOV facilities	72,021	1,328	54.2	299	72,002	1,122	64.2	94	149,952	2,535	59.2	393
Expressways/parkways	81,889	1,455	56.3	218	115,712	2,056	56.3	309	398,295	6,736	59.1	731
Principal arterials	205,935	5,348	38.5	922	306,588	7,915	38.7	1,282	1,144,438	27,929	41.0	3,315
Minor arterials	211,775	5,217	40.6	314	344,683	8,536	40.4	551	1,128,747	27,502	41.0	1,233
Major collectors	105,296	3,013	34.9	460	161,020	4,418	36.4	490	511,576	13,631	37.5	1,108
Minor collectors	2,094	58	36.0	2	3,219	109	29.5	19	10,866	335	32.4	32
Freeway ramps	15,259	592	25.8	194	22,687	930	24.4	331	77,100	2,927	26.3	865
Truck lanes only	0	0	0.0	0	0	0	0.0	0	0	0	0.0	0
Centroid connectors	72,075	2,827	25.5	0	119,703	4,696	25.5	0	399,047	15,663	25.5	0
Total—All Links	**1,078,958**	**25,970**	**41.5**	**4,074**	**1,518,977**	**35,883**	**42.3**	**3,843**	**5,223,759**	**120,023**	**43.5**	**10,388**

2045 Preferred Plan

The 2045 Base dataset was used for 2045 Preferred Plan scenario (the Plan, as described in this EIR) and the network assumptions are consistent with the RTP. The 2045 socio-economic data for the Planning Area was updated based on the 2045 Preferred Plan scenario. The socio-economic data outside the Planning Area is consistent with the SCAG assumptions for the region in the year 2040.

The 2045 Base Highway network was reviewed by the City of Palmdale for the 2045 Preferred Plan and based on their recommendations, the highway network was updated. In addition, High-Speed Rail ridership at the Palmdale station was incorporated into the highway assignment procedures.

The daily link-based VMT, VHT, and the average speeds by facility types are shown in Table 4.17-8 for Planning Area only trips. This table shows the link-based VMT, VHT, VHD, and average speeds by facility for the Planning Area for all trips, regardless of trip origin or destination, under this scenario.

As shown in Table 4.17-9, under this scenario Palmdale trips generate a VMT of 7,727,110 and a VHT of 261,367 on all the roadway facilities within the SCAG region. The Planning Area only accounts for 28.9 percent of the total VMT generated, Lancaster accounts for 14.2 percent, and the High Desert region accounts for 4.1 percent. The rest of Los Angeles County accounts for 27.4 percent.

As shown in Table 4.17-9, the Palmdale transportation network as a system, which includes all roadway facilities within the Planning Area, generates 4,685,219 VMT, 111,241 VHT and 8,259 VHD daily under this scenario. This accounts for all trips, including pass through trips, using the highway network within the Planning Area.

Table 4.17-8 Preferred Plan Planning Area (II and IX) Average VMT, VHT, and Speed

From/To	VMT	VHT	Average Speed (mph)
Freeways	2,395,390	92,084	45.2
HOT facilities	7,911	230	63.4
HOV facilities	184,453	9,425	49.0
Expressways/parkways	5,083	184	51.2
Principal arterials	1,571,929	42,699	29.9
Minor arterials	1,821,834	50,209	30.5
Major collectors	1,075,565	30,851	23.7
Minor connectors	53,726	1,575	29.1
Freeway ramps	122,764	14,415	20.4
Truck lanes only	8,130	646	24.9
Centroid connectors	480,325	19,048	24.4
Total without centroid connectors	7,246,785	242,319	35.5
Total of All Links	**7,727,110**	**261,367**	**34.5**

Table 4.17-9 2045 Preferred Plan Planning Area VMT/VHT by Facility Type for All Trips

	AM Peak				PM Peak				Daily			
Facility	**VMT**	**VHT**	**Speed**	**Delay**	**VMT**	**VHT**	**Speed**	**Delay**	**VMT**	**VHT**	**Speed**	**Delay**
Freeways	243,132	4,149	58.6	675	294,514	4,620	63.7	413	1,063,365	16,410	64.8	1,219
HOT facilities	0	0	0.0	0	0	0	0.0	0	0	0	0.0	0
HOV facilities	50,509	776	65.1	55	41,547	598	69.5	4	99,507	1,480	67.2	59
Expressways/parkways	0	0	0.0	0	0	0	0.0	0	0	0	0.0	0
Principal arterials	225,647	6,006	37.6	1,038	330,852	8,917	37.1	1,601	1,208,274	30,538	39.6	3,914
Minor arterials	262,849	6,443	40.8	449	420,218	10,415	40.3	824	1,382,559	33,333	41.5	1,738
Major collectors	110,627	2,819	39.2	212	157,278	3,986	39.5	250	492,059	12,273	40.1	563
Minor collectors	5,977	144	41.5	2	7,070	178	39.6	6	19,576	497	39.4	12
Freeway ramps	11,299	537	21.1	197	15,858	759	20.9	286	55,388	2,412	23.0	754
Truck lanes only	0	0	0.0	0	0	0	0.0	0	0	0	0.0	0
Centroid connectors	67,697	2,650	25.5	0	109,639	4,293	25.5	0	364,492	14,297	25.5	0
Total—All Links	**977,736**	**23,524**	**41.6**	**2,628**	**1,376,977**	**33,764**	**40.8**	**3,384**	**4,685,219**	**111,241**	**42.1**	**8,259**

Table 4.17-10 shows various statistics for the home-based and all trip purposes for the Planning Area under all scenarios. The average trip lengths for home-based work, home-based trips and all trip purposes decrease in the future Plan scenarios, which in turn reduces the VMT generated. The VMT per capita and the VMT per employee also decrease. In addition, the average trip lengths for the 2045 Preferred Plan scenario decreases. All these reductions effectively contribute toward the overall reduction in VMT, thereby improving air quality and reducing greenhouse gas (GHG) emissions and carbon dioxide (CO_2) emissions.

Table 4.17-10 Trip Purpose Statistics

Palmdale Sphere—Statistics	2017 Existing	2045 Base	2045 Preferred Plan
Home-based work trips—VMT per capita	16.43	14.54	8.85
Home-based work trips—average trip length	31.57	31.10	21.59
Home-based all trips—VMT per capita	26.19	23.20	16.57
Home-based all trips—average trip length	16.49	15.63	12.62
All trips—VMT per service population	34.30	30.60	27.00
All trips—average trip length	11.87	11.56	10.86

The link-based performance statistics for the roadway facilities within the Planning Area are shown in Table 4.17-11. The VMT, VHT, and VHD (vehicle hours of delay) are reported for daily and AM and PM peak periods for all the scenarios. These metrics are lower in the 2045 Preferred Plan than in the 2045 base scenario.

Table 4.17-11 Performance Statistics by Facility Type within the Planning Area

Performance Measurement	Facility Type	Planning Area Analysis		
		2017 Existing	2045 Base	2045 Preferred Plan
Daily VMT (thousands)	Freeways	1,203.1	1,327.1	1,162.9
	Arterials	2,197.7	2,658.9	2,590.8
	Other	874.8	1,043.8	931.5
	All Facilities	**4,275.6**	**5,029.8**	**4,685.2**
AM and PM peak period VMT (thousands)	Freeways	646.4	712.9	629.7
	Arterials	1,049.5	1,246.6	1,239.6
	Other	445.4	533.5	485.4
	All Facilities	**2,141.3**	**2,493.1**	**2,354.7**
Daily VHT (thousands)	Freeways	18.8	21.9	17.9
	Arterials	53.3	67.4	63.9
	Other	28.0	33.9	29.5
	All Facilities	**100.1**	**123.2**	**111.2**
AM and PM peak period VHT (thousands)	Freeways	10.7	12.9	10.1
	Arterials	26.4	33.2	31.8
	Other	14.5	17.6	15.4
	All Facilities	**51.6**	**63.7**	**57.3**

Performance Measurement	Facility Type	Planning Area Analysis		
		2017 Existing	2045 Base	2045 Preferred Plan
Daily VHD (thousands)	Freeways	1.6	2.9	1.3
	Arterials	3.6	7.4	5.7
	Other	1.5	2.2	1.3
	All Facilities	**6.8**	**12.6**	**8.3**
AM and PM peak period VHD (thousands)	Freeways	1.5	2.7	1.1
	Arterials	2.7	5.1	3.9
	Other	1.1	1.6	1.0
	All Facilities	**5.3**	**9.4**	**6.0**

Vehicle Miles Traveled

Section 15064.3 of the CEQA Guidelines states that a project's effect on automobile delay shall not constitute a significant environmental impact, as previously required under CEQA, and VMT is now the required metric to be used for identifying CEQA impacts and mitigation, instead of a congestion metric (such as LOS). Section 15064.3 of the CEQA Guidelines refers to VMT as the amount and distance of automobile travel attributable to a project. Other relevant considerations may include the effects of the project on transit and non-motorized travel. Except as provided in subdivision (b)(2) below (regarding roadway capacity), a project's effect on automobile delay shall not constitute a significant environmental impact. Criteria for analyzing transportation impacts includes the following:

- **Land Use Projects.** Vehicle miles traveled exceeding an applicable threshold of significance may indicate a significant impact. Generally, projects within one-half mile of either an existing major transit stop or a stop along an existing high quality transit corridor should be presumed to cause a less than significant transportation impact. Projects that decrease vehicle miles traveled in the project area compared to existing conditions should be presumed to have a less than significant transportation impact.
- **Transportation Projects.** Transportation projects that reduce, or have no impact on, vehicle miles traveled should be presumed to cause a less than significant transportation impact. For roadway capacity projects, agencies have discretion to determine the appropriate measure of transportation impact consistent with CEQA and other applicable requirements. To the extent that such impacts have already been adequately addressed at a programmatic level, such as in a regional transportation plan EIR, a lead agency may tier from that analysis as provided in Section 15152.
- **Qualitative Analysis.** If existing models or methods are not available to estimate the vehicle miles traveled for the particular project being considered, a lead agency may analyze the project's vehicle miles traveled qualitatively. Such a qualitative analysis would evaluate factors such as the availability of transit, proximity to other destinations, etc. For many projects, a qualitative analysis of construction traffic may be appropriate.
- **Methodology.** A lead agency has discretion to choose the most appropriate methodology to evaluate a project's vehicle miles traveled, including whether to express the change in absolute terms, per capita, per household or in any other measure. A lead agency may use models to estimate a project's vehicle miles traveled and may revise those estimates to reflect professional judgment based on substantial evidence. Any assumptions used to estimate vehicle miles traveled and any revisions to model outputs should be documented and explained in the

environmental document prepared for the project. The standard of adequacy in Section 15151 shall apply to the analysis described in this section.

While some jurisdictions may choose to retain LOS standards as one of a project's condition of approval, CEQA impacts and/or mitigation measures are no longer based on changes to LOS.

VMT was chosen as the primary metric to better integrate land use and multimodal transportation choices and encourage alternative transportation, greater efficiency, and reduced GHG emissions. OPR's Technical Advisory on Evaluating Transportation Impacts provides technical recommendations regarding the assessment of VMT, thresholds of significance, and mitigation measures (OPR 2018). OPR offers a generalized recommendation of a 15 percent reduction below existing VMT as a threshold of CEQA significance. County of Los Angeles VMT thresholds are used as CEQA significance thresholds in this analysis, however, for the reasons discussed below.

Trip- or tour-based VMT analysis is recommended over boundary-based VMT analysis as the most appropriate methodology for analyzing VMT impacts under CEQA. Trip-based assessment of VMT captures the full extent of the vehicle trip length, including the portion that extends beyond the jurisdictional boundary. VMT impacts are assessed by quantifying trips to or from a jurisdiction, starting or ending within the jurisdiction. Conversely, a boundary-based assessment of VMT impacts is quantified by the length of the vehicle trips within a jurisdiction's boundaries.

As noted in the current CEQA Guidelines, agencies are directed to choose metrics appropriate for their jurisdiction to evaluate the potential impacts of a project in terms of VMT. The guidance provided thus far relative to VMT significance criteria is focused on residential, office, and retail uses. For rural land uses, OPR guidance states that fewer options may be available for reducing VMT for projects in rural areas outside of a metropolitan planning organization and significance thresholds may be best determined on a case-by-case basis. In lieu of formally adopted thresholds of significance, VMT thresholds consistent with OPR's final technical guidance for analyzing transportation impacts under CEQA were applied in the analysis presented in this EIR.

The SCAG model was the best available tool to estimate VMT in Los Angeles County. The most current version of the SCAG model, with a base year of 2012 and future year of 2040, was developed for the *2016 SCAG Regional Transportation Plan/ Sustainable Communities Strategy,* April 2016. The model utilizes traffic analysis zones (TAZs) containing socio-economic data reflecting the region's population, employment, and land use development characteristics.

Baseline VMT

Given the differences in VMT trends between the northern and southern planning areas in Los Angeles County, the County has adopted separate North County and South County Baseline VMT benchmarks. The North County Baseline VMT contains the Antelope Valley, Santa Clarita Valley, and Santa Monica Mountains planning areas in the more rural portion of the County. The South County Baseline VMT contains the remaining planning areas in the more urban portion of the County. By establishing a North County and South County Baseline VMT, the County acknowledges the differences in travel behavior in these areas given the land use context and transportation network to represent a more realistic and reasonable picture of VMT activity levels and thus a more appropriate and feasible baseline for VMT analysis. As shown in Table 4.17-12, baseline VMT is higher in the North County (in which Palmdale is located) than in the South County. More details of about this methodology are available in the Traffic Report (Appendix D).

While the baseline VMT trends included in Table 4.17-12 reflect the base year of the SCAG model, baseline conditions for CEQA purposes will be specific to the release date of a project's notice of preparation. The County's Total VMT per Service Population threshold is independent of (and not necessarily a total of) Residential VMT per Capita and Employment per Employee.

Table 4.17-12 Cumulative Vehicle Miles Traveled Thresholds

Baseline Area	Total VMT Thresholds for North and South County	Residential VMT per Capita	Employment VMT per Employee
North County	43.1	22.3	19.0
South County	31.1	12.7	18.4

Source: Transportation Impact Analysis Guidelines, Los Angeles County Public Works, July 23,2020

VMT Analysis Travel Demand Model Scenario Descriptions

The Palmdale General Plan (Plan) anticipates that the Planning Area will grow in population, households and employment, and work toward a goal of being a self-contained community in the Antelope Valley region of northern Los Angeles County. For the Traffic Report, the SCAG RTP/SCS Travel Demand Model (SCAG model) was run through all four steps of the SCAG model for the following scenarios:

- **2017 SCAG:** This model run is based on the 2017 model forecast year assumptions using the 2016 RTP/SCS model directly without any modifications.
- **2017 Existing:** The 2017 SCAG model forecast year is used and the land use in the Palmdale SOI (Planning Area) is modified with land use obtained from the City of Palmdale. The employment is updated for several zones to account for Plant 42, which is not in the employment forecasts.
- **2040 SCAG:** This model run is based on the 2040 model forecast year assumptions using the 2016 RTP/SCS model directly without any modifications.
- **2045 Base:** The 2040 SCAG model forecast year is used and the land use in the Palmdale City limits were modified to reflect updated assumptions. The 2045 Base scenario is developed by updating the 2040 SCAG land use within the Planning Area with land use obtained from the City of Palmdale. The employment is updated for a few zones to account for Plant 42, which was not in the employment forecasts. The land use updates are made to all the zones within the Planning Area to reflect updated socioeconomic data forecasts.
- **2045 Preferred Plan:** The 2040 SCAG model forecast year is used and the land use in the Palmdale City limits are modified to reflect the final 2045 Preferred Plan scenario assumptions. The 2045 Preferred Plan scenario are updated with revised socioeconomic data forecasts which are conservative in nature. Land use updates are made to all the zones within the Planning Area to reflect updated socioeconomic data forecasts.

Project and Cumulative Impacts

Threshold 1:	Would the Plan conflict with a program, plan, ordinance or policy addressing the circulation system, including transit, roadway, bicycle and pedestrian facilities?

Impact T-1 THE PLAN WOULD NOT CONFLICT WITH A PROGRAM, PLAN, ORDINANCE OR POLICY ADDRESSING THE CIRCULATION SYSTEM, INCLUDING TRANSIT, ROADWAY, BICYCLE, AND PEDESTRIAN FACILITIES. IMPACTS WOULD BE LESS THAN SIGNIFICANT.

The Mobility Element of the Plan provides a comprehensive system of bicycle lanes, trails, and pathways to enhance pedestrian, transit, and bicycle and pedestrian connectivity in the Planning Area. Additionally, the Mobility Element identifies a series of Goals and Policies to ensure these facilities' integrity and service levels are maintained.

The following Plan policies and actions relate to pedestrian, transit, and bicycle infrastructure:

- **Goal TM-1: Build and maintain a transportation system that is safe and comfortable for travelers of all modes regardless of age or ability.**
  - **Policy TM-1.1: Roadway design.** Design and maintain the public right-of-way through a complete streets approach that facilitates safe, comfortable, and efficient travel for all roadway users.
  - **Policy TM-1.2: Modal conflicts.** Use a systemic safety approach to proactively identify opportunities to improve safety where conflicts between users exist.
  - **Policy TM-1.3: Network gaps.** Identify and program mitigation measures for gaps and deficiencies in the transportation system to accommodate each major transportation mode.
- **Goal TM-2: Build and maintain a transportation system that accommodates future growth and maintains transportation networks for all modes.**
  - **Policy TM-2.1: Roadway classification.** Classify streets based on their modal purpose and land use context.
  - **Policy TM-2.2: Multimodal travel.** Prioritize safety, operations, and comfort for active and transit modes on streets that have been identified as part of the multimodal network.
  - **Policy TM-2.3: Intersection Design.** Prioritize safety and mobility for non-motorized modes in all intersection designs.
  - **Policy TM-2.4: Network connectivity.** Prioritize multimodal infrastructure that connects existing development with future infill development areas (i.e., gap closure projects).
  - **Policy TM-2.5: Multimodal comfort.** Prioritize quality of multimodal facilities with respect to a user's experience of stress, connectivity, and safety for streets with a non-automobile priority, and ensure the appropriate balance with vehicular operations.
- **Goal TM-3: Build and maintain a transportation system that provides affordable, equitable, and efficient access to employment centers and essential services.**
  - **Policy TM-3.1: Transit reliability.** Make public transit a convenient and reliable option for daily trip making on a local and regional basis.
  - **Policy TM-3.2: Transit access.** Encourage investments and Capital Projects that reduce first/last-mile barriers to transit stops.

  - **Policy TM-3.4: Transit coordination.** Work with AVTA to enhance the deployment of fixed-route and flex-route transit services, including increased frequency and service spans.
  - **Policy TM-3.5: Regional rail.** Work with Metrolink to increase the frequency of on-peak services and later service hours.
  - **Policy TM-3.6: Transit information.** Work with transit providers to improve the delivery of transit service availability and real-time information in an easy, dependable, and accessible means.
  - **Policy TM-3.7: Commute trip reduction.** Work with large employers to implement programs that expand access to non-drive alone commute options for all commuters, including hourly staff and contract workers.
  - **Policy TM-3.8: Multimodal Station.** Maximize access to downtown via transit and other modes through the Palmdale Transportation Center and future relocation to accommodate a station for high-speed rail.

- **Goal TM-5: Build and maintain a transportation system that fosters a more active and vibrant downtown.**
  - **Policy TM-5.1: Public space.** Encourage wider sidewalks and plazas on downtown streets to enhance placemaking, improve public safety, and support local businesses.
  - **Policy TM-5.2: Parking supply.** Promote and support creative and flexible approaches to parking, including maximizing use of existing public supply and sharing between uses to create a "park once environment."
  - **Policy TM-5.3: Walkability.** Enhance the safety and comfort of existing pedestrian street crossings and reduce the distance between crossings.
  - **Policy TM-5.4: Streetscaping.** Implement streetscape design that improves the pedestrian environment and appearance of downtown corridors.
  - **Policy TM-5.5: Secure bicycle parking.** Install secure short- and long-term bicycle parking near key destinations, civic buildings, and transit facilities.

- **Goal TM-6: Build and maintain a transportation system that leverages the City's natural setting and reduces impacts to the environment.**
  - **Policy TM-6.2: Multimodal development.** Encourage the development of dense, mixed-use, pedestrian-oriented land uses that link affordable housing options to daily needs.
  - **Policy TM-6.3: Transportation demand management.** Promote trip reduction strategies, including telecommuting, through land-use decisions and TDM programming strategies.

- **Goal TM-7: Proactively prepare for the future, ensuring that implementation of transportation innovations and regional projects align with the City's vision.**
  - **Policy TM-7.7: High-speed rail.** Consider the location of a future California High Speed Rail station and right-of-way in long term planning efforts and investment prioritization.

Mobility Element Goals 1, 2, 3, 4, 5, 6, and 7 and the policies therein would create and improve pedestrian, transit, and bicycle infrastructure. The Mobility Element also focuses on providing Mobility Hubs and First Mile/Last Mile Connections for the city and improving pedestrian, transit, and bicycle connectivity throughout the community. By implementing the Plan, impacts on pedestrian, transit, and bicycle facilities would be reduced to a less than significant level.

Mitigation Measures

Impacts would be less than significant. Therefore, mitigation is not required.

Threshold 2:	Would the Plan conflict or be inconsistent with CEQA Guidelines Section 15064.3 subdivision(b)?

Impact T-2 THE PLAN WOULD BE CONSISTENT WITH CEQA GUIDELINES SECTION 15064.3(B). THE PLAN HAS THE LEAST SIGNIFICANT VMT IMPACT OF ALL THE SCENARIOS, WHERE SOCIO-ECONOMIC DATA WERE EVALUATED AND PLACED IN THE OPTIMUM LOCATIONS FOR SMART GROWTH CONSIDERATION. NO SIGNIFICANT IMPACTS WOULD OCCUR.

Analysis of VMT for the various scenarios are shown in Table 4.17-13, which compares the Baseline VMT threshold criteria for the North County region to total VMT for service population for the different Plan scenarios analyzed in the Traffic Report. The Plan scenarios are well below the North County target of 35.9, which is a 16.8 percent reduction from the baseline VMT. The 2045 Preferred Plan (the proposed Plan) has the least significant impact of all the scenarios.

Table 4.17-13 Baseline VMT Thresholds—Total VMT per Service Population

	2017 SCAG	2017 Existing	2040 SCAG	2045 Base	2045 Preferred Plan
Total VMT for service population from the model scenarios *	35.4	34.3	32.5	30.6	27.0
VMT impact criteria threshold result	Pass	Pass	Pass	Pass	Pass

Note: North County baseline VMT for total service population is 43.1 as shown in Table 4.17-12.

*A 16.8% decrease from the baseline VMT amounts to 35.9 as recommended by the Los Angeles County Public Works *Transportation Impact Analysis Guidelines*.

The VMT reported in Table 4.17-14 is used for computing the total VMT per service population generated by trips between the Planning Area and other areas of the SCAG region. This table also compares the Baseline VMT threshold criteria for the North County region to the Preferred Plan scenario (the Plan). The Plan scenarios shown in Table 4.17-13 are well below the North County targets of 35.9, which is a 16.8 percent reduction from the baseline VMT. Therefore, the Plan would have no impact, or even a beneficial impact, related to VMT.

Table 4.17-14 All Trips and VMT Statistics

All Trip Purposes—Planning Area	2017 Existing	2045 Base	2045 Preferred Plan
Total service population	237,989	307,600	300,496
VMT (zone-based)	8,153,876	9,424,251	8,111,684
Total trips per capita	2.70	2.52	2.50
Total trips per employee	10.30	9.04	7.54
Total VMT per service population	34.30	30.60	27.00
All trips—average trip length	**11.87**	**11.56**	**10.86**

For all the reasons discussed above, the Plan (2045 Preferred Plan) would have no VMT impact and would not conflict or be inconsistent with CEQA Guidelines Section 15064.3 subdivision(b). No mitigations are necessary.

Mitigation Measures

There would be no impact. Therefore, mitigation would not be required.

Threshold 3:	Would the Plan substantially increase hazards due to a geometric design feature (e.g., sharp curves or dangerous intersections) or incompatible use (e.g., farm equipment)?

Impact T-3 THROUGH IMPLEMENTATION OF PLAN POLICIES AND ACTIONS, THE PLAN WOULD HELP ENSURE SAFE AND EFFICIENT MOVEMENT FOR ALL MODES OF TRAVEL AND WOULD THEREFORE NOT SUBSTANTIALLY INCREASE HAZARDS DUE TO A DESIGN FEATURE (E.G., SHARP CURVES OR DANGEROUS INTERSECTIONS) OR INCOMPATIBLE USES (E.G. FARM EQUIPMENT). THIS WOULD BE A LESS THAN SIGNIFICANT IMPACT.

The Plan was developed to minimize conflicts between incompatible uses. The Plan has policies and actions that aim to create safe and efficient movement for all modes of travel, including the following:

- **Goal TM-1: Build and maintain a transportation system that is safe and comfortable for travelers of all modes regardless of age or ability.**
  - **Policy TM-1.1: Roadway design.** Design and maintain the public right-of-way through a complete streets approach that facilitates safe, comfortable, and efficient travel for all roadway users.
  - **Policy TM-1.2: Modal conflicts.** Use a systemic safety approach to proactively identify opportunities to improve safety where conflicts between users exist.
  - **Policy TM-1.3: Network gaps.** Identify and program mitigation measures for gaps and deficiencies in the transportation system to accommodate each major transportation mode.
- **Goal TM-2: Build and maintain a transportation system that accommodates future growth and maintains transportation networks for all modes.**
  - **Policy TM-2.1: Roadway classification.** Classify streets based on their modal purpose and land use context.
  - **Policy TM-2.2: Multimodal travel.** Prioritize safety, operations, and comfort for active and transit modes on streets that have been identified as part of the multimodal network.
  - **Policy TM-2.3: Intersection Design.** Prioritize safety and mobility for non-motorized modes in all intersection designs.
  - **Policy TM-2.4: Network connectivity.** Prioritize multimodal infrastructure that connects existing development with future infill development areas (i.e., gap closure projects).
  - **Policy TM-2.5: Multimodal comfort.** Prioritize quality of multimodal facilities with respect to a user's experience of stress, connectivity, and safety for streets with a non-automobile priority, and ensure the appropriate balance with vehicular operations.
- **Goal TM-5: Build and maintain a transportation system that fosters a more active and vibrant downtown.**
  - **Policy TM-5.1: Public space.** Encourage wider sidewalks and plazas on downtown streets to enhance placemaking, improve public safety, and support local businesses.
  - **Policy TM-5.3: Walkability.** Enhance the safety and comfort of existing pedestrian street crossings and reduce the distance between crossings.

- **Policy TM-5.4: Streetscaping.** Implement streetscape design that improves the pedestrian environment and appearance of downtown corridors.
- **Policy TM-5.5: Secure bicycle parking.** Install secure short- and long-term bicycle parking near key destinations, civic buildings, and transit facilities.

The Plan goals and policies above would help minimize conflicts between incompatible transportation uses and create a safe and efficient movement for all modes of travel. This policy in addition to the others listed above would ensure the Plan would not substantially increase hazards due to design features or incompatible uses, and impacts would be less than significant.

Mitigation Measures

Impacts would be less than significant. Therefore, mitigation would not be required.

Threshold 4: Would the Plan result in inadequate emergency access?

Impact T-4 THE PLAN WOULD NOT RESULT IN INADEQUATE EMERGENCY ACCESS BECAUSE PLAN GOALS AND POLICIES WOULD ENCOURAGE EASE OF CONNECTIVITY AND EASE OF MOBILITY THROUGHOUT THE PLANNING AREA AND EMERGENCY ACCESS WOULD BE IMPROVED. THERE WOULD BE NO IMPACT.

The Safety Element of the Plan finds evacuation and emergency access in the Planning Area is not a major concern due to the many roadways throughout the Planning Area. Most residential developments throughout the Planning Area have at least two emergency exits. However, a few neighborhoods located in the Fire Hazard Severity Zones have only one way in and out of the neighborhood. More information regarding these neighborhoods is available in the Safety Element of the Plan. The Plan would not increase the amount of development allowed in these areas so it would not have an impact on emergency access in these areas. Furthermore, the Plan's Mobility Element would improve connectivity and mobility throughout the Planning Area through implementation of the following goals and policies and which are also directly or indirectly related to emergency access:

- **Goal TM-1: Build and maintain a transportation system that is safe and comfortable for travelers of all modes regardless of age or ability.**
  - **Policy TM-1.1: Roadway design.** Design and maintain the public right-of-way through a complete streets approach that facilitates safe, comfortable, and efficient travel for all roadway users.
  - **Policy TM-1.2: Modal conflicts.** Use a systemic safety approach to proactively identify opportunities to improve safety where conflicts between users exist.
- **Goal TM-2: Build and maintain a transportation system that accommodates future growth and maintains transportation networks for all modes.**
  - **Policy TM-2.1: Roadway classification.** Classify streets based on their modal purpose and land use context.
  - **Policy TM-2.2: Multimodal travel.** Prioritize safety, operations, and comfort for active and transit modes on streets that have been identified as part of the multimodal network.

These goals and policies, and the improved connectivity and mobility they would help create, would help improve emergency access throughout the Planning Area. Plan implementation would improve

emergency access, so the Plan would not result in inadequate emergency access and there would be no impact.

Mitigation Measures

There would be no impact. Therefore, mitigation would not be required.

4.17.4 Cumulative Impacts

The geographic scope of potential cumulative transportation impacts is the Planning Area and surrounding region. This geographic scope is appropriate for evaluating transportation impacts because it includes the regional and local transportation network that would primarily be impacted by reasonably foreseeable development associated with the Plan. The cumulative impacts analysis estimates the change in total VMT resulting from these land use changes and is represented through the metric of total VMT per service population. In the Traffic Report, Parsons Engineering modeled this traffic for 2040 by using the SCAG model for the preferred plan (the Plan) which incorporates cumulative development and growth throughout the SCAG region. The forecast for the Plan is analyzed in this EIR and thus considers cumulative impacts in Impacts T-1 through T-4. Based on the analysis in the Traffic Report and summarized above, the Plan does not make a substantial contribution to, or result in, a significant cumulative transportation impact.

This page intentionally left blank.

4.18 Tribal Cultural Resources

This section analyzes the potential impacts of the Plan on tribal cultural resources (TCRs).

4.18.1 Environmental Setting

The analysis considers the value of a resource to tribal cultural tradition, heritage, and identity, in order to establish potential mitigation options for TCRs and to recognize that California Native American tribes have expertise concerning their tribal histories and practices.

Ethnographic Setting

The Planning Area is within a transitional zone that was occupied by multiple cultural groups including the Kitanemuk, Serrano, and Tataviam (cf., Bean and Smith 1978; Blackburn and Bean 1978; Kroeber 1925; Sutton 1988). All of these groups are more closely associated with portions of the surrounding mountains – Kitanemuk to the north, Serrano to the southeast, and Tataviam to the southwest – but each of them likely visited the Antelope Valley floor as part of their resource exploitation strategies. Ethnographic boundaries in the Mojave Desert are loosely defined, owing to the highly mobile nature of desert settlement and resource extraction strategies, as well as the variety of interpretations presented by previous researchers. The following sections provide brief overviews of the three groups likely to have ethnographically used the Planning Area.

Kitanemuk

The Kitanemuk are one of the least-understood ethnographic groups in California, despite being considered by researchers as the primary aboriginal inhabitants of Antelope Valley (Sutton 1987, 1988). Kitanemuk territory extended from the Tehachapi Mountains at the northwestern edge of the Antelope Valley southeast to beyond Rosamond Lake north of Palmdale, although their populations were most dense in the mountains at the southern end of the San Joaquin Valley (Blackburn and Bean 1978:564; Kroeber 1925:611). The Kitanemuk were primarily mountain dwellers who lived in semi-permanent village sites that functioned as year-round base camps; during the late winter and early spring, expeditions ventured onto the desert floor in pursuit of available seasonal resources (Earle 1997).

Kroeber (1925:611) noted that the Kitanemuk were a subdivision of the Serrano, and thus spoke a language of the Takic family that was similar to dialects spoken by groups living as far south and east as Yucca Valley and Twentynine Palms. Although some aspects of Kitanemuk social organization are similar to those of other Takic speaking groups, Blackburn and Bean (1978:564) argue that Kitanemuk ritual, mythology, and shamanism were most strongly shaped by their neighbors to the north (Kawaiisu and Tubatulabal) and west (Chumash). The Kitanemuk appear to have enjoyed particularly strong trade ties with coastal and inland Chumash groups (Blackburn and Bean 1978:564; Kroeber 1925:613). Modern-day descendants of the Kitanemuk live at the Tule River Reservation, Porterville, and Tejon Ranch (Four Directions Institute 2007).

Serrano

The Serrano occupied an area in and around the San Bernardino Mountains between approximately 450 and 3,350 meters (1,500-11,000 feet) above mean sea level. Their territory extended west of Cajon Pass, east past Twentynine Palms, north of Victorville, and south to the Yucaipa Valley. The Serrano language is part of the Serran division of a branch of the Takic family of the Uto-Aztecan

linguistic stock (Mithun 2006:539, 543). The two Serran languages, Kitanemuk and Serrano, are closely related. Kitanemuk lands were northwest of Serrano lands. Serrano was originally spoken by a relatively small group located within the San Bernardino and Sierra Madre mountains, and the term "Serrano" has come to be ethnically defined as the name of the people in the San Bernardino Mountains (Kroeber 1925:611). The Vanyume, who lived along the Mojave River and associated Mojave Desert areas and are also referred to as the Desert Serrano, spoke either a dialect of Serrano or a closely related language (Mithun 2006:543). Year-round habitation tended to be located on the desert floor, at the base of the mountains, and up into the foothills, with all habitation areas requiring year-round water sources (Bean and Smith 1978; Kroeber 1908).

Most Serrano lived in small villages located near water sources (Bean and Smith 1978:571). Houses measuring 12 to 14 feet in diameter were domed and constructed of willow branches and tule thatching and occupied by a single extended family. Many of the villages had a ceremonial house, used both as a religious center and the residence of the lineage leaders. Additional structures within a village might include granaries and a large circular subterranean sweathouse. The sweathouses were typically built along streams or pools. A village was usually composed of at least two lineages. The Serrano were loosely organized along patrilineal lines and associated themselves with one of two exogamous moieties or "clans"—the Wahiyam (coyote) or the Tukum (wildcat) moiety.

The subsistence economy of the Serrano was one of hunting and collecting plant goods, with occasional fishing (Bean and Smith 1978:571). They hunted large and small animals, including mountain sheep, deer, antelope, rabbits, small rodents, and various birds, particularly quail. Plant staples consisted of seeds; acorn nuts of the black oak; piñon nuts; bulbs and tubers; and shoots, blooms, and roots of various plants, including yucca, berries, barrel cacti, and mesquite. The Serrano used fire as a management tool to increase yields of specific plants, particularly chía.

Trade and exchange were important aspects of the Serrano economy. Those living in the lower-elevation, desert floor villages traded foodstuffs with people living in the foothill villages who had access to a different variety of edible resources. In addition to inter-village trade, ritualized communal food procurement events, such as rabbit and deer hunts and piñon, acorn, and mesquite nut-gathering events, integrated the economy and helped distribute resources that were available in different ecozones.

Contact between Serrano and Europeans was relatively minimal prior to the early 1800s. As early as 1790, however, Serrano began to be drawn into mission life (Bean and Vane 2002). More Serrano were relocated to Mission San Gabriel in 1811 after a failed indigenous attack on that mission. Most of the remaining western Serrano were moved to an asistencia built near Redlands in 1819 (Bean and Smith 1978:573).

A smallpox epidemic in the 1860s killed many indigenous southern Californians, including many Serrano (Bean and Vane 2002). Oral history accounts of a massacre in the 1860s at Twentynine Palms may have been part of a larger American military campaign that lasted 32 days (Bean and Vane 2002:10). Surviving Serrano sought shelter at Morongo with their Cahuilla neighbors; Morongo later became a reservation (Bean and Vane 2002). Other survivors followed the Serrano leader Santos Manuel down from the mountains and toward the valley floors and eventually settled what later became the San Manuel Band of Mission Indians Reservation, formally established in 1891.

The Morongo Band of Mission Indians of the Morongo Reservation, established through presidential executive orders in 1877 and 1889, includes both Cahuilla and Serrano members. Established in 1893, the San Manuel Band of Mission Indians Reservation included 84 Serrano tribal members in

2004. Both Morongo and San Manuel are federally recognized tribes. People of both reservations participate in cultural programs to revitalize traditional languages, knowledge, and practices.

Tataviam

Like the Kitenamuk, the Tataviam were not well documented by early ethnographers. However, researchers today generally agree that the Tataviam spoke an Uto-Aztecan language, most likely a Takic language (Hudson 1982). Tataviam territory included the upper Santa Clara River from Piru Creek eastward, extending over the Sawmill Mountains to the southwest edge of the Antelope Valley (King and Blackburn 1978). Their territory was bounded on the west and north by various Chumash groups; on the south by the Tongva (Gabrielino and Fernandeño, though some Tataviam were also identified as Fernandeño because of their association with Mission San Fernando); and to the east by the Kitanemuk and Serrano.

Exogamous marriage was common, with Tataviam intermarrying with Tongva, Chumash, and Kitanemuk neighbors (King and Blackburn 1978). King and Blackburn (1978) hypothesize that the Tataviam relied on yucca as a food source more than their neighbors because of the predominance of large south-facing slopes within their territory. Additional food resources included acorns, sage seeds, berries, small mammals, and deer. Settlement size ranged from 10 to 200 persons, with small settlements often ancillary to large villages. Archaeological evidence from Bower's Cave – located between Newhall and Piru – combined with ethnographic evidence suggest their ritual organization was similar to both the Chumash and Gabrielino, whose lifestyles were distinct from one another. By 1810 the Tataviam were virtually completely "missionized" through baptism at Mission San Fernando.

4.18.2 Regulatory Setting

State

California Register of Historical Resources

A tribal cultural resource could be considered significant if it is eligible for listing in the California Register of Historical Resources (CRHR). As discussed in Section 4.5, *Cultural Resources*, the CRHR helps government agencies identify, evaluate, and protect California's historical resources, and indicates which properties are to be protected from substantial adverse change (Public Resources Code [PRC] Section 5024.1[a]). The CRHR is administered through the State Office of Historic Preservation, which is part of the California State Parks system.

Assembly Bill 52

California Assembly Bill (AB) 52 of 2014, which was enacted on July 1, 2015, expands CEQA by defining a new resource category, "tribal cultural resources." AB 52 establishes that "a project with an effect that may cause a substantial adverse change in the significance of a tribal cultural resource is a project that may have a significant effect on the environment" (PRC Section 21084.2). It further states that the lead agency shall establish measures to avoid impacts that would alter the significant characteristics of a tribal cultural resource, when feasible (PRC Section 21084.3).

PRC Section 21074(a) defines "tribal cultural resources" as either of the following:

(1) Sites, features, places, cultural landscapes, sacred places, and objects with cultural value to a California Native American tribe that are either of the following:

(A) Included or determined to be eligible for inclusion in the CRHR.

(B) Included in a local register of historical resources as defined in Public Resources Code Section 5020.1(k).

(2) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in Public Resources Code Section 5024.1(c). In applying these criteria, the lead agency shall consider the significance of the resource to a California Native American tribe. (PRC Section 21074[a])

AB 52 also establishes a formal consultation process for California tribes regarding those resources. The consultation process must be completed before a CEQA document can be certified. Under AB 52, lead agencies are required to "begin consultation with a California Native American tribe that is traditionally and culturally affiliated with the geographic area of the proposed project." Native American tribes to be included in the process are those that have requested notice of projects proposed within the jurisdiction of the lead agency.

Senate Bill 18

Senate Bill (SB) 18 recognizes that protection of traditional tribal cultural places is important to all tribes, whether federally recognized or not, and it provides all California Native American tribes with the opportunity to participate in consultation with city and county governments for this purpose (Governor's Office of Planning and Research [OPR] 2005).

SB 18 establishes responsibilities for local governments to contact, provide notice to, refer plans to, and consult with tribes. The provisions of SB 18 apply only to city and county governments, and not to other public agencies. The following list briefly identifies the contact and notification responsibilities of local governments, in sequential order of their occurrence (OPR 2005):

- Prior to the adoption or any amendment of a general plan or specific plan, a local government must notify the appropriate tribes (on the contact list maintained by the NAHC) of the opportunity to conduct consultations for the purpose of preserving, or mitigating impacts to, cultural places located on land within the local government's jurisdiction that is affected by the proposed plan adoption or amendment. Tribes have 90 days from the date on which they receive notification to request consultation, unless a shorter timeframe has been agreed to by the tribe (Government Code Section 65352.3).
- Prior to the adoption or substantial amendment of a general plan or specific plan, a local government must refer the proposed action to those tribes that are on the NAHC contact list and have traditional lands located within the city or county's jurisdiction. The referral must allow a 45 day comment period (Government Code Section 65352). Notice must be sent regardless of whether prior consultation has taken place. Such notice does not initiate a new consultation process.
- Local governments must send notice of a public hearing, at least 10 days prior to the hearing, to tribes who have filed a written request for such notice (Government Code Section 65092).

Under SB 18, local governments must consult with tribes under two circumstances (OPR 2005):

- On or after March 1, 2005, local governments must consult with tribes that have requested consultation in accordance with Government Code Section 65352.3. The purpose of this consultation is to preserve, or mitigate impacts to, cultural places that may be affected by a general plan or specific plan amendment or adoption.

- On or after March 1, 2005, local governments must consult with tribes before designating open space, if the affected land contains a cultural place and if the affected tribe has requested public notice under Government Code Section 65092. The purpose of this consultation is to protect the identity of the cultural place and to develop treatment with appropriate dignity of the cultural place in any corresponding management plan (Government Code Section 65562.5).

In addition to the notice and consultation requirements outlined above, SB 18 amended Government Code Section 65560 to allow the protection of cultural places in the open space element of the general plan. SB 18 also amended Civil Code Section 815.3 and adds California Native American tribes to the list of entities that can acquire and hold conservation easements. Tribes on the contact list maintained by the NAHC now have the ability to acquire, on terms mutually satisfactory to the tribe and the landowner, conservation easements for the purpose of protecting their cultural places (OPR 2005).

4.18.3 Existing Conditions

Assembly Bill 52 and Senate Bill 18 Consultation

In accordance with AB 52 and SB 18, the City of Palmdale notified the San Fernando Band of Mission Indians, San Manuel Band of Mission Indians, Serrano Nation of Mission Indians, the Fernandeño Tataviam Band of Mission Indians, the Morongo Band of Mission Indians, and the Quechan Tribe of the Fort Yuma Reservation of the Plan update and invited them to participate in consultation. The City of Palmdale prepared and mailed letters on July 1, 2021.

On July 9, 2021 the Quechan Tribe of the Fort Yuma Reservation notified the City that they have no comments on the Plan and defer to other local Tribes. No further consultation or communication occurred.

On July 13, 2021 the San Manuel Band of Mission Indians responded, noting that the Planning Area included Serrano ancestral territory and requesting additional information concerning inclusion of plans for interpretative sites, museums, or other cultural centers in the Plan or references to archaeological or cultural resources. A consultation meeting was held on September 13, 2021. Following the consultation, the City provided background documents for the General Plan and EIR and no further consultation was requested by the San Manuel Band of Mission Indians.

On August 3, 2021 the Fernandeño Tatviam Band of Mission Indians requested consultation to incorporate Tribal perspectives into environmental review and management protocols that are inclusive of Tribes. A consultation meeting was held on September 27, 2021. Following the consultation, the City provided background documents for the General Plan and EIR and no further consultation was requested by the Fernandeño Tatviam Band of Mission Indians.

4.18.4 Impact Analysis

Methodology and Significance Thresholds

As part of the process of identifying Native American cultural resources within or near the Planning Area, the City of Palmdale consulted the NAHC contact list of eight Native American individuals or tribal organizations that may have knowledge of cultural resources in or near the Planning Area. In addition, Assembly Bill (AB) 52 letters for the City (Appendix E) addressed to each of the NAHC-listed contacts were sent on July 1, 2021 inviting tribes to consult with the City of Palmdale on the preparation of the Plan.

According to CEQA Guidelines Appendix G, an impact on Tribal Cultural Resources from the proposed Plan would be significant if the following applies:

1) Would the project cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is:
   a) Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or
   b) A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe.

Threshold 1:	Would the Plan cause a substantial adverse change in the significance of a tribal cultural resource, defined in Public Resources Code section 21074 as either a site, feature, place, cultural landscape that is geographically defined in terms of the size and scope of the landscape, sacred place, or object with cultural value to a California Native American tribe, and that is: a. Listed or eligible for listing in the California Register of Historical Resources, or in a local register of historical resources as defined in Public Resources Code section 5020.1(k), or b. A resource determined by the lead agency, in its discretion and supported by substantial evidence, to be significant pursuant to criteria set forth in subdivision (c) of Public Resources Code Section 5024.1. In applying the criteria set forth in subdivision (c) of Public Resource Code Section 5024.1, the lead agency shall consider the significance of the resource to a California Native American tribe?

Impact TCR-1 DEVELOPMENT CARRIED OUT UNDER THE PLAN MAY IMPACT UNIDENTIFIED TRIBAL CULTURAL RESOURCES, BUT THESE IMPACTS WOULD BE REDUCED TO A LESS THAN SIGNIFICANT LEVEL WITH INCORPORATION OF MITIGATION MEASURES TCR-1 AND TCR-2.

Effects on tribal cultural resources can only be known once a specific project has been proposed because the effects are highly dependent on both the individual project site conditions and the characteristics of the proposed activity. New TCRs may be identified or established during implementation of the Plan which is expected to occur over many years. The Plan includes policies and implementation actions intended to reduce the impact of new development on tribal resources. These policies and actions include:

- **Goal CON-8: Protect historical and culturally significant resources, which contribute to the community's sense of history**.
  - **Policy CON-8.1: Historic landmark identification.** Identify and recognize historic landmarks from Palmdale's past.
  - **Policy CON-8.4: Preservation in new development.** Require that new development preserve significant historic, paleontological, or archaeological resources.

- **Policy CON-8.5: Tribal consultation**. Conduct Native American consultation consistent with the applicable regulations when new development is proposed in potentially culturally sensitive areas.
- **Policy CON-8.6: Discovery coordination with Tribal groups.** When human remains suspected to be of Native American origin are discovered, coordinate with the Native American Heritage Commission and any local Native American groups to determine the most appropriate course of action.
- **Policy CON-8.7: Cooperation with preservation entities**. Cooperate with private and public entities whose goals are to protect and preserve historic landmarks and important cultural resources.

Therefore, as specific projects are proposed, consultation with tribes under AB 52 would occur to determine if any TCRs may be impacted by specific projects. If TCRs are identified during AB 52 consultation, impacts to any such TCRs would be potentially significant unless mitigation is incorporated. The policy in the conservation element is deliberately broad and the following mitigation measures are intended to provide specificity in regard to evaluation of TCRs and mitigation-specific actions (including thresholds) that should be applied, which provide more detail to the agency regarding future actions.

Mitigation Measures

TCR-1 Native American Monitoring

Prior to the issuance of a grading permit for a project under the Plan that has the potential to impact a tribal cultural resource onsite, the City of Palmdale (City) shall ensure that the project applicant seeks the services of a tribal monitor(s) approved by the relevant tribes to provide Native American monitoring during ground-disturbing activities. This provision shall be included on the proposed project contractor's plans and specifications. Ground-disturbing activities are defined by the relevant tribes as activities that may include but are not limited to pavement removal, pot-holing or using an auger, grubbing, tree removals, borings, grading, excavation, drilling, and/or trenching within the project area. The project site shall be made accessible to the monitor(s), provided adequate notice is given to the construction contractor and that a construction safety hazard does not occur. The monitor(s) shall possess Hazardous Waste Operations and Emergency Response (HAZWOPER) certification. In addition, the monitor(s) shall be required to provide insurance certificates, including liability insurance.

If evidence of tribal cultural resources is found during ground-disturbing activities, the monitor(s) shall have the capacity to halt construction in the immediate vicinity of the find to recover and/or determine the appropriate plan of recovery for the resource in consultation with a qualified archaeologist. The recovery process shall not unreasonably delay the construction process and must be carried out consistent with CEQA and local regulations.

Construction activity shall not be contingent on the presence or availability of a monitor, and construction may proceed regardless of whether or not a monitor is present on site. The monitor shall complete daily monitoring logs that will provide descriptions of the day's activities and general observations and whether the Native American monitor believes they observed a TCR and what action they took. The on-site monitoring shall end when the project site grading and excavation activities are completed or prior to the completion if the monitor has indicated that the site has a low potential for tribal cultural resources.

TCR-2 Unanticipated Discovery of Tribal Cultural Resources

Upon discovery of any tribal cultural resources, the Native American monitor has the ability to halt construction activities in the immediate vicinity (within 50 feet) of the find until the find can be assessed. All tribal cultural resources unearthed during project construction activities shall be evaluated by the Native American monitor approved by the relevant tribes and a qualified archaeologist. Construction work shall be permitted to continue on other parts of the project site while evaluation and, if necessary, additional investigations and/or preservation measures take place (CEQA Guidelines Section15064.5(f)). If the resources are Native American in origin, the relevant tribes tribe shall coordinate with the landowner regarding treatment and curation of these resources. If a resource is determined by the qualified archaeologist to constitute a "historical resource" or "unique archaeological resource," time allotment and funding sufficient to allow for implementation of avoidance measures shall be made available through coordination between the relevant tribes and the project applicant. The treatment plan established for the resources shall be in accordance with California Environmental Quality Act (CEQA) Guidelines Section 15064.5(f) for historical resources and Public Resources Code (PRC) Sections 21083.2(b) for unique archaeological resources. Preservation in place (i.e., avoidance) shall be the preferred manner of treatment. If preservation in place is not feasible, treatment may include implementation of archaeological data recovery excavations to remove the resource along with subsequent laboratory processing and analysis.

Significance After Mitigation

Implementation of mitigation measures CUL-2 through CUL-8 in Section 4.5 *Cultural Resources*, and TCR-1 and TCR-2 would reduce impacts to archaeological resources to less than significant levels by ensuring the avoidance of archeological resources to the extent feasible, or by identifying, evaluating, and conducting data recovery archaeological resources that may be impacted by future projects in a timely manner.

4.18.5 Cumulative Analysis

Tribal cultural resources are regionally specific and determined by the consulting tribes. To ensure protection of tribal cultural resources, tribal cultural resource consultation in accordance with AB 52 would occur for project-specific activities that have the potential to affect tribal cultural resources when a project is identified. Cumulative impacts to tribal cultural resources would be less than significant with adherence to the General Plan policies addressing tribal resources listed in impact TCR-1 and incorporation of the mitigation measures TCR-1 and TCR-2, which apply to future projects carried out under the Plan.

4.19 Utilities and Service Systems

This section evaluates potential Plan impacts to water, wastewater, and solid waste service. Section 4.10, *Hydrology and Water Quality*, addresses potential impacts to storm drain infrastructure and surface water quality.

4.19.1 Environmental Setting

Water Supply

The City is part of the Palmdale Water District (PWD or District), which services approximately 187 square miles in northeastern Los Angeles County. A small, northwestern portion of the Planning Area is also served by Los Angeles County Water District No. 40 (LACWD 40), which purchases water from Antelope Valley-East Kern Water Agency (AVEK). PWD serves the central and southern portions of Palmdale while LACWD 40 serves areas both east and west of State Route 14. PWD provides retail and wholesale water supply services to the City and more than 30 unincorporated areas throughout the Antelope Valley. Residents receive their water from the California Aqueduct, the Littlerock Dam, and/or groundwater wells (Palmdale Water District 2017a).

Other water suppliers in and around Palmdale include Quartz Hill Water District, Littlerock Creek Irrigation District, various small mutual water companies, and private wells. These suppliers generally serve small portions of the City or areas adjacent to city limits.

Groundwater

According to the California Department of Water Resources (DWR), the Antelope Valley Groundwater Basin encompasses 1,580 square miles of Los Angeles County, Kern County, and, less prominently, San Bernardino County, and has a storage capacity of approximately 70,000,000-acre feet (DWR 2004). The Antelope Valley Groundwater Basin is comprised of two primary aquifers: (1) the upper (principal) aquifer and (2) the lower (deep) aquifer. The U.S. Geological Survey has identified a series of subbasins in the Antelope Valley Groundwater Basin. The Planning Area is serviced by PWD and LACWD 40. PWD's service area overlies the Lancaster, Buttes, and Pearland groundwater subbasins. LACWD 40's service area overlies West Antelope, Finger Buttes, Neenach, Willow Springs, Oak Creek, Gloster, Chaffee, Peerless, and North Muroc, in addition to PWD's three subbasins (LACWD 40 2021). The boundaries between the three subbasins are determined by discontinuity or by steepening of the groundwater surface as measured in wells (PWD 2020).

Groundwater has accounted for 35 percent of PWD water supply since 2016. PWD has 22 active groundwater wells drawing from the Antelope Valley Aquifer (PWD 2020). PWD is temporarily entitled to a share of a federal groundwater right, of up to 1,450 AFY until 2025. Additionally, PDW will begin receiving a groundwater production right of 2,770 AFY starting in 2023. PDW has produced an average of 6,380-acre feet of groundwater per year since 2015. LACWD 40 pumped a total of 14,266 AFY from the Antelope Valley Groundwater Basin in 2020, and average of 15,550 AFY per year between 2016 and 2020 (LACWD 40 2021).

The Lancaster subbasin is in the center of the Antelope Valley Groundwater Basin with its southernmost portions lying within PWD service area. The Buttes subbasin is located southeast of the Lancaster subbasin where a small portion underlies PWD service area. PWD does not currently have any wells or pump water from the Buttes subbasin. The Pearland subbasin is also located southeast of the Lancaster Subbasin where the northern portion of the subbasin lies within PWD

service area. PWD operates 10 wells in the Pearland subbasin, with a pumping capability of 3,500 gallons per minute (gpm). Additionally, PWD operates 10 wells in the Lancaster subbasin, with a pumping capability of approximately 12,500 gpm (PWD 2020).

The San Andreas rift zone, also known as the San Andreas Fault, has two general groundwater bearing areas. These areas generally lie east and west of the intersection of Pearblossom Highway and Barrel Springs Road in the south-central part of the Planning Area. While the area to the east has poor groundwater production potential, the area to the west has greater groundwater bearing deposits. PWD has four wells in the San Andreas rift zone, two in the western area and two in the eastern area (PWD 2020).

PWD and LACWD 40 are involved in the adjudication of groundwater rights for the Antelope Valley Groundwater Basin that began in 2004. The adjudication allows groundwater banking between entities and allows PWD and LACWD 40 to take any additional groundwater banked. In late 2015, PWD and LACWD 40 as well as the majority of parties involved, agreed to a stipulated judgment for the adjudication of the Antelope Valley Groundwater Basin. Per the judgment, PWD is receiving a groundwater production right of 2,770 AFY. Prior to the judgment, PWD had an unquantified right to pump water for beneficial use and assumed projected pumping volumes of up to 12,000 AFY based on pumping capacity. In addition to its groundwater production right, PWD is entitled to a share of the unused federal reserved right. Currently, the average amount of PWD share of unused Federal Reserved Water Right Production is 1,450 AFY. PWD is also entitled to a pumping allocation for return flow credit of imported water used. Based on the analyses conducted in planning reports return flow credits are projected to range between approximately 4,900 AFY and 6,000 AFY through 2040 (PWD 2020). LACWD 40 was given the right to pump 6,789 AFY, use approximately 3,500 AFY of unused federal reserve rights, and return flows equivalent to 39 percent of LACWD 40's five-year average of purchased SWP water supply (39 percent of 26,657 AFY or 10,400 AFY). LACWD 40 also has the right to lease 2,600 AFY of groundwater rights from AVEK. Overall, LACWD 40's groundwater rights total of 23,289 AFY (LACWD 40 2021).

Antelope Valley Basin is exempt from the requirements of the Sustainable Groundwater Management Act (SGMA), which was passed by the State of California in 2014 and sets forth a statewide framework to help protect groundwater resources over the long-term (DWR 2022). The PWD has not adopted a groundwater management plan, and no regional groundwater management plan currently exists for the Basin (PWD 2020).

The DWR's Bulletin 118, California's Groundwater (2019), does not characterize the groundwater basin as over drafted, however it was deemed a 'low-priority' basin by DWR (PWD 2020).

Surface Water

The Littlerock Dam and Reservoir, just south of the Planning Area in the San Gabriel Mountains, serves as PWD local surface water supply. The Littlerock Dam and Reservoir receives water from natural runoff of the San Gabriel mountains, and intercepts flows from Littlerock and Santiago Canyons. The primary tributaries that supply water to the PDW service area are the Littlerock and Big Rock Creeks, which flow north from the San Gabriel Mountains (PWD 2020). The 65 square mile watershed is in the Angeles National Forest. The Littlerock Dam has a capacity of approximately 3,500-acre feet (PWD 2020).

Imported Water

The City obtains imported surface water from northern California, transported via the State Water Project (SWP) into Lake Palmdale. PWD began receiving SWP water in 1985 from the East Branch of the California Aqueduct, which runs through the District's service area. The imported water mixes with water from Littlerock Reservoir in Lake Palmdale prior to being treated. The District has a SWP contract Table A Amount (the maximum annual amount of water they can receive) for 21,300 AFY, but the delivered volume is typically lower in drought years. In the last ten years, PWD has received between 41 percent and 77 percent of its Table A Amount (PWD 2016).

LACWD 40 purchases water from AVEK, which receives surface water from the State Water Project (SWP) (LACWD 40 2021). AVEK has a maximum of 144,844 acre feet per year (AFY) available from the SWP each year, of which they allocate about 58 percent (LACWD 40 2021).

Distribution

The District's distribution system is divided into seven main pressure zones, which contain the Littlerock Dam and Reservoir, Lake Palmdale, groundwater wells, and the SWP service connection, which together comprise the City's total water supply. PWD operates 23 active wells, 39 booster wells, and 17 booster pump stations, which source an average of 10,300 AFY of groundwater for the District's service area. Imported water from the SWP connection and surface water from the Littlerock Reservoir are combined in Lake Palmdale and fed into the Leslie O. Carter Water Treatment Plant, the District's only water treatment plant. The plant can purify up to 30 million gallons of water per day (mgd). Treated water is conveyed throughout the City and to unincorporated areas via 414 miles of distribution pipelines, varying in diameter from 4 to 42 inches. 21 storage reservoirs can store up to 50 million gallons of water (Palmdale Water District 2016).

Recycled Water

In 2013, the City of Palmdale and PWD created the Palmdale Recycled Water Authority (PRWA). PRWA studies, distributes, and manages recycled water resources created by two sanitation districts in Los Angeles County and uses recycled water for irrigation and groundwater recharge. PRWA also finances the acquisition, construction, and installation of recycled water facilities, irrigation systems, and recharge projects in and around Palmdale. PRWA currently manages the Palmdale Groundwater Recharge and Recovery Project, which stores underground recycled water from the sanitation districts and untreated water from the California Aqueduct (Palmdale Water District 2019).

Wastewater

The Palmdale Utilities Services Division (PUSD or Division) manages the City's wastewater discharge and sewage system. The Division prepared a Sewer System Management Plan (SSMP) in 2014 to comply with the State Water Resources Control Board (SWRCB) Order 2006-0003: Statewide General Waste Discharge Requirements for Sanitary Sewer Systems. The City owns, operates, and maintains a wastewater collection system originally managed by the Los Angeles County Department of Public Works Sewer Maintenance District. PUSD manages wastewater collection for the City's entire service area, which encompasses approximately 105 square miles. Unincorporated areas surrounding Palmdale fall under Los Angeles County standards. The City's sewer system includes 396 miles of pipeline and 8,441 manholes, most of which are under 30 years in structure age. Most of the collected wastewater flows to the Palmdale Water Reclamation Plant (PWRP), which is managed in Los Angeles County Sanitation District #20 and can reclaim up to 12 mgd. Some

wastewater is sent to the Lancaster Water Reclamation Plant, located approximately 16 miles north of the City (City of Palmdale, 2014).

The Palmdale Water Reclamation Plant provides primary, secondary, and tertiary water treatment with a design capacity of 12 mgd. Treatment includes preliminary mechanically cleaned bar screens, aerated grit chambers, and settling tanks; secondary anaerobic digester, air compressors, and clarifier tanks; and tertiary chemical treatments with aqueous ammonia, sodium hypochlorite, and chlorine contact tanks. The fully treated water is then reused in municipal and agricultural settings or stored in recycled water reservoirs (Los Angeles County 2021).

Stormwater

The City of Palmdale Department of Public Works maintains the City's stormwater system. The Department operates closed conduits, open channels, drainage basins, dry wells, and two dry creeks as natural stormwater conveyances. Because of the City's arid climate, the stormwater system remains dry for most of the year and only captures stormwater during rainy periods (City of Palmdale 2003).

Solid Waste

The City contracts with Waste Management to provide complete residential and commercial trash, organic waste processing, and recycling services, including residential curbside trash, recycling and yard waste collection, pickup of bulky items, and electronic waste pickup, for all single and multi-family homes, as well as businesses (City of Palmdale 2021a).

Like all municipalities, Palmdale must meet the solid waste diversion mandates established by the California Integrated Waste Management Act under State Assembly Bill 939 (AB 939) in 1989. AB 939 mandates that all cities reduce annual waste per capita by 50 percent. Palmdale is working toward compliance with all state recycling requirements, including legislation that imposes Mandatory Commercial Recycling on all businesses that generate at least four cubic yards of trash per week and all multi-family dwellings that have 5 units or more. City waste haulers send all residential and commercial solid waste to the Antelope Valley Recycling and Disposal Facility, located on the west side of the City approximately one mile from the Antelope Valley Freeway.

The City also complies with AB 1826, California's Mandatory Commercial Organics Recycling law, which requires businesses and multi-family dwellings to recycle their organic waste. Organic waste includes food waste, green waste, landscape and pruning waste, nonhazardous wood waste, and food-soiled waste that is mixed with food waste. Through the City, Waste Management offers organic waste recycling services for both businesses and multi-family dwellings (City of Palmdale 2018).

According to the California Department of Resources Recycling and Recovery's (CalRecycle's) Disposal Reporting System, in the fourth quarter of 2019, solid waste generated in Palmdale was disposed of at eight different landfills, recycling centers, and waste recovery and conversion facilities, as summarized below.

Table 4.19-1 City Service Landfill Capacity

Solid Waste Facility	Tonnage from Palmdale	Total Facility Capacity (cubic yards)	Percent Capacity Remaining	Ceased Operation Year
Antelope Valley Public Landfill	26,416.63	30,200,000	59%	2044
Lancaster Landfill and Recycling Center	866.77	27,700,000	52%	2044
McKittrick Waste Treatment Site	680.57	5,474,900	14%	2059
Simi Valley Landfill and Recycling Center	261.37	119,600,000	69%	2063
El Sobrante Landfill	41.94	209,910,000	69%	2051
Sunshine Canyon City/County Landfill	11.59	140,900,000	55%	2037
Chiquita Canyon Sanitary Landfill	4.70	110,366,000	55%	2047
Victorville Sanitary Landfill	0.35	93,400,000	85%	2047
Total	**28,283.92**			

CalRecycle SWIS Facility/Sire Activity Details (CalRecycle 2021b)

Sources: CalRecycle Transported Solid Waste – Palmdale (CalRecycle 2021a)

- **Antelope Valley Public Landfill,** also known as the Antelope Valley Recycling and Disposal Facility, is located at 1200 W. City Ranch Road, Palmdale, CA. It encompasses 185 acres of land with 125 acres permitted for waste disposal. The facility accepts municipal solid waste, asphalt/concrete, dirt, wood waste and green waste, construction and demolition waste, discarded appliances, tires, and electronic waste (Waste Management 2021a).
- **Lancaster Landfill and Recycling Center** is located at 600 East Avenue F, Lancaster, CA, covering 276 acres of land with 209 acres permitted for waste disposal. The facility accepts municipal solid waste, asphalt/concrete, dirt, wood waste and green waste, construction and demolition waste, discarded appliances, tires, and electronic waste (Waste Management 2021b).
- **McKittrick Waste Treatment Site** is located at 56533 Highway 58 West, McKittrick, CA. The site accepts asbestos (non-friable), auto-shredder fluff, construction and demolition waste, drum management, and industrial and special waste (Waste Management 2021c).
- **Simi Valley Landfill and Recycling Center** is located at 2801 Madera Road, Simi Valley, CA. The facility is permitted to accept up to 3,000 tons of refuse and 6,250 tons of recyclable materials per day. On average, the facility recycles approximately 25% of all tons accepted. The landfill accepts municipal solid waste, appliances, tires, construction and demolition waste, dirt, asphalt/concrete, mixed inerts, and wood waste and green waste (Waste Management 2021d).
- **El Sobrante Landfill** is located at 10910 Dawson Canyon Road, Corona, CA. The facility can process up to 70,000 tons of waste per week and primarily serves Riverside County. The site also is managed as a wildlife habitat (Waste Management 2021e).
- **Sunshine Canyon City/County Landfill** is located on Sunshine Canyon Road in Sylmar, CA. Managed by Republic Services, this facility has 363 acres permitted for disposal and receives approximately 9,000 tons of waste per day. The site also handles about one-third of the daily waste of Los Angeles County (Sunshine Canyon Landfill, 2021).
- **Chiquita Canyon Sanitary Landfill** is located at 29201 Henry Mayo Drive, Castaic, CA. This landfill, owned and operated by Waste Connections, is 639 acres and accepts municipal solid waste, residential and commercial waste, yard waste, green waste, fill soil, and construction and demolition waste (Chiquita Canyon 2021).

- **Victorville Sanitary Landfill** is located at 18600 Stoddard Wells Road, Victorville, CA. The facility is managed by the County of San Bernadino's Department of Public Works (San Bernadino County 2021).

Recyclables are collected in separate containers in Palmdale at single family residences, some multifamily residences, businesses, and agencies. Waste Management, the City's waste hauler, achieves most of its waste diversion through mixed waste processing at materials recovery facilities. In accordance with AB 939, recyclables are sorted, and the residual waste is transferred to the landfill. In 2014 the City of Palmdale disposed of 40,768 tons of residential waste and 43,942 tons of commercial waste. Palmdale's waste generation is taken into account in the County of Los Angeles Countywide Integrated Waste Management Plan, which projects future waste generation and disposal facility needs.

Electricity

Southern California Edison (SCE) provides electricity to the City of Palmdale and surrounding areas. In 2020, SCE generated approximately 83,533 gigawatts of electricity (California Energy Commission 2020). As of 2019, approximately 35 percent of SCE's power mix was sourced from approximately 35 percent renewable resources, including solar, wind, eligible hydroelectric, and geothermal. Approximately 32 percent of SCE's power mix was purchased through open market transactions, and the remainder was sourced from natural gas, large hydroelectric, and nuclear resources (SCE 2019).

Natural Gas

Southern California Gas Company (SoCal Gas) provides natural gas to the City of Palmdale and surrounding areas. In 2020, SoCal Gas produced approximately 5,231 million therms of natural gas (California Energy Commission 2020b). Most of the gas transmitted by SoCal Gas is sourced from basins in Texas and New Mexico (SoCal Gas 2022).

Telecommunications

Telecommunication utilities, including phone, internet, and television, are mainly a privately owned enterprise and are offered by a variety of companies in Palmdale and the surrounding area. The number of providers offering the service, the type of service available, and the transmission speed of the service all affect the quality of telecommunications. This approach differs from that of most other utilities, which are generally publicly owned or offered by limited or individual service providers in a given area. However, the City of Palmdale has formed an agreement with SiFi Networks, a fiberoptic cable internet provider, to install an underground fiberoptic network within public and private streets of Palmdale. This project has already been considered under CEQA through a Categorical Exemption in 2020 (City of Palmdale 2020). Telecommunications providers will usually complete infrastructure and other service improvements for an area as the need arises to meet customer demand.

4.19.2 Regulatory Setting

a. Water Supply

Federal

Clean Water Act

The federal Clean Water Act, enacted by Congress in 1972 and amended several times since, is the primary federal law regulating water quality in the United States and forms the basis for several State and local laws throughout the country. The Act established the basic structure for regulating discharges of pollutants into the waters of the United States. The Clean Water Act gave the U.S. Environmental Protection Agency the authority to implement federal pollution control programs, such as setting water quality standards for contaminants in surface water, establishing wastewater and effluent discharge limits for various industry contaminants in surface water, establishing wastewater and effluent discharge limits for various industry categories, and imposing requirements for controlling nonpoint-source pollution. At the federal level, the Clean Water Act is administered by the U.S. Environmental Protection Agency and U.S. Army Corps of Engineers. At the State and regional levels in California, the act is administered and enforced by the State Water Resources Control Board (SWRCB) and the nine Regional Water Quality Control Boards (RWQCB).

Clean Water Act Section 402

Section 402 of the Clean Water Act requires that all construction sites on an acre or greater of land, as well as municipal, industrial and commercial facilities discharging wastewater or stormwater directly from a point source, such as a pipe, ditch, or channel, into a surface water of the United States must obtain permission under the NPDES permit. All NPDES permits are written to ensure that the surface water receiving discharges will achieve specified water quality standards.

Title 40 of the Code of Federal Regulations

Title 40 of the Code of Federal Regulations (CFR), Part 258 (Resource Conservation and Recovery Act RCRA, Subtitle D) contains regulations for municipal solid waste landfills and requires states to implement their own permitting programs incorporating the federal landfill criteria. The federal regulations address the location, operation, design, groundwater monitoring, and closure of landfills.

State

California Department of Water Resources

The California Department of Water Resources is responsible for preparing and updating the California Water Plan, which is a policy document that guides the development and management of State water resources. The plan is updated every five years to reflect changes in resources and urban, agricultural, and environmental water demands. The California Water Plan suggests ways of managing demand and augmenting supply to balance water supply with demand.

Sustainable Groundwater Management Act

In September 2014, Governor Brown signed legislation requiring that California's critical groundwater resources be sustainably managed by local agencies. The Sustainable Groundwater

Management Act gives local agencies the power to sustainably manage groundwater and requires groundwater sustainability plans to be developed for medium- and high-priority groundwater basins.

Urban Water Management Planning Act

In 1983 the California Legislature enacted the Urban Water Management Planning Act (Water Code Section 10610–10656). The Act states that every urban water supplier that provides water to 3,000 or more customers, or that provides over 3,000 acre-feet annually, should make every effort to ensure the appropriate level of reliability in its water service sufficient to meet the needs of its various categories of customers during normal, dry, and multiple dry years. The Act requires that urban water suppliers adopt an urban water management plan (UWMP) at least once every five years and submit them to the Department of Water Resources. Noncompliant urban water suppliers are ineligible to receive funding pursuant to Division 24, commencing with Section 78500, or Division 26, commencing with Section 79000, or receive drought assistance from the State until the UWMP is submitted and deemed complete pursuant to the Urban Water Management Planning Act.

Senate Bills 610 and 221, Water Supply Assessment and Verification

Senate Bills (SB) 610 and 221 amended State law, effective January 1, 2002, to improve the link between the information on water supply availability and certain land use decisions made by cities and counties. Both statutes require detailed information regarding water availability to be provided to city and county decision-makers prior to approval of specified large development projects with greater than 500 dwelling units or 500,000 square feet of commercial space. Both statutes also require this detailed information to be included in the administrative record that serves as the evidentiary basis for an approval action by the city or county on such projects. Under SB 610 water assessments must be furnished to local governments for inclusion in any environmental documentation for certain projects as defined in Water Code 10912 subject to CEQA. Under SB 221 approval by a city or county of certain residential subdivisions requires an affirmative written verification of sufficient water supply.

Water Conservation Act of 2009 (SBx7-7)

Due to reductions of water available from the San Joaquin Delta, the Legislature drafted the Water Conservation Act of 2009 (SBx7-7) to protect statewide water sources. The legislation called for a 20 percent reduction in water use in California by the year 2020. The legislation amended the Water Code to call for 2020 and 2015 water use targets in the 2010 UWMPs, updates or revisions to these targets in the 2015 UWMPs and allows DWR to enforce compliance to the new water use standards. Beginning in 2016, failure to comply with interim and final targets will make the City ineligible for grants and loans from the State. In addition to an overall statewide 20 percent water use reduction, the objective of SBx7-7 is to reduce water use within each hydrologic region in accordance with the agricultural and urban water needs of each region. Currently, DWR recognizes 10 separate hydrologic regions. Each hydrologic region has been established for planning purposes and corresponds to the State's major drainage areas. The City of Palmdale is located in the South Lahontan Hydrologic Region, which encompasses over 17 million acres of land and includes portions of Inyo, Mono, San Bernadino, Kern, and Los Angeles Counties. The ten-year baseline for per capita water use for this region was determined to be 231 gallons of water per capita per day (GPCD), and PWD was able to meet their 2020 target of reducing water usage to 165 GPCD, or a 20% reduction (Palmdale Water District 2020).

Model Water Efficient Landscape Ordinance (Assembly Bill 1881)

The updated Model Water Efficient Landscape Ordinance required cities and counties to adopt landscape water conservation ordinances by January 31, 2010 or to adopt a different ordinance that is at least as effective in conserving water as the updated Model Water Efficient Landscape Ordinance (WELO). The City of Palmdale has adopted a WELO (Ordinance 1475, City of Palmdale Municipal Code, Chapter 14.05, *Water Efficient Landscape)* to reduce the amount of water used in landscaping. This ordinance brings the City into compliance with California Assembly Bill 1881.

Executive Order B-29-15 required the State to revise the Model WELO to increase water efficiency standards for new and retrofitted landscapes through more efficient irrigation systems, greywater usage, on-site stormwater capture, and by limiting the portion of landscapes that can be covered in turf. It also requires reporting on the implementation and enforcement of local ordinances, with required reports due by December 31, 2015 (California Department of Water Resources [DWR] 2017).

Regional and Local

The main sources of water supply for the City are groundwater produced from the Antelope Valley Groundwater Basin, surface water from the Littlerock Reservoir, and imported SWP water. The City has the legal right to pump from the Antelope Valley Groundwater Basin and has had a contract with the State Water Project since 1985. The City's WELO requires that all applicable landscaping and irrigation projects, including certain new development projects, any project with an aggregate landscape area of 2,500 square feet, or projects using treated or untreated graywater or rainwater, are required to prepare landscape and irrigation design plans (City of Palmdale 2015).

Urban Water Management Plan

The 1983 Urban Water Management Act mandates that all urban water suppliers prepare an Urban Water Management Plan (UWMP), as described in California Water Code Sections 10610 through 10657. A UWMP is a planning tool that guides the actions of urban water suppliers, and it provides perspective on water supply issues to water managers and the public. PWD developed a UWMP in 2020 in compliance with the requirements of these regulations, that the UWMP address water supply planning over at least a 20-year period, identify and quantify existing and projected water supplies, and implement conservation and efficient use of urban water supplies (Palmdale Water District 2020a). LACWD 40 also prepared a UWMP in 2020 in compliance with these regulations.

Water Shortage Contingency Plan

In June 2021, PWD adopted a Water Shortage Contingency Plan (WSCP) as part of its Urban Water Management Plan. The WSCP serves to guide the actions of the District during water shortage conditions and aims to improve preparedness for droughts and other impacts on water supplies by describing the process used to address varying degrees of water shortages. An Annual Assessment of water supply and demand will be conducted for the WSCP and submitted to the Department of Water Resources (Palmdale Water District 2020).

b. Wastewater

State

Porter-Cologne Water Quality Control Act (California Water Code)

The State of California is authorized to administer Federal or State laws regulating water pollution within the State. The Porter-Cologne Water Quality Control Act (Water Code §§ 13000, *et seq*.) includes provisions to address requirements of the Clean Water Act. These provisions include National Pollutant Discharge Elimination System (NPDES) permitting, dredge and fill programs, and civil and administrative penalties. The Porter-Cologne Act is broad in scope and addresses issues relating to the conservation, control, and utilization of the water resources of the State. Additionally, the Porter-Cologne Act states that the quality of all the waters of the State, including groundwater and surface water, must be protected for the use and enjoyment by the people of the State.

In California, the NPDES program is administered by the SWRCB through the Regional Water Quality Control Boards (RWQCB) and requires municipalities to obtain permits that outline programs and activities to control wastewater and stormwater pollution. The federal Clean Water Act prohibits discharges of stormwater from construction projects unless the discharge is in compliance with an NPDES permit. The SWRCB is the permitting authority in California and adopted an NPDES General Permit for Stormwater Discharges Associated with Construction and Land Disturbance Activities, otherwise known as the Construction General Permit (Order 2009-0009, as amended by Orders 2010-0014-DWQ and 2012-006-DWQ). The Order applies to construction sites that include one or more acre of soil disturbance. Construction activities include clearing, grading, grubbing, excavation, stockpiling, and reconstruction of existing facilities involving removal or replacement. The Construction General Permit requires that the landowner and/or contractor file permit registration documents prior to commencing construction and then pay a fee annually through the duration of construction. These documents include a notice of intent, risk assessment, site map, stormwater pollution prevention plan (SWPPP), and signed certification statement. The SWPPP must include measures to ensure that: all pollutants and their sources are controlled; non-stormwater discharges are identified and eliminated, controlled, or treated; site Best Management Practices (BMPs) are effective and result in the reduction or elimination of pollutants in stormwater discharges and authorized non-stormwater discharges; and BMPs installed to reduce or eliminate pollutants after construction are completed and maintained. The Construction General Permit specifies minimum BMP requirements for stormwater control based on the risk level of the site. The Permit also specifies minimum qualifications for a qualified SWPPP developer and qualified SWPPP practitioner.

Title 22 of California Code of Regulations

Title 22 regulates the use of reclaimed wastewater. In most cases only disinfected tertiary water may be used on food crops where the recycled water would come into contact with the edible portion of the crop. Disinfected secondary treatment may be used for food crops where the edible portion is produced below ground and will not come into contact with the secondary effluent. Lesser levels of treatment are required for other types of crops, such as orchards, vineyards, and fiber crops.

The California Department of Public Health sets specific requirements for treated effluent reuse, or recycled water, through Title 22 of the California Code of Regulations. These requirements are primarily set to protect public health. The California Code of Regulations Title 22, Division 4, Chapter

3, Sections 60301 through 60355 are used to regulate recycled wastewater and are administered jointly by the California Department of Public Health and the RWQCBs. Title 22 contains effluent requirements for four levels of wastewater treatment, from un-disinfected secondary recycled water to disinfected tertiary recycled water. Higher levels of treatment have higher effluent standards, allowing for a greater number of uses under Title 22, including irrigation of freeway landscaping, pasture for milk animals, parks and playgrounds, and vineyards and orchards for disinfected tertiary recycled water.

c. Solid Waste

State

California Department of Resources Recycling and Recovery

California Department of Resources Recycling and Recovery (CalRecycle) oversees, manages, and monitors waste generated in California. CalRecycle provides limited grants and loans to help California cities, counties, businesses, and organizations meet the State waste reduction, reuse, and recycling goals. It also provides funds to clean up solid waste disposal sites and co-disposal sites, including facilities that accept hazardous waste substances and non-hazardous waste. CalRecycle develops, manages, and enforces waste disposal and recycling regulations, including AB 939 and SB 1016, both of which are described below.

Assembly Bill 939

AB 939 (Public Resources Code 41780) requires cities and counties to prepare integrated waste management plans and to divert 50 percent of solid waste from landfills beginning in calendar year 2000 and each year thereafter. AB 939 also requires cities and counties to prepare Source Reduction and Recycling Elements as part of the integrated waste management plans. These elements are designed to develop recycling services to achieve diversion goals, stimulate local recycling in manufacturing and stimulate the purchase of recycled products.

Assembly Bill 341

The purpose of AB 341 is to reduce GHG emissions by diverting commercial solid waste to recycling efforts and to expand the opportunity for additional recycling services and recycling manufacturing facilities in California. AB 341 required all businesses that generate four or more cubic yards of garbage per week and multi-family dwellings with five or more units to recycle by July 1, 2012. AB 341 also sets a statewide goal of 75 percent waste diversion.

Senate Bill 1016

SB 1016 requires that the 50 percent solid waste diversion requirement established by AB 939 be expressed in pounds per person per day. SB 1016 changed the CalRecycle review process for each municipality's Integrated Waste Management Plan. After an initial determination of diversion requirements in 2006 and establishing diversion rates for subsequent calendar years, the Board reviews a jurisdiction's diversion rate compliance in accordance with a specified schedule. Beginning January 1, 2018, the Board will be required to review a jurisdiction's source reduction and recycling element and hazardous waste element once every two years.

Senate Bill 1374

SB 1374 seeks to assist jurisdictions with diverting their construction and demolition waste based on a model diversion ordinance adopted by CalRecycle in March 2004. SB 1374 requires local jurisdictions to summarize their progress in diverting construction and demolition material, in addition to reporting the progress of diversion programs pursuant to AB 939.

Senate Bill 1383

SB 1383 establishes methane emissions reduction targets for California in an effort to reduce emissions of short-lived climate pollutants. Recognizing that 20 percent of the state's methane emissions originate from organic waste in landfills, these targets aim to reduce organic waste disposal by 75 percent by 2025, and recover at least 20 percent of currently disposed surplus food by 2025.

4.19.3 Impact Analysis

a. Methodology and Significance Thresholds

According to CEQA Guidelines Appendix G, impacts related to utilities and service systems would be potentially significant if implementation of the Plan would:

1. Require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects
2. Have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years
3. Result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments
4. Generate solid waste in excess of State or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals
5. Comply with federal, state, and local management and reduction statutes and regulations related to solid waste.

b. Project and Cumulative Impacts

Threshold 1:	Would the Plan require or result in the relocation or construction of new or expanded water, wastewater treatment or storm water drainage, electric power, natural gas, or telecommunications facilities, the construction or relocation of which could cause significant environmental effects?
Threshold 2:	Would the Plan have sufficient water supplies available to serve the project and reasonably foreseeable future development during normal, dry, and multiple dry years?
Threshold 3:	Would the Plan result in a determination by the wastewater treatment provider which serves or may serve the project that it has adequate capacity to serve the project's projected demand in addition to the provider's existing commitments?

Impact U-1 DEVELOPMENT FACILITATED BY THE PLAN WOULD CREATE ADDITIONAL DEMAND FOR WATER SUPPLY AND WASTEWATER FACILITIES, WHICH WOULD REQUIRE THE CONSTRUCTION OR RELOCATION OF NEW OR EXPANDED WATER AND WASTEWATER FACILITIES. SUFFICIENT WATER SUPPLIED BY PWD AND LACWD 40 WOULD NOT BE AVAILABLE TO SERVE THE PLAN AND REASONABLY FORESEEABLE FUTURE DEVELOPMENT. THE PLAN WOULD ALSO EXCEED CAPACITY OF LOCAL WASTEWATER TREATMENT FACILITIES. IMPACTS WOULD BE SIGNIFICANT AND UNAVOIDABLE.

Water

Growth and development facilitated by the Plan would create additional demand for water in Palmdale. Development facilitated by the Plan would generally occur within developed areas of the city, with existing water infrastructure; however, development of new areas and increased density in developed areas could require additional water infrastructure and upgrades to existing infrastructure. Installation of upgraded infrastructure would result in ground disturbance. Generally, this ground disturbance would occur in previously disturbed or developed areas, reducing the potential for environmental impacts. Compliance with mitigation measures and Plan policies provided in this EIR would minimize impacts to sensitive environmental resources where upgrades require construction in undeveloped areas of the City. Therefore, the Plan would not result in construction or relocation of water facilities such that significant environmental impacts would result.

In 2020, PWD's total service population was 126,062, and the PWD 2020 UWMP estimates an anticipated 2045 service population of 153,766. As discussed in Section 4.14, *Population and Housing,* growth facilitated by the project is predicted to increase the Planning Area's total population to 243,154, an increase of 58 percent. Accordingly, the Plan would result in substantial population growth compared to existing conditions and currently projected population growth.

PWD presents projected water usage and projected water supplies in normal, single dry, and multiple dry years in its 2020 UWMP. Table 4.19-2 shows anticipated water usage and water supply through the Plan's horizon year of 2045.

Table 4.19-2 Projected Water Usage and Water Supplies

	2025	2030	2035	2040	2045
Normal Year					
Supply Totals	36,725	35,315	35,345	35,375	35,375
Water Use Totals	19,720	20,310	21,480	22,780	24,250
Difference	+17,005	+15,005	+13,865	+12,595	+11,125
Single Dry Year					
Supply Totals	21,235	20,600	21,410	22,225	22,225
Water Use Totals	19,720	20,310	21,480	22,780	24,250
Difference	1,515	290	-70	-555	-2,025
Multiple Dry Years					
Supply Totals	28,125	26,390	26,105	25,665	25,665
Water Use Totals	19,720	20,310	21,480	22,780	24,250
Difference	8,405	6,080	4,625	2,885	1,415

Notes: Units are presented in acre-feet per year.

Source: PWD 2020)

As shown above, current anticipated water supplies would be insufficient to meet anticipated water usage in a single dry year. LACWD 40's UWMP demonstrates that in normal, single, and multiple dry years, LACWD 40 can meet its service area's demands by pumping groundwater from its banked supplies (LACWD 40 2020). Water demand can be estimated using the projected wastewater generation, which is further described below; generally, anticipated water demand is approximately 120 percent of anticipated wastewater generation. Development facilitated by the Plan would generate approximately 4,765,260 gallons per day, or 5,338 acre-feet per year, of wastewater. Accordingly, the Plan would increase water demand by approximately 6,404 acre-feet per year. Due to the substantial population increase and associated water demand facilitated by the Plan, LACWD 40 and PWD would likely have insufficient supply to meet demand from the Plan's projected population of 243,154 residents by 2045. The following goals and policies of the Plan would minimize impacts to water supply and would encourage water conservation to the extent feasible.

LAND USE AND COMMUNITY DESIGN

- **Goal LUD-3: A City with high-quality services and facilities in all neighborhoods.**
  - **Policy LUD-3.4: Expansion of Public Facilities**. Maintain and expand public facilities and services to better support the community, including schools, libraries, utilities, and recreational spaces.
  - **Policy LUD-3.5: Infrastructure Capacity and Service.** Ensure that there will be adequate water and wastewater system capacity to meet projected demand by continuing to oversee the development of adequate and dependable public services and facilities to support both existing and future development.
  - **Policy LUD-3.6: Infrastructure Funding and Programs.** Continue to implement comprehensive water and wastewater management programs and ensure that future developments pay their fair share for any infrastructure improvements demand necessary.

CONSERVATION

- **Goal CON-5: Protect the quality and quantity of local water resources.**
  - **Policy CON-5.1: Ground water recharge.** Ensure that ground water supplies are recharged and protect natural recharge areas such as the Little Rock and Big Rock Washes, and Amargosa and Anaverde Creeks from pollutants or other materials, which might degrade groundwater supplies.
  - **Policy CON-5.3: Regional monitoring cooperation.** Cooperate with Los Angeles County Health Department and the Regional Water Quality Control Board in monitoring industrial and commercial uses utilizing hazardous or potentially polluting materials and fluids, to prevent their discharge into the groundwater aquifer.
  - **Policy CON-5.4: Flood control measures.** Maximize groundwater recharge capabilities with flood control measures.
- **Goal CON-6: Minimize the impacts of urban development on groundwater supplies.**
  - **Policy CON-6.1: Encourage natural recharge**. Restrict building coverage and total impervious area in the vicinity of natural recharge areas.
  - **Policy CON-6.2: Reduce landscaping irrigation needs.** Require the use of water conserving native or drought resistant plants and drip irrigation systems where feasible.
  - **Policy CON-6.3: Reduce street runoff.** Design streets to incorporate vegetation, soil, and engineered systems to slow, filter, and cleanse stormwater runoff.
  - **Policy CON-6.4: New construction water conservation.** Require water conserving appliances and plumbing fixtures in all new construction.
  - **Policy CON-6.5: Monitoring and coordination**. Coordinate with local water agencies to monitor ground water levels, State water allocations and development approvals, to assure that development does not outpace long-term water availability.
- **Goal CON-7: Maintain and further the City's commitment to long-term water management within the Antelope Valley by planning for the conservation and managed use of water resources, including groundwater, imported water, and reclaimed water.**
  - **Policy CON-7.1: Reclaimed water irrigation.** Assess and implement, when and where feasible, reclaimed water for landscape irrigation.
  - **Policy CON-7.2: Water run-off capture**. Work with local water purveyors to assess the potential for capturing local run-off and utilization of imported water (water banking) for groundwater recharge within the Planning Area.
  - **Policy CON-7.3: Retain recharge areas.** Through the land use planning process, ensure that important recharge areas are retained.
  - **Policy CON-7.4: Water management.** Continue to seek out long-range water management techniques as new technology is developed.
  - **Policy CON-7.5: Implementation.** Promote implementation of water reduction and recycling systems that are feasible and appropriate to the Planning Area.
  - **Policy CON-7.6**: **Water recycling**. Encourage residents and businesses to recycle water where feasible, and where water recycling does not result in health and safety concerns.
  - **Policy CON-7.7**: **Water sources**. Participate in regional efforts to retain imported water allocations and seek out other sources as they become available.

PUBLIC FACILITIES, SERVICES, AND INFRASTRUCTURE

- **Goal PFSI-1 Maintain superior public facilities to support the Palmdale community.**
  - **Policy PFSI 1.1: Community Facilities Master Plan.** Prepare a citywide master plan for community facilities that addresses existing and future facilities and equitable access. Include evaluation of existing facilities, need for new or expanded facilities and potential locations, and a funding plan.
  - **Policy PFSI 1.3: Expand Public Facilities.** Expand public facilities, recreation, and library facilities to underserved areas as needed, including the areas west of SR-14.
  - **Policy PFSI 1.6: Rehabilitate Facilities.** Rehabilitate City-owned public facilities using the most innovative technologies and best practices available to ensure long term efficacy.
- **Goal PSFI-3: Ensure that all development in Palmdale is served by adequate water distribution and sewage facilities.**
  - **Policy PFSI 3.1: Water Supply and Delivery.** Support water suppliers and other jurisdictions within the Antelope Valley in studying status and projected needs for water supply and delivery.
  - **Policy PFSI 3.2: Local Drainage Detection Basins.** Make use of interim local drainage detention basins to slow stormwater runoff until such time as permanent drainage facilities are constructed.
  - **Policy PFSI 3.3: Retention Facilities.** Where feasible, plan for detention or retention facilities in areas where groundwater recharge can be accomplished.
  - **Policy PFSI 3.4: Drainage Facilities**. Through the development review process, reserve land in appropriate locations for construction of drainage facilities.
  - **Policy PFSI 3.5: Sanitation District Collaboration and Water Purveyors**. Work with the Sanitation District and Water Purveyors to identify users for reclaimed water and support plans for its treatment and distribution.
  - **Policy PFSI 3.6: Code Compliance.** All private sewage disposal systems must comply with the requirements of the City of Palmdale Plumbing Code, the Los Angeles County Health Department, and Lahontan Regional Water Quality Control Board and any Memorandum of Understanding between these agencies concerning private sewage disposal systems.
  - **Policy PFSI 3.7: Public Sewer System Prioritization.** Require that all commercial, industrial, institutional, and multiple family uses be connected to a public sewer system with only limited use of private sewage disposal systems.
  - **Policy PFSI 3.8: Public Sewer System Utilization Requirement.** Require that all single-family residential uses with lot sizes of less than one acre be connected to a public sewer system.
  - **Policy PFSI 3.9: Renewable Energy Project Disposal Systems.** Allow the use of private sewage disposal systems on nonresidential renewable energy projects with domestic discharge only on property with an IND (Industrial) General Plan Land Use designation located between Avenue L and M between 50th Street East and 120th Street East, and on property with an IND (Industrial) General Plan Land Use designation on property located south of Avenue M, north of Avenue P-8, between 90th Street East and 120th Street East. The maximum daily estimated discharge shall not exceed 500 gallons/acre/day wastewater flow with a maximum discharge of 5,000 gallons per day.

- **Policy PFSI 3.11**: **New Development Fees.** Require new development to pay necessary fees for expansion and ongoing maintenance of the sewage disposal system to the appropriate agencies, to handle the increased load, which it will generate.
- **Policy PFSI 3.12: Water and Wastewater BMPs.** Utilize best management practices (BMPs) in the purveyance of water resources and management of wastewater.
- **Policy PFSI 3.13: Low Impact Development.** Require new development to minimize storm water runoff and pollutant exposure by incorporating low impact development (LID) measures and appropriate best management practices (BMPs) consistent with the National Pollution Discharge Elimination System (NPDES).
- **Policy PFSI 3.14: Water and Wastewater Provision**. Ensure the provisions of adequate water and wastewater services to all new development.
- **Policy PFSI 3.15: Diversify Water Supplies.** Coordinate with water purveyors to facilitate the commitment to diversifying the region's water supply through water banking projects and expanded recycled water projects.
- **Policy PFSI 3.16: Service Levels**. Provide sufficient levels of water, sewer, and storm drain services throughout the City.
- **Policy PFSI 3.17: Adequate Systems.** Identify and correct issues within the City's sewer and storm drain systems to prevent system failures.
- **Policy PFSI 3.18: Water Conservation.** Support and promote water conservation across all facets of City water infrastructure.

- **Goal PSFI-5: Ensure that adequate public utilities are available to support development in an efficient and orderly manner.**
  - **Policy PFSI 5.1: Development Priorities.** Prioritize development in areas that have existing horizontal infrastructure (roads, sewer, water, drainage, etc.).
  - **Policy PFSI 5.2: On-site Infrastructure.** Require all new development, including major modifications to existing development, to construct required on-site infrastructure improvements pursuant to City standards.
  - **Policy PFSI 5.3: Off-Site Fair Share Contribution.** Require all new development, including major modifications to existing development, to construct or provide a fair share contribution toward construction of required off-site improvements needed to support the project. This includes a fair share contribution toward development of regional master facility plans for roads, sewer, water, drainage, schools, libraries, parks, fire, and other community facilities, prior to granting approval of development applications.
  - **Policy PFSI 5.4: Funding for Maintenance.** Ensure there is a funding plan in place for the ongoing maintenance of these off-site facilities.
  - **Policy PFSI 5.5: Improvements Prior to Occupancy.** Require that on- and off-site improvements are constructed prior to occupancy of a new development project, or phase thereof, unless otherwise approved by the City.
  - **Policy PFSI 5.6: Land Use Changes.** When reviewing applications for land use designation changes (i.e., zone change, General Plan Amendment, specific plan amendment), conduct a thorough analysis of the impacts of the proposed change on all elements of the City's infrastructure systems, and require mitigation as deemed appropriate.
  - **Policy PFSI 5.7: Adjacent Development Integration**. Require that individual development projects integrate with adjacent development with respect to backbone infrastructure

(streets, sewer, water, and drainage). If adjacent property is undeveloped, a conceptual plan should be prepared to show that the pending development will allow for future integration and development of adjacent properties in a manner which is reasonable from a design, construction, and cost standpoint.

- **Goal PSFI-6: Coordinate with utility providers to support adequate provision of critical utilities.**
  - **Policy PFSI 6.1: Infrastructure Equity**. Distribute the costs of extending infrastructure equitably among those benefiting from the improvements.
  - **Policy PFSI 6.2: Waste Ordinance Review.** Regularly review the City's ordinances related to recycling and solid waste to reflect updated best management practices and technological innovation.
  - **Policy PFSI 6.3: New Utility Development.** When feasible, require new utility lines to be constructed underground and along existing utility corridors.
  - **Policy PFSI 6.4: Utility Construction Cost Minimization.** Coordinate installation of utility line placement with street construction to minimize cost, where possible.
  - **Policy PFSI 6.5: Utility Provision.** Coordinate with electricity, gas, and waste providers to ensure adequacy of services for future and current needs.
  - **Policy PFSI 6.6: Prioritize Connections.** Work with providers to prioritize connections near existing development in the core of the city.
  - **Policy PFSI 6.7: Utility Safety.** When feasible, require new utility lines to be constructed away from fault lines, flood zones, fire zones, and other vulnerable areas.
  - **Policy PFSI 6.8: Utility Easements.** Through the development review process, protect existing utility easements and require dedication of additional easements where needed.
  - **Policy PFSI 6.9: Telecommunication Retrofitting.** Work with telecommunication providers to retrofit underserved areas with necessary telecommunication facilities and utilities.
  - **Policy PFSI 6.10: Capital Improvement Plans**. Adopt and annually update the City's Capital Improvement Program to prioritize funding for public works projects in accordance with the General Plan.
  - **Policy PFSI 6.11: City-Initiated Planning.** Inform adjacent cities, town councils and county agencies of City-initiated planning and public works projects which may impact infrastructure systems and consider input and recommendations from these entities in the land use decision process.
  - **Policy PFSI 6.12: Area-Wide Improvements.** Participate in regional efforts to gain State or Federal funding for area-wide improvements.

SUSTAINABILITY

- **Goal SCR-6 Safe and secure water supply.**
  - **Policy SCR-6.1:** Recycled Water. Increase municipal reuse of local recycled water. Support the efforts of the Palmdale Water District and the Joint Powers Authority (JPA) Palmdale Recycled Water Authority (PRWA) in its proof of concept and implementation of aquifer augmentation through Advanced Treatment of Recycled water.
  - **Policy SCR-6.2:** Water Efficiency Standards. Establish water efficiency standards that are more stringent than CALGreen and model water efficient landscape ordinance (MWELO).

- **Policy SCR-6.3:** Low-Water Use Plant List. Implement the City's landscape plant list and use of low-water plants in new or renovated landscaped areas.
- **Policy SCR-6.4:** Rainwater Capture. Encourage rainwater capture and use of cisterns for outdoor watering purposes.
- **Policy SCR-6.5:** Greywater Permitting. Establish a streamlined permitting process for greywater systems.

In particular, Goal PFSI-3, Goal PFSI-5, and the policies contained therein would ensure that planned development within the Planning Area does not outpace predicted long-term water supplies, and in the event that PWD, LACWD 40 or other applicable water agencies determine that projected water supply is inefficient, appropriate action would be taken. Adherence to these Plan policies would address the potential water supply shortfall.

In addition, individual developments that meet certain criteria under Senate Bill 610, described above under *Regulatory Framework*, will be required to prepare a Water Supply Assessment (WSA), which identifies and verifies water supply availability under normal water year conditions, single dry year conditions, and multiple dry year conditions. The WSA will be attached to the CEQA document for the applicable project, and subject to public comment and review as part of the CEQA process. In addition, the ACWD will need to approve a project's WSA before the project may be implemented. Additionally, CALGreen requires a 20 percent reduction in residential indoor water use that would lower potential water demand. According to PWD's UWMP, the PWD service area has a water reduction goal of 185 gallons per capita per day (GPCD) by 2020, and in 2020 the PWD reported its GPCD was 165 GPCD, which met the targeted 185 GPCD (PWD 2020).

While development within the Planning Area would adhere to the Plan policies and water reduction requirements described above, the substantial increase to the Planning Area's population would result in water demand that exceeds projected supply. Impacts would be significant and unavoidable.

Wastewater

Additional wastewater generated by development facilitated by the Plan is based on sewage generation factors developed by the City of Los Angeles (City of Los Angeles 2006). Household sizes in Los Angeles are generally comparable to those in Palmdale. Each development type has its own associated sewage generation factor by unit, which were used to calculate projected sewage generation volumes for each type of new development. Table 4.19-3 shows the total net new projected wastewater generation by development type facilitated under buildout of the Plan.

Table 4.19-3 Wastewater Generation by Development Type

Development Type	Plan Growth Forecast (Net New)	Sewage Generation Factor	Net New Wastewater (gpd)
Single Family Residential	11,272 units	180 gpd/unit	2,028,960
Multi-Family Residential	10,736 units	120 gpd/unit	1,288,320
Commercial	1,624,465 sf	80 gpd/1,000 sf	129,957
Industrial	10,046,865 sf	80 gpd/1,000 sf	803,749
Office	3,428,498 sf	150 gpd/1,000 sf	514,274
Total			**4,765,260**

gpd = gallons per day; AFY = acre-feet per year; sf = square feet
Source for water demand factors used in calculations: City of Los Angeles 2006

Development facilitated by the Plan may require the installation of upsized sewer lines and additional lateral connections within the Planning Area. As with water facilities, sewer laterals and main extensions necessary to serve the future development would generally be installed within the already disturbed rights-of-way of existing roads or within the disturbance footprints of such projects. As such, the construction of these infrastructure improvements would not substantially increase the project's disturbance area or otherwise cause significant environmental effects beyond those identified throughout this EIR.

As shown above in Table 4.19-3, sewage generation would be expected to increase by approximately 4.7 mgd due to development facilitated by the Plan. As described under *Environmental Setting,* the Palmdale Water Reclamation Plant provides primary, secondary, and tertiary wastewater treatment with a design capacity of 12 mgd. Given the design capacity of the Palmdale Water Reclamation Plant, it is likely that upgrades to the existing plant or new wastewater treatment facilities would be required to accommodate the additional wastewater. However, additional wastewater treatment facilities would be evaluated under CEQA project-specific review to determine potential environmental impacts. In addition, the following goals and policies of the Plan element apply to wastewater facilities:

PUBLIC FACILITIES, SERVICES, AND INFRASTRUCTURE

- **Goal PSFI-3: Ensure that all development in Palmdale is served by adequate water distribution and sewage facilities.**
  - **Policy PFSI 3.5: Sanitation District Collaboration and Water Purveyors**. Work with the Sanitation District and Water Purveyors to identify users for reclaimed water and support plans for its treatment and distribution.
  - **Policy PFSI 3.7: Public Sewer System Prioritization.** Require that all commercial, industrial, institutional, and multiple family uses be connected to a public sewer system with only limited use of private sewage disposal systems.
  - **Policy PFSI 3.8: Public Sewer System Utilization Requirement.** Require that all single-family residential uses with lot sizes of less than one acre be connected to a public sewer system.
  - **Policy PFSI 3.11**: **New Development Fees.** Require new development to pay necessary fees for expansion and ongoing maintenance of the sewage disposal system to the appropriate agencies, to handle the increased load, which it will generate.

- **Policy PFSI 3.12: Water and Wastewater BMPs.** Utilize best management practices (BMPs) in the purveyance of water resources and management of wastewater.
- **Policy PFSI 3.14: Water and Wastewater Provision**. Ensure the provisions of adequate water and wastewater services to all new development.

Adherence to these Plan policies would address the potential need for additional wastewater treatment facilities. However, the substantial increase to the Planning Area's population would result in wastewater generation that could exceed capacity of existing treatment facilities. Impacts would be significant and unavoidable.

Other Utilities

Finally, development facilitated by the Plan would increase demand for electricity, natural gas, and telecommunication facilities. However, these types of facilities are typically constructed in response to specific development, which would be evaluated under CEQA project-specific review. In addition, the following goals and policies of the Plan apply to the development of additional utilities.

LAND USE AND DEVELOPMENT

- **Goal PFSI-1 Maintain superior public facilities to support the Palmdale community.**
  - **Policy PFSI 1.1: Community Facilities Master Plan.** Prepare a citywide master plan for community facilities that addresses existing and future facilities and equitable access. Include evaluation of existing facilities, need for new or expanded facilities and potential locations, and a funding plan.
  - **Policy PFSI 1.3: Expand Public Facilities.** Expand public facilities, recreation, and library facilities to underserved areas as needed, including the areas west of SR-14.
  - **Policy PFSI 1.6: Rehabilitate Facilities.** Rehabilitate City-owned public facilities using the most innovative technologies and best practices available to ensure long term efficacy.

PUBLIC FACILITIES, SERVICES, AND INFRASTRUCTURE

Plan Goal PFSI 3 and Plan Policies PFSI 3.1 through 3.18, listed above, would apply.

Adherence to these Plan policies would address the potential need for additional electricity, natural gas, and telecommunication facilities. Therefore, impacts would be less than significant.

Mitigation Measures

At this time, it cannot be determined with certainty whether sufficient water supply sources may be available and sufficient to accommodate the demands of anticipated growth. There are no known mitigation measures that would reduce this impact to less than significant.

Significance After Mitigation

Impacts related to water supply and wastewater capacity would be significant and unavoidable.

Threshold 4:	Would the Plan generate solid waste in excess of state or local standards, or in excess of the capacity of local infrastructure, or otherwise impair the attainment of solid waste reduction goals?
Threshold 5:	Would the Plan comply with federal, state, and local management and reduction statutes and regulations related to solid waste?

Impact U-2 THE PLAN WOULD NOT GENERATE SOLID WASTE IN EXCESS OF STATE OR LOCAL STANDARDS OR IN EXCESS OF CAPACITY OF LOCAL INFRASTRUCTURE. PROJECTS CARRIED OUT UNDER THE PLAN WOULD COMPLY WITH RELEVANT WASTE REDUCTION STATUTES AND REGULATIONS. IMPACTS WOULD BE LESS THAN SIGNIFICANT.

Development facilitated by the Plan would add approximately 22,000 housing units and over 10 million square feet of commercial, industrial, and retail area. Projected solid waste generation rates for the various land use types that could experience future growth under the Plan are shown in Table 4.19-4. As shown below, development facilitated by the Plan would generate approximately 62,900 tons of solid waste per year at full buildout.

Table 4.19-4 Projected Plan Solid Waste Generation

Development Type	Plan Growth Forecast (Net New)	Solid Waste Generation Factor (per day)	Projected Daily Solid Waste Generation in 2045 (tons/year)
Single Family Residential	11,272 units	12.23 lbs/unit	25,158
Multi-Family Residential	10,736 units	12.23 lbs/unit	23,962
Commercial	1,624,465 sf	5 lbs/1,000 sf	1,482
Industrial	10,046,865 sf	62.5lbs/1,000 sf	9,167
Office	3,428,498 sf	6 lbs/1,000 sf	3,128
Total			**62,900**

Source: CalRecycle 2004

Potential future developments facilitated by the Plan would be reviewed on a project-by-project basis; solid waste impacts of these developments would be evaluated based on existing and planned disposal facilities and their available capacities. Further, as shown in Table 4.19-5, the landfills listed in Section 4.19.1, *Environmental Setting*, have a combined remaining capacity of 477,835,706 cubic yards, or 191,134,282 tons.[1]

Table 4.19-5 Existing Landfills Remaining Capacity

Solid Waste Facility	Remaining Capacity (cubic yards)
Antelope Valley Public Landfill	17,911,225
Lancaster Landfill and Recycling Center	14,514,648
McKittrick Waste Treatment Site	769,790
Simi Valley Landfill and Recycling Center	82,954,873
El Sobrante Landfill	143,977,170

[1] Solid waste is approximately 800 pounds per cubic yard (CalRecycle 2004).

Solid Waste Facility	Remaining Capacity (cubic yards)
Sunshine Canyon City/County Landfill	77,900,000
Chiquita Canyon Sanitary Landfill	60,408,000
Victorville Sanitary Landfill	79,400,000
Total	**477,835,706**

Source: CalRecycle 2021b

The solid waste generated by the Plan annually by 2045 would represent less than 0.1 percent of the remaining capacity of these facilities. Further, the Plan includes the following goal and policies to ensure continued effective management of solid waste generated in the Planning Area.

PUBLIC FACILITIES, SERVICES, AND INFRASTRUCTURE

- **Goal PSFI-5: Ensure that adequate public utilities are available to support development in an efficient and orderly manner.**
  - **Policy PFSI 5.2: On-site Infrastructure.** Require all new development, including major modifications to existing development, to construct required on-site infrastructure improvements pursuant to City standards.
  - **Policy PFSI 5.3: Off-Site Fair Share Contribution.** Require all new development, including major modifications to existing development, to construct or provide a fair share contribution toward construction of required off-site improvements needed to support the project. This includes a fair share contribution toward development of regional master facility plans for roads, sewer, water, drainage, schools, libraries, parks, fire, and other community facilities, prior to granting approval of development applications.
  - **Policy PFSI 6.5: Utility Provision.** Coordinate with electricity, gas, and waste providers to ensure adequacy of services for future and current needs.

Development facilitated by the Plan would be required to comply with these policies, including providing and maintaining adequate and orderly systems for efficient collection and disposal of solid waste for existing and future development. Further, the 62,900 tons of waste generated by development facilitated by the Plan annually would account for 0.1 percent of the remaining capacity of the landfills listed in Section 4.19.1, *Environmental Setting.* Furthermore, through compliance with Plan policies addressing the efficiency and sustainability of the solid waste services and solid waste reduction, the Plan's solid waste impacts would be less than significant.

Mitigation Measures

No mitigation measures are required.

4.19.4 Cumulative Impacts

By its nature, a general plan considers cumulative impacts insofar as it considers cumulative development that could occur. Therefore, the analysis of Plan impacts also constitutes the cumulative analysis, at least at the level of the Planning Area or the service area of the utility providers discussed in this chapter of the EIR.

Water

The geographic scope for cumulative water supply impacts is the water districts service areas. PWD's service area encompasses approximately 187 square miles in northeastern Los Angeles County, including the City of Palmdale and its SOI. LACWD 40's service area encompasses most of the City of Lancaster and a small portion of the Planning Area to the northwest. This geographic scope is appropriate because PWD and LACWD 40 are responsible for supplying potable water to all residential, commercial, industrial, and fire protection uses within its service area. Development considered part of the cumulative analysis includes buildout of the Plan and other future development within the Planning Area.

Cumulative development within the PWD and LACWD 40 service areas will continue to increase demands on water supplies. In addition to the proposed Plan, other cumulative development would further increase demand for water services. While some excess water supply is currently anticipated in some years by PWD and LACWD 40, and adherence to Plan goals and policies would reduce water consumption and ensure the provision of water is not outpaced by development, the Plan and other cumulative development would exceed projected water supply. Accordingly, there would not be sufficient water supply for cumulative development in normal and dry years. Therefore, the Plan would contribute to cumulatively considerable impacts to water supply services.

Wastewater

The geographic scope for cumulative wastewater impacts includes PUSD's service area, because wastewater conveyance and treatment throughout the Planning Area is conducted by PUSD. As discussed above under Impact UTIL-1, new wastewater service connections would be installed as needed, on a project-specific basis; this would occur for developments within the cumulative scenario as it would for developments facilitated by the Plan. PUSD and the City of Palmdale conduct repairs and upgrades to the existing wastewater conveyance system throughout the city on an as-needed basis and would continue to do so for both residential developments under the proposed Plan as well as projects in the cumulative scenario.

As discussed under Impact UTIL-1, the Plan would generate wastewater that would exceed capacity of the Palmdale Water Reclamation Plant. Future development in the Planning Area would further generate wastewater in excess of the plant's capacity. While adherence to Plan goals and policies would ensure the provision of wastewater services is not outpaced by development, the Plan and other cumulative development would exceed capacity of the Palmdale Water Reclamation Plant. Therefore, the Plan would contribute to cumulatively considerable impacts to wastewater treatment services.

Electricity and Natural Gas

The geographic scope for cumulative electricity and natural gas impacts is the SCE and SoCal Gas service area. This geographic scope is appropriate because SCE and SoCal Gas are responsible for transmitting electricity and natural gas, respectively, to all land uses within its service area, including the Planning Area. Development considered part of the cumulative analysis includes buildout of other local General Plans and development within the SCE and SoCal Gas service area. SCE and SoCal Gas are subject to the requirements set forth and/or enforced by the CPUC. The need for electricity and natural gas infrastructure would be addressed on a case-by-case basis for each cumulative project, and would be subject to CPUC requirements, similar to those applicable to the Plan. Therefore, cumulative impacts related to electric power and natural gas transmission facilities

would be less than significant. Therefore, the Plan would not have a cumulatively considerable contribution to a cumulative impact regarding electricity and natural gas.

Telecommunications

The geographic scope for cumulative telecommunications impacts is the telecommunication provider service area. This geographic scope is appropriate because local providers are responsible to provide adequate telecommunication infrastructure to all land uses within its service area, including the Planning Area. Development considered part of the cumulative analysis includes buildout of the Plan.

As discussed above under Impact UTIL-1, Plan implementation requires connections to existing utility infrastructure to meet the needs of future residents and employees within the Planning Area. Cumulative development would increase demand for telecommunications infrastructure in the Planning Area. However, cumulative projects would each be required to provide adequate telecommunications infrastructure on a project-by-project basis and would be subject to the same requirements as the Plan. Therefore, cumulative impacts related to telecommunications infrastructure would be less than significant. The Plan would not have a cumulatively considerable contribution to a cumulative impact regarding telecommunication services.

Solid Waste

The geographic scope for cumulative solid waste impacts encompasses all areas in the Waste Management service area that contribute to the same landfills and solid waste facilities as Palmdale and its SOI. This geographic scope is appropriate because, as the local provider, Waste Management is responsible for accepting solid waste from all land uses within its service area, including the Planning Area. Development considered part of the cumulative analysis includes buildout of cities and unincorporated areas within Los Angeles County that dispose of waste at the same facilities as Palmdale, which would continue to increase solid waste generation.

As discussed under Impact UTIL-2, the Plan at full buildout would annually generate solid waste that would represent less than 0.1 percent of the remaining capacities of the landfills that serve the Planning Area. Further, compliance with applicable solid waste regulations and with Palmdale Municipal Code standards would maintain or improve upon diversion rates. Cumulative development in the Planning Area would be required to comply with requirements of AB 939 which requires a solid waste diversion rate of 50 percent and of SB 1383 requiring the enhanced diversion of organic waste. Therefore, cumulative impacts to solid waste facilities would be less than significant.

This page intentionally left blank.

4.20 Wildfire

This chapter analyzes impacts associated with the risk of exposure to wildland fires under the Plan. Information for this chapter comes from various sources including the Plan, the Natural and Manmade Hazards and Public Facilities + Open Space chapter of the Background Report produced by the City for the Plan and released to the public in Spring 2020 (available on the project website and upon request from the City of Palmdale), and other sources as cited in this chapter.

4.20.1 Environmental Setting

In California, responsibility for wildfire prevention and suppression is shared by federal, State, and local agencies. Federal agencies are responsible for lands in Federal Responsibility Areas. California has identified State Responsibility Areas (SRA) where the state has financial responsibility for wildland fire protection and prevention; incorporated cities and areas under federal ownership are not included. These are managed by the California Department of Forestry and Fire Protection (CAL FIRE). All incorporated areas and other unincorporated lands not in SRAs are classified as Local Responsibility Areas (LRA).

a. Wildfire Behavior and Controlling Factors

Human influence on wildfire includes direct influences, such as the ignition and suppression of fires, and indirect influence through climate change, the alteration of native vegetation, fire suppression, and development patterns. Human-induced wildfire ignitions can change fire regime characteristics in two ways: (1) changing the distribution and density of ignitions and (2) changing the seasonality of burning activity. Human-induced ignition sources include escapes from debris and brush-clearing fires, electrical equipment malfunctions, campfires, smoking, fire play (e.g., fireworks), vehicles, and arson. Consequently, areas near human development more frequently experience fires than very remote or urban areas.

Once a fire is started, the spread and behavior of a fire become a function of fuel characteristics, terrain, and weather conditions. People have intervened deliberately and dramatically in the natural fire regime through fire suppression and, more recently, actions that affect fuel connectivity. Historically, fire suppression was used to prevent and limit wildfires. Over time, this land management practice (combined with forest regrowth after extensive logging in the late 19th century) has led to a buildup of forest fuels and an increase in the occurrence and threat of large, severe fires. Contemporary fire management practices include fuel management activities that are intended to reduce the intensity and severity of wildfires. Reducing fuels through mechanical treatments and prescribed fire have been found to be effective at reducing fire frequency, fire severity, and annual area burned when applied at the landscape scale over an extended period of time.

Wildfire activity is closely related to temperature and drought conditions, and in recent decades, increasing drought frequency and warming temperatures have resulted in increased fire activity and the largest, most destructive, and deadliest wildfires in California history. Climate change will continue to produce conditions that facilitate a longer fire season, which, when coupled with human-caused changes in the seasonality of ignition sources, will produce more, longer, and bigger fires during more times of the year. According to California's Fourth Climate Change Assessment, Statewide Summary Report (OPR 2018), if greenhouse gas emissions continue to rise, the frequency

of extreme wildfires burning over 25,000 acres could increase by 50 percent by 2100, and the average area burned Statewide could increase by 77 percent by the end of the century.

b. California Wildfire Hazards

While all of California is subject to some degree of wildfire hazard, specific features make certain areas more hazardous. CAL FIRE is required by law to map areas of significant fire hazards based on fuels, terrain, weather, and other relevant factors (Public Resources Code [PRC] 4201-4204 and California Government Code 51175-89). Factors that increase an area's susceptibility to fire hazards include slope, vegetation type and condition, and atmospheric conditions. CAL FIRE has identified two types of wildfire risk areas: 1) wildland areas that may contain substantial forest fire risks and hazards and 2) very high fire hazard severity zones (VHFHSZ). Each risk area carries with it Code requirements to reduce the potential risk of wildfires. Under State regulations, areas in very high FHSZs must comply with specific building and vegetation management requirements intended to reduce property damage and loss of life in these areas.

c. Palmdale Fire Protection and Hazards

The City of Palmdale contracts fire protection through the County of Los Angeles Fire Department (LACoFD), which operates five fire stations in and around Palmdale. The locations of these fire stations are listed in Table 4.20-1.

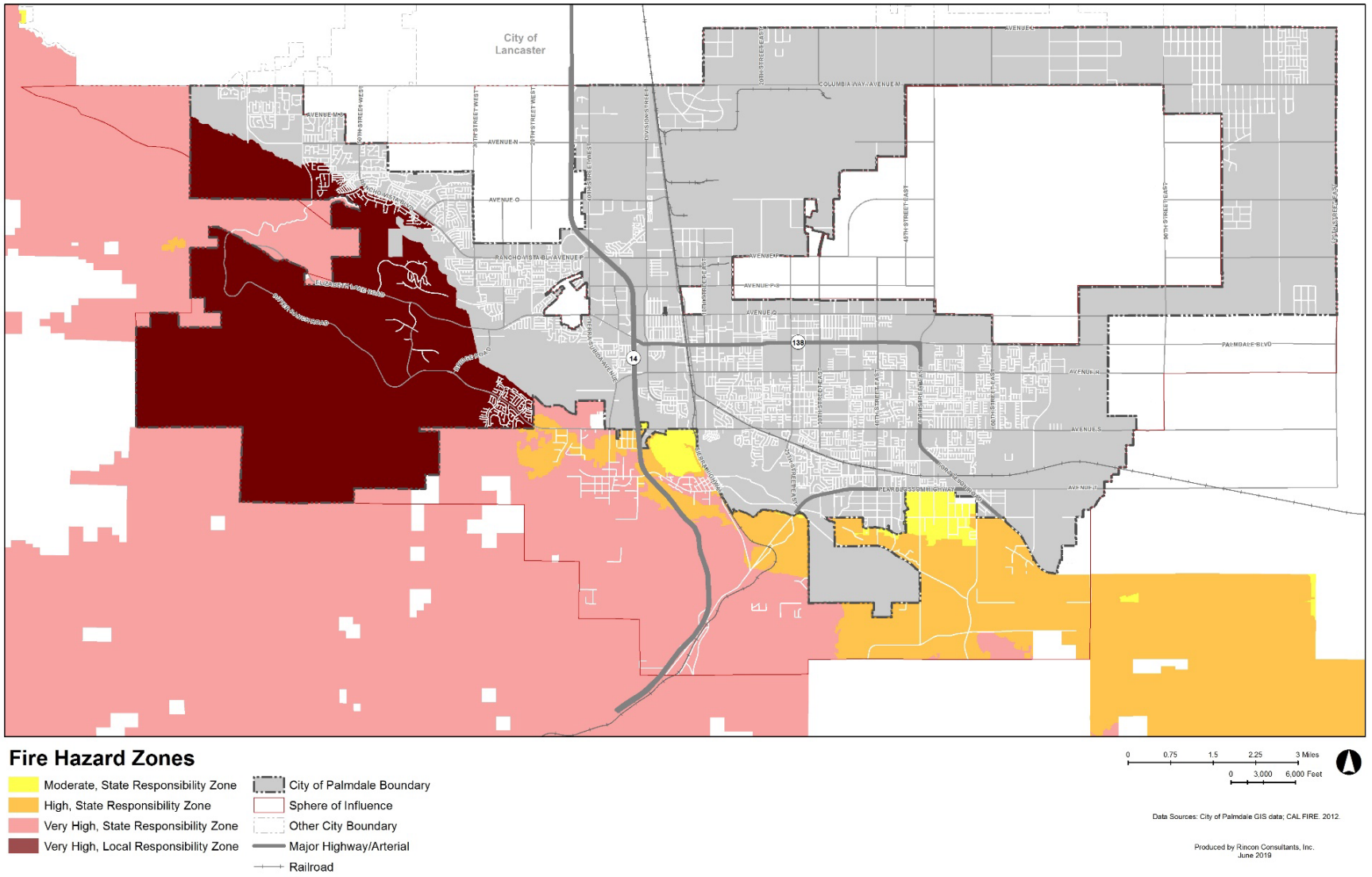
Table 4.20-1 Palmdale Fire Stations

Facility	Address
Los Angeles County Fire Department Station #24	1050 West Avenue P
Los Angeles County Fire Department Station #37	38318 9th Street East
Los Angeles County Fire Department Station #93	5624 East Ave R
Los Angeles County Fire Department Station #131	2629 East Ave S
Los Angeles County Fire Department Station #136	3650 Bolz Ranch Rd

Source: City of Palmdale, 2020

The parts of the Planning Area that are in the City of Palmdale and are in fire hazard zones are designated as an LRA, but most of the City is not within a fire hazard severity zone. The southwestern portion of the City, primarily south of Rancho Vista Boulevard and west of 25th Street West, is within a VHFHSZ and is the designated LRA. Outside of the City, Palmdale is surrounded by moderate, high, and very high fire hazard severity zones to the west and south (CAL FIRE 2007). Some of these areas are in the Sphere of Influence (SOI), and therefore also in the Planning Area, and some are outside the SOI and Planning Area. Winds in Palmdale generally move from the southwest due to the high-elevation Sierra Nevada Mountains blocking wind to the north and the Mojave Desert heating wind as it moves south. Palmdale can also experience Santa Ana winds, which are strong southwesterly winds that can exceed speeds of 30 miles per hour (City of Palmdale 2015). Figure 4.20-1 shows the different fire hazard severity zones in and around the City.

Figure 4.20-1 Palmdale Fire Hazard Severity Zones



4.20.2 Regulatory Setting

a. Federal Laws, Regulations, and Policies

International Fire Code

The International Fire Code (IFC), created by the International Code Council, is the primary means for authorizing and enforcing procedures and mechanisms to ensure the safe handling and storage of any substance that may pose a threat to public health and safety. The IFC regulates the use, handling, and storage requirements for hazardous materials at fixed facilities. The IFC and the International Building Code use a hazard classification system to determine what protective measures are required for fire and life safety. These measures may include construction standards, separations from property lines, and specialized equipment. To ensure that these safety measures are met, the IFC employs a permit system based on hazard classification. The IFC is updated every three years and is the basis for the California Fire Code (CFC) (also updated triennially). Local jurisdictions, including the City of Palmdale, then adopt the CFC, in some cases with local amendments.

Federal Disaster Mitigation Act

The Disaster Mitigation Act of 2000 provided a new set of mitigation plan requirements that encourage state and local jurisdictions to coordinate disaster mitigation planning and implementation. States are encouraged to complete a "Standard" or an "Enhanced" Natural Mitigation Plan. "Enhanced" plans demonstrate increased coordination of mitigation activities at the state level and, if completed and approved, increase the amount of funding through the Hazard Mitigation Grant Program. The State of California Multi-Hazard Mitigation Plan (SHMP) complies with this act.

National Fire Plan

The U.S. Department of the Interior's National Fire Plan is intended to ensure an appropriate federal response to severe wildland fires, reduce fire impacts on rural communities, and ensure sufficient firefighting capacity in the future. The Rural Fire Assistance program is funded to enhance the fire protection capabilities of rural fire districts and safe and effective fire suppression in the wildland/urban interface. The program promotes close coordination among local, state, tribal, and federal firefighting resources by conducting training, equipment purchase, and prevention activities on a cost-shared basis.

b. State Laws, Regulations, and Policies

2019 Strategic Plan for California

The 2019 Strategic Plan prepared by CAL FIRE and the California Natural Resources Agency lays out central goals for reducing and preventing the impacts of fire in the State. The goals are meant to establish, through local, State, federal, and private partnerships, a natural environment that is more resilient and human-made assets that are more resistant to the occurrence and effects of wildland fire.

In addition to the 2019 Strategic Plan for California, individual CAL FIRE units develop fire plans, which are major strategic documents that establish a set of tools for each CAL FIRE unit for its local

area. Updated annually, unit fire plans identify wildfire protection areas, initial attack success, assets and infrastructure at risk, pre-fire management strategies, and accountability within their unit's geographical boundaries. The unit fire plan identifies strategic areas for pre-fire planning and fuel treatment as defined by the people who live and work locally. The plans include contributions from local collaborators and stakeholders and are aligned with other plans for the area.

California Building Code (2019)

Chapter 7A of the California Building Code (California Code of Regulations, Title 24, Part 2) includes specific requirements related to exterior wildfire exposure. These requirements establish minimum standards to protect buildings located in Fire Hazard Severity Zone within SRAs and Wildland-Urban Interface Fire Areas. This code includes provisions for ignition-resistant construction standards for new buildings.

California Fire Code

The 2019 California Fire Code (California Code of Regulations, Title 24, Part 9) establishes the minimum requirements consistent with nationally recognized good practices to safeguard the public health, safety, and general welfare for the hazards of fire, explosion, or dangerous conditions in new and existing buildings, structures, and premises, and to provide safety and assistance to firefighters and emergency responders during emergency operations. The provisions of this code apply to the construction, alteration, movement, enlargement, replacement, repair, equipment, use and occupancy, location, maintenance, removal, and demolition of buildings or structures or any appurtenances connected or attached to such building structures throughout California.

Wildland-Urban Interface Building Standards

On September 20, 2007, the Building Standards Commission approved the Office of the State Fire Marshal emergency regulations amending the California Code of Regulations, Title 24, Part 2, known as the California Building Code (CBC). These codes include provisions for ignition-resistant construction standards in the WUI.

California Emergency Services Act

The California Emergency Services Act of 2008 merged the duties, powers, purposes, and responsibilities of OES and the Governor's Office of Homeland Security into a new cabinet-level agency, the California Emergency Management Agency (Cal EMA). In 2013, the Governor merged the California Emergency Management Agency with the Office of Public Safety Communications and renamed the organization the California Governor's Office of Emergency Services (Cal OES). CAL OES is responsible for overseeing and coordinating emergency preparedness, response, recovery, and homeland security activities within California. Section 8687.7 of the California Disaster Assistance Act required the development of a Standard Emergency Management System (SEMS) program, for managing multiagency and multijurisdictional responses to emergencies in California. The Cal OES Emergency Management Systems Unit is a multi-agency group charged with methodical review, evaluation, and approval of needed improvements to SEMS. State agencies are required to use SEMS and local government entities must use SEMS in order to be eligible for any reimbursement of response-related costs under the State's disaster assistance programs.

Cal OES serves as the lead State agency for emergency management and coordinates the State response to major emergencies in support of local government. SEMS provides the mechanism by

which local governments request assistance from Cal OES, and Cal OES maintains oversight of the State's mutual aid system.

State of California Emergency Plan

The Cal OES Emergency Plan outlines a state-level strategy to support local government efforts during a large-scale emergency. In accordance with the California Emergency Services Act, the State Emergency Plan describes methods for carrying out emergency operations, mutual aid processes, emergency services of governmental agencies, resource mobilization, emergency public information, and continuity of government (Cal OES 2017).

California Multi-Hazard Mitigation Plan

The California Office of Emergency Services prepares the State Hazard Mitigation Plan (SHMP), which identifies hazard risks and includes a vulnerability analysis and a hazard mitigation strategy (Cal OES 2018). The SHMP is required under the federal Disaster Mitigation Act of 2000 for the State to receive federal funding.

The SHMP represents the state's primary hazard mitigation guidance document - providing an updated analysis of the state's historical and current hazards, hazard mitigation goals and objectives, and hazard mitigation strategies and actions. The SHMP represents the state's overall commitment to supporting a comprehensive mitigation strategy to reduce or eliminate potential risks and impacts of disasters in order to promote faster recovery after disasters and, overall, a more resilient state. SHMPs are required to meet the Elements outlined in FEMA's State Mitigation Plan Review Guide (revised March 2015, effective March 2016).

OES is responsible for the development and maintenance of the State's plan for hazard mitigation. The State's SHMP was last approved by the Federal Emergency Management Agency (FEMA) as an Enhanced State Mitigation Plan in 2018. The SHMP is designed to reduce the effects of disasters caused by natural, technological, accidental, and adversarial/human-caused hazards. The SHMP sets the mitigation priorities, strategies, and actions for the state. The SHMP also describes how risk assessment and mitigation strategy information is coordinated and linked from local mitigation plans into the SHMP and provides a resource for local planners of risk information that may affect their planning area. The State of California is required to review and revise its SHMP and resubmit for FEMA approval at least every five years to ensure continued funding eligibility for certain federal grant programs.

Senate Bill 1241 (Kehoe) of 2012

Senate Bill 1241 (Chapter 311, Statutes of 2012) requires cities and counties to address fire risk in SRAs and VHFHSZs in the safety element of their general plans. It also requires cities and counties to make certain findings regarding available fire protection and suppression services before approving a tentative subdivision map or parcel map.

Assembly Bill 3074 (Friedman) of 2020

Assembly Bill 3074 (Chapter 259, Statutes of 2020) imposes additional fuel reduction requirements on a person who owns, leases, controls, operates, maintains, or builds an occupied dwelling or structure in, upon, or adjoining wild lands within a very high fire hazard severity zone.

SRA Fire Safe Regulations

The State Responsibility Area (SRA) Fire Safe Regulations CCR Title 14, Division 1.5, Section 1270 et seq. establishes CAL FIRE's basic wildland fire protection standards for new development and is applicable in all SRAs in California—areas where CAL FIRE is responsible for wildfire protection.

a. Local

Palmdale Local Hazard Mitigation Plan

To ensure protection of residents and businesses from natural and man-made hazards, the City has adopted a Local Hazard Mitigation Plan (LHMP), which provides mitigation for a variety of hazards that could affect Palmdale and its SOI (the Planning Area), including wildfires and brush fires. The LHMP recognizes that the City of Palmdale and the surrounding area are at risk of wildfire, and that several City facilities are in areas susceptible to wildfire. The LMHP contains several goals and objectives related to the mitigation of wildfire impacts, including but not limited to implementation of programs and projects that make infrastructure, facilities, and property more resistant to losses from all hazards, increasing public awareness of existing hazards, and strengthening communication and coordination to improve hazard response.

Palmdale Emergency Operations Plan

The Palmdale Emergency Operations Plan was developed in 2012 to serve as a guiding document for emergency/disaster response in the city and is currently being updated with the goal of City adoption by December 2022. The Plan's primary functions are to:

- Assign responsibility to organizations and individuals for carrying out specific actions at projected times and places in an emergency that exceeds the capability or routine responsibility of any one agency;
- Set forth lines of authority and organizational relationships and shows how all actions will be coordinated;
- Describes how people and property will be protected in emergencies and disasters; and
- Identifies personnel, equipment, facilities, supplies, and other resources available--within the jurisdiction or by agreement with other jurisdictions--for use during response and recovery operations.

4.20.3 Impact Analysis

a. Methodology and Significance Thresholds

According to CEQA Guidelines Appendix G, impacts related to wildfire would be potentially significant if the Planning Area is located in or near state responsibility areas or lands classified as very high fire hazard severity zones, and the Plan would:

1. Substantially impair an adopted emergency response plan or emergency evacuation plan
2. Due to slope, prevailing winds, and other factors, exacerbate wildfire risks and thereby expose project occupants to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire

3. Require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment
4. Expose people or structures to significant risks, including downslopes or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes

Threshold 1:	If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would Plan implementation substantially impair an adopted emergency response plan or emergency evacuation plan?

Impact WFR-1 A PORTION OF THE PLANNING AREA IS IN A VHFHSZ. HOWEVER, DEVELOPMENT CARRIED OUT UNDER THE PLAN WOULD NOT SUBSTANTIALLY IMPAIR ANY ADOPTED EMERGENCY RESPONSE PLANS OR EMERGENCY EVACUATION ROUTES BECAUSE IT WOULD BE SUBJECT TO ADOPTED FEDERAL, STATE, AND LOCAL DEVELOPMENT GUIDELINES THAT GOVERN WILDFIRE, EMERGENCY SERVICES, AND EMERGENCY ACCESS, AND PLAN POLICIES ADDRESS EMERGENCY PLANNING AND RESPONSE. THEREFORE, THIS IMPACT WOULD BE LESS THAN SIGNIFICANT.

As shown in Figure 4.20-1, areas within the Planning Area that are designated as federal, State, or Local Responsibility Area VHFHSZs are located in the southwestern portion of the Planning Area in and near the foothills of the Los Angeles Forest. The Plan, in and of itself, does not propose specific projects but sets forth goals and policies that promulgate new housing development in Palmdale consistent with the current RHNA cycle and other requirements and expected growth. The City would evaluate development carried out under the Plan in its jurisdiction for wildfire safety, including the ability of emergency vehicles to access the site, ease of evacuation, exacerbation of fire risk, and proximity to areas prone to flooding or landslide, as part of its standard development review process.

Development proposals for individual projects would be subject to adopted federal, State, and local development guidelines that govern wildfire, emergency services, and emergency access, including the City's Hazard Mitigation Plan for wildfires, the City's Emergency Operations Plan (which is currently being updated (anticipated completion in 2022), the California Fire Code, and proposed Plan policies. Plan goals and policies related to emergency planning and response include:

- **Goal SE-2: Minimize public health, safety, and welfare impacts resulting from wildfire hazards.**
  - **Policy SE-2.7**: **Emergency Access Routes for Wildfire Hazard Zones.** Require all new development in or near designated wildfire hazard zones to identify multiple evacuation/emergency access routes and file with City.
  - **Policy SE-2.8: Los Angeles County Fire Department Coordination**. Continue to coordinate with the Los Angeles County Fire Department to provide emergency evacuation support and address fire hazards.

Further, LACoFD reviews and approves development projects to ensure that emergency access meets its standards. Implementation of Plan policies associated with emergency planning and response, in addition to LACoFD review, would ensure that potential impacts from implementation of the Plan on emergency response and evacuation would be less than significant.

Mitigation Measures

No mitigation measures are required.

Threshold 2:	If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would Plan implementation, due to slope, prevailing winds, and other factors, exacerbate wildfire risks and thereby expose occupants of projects carried out under the Plan to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire?

Impact WFR-2 THE PLAN WOULD NOT EXACERBATE WILDFIRE RISK DUE TO SLOPE, PREVAILING WINDS, OR ANY OTHER FACTOR. THE PLAN WOULD NOT EXPOSE OCCUPANTS OF PROJECTS CARRIED OUT UNDER THE PLAN TO POLLUTANT CONCENTRATIONS FROM A WILDFIRE OR THE UNCONTROLLED SPREAD OF A WILDFIRE. THIS IMPACT WOULD BE LESS THAN SIGNIFICANT.

Wildfire risk in the Planning Area is generally limited to the hillside areas in the south and southwestern portions of the Planning Area because this area is mostly undeveloped and contains large tracts of vegetation cover that can act as fire fuel. This area is also adjacent to large areas of vegetation cover and open space outside of the Planning Area, which further increases the potential for wildfires. The Plan does not include changes to land use designations in hillside areas within the Planning Area that would allow for more residential development than allowed under the current General Plan.

As described under *Environmental Setting,* winds in Palmdale generally move from the southwest. Therefore, the prevailing winds would move wildfire in the hillside area and the related smoke and air pollutants, toward the southwest and away from the urbanized areas of the City. Additionally, fire tends to burn and spread uphill, and the hillside parts of the Planning Area generally slope uphill toward the west and south, away from the developed parts of the Planning Area. Residential areas, including a school, parks, and a few businesses, are located in the southwestern portion of the Planning Area in the VHFHSZ, but development under the Plan would not introduce new people or structures to this area beyond what is currently permitted under existing zoning and land use designations. Furthermore, the Plan would include the following goals and policies related to wildfire risks:

- **Goal SE-2: Minimize public health, safety, and welfare impacts resulting from wildfire hazards.**
  - **Policy SE-2.1: Critical Facilities**. Prohibit new public or critical facilities in Very High Fire Hazard Severity Zones, except when other options do not exist.
  - **Policy SE-2.2: Redevelopment Compliance.** After a large fire, ensure that re-development located in the in the High and Very High Fire Hazard Severity Zones complies with fire safety requirements for construction, accounting for any increased risk related to climate change.
  - **Policy SE-2.3: Wildland Development.** Require that developments located in wildland interface areas incorporate and enforce standards for construction, including a fuel modification program (i.e., brush clearance, planting of fire-retardant vegetation) to reduce the threat of wildfires, accounting for any increased risk related to climate change.
  - **Policy SE-2.4: Landscaped Buffer Zones.** Provide fire-resistant landscaped buffer zones between high-risk fire hazard areas and urban development with fire clearance located on private land and maintained by the property owner(s).
  - **Policy SE-2.5: Maintain Firesafe Zones.** Require property owners to clear brush and high fuel vegetation and maintain firesafe zones (a minimum distance of 30 feet from the structure or to the property line, whichever is closer) to reduce the risk of fires. For structures located within a Very High Fire Hazard Severity Zone, the required brush clearance distance is 200 feet from structures to the property line.

- **Policy SE-2.6: Soils and Waterways.** Evaluate soils and waterways for risks from flooding, water quality, and erosion to ensure that they are suitable to support redevelopment following a large fire.
- **Policy SE-2.9: Development Requirements.** Ensure that the requirements of the Los Angeles County Fire Department are incorporated into new development through the development review process.
- **Policy SE-2.10: Water system requirements.** Require all new development to be served by a water system that meets applicable fire flow requirements.

The City would evaluate development carried out under the Plan for wildfire safety, including the ability of emergency vehicles to access the site, ease of evacuation, exacerbation of fire risk, and proximity to areas prone to flooding or landslide, as part of the City's standard development review process. Development proposals for individual projects would be subject to adopted federal, State, and local development guidelines that govern wildfire, emergency services, and emergency access, including the City's Hazard Mitigation Plan for wildfires, the California Fire Code, and applicable Plan policies. In addition, LACoFD reviews and approves development projects to ensure that emergency access meets standards. Therefore, the Plan would not exacerbate wildfire risk or expose occupants of projects carried out under the Plan to pollutant concentrations from a wildfire or the uncontrolled spread of a wildfire, and this impact would be less than significant.

Mitigation Measures

No mitigation measures are required.

Significance After Mitigation

Impacts would be less than significant without mitigation.

Threshold 3: If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the Plan require the installation or maintenance of associated infrastructure (such as roads, fuel breaks, emergency water sources, power lines or other utilities) that may exacerbate fire risk or that may result in temporary or ongoing impacts to the environment?

Impact WFR-3 THE PLAN WOULD NOT REQUIRE THE INSTALLATION OR MAINTENANCE OF ASSOCIATED INFRASTRUCTURE THAT MAY EXACERBATE FIRE RISK OR THAT MAY RESULT IN TEMPORARY OR ONGOING IMPACTS TO THE ENVIRONMENT. THEREFORE, THE IMPACT WOULD BE LESS THAN SIGNIFICANT.

The Plan would accommodate growth in Palmdale, including an estimated 22,000 new dwelling units and over 10 million square feet of commercial, industrial, and public uses. This growth would occur primarily as infill and redevelopment within the urbanized parts of the Planning Area. Therefore, most of the roads and utility infrastructure required for growth carried out under the Plan would already exist or would be built in currently developed areas, resulting in negligible temporary or ongoing environmental impacts. Because such development would occur in urbanized areas of Palmdale, where large tracts of vegetation cover are not present, the risk of wildfire would not be exacerbated.

Wildfire risk in Palmdale is generally limited to the hillside areas in the south and southwestern parts of the Planning Area because this area is mostly undeveloped and contains large tracts of vegetation cover that can act as fire fuel. This area is also adjacent to large areas of vegetation cover

and open space outside the Planning Area, which further increases the potential for wildfires. The Plan does not include changes to land use designations in these hillside areas that would allow for more or increased residential development than allowed under the current General Plan. Furthermore, the Plan would include the goals and policies related to wildfire listed under Impact WFR-1 above.

Maintenance of fire access roads could generate temporary or ongoing impacts related to noise and vegetation removal. These impacts would be less than significant because maintenance would be infrequent and limited to areas immediately next to fire access roads. Additionally, maintenance of these fire access roads would reduce the potential for severe or catastrophic wildfires, rather than exacerbate them. Accordingly, impacts would be less than significant.

Mitigation Measures

No mitigation measures are required.

Significance After Mitigation

Impacts would be less than significant without mitigation.

Threshold 4:	If located in or near state responsibility areas or lands classified as very high fire hazard severity zones, would the Plan expose people or structures to significant risks, including downslopes or downstream flooding or landslides, as a result of runoff, post-fire slope instability, or drainage changes?

Impact WFR-4 THE PLAN WOULD NOT EXPOSE PEOPLE OR STRUCTURES TO SIGNIFICANT RISKS, INCLUDING DOWNSLOPES OR DOWNSTREAM FLOODING OR LANDSLIDES, AS A RESULT OF RUNOFF, POST-FIRE SLOPE INSTABILITY, OR DRAINAGE CHANGES, AND THERE WOULD BE NO IMPACT.

Severe wildfires damage the forest or shrub canopy, the plants below, as well as the soil. This can result in increased runoff after intense rainfall, which can put homes and other structures below a burned area at risk of localized floods and landslides. Slopes at risk of wildfire in Palmdale are limited to the hillside areas in the south and southwestern portion of the Planning Area. If a severe wildfire were to occur in these hillside areas, downslope structures would be at risk of flooding or landslides. Other areas of Palmdale are generally flat to gently sloping and developed with little to no wildfire fuels or vegetation cover prone to ignition. If a structural fire or large urban fire were to occur in the more flat and urbanized areas of Palmdale, the risk of flooding or landslides afterward would be negligible because of the nearly flat topography and because little soil would be exposed due to the developed conditions. Furthermore, in addition to policies listed above, the Plan would include Policy SE-2.6, which encourages evaluation of soils and waterways for risks of flooding and erosion following a large fire.

The Plan would not include changes to land use designations in hillside areas that would increase the amount of allowed development. Therefore, the Plan would not increase the risk of flooding, landslides, post-fire slope instability, or the risk of wildland fires. There would be no impact.

Mitigation Measures

No mitigation measures are required.

Significance After Mitigation

There would be no impact and therefore no need for mitigation.

Cumulative Impacts

By its nature, a general plan considers cumulative impacts insofar as it considers cumulative development that could occur within the Planning Area. In that sense, the analysis of the Plan's impacts also constitutes the cumulative analysis. As explained in Section 4.20.1, *Environmental Setting*, the parts of the Planning Area that are in the City of Palmdale and are in fire hazard zones are designated as an LRA, but most of the City is not within a fire hazard severity zone. The southwestern portion of the City, primarily south of Rancho Vista Boulevard and west of 25th Street West, is within a VHFHSZ. Outside of the City, Palmdale is surrounded by moderate, high, and very high fire hazard severity zones to the west and south (CAL FIRE 2007). Some of these areas are inside the City's SOI, and therefore also in the Planning Area, and some are outside the SOI and Planning Area. As concluded throughout the impact discussion parts of this chapter, the Plan would have a less than significant impact, or in some cases no impact, related to wildfires and thus would not make a substantial contribution to any cumulative impact related to wildfires.

5 Other CEQA Required Discussions

This section discusses growth-inducing impacts and irreversible environmental impacts that would be caused by implementation of the Plan.

5.1 Growth Inducement

Section 15126(d) of the CEQA Guidelines requires a discussion of a project's potential to foster economic or population growth, including ways in which a project could remove an obstacle to growth. Growth does not necessarily create significant physical changes to the environment. However, depending upon the type, magnitude, and location of growth, it can result in significant adverse environmental effects. The Plan's growth inducing potential is therefore considered significant if project-induced growth could result in significant physical effects in one or more environmental issue areas.

5.1.1 Population and Employment Growth

As discussed in Section 4.14, *Population and Housing*, and as explained in Section 2.3.5, *Residential and Employment Growth,* of this EIR, reasonably foreseeable development under the Plan is projected to result in approximately 22,000 new homes and 26,391 new jobs, which would move the city closer to a 1 to 1 jobs/housing ratio. Based on Palmdale's estimated average household size of 3.44 persons (DOF, 2022), this would lead to an increase of approximately 75,756 residents in the city. Adding the 75,756 new residents cited above to the City's 2022 population of 167,398, future residential growth carried out under the proposed project is predicted to increase the city's total population to 243,154, which is above SCAG's 2045 population forecasts of 207,000 from the 2016-2040 RTP/SCS (SCAG 2016). The addition of approximately 75,756 residents constitutes a 45% population increase between 2022 and 2045. Therefore, the Plan would accommodate substantial population growth in the area.

However, policies in the Plan would help manage the use of land so that growth, development, and redevelopment occur in an orderly manner. The following Plan policies would guide growth in the Planning Area:

- **Goal LUD-2: A City that supports and encourages new growth in the developed urban core.**
  - **Policy LUD-2.1: Focused Growth.** Direct future growth to areas closer to the center of town, which can accommodate development based upon topography, environmental factors, and availability of existing infrastructure.
  - **Policy LUD-2.2: Preferred Development Patterns.** In considering requests to amend the Land Use Map, encourage proposals for development in those areas which are functionally connected to developed portions of the city, have available infrastructure, and do not have significant topographic or jurisdictional barriers, or other similar constraints.
  - **Policy LUD-2.3: Discouraged Development Patterns.** In considering requests to amend the Land Use Map, discourage proposals for development in those areas which are functionally separated from developed portions of the city by lack of infrastructure, expanses of vacant land, significant topographic or jurisdictional barriers, or other similar constraints.

- **Goal LUD-5 All new major development in the city is designed to support high-quality neighborhoods**.
  - **Policy LUD-5.1: New Complete Neighborhoods**. Require new development to provide multiple amenities, a beautiful public realm, and be consistent with the City's vision for complete neighborhoods.
  - **Policy LUD-5.2: Walkability of New Neighborhoods**. Require all new neighborhoods to be pedestrian friendly by including features, such as short blocks, wide sidewalks, shaded streets, buildings that define and are oriented to streets or public spaces, traffic-calming features, convenient pedestrian street crossings, and safe streets designed for pedestrians, cyclists, and vehicles.
  - **Policy LUD-5.3: Public Services in New Neighborhoods**. Require new developments to be designed for and provided with adequate public services and infrastructure. Require that these public facilities and services be provided concurrently with development to ensure a high quality of life for residents.
  - **Policy LUD-5.4: Access to Retail/Services.** Strive for a high level of connectivity of residents to neighborhood services through site design, open space linkages, and bicycle facilities. Plan for 90 percent of residents (except for in rural residential designations) to be within a fifteen to twenty minute walking distance of retail and neighborhood services.
- **Goal LUD-24: Maintain the character of rural areas.**
  - **Policy LUD-24.1: Appropriate Densities.** Avoid designating land for higher density uses where prevailing existing development patterns are rural residential with lot sizes of one acre or more.
  - **Policy LUD-24.2: Commercial Developments**. Permit neighborhood commercial development within rural areas to serve the needs of these areas, provided that such projects include safe, logical, and functional access from the adjacent neighborhoods for pedestrian and equestrian users.

Growth under the proposed project would result in a more balanced jobs-housing ratio in 2045 by increasing jobs available in Palmdale (see Table 4.14-2 in Section 4.14, *Population and Housing*). Therefore, such growth would not result in substantial adverse effects associated with an increased imbalance of jobs and housing in the City. Further, growth carried out under the Plan would be substantial, but would not be "unplanned." As discussed in Section 2.3.1 of this EIR, the Plan's vision for the City was developed with extensive community input and in recognition of the state's planning priorities. The Plan focuses on enhancing community identity, building on planned infrastructure investments, improving multi-modal active transportation and connectivity, integrating health and equity, and capitalizing on the City's unique location in the region. The Plan identifies major strategies and physical improvements for the city over the next 25 years. Because the Plan is designed for planned and orderly growth, which improves the balance of jobs and housing, impacts would be less than significant.

5.1.2 Removal of Obstacles to Growth

The Planning is an urbanized community served by existing infrastructure. As discussed in Section 4.19, *Utilities and Service Systems*, and Section 4.10, *Hydrology and Water Quality*, existing infrastructure in the Planning Area would be adequate to serve development facilitated by the Plan. One of the purposes of the Plan is to focus future development in a way that minimizes the impacts

of growth by emphasizing the development and reuse of already developed areas, thus minimizing pressure to develop on the open spaces surrounding the Planning Area. As discussed in Section 2, *Project Description*, the Plan encourages the reuse of already developed areas. Generally, most new development would result in re-use of properties, conversion of properties to different uses in response to market demand (e.g., select industrial to commercial), and more intense use of land in defined focus areas. Growth in the Planning Area is anticipated to consist of infill development rather than development on greenfield sites. Furthermore, the Plan emphasizes bicycle connections and pedestrian-oriented focus areas; proposes focus areas and activity nodes to help shape and distribute new development; promotes protecting the character of existing residential neighborhoods; and outlines the future role and form of Palmdale's public realm. Therefore, although development of vacant lands would require new infrastructure and expansion of services, new development would occur primarily where existing roads, water, and sewer are in place and in a manner that minimizes the impact of development on existing facilities and services. In addition, the goals, policies, and programs of the Plan would limit development in the Planning Area, thereby controlling, rather than removing, obstacles to growth.

5.2 Irreversible Environmental Effects

Section 15126.2(c) of the CEQA Guidelines requires that EIRs evaluating projects involving amendments to public plans, ordinances, or policies contain a discussion of significant irreversible environmental changes. CEQA also requires decision-makers to balance the benefits of a proposed project against its unavoidable environmental risks in determining whether to approve a project. This section addresses non-renewable resources, the commitment of future generations to the proposed uses, and irreversible impacts associated with the proposed project.

Construction activities facilitated under the Plan would involve the use of building materials and energy, some of which are non-renewable resources. Consumption of these resources would occur with any development in the region and are not unique to Palmdale or the Plan. New development in the City during the lifetime of the Plan would increase local demand for non-renewable energy resources such as petroleum, although increasingly efficient building fixtures and automobile engines, and a state energy portfolio increasingly generated from renewable resources, as well as implementation of policies included in the Plan, are expected to offset this increased demand, either in whole or in part. For these reasons, and because of Palmdale's relatively small size compared to the region, growth facilitated by the Plan would not significantly affect local or regional energy supplies.

Growth facilitated by the Plan would also require an irreversible commitment of City services, water supply, and wastewater treatment. As discussed in Section 4.15, *Public Services,* compliance with Plan policies would reduce impacts related to police and fire protection services, schools and other public facilities to less than significant. However, as discussed in Section 4.19, *Utilities and Service Systems*, impacts related to the provision of water supply facilities and wastewater facilities would be significant and unavoidable, even with adherence to applicable regulations and Plan goals and policies.

The additional vehicle trips associated with growth from implementation of the Plan would increase local traffic, noise levels, and regional air pollutant and greenhouse gas (GHG) emissions. As discussed in Section 4.3, *Air Quality*, construction and operation emissions associated with individual development projects facilitated by the Plan may conflict with the Antelope Valley Air Quality Management District's Ozone Attainment Plan and would contribute to a cumulatively

considerable net increase in criteria pollutants; impacts would be significant and unavoidable. As discussed in Section 4.8, *Greenhouse Gas Emissions,* although the Plan would result in an increase in GHG emissions, the Greenhouse Gas Inventory included in the Plan demonstrates that GHG emissions per service person would decrease over time under the Plan. Therefore, the Plan would have less than significant impacts related to GHG emissions. Implementation of Plan policies and regional air pollution programs would reduce the air pollutant and GHG emissions associated with individual future development projects. Further, compliance with Palmdale Municipal Code and implementation of Plan policies would ensure that impacts related to noise would be less than significant.

Finally, demolition and ground-disturbing activities facilitated by the Plan could cause substantial adverse changes in the significance of a historical resource. Even with implementation of applicable Plan policies and Mitigation Measure CUL-1, damage to or destruction of a known or previously unknown historical resource could occur because of the Plan. Therefore, the Plan would irreversibly impact historical resources in the Planning Area.

5.3 Significant and Unavoidable Impacts

The environmental effects of the proposed project, along with recommended mitigation measures, are discussed in detail in Section 4, *Environmental Impact Analysis*, of this EIR and summarized in the Executive Summary. The following environmental issues were determined to be less than significant, or can be reduced to less than significant with the incorporation of mitigation measures:

- Aesthetics
- Agricultural and Forestry Resources
- Biological Resources
- Energy
- Geology and Soils
- Greenhouse Gas Emissions
- Hazards and Hazardous Materials
- Hydrology and Water Quality
- Land Use and Planning
- Mineral Resources
- Noise
- Population and Housing
- Public Services
- Recreation
- Transportation
- Tribal Cultural Resources
- Wildfire

Section 15126.2(b) of the CEQA Guidelines requires that an EIR describe any significant impacts, including those that can be mitigated but not reduced to less than significant levels, as a result of implementation of the project. The following environmental issues were determined to result in potential significant and unavoidable impacts:

- Air Quality: increase in ozone and criteria air pollutants beyond local and state thresholds.
- Cultural Resources: substantial adverse change in the significance of a historical resource.
- Utilities and Service Systems: insufficient water supplies available to serve the Planning Area and reasonably foreseeable future development.

This page intentionally left blank.

6 Alternatives

As required by Section 15126.6 of the California Environmental Quality Act (CEQA) Guidelines, this chapter of the EIR examines a range of alternatives to the Plan. Included in this analysis are the CEQA-required "no project" alternatives (no growth, and growth in accordance with the City's current General Plan). In addition, a Reduced Growth Alternative is proposed to address potential impacts associated with growth. The alternatives are listed below:

- Alternative 1: No Project (see Section 6.1)
- Alternative 2: Reduced Growth Alternative (see Section 6.2)

Alternative 1: No Project, analyzes growth in accordance with the City's current General Plan. The City also considered a "no growth" alternative, but rejected it as infeasible for the reasons discussed in Chapter 6.3 of this EIR. As required by CEQA, this chapter includes a discussion of the "environmentally superior alternative" among those studied (see Section 6.4).

Section 15126.6(a) of the CEQA Guidelines states the following:

> "An EIR shall describe a reasonable range of alternatives to the project, or to the location of the project, which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project, and evaluate the comparative merits of the alternatives. An EIR need not consider every conceivable alternative to a project. Rather it must consider a reasonable range of potentially feasible alternatives that will foster informed decision making and public participation. An EIR is not required to consider alternatives which are infeasible. The lead agency is responsible for selecting a range of project alternatives for examination and must publicly disclose its reasoning for selecting those alternatives. There is no ironclad rule governing the nature or scope of the alternatives to be discussed other than the rule of reason."

The City of Palmdale, in its role as lead agency, has determined that the alternatives analyzed in this chapter of the EIR represent a reasonable range of alternatives to the Plan. Section 6.3 of this EIR includes a discussion of alternatives considered but rejected by the lead agency because they either did not meet the objectives of the project, were considered infeasible, or would not avoid or substantially lessen one or more significant effects of the Plan.

6.1 Alternative 1: No Project Alternative

6.1.1 Description

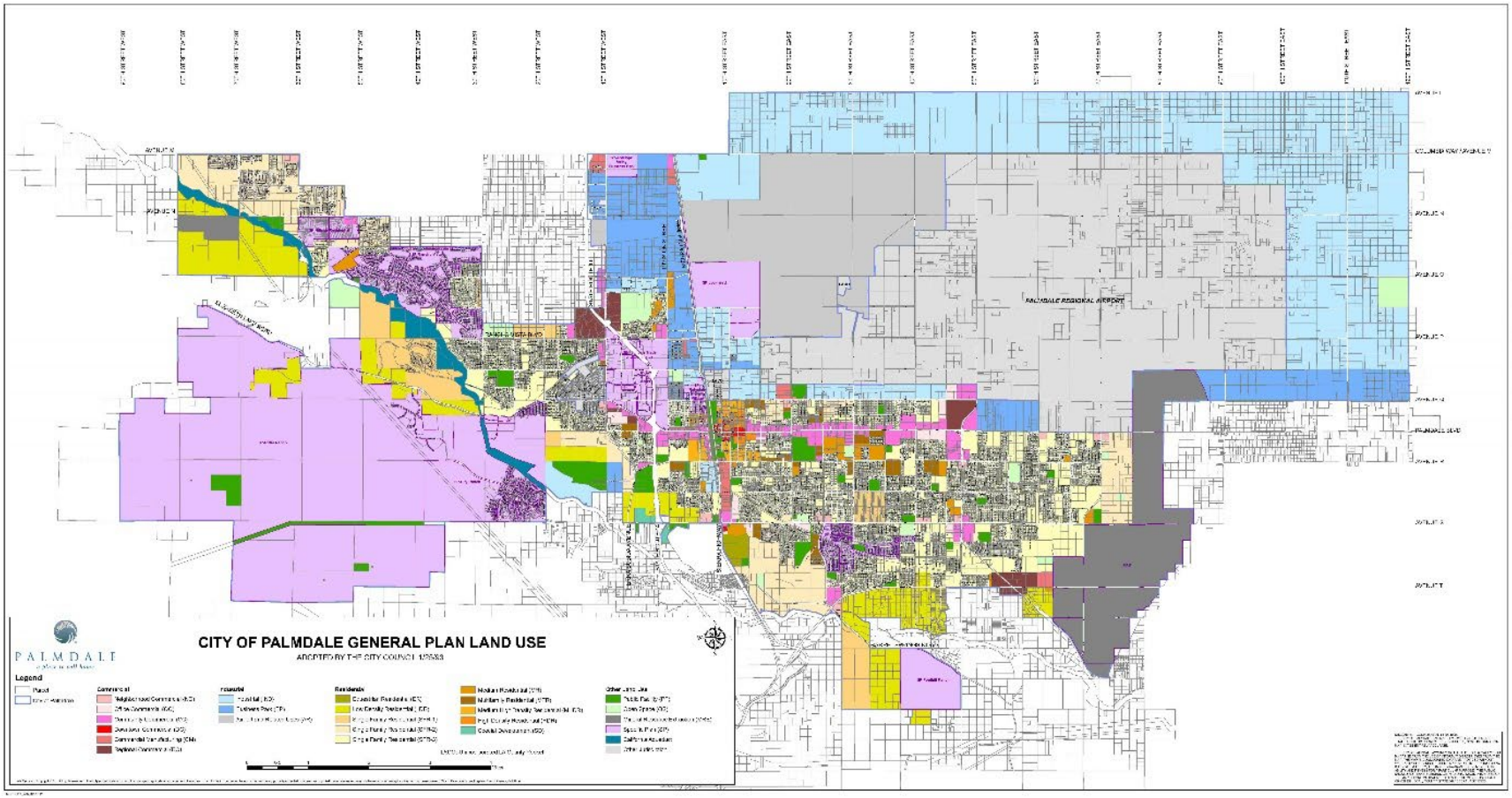
The "No Project" Alternative involves continued implementation of the City's current General Plan, the last comprehensive update of which was adopted in 1993. The City also considered a "no growth" alternative, but rejected it as infeasible for the reasons discussed in Section 6.3 of this EIR. The No Project Alternative assumes that the proposed Plan would not be adopted and therefore future development would be carried out under the City's existing General Plan policies and land use designations. The overall amount of growth anticipated to occur under the City's current General Plan is less than anticipated to occur under the proposed Plan. The proposed Plan includes additional land use designations for mixed housing densities focused around the future downtown area and across Palmdale Boulevard with education and medical districts strategically distributed

within the City. Therefore, it also increases the City's total potential population and amount of commercial development compared to the current General Plan. As discussed in Chapter 4.14 *Population and Housing* under the current General Plan, the City's population is not expected to reach the SCAG forecast of 207,000 by 2040, while under the proposed Plan future residential growth is predicted to increase the City's total population to 236,480. SCAG forecasts for population, households, and employment in Palmdale through the year 2045 are shown in Table 2-3 of Chapter 2, *Project Description* of this EIR.

The Plan identifies major strategies and physical improvements for the City over the next 25 years. These strategies include creating a vibrant downtown near the future multimodal transit station, establishing three health and wellness districts and two education districts, transforming Palmdale Boulevard into a mixed-use corridor, promoting a diversity of housing types in the City, forming village centers that offer a mix of residential choices and daily goods and services near existing neighborhoods, and building off existing industrial and aerospace business opportunities. In contrast, the No Project Alternative would continue to facilitate development in the same pattern as currently seen in the Planning Area. This pattern of land uses is reflected in the City's current Land Use Map, shown in Figure 6.1.

Under the Plan, new development would generally result from re-use of properties, infill development on vacant lots, conversion of uses in response to market demand (e.g., mixed use developments), and more intense use of land in defined areas. Additionally, most development under the Plan would be in the industrial and office space land use designations. Growth would be redirected to downtown Palmdale as well as the numerous land use districts established in the Plan. While new development under the No Project Alternative would also result from re-use of properties, conversion of uses in response to market demand, and development on vacant lots, this alternative would not include as much land zoned for medium-density residential or mixed use development as the focus areas included under the Plan, and new development would therefore be spread throughout the Planning Area rather than in defined areas to a greater degree than under the Plan. Therefore, rather than potentially creating more intense use of land in the geographically well-defined focus areas, a lower amount of new, market-driven development would occur, and development under Alternative 1 would likely be spread more widely across the Planning Area, without the adjustments in land use, beautification, and placemaking included in the Plan.

Figure 6-1 Palmdale Current General Plan Land Use Map



6.1.2 Impact Analysis

a. Aesthetics

As discussed in Impact AES-3 in Chapter 4.1, *Aesthetics*, the Plan, when compared to the City's current General Plan, places a greater emphasis on enhancing community identity, building on planned infrastructure investments, integrating health and equity, and capitalizing on the Planning Area's unique location in the region. The vision established by the Plan places a greater emphasis on an active and vibrant downtown and transforming Palmdale Boulevard a mixed-use corridor. The Plan defines (both physically and visually) the desired visual character and quality of these areas and sets forth urban form policies to ensure that the Planning Area retains the unique aesthetic qualities valued by Palmdale residents. The Plan does not call for substantial changes to established residential neighborhoods, and includes specific policies aimed at retaining the character of the neighborhoods. The No Project Alternative would not include these features and could therefore lead to a lower level of visual character and quality for certain parts of the Planning Area, and perhaps for the Planning Area as a whole, thereby potentially creating a greater impact to visual character and quality than the Plan. There would be less change to visual character and light and glare conditions in the Planning Area compared to the Plan because this alternative would reduce overall development. Less development in the focus areas would result in fewer light sources and slightly reduced light and glare impacts. Impacts to scenic vistas under this alternative would be less than those of the Plan because reduced development would mean fewer buildings partially blocking views. Because this alternative's aesthetics impacts would be greater than the Plan's in some respects but less than the Plan's in others, its overall aesthetic impacts would be similar those of the Plan.

b. Agricultural and Forestry Resources

As described in Chapter 4.2, *Agricultural Resources* the Planning Area contains approximately 4,898 acres of agricultural land, which comprises approximately 4.6 percent of the Planning Area (Raimi & Associates 2021c). The agricultural land primarily consists of Prime Farmland, with small areas of Farmland of Statewide Importance and Unique Farmland. The Plan focuses on infill and urban development, would not involve specific development on Farmland, and would contain goals and policies related to the conservation of Farmland within the Planning Area, or any other land use changes that would substantially contribute to farmland conversion. Therefore, the Plan would not involve the conversion of Farmland to non-agricultural use. The Planning Area does not include areas forest land, timberland, or timberland zoned Timberland Production. No lands within the Planning Area are currently designated as forest land or timberland in the City's General Plan, and no lands within the City are zoned for timberland production. Therefore, the Plan would not conflict with existing zoning or cause rezoning of forest land, timberland, or areas zoned for timberland production. The Plan would therefore not result in conversion of farm or forest land, nor would it conflict with existing zoning for agricultural or forest use, and it would not have any significant impact environmental impacts on agricultural and forestry resources.

The No Project alternative would also not have any significant environmental impacts on agricultural and forestry resources. The area in which most of the agricultural land in the Planning Area is located is currently designated as Industrial (IND) or as Airport and Related Uses in the City's existing General Plan and is zoned as Planned Industrial in the City's municipal code. Future development facilitated by the existing General Plan would be subject to existing federal and State laws and regulations that aim to conserve and protect farmland, as well as existing General Plan

policies that would discourage development in agricultural areas and the conversion of Farmland to non-agricultural use. Overall, the agricultural and forestry resources of this alternative would be similar to those of the Plan.

c. Air Quality

As with the Plan, impacts to Air Quality under this alternative would be significant and unavoidable. As discussed in Impact AQ-1, AQ-2, and AQ-3 in Chapter 4.3, *Air Quality* of this EIR, individual developments projects carried out under the Plan would generate construction and operational-related emissions. Even with implementation of Plan policies, compliance with existing regulations, and implementation of mitigation measures, construction and operational emissions would exceed applicable emissions thresholds. The Plan would result in a cumulatively conservable net increase of criteria pollutants; however, impacts related to exposing sensitive receptors to substantial pollutant concentrations and other emissions such as odors would be less than significant. The same would be true with the No Project Alternative. Under this alternative, individual projects would be constructed and operated under City's current General Plan, and as such would be subject to existing General Plan policies intended to mitigate air quality impacts; however, buildout would result in significant impacts as emissions would exceed applicable thresholds. Further, buildout under the existing General Plan would result in a cumulative net increase of criteria pollutants. As with development under the Plan, development under the No Project Alternative would be subject to applicable Antelope Valley Air Quality Management District (AVAQMD) policies, and the reduced amount of construction under the No Project Alternative would result in reduced construction emissions and slightly reduced impacts to air quality under this alternative. However, impacts would remain significant and unavoidable.

d. Biological Resources

As described in Chapter 4.4, *Biological Resources*, development carried out under the Plan could potentially adversely affect biological resources and as a result Mitigation Measures BIO-1 would be required. This mitigation measures, along with Plan policies described in Chapter 4.4, would reduce impacts to biological resources to a less than significant level. Development carried out under the No Project Alternative would occur under the City's current General Plan, which does not include these Plan policies or mitigation measures. Development under the City's current General Plan might also tend to be more dispersed than under the proposed Plan, which would redirect to downtown Palmdale as well as the numerous land use districts established in the Plan. As a result, impacts under this alternative would be greater than those of the Plan.

e. Cultural Resources

As discussed in Impact CUL-1 and CUL-2 in Chapter 4.5 *Cultural Resources* of this EIR, the Plan would have less than significant impacts to historical resources with mitigation. Impact CUL-1 describes how the Plan has the potential to result in a significant impact if development carried out under the Plan caused a substantial adverse change in the significance of a historical resource and as a result Mitigation Measure CUL-1 would be required. Impact CUL-2 describes how the Plan has the potential to result in a significant impact if development carried out under the Plan caused a substantial adverse change in the significance of an archaeological resource and as a result mitigation measures CUL-2 through CUL-8 would be required. Impact CUL-3 describes how the Plan has the potential to disturb or damage human remains, and the existing regulations that address this potential impact.

Under the No Project Alternative development would still occur but would be carried out under the City's current General Plan, with a lower amount of new, market-driven development likely spread more widely across the Planning Area than under the Plan. However, because it is not known where archaeological resources and human remains may exist, and this alternative would involve potential impacts to these resources, potential impacts to these resources would greater under this scenario.

The No Project Alternative would potentially increase impacts to historic and archaeological resources compared to the Plan. As discussed in Chapter 4.5 *Cultural Resources*, the Plan does not call for substantial changes to established residential neighborhoods and includes specific policies aimed at preserving historic resources. The No Project Alternative would not include these elements and would, therefore, be more likely than the Plan to lead to or allow the loss of, or negative effects on, historic resources in such areas. Additionally, the No Project Alternative would not include the specific mitigation measures described in Chapter 4.5. This alternative would therefore have potentially greater impacts to cultural resources than the Plan.

f. Energy

Because development under the No Project Alternative would still occur but would be carried out under the City's current General Plan, with a lower amount of new, market-driven development likely spread more widely across the Planning Area than under the Plan, the Plan and the No Project Alternative do not have substantially different development footprints, at least in terms of land area. However, the Plan's land use scenario encourages a greater degree of high-density development. While the City's current General Plan does contain some energy efficiency policies, it does not contain any transportation demand management policies that would reduce VMT or encourage the installation of electric vehicle infrastructure, nor is it as consistent with energy efficiency goals contained in the City's Energy Action Plan or proposed Climate Action Plan. Therefore, inefficient and unnecessary consumption of energy would be greater under this alternative. Overall, the No Project Alternative would have greater energy impacts than the Plan.

g. Geology and Soils

Under the No Project Alternative, development would occur within the same Planning Area as the Plan. Therefore, development under this alternative would occur on the same geologic units, soils, and slopes as under the Plan. Development under this alternative would, like development under the Plan, be required to comply with applicable regulations, such as the California Building Code, the Palmdale Municipal Code, and the Clean Water Act. Because this alternative and the Plan would not substantially differ in land area development footprints, they would have similar potential for loss of topsoil, placement of development atop expansive soils, or accidental discovery of paleontological resources. Therefore, impacts associated with topsoil loss and expansive soils would be similar under the No Project Alternative and the Plan. As described in Chapter 4.7, *Geology and Soils*, impacts from development carried out under the Plan would be less than significant with adherence to applicable building codes and Plan policies. Development carried out under the No Project Alternative would occur under the City's current General Plan, which does not include these Plan policies. As a result, potential impacts to these resources under this alternative would be greater than those of the Plan. Overall, this alternative would be more impactful in some respects than the Plan, and its potential impacts related to geology and soils would therefore be greater than those of the Plan.

h. Greenhouse Gas Emissions

Implementation of the No Project Alternative would result in a lower amount of new, market-driven development that would likely be spread more widely across the Planning Area and would involve less overall development and associated growth than would occur under Plan. Therefore, this alternative would reduce construction related GHG emissions compared to the Plan. However, because development would be more dispersed under this alternative and not concentrated in identified focus areas, total VMT and per capita VMT would be greater under this alternative than under the Plan, as shown in Table 4.17-14 of this EIR. The land use scenario and the associated GHG emissions envisioned under this alternative would also not be consistent with applicable state regulations that were adopted after the City's current General Plan, including the City's proposed Climate Action Plan and SCAG's latest RTP/SCS. The Plan also contains policies intended to facilitate greater GHG emission reductions than is mandated under the City's current General Plan. Because this alternative would not include GHG emissions reduction policies and programs, it could contribute to greater GHG emissions than the Plan. Therefore, while the No Project Alternative would result in fewer GHG emissions during construction, the other factors discussed above could contribute to increased operational GHG emissions. Overall, this alternative's greenhouse gas emissions impacts would therefore be similar to those of the Plan.

i. Hazards and Hazardous Materials

The No Project Alternative would result in less development than the Plan, so it would result in slightly less use and transport of hazardous materials than the Plan. This development, however, would still take place in the Planning Area. The City's current General Plan contains policies regarding the handling, storage, and collection of hazardous materials, but the Plan includes additional policies related to hazardous materials transportation routes, partnerships, remediation, education, and emergency plans, which would better prevent exposure to hazardous materials. Therefore, while the No Project Alternative would have less than significant hazardous materials impacts, its overall impacts would be greater than those of the Plan.

j. Hydrology and Water Quality

The No Project Alternative would result in less development than the Plan. Therefore, development under this alternative would result in slightly reduced impervious surfaces and stormwater runoff volumes and velocity as the Plan. Both the City's current General Plan and the Plan contain policies to reduce potential water quality impacts. Development under this alternative would be subject to the same regulatory requirements, such as NPDES permit requirements, governing runoff and protecting water quality and supply, as development carried out under the Plan. The No Project Alternative, however, would result in a smaller population in 2040, and demand for groundwater would be less than that of the Plan. Impacts to hydrology and water quality under this alternative would be less than those of the Plan.

k. Land Use and Planning

As discussed under Impact LU-2 in Chapter 4.11, *Land Use and Planning*, the Plan would be generally consistent with the policies of SCAG's RCP and RTP/SCS. The No Project Alternative would not be as consistent with these policies because it would not include the Plan goals and policies described in Chapter 4.11. Development under the Plan would also help the City meet its RHNA allocation. The No Project Alternative would lead to less residential development than the Plan and as a result would not help the City meet its RHNA allocation to the same degree as the Plan. Thus, the No

Project Alternative would not be consistent with state policies for the provision of adequate housing represented by the RHNA. The No Project Alternative's overall land use and planning impacts would be greater than those of the Plan.

l. Mineral Resources

The No Project Alternative would result in less development than the Plan. However, development under this alternative would still take place in the Planning Area. Therefore, development under the No Project Alternative could result in development in areas where significant mineral resources exist. As described in Impact MIN-1, projects carried out under the Plan would be required to adhere to SMARA regulations, Title 17 Chapter 17.102 and Chapter 17.72 of the Palmdale Municipal Code (described in Section 4.12.2, *Regulatory Setting*). The same would be true under the No Project Alternative. However, projects carried out under the Plan would also be required to be consistent with the Plan goals and policies relevant to mineral resources. Development carried out under the No Project Alternative would occur under the City's current General Plan, which does not include these policies. Therefore, this alternative's overall impact to mineral resources would be greater than that of the Plan.

m. Noise

The No Project Alternative would result in less development than the Plan. Therefore, less construction and associated construction noise and vibration would occur under this alternative than under the Plan, particularly in the identified development areas and housing opportunity sites in the Plan. However, construction noise under this alternative might be spread more widely across the Planning Area. Also, while this alternative would result in less development, the City's current General Plan has fewer operational noise reduction policies and restrictions than the Plan. Furthermore, Mitigation Measure N-1, which requires construction vibration control measures, would not be included in this alternative. Therefore, the No Project Alternative's noise impacts would be greater than those of the Plan.

n. Population and Housing

Under the No Project Alternative, the existing land use designations in the City's current General Plan would continue to define the type of development that occurs in the Planning Area. Implementation of this alternative would accommodate fewer residents and housing units than the Plan, which would increase allowable residential development densities in certain focus areas. Thus, compared to the Plan, the No Project Alternative would result in less population growth, which would be more consistent with SCAG projections for Palmdale than projected residential growth under the Plan, although policies and actions included in the Plan would adequately address potential impacts of this projected population growth. Any displacement of people or housing units under the No Project Alternative would be minimal because development in the Planning Area would continue pursuant to the existing General Plan, but this impact would also be minimal under the Plan, as described in Impact PH-2 of this EIR. Still, because of the lower total population growth it would accommodate, this alternative's population and housing impacts would be less than those of the Plan.

o. Public Services

Under the No Project Alternative, the existing land use designations in the City's current General Plan would continue to define the type of development that occurs throughout the Planning Area.

This alternative would result in less development than the Plan and would therefore generate less demand for fire, police, school, and library services. While, as discussed in Chapter 4.15, *Public Services*, the Plan includes policies that direct the City to strive to maintain adequate public service facilities, the City's' current General Plan contains some similar policies. The No Project Alternative would result in a demand for public services already anticipated by existing public service facilities, while the Plan would result in additional demand. Because of the lower total population growth it would accommodate, this alternative's public services impacts would be less than those of the Plan.

p. Recreation

Under the No Project Alternative, the existing land use designations in the City's current General Plan would continue to define the type of development that occurs throughout the Planning Area. This alternative would result in less development than the Plan and would therefore generate less demand for, and demand on, recreational facilities. While, as discussed in Chapter 4.16, *Recreation*, the Plan includes policies that direct the City to strive to maintain adequate recreational facilities, the City's current General Plan contains some similar policies. The No Project Alternative would result in a demand for, and demand on, recreational services already anticipated by existing recreational facilities, while the Plan would result in additional demand. Because of the lower total population growth it would accommodate, this alternative's impacts on recreation would be less than those of the Plan.

q. Transportation

Under the No Project Alternative, the existing land use designations in the City's current General Plan would continue to define the type of development that occurs throughout the Planning Area. Implementation of the No Project Alternative would result in less new, market-driven development that would likely be spread more widely across the Planning Area and would involve less overall development and associated growth than would occur under Plan. Because development would be more dispersed under this alternative and not concentrated in identified focus areas, it would result in greater per capita VMT and would therefore be more inconsistent with CEQA Guidelines Section 15064.3 subdivision (b) than the Plan. The No Project alternative would also not include policies described in Chapter 4.17, *Transportation* of this EIR that reduce traffic hazards, address emergency access and the circulation system, and multimodal and alternative transportation. Therefore, this alternative would result in greater transportation impacts than the Plan.

r. Tribal Cultural Resources

As discussed in Chapter 4.18, *Tribal Cultural Resources*, tribal cultural resources impacts are highly dependent on both the individual project site conditions and the characteristics of the proposed activity. Development carried out under the Plan has the potential to impact unidentified tribal cultural resources. Impacts on tribal cultural resources would be potentially significant but mitigable. Under the No Project Alternative, the existing land use designations in the City's current General Plan would continue to define the type of development that occurs throughout the Planning Area. Because development would occur within the same Planning Area as the Plan, this alternative's potential to encounter tribal cultural resources would be similar to the Plan. This alternative, however, would not include mitigation measures TCR-1 and TCR-2, which would protect tribal cultural resources. Impacts to tribal cultural resources under the No Project Alternative would therefore be greater than under the Plan.

s. Utilities and Service Systems

As discussed in Chapter 4.19, *Utilities and Service Systems*, development carried out under the Plan would or may require increased or expanded water supplies and wastewater, stormwater, telecommunications, electric power, and natural gas supplies and facilities. While compliance with policies in the Plan, the Palmdale Municipal Code, and other City programs would reduce these impacts, impacts on water supply and wastewater capacity would remain significant and unavoidable. The No Project Alternative would result in less development and less population increase than the Plan, which would tend to decrease demand on existing utilities and service systems, but it would not include policies from the Plan that address water supply, wastewater, and solid waste. Still, development under the No Project Alternative would tend to be more consistent with the existing demand projections of utility service providers. Therefore, utilities impacts under this alternative would be less than under the Plan.

t. Wildfire

As discussed in Chapter 4.20, *Wildfire,* although a portion of the Planning Area is in a very high fire hazards severity zone, Plan policies related to wildfire risk would reduce impacts to a less than significant level. The No Project Alternative would be carried out in the same Planning Area as the Plan including areas in very high fire hazard severity zones. Development carried out under the No Project Alternative would occur under the City's current General Plan, which does not include these Plan policies. Therefore, this alternative's overall wildfire impact would be greater than that of the Plan.

6.2 Alternative 2: Reduced Growth Alternative

6.2.1 Description

The Reduced Growth Alternative (Alternative 2) is included in this chapter of the EIR to address potential growth-related impacts associated with the Plan. The Reduced Growth Alternative is based in part on a report to the Mayor and Members of the City Council from the City Manager that analyzed land use alternatives for the General Plan update (Palmdale 2020). This analysis assumes that "Alternative 2" described in the report would be the reduced growth alternative.

Although this alternative would result in less overall development than the Plan, development is assumed to occur in the same general locations as under the Plan, and be subject to the same goals, policies, and development standards as under the Plan.

Implementation of the Reduced Growth Alternative would result in development within the Planning Area that would generally meet the project objectives established for the Plan, although in some cases to a lesser degree than the Plan. This alternative would result in lower housing density than the Plan and thus would, overall, result in less housing and population growth. However, this alternative would result in more growth in the aerospace industrial sector, similar moderate growth in other industrial sectors, and a marginally greater amount of growth in employment flex sectors (mixed use development of lighter industrial uses and more intensive service, retail, and wholesale commercial uses including R&D, small warehouses, office, and medical uses in a walkable and/or auto-accessible environment). Under this alternative, village centers would also have exclusively commercial uses as opposed to the higher density mixed use retail and residential uses envisioned under the Plan. According to a Future Conditions report prepared by Parsons, overall employment

under this alternative would be similar to the Plan while population and household growth would decrease by 2 and 4 percent respectively (Parsons 2021). As discussed in Chapter 4.14, *Population and Housing*, the Plan would help the City meet its Regional Housing Needs Assessment (RHNA) allocation. The Reduced Growth Alternative would do this to a lesser degree than the Plan. The decrease in population would also result in producing fewer work-related trips within the Palmdale city limits. This would contribute to Palmdale being a net importer of commuters, thereby increasing longer commutes. Longer commutes would result in increased VMT, which would be contrary to the proposed Plan's goal of "striving to become a self-contained community."

6.2.2 Impact Analysis

a. Aesthetics

As discussed in Impact AES-3 in Chapter 4.1, *Aesthetics*, the Plan, when compared to the City's current General Plan, places a greater emphasis on enhancing community identity, building on planned infrastructure investments, integrating health and equity, and capitalizing on the Planning Area's unique location in the region. The vision established by the Plan places a greater emphasis on an active and vibrant downtown and transforming Palmdale Boulevard a mixed-use corridor. The Plan defines (both physically and visually) the desired visual character and quality of these areas and sets forth urban form policies to ensure that the Planning Area retains the unique aesthetic qualities valued by Palmdale residents. The Plan does not call for substantial changes to established residential neighborhoods, and includes specific policies aimed at retaining the character of the neighborhoods.

The Reduced Growth Alternative would implement the same policies as the Plan but would involve less residential and non-residential development than the Plan. Impact related to visual quality under this alternative would be similar to those of the Plan because the same Plan policies would apply to new development, but impacts to visual character may be reduced because less development would produce less change to visual character. As discussed in Chapter 4.1.2, Section 17.86.030 of the Palmdale Municipal Code includes lighting standards for protecting the aesthetic character of the City. This alternative would be subject to these same regulations. This alternative may introduce fewer sources of light and glare to the Planning Area, however, because of the reduced total amount of development. Therefore, light and glare impacts would be less than those of the Plan. Impacts to scenic vistas under this alternative would be less than those of the Plan because reduced development would mean fewer buildings partially blocking views. Overall, this alternative's aesthetic impacts would be less than those of the Plan.

b. Agricultural and Forestry Resources

As described in Chapter 4.2 *Agricultural Resources*, the Planning Area contains approximately 4,898 acres of agricultural land, which comprises approximately 4.6 percent of the Planning Area (Raimi & Associates 2021c). The agricultural land primarily consists of Prime Farmland, with small areas of Farmland of Statewide Importance and Unique Farmland. The Plan focuses on infill and urban development, would not involve specific development on Farmland, and would contain goals and policies related to the conservation of Farmland within the Planning Area. Therefore, the Plan would not involve the conversion of Farmland to non-agricultural use. The Planning Area does not include areas forest land, timberland, or timberland zoned Timberland Production. No lands within the Planning Area are currently designated as forest land or timberland in the City's General Plan, and no lands within the City are zoned for timberland production. The same would be true of the

Reduced Growth Alternative because it would also not involve development in these areas. Therefore, neither the Plan nor this alternative would conflict with existing zoning or cause rezoning of forest land, timberland, or areas zoned for timberland production; result in conversion of farm or forest land; or conflict with existing zoning for agricultural or forest use. Additionally, the Reduced Growth Alternative would implement the same policies relating to agricultural resources as the Plan. Therefore, neither the Plan north this alternative would have any significant impact environmental impacts on agricultural and forestry resources. Therefore impacts would be the same under either the Reduced Growth Alternative or the Plan.

c. Air Quality

As with the Plan, impacts to Air Quality under this alternative would be significant and unavoidable As discussed in Impact AQ-1, AQ-2, and AQ-3 in Chapter 4.3, Air Quality of this EIR, individual developments projects carried out under the Plan would generate construction and operational-related emissions. Even with implementation of Plan policies, compliance with existing regulations, and implementation of mitigation measures, construction and operational emissions would exceed applicable emissions thresholds. The Plan would result in a cumulative net increase of criteria pollutants; however, impacts related to exposing sensitive receptors to substantial pollutant concentrations and other emissions such as odors would be less than significant. While construction and operational-related emissions would be reduced as overall growth would be reduced under this alternative, impacts of this alternative would be similar to impacts of the Plan. . Under either scenario, individual projects would be constructed and operated, but they would be subject to existing General Plan policies intended to mitigate air quality impacts. Additionally, as with development under the Plan, development under the Reduced Growth Alternative would also be subject to applicable AVQMD policies. The reduced amount of construction under this alternative would result in reduced construction emissions and slightly reduced impacts; however, impacts to air quality would remain significant and unavoidable.

While the Reduced Growth Alternative would result in less development overall, it would still include the same goals and policies as the Plan and could therefore still focus growth in the identified infill focus areas. Per capita VMT per capita could therefore be similarly reduced compared to the Plan, at least for new development. Overall, because of its reduced total amount of development and potentially similar per capita VMT, this alternative's air quality impacts would be less than those of the Plan.

d. Biological Resources

As described in Chapter 4.4, *Biological Resources*, development carried out under the Plan could potentially adversely affect biological resources and as a result mitigation measures BIO-1 would be required. These mitigation measures, along with Plan policies described in Chapter 4.4, would reduce impacts to biological resources to a less than significant level. Development carried out under the Reduced Growth Alternative would be subject to the same mitigation measures and Plan policies. Under the Reduced Growth Alternative less development and construction would take place, which could result in reduced impacts to biological resources depending on its location. While development under this alternative would still be subject to the Plan's goals and policies and would thus tend to be infill rather than greenfield development, sensitive biological resources may occur through the Planning Area and the reduced total amount of development under this alternative would tend to reduce potential impacts to biological resources. Overall, this alternative's impacts to biological resources would be less than those of the Plan.

e. Cultural Resources

Impacts to Cultural Resources, as discussed in Impact CUL-1 and CUL-2 in Chapter 4.5 *Cultural Resources* of this EIR, would be significant but mitigable. Impact CUL-1 describes how the Plan has the potential to result in a significant impact if development carried out under the Plan caused a substantial adverse change in the significance of a historical resource and as a result mitigation measure CUL-1 would be required. Impact CUL-2 describes how the Plan has the potential to result in a significant impact if development carried out under the Plan caused a substantial adverse change in the significance of an archaeological resource and as a result mitigation measures CUL-2 through CUL-8 would be required. Impact CUL-3 describes how the Plan has the potential to disturb or damage human remains, and the existing regulations that address this potential impact. Implementation of Plan policies and further mitigation would ensure that impacts to cultural resources would be less than significant. Under the Reduced Growth Alternative there would be less total development, but development would still be carried out. Because it is not known where archaeological resources and human remains may exist, and both the Plan and this alternative would involve potential impacts to these resources, potential impacts to these resources would be similar under either scenario. This alternative would involve the same Plan policies and mitigation as described in Chapter 4.5, *Cultural Resources,* but would facilitate less development. Therefore, this alternative would have less impact on cultural resources because of the reduced overall amount of development.

f. Energy

The Reduced Growth Alternative would reduce development in the Planning Area compared to the Plan. Less overall development would result in less construction and thus reduced energy consumption for construction vehicles. Similarly, less development would result in less consumption of energy from operational uses including heating and transportation fuel. Like the Plan, the Reduced Growth Alternative would implement new energy efficiency and renewable energy policies that would reduce energy consumption and would be consistent with energy goals and policies contained in the City's proposed Climate Action Plan. Therefore, this alternative would have reduced energy consumption. Overall, this alternative's energy impacts would be less than those of the Plan.

g. Geology and Soils

Under the Reduced Growth Alternative development would occur within the same Planning Area as the Plan. Therefore, development under this alternative would occur on the same geologic units, soils, and slopes as under the Plan. However, development would not be as intensive as the Plan; thus, the potential for loss of topsoil, placement of development atop expansive soils, or accidental discovery of paleontological resources would be reduced under this alternative. Development under this alternative would be required to comply with applicable regulations, such as the California Building Code, the Palmdale Municipal Code, and the Clean Water Act. Therefore, under the Reduced Growth Alternative, risks associated with topsoil loss and expansive soils would be less than those of the Plan.

h. Greenhouse Gas Emissions

Implementation of the Reduced Growth Alternative would involve less overall development and associated growth than under the Plan. Therefore, this alternative would have less construction related GHG emissions than the Plan. Additionally, this alternative would result in less total VMT

and related GHG emissions. However, its per capita VMT emissions may be roughly similar, or perhaps even somewhat greater, than those of the Plan because it would accommodate a lower total population and less growth in infill areas. While this alternative would result in fewer sources of GHG emissions, the land use scenario and the associated GHG emissions envisioned under this alternative would still be subject to and consistent with applicable state regulations contained in the Plan including City's proposed Climate Action Plan and the SCAG 2020-2045 RTP/SCS. The Plan also contains policies intended to facilitate greater GHG emission reductions which would also be included in the Reduced Growth Alternative. While total emissions may in some respects be reduced under this alternative because of lower total population, per capita emissions may be similar or perhaps even somewhat greater than those of the Plan because it would involve less growth in infill areas. Therefore, the Reduced Growth Alternative's GHG emissions impacts would be roughly similar to those of the Plan.

i. Hazards and Hazardous Materials

The Reduced Growth Alternative would result in less development than the Plan. Therefore, development under the Reduced Growth Alternative would result in slightly less use and transport of hazardous materials than the Plan. Development under this alternative would still take place in and affect the Planning Area, but Plan policies related to hazardous materials transportation routes, partnerships, remediation, education, and emergency plans, which would help prevent exposure to hazardous materials, would also be included in this alternative. Therefore, the Reduced Growth Alternative would reduce these impacts compared to the Plan.

j. Hydrology and Water Quality

The Reduced Growth Alternative would result in less development than the Plan, while consisting of a similar land use pattern as the Plan (but at a lower intensity). Therefore, development under this alternative could result in slightly less impervious surfaces and stormwater runoff volumes and velocity than the Plan. The Plan contains policies to reduce potential water quality impacts and development, and under this alternative future development would be subject to the same policies, as well as the same regulatory requirements, such as NPDES permit requirements, governing runoff and protecting water quality and supply. In addition, the Reduced Growth Alternative would result in a smaller population in 2040, and demand for groundwater would be less than under the Plan. Impacts under this alternative would be less than those of the Plan.

k. Land Use and Planning

As discussed under Impact LU-2 in Chapter 4.11 *Land Use and Planning*, the Plan would be generally consistent with the policies of SCAG's RCP and RTP/SCS. The Plan would also help the City meet its RHNA allocation. The Reduced Growth Alternative would reduce residential development compared to the Plan and as a result would not help the City meet its RHNA allocation to the same degree as the Plan. Thus, the Reduced Growth Alternative would not be as consistent with state policies for the provision of adequate housing represented by the RHNA and would therefore have greater impacts related to land use and planning.

l. Mineral Resources

The Reduced Growth Alternative would result in less development than the Plan. However, development under this alternative would still take place in the Planning Area. Therefore, development under this alternative would result in potential for development in areas where

significant mineral resources exist. However, as described in Impact MIN-1, projects carried out under the Plan would be required to adhere to SMARA regulations, Title 17 Chapter 17.102 and Chapter 17.72 of the Palmdale Municipal Code (described in Section 4.12.2, *Regulatory Setting*). The same would be true under the Reduced Growth Alternative. None of the growth under either alternative would substantially impact availability of or access to mineral resources. This alternative would therefore have similarly less than significant potential impacts on mineral resources.

m. Noise

The Reduced Growth Alternative would result in less development than the Plan. Therefore, less construction and associated construction noise and vibration would occur under this alternative, particularly in the identified development areas and housing opportunity sites for the Plan. Additionally, noise reduction policies and restrictions included in the Plan would also be included in the Reduced Growth Alternative. Furthermore, Mitigation Measure N-2, which requires construction vibration control measures, would also be included in this alternative. Therefore, the Reduced Growth Alternative would have reduced noise impacts compared to the Plan.

n. Population and Housing

The Reduced Growth Alternative would result in less residential development than the Plan, which would result in less population growth than the Plan. This alternative would therefore be more consistent with SCAG projections for Palmdale than projected residential growth under the Plan. As discussed under Impact PH-1 in Chapter 4.14, *Population and Housing*, policies and actions included in the Plan would adequately address the projected population growth and Plan impacts related to population and housing. This alternative would include these policies and actions, and would still provide for the orderly development and growth of the Planning Area. Displacement of people or housing units under the Reduced Growth Alternative may also be reduced because development in the Planning Area would be reduced compared to the Plan, although this impact would be minimal under the Plan, as described in Impact PH-2 of this EIR. Still, because of the lower total population growth it would accommodate, the Reduced Growth Alternative's population and housing impacts would be less than those of the Plan.

o. Public Services

The Reduced Growth Alternative would result in less development than the Plan and would therefore generate less demand for fire, police, school, and library services. Additionally, as discussed in Chapter 4.15, *Public Services*, the Plan includes policies that direct the City to strive to maintain adequate public service facilities and the same policies would apply to the Reduced Growth Alternative. Overall, this alternative's public services impacts would be less than those of the Plan.

p. Recreation

The Reduced Growth Alternative would result in less development than the Plan and would therefore generate less demand for, and demand on, recreational facilities. This alternative would also include Plan policies that direct the City to strive to maintain adequate recreational facilities, as discussed in Chapter 4.16, *Recreation*. Therefore, this alternative's impacts to and from recreational facilities would be less than those of the Plan.

q. Transportation

The Reduced Growth Alternative would result in less overall development than the Plan, but development is assumed to occur in the same general locations as under the Plan, and be subject to the same goals, policies, and development standards as under the Plan. The same policies from the Plan regarding transportation, traffic, and multimodal and alternative transportation would apply so impacts to traffic hazards, emergency access, and the circulation system would be similar. The Plan would increase transit-friendly development in identified focus areas which in turn would result in a reduction in per capita VMT. Although it would likely reduce in less total VMT than the Plan, the Reduced Growth Alternative would result in less development in the identified focus areas and therefore VMT per capita would not be reduced to the same degree as under the Plan. Because of its potential to result in greater per capita VMT than the Plan, overall transportation impacts under this alternative would be greater than under the Plan.

r. Tribal Cultural Resources

As discussed in Chapter 4.18 *Tribal Cultural Resources*, tribal cultural resources impacts are highly dependent on both the individual project site conditions and the characteristics of the proposed activity. Development carried out under the Plan has the potential to impact unidentified tribal cultural resources. Impacts on tribal cultural resources would be potentially significant but mitigable. The Reduced Growth Alternative would result in less development than the Plan but because development under this alternative would occur within the same Planning Area as the Plan the potential to encounter tribal cultural resources would be similar. This alternative would also include mitigation measures TCR-1 and TCR-2 from this EIR that would protect tribal cultural resources. Therefore, impacts to tribal cultural resources under the Reduced Project Alternative would be similar to those of the Plan.

s. Utilities and Service Systems

As discussed in Chapter 4.19, *Utilities and Service Systems*, Development carried out under the Plan would or may require increased or expanded water supplies and wastewater, stormwater, telecommunications, electric power, and natural gas supplies and facilities. While compliance with Plan policies, the Palmdale Municipal Code, and other City programs would reduce these impacts, impacts on water supply and wastewater capacity would remain significant and unavoidable. The Reduced Growth Alternative would result in reduced development potential and reduced population increase and decrease demand on existing utilities and service systems. This alternative would also include Plan goals and policies related to water, wastewater, storm water drainage, electricity, and natural gas. Because of its reduced overall amount of development and continued applicability of Plan policies, this alternative would result in less demand on utilities and service systems than the Plan, although impacts on water supply and wastewater capacity may still remain significant and unavoidable because development under this alternative may still exceed the existing demand projections of utility service providers.

t. Wildfire

As discussed in Chapter 4.20, *Wildfire*, although a portion of the Planning Area is in a very high fire hazards severity zone, Plan policies related to wildfire risk would reduce impacts to a less than significant level. The Reduced Growth Alternative would be carried out in the same Planning Area as the Plan and would also include areas in very high fire hazard severity zones. Development carried

out under this alternative would be subject to the same policies and goals as the Plan. However, the amount of development in very high fire hazard severity zones may be reduced, resulting in a reduction of wildfire risk to developments in those areas. Because of its reduction in the total amount of development that could potentially be exposed to wildfire risks, while retaining Plan policies relating to wildfire, this alternative's overall impact to wildfire would be less than those of the Plan.

6.3 Alternatives Considered but Rejected

6.3.1 Description

a. Relocated Focus Areas

Other alternatives considered include various scenarios that would relocate the focus area of development included in the Plan. This would involve shifting the location of one or more of the focus areas identified in the Plan, such as downtown Palmdale, the health/wellness and education districts, and Palmdale Boulevard, in an attempt to avoid growth-related impacts in certain areas. Although this alternative would occur in different general locations from the Plan it is assumed that the same amount of overall development would occur and this alternative would be subject to the same goals, policies, and development standards as the Plan.

Relocating the focus areas of development included in the Plan would not reduce traffic in the Planning Area as a whole. Rather, it would simply move it to different areas of the Planning Area. Additionally, moving the focus areas away from the areas identified in the Plan could push traffic to streets where viable infrastructure is not in place to support this level of development, further increasing traffic related impacts. Furthermore, the TIA found that the Plan's overall impacts on transportation were less than significant under CEQA. As noted in Chapter 4.17, *Transportation*, vehicle miles travelled (VMT), not traffic congestion metrics such as LOS, is the appropriate metric for measuring the environmental impacts of traffic under CEQA. The Plan would reduce per capita VMT, and relocation of the focus areas would not substantially affect Plan VMT or avoid any environmental impact. Therefore, these scenarios were rejected from further consideration and this option was not included as an alternative in the analysis.

b. No Growth

The No Growth alternative would mean no more development compared to current conditions. This option was determined to be infeasible. The No Growth alternative is not realistic because some development in Palmdale is already allowed under existing land use designations and zoning, and in some cases may have already received approvals or other entitlements. The No Growth alternative would require a growth moratorium ordinance that would restrict property development rights that already exist under existing policies and regulations, which could raise issues related to property rights and takings. Additionally, the No Growth alternative would not meet several of the main objectives of the plan, listed below and discussed in Section 2.3.1 of this EIR.

- **Active and vibrant downtown.** Palmdale residents desire a future downtown that fosters a sense of place, promotes local businesses, provides gathering spaces, and events, and improves the overall appearance of Palmdale

- **Housing options for residents at different stages of life and ability.** The residents of Palmdale desire to preserve and expand affordable housing and diversify housing types across the city that support residents of all abilities through different stages of life
- **Forefront of transportation innovations.** On the cusp of major regional transportation improvements, Palmdale seeks to leverage planned investments and improve local transit opportunities

The creation of an active and vibrant downtown would not be possible without development of new residential and non-residential projects, which would induce growth in the Planning Area. The development of new housing units to serve residents of all ages and abilities, including the expansion of affordable housing, would not be possible under a no growth alternative as these housing projects would induce growth in the Planning Area. If transit and transportation improvements listed as objectives of the Plan are not considered growth, they could still be considered under the No Growth alternative. However, without development growth the City would have to find a funding mechanism for public improvements without development fees or development related revenues. Therefore, feasibly meeting these objectives under the City's current fiscal structure may not be possible under the No Growth alternative.

The No Growth alternative would not meet these objectives because all of them would require at least some development. Therefore, this scenario was rejected from further consideration and this option was not included as an alternative in the analysis.

6.4 Environmentally Superior Alternative

CEQA requires the identification of the environmentally superior alternative among the options studied. When the "No Project" alternative is determined to be environmentally superior, CEQA also requires identification of the environmentally superior alternative among the development options. As shown in Table 6-1, the Reduced Growth Alternative would, overall, be environmentally superior to the Plan. When the two alternatives are compared to each other, the Reduced Growth Alternative would be environmentally superior because apart from greater impacts to Land Use and Planning and Transportation, it would have reduced or similar environmental impacts to the Plan, while the No Project Alternative would result in greater impacts to Biological Resources, Cultural Resources, Energy, Geology and Soils, Hazards and Hazardous Materials, Land Use and Planning, Mineral Resources, Noise, Transportation and Traffic, Tribal Cultural Resources and Wildfire, with reduced impacts in Air Quality, Hydrology and Water Quality, Population and Housing, Public Services, Recreation, Utilities and Service Systems, and Wildfire.

Table 6-1 Impact Comparison of Alternatives

Issue	No Project Alternative	Reduced Growth Alternative
Aesthetics	=	+
Agricultural and Forestry Resources	=	=
Air Quality	+	+
Biological Resources	-	+
Cultural Resources	-	+
Energy	-	+
Geology and Soils	-	+
Greenhous Gas Emissions	=	=
Hazards and Hazardous Materials	-	+
Hydrology and Water Quality	+	+
Land Use and Planning	-	-
Mineral Resources	-	=
Noise	-	+
Population and Housing	+	+
Public Services	+	+
Recreation	+	+
Transportation and Traffic	-	-
Tribal Cultural Resources	-	=
Utilities and Service Systems	+	+
Wildfire	-	+

+ Superior to the Plan (reduced level of impact)
- Inferior to the Plan (increased level of impact)
= Similar level of impact to the Plan

This page intentionally left blank.

7 References

7.1 Bibliography

Executive Summary

Parsons. 2022. Palmdale General Plan Update and Program EIR Traffic Report. February.

Introduction

California Board of Forestry and Fire Protection. About the Board of Forestry and Fire Protection. 2022. https://bof.fire.ca.gov/about/. (accessed May 2022).

Project Description

California Department of Finance (DOF). 2022. E-5 City/County Population and Housing Estimates, 1/1/2022. https://dof.ca.gov/forecasting/demographics/estimates/ (accessed May 2022).

Raimi & Associates. 2020. Socio-Economic Profile and Market Analysis Final Report. Spring 2020. https://static1.squarespace.com/static/5c7dc93065a707492aca3e47/t/5ebd6bbdbf15ae0a8694cc28/1589472199232/PalmdaleGPU-ECR-Ch2-Socio-Economic+Market+Study_5720.pdf (accessed April 2022).

_____. 2021. Palmdale GPU – Growth Projections Methodology Memo – FINAL

Southern California Association of Governments (SCAG). 2020. 2020-2045 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) – Demographics and Growth Forecast Appendix. September 3, 2020. https://scag.ca.gov/read-plan-adopted-final-plan (accessed May 2022).

Environmental Setting

California Department of Finance (DOF). 2022. E-1 Cities, Counties, and the State Population Estimates with Annual Percent Change. https://dof.ca.gov/forecasting/demographics/estimates/ (accessed May 2022).

Los Angeles, County of. 2021. Statistics. https://lacounty.gov/government/geography-statistics/statistics/ (accessed September 2021).

National Oceanic and Atmospheric Association (NOAA). 2021. Climate Data Online: Palmdale, California. https://www.ncdc.noaa.gov/cdo-web/datasets (accessed November 2021).

Palmdale, City of. 1993. General Plan. Adopted January 25, 1993. https://cityofpalmdale.org/279/General-Plan (accessed November 2021).

Raimi & Associates. 2020a. Public Facilities and Open Space Final Report. Spring 2020. https://static1.squarespace.com/static/5c7dc93065a707492aca3e47/t/5edaf08e6a3831601b6d540b/1591406750359/PalmdaleGPU-ECR-Ch7-PublicFacilitiesOpenSpace_Final+6-1-20.pdf (accessed April 2022).

_____. Socio-Economic Profile and Market Analysis Final Report. Spring 2020. https://static1.squarespace.com/static/5c7dc93065a707492aca3e47/t/5ebd6bbdbf15ae0a8694cc28/1589472199232/PalmdaleGPU-ECR-Ch2-Socio-Economic+Market+Study_5720.pdf (accessed April 2022).

_____. 2020c. Land Use and Urban Form Final Report. Spring 2020. https://static1.squarespace.com/static/5c7dc93065a707492aca3e47/t/5edaef566a3831601b6d31c3/1591406498098/PalmdaleGPU-ECR-Ch3-+LandUseForm_Final+6-2-20.pdf (accessed April 2022).

Southern California Association of Governments (SCAG). 2020. 2020-2045 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) – Demographics and Growth Forecast Appendix. September 3, 2020. https://scag.ca.gov/read-plan-adopted-final-plan (accessed November 2021).

Aesthetics

California Department of Transportation. 2012. Scenic Highway Guidelines. https://dot.ca.gov/-/media/dot-media/programs/design/documents/scenic-hwy-guidelines-04-12-2012.pdf (accessed October 2021).

_____. 2019. California State Scenic Highway System Map. https://caltrans.maps.arcgis.com/apps/webappviewer/index.html?id=465dfd3d807c46cc8e8057116f1aacaa (accessed April 2022).

Chiquita Canyon. 2021. “About Chiquita Canyon.” Last modified 2021. https://chiquitacanyon.com/about/ (accessed September 2021)

Los Angeles, County of. 1993. Environmental Impact Report for the City of Palmdale Draft General Plan. https://cityofpalmdale.org/DocumentCenter/View/4819/Final-General-Plan-EIR-PDF?bidId=. (accessed March 2022).

Palmdale, City of. 1993. Environmental Resources Element (accessed October 2021) https://www.lacsd.org/services/wastewater-sewage/facilities/palmdale-water-reclamation-plant (accessed September 2021)

_____. 2003. General Plan Parks Recreation and Trails. https://cityofpalmdale.org/DocumentCenter/View/564/Parks-Recreation-and-Trails-Element-PDF. (accessed March 2022).

_____. 2016. Palmdale General Plan: Land Use Element. https://cityofpalmdale.org/DocumentCenter/View/571/Land-Use-Element-PDF (accessed November 2021)

_____. 2018. “City of Palmdale – Business & Multifamily Waste and Recycling Service Guide.” Last modified July 2018. https://cityofpalmdale.org/DocumentCenter/View/4509/Business-and-Multifamily-Mandatory-Waste-and-Recycling-Requirements---English-PDF (accessed September 2021)

_____. 2020. Land Use + Urban Form Existing Conditions Report.

_____. 2021a. High Speed Rail Overview. https://cityofpalmdale.org/788/High-Speed-Rail-Overview (accessed November 2021)

_____. 2021b. “Sustainability, Climate Action, and Resilience Policy Framework.” Last modified 2021.https://static1.squarespace.com/static/5c7dc93065a707492aca3e47/t/60db55562a23551af30adad8/1624986967531/PalmdaleGPU+Policy+Framework+SustainabilityClimate_62321.pdf (accessed September 2021)

_____. 2022a. Highspeed Rail Overview. https://cityofpalmdale.org/788/High-Speed-Rail-Overview. (accessed March 2022).

_____. 2022b. Joe Davis Heritage Airpark. https://www.cityofpalmdale.org/521/Joe-Davies-Heritage-Airpark . (accessed April 2022).

San Bernadino, County of. “Waste Disposal Sites.” Last modified 2021. https://cms.sbcounty.gov/dpw/SolidWasteManagement/WasteDisposalSites.aspx (accessed September 2021)

Southern California Department of Governments (SCAG). 2020. Demographics and Growth Forecast. https://scag.ca.gov/sites/main/files/file-attachments/0903fconnectsocal_demographics-and-growth-forecast.pdf (accessed October 2021)

Agriculture and Forestry Resources

California Department of Conservation (DOC). 2016a. California Important Farmland Finder. https://maps.conservation.ca.gov/DLRP/CIFF/ (accessed April 2022).

_____. 2016b. State of California Williamson Act Contract Land. https://planning.lacity.org/eir/HollywoodCenter/Deir/ELDP/(E)%20Initial%20Study/Initial%20Study/Attachment%20B%20References/California%20Department%20of%20Conservation%20Williamson%20Map%202016.pdf (accessed April 2022).

_____. 2019. Important Farmland Categories. https://www.conservation.ca.gov/dlrp/fmmp/Pages/Important-Farmland-Categories.aspx#:~:text=Farmland%20with%20the%20best%20combination,to%20produce%20sustained%20high%20yields. (accessed April 2022).

California Department of Fish and Wildlife. 2019. California Forests and Timberlands Map. https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=109917&inline (accessed April 2022).

Raimi & Associates. 2020c. Land Use and Urban Form Final Report. Spring 2020. https://static1.squarespace.com/static/5c7dc93065a707492aca3e47/t/5edaef566a3831601b6d31c3/1591406498098/PalmdaleGPU-ECR-Ch3-+LandUseForm_Final+6-2-20.pdf (accessed April 2022).

Palmdale, City of. 2016. General Plan Land Use Map. Adopted by the City Council 1/25/1993. https://cityofpalmdale.org/DocumentCenter/View/574/General-Plan-Land-Use-Map-PDF (accessed April 2022).

_____. 2018. City of Palmdale Zoning Map. Adopted by the City Council 12/14/1994. https://cityofpalmdale.org/DocumentCenter/View/516/Zoning-with-street-labels-PDF?bidId= (accessed April 2022).

Air Quality

Antelope Valley Air Quality Management District (AVAQMD). 2016. *California Environmental Quality Act (CEQA) and Federal Conformity Guidelines*. https://avaqmd.ca.gov/files/e5b34d385/AV%20CEQA%20Guides%202016.pdf (accessed May 2022).

_____ 2017a. Antelope Valley AQMD Attainment Status. https://avaqmd.ca.gov/attainment-status (accessed May 2022).

_____ 2017a. AVAQMD Federal 75 ppm Ozone Attainment Plan Western Mojave Desert Nonattainment Area. March. https://avaqmd.ca.gov/rules-plans (accessed May 2022).

California Air Resources Board (CARB). 2016. Ambient Air Quality Standards. Last modified: May 4, 2016. http://www.arb.ca.gov/research/aaqs/aaqs2.pdf (accessed May 2022).

_____. 2022a. "Overview Diesel Exhaust & Health" [webpage]. N.d. https://ww2.arb.ca.gov/resources/overview-diesel-exhaust-and-health (accessed February 2022).

_____. 2022b. iADAM: Air Quality Data Statics, Top 4 Summary. https://www.arb.ca.gov/adam (accessed May 2022).

California Department of Finance (California DOF). 2021. E-5 Population and Housing Estimates for Cities, Counties, and the State 2011-2021. [online]: https://dof.ca.gov/2022/03/15/e-5-population-and-housing-estimates-for-cities-counties-and-the-state-2011-2021-with-2010-census-benchmark/ (accessed March 2022).

Parsons. 2022. Palmdale General Plan Update and Program EIR Traffic Report. February 2022.

Southern California Association of Governments (SCAG). 2016. 2016-2040 RTP/SCS Final Growth Forecast by Jurisdiction: https://scag.ca.gov/sites/main/files/file-attachments/2016_2040rtpscs_finalgrowthforecastbyjurisdiction.pdf?1605576071 (accessed February 2022)

_____. 2020. Connect SoCal (2020 - 2045 Regional Transportation Plan/Sustainable Communities Strategy). https://www.connectsocal.org/Pages/Connect-SoCal-Final-Plan.aspx (accessed May 2022).

State of California. 2022. California Code of Regulations (CCR). https://oal.ca.gov/publications/ccr/ (accessed June 2022).

United States Environmental Protection Agency (USEPA) 2013. Policy Assessment for the Review of the Lead National Ambient Air Quality Standards, External Review Draft. https://www3.epa.gov/ttn/naaqs/standards/pb/data/010913_pb-draft-pa.pdf (accessed May 2022).

_____. 2020. Criteria Air Pollutants. https://www.epa.gov/haps/health-and-environmental-effects-hazardous-air-pollutants (accessed March 2022).

_____. 2021. "Criteria Air Pollutants." https://www.epa.gov/criteria-air-pollutants (accessed May 2022).

Biological Resources

California Department of Fish and Wildlife (CDFW). 2014. California Wildlife Habitat Relationships. California Interagency Wildlife Task Group.

_____. 2020. List of Vegetation Alliances and Associations. Vegetation Classification and Mapping Program, Sacramento, CA. September 9, 2020. https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=153609&inline. (accessed June 2022).

_____. 2022a. California Natural Diversity Database (CNDDB). Rarefind V 5.2.14. (online). https://apps.wildlife.ca.gov/rarefind/view/RareFind.aspx. (accessed June 2022).

_____. 2022b. Biogeographic Information and Observation System (BIOS). https://apps.wildlife.ca.gov/bios/. (accessed November 2021).

California Native Plant Society (CNPS), Rare Plant Program. 2022. Inventory of Rare and Endangered Plants of California (online edition, v9-01 0.0). https://www.rareplants.cnps.org. (accessed June 2022).

Conservation Corridor. 2022. Corridor Concerns website. Available at: https://conservationcorridor.org/corridor-concerns/. (accessed June 2022).

Federal Geographic Data Committee (FGDC). 2008. National Vegetation Classification Standard, Version 2 FGDC-STD-005-2008. Vegetation Subcommittee, FGDC Secretariat, U.S. Geological Survey. Reston, VA. 55 pp. + Appendices.

Jennings M.D., D. Faber-Langendoen, O.L. Loucks, R.K. Peet, and D. Roberts. 2009. Standards for associations and alliances of the US National Vegetation Classification. Ecological Monographs 79:173–199.

Mayer, K. E., and W. F. Laudenslayer. 1988. A Guide to Wildlife Habitats of California. California Department of Fish and Game, Sacramento, CA.

Sawyer, J. O., T. Keeler-Wolf, and J.M. Evens. 2009. A Manual of California Vegetation, Second Edition. California Native Plant Society, Sacramento, California.

Spencer, W.D., P. Beier, K. Penrod, K. Winters, C. Paulman, H. Rustigian-Romsos, J. Strittholt, M. Parisi, and A. Pettler. 2010. California Essential Habitat Connectivity Project: A Strategy for Conserving a Connected California. Prepared for California Department of Transportation, California Department of Fish and Game, and Federal Highways Administration.

State Water Resources Control Board (SWRCB). 2022. State Wetland Definition and Procedures for Discharges of Dredged or Fill Material to Waters of the State. (accessed June 2022).

United States Environmental Protection Agency (USEPA). 2022. Background about Compensatory Mitigation Requirements under CWA Section 404. https://www.epa.gov/cwa-404/background-about-compensatory-mitigation-requirements-under-cwa-section-404. (accessed June 2022

U.S. Fish and Wildlife Service (USFWS). 2022a. National Wetlands Inventory. http://www.fws.gov/wetlands/Data/Mapper.html. (accessed November 2021).

_____. 2022b. Information, Planning and Conservation System (IPaC). https://ecos.fws.gov/ipac/. (accessed November 2021).

_____. 2022c. Critical Habitat Mapper. https://ecos.fws.gov/ecp/report/table/critical-habitat.html. (accessed November 2021).

Cultural Resources

Aikens, C. Melvin. 1978. Archaeology of the Great Basin. Annual Review of Anthropology 7:71–87.

Arnold, Jeanne E., Michael R. Walsh, and Sandra E. Hollimon. 2004. The Archaeology of California. Journal of Archaeological Research Vol. 12, No. 1.

Bettinger, R. L., and M. A. Baumhoff. 1982. The Numic Spread: Great Basin Cultures in Competition. American Antiquity 47:485-503.

Blackburn, Thomas C., and Lowell J. Bean. 1978. Kitanemuk. In California, edited by R. F. Heizer, pp. 564–569. Handbook of North American Indians, Vol. 8, William G. Sturtevant, general editor, Smithsonian Institution, Washington, D.C.

Campbell, E. W. C., and W. H. Campbell. 1935. The Pinto Basin Site: An Ancient Aboriginal Camping Ground in the California Desert. Southwest Museum Papers No. 9, Los Angeles.

Cleland, J. H., and W.G. Spaulding. 1992. An Alternative Perspective on Mojave Desert Prehistory. Society for California Archaeology Newsletter 26(6):1–6.

Davis, Emma Lou. 1975. The “exposed archaeology” of China Lake, California. American Antiquity 40(1):39-53.

_____., and Carol Panlaqui. 1978. Stone Tools, The Action Units. In the Ancient Californians Rancholabrean Hunters of the Mojave Lakes Country, edited by Emma Lou Davis, pp. 30-75. Natural History Museum of Los Angeles County Science Series 29, Los Angeles.

Engelhardt, Zephyrin, O.F.M. 1927a. San Fernando Rey, the Mission of the Valley. Franciscan Herald Press, Chicago.

_____. 1927b. San Gabriel Mission and the Beginning of Los Angeles. Mission San Gabriel, San Gabriel, California.

Frémont, J. C. 1845. Report of the Exploring Expedition to the Rocky Mountains in the Year 1842, and to Oregon and North California in the Years 1843–44. Gales and Seaton, Washington, D.C.

Giambastiani, M. A., and T.F. Bullard. 2008. Early Holocene Occupations on the Eastern Shoreline of China Lake, PCAS Quarterly, Twentynine Palms, California.

Glennan, William. 1971. A Glimpse at the Prehistory of the Antelope Valley: Archaeological Investigations at the Sweetersite (KER-302). Kern-Antelope Historical Society, Ridgecrest, CA.

_____. 1987. Concave-Based Lanceolate Fluted Projectile Points from California. In Prehistory of the Antelope Valley, California: An Overview, edited by R. W. Robinson. Antelope Valley Archaeological Society Occasional Paper 1, Lancaster, CA.

Grayson, D. K. 2007. The Great Basin: a Natural Prehistory. University of California Press, Berkeley, CA

Guinn, J. M. 1915. A History of California and an Extended History of Los Angeles and Environs, Vol.1. Historic Record Company, Los Angeles.

Gumprecht, Blake. 1999. The Los Angeles River: Its Life, Death, and Possible Rebirth. Johns Hopkins University Press, Baltimore.

Hoover, Mildred B., Hero E. Rensch, Ethel G. Rensch, and William N. Abeloe. 2002. Historic Spots in California. 5th ed. Revised by Douglas E. Kyle. Palo Alto, CA: Stanford University Press.

Johnson, Paul C., Dorothy Krell, John S. Weir, Harry Downie, Adrian Wilson, Joe Seney, Philip Spencer, and France Carpentier. 1972. The California Missions A Pictorial History. Sunset Books, Lane Publishing Co., Menlo Park, California.

Jones, Terry L., and Kathryn A. Klar. 2007. California Prehistory: Colonization, Culture, and Complexity. AltaMira Press, New York.

Justice, Noel D. 2002. Stone Age Spear and Arrow Points: of California and the Great Basin. Indiana University Press, Bloomington.

Moratto, Michael J. 1984. California Archaeology. Coyote Press, Salinas, California.

Morgan, Wallace M. 1914. History of Kern County, California. Electronic document, http://archive.org/stream/historyofkerncou00morg/historyofkerncou00morg_djvu.txt. (accessed September 2021).

National Park Service. 1983. Archaeology and Historic Preservation: Secretary of the Interior's Standards and Guidelines. Electronic document accessed September, 2021. https://www.nps.gov/subjects/historicpreservation/upload/standards-guidelines-archeology-historic-preservation.pdf (accessed September 2021)

Norwood, Richard H. 1987. Prehistoric Archaeology at Edwards Air Force Base, California. In, Prehistory of the Antelope Valley, California: An Overview, edited by R. W. Robinson, Antelope Valley Archaeological Society Occasional Paper 1. Lancaster, CA.

Rolle, Andrew. 2003. California: A History. Revised and expanded sixth edition. Harlan Davidson, Inc., Wheeling, Illinois.

Stine, S. 1994. Extreme and Persistent Drought in California and Patagonia during Medieval Times. Nature 369 (6481):546–549.

Sutton, Mark Q. 1996. The Current Status of Archaeological Research in the Mojave Desert. Journal of California and Great Basin Anthropology 18(2):221–257.

_____., M. E. Basgall, J. K. Gardner, and M. W. Allen. 2007. Advances in Understanding Mojave Desert Prehistory. In California Prehistory: Colonization, Culture, and Complexity, edited by T. L. Jones and K. A. Klar, pp. 229–245. AltaMira Press, New York.

Warren, Claude N. 1984. The Desert Region. In California Archaeology, edited by M. J. Moratto, pp. 339–430. Academic Press, Orlando, Florida.

U.S. Fish and Wildlife Service (USFWS). 2021. USFWS Information for Planning and Conservation (IPaC) [online]. https://ecos.fws.gov/ipac/ (accessed October 2021).

Yohe, Robert M. 1998. The Introduction of the Bow and Arrow and Lithic Resource Use at Rose Spring (CA-INY-372). Journal of California and Great Basin Anthropology 20:26-52.

Energy

California Air Resources Board (CARB). 2017. California's 2017 Climate Change Scoping Plan. https://ww2.arb.ca.gov/sites/default/files/classic/cc/scopingplan/scoping_plan_2017.pdf (accessed June 2022).

_____. 2022. Advanced Clean Trucks. https://ww2.arb.ca.gov/our-work/programs/advanced-clean-trucks (accessed June 2022).

California Department of Conservation, Division of Oil, Gas, and Geothermal Resources (DOGGR). 2021. *2019 Report of California Oil and Gas Production Statistics.* June 2021. https://www.conservation.ca.gov/calgem/pubs_stats/annual_reports/Pages/annual_reports.aspx (accessed April 2022).

California Department of Finance (DOF). 2021. E-1 Cities, Counties, and the State Population Estimates with Annual Percent Change. https://dof.ca.gov/forecasting/demographics/estimates/ (accessed April 2022).

California Energy Commission. 2019. 2019 California Energy Efficiency Action Plan. https://www.energy.ca.gov/filebrowser/download/1900 (accessed June 2022).

_____. 2020. *2020 Integrated Energy Policy Report Update Vol. 1*. https://www.energy.ca.gov/sites/default/files/2021-03/2020_IEPR_Update%20Vol%20I%20ExectuiveSummary.pdf (accessed April 2022).

. 2021a. Oil Supply Sources to California Refineries. http://www.energy.ca.gov/almanac/petroleum_data/statistics/crude_oil_receipts.html (accessed April 2022).

_____. 2021b. Electricity Consumption by County. http://ecdms.energy.ca.gov/elecbycounty.aspx (accessed April 2022).

_____. 2021c. Electric Generation Capacity & Energy. https://www.energy.ca.gov/almanac/electricity_data/electric_generation_capacity.html (accessed April 2022).

_____. 2021d. Foreign Sources of Crude Oil Imports to California 2019. http://www.energy.ca.gov/almanac/petroleum_data/statistics/2016_foreign_crude_sources.html (accessed April 2022).

_____. 2021e. California Retail Fuel Outlet Annual Reporting (CEC-A15) Results, California Annual Retail Fuel Outlet Report Results (CEC-A15) Spreadsheets. https://www.energy.ca.gov/data-reports/energy-almanac/transportation-energy/california-retail-fuel-outlet-annual-reporting (accessed December 2021).

_____. 2021f. CEC-A15 Gasoline Sales by City. https://www.energy.ca.gov/data-reports/energy-almanac/transportation-energy/california-retail-fuel-outlet-annual-reporting (accessed April 2022).

_____. 2021g. Diesel Sales by County. https://www.energy.ca.gov/data-reports/energy-almanac/transportation-energy/california-retail-fuel-outlet-annual-reporting (accessed April 2022).

_____. 2021h. Natural Gas Consumption by County. http://ecdms.energy.ca.gov/gasbycounty.aspx (accessed April 2022).

California Gas and Electric Utilities (CGEU). 2020. *2020 California Gas Report*. https://www.socalgas.com/sites/default/files/2020-10/2020_California_Gas_Report_Joint_Utility_Biennial_Comprehensive_Filing.pdf (accessed April 2022)

California Office of the Governor. 2021. Governor Newsom Takes Action to Phase Out Oil Extraction in California. April 23, 2021. https://www.gov.ca.gov/2021/04/23/governor-newsom-takes-action-to-phase-out-oil-extraction-in-california/ (accessed June 2022).

National Highway Traffic Safety Administration. 2020. "Fact Sheet: SAFE Vehicles Rule." https://www.nhtsa.gov/corporate-average-fuel-economy/safe-fact-sheet (accessed June 2022).

National Pipeline Mapping System (NPMS). 2021. "NPMS Public Viewer" [Interactive Database]. https://pvnpms.phmsa.dot.gov/PublicViewer/. (accessed April 2022).

Palmdale, City of. 2011. City of Palmdale Energy Action Plan. Adopted August 2011. https://cityofpalmdale.org/DocumentCenter/View/195/Palmdale-Energy-Action-Plan-PEAP-PDF (accessed April 2022).

United States Energy Information Administration (EIA). 2020. *Table C1. Energy Consumption Overview: Estimates by Energy Source and End-Use Sector, 2018*. Released June 26, 2020. https://www.eia.gov/state/seds/seds-data-complete.php#Consumption (accessed April 2022).

United States Environmental Protection Agency (USEPA). 2022. Regulations for Emissions from Heavy Equipment with Compression-Ignition (Diesel) Engines. https://www.epa.gov/regulations-emissions-vehicles-and-engines/regulations-emissions-heavy-equipment-compression (accessed June 2022).

_____. 2021. Petroleum & Other Liquids, California Field Production of Crude Oil. https://www.eia.gov/dnav/pet/hist/LeafHandler.ashx?n=PET&s=MCRFPCA1&f=M (accessed April 2022)

United States Department of Energy (USDOE). 2021a. Hydrogen Fueling Station Locations. https://afdc.energy.gov/fuels/hydrogen_locations.html#/find/nearest?fuel=HY. (accessed April 2022).

_____. 2021b. Biodiesel Fueling Station Locations. https://afdc.energy.gov/fuels/biodiesel_locations.html#/find/nearest?fuel=BD&location=los%20angeles%20county (accessed April 2022).

_____. 2021c. Electric Vehicle Charging Stations – California. https://afdc.energy.gov/fuels/electricity_locations.html#/analyze?fuel=ELEC&region=US-CA&show_map=true (accessed April 2022).

_____. 2022. Hydrogen Storage Challenges. https://www.energy.gov/eere/fuelcells/hydrogen-storage-challenges#:~:text=The%20key%20challenges%20include%3A,to%20conventional%20petroleum%20fueled%20vehicles. (accessed June 2022).

Geology and Soils

California Geological Survey (CGS). 2002. California Geomorphic Provinces. https://www.conservation.ca.gov/cgs/Documents/Publications/CGS-Notes/CGS-Note-36.pdf (accessed June 2022).

Palmdale, City of. 1993. General Plan. Adopted January 25, 1993. https://cityofpalmdale.org/279/General-Plan (accessed November 2021).

_____. 2016. Local Hazard Mitigation Plan. https://cityofpalmdale.org/DocumentCenter/View/9317/LOCAL-HAZARD-MITIGATION-PLAN-PDF?bidId= (accessed June 2022).

United States Geological Survey (USGS). 2021. Areas of Land Subsidence in California. https://ca.water.usgs.gov/land_subsidence/california-subsidence-areas.html (accessed June 2022).

Greenhouse Gas Emissions

Antelope Valley Air Quality Management District (AVAQMD). 1977, Amended 2013. Rule 1113 Architectural Coatings. https://avaqmd.ca.gov/files/977cf20dc/AV1113.pdf (accessed May 2022).

_____. 2008, amended 2020. Rule 445. Wood-Burning Devices. http://www.aqmd.gov/docs/default-source/rule-book/rule-iv/rule-445.pdf (accessed May 2022).

California Air Pollution Control Officers Association (CAPCOA). 2008. *CEQA and Climate Change.* January. http://www.capcoa.org/wp-content/uploads/2012/03/CAPCOA-White-Paper.pdf (accessed March 2022)

California Air Resources Board (CARB). 2008. Climate Change Scoping Plan. Sacramento, CA. December 2008.

_____. 2014. AB 32 Scoping Plan Website. Updated June 2014. http://www.arb.ca.gov/cc/scopingplan/scopingplan.htm (accessed February 2022).

_____. 2017. California's 2017 Climate Change Scoping Plan. December 14, 2017. https://www.arb.ca.gov/cc/scopingplan/scoping_plan_2017.pdf (accessed February 2022).

_____. 2020a. EMFAC Off-Model Adjustment Factors for Carbon Dioxide (CO2) Emissions to Account for the SAFE Vehicles Rule Part One and the Final SAFE Rule. June 26, 2020. https://ww3.arb.ca.gov/msei/emfac_off_model_co2_adjustment_factors_06262020-final.pdf?utm_medium=email&utm_source=govdelivery (accessed May 2022).

_____.2021. California Greenhouse Gas Emissions for 2000 to 2019 Trends of Emissions and Other Indicators. July. https://ww3.arb.ca.gov/cc/inventory/pubs/reports/2000_2019/ghg_inventory_trends_00-19.pdf (accessed May 2022).

California Climate Change Center (CCCC). 2006. Climate Scenarios for California. https://research.fit.edu/media/site-specific/researchfitedu/coast-climate-adaptation-library/united-states/west-coast-amp-hawaix27i/california---statewide/CCCC.--2006.--Climate-Scenarios-for-California.pdf (accessed May 2022).

California Department of Food and Agriculture. 2020. “California Agricultural Production Statistics.” https://www.cdfa.ca.gov/statistics/ (accessed February 2022).

California Department of Water Resources. 2018. Indicators of Climate Change in California. May 2018. https://oehha.ca.gov/media/downloads/climate-change/report/2018caindicatorsreportmay2018.pdf (accessed February 2022).

California Environmental Protection Agency (CalEPA). 2006. Climate Action Team Report to Governor Schwarzenegger and the Legislature. Marcy 2006. https://planning.lacity.org/eir/8150Sunset/References/4.E.%20Greenhouse%20Gas%20Emissions/GHG.23_CalEPA%202006%20Report%20to%20Governor.pdf (accessed May 2022).

California Natural Resources Agency. 2021. Draft California Climate Adaptation Strategy. October 2021. https://resources.ca.gov/-/media/CNRA-Website/Files/Initiatives/Climate-Resilience/SAS-Workshops/Draft-CA-Climate-Adaptation-Strategy-ada.pdf (accessed February 2022).

Intergovernmental Panel on Climate Change (IPCC). 2021. Climate Change 2021: The Physical Science Basis. Contribution of Working Group I to the Sixth Assessment Report of the Intergovernmental Panel on Climate Change [Masson-Delmotte, V., P. Zhai, A. Pirani, S. L. Connors, C. Péan, S. Berger, N. Caud, Y. Chen, L. Goldfarb, M. I. Gomis, M. Huang, K. Leitzell, E. Lonnoy, J.B.R. Matthews, T. K. Maycock, T. Waterfield, O. Yelekçi, R. Yu and B. Zhou (eds.)] Cambridge University Press. https://www.ipcc.ch/report/ar6/wg1/downloads/report/IPCC_AR6_WGI_Full_Report.pdf (accessed February 2022).

National Aeronautics and Space Administration. 2020. “Global Climate Change – Vital Signs of the Planet – Sea Level.” https://climate.nasa.gov/vital-signs/sea-level/ (accessed May 2022).

National Highway Traffic Safety Administration. 2020. “Fact Sheet: SAFE Vehicles Rule.” https://www.nhtsa.gov/corporate-average-fuel-economy/safe-fact-sheet (accessed February 2022).

National Oceanic and Atmospheric Administration. 2022. Climate Change: Global Temperature. https://www.climate.gov/news-features/understanding-climate/climate-change-global-temperature#:~:text=Earth's%20temperature%20has%20risen%20by,land%20areas%20were%20record%20warm (accessed May 2022).

Parmesan, C. 2006. Ecological and Evolutionary Responses to Recent Climate Change. August.

Parsons. 2022. Palmdale General Plan Update and Program EIR Traffic Report. February.

Southern California Association of Governments (SCAG). 2020. Connect SoCal (2020 - 2045 Regional Transportation Plan/Sustainable Communities Strategy). https://www.connectsocal.org/Pages/Connect-SoCal-Final-Plan.aspx (accessed May 2022).

State of California. 2018. California’s Fourth Climate Change Assessment Statewide Summary Report. August 27, 2018. http://www.climateassessment.ca.gov/state/ (accessed February 2022).

U.S. Environmental Protection Agency (USEPA). 2021. Climate Change Indicators: U.S. Greenhouse Gas Emissions. https://www.epa.gov/climate-indicators/climate-change-indicators-us-greenhouse-gas-emissions (accessed May 2022).

_____. 2022a. “Climate Change Indicators: Greenhouse Gases” https://www.epa.gov/climate-indicators/greenhouse-gases (accessed May 2022).

_____. 2022b.Climate Change Indicators: Global Greenhouse Gas Emissions. https://www.epa.gov/climate-indicators/climate-change-indicators-global-greenhouse-gas-emissions (accessed May 2022).

World Meteorological Organization. 2013. A summary of current and climate change findings and figures: a WMO information note. March 2013. https://library.wmo.int/opac/index.php?lvl=notice_display&id=15892#.Wt9-Z8gvzIU (accessed May 2022).

_____.2022. “Greenhouse Gases.” https://public.wmo.int/en/our-mandate/focus-areas/environment/greenhouse%20gases (accessed May 2022).

Hazards and Hazardous Materials

California Department of Conservation. 2022. “Well Finder.” https://maps.conservation.ca.gov/doggr/wellfinder/#openModal/-117.28644/34.60459/9 (accessed April 2022).

California Department of Forestry and Fire Protection (CalFIRE). 2016. “Fire and Emergency Response.” https://www.fire.ca.gov/media/4932/fireandemergencyresponse.pdf (accessed April 2022).

_____. 2022a. “About Us”. https://www.fire.ca.gov/about-us/#:~:text=The%20men%20and%20women%20of,of%20California's%20privately%2Downed%20wildlands. (accessed April 2022).

_____. 2022b. “Cooperative Efforts”. https://www.fire.ca.gov/programs/fire-protection/cooperative-efforts/ (accessed April 2022).

_____. 2022c. “FHSZ Viewer.” https://egis.fire.ca.gov/FHSZ/ (accessed April 2022).

California Department of Toxic Substances Control. 2022. “EnviroStor.” https://www.envirostor.dtsc.ca.gov/public/map/?myaddress=palmdale (accessed April 2022).

California Governor’s Office of Emergency Services (CalOES). 2021. CalOES Yellow Book. https://www.caloes.ca.gov/LegalAffairsSite/Documents/Cal%20OES%20Yellow%20Book.pdf (accessed April 2022).

CityData.com. 2022. “Map of Radon Zones in California based on Environmental Protection Agency (EPA) data.” https://www.city-data.com/radon-zones/California/California.html (accessed April 2022).

Los Angeles Airport Land Use Commission, County of. 2003. Palmdale Airport/USAF Plant 42. https://planning.lacounty.gov/assets/upl/project/aluc_airport-palmdale.pdf (accessed April 2022).

Los Angeles Fire Department, County of. 2021. Los Angeles County Fire Department. https://fire.lacounty.gov/wp-content/uploads/2021/05/Department-Overview-Booklet_single-pages_May-13-2021-PDF.pdf (accessed April 2022).

_____. 2022. California Environmental Reporting System (CERS) Information. https://fire.lacounty.gov/ca-environmental-reporting/ (accessed April 2022).

Los Angeles Public Health, County of. No date. “Lead Information for Property Owners or Contractors”. http://www.publichealth.lacounty.gov/eh/safety/lead-information-property-owners-contractors.htm (accessed April 2022).

Los Angeles Public Works, County of. 2022. “Permanent Centers”. https://pw.lacounty.gov/epd/hhw/Permanent (accessed April 2022).

_____. No date. Los Angeles County Certified Unified Program Agency (CUPA). http://pw.lacounty.gov/epd/ust/cupa.cfm (accessed April 2022).

Palmdale, City of. 2012. Emergency Operations Plan. https://cityofpalmdale.org/DocumentCenter/View/4938/City-of-Palmdale-Emergency-Operations-Plan-Executive-Summary-PDF (accessed April 2022).

_____. 2016. City of Palmdale Very High Fire Hazard Severity Zone. https://cityofpalmdale.org/DocumentCenter/View/514/Very-High-Fire-Hazard-Zones-PDF (accessed April 2022).

_____. 2021. Palmdale Regional Airport. https://www.cityofpalmdale.org/DocumentCenter/View/10189/Palmdale-Regional-Airport-Brochure---Facts-and-Figures-PDF (accessed April 2022).

Raimi & Associates. 2021. Chapter 3 Land Use + Landform. 2021 (accessed September 2021).

State Water Resources Control Board. 2022. GeoTracker. https://geotracker.waterboards.ca.gov/map/?CMD=runreport&myaddress=palmdale (accessed April 2022).

United States Environmental Protection Agency (U.S. EPA). No date. “Radon Zones Map.”. https://www.epa.gov/sites/default/files/2018-12/documents/radon-zones-map.pdf (accessed April 2022).

_____. 2009. Correspondence: “RE: Citizen Petition to EPA Regarding the Paint and Dust Lead Standards”. https://www.epa.gov/sites/default/files/2015-10/documents/epa_lead_standards_petition_final.pdf (accessed April 2022).

_____. 2021a. “Learn the Basics of Hazardous Waste”. https://www.epa.gov/hw/learn-basics-hazardous-waste#recycling (accessed April 2022).

_____. 2021b. “Learn about Asbestos”. https://www.epa.gov/asbestos/learn-about-asbestos (accessed April 2022).

_____. 2021c. “Household Hazardous Waste (HHW)”. https://www.epa.gov/hw/household-hazardous-waste-hhw (accessed April 2022).

_____. 2021d. “Categories of Hazardous Waste Generators”. https://www.epa.gov/hwgenerators/categories-hazardous-waste-generators#large (accessed April 2022).

_____. 2022a. “Learn about Lead”. https://www.epa.gov/lead/learn-about-lead (accessed April 2022).

_____. 2022b. “Superfund: National Priorities List (NPL)”. https://www.epa.gov/superfund/superfund-national-priorities-list-npl (accessed April 2022).

_____. 2022c. “Toxic Release Inventory (TRI) Program”. https://www.epa.gov/toxics-release-inventory-tri-program (accessed April 2022).

_____. 2022d. “Health Risk of Radon”. https://www.epa.gov/radon/health-risk-radon (accessed April 2022).

Hydrology and Water Quality

California Department of Water Resources (DWR). 2022. *Sustainable Groundwater Management Act (SGMA)*. https://water.ca.gov/programs/groundwater-management/sgma-groundwater-management. (accessed May 2022).

Los Angeles, County of. 2019. Antelope Valley Integrated Regional Water Management Plan. https://pw.lacounty.gov/wwd/avirwmp/docs/finalplan/2019%20Final%20AV%20IRWMP.pdf (accessed May 2022).

Los Angeles County Waterworks District 40. 2021. Final 2020 Urban Water Management Plan for Los Angeles County Waterworks District 40 Antelope Valley. October 2021. https://dpw.lacounty.gov/wwd/web/Documents/D40_AV2020_UWMP%20FINAL.pdf (accessed June 2022).

Palmdale Water District (PWD). 2021. 2020 Urban Water Management Plan. https://www.palmdalewater.org/wp-content/uploads/2021/08/PWD_Final_2020_UWMP.pdf (accessed May 2022).

Palmdale, City of. 2016. Local Hazard Mitigation Plan. https://cityofpalmdale.org/DocumentCenter/View/9317/LOCAL-HAZARD-MITIGATION-PLAN-PDF?bidId= (accessed May 2022).

California Department of Conservation (DOC). 2021. Tsunami Inundation Map. https://www.conservation.ca.gov/cgs/tsunami/maps (accessed April 2022).

Land Use and Planning

Los Angeles County Department of Regional Planning. 2009. Land Use and Zoning. https://planning.lacounty.gov/luz. (accessed May 2022).

Southern California Association of Governments (SCAG). 2008. 2008 Regional Comprehensive Plan (RCP). https://scag.ca.gov/sites/main/files/file-attachments/f2008rcp_complete.pdf?1604263359. (accessed April 2022).

Southern California Association of Governments (SCAG). 2020. 2020-2045 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS). https://sccrtc.org/wp-content/uploads/2022/02/Final%20Draft%202045%20RTP.pdf. (accessed April 2022.)

U.S Department of the Interior. 2004 West Mojave Plan. https://eplanning.blm.gov/public_projects/lup/72544/97517/117675/wemo_plan_vol-1_2004.pdf (accessed April 2022.)

Mineral Resources

California Department of Conservation. 1984. Special Report 143: Mineral Land Classification of the Greater Los Angeles Area, Part V.

California Geological Survey (CGS). 2002. California Geomorphic Provinces. https://www.conservation.ca.gov/cgs/Documents/Publications/CGS-Notes/CGS-Note-36.pdf (accessed May 2022).

Palmdale, City of. 1993. General Plan. Adopted January 25, 1993. https://cityofpalmdale.org/279/General-Plan (accessed November 2021).

Noise

Federal Transit Administration (FTA). 2006. Transit Noise and Vibration Impact Assessment. May 2006.

_____2018. Transit Noise and Vibration Impact Assessment Manual. https://www.transit.dot.gov/sites/fta.dot.gov/files/docs/research-innovation/118131/transit-noise-and-vibration-impact-assessment-manual-fta-report-no-0123_0.pdf (accessed June 2022)

California High-Speed Rail Authority. 2021. Bakersfield to Palmdale Project Section: Final Environmental Impact Report/Environmental Impact Statement. https://hsr.ca.gov/wp content/uploads/2021/06/BP_Final_EIRS_Vol_1_Cover.pdf (accessed June 2022).

U.S. Environmental Protection Agency (U.S. EPA). 1978. Protective Noise Levels: Condensed Version of EPA Levels Document. November.

Office of Planning and Research (OPR). 2003. Guidelines for the Preparation and Content of the Noise Element of the General Plan https://opr.ca.gov/docs/OPR_Appendix_D_final.pdf (accessed June 2022)

Population and Housing

California Department of Finance [DOF]. 2022. E-1 Historical Population Estimates for Cities, Counties, and the State, 2020 and 2021. https://dof.ca.gov/forecasting/demographics/estimates-e1 (accessed April 2022).

Palmdale, City of. 2016. The 2016-2040 Regional Transportation Plan/ Sustainable Communities Sustainable Communities Strategy. https://scag.ca.gov/sites/main/files/file-attachments/f2016rtpscs.pdf?1606005557. (accessed June 2022).

_____. 2021. Palmdale 2021 – 2029 Housing Element. https://static1.squarespace.com/static/5c7dc93065a707492aca3e47/t/6149096177aba05e42108047/1632176488568/Palmdale+DRAFT+HE+2021-2029_submittedtoHCD.pdf (accessed April 2022). Southern California Association of Governments [SCAG]. 2020. Demographics and Growth Forecast. https://scag.ca.gov/sites/main/files/file-attachments/0903fconnectsocal_demographics-and-growth-forecast.pdf?1606001579 (accessed May 2022).

Public Services

Los Angeles, County of. 2020. County of Los Angeles Sheriff's Department, Strategic Plan, 2020. https://lasd.org/pdf/Palmdale_Strategic_Plan_2020_050520.pdf (accessed April 2022).

Palmdale, City of. 2012. City of Palmdale Emergency Operations Plan. https://cityofpalmdale.org/DocumentCenter/View/4938/City-of-Palmdale-Emergency-Operations-Plan-Executive-Summary-PDF (accessed April 2022). _____. 2015. City of Palmdale Local Hazard Mitigation Plan. https://cityofpalmdale.org/DocumentCenter/View/9317/LOCAL-HAZARD-MITIGATION-PLAN-PDF?bidId= (accessed April 2022).

Raimi & Associates, 2020. Public Facilities and Open Space Existing Conditions Report.

Recreation

California, State of. 2022. Quimby Act. https://leginfo.legislature.ca.gov/faces/billTextClient.xhtml?bill_id=201520160AB1191 (accessed June 2022).

Palmdale, City of. 2022a. Parks and Recreation. https://cityofpalmdale.org/174/Parks-and-Recreation (accessed June 2022).

_____. 2022b. Municipal Code Parkland Dedication. https://www.codepublishing.com/CA/Palmdale/#!/Palmdale03/Palmdale0334.html#3.34 (accessed June 2022).

Transportation

Palmdale, City of. 2019a. “City of Palmdale Municipal Code, Chapter 17.101. Transportation Demand Management. Last modified 2019

_____. 2019b. “City of Palmdale Municipal Code, Chapter 17.87010. Off-Street Parking. Last modified 2019

_____. 2020. Existing Conditions Report. https://static1.squarespace.com/static/5c7dc93065a707492aca3e47/t/5edaefe22a807e7741d6f4c7/1591406589460/PalmdaleGPU-ECR-Ch5-Transportation+Report_Final+edits+6-1-20.pdf (accessed June 2022)

Parsons. 2022. Palmdale General Plan Update and Program EIR Traffic Report.

Tribal Cultural Resources

Bean, Walton. 1968. California: An Interpretive History. McGraw-Hill Book Company, New York.

_____., and Charles R. Smith. 1978. Serrano. In California, edited by R. F. Heizer, pp. 570–574. Handbook of North American Indians, Vol. 8, William G. Sturtevant, general editor, Smithsonian Institution, Washington, D.C.

_____. , and Sylvia B. Vane. 2002. The Native American Ethnography and Ethnohistory of Joshua Tree National Park: An Overview and Assessment Study: Section IV. The Serrano. Electronic document, http://www.nps.gov/history/history/online_books/jotr/history4.htm

Four Directions Institute. 2007. Four Directions Institute, Kitanemuk. Electronic document, http://www.fourdir.com/kitanemuk.htm, accessed June 18, 2012. Four Winds Press.

Hudson, Travis. 1982. “The Alliklik-Tataviam Problem”. Journal of California and Great Basin Anthropology 4:222-232.

King, Chester, and Thomas C. Blackburn. 1978. Tataviam. In California, edited by R. F. Heizer, pp. 535–537. Handbook of North American Indians, Vol. 8, William G. Sturtevant, general editor, Smithsonian Institution, Washington, D.C.

Kroeber, Alfred L. 1908. Ethnography of the Cahuilla. University of California Publications in American Archaeology and Ethnology 8(2):29–68.

_____. 1925. Handbook of the Indians of California. Bulletin 78, Bureau of American Ethnology, Smithsonian Institution. Government Printing Office, Washington, D.C. Reprinted 1976 by Dover Publications, Inc., New York.

McCawley, William. 1996. The First Angelinos: The Gabrielino Indians of Los Angeles. Malki Museum/Ballena Press Cooperative Publication, Banning or Novato, California.

Mithun, Marianne. 2006. The Languages of Native Nor th America. Reprinted. Originally published 1999. Cambridge University Press, New York.

Utilities and Service Systems

California Department of Water Resources. 2017. "Executive Order B-29-15." Last modified 2017. https://www.waterboards.ca.gov/waterrights/water_issues/programs/drought/docs/040115_executive_order.pdf (accessed September 2021)

_____. 2018. "South Lahontan Hydrologic Region: Antelope Valley Groundwater Basin." Last modified: Feb 27, 2004. https://water.ca.gov/-/media/DWR-Website/Web-Pages/Programs/Groundwater-Management/Bulletin-118/Files/2003-Basin-Descriptions/6_044_AntelopeValley.pdf (accessed September 2021)

California Energy Commission. 2020a. Electricity Consumption by Entity. http://www.ecdms.energy.ca.gov/elecbyutil.aspx (accessed April 2022).

_____. 2020b. Gas Consumption by Entity. http://www.ecdms.energy.ca.gov/gasbyutil.aspx (accessed April 2022).

CalRecycle. 2004. "Estimated Solid Waste Generation Rates." Last modified 2006. https://www2.calrecycle.ca.gov/wastecharacterization/general/rates (accessed September 2021)

_____. 2021a. "Transported Solid Waste – Palmdale." Last modified 2021. https://www2.calrecycle.ca.gov/LGCentral/DisposalReporting/Statewide/TransportedSolidWaste (accessed September 2021)

_____. 2021b. "SWIS Facility/Site Activity Details." Last modified 2021. https://www2.calrecycle.ca.gov/SolidWaste/SiteActivity/Details/1870?siteID=2652 (accessed September 2021)

Chiquita Canyon. 2021. "About Chiquita Canyon." Last modified 2021. https://chiquitacanyon.com/about/ (accessed September 2021)

California Department of Finance [DOF]. 2022. E-1 Historical Population Estimates for Cities, Counties, and the State, 2020 and 2021. https://dof.ca.gov/forecasting/demographics/estimates-e1 (accessed April 2022).

Los Angeles, City of. 2006. L.A. CEQA Thresholds Guide: Your Resource in Preparing CEQA Analyses in Los Angeles. http://planning.lacity.org/Documents/MajorProjects/CEQAThresholdsGuide.pdf (accessed April 2022).

Los Angeles, County of. 2019. "Antelope Valley Integrated Regional Water Management Plan: Final 2019 Update." Last modified 2019. https://pw.lacounty.gov/wwd/avirwmp/index.cfm (accessed September 2021)

_____. 2021. "Palmdale Water Reclamation Plant." Last modified 2021. https://www.lacsd.org/services/wastewater-sewage/facilities/palmdale-water-reclamation-plant (accessed September 2021)

Los Angeles County Water District No. 40 (LACWD 40). 2021. 2020 Urban Water Management Plan for Los Angeles County Waterworks District No. 40 Antelope Valley. https://dpw.lacounty.gov/wwd/web/Documents/D40_AV2020_UWMP%20FINAL.pdf (accessed June 2022).

Palmdale, City of. 2003. Stormwater Management Plan. https://www.waterboards.ca.gov/water_issues/programs/stormwater/swmp/palmdale_swmp.pdf (accessed April 2022).

_____. 2014. Palmdale Utilities Services Division – Sewer System Management Plan. May 7, 2014. https://www.cityofpalmdale.org/DocumentCenter/View/130/Palmdale-Sewer-System-Management-Plan-PDF (accessed September 2021).

_____. 2015. "City of Palmdale Municipal Code, Chapter 14.05: Water Efficient Landscape." Last modified July 2015. https://www.codepublishing.com/CA/Palmdale/html/Palmdale14/Palmdale1405.html (accessed September 2021)

_____. 2018. "City of Palmdale – Business & Multifamily Waste and Recycling Service Guide." Last modified July 2018. https://cityofpalmdale.org/DocumentCenter/View/4509/Business-and-Multifamily-Mandatory-Waste-and-Recycling-Requirements---English-PDF (accessed September 2021)

_____. 2020. City of Palmdale Notice of Exemption – SiFi Citywide Fiber Optic Network. December 3, 2020. https://files.ceqanet.opr.ca.gov/266332-2/attachment/bxzx_8f0mhEysP7ZIqPYA6Gg6lFzYe7q2zo686oF5ynZJlRi9PaISZ1eP61dXhl9HyRf9jF4kw4tBySN0 (accessed June 2022).

_____. 2021a. "City of Palmdale – Residential Waste and Recycling Service Guide." Last modified July 2021. https://localsites.wm.com/a4480000006oO0CAAU/Palmdale+New+Residential+Service+Guide+%282021-2022%29+rev.+2.pdf (accessed September 2021)

_____. 2021b. "Sustainability, Climate Action, and Resilience Policy Framework." Last modified 2021.https://static1.squarespace.com/static/5c7dc93065a707492aca3e47/t/60db55562a23551af30adad8/1624986967531/PalmdaleGPU+Policy+Framework+SustainabilityClimate_62321.pdf (accessed September 2021)

Palmdale Water District. 2016. 2016 Water System Master Plan. Palmdale, CA. December 2016. https://www.palmdalewater.org/wp-content/uploads/2017/01/2016_WSMP_Final_20161216_opt.pdf (accessed September 2021).

_____. 2017a. "Water Supply." https://www.palmdalewater.org/about/water-supply/ (accessed September 2021)

_____. 2017b. "Waste of Water Policy." Last modified 2017. https://www.palmdalewater.org/conservation/policies/ (accessed September 2021)

_____. 2017c. "Rebates." Last modified 2017. https://www.palmdalewater.org/conservation/rebates/ (accessed September 2021)

_____. 2019. "Palmdale Recycled Water Authority." Last modified 2019. https://www.palmdalewater.org/prwa/ (accessed September 2021)

_____. 2020a. Palmdale Water District – 2020 Water Shortage Contingency Plan. June 2021. https://www.palmdalewater.org/wp-content/uploads/2021/08/PWD_Final_2020_WSCP.pdf (accessed September 2021).

_____. 2020b. Palmdale Water District – 2020 Urban Water Management Plan. June 2021. https://www.palmdalewater.org/wp-content/uploads/2021/10/PWD_Final_2020_UWMP.pdf (accessed September 2021)

_____. 2021. Palmdale Water District 2020 Water Shortage Contingency Plan, & 2015 Addendum. https://www.palmdalewater.org/wp-content/uploads/2021/06/presentation.pdf (accessed April 2022).

San Bernadino, County of. "Waste Disposal Sites." Last modified 2021. https://cms.sbcounty.gov/dpw/SolidWasteManagement/WasteDisposalSites.aspx (accessed September 2021)

Southern California Edison (SCE). 2019. 2019 Power Content Label. https://www.energy.ca.gov/filebrowser/download/3265 (accessed April 2022).

Southern California Gas Company (SoCal Gas). 2022. Natural Gas Transmission. https://www.socalgas.com/stay-safe/pipeline-and-storage-safety/natural-gas-transmission#:~:text=Because%20most%20of%20the%20natural,enough%20natural%20gas%20when%20needed. (accessed April 2022).

State Water Resources Control Board. 2018. "Regulations Related to Recycled Water." Last modified July 16, 2015. https://www.waterboards.ca.gov/drinking_water/certlic/drinkingwater/documents/lawbook/RWregulations_20181001.pdf (accessed September 2021)

Sunshine Canyon Landfill. 2021. "About – Sunshine Canyon Landfill." Last modified 2021. https://sunshinecanyonlandfill.com/about/ (accessed September 2021)

Waste Management. 2021a. "Materials Accepted – Palmdale." Last modified 2021. https://www.wm.com/location/california/antelope-valley/palmdale-landfill/materials-accepted.jsp (accessed September 2021)

_____. 2021b. "Materials Accepted – Lancaster." Last modified 2021. https://www.wm.com/location/california/antelope-valley/lancaster-landfill/materials-accepted.jsp (accessed September 2021)

_____. 2021c. "McKittrick Waste Landfill – Management Facility (Disposal)." Last modified 2021. https://www.wmsolutions.com/locations/details/id/186 (accessed September 2021)

_____. 2021d. "Materials Accepted – Simi Valley." Last modified 2021. https://www.wm.com/location/california/ventura-county/landfill/acceptable-materials.jsp (accessed September 2021)

_____. 2021e. "El Sobrante." Last modified 2021. https://www.wm.com/location/california/inland-empire/riverside-county/el-sobrante.jsp (accessed September 2021)

Wildfire

California Department of Forestry and Fire Protection (CAL FIRE). 2007. Fire Hazard Severity Zone Viewer. https://egis.fire.ca.gov/FHSZ/ (accessed April 2022).

Governor's Office of Emergency Services (Cal OES). 2017. State of California Emergency Plan 2017. https://www.caloes.ca.gov/cal-oes-divisions/planning-preparedness/state-of-california-emergency-plan-emergency-support-functions. (accessed April 2022).

_____. 2018. State of California Hazard Mitigation Plan. https://www.caloes.ca.gov/HazardMitigationSite/Documents/002-2018%20SHMP_FINAL_ENTIRE%20PLAN.pdf (accessed April 2022).

Natural Resources Conservation Service. 2020. Wind Rose Dataset - Los Angeles County. https://www.nrcs.usda.gov/wps/portal/wcc/home/climateSupport/windRoseResources/ (accessed April 2022).

Office of Planning and Research (OPR). 2018. California's Fourth Climate Change Assessment, Statewide Summary Report. https://www.energy.ca.gov/sites/default/files/2019-11/Statewide_Reports-SUM-CCCA4-2018-013_Statewide_Summary_Report_ADA.pdf (accessed April 2022).

Palmdale, City of. 2015. City of Palmdale Local Hazard Mitigation Plan. https://cityofpalmdale.org/DocumentCenter/View/9317/LOCAL-HAZARD-MITIGATION-PLAN-PDF?bidId= (accessed April 2022).

_____. 2020. Existing Conditions Report. https://static1.squarespace.com/static/5c7dc93065a707492aca3e47/t/5edaf08e6a3831601b6d540b/1591406750359/PalmdaleGPU-ECR-Ch7-PublicFacilitiesOpenSpace_Final+6-1-20.pdf (accessed June 2022).

Alternatives

California Department of Conservation (DOC). 2016a. California Important Farmland Finder. https://maps.conservation.ca.gov/DLRP/CIFF/ (accessed April 2022).

Palmdale, City of. 2016. General Plan Land Use Map. Adopted by the City Council 1/25/1993. https://cityofpalmdale.org/DocumentCenter/View/574/General-Plan-Land-Use-Map-PDF (accessed April 2022).

_____. 2018. City of Palmdale Zoning Map. Adopted by the City Council 12/14/1994. https://cityofpalmdale.org/DocumentCenter/View/516/Zoning-with-street-labels-PDF?bidId= (accessed April 2022).

_____. 2020. Report to the Mayor and Members of the City Council from the City Manager, General Plan Update – Land Use Alternatives

Parsons. 2021. Palmdale General Plan Update, Future Conditions Report

7.2 List of Preparers

This EIR was prepared by the City of Palmdale with the assistance of Rincon Consultants, Inc. Rincon staff involved in the preparation of the EIR are listed below.

Rincon Consultants, Inc.

Matt Maddox, AICP, Principal
Joe Power, AICP CEP, Principal
Abe Leider, AICP CEP, Principal Planner
Greg Martin, AICP, Senior Planner/Project Manager
Dario Campos, Formatting and Technical Editor
Josh Carman, INCE-USA, Director – Noise, Air Quality & GHG
Anna Choudhuri, Supervising Planner
Jacob Cisneros, Sustainability Associate
Gerard Cogliano, Environmental Planner
Heather Dubois, Senior Air Quality and Noise Specialist
Melissa Fajardo, Environmental Planner
Ryan Glenn, MA RPA, Archaeologist
Bryce Haney, Environmental Planner
Chris Jackson-Jordan, GIS Analyst
Kayleigh Limbach, Environmental Planner
Marco Mendoza, Environmental Planner
Chris Murphy, Planning Intern
Andrew Pulcheon, RPA, AICP CEP, Principal/Cultural Resources Manager/Registered Professional Archaeologist/Certified Planner
Isabelle Radis, GIS Intern
Yaritza Ramirez, Publishing Specialist
Yasaman Samsamshariat, Environmental Planner/Biologist
Andres Sanchez, Environmental Planner
Jesse Voremberg, MS, Environmental Planner
Bill Vosti, Program Manager – Air Quality, GHG Emissions, and Noise
Kari Zajac, MESM, Project Manager/Senior Environmental Planner

This page intentionally left blank.

8 Responses to Comments on the Draft EIR

This section includes comments received during the circulation of the Draft Environmental Impact Report prepared for the City of Palmdale 2045 General Plan Update Project (Project).

The Draft EIR was circulated for a 45-day public review period that began on July 14, 2022, and ended on August 29, 2022. The City of Palmdale received two comment letters on the Draft EIR. The commenters and the page number on which each commenter's letter appear are listed below.

Letter No. and Commenter		Page No.
1	Barbara Lods, Operations Manager**,** Antelope Valley Air Quality Management District	8-2
2	Victoria Tang, California Department of Fish and Wildlife	8-4

The comment letters and responses follow. The comment letters have been numbered sequentially and each separate issue raised by the commenter, if more than one, has been assigned a number. The responses to each comment identify first the number of the comment letter, and then the number assigned to each issue (Response 1.1, for example, indicates that the response is for the first issue raised in comment letter 1).

Where a comment resulted in a change to the Draft EIR text, a notation is made in the response indicating that the text is revised. Changes in text are signified by strikeouts (~~strikeouts~~) where text is removed and by underlined font (underlined font) where text is added. These changes in text are also included in *Amendments to the Draft EIR*, at the end of this section.

Letter 1

Antelope Valley Air Quality Management District
43301 Division St., Suite 206
Lancaster, CA 93535-4649
661.723.8070

In reply, please refer to AV0722/140

July 29, 2022

Megan Taggart
City of Palmdale
38250 Sierra Highway
Palmdale, CA 93550

RE: Notice of Availability of a Draft Environmental Impact Report for Project: Palmdale 2045 General Plan Update (Palmdale 2045)

Dear Ms. Taggart,

The Antelope Valley Air Quality Management District (District) has received the Notice of Availability of A Draft Environmental Impact Report for the Palmdale 2045 General Plan Update Project.

We have reviewed the documentation and based on the information available to us at this time, we have no comment on the request.

Thank you for the opportunity to review this planning document. If you have any questions regarding this letter, please contact me at (661) 723-8070 x23 or blods@avaqmd.ca.gov.

Sincerely,

Barbara Lods

Barbara Lods
Operations Manager

BJL/SS
Sent via E-mail

Printed on recycled paper

Letter 1

COMMENTER: Barbara Lods, Operations Manager, Antelope Valley Air Quality Management District

DATE: July 29, 2022

The commenter states that the District received the Notice of Availability of the Draft EIR, reviewed the document, and has no comments. This comment is noted, and no response is required.

DocuSign Envelope ID: 5F68A5BF-79FC-4F83-BEFD-FB9975A0BF8E

Letter 2

State of California – Natural Resources Agency
DEPARTMENT OF FISH AND WILDLIFE
South Coast Region
3883 Ruffin Road
San Diego, CA 92123
(858) 467-4201
www.wildlife.ca.gov

GAVIN NEWSOM, Governor
CHARLTON H. BONHAM, Director

August 23, 2022

Megan Taggert
City of Palmdale
38250 Sierra Highway
Palmdale, CA 93550
MTaggart@cityofpalmdale.org

Subject: Comments on the Draft Environmental Impact Report for the Palmdale 2045 General Plan Update Project, SCH #2021060494, Los Angeles County

Dear Ms. Taggert:

The California Department of Fish and Wildlife (CDFW) has reviewed the Draft Environmental Impact Report (DEIR) for the Palmdale 2045 General Plan Update Project (Project) from the City of Palmdale (City). Thank you for the opportunity to provide comments and recommendations regarding those activities involved in the Project that may affect California fish and wildlife. Likewise, we appreciate the opportunity to provide comments regarding those aspects of the Project that CDFW, by law, may be required to carry out or approve through the exercise of its own regulatory authority under the Fish and Game Code.

CDFW's Role

CDFW is California's Trustee Agency for fish and wildlife resources and holds those resources in trust by statute for all the people of the State [Fish & G. Code, §§ 711.7, subdivision (a) & 1802; Pub. Resources Code, § 21070; California Environmental Quality Act (CEQA) Guidelines, § 15386, subdivision (a)]. CDFW, in its trustee capacity, has jurisdiction over the conservation, protection, and management of fish, wildlife, native plants, and habitat necessary for biologically sustainable populations of those species (Id., § 1802). Similarly, for purposes of CEQA, CDFW is charged by law to provide, as available, biological expertise during public agency environmental review efforts, focusing specifically on projects and related activities that have the potential to adversely affect state fish and wildlife resources. 2-1

CDFW is also submitting comments as a Responsible Agency under CEQA (Pub. Resources Code, § 21069; CEQA Guidelines, § 15381). CDFW expects that it may need to exercise regulatory authority as provided by the Fish and Game Code, including lake and streambed alteration regulatory authority (Fish & G. Code, § 1600 *et seq*.). Likewise, to the extent implementation of the Project as proposed may result in "take", as defined by State law, of any species protected under the California Endangered Species Act (CESA) (Fish & G. Code, § 2050 *et seq.*), or CESA-listed rare plant pursuant to the Native Plant Protection Act (NPPA; Fish & G. Code, §1900 *et seq.*), CDFW recommends the Project proponent obtain appropriate authorization under the Fish and Game Code.

DocuSign Envelope ID: 5F68A5BF-79FC-4F83-BEFD-FB9975A0BF8E

Project Description and Summary

Objective: The proposed Project is a three-plus-year comprehensive update to the City's General Plan, the guiding document for the future of Palmdale over 23 years (2022-2045). The Project focuses on building out planned infrastructure investments and improving multi-modal active transportation and connectivity. The Project identifies major strategies and physical improvements for the City over the next 23 years. These strategies include creating a downtown near the future multimodal transit station, establishing three health and wellness districts, and developing two education districts. This also includes transforming Palmdale Boulevard into a mixed-use corridor, promoting a diversity of housing types in the City, forming village centers that offer a mix of residential choices and daily goods and services near existing neighborhoods, and building off existing industrial and aerospace business opportunities. The City has identified 24 sites on Table 3-1 Development Status of Major Approved Projects that are sites approved for development (Approved Projects) within the 23-year planning period of the Project. The following actions will also be taken by the City in connection with the Project and are also considered part of the proposed project analyzed in the DEIR: 2.1

- Adopt and implement the General Plan Update (Palmdale 2045 Plan);
- Adopt and implement the Climate Action Plan;
- Adopt Zoning Ordinance Amendments required to make the Zoning Ordinance consistent with the General Plan Update;
- Adopt the Housing Element Update; and
- Adopt revisions to the Palmdale Transit Area Specific Plan to slightly expand its boundary.

Location: The Project would apply to the entire geographic area located within the boundaries of the City of Palmdale. The City is located in the southern region of the Antelope Valley, approximately 60 miles northeast of downtown Los Angeles along State Highway 14. The Project Area is 106,634 acres, or approximately 166 square miles.

Comments and Recommendations

CDFW offers the comments and recommendations below to assist the City in adequately identifying, avoiding, and/or mitigating the Project's significant, or potentially significant, direct, and indirect impacts on fish and wildlife (biological) resources. Editorial comments or other suggestions are also included to improve the environmental document. CDFW recommends the measures or revisions below be included in a science-based monitoring program that contains adaptive management strategies as part of the Project's CEQA mitigation, monitoring and reporting program (Pub. Resources Code, § 21081.6; CEQA Guidelines, § 15097). 2.2

Specific Comments

Comment #1: Impacts on Western Joshua Trees (*Yucca brevifolia*) and Woodlands

Issue: Development facilitated by the Project could impact western Joshua trees and woodlands, which can be found throughout the Palmdale area. 2.3

Specific impacts: Development of the Approved Projects or future project sites may result in loss of individual western Joshua trees as well as acres of Joshua tree woodlands.

DocuSign Envelope ID: 5F68A5BF-79FC-4F83-BEFD-FB9975A0BF8E

Why impact would occur: Take of western Joshua tree is defined as any activity that results in the removal of a western Joshua tree, or any part thereof, or impacts the seedbank surrounding one or more western Joshua trees (CDFW 2022a). Development of some Approved Projects and potentially future sites could result in the loss of individual trees and acres of Joshua tree woodlands. Impacts on western Joshua trees and Joshua tree woodlands could occur as a result of clearing a project site for development, which includes fuel modification areas surrounding the potential development. Even if individual trees are not removed as part of fuel modification, removal and disturbance of the understory vegetation would result in the complete loss, degradation, or disturbance of a structurally diverse Joshua tree woodland. As a result, the Project would remove western Joshua trees, eliminate and modify habitat, and crush and/or bury living seeds in the soil, rendering living seeds inviable and/or causing them to be killed.

The DEIR concludes that the Project's impact on western Joshua trees is less than significant through implementation and compliance with the City's Native Vegetation Ordinance as well as the Project's Conservation Policy Goal CON-1.2. The City's Native Vegetation Ordinance applies to individual trees, not the habitat or natural community as a whole. The Project's Goal CON-1.2 does not prescribe, require, or impose specific actions that would substantially mitigate for impacts on a natural community that CDFW considers to be a Sensitive Natural Community. The DEIR does not require any future development facilitated by the Project to undertake measures to mitigate for impacts on western Joshua trees as a natural community. As a result, the Project could result in unmitigated impacts.

2.3

The City's Native Vegetation Ordinance requires preservation of two Joshua trees per acre. Loss of woodlands supporting foraging, nesting, and dispersing wildlife may not be completely mitigated by preserving individual trees. Individual trees may not completely replace the loss of viable habitat, understory vegetation, and biological functions. This could result in a short-term and long-term reduction in Joshua tree woodlands available to support biological and ecological functions. As such, this could result in local extirpation of wildlife.

Evidence impact would be significant: The western Joshua tree is a species designated as candidate for listing as threatened pursuant to CESA (Fish & G. Code, § 2050 *et seq*.). The western Joshua tree is granted full protection of a threatened species under CESA. Take of any endangered, threatened, candidate species that results from the Project is prohibited, except as authorized by State law (Fish & G. Code, §§ 86, 2062, 2067, 2068, 2080, 2085; Cal. Code Regs., tit. 14, § 786.9). The DEIR does not describe or disclose any compensatory mitigation required for the Project's impact on western Joshua trees, their seedbank, or in situ western Joshua trees adjacent to an Approved Project or future project site. Accordingly, the Project may have a substantial adverse direct, indirect, and cumulative effect, either directly or through habitat modifications, on a species identified as a candidate, sensitive, or special status by CDFW.

CDFW considers Joshua tree woodlands to be a sensitive plant community. Impacts to a Sensitive Natural Community should be considered significant under CEQA unless impacts are clearly mitigated below a level of significance. Without appropriate mitigation, the Project may result in significant impacts on a Sensitive Natural Community if development facilitated by the Project would remove, encroach into, or disturb (e.g., fuel modification) such resources. Accordingly, the Project would continue to have a substantial adverse direct, indirect, and cumulative effect, either directly or through habitat modifications, on a species or natural community identified as a candidate, sensitive, or special status species by CDFW.

DocuSign Envelope ID: 5F68A5BF-79FC-4F83-BEFD-FB9975A0BF8E

Recommended Potentially Feasible Mitigation Measure(s) Required for Future Projects Facilitated by the General Plan Update:

Mitigation Measure #1: The City should require project applicants to submit an Incidental Take Permit (ITP) Application to CDFW that provides the following information (at a minimum):

1. An analysis of individual western Joshua trees (clonal and non-clonal) and western Joshua tree seedbank that would be impacted both within the Project site and within 300 feet of the Project site;
2. An analysis of the acres of natural communities supporting western Joshua trees that would be impacted both within the Project site and within 300 feet of the Project site provided according to alliance and/or association-based natural communities found in the Manual of California Vegetation (MCV), second edition (Sawyer et al. 2009);
3. A map of the Project's site plan overlaid on location of western Joshua trees and natural communities; and
4. A discussion of whether development could impact any in-situ western Joshua trees adjacent to the Project site.

Mitigation Measure #2: The City should provide compensatory mitigation for any Approved Project's or future project's impact on western Joshua trees at no less than 2:1, or as required in an ITP for western Joshua trees issued by CDFW. Mitigation should be higher if the project will impact a western Joshua tree population that is increasing through seedling recruitment. Mitigation lands provided by the City should (at a minimum):

1. Support western Joshua trees of similar density, abundance, and age structure;
2. Support natural communities of similar native plant species composition, density, structure, and function to habitat that was impacted;
3. Support nursery plants for western Joshua tree recruits; and
4. Not be exposed or have the potential to be exposed to disturbances such as OHV activity, illegal access, and encroachment from pending or future development.

2.3

Mitigation Measure #3: The City should require the project applicants to protect mitigation lands in perpetuity under a conservation easement dedicated to a local land conservancy or other appropriate entity that has been approved to hold and manage mitigation lands pursuant to Assembly Bill 1094 (2012). Assembly Bill 1094 amended Government Code sections 65965-65968. Under Government Code section 65967(c), the lead agency must exercise due diligence in reviewing the qualifications of a governmental entity, special district, or nonprofit organization to effectively manage and steward land, water, or natural resources on mitigation lands it approves. An appropriate non-wasting endowment should be provided for the long-term management of mitigation lands. A mitigation plan should include measures to protect the targeted habitat values in perpetuity from direct and indirect negative impacts. Issues that should be addressed include but are not limited to the following: protection from any future development and zone changes; restrictions on access; proposed land dedications; control of illegal dumping; water pollution; and, increased human intrusion. A conservation easement and endowment funds should be fully acquired, established, transferred, or otherwise executed prior to impacts on western Joshua trees.

Recommendation #1: The City should revise the DEIR to require future applicants to disclose the project's impact on western Joshua tree by providing the following information:

DocuSign Envelope ID: 5F68A5BF-79FC-4F83-BEFD-FB9975A0BF8E

1. The Project's potential impact on western Joshua tree seedbank within the Project site;
2. The Project's potential impact on western Joshua trees and seedbank adjacent to the Project site;
3. The Project's potential impact on each unique native and non-native natural community supporting western Joshua trees within and adjacent to the Project site;
4. The Project's construction, operation, and maintenance activities that could impact western Joshua trees and seedbank within and adjacent to the Project site; and
5. The Project's cumulative impact on western Joshua tree.

2.3

Recommendation #2: Revisions to the Fish and Game Code, effective January 1998, may require that CDFW issue a separate CEQA document for the issuance of an ITP for the Project unless the Project require all current and future project CEQA document address all the project's impact on CESA endangered, threatened, and/or candidate species. The Project's CEQA document should also specify a mitigation monitoring and reporting program that will meet the requirements of an ITP. Also, biological mitigation monitoring and reporting proposals should be of sufficient detail and resolution to satisfy the requirements for an ITP. However, it is worth noting that mitigation for the Project's impact on a CESA endangered, threatened, and/or candidate species proposed in the Project's CEQA document may not necessarily satisfy mitigation required to obtain an ITP.

Comment #2: Impacts on Biological Resources

Issue: Development facilitated by the Project could impact biological resources.

Specific impacts: Direct and indirect impacts on biological resources could result from development on Approved Project and future sites. Impacts on biological resources could result in reproductive suppression, mortality or injury to wildlife, or population decline of a special status, sensitive, or rare species or natural community.

Why impacts would occur: The DEIR states, "Based on the review of applicable databases, 32 special-status animal species and 43 special-status plant species have been observed or have the potential to occur in the 9-quadrangle search area surrounding the Planning Area, as detailed in Appendix C. These include the desert tortoise and Mohave ground squirrel." According to the DEIR, out of the 24 sites that the Project has identified, CDFW has estimated 19 sites on vacant land. Development on these sites as proposed in the Project, would require removal of habitat and construction of residential, commercial, and industrial uses. Development on these sites could result in habitat modification and impacts to special status species during development and operation. Development facilitated by the Project could impact biological resources, both directly or indirectly through habitat modification or loss. Biological resources that could be impacted by the Project includes special status, sensitive, or rare species or natural communities. Given that the Project site supports multiple species and their habitats, the DEIR only includes MM-BIO-1 to minimize impacts to nesting birds. The Project may, therefore, result in a net loss of special status, sensitive, or rare species or natural communities without further avoidance, minimization, or mitigation measures.

2-4

The DEIR concludes that the Project's impact on any species identified as a candidate, sensitive, or special status species in local or regional plans, policies, or regulations, or by CDFW and/or U.S. Fish and Wildlife Service (USFWS) is less than significant through implementation of the Project's goals and policies and compliance with provisions of the various

DocuSign Envelope ID: 5F68A5BF-79FC-4F83-BEFD-FB9975A0BF8E

State and federal regulations. The Project's Conservation Goals CON-1, CON-2, CON-5, and CON-7 are goals and policies that do not prescribe, require, or impose specific actions that would substantially mitigate for impacts on candidate, sensitive, or special status species at a project level. The DEIR does not require future development facilitated by the Project to undertake any measures to mitigate for impacts on candidate, sensitive, or special status species, other than birds. As a result, the Project, by identifying developable sites over the next 23 years, could result in unmitigated impacts.

Evidence impacts would be significant: The Project has identified vacant sites within the City that could be developed through 2045. The Project could result in direct physical changes to the environment and impact special status, sensitive, or rare plant or wildlife species or natural communities. Impacts on CESA- and ESA-listed species requires a mandatory finding of significance under CEQA (CEQA Guidelines, § 15065). Take under ESA also includes significant habitat modification or degradation that could result in death or injury to a listed species by interfering with essential behavioral patterns such as breeding, foraging, or nesting. Plants with a California Rare Plant Rank (CRPR) of 1B meets the definition of endangered, rare, or threatened species under CEQA (CEQA Guidelines, §15380; CNPS 2022a). Plants with a CRPR of 4 may meet the definition of endangered, rare, or threatened species. Impacts on rare plants could require a mandatory finding of significance. CDFW considers Sensitive Natural Communities as threatened habitats having both regional and local significance. Natural communities, alliances, and associations with a State-wide rarity ranking of S1, S2, and S3 should be considered sensitive and declining at the local and regional level. These ranks can be obtained by visiting the Vegetation Classification and Mapping Program - Natural Communities webpage (CDFW 2022a). Impacts on sensitive natural communities could require a mandatory finding of significance. species by CDFW.

Development facilitated by the Project could substantially reduce the habitat of a fish or wildlife species; cause a fish or wildlife population to drop below self-sustaining levels; threaten to eliminate a plant or animal community; or substantially reduce the number or restrict the range of an endangered, rare, or threatened species [CEQA Guidelines, § 150565(a)(1)]. Without appropriate mitigation, the Project continues to have a substantial adverse direct, indirect, and cumulative effect, either directly or through habitat modifications, on species identified as a candidate, sensitive, or special status species, or a Sensitive Natural Community, in local or regional plans, policies, or regulations, or by CDFW and/or USFWS. 2.4

Recommended Potentially Feasible Mitigation Measure(s) Required for Future Projects Facilitated by the General Plan Update:

Mitigation Measure #4: Future development projects on Approved Project sites should conduct the appropriate biological resources technical studies as part of project-level analyses, including baseline surveys, protocol-level surveys, tree inventories to confirm the presence of any special status species within or immediate adjacent to proposed impact areas. Focused species-specific surveys should be required if suitable habitat is present. These surveys should be performed according to any established CDFW and/or USFWS protocols. Reports should be prepared that should document baseline conditions at the time of project application, identify constraints, recommend project redesign, analyze potential effects, and propose mitigation measures that reduce potential impacts to less than significant levels. Biological resources technical studies should provide and include the following:

DocuSign Envelope ID: 5F68A5BF-79FC-4F83-BEFD-FB9975A0BF8E

1. A complete, recent, assessment of rare, threatened, and endangered species, regionally and locally unique species, and sensitive habitats at the project site and within the area of potential effect, including California Species of Special Concern and California Fully Protected Species (Fish & G. Code, §§ 3511, 4700, 5050, and 5515). Species to be addressed should include all those which meet the CEQA definition of endangered, rare, or threatened species (CEQA Guidelines, § 15380). Seasonal variations in use of land around the project site should also be addressed. A nine-quadrangle search of CDFW's California Natural Diversity Database (CNDDB) should be conducted to obtain current information on any previously reported sensitive species and habitat (CDFW 2022b);
2. A thorough, recent, floristic-based assessment of special status plants and natural communities following CDFW's Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Sensitive Natural Communities (CDFW 2018). Adjoining habitat areas should be included where project construction and activities could lead to direct or indirect impacts off site;
3. Floristic, alliance- and/or association-based mapping and vegetation impact assessments conducted at the project site and within the area of potential effect. The Manual of California Vegetation (MCV), second edition, should be used to inform this mapping and assessment (Sawyer et al. 2009);
4. A rare plant assessment using online databases for rare, threatened, and endangered plants, including the California Native Plant Society (CNPS) Online Inventory of Rare and Endangered Plants of California (CNPS 2022b) as well as the Calflora's Information on Wild California Plants database (Calflora 2022);
5. A discussion regarding project-related indirect impacts on biological resources in nearby public lands, open space, adjacent natural habitats, riparian ecosystems, and any designated and/or proposed or existing reserve lands [e.g., preserve lands associated with a Natural Community Conservation Plan (Fish & G. Code, § 2800 et. seq.)]; and
6. Impacts on, and maintenance of, wildlife corridor/movement areas, including access to undisturbed habitats in areas adjacent to the project site.

2-4

Mitigation Measure #5: If necessary, the project applicants should be required to enter into consultation with, and obtain the appropriate permits from, the USFWS and/or CDFW for unavoidable impacts to special status species and other protected resources. Appropriate permits from the USFWS and/or CDFW should be obtained prior to obtaining a grading permit.

Mitigation Measure #6: If a rare plant species or a Sensitive Natural Community is detected, the project applicant should fully avoid impacts. If the project cannot feasibly avoid impacts to rare plants and habitat, or sensitive natural communities, either during project activities or over the life of the project, the project applicant should provide compensatory mitigation for the loss of individual plants and habitat acres, which should include impacts due to fuel modification. Impacts on rare plants or a Sensitive Natural Community due hazard mitigation/remediation should also be mitigated as these impacts would result in permanent loss and perpetual impacts on habitat function and quality. The project applicant should provide compensatory mitigation so that there is no net loss of rare plants and habitat, or sensitive natural communities. Compensatory mitigation should be appropriate for the extent of permanently disturbed habitat. Compensatory mitigation should be higher for impacts on CRPR 1 species, S1 or S2 Sensitive Natural Community, and Sensitive Natural Community with an additional rank of 0.1 or 0.2. Compensatory mitigation should be implemented by a qualified restoration ecologist. A Restoration Plan, at a minimum, should include success criteria and performance standards for measuring the establishment of rare plants and habitat, responsible parties, maintenance

DocuSign Envelope ID: 5F68A5BF-79FC-4F83-BEFD-FB9975A0BF8E

techniques and schedule, five-year monitoring and reporting schedule, adaptive management strategies, and contingencies. A Restoration Plan should be submitted to the City prior to any grading or vegetation removal.

Mitigation Measure #7: CDFW considers adverse impacts to a species protected by CESA to be significant without mitigation under CEQA. As to CESA, take of any endangered, threatened, candidate species that results from a project is prohibited, except as authorized by State law (Fish & G. Code, §§ 2080, 2085; Cal. Code Regs., tit. 14, § 786.9). Consequently, if a project, project construction, or any project-related activity for the duration of the project will result in take of a species designated as endangered or threatened, or a candidate for listing under CESA, CDFW recommends the project applicant seek appropriate take authorization under CESA prior to implementing or continuing the project. Appropriate authorization from CDFW may include an ITP or a Consistency Determination in certain circumstances, among other options [Fish & G. Code, §§ 2080.1, 2081, subds. (b) and (c)]. Early consultation is encouraged, as significant modification to a project and mitigation measures may be required to obtain a CESA Permit. Revisions to the Fish and Game Code, effective January 1998, may require that CDFW issue a separate CEQA document for the issuance of an ITP unless the project's CEQA document addresses all project impacts to CESA listed species and specifies a mitigation monitoring and reporting program that will meet the requirements of an ITP. For these reasons, biological mitigation monitoring and reporting proposals should be of sufficient detail and resolution to satisfy the requirements for a CESA ITP.

2-4

Comment #3: Impacts to Streams

Issue: Development facilitated by the Project and Conservation Goal CON-7 could impact streams.

Specific impacts: Development on some of the Approved Project sites may result in erosion and earth movement that could impair streams, whether ephemeral, intermittent, or perennial. Development on the Approved Project or future project sites may necessitate capturing local run-off from their natural course of flow. In addition, vegetation along streams may need to be removed or may be degraded through habitat modification (e.g., loss of water source, encroachment, and edge effects leading to introduction of non-native plants).

Why impacts would occur: According to the DEIR, Amargosa Channel is located adjacent to a site on the Approved Projects. Development of this site could affect riparian habitat during project construction and operation. Development on this and potentially additional future sites may result in ground-disturbing activities and vegetation removal. This includes ground-disturbing activities and vegetation removal potentially required for fuel modification and hazard mitigation/remediation. Ground-disturbing activities and vegetation removal could result in erosion. Siltation or runoff downstream could impair streams and herbaceous vegetation. Herbaceous vegetation adjacent to streams protects the physical and ecological integrity of these water features and maintains natural sedimentation processes. Therefore, a housing or future project that would impact vegetation adjacent to streams, but not the stream itself, could still impact the stream.

2-5

In addition, current Approved Projects or future projects may require streams to be channelized or local run-off diverted from their natural course of flow. The DEIR concludes that the Project's impact on any riparian habitat or other sensitive natural community is less than significant

DocuSign Envelope ID: 5F68A5BF-79FC-4F83-BEFD-FB9975A0BF8E

through implementation of the Project's goals and policies and compliance with relevant local, state, and federal regulations. The Policy Conservations Goals CON-1, CON-4, CON-5, CON-6, CON-7 are goals and policies that do not prescribe, require, or impose specific actions that would substantially mitigate for impacts on streams and associated natural communities. The DEIR does not require future development facilitated by the Project to undertake any measures to mitigate for impacts on streams and associated natural communities. As a result, the Project, by identifying developable sites over the next 23 years, could result in unmitigated impacts.

Evidence impacts would be significant: Changes to hydrology or channel morphology, due to run-off diversion, are reasonable potential direct and indirect physical changes in the environment. Said changes and their potential impacts on biological resources should be analyzed and disclosed in an environmental document. Adequate disclosure is necessary for CDFW to assist a lead agency in adequately identifying, avoiding, and/or mitigating a project's significant, or potentially significant, direct, and indirect impacts on biological resources.

CDFW exercises its regulatory authority as provided by Fish and Game Code section 1600 et seq. to conserve fish and wildlife resources which includes rivers, streams, or lakes and associated natural communities. Fish and Game Code section 1602 requires any person, state or local governmental agency, or public utility to notify CDFW prior to beginning any activity that may do one or more of the following:

- Divert or obstruct the natural flow of any river, stream, or lake;
- Change the bed, channel, or bank of any river, stream, or lake;
- Use material from any river, stream, or lake; or,
- Deposit or dispose of material into any river, stream, or lake.

CDFW requires a Lake and Streambed Alteration (LSA) Agreement when a project activity may substantially adversely affect fish and wildlife resources. The Project may result in significant impacts on streams and associated natural communities if development of Approved Project sites identified by the Project or future projects would be in close proximity to these resources. Without appropriate mitigation, the Project continues to have a substantial adverse direct, indirect, and cumulative effect, either directly or through habitat modifications, on fish and wildlife resources, including rivers, streams, or lakes and associated natural communities identified by CDFW.

2-5

Recommended Potentially Feasible Mitigation Measure(s) Required for Future Projects Facilitated by the General Plan Update:

Mitigation Measure #8: Project specific analyses should prepare a jurisdictional delineation and impact assessment provided along with the project's biological resources technical studies.

Mitigation Measure #9: If any river, stream, or lake are present and may be impacted, the project should be required to avoid impacts by implementing appropriate vegetative buffers and/or setbacks adjoining the stream or wetland feature to reduce impacts of the project on these resources.

Mitigation Measure #10: If avoidance is not feasible, the project applicant should be required to notify CDFW pursuant to Fish and Game Code 1602 and obtain an LSA Agreement from CDFW prior to obtaining a grading permit. The project applicant should comply with the

DocuSign Envelope ID: 5F68A5BF-79FC-4F83-BEFD-FB9975A0BF8E

mitigation measures detailed in a LSA Agreement issued by CDFW. The project applicant should also provide compensatory mitigation at no less than 2:1 for the impacted stream and associated natural community, or at a ratio acceptable to CDFW. Please visit CDFW's Lake and Streambed Alteration Program webpage for more information (CDFW 2022c).

Recommendation #3: CDFW recommends the DEIR require any approved or future projects to include an analysis of potential impacts on biological resources resulting from any proposed water diversion. At a minimum, the analysis should evaluate a study reach that includes the channel downstream from a project site. The study reach should extend a minimum of one mile downstream or an appropriate distance determined by both a qualified biologist and hydrologist, whichever is greater. The analysis of the study reach should discuss changes in hydrology and hydraulics, including the following:

1. Under pre-project (i.e., baseline) conditions, the volume of water flow from both the project area and study reach during a) the wet (November through March); b) the dry season (April through October); and c) above-average and below-average water year (i.e., wet season/above-average water year, wet season/below-average water year, dry season/above-average water year, and dry season/below-average water year). The analysis should clearly define above-average or below-average rainfall year.
2. Under proposed project conditions, the percent reduction in flow from both the project area and study reach for a wet season/above-average water year, wet season/below-average water year, dry season/above-average water year, and dry season/below-average water year.
3. A quantitative analysis comparing the flow from the project area and other tributaries into the study reach, and their relative contribution to the hydrograph of the study reach.
4. An analysis of potential project-related changes to river hydraulics in both concrete-lined and soft-bottom reaches. This includes water depth (percent change), wetted perimeter (acres gained/lost), and velocity (percent change).

2-5

Recommendation #4: CDFW's issuance of an LSA Agreement for a project that is subject to CEQA will require CEQA compliance actions by CDFW as a Responsible Agency. As a Responsible Agency, CDFW may consider the CEQA document from the lead agency/project applicant for the project. To minimize additional requirements by CDFW pursuant to Fish and Game Code section 1600 et seq. and/or under CEQA, a project's CEQA document should fully identify the potential impacts to the stream or riparian resources and provide adequate avoidance, mitigation, monitoring, and reporting commitments for issuance of the LSA Agreement. To compensate for any on- and off-site impacts to aquatic and riparian resources, additional mitigation conditioned in any LSA Agreement may include the following: erosion and pollution control measures; avoidance of resources; protective measures for downstream resources; on- and/or off-site habitat creation; enhancement or restoration; and/or protection and management of mitigation lands in perpetuity.

Additional Recommendations

Recommendation #5: Nesting Birds – CDFW recommends modifying BIO-MM-4 to include underlined language and remove language with strikethrough:

2-6

> "To avoid disturbance of nesting and special status birds, including raptorial species protected by the MBTA and CFGC, activities related to construction projects carried out

DocuSign Envelope ID: 5F68A5BF-79FC-4F83-BEFD-FB9975A0BF8E

under the Plan, including, but not limited to, vegetation removal, ground disturbance, and construction and demolition shall occur outside of the bird breeding season, February 15 through September 15 (as early as January 1 for some raptors) ~~(February 1 through August 31~~). If construction must begin during the breeding season, then a pre-construction nesting bird survey shall be conducted no more than 3 days prior to initiation of ground disturbance and vegetation removal activities. The nesting bird pre-construction survey shall be conducted on foot inside the area of proposed development, including a 300-foot buffer (500-foot for raptors), and in inaccessible areas (e.g., private lands) from afar using binoculars to the extent practical. The survey shall be conducted by a biologist familiar with the identification of avian species known to occur in southern California desert communities.

If nests are found, an avoidance buffer (dependent upon the species, the proposed work activity, and existing disturbances associated with land uses outside of the site) shall be determined and demarcated by the biologist with bright orange construction fencing, flagging, construction lathe, or other means to mark the boundary. All construction personnel shall be notified as to the existence of the buffer zone and to avoid entering the buffer zone during the nesting season. No ground disturbing activities shall occur within this buffer until the avian biologist has confirmed that breeding/nesting is completed and the young have fledged the nest. Encroachment into the buffer shall occur only at the discretion of the qualified biologist."

2-6

It should be noted that the temporary halt of Project activities within nesting buffers during nesting season does not constitute effective mitigation for the purposes of offsetting Project impacts associated with habitat loss. Additional mitigation would be necessary to compensate for the permanent removal of nesting habitat within the Project site based on acreage of impact and vegetation composition. CDFW shall be consulted to determine proper mitigation for impacts to occupied habitat depending on the status of the bird species. Mitigation ratios would increase with the occurrence a California Species of Special Concern and would further increase with the occurrence of a CESA-listed species.

Recommendation #6: Data – CEQA requires that information developed in environmental impact reports and negative declarations be incorporated into a database which may be used to make subsequent or supplemental environmental determinations [Pub. Resources Code, § 21003, subd. (e)]. Accordingly, please report any special status species detected by completing and submitting CNDDB Field Survey Forms (CDFW 2022d). This includes all documented occurrences of special status species. The City should ensure the data has been properly submitted, with all data fields applicable filled out, prior to Project ground-disturbing activities. The data entry should also list pending development as a threat and then update this occurrence after impacts have occurred. The City should provide CDFW with confirmation of data submittal.

2-7

Recommendation #7: Mitigation and Monitoring Reporting Plan – Per Public Resources Code section 21081.6(a)(1), CDFW has provided the City with a summary of our suggested mitigation measures and recommendations in the form of an attached Draft Mitigation and Monitoring Reporting Plan (MMRP; Attachment A). A final MMRP shall reflect results following additional plant and wildlife surveys and the Project's final on and/or off-site mitigation plans.

2-8

Filing Fees

DocuSign Envelope ID: 5F68A5BF-79FC-4F83-BEFD-FB9975A0BF8E

The Project, as proposed, would have an impact on fish and/or wildlife, and assessment of filing fees is necessary. Fees are payable upon filing of the Notice of Determination by the City of Palmdale and serve to help defray the cost of environmental review by CDFW. Payment of the fee is required for the underlying Project approval to be operative, vested, and final (Cal. Code Regs., tit. 14, § 753.5; Fish & G. Code, § 711.4; Pub. Resources Code, § 21089).

Conclusion 2-8

We appreciate the opportunity to comment on the Project to assist the City in adequately analyzing and minimizing/mitigating impacts to biological resources. CDFW requests an opportunity to review and comment on any response that the City has to our comments and to receive notification of any forthcoming hearing date(s) for the Project [CEQA Guidelines, § 15073(e)]. If you have any questions or comments regarding this letter, please contact Felicia Silva, Environmental Scientist, at Felicia.Silva@wildlife.ca.gov or (562) 292-8105.

Sincerely,

DocuSigned by:
5991E19EF8094C3...
Victoria Tang signing for

Erinn Wilson-Olgin
Environmental Program Manager I
South Coast Region

ec: CDFW
Erinn Wilson-Olgin, Los Alamitos – Erinn.Wilson-Olgin@wildlife.ca.gov
Victoria Tang, Los Alamitos – Victoria.Tang@wildlife.ca.gov
Ruby Kwan-Davis, Los Alamitos – Ruby.Kwan-Davis@wildlife.ca.gov
Felicia Silva, Los Alamitos – Felicia.Silva@wildlife.ca.gov
Julisa Portugal, Los Alamitos – Julisa.Portugal@wildlife.ca.gov
Fredric Rieman, Los Alamitos – Frederic.Rieman@wildlife.ca.gov
Cindy Hailey, San Diego – Cindy.Hailey@wildlife.ca.gov
CEQA Program Coordinator, Sacramento – CEQACommentLetters@wildlife.ca.gov
Office of Planning and Research
State Clearinghouse, Sacramento – State.Clearinghouse@opr.ca.gov

References:

[CDFWa] California Department of Fish and Wildlife. 2022. Natural Communities. Available from: https://wildlife.ca.gov/Data/VegCAMP/Natural-Communities.
[CDFWb] California Department of Fish and Wildlife. 2022. California Natural Diversity Database. Available from: https://wildlife.ca.gov/Data/CNDDB/Maps-andData#43018408-cnddb-in-bios
[CDFWc] California Department of Fish and Wildlife. 2022. Lake and Streambed Alteration Program. Available from: https://wildlife.ca.gov/Conservation/LSA

DocuSign Envelope ID: 5F68A5BF-79FC-4F83-BEFD-FB9975A0BF8E

[CDFWd] California Department of Fish and Wildlife. 2022. Submitting Data to the CNDDB. Available from: https://wildlife.ca.gov/Data/CNDDB/Submitting-Data

[CDFW] California Department of Fish and Wildlife. 2018. Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Sensitive Natural Communities. Available from: https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=18959

Calflora. 2022. Information on Wild California Plants. Available from: https://www.calflora.org/

[CNPSa] California Native Plant Society. 2022. CNPS Rare Plant Ranks. Available from: https://www.cnps.org/rare-plants/cnps-rare-plant-ranks

[CNPSb] California Native Plant Society, Rare Plant Program. 2022. Inventory of Rare and Endangered Plants of California (online edition, v9-01 1.0). Available from: https://www.rareplants.cnps.org

Sawyer, J. O., Keeler-Wolf, T., and Evens J.M. 2009. A Manual of California Vegetation, 2nd ed. ISBN 978-0-943460-49-9.

DocuSign Envelope ID: 5F68A5BF-79FC-4F83-BEFD-FB9975A0BF8E

State of California – Natural Resources Agency
DEPARTMENT OF FISH AND WILDLIFE
South Coast Region
3883 Ruffin Road
San Diego, CA 92123
(858) 467-4201
www.wildlife.ca.gov

GAVIN NEWSOM, Governor
CHARLTON H. BONHAM, Director

Attachment A: Draft Mitigation and Monitoring Reporting Plan

CDFW recommends the following language to be incorporated into a future environmental document for the Project. A final MMRP shall reflect results following additional plant and wildlife surveys and the Project's final on and/or off-site mitigation plans.

Biological Resources (BIO)			
Mitigation Measure (MM) or Recommendation (REC)		**Timing**	**Responsible Party**
MM-BIO-1-Joshua Tree ITP	The City shall require project applicants to submit an ITP Application to CDFW that provides the following information (at a minimum): 1) An analysis of individual western Joshua trees (clonal and non-clonal) and western Joshua tree seedbank that would be impacted both within the Project site and within 300 feet of the Project site; 2) An analysis of the acres of natural communities supporting western Joshua trees that would be impacted both within the Project site and within 300 feet of the Project site provided according to alliance and/or association-based natural communities found in the Manual of California Vegetation (MCV), second edition (Sawyer et al. 2009); 3) A map of the Project's site plan overlaid on location of western Joshua trees and natural communities; and 4) A discussion of whether housing development could impact any in-situ western Joshua trees adjacent to the Project site.	Prior to Project construction and activities	City of Palmdale/Project Applicant

DocuSign Envelope ID: 5F68A5BF-79FC-4F83-BEFD-FB9975A0BF8E

MM-BIO-2-Joshua Tree Mitigation	The City shall provide compensatory mitigation for any Approved Projects or future project's impact on western Joshua trees at no less than 2:1, or as required in an ITP for western Joshua trees issued by CDFW. Mitigation shall be higher if the project will impact a western Joshua tree population that is increasing through seedling recruitment. Mitigation lands provided by the City shall (at a minimum): 1) Support western Joshua trees of similar density, abundance, and age structure; 2) Support natural communities of similar native plant species composition, density, structure, and function to habitat that was impacted; 3) Support nursery plants for western Joshua tree recruits; and 4) Not be exposed or have the potential to be exposed to disturbances such as OHV activity, illegal access, and encroachment from pending or future development.	Prior to Project construction and activities	City of Palmdale/Project Applicant
MM-BIO-3-Mitigation Lands	The City shall require the project applicants to protect mitigation lands in perpetuity under a conservation easement dedicated to a local land conservancy or other appropriate entity that has been approved to hold and manage mitigation lands pursuant to Assembly Bill 1094 (2012). Assembly Bill 1094 amended Government Code sections 65965-65968. Under Government Code section 65967(c), the lead agency must exercise due diligence in reviewing the qualifications of a governmental entity, special district, or nonprofit organization to effectively manage and steward land, water, or natural resources on mitigation lands it approves. An appropriate non-wasting endowment shall be provided for the long-term management of mitigation lands. A mitigation plan shall include measures to protect the targeted habitat values in perpetuity from direct and indirect negative impacts. Issues that shall be addressed include but are not limited to the following: protection from any future development and zone	Prior to Project construction and activities	City of Palmdale/Project Applicant

DocuSign Envelope ID: 5F68A5BF-79FC-4F83-BEFD-FB9975A0BF8E

	changes; restrictions on access; proposed land dedications; control of illegal dumping; water pollution; and, increased human intrusion. A conservation easement and endowment funds shall be fully acquired, established, transferred, or otherwise executed prior to impacts on western Joshua trees.		
REC-1-Impacts to Joshua Tree	The City should revise the DEIR to requite future applicants to disclose the project's impact on western Joshua tree by providing the following information: 1) The Project's potential impact on western Joshua tree seedbank within the Project site; 2) The Project's potential impact on western Joshua trees and seedbank adjacent to the Project site; 3) The Project's potential impact on each unique native and non-native natural community supporting western Joshua trees within and adjacent to the Project site; 4) The Project's construction, operation, and maintenance activities that could impact western Joshua trees and seedbank within and adjacent to the Project site; and 5) The Project's cumulative impact on western Joshua tree.	Prior to Project construction and activities	City of Palmdale/Project Applicant
REC-2-ITP Issuance	Revisions to the Fish and Game Code, effective January 1998, may require that CDFW issue a separate CEQA document for the issuance of an ITP for the Project unless the Project require all current and future project CEQA document address all the project's impact on CESA endangered, threatened, and/or candidate species. The Project's CEQA document should also specify a mitigation monitoring and reporting program that will meet the requirements of an ITP. Also, biological mitigation monitoring and reporting proposals should be of sufficient detail and resolution to satisfy the requirements for an ITP. However, it is worth noting that mitigation for the Project's impact on a CESA endangered, threatened, and/or candidate species proposed in the Project's CEQA document may not necessarily satisfy mitigation required to obtain an ITP.	Prior to Project construction and activities	City of Palmdale/Project Applicant

DocuSign Envelope ID: 5F68A5BF-79FC-4F83-BEFD-FB9975A0BF8E

MM-BIO-4-Biological Resources	Future development projects and development on Approved Project sites shall conduct the appropriate biological resources technical studies as part of project-level analyses, including baseline surveys, protocol-level surveys, tree inventories to confirm the presence of any special status species within or immediate adjacent to proposed impact areas. Focused species-specific surveys shall be required if suitable habitat is present. These surveys shall be performed according to any established CDFW and/or USFWS protocols. Reports shall be prepared that shall document baseline conditions at the time of project application, identify constraints, recommend project redesign, analyze potential effects, and propose mitigation measures that reduce potential impacts to less than significant levels. Biological resources technical studies shall provide and include the following: 1. A complete, recent, assessment of rare, threatened, and endangered species, regionally and locally unique species, and sensitive habitats at the project site and within the area of potential effect, including California Species of Special Concern and California Fully Protected Species (Fish & G. Code, §§ 3511, 4700, 5050, and 5515). Species to be addressed shall include all those which meet the CEQA definition of endangered, rare, or threatened species (CEQA Guidelines, § 15380). Seasonal variations in use of land around the project site shall also be addressed. A nine-quadrangle search of CDFW's California Natural Diversity Database (CNDDB) shall be conducted to obtain current information on any previously reported sensitive species and habitat (CDFW 2022b); 2. A thorough, recent, floristic-based assessment of special status plants and natural communities following CDFW's Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Sensitive Natural Communities (CDFW 2018). Adjoining habitat areas shall be included where project construction and activities could lead to direct or indirect impacts off site;	Prior to Project construction and activities	City of Palmdale/Project Applicant

DocuSign Envelope ID: 5F68A5BF-79FC-4F83-BEFD-FB9975A0BF8E

	3. Floristic, alliance- and/or association-based mapping and vegetation impact assessments conducted at the project site and within the area of potential effect. The Manual of California Vegetation (MCV), second edition, shall be used to inform this mapping and assessment (Sawyer et al. 2009); 4. A rare plant assessment using online databases for rare, threatened, and endangered plants, including the California Native Plant Society (CNPS) Online Inventory of Rare and Endangered Plants of California (CNPS 2022b) as well as the Calflora's Information on Wild California Plants database (Calflora 2022); 5. A discussion regarding project-related indirect impacts on biological resources in nearby public lands, open space, adjacent natural habitats, riparian ecosystems, and any designated and/or proposed or existing reserve lands [e.g., preserve lands associated with a Natural Community Conservation Plan (Fish & G. Code, § 2800 et. seq.)]; and, 6. Impacts on, and maintenance of, wildlife corridor/movement areas, including access to undisturbed habitats in areas adjacent to the project site.		
MM-BIO-5-Special Status Species Permits	If necessary, the project applicants shall be required to enter into consultation with, and obtain the appropriate permits from, the USFWS and/or CDFW for unavoidable impacts to special status species and other protected resources. Appropriate permits from the USFWS and/or CDFW shall be obtained prior to obtaining a grading permit.	Prior to Project construction and activities	City of Palmdale/Project Applicant
MM-BIO-6-Sensitive Natural Communities	If a rare plant species or a Sensitive Natural Community is detected, the project applicant shall fully avoid impacts. If the project cannot feasibly avoid impacts to rare plants and habitat, or sensitive natural communities, either during project activities or over the life of the project, the project applicant shall provide compensatory mitigation for the loss of individual plants and habitat acres, which shall include impacts due to fuel modification.	Prior to Project construction and activities	City of Palmdale/Project Applicant

DocuSign Envelope ID: 5F68A5BF-79FC-4F83-BEFD-FB9975A0BF8E

	Impacts on rare plants or a Sensitive Natural Community due to hazard mitigation/remediation shall also be mitigated as these impacts would result in permanent loss and perpetual impacts on habitat function and quality. The project applicant shall provide compensatory mitigation so that there is no net loss of rare plants and habitat, or sensitive natural communities. Compensatory mitigation shall be appropriate for the extent of permanently disturbed habitat. Compensatory mitigation shall be higher for impacts on CRPR 1 species, S1 or S2 Sensitive Natural Community, and Sensitive Natural Community with an additional rank of 0.1 or 0.2. Compensatory mitigation shall be implemented by a qualified restoration ecologist. A Restoration Plan, at a minimum, shall include success criteria and performance standards for measuring the establishment of rare plants and habitat, responsible parties, maintenance techniques and schedule, five-year monitoring and reporting schedule, adaptive management strategies, and contingencies. A Restoration Plan shall be submitted to the City prior to any grading or vegetation removal.		
MM-BIO-7-CEQA Document	CDFW considers adverse impacts to a species protected by CESA to be significant without mitigation under CEQA. As to CESA, take of any endangered, threatened, candidate species that results from a project is prohibited, except as authorized by State law (Fish & G. Code, §§ 2080, 2085; Cal. Code Regs., tit. 14, § 786.9). Consequently, if a project, project construction, or any project-related activity for the duration of the project will result in take of a species designated as endangered or threatened, or a candidate for listing under CESA, CDFW recommends the project applicant seek appropriate take authorization under CESA prior to implementing or continuing the project. Appropriate authorization from CDFW may include an ITP or a Consistency Determination in certain circumstances, among other options [Fish & G. Code, §§ 2080.1, 2081, subds. (b) and (c)]. Early consultation is encouraged, as significant modification to a project and mitigation measures may be required to obtain a CESA Permit. Revisions to	Prior to Project construction and activities	City of Palmdale/Project Applicant

DocuSign Envelope ID: 5F68A5BF-79FC-4F83-BEFD-FB9975A0BF8E

	the Fish and Game Code, effective January 1998, may require that CDFW issue a separate CEQA document for the issuance of an ITP unless the project's CEQA document addresses all project impacts to CESA listed species and specifies a mitigation monitoring and reporting program that will meet the requirements of an ITP. For these reasons, biological mitigation monitoring and reporting proposals should be of sufficient detail and resolution to satisfy the requirements for a CESA ITP.		
MM-BIO-8-Jurisdictional Delineation	Project specific analyses shall prepare a jurisdictional delineation and impact assessment provided along with the project's biological resources technical studies.	Prior to Project construction and activities	City of Palmdale/Project Applicant
MM-BIO-9-Stream Buffers	If any river, stream, or lake are present and may be impacted, the project shall be required to avoid impacts by implementing appropriate vegetative buffers and/or setbacks adjoining the stream or wetland feature to reduce impacts of the project on these resources.	Prior to Project construction and activities	City of Palmdale/Project Applicant
MM-BIO-10-LSA Notification	If avoidance is not feasible, the project applicant shall be required to notify CDFW pursuant to Fish and Game Code 1602 and obtain an LSA Agreement from CDFW prior to obtaining a grading permit. The project applicant shall comply with the mitigation measures detailed in a LSA Agreement issued by CDFW. The project applicant shall also provide compensatory mitigation at no less than 2:1 for the impacted stream and associated natural community, or at a ratio acceptable to CDFW. Please visit CDFW's Lake and Streambed Alteration Program webpage for more information (CDFW 2022c).	Prior to Project construction and activities	City of Palmdale/Project Applicant
REC-3-Water Diversion Biological Analysis	CDFW recommends the DEIR require any approved or future projects to include an analysis of potential impacts on biological resources resulting from any proposed water diversion. At a minimum, the analysis should evaluate a study reach that includes the channel downstream from the Project site. The study reach should extend a minimum of one mile downstream or an appropriate distance determined by both a qualified biologist and	Prior to Project construction and activities	City of Palmdale/Project Applicant

DocuSign Envelope ID: 5F68A5BF-79FC-4F83-BEFD-FB9975A0BF8E

	hydrologist, whichever is greater. The analysis of the study reach should discuss changes in hydrology and hydraulics, including the following: 1. Under pre-project (i.e., baseline) conditions, the volume of water flow from both the project area and study reach during a) the wet (November through March); b) the dry season (April through October); and c) above-average and below-average water year (i.e., wet season/above-average water year, wet season/below-average water year, dry season/above-average water year, and dry season/below-average water year). The analysis should clearly define above-average or below-average rainfall year. 2. Under proposed project conditions, the percent reduction in flow from both the project area and study reach for a wet season/above-average water year, wet season/below-average water year, dry season/above-average water year, and dry season/below-average water year. 3. A quantitative analysis comparing the flow from the project area and other tributaries into the study reach, and their relative contribution to the hydrograph of the study reach. An analysis of potential project-related changes to river hydraulics in both concrete-lined and soft-bottom reaches. This includes water depth (percent change), wetted perimeter (acres gained/lost), and velocity (percent change).		
REC-4-CEQA Compliance	CDFW's issuance of an LSA Agreement for a project that is subject to CEQA will require CEQA compliance actions by CDFW as a Responsible Agency. As a Responsible Agency, CDFW may consider the CEQA document from the lead agency/project applicant for the project. To minimize additional requirements by CDFW pursuant to Fish and Game Code section 1600 et seq. and/or under CEQA, a project's CEQA document should fully identify the potential impacts to the stream or riparian resources and provide adequate avoidance, mitigation, monitoring, and reporting commitments for issuance of the LSA Agreement. To	Prior to Project construction and activities	City of Palmdale/Project Applicant

DocuSign Envelope ID: 5F68A5BF-79FC-4F83-BEFD-FB9975A0BF8E

	compensate for any on- and off-site impacts to aquatic and riparian resources, additional mitigation conditioned in any LSA Agreement may include the following: erosion and pollution control measures; avoidance of resources; protective measures for downstream resources; on- and/or off-site habitat creation; enhancement or restoration; and/or protection and management of mitigation lands in perpetuity.		
REC-5-Nesting Birds	CDFW recommends modifying BIO-MM-4 to include <u>underlined</u> language and remove language with strikethrough: "To avoid disturbance of nesting and special status birds, including raptorial species protected by the MBTA and CFGC, activities related to construction projects carried out under the Plan, including, but not limited to, vegetation removal, ground disturbance, and construction and demolition shall occur outside of the bird breeding season, <u>February 15 through September 15 (as early as January 1 for some raptors)</u> ~~(February 1 through August 31~~). If construction must begin during the breeding season, then a pre-construction nesting bird survey shall be conducted no more than 3 days prior to initiation of ground disturbance and vegetation removal activities. The nesting bird pre-construction survey shall be conducted on foot inside the area of proposed development, including a 300-foot buffer (500-foot for raptors), and in inaccessible areas (e.g., private lands) from afar using binoculars to the extent practical. The survey shall be conducted by a biologist familiar with the identification of avian species known to occur in southern California desert communities. If nests are found, an avoidance buffer (dependent upon the species, the proposed work activity, and existing disturbances associated with land uses outside of the site) shall be determined and demarcated by the biologist with bright orange construction fencing, flagging, construction	Prior to Project construction and activities	City of Palmdale/Project Applicant

DocuSign Envelope ID: 5F68A5BF-79FC-4F83-BEFD-FB9975A0BF8E

	lathe, or other means to mark the boundary. All construction personnel shall be notified as to the existence of the buffer zone and to avoid entering the buffer zone during the nesting season. No ground disturbing activities shall occur within this buffer until the avian biologist has confirmed that breeding/nesting is completed and the young have fledged the nest. Encroachment into the buffer shall occur only at the discretion of the qualified biologist." It should be noted that the temporary halt of Project activities within nesting buffers during nesting season does not constitute effective mitigation for the purposes of offsetting Project impacts associated with habitat loss. Additional mitigation would be necessary to compensate for the permanent removal of nesting habitat within the Project site based on acreage of impact and vegetation composition. CDFW shall be consulted to determine proper mitigation for impacts to occupied habitat depending on the status of the bird species. Mitigation ratios would increase with the occurrence a California Species of Special Concern and would further increase with the occurrence of a CESA-listed species.		
REC-6-Data	CEQA requires that information developed in environmental impact reports and negative declarations be incorporated into a database which may be used to make subsequent or supplemental environmental determinations [Pub. Resources Code, § 21003, subd. (e)]. Accordingly, please report any special status species detected by completing and submitting CNDDB Field Survey Forms (CDFW 2022d). This includes all documented occurrences of special status species. The City should ensure the data has been properly submitted, with all data fields applicable filled out, prior to Project ground-disturbing activities. The data entry should also list pending development as a threat and then update this occurrence after impacts have occurred. The City should provide CDFW with confirmation of data submittal.	Prior to Project construction and activities	City of Palmdale/Project Applicant

DocuSign Envelope ID: 5F68A5BF-79FC-4F83-BEFD-FB9975A0BF8E

REC-7- Mitigation and Monitoring Plan	Per Public Resources Code section 21081.6(a)(1), CDFW has provided the City with a summary of our suggested mitigation measures and recommendations in the form of an attached Draft Mitigation and Monitoring Reporting Plan (MMRP; Attachment A). A final MMRP shall reflect results following additional plant and wildlife surveys and the Project's final on and/or off-site mitigation plans.	Prior to approval of CEQA document	City of Palmdale/Project Applicant

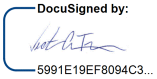
DocuSign

Certificate Of Completion

Envelope Id: 5F68A5BF79FC4F83BEFDFB9975A0BF8E
Status: Completed
Subject: Please DocuSign: 2021060494 Palmdale General Plan DEIR.docx
Use Case ID:
Source Envelope:
Document Pages: 24
Signatures: 1
Envelope Originator:
Certificate Pages: 1
Initials: 0
Jennifer Ludovissy
AutoNav: Enabled
1700 9th Street
EnvelopeId Stamping: Enabled
12th Floor
Time Zone: (UTC-08:00) Pacific Time (US & Canada)
Sacramento, CA 95811
Jennifer.Ludovissy@Wildlife.ca.gov
IP Address: 134.186.51.126

Record Tracking

Status: Original
8/23/2022 10:50:13 AM
Holder: Jennifer Ludovissy
Jennifer.Ludovissy@Wildlife.ca.gov
Location: DocuSign
Security Appliance Status: Connected
Pool: StateLocal
Storage Appliance Status: Connected
Pool: California Department of Fish and Wildlife
Location: DocuSign

Signer Events	Signature	Timestamp
Victoria Tang victoria.tang@wildlife.ca.gov Senior ES Supervisor California Department of Fish and Wildlife Security Level: Email, Account Authentication (None)	DocuSigned by:  5991E19EF8094C3... Signature Adoption: Uploaded Signature Image Using IP Address: 24.205.171.15 Signed using mobile	Sent: 8/23/2022 10:51:16 AM Viewed: 8/23/2022 11:31:13 AM Signed: 8/23/2022 11:31:27 AM
Electronic Record and Signature Disclosure: Not Offered via DocuSign		

In Person Signer Events	Signature	Timestamp

Editor Delivery Events	Status	Timestamp

Agent Delivery Events	Status	Timestamp

Intermediary Delivery Events	Status	Timestamp

Certified Delivery Events	Status	Timestamp

Carbon Copy Events	Status	Timestamp

Witness Events	Signature	Timestamp

Notary Events	Signature	Timestamp

Envelope Summary Events	Status	Timestamps
Envelope Sent	Hashed/Encrypted	8/23/2022 10:51:16 AM
Certified Delivered	Security Checked	8/23/2022 11:31:13 AM
Signing Complete	Security Checked	8/23/2022 11:31:27 AM
Completed	Security Checked	8/23/2022 11:31:27 AM

Payment Events	Status	Timestamps

Letter 2

COMMENTER: Victoria Tang, California Department of Fish and Wildlife

DATE: August 23, 2022

Response 2.1

The commenter states that CDFW is a Trustee Agency and Responsible Agency for fish and wildlife resources with jurisdiction over such resources. The commenter summarizes the proposed project and geographic area.

This comment is noted. Required approvals and approving agencies for the proposed Plan are listed in Section 2.4 of the Draft EIR (refer to page 2-14). The CDFW does not have approval authority over the proposed Plan but for individual projects that may be implemented as a result of the proposed Plan, where there are fish and wildlife resources on site, CDFW may be a Trustee or Responsible Agency for those individual projects, if and when they are submitted for application and project-level CEQA review.

Response 2.2

The commenter recommends inclusion of a science-based monitoring program with adaptive management strategies as mitigation for the project.

Please refer to Response 2.3 through Response 2.6 regarding the commenter's proposed mitigation measures. A Mitigation Monitoring and Reporting Program (MMRP) is required by CEQA and included in this Final EIR as Appendix F. The MMRP includes all mitigation measures in the Final EIR, a timeline for implementation and the responsible agency overseeing mitigation.

Response 2.3

The commenter states that the project could impact Western Joshua trees (*Yucca brevifolia*) and woodlands, specifically from the loss of individual trees and acres of woodlands. The commenter states that impacts would occur as a result of clearing sites for development, including fuel modification that could disturb woodlands, and crushing or burying seeds such that they are no longer viable. The commenter summarizes the conclusion in the Draft EIR and states that the City's Native Vegetation Ordinance applies to individual trees rather than the community as a whole. The commenter states that CDFW considers Joshua tree woodlands to be a sensitive natural community, and project impacts are unmitigated. The commenter states that Joshua trees are designated as a candidate for listing as threatened under the California Endangered Species Act (CESA). The commenter recommends new mitigation measures be added to the Draft EIR, including a requirement for Incidental Take Permit (ITP) applications, compensatory mitigation at a 2:1 ratio or higher for Joshua tree removal, and establishing a permanent conservation easement. The commenter recommends the Draft EIR provide additional information related to potential impacts to western Joshua tree and sensitive natural communities, and preparation of separate CEQA documents for the issuance of ITPs for individual projects.

Joshua tree habitat is described on page 4.4-5 of the Draft EIR, as part of the vegetation communities discussion. Joshua tree habitat is identified in the Draft EIR as a sensitive natural community on page 4.4-13.

Section 4.4.2 of the Draft EIR, beginning on page 4.4-15, describes the regulations applicable to future development as a result of the proposed Plan. As described therein, the City's Native Vegetation Ordinance (PMC Section 14.04.040[B-C]) requires developers to obtain a permit for removal of dead western Joshua trees or limbs from the City, and, because the species is a candidate for listing, permits from CDFW would be required for the removal of live western Joshua trees unless there is a change in the Joshua tree's status before implementation of future development projects. As stated in Palmdale Municipal Code (PMC) Section 14.04.040(I), projects not described in PMC 14.04.040(A-H) would be required to obtain an Incidental Take Permit (ITP) from CDFW.

Potential impacts to individual Joshua trees and Joshua tree habitat are discussed under Impact BIO-1 (pages 4.4-19 through 4.4-22 of the Draft EIR), and Impact BIO-4 (page 4.4-26 of the Draft EIR). These impact discussions describe the regulatory requirements that would be protective of sensitive habitats and special-status species, as follows:

> Under the proposed Plan, development that could alter biological habitats could occur in portions of the Planning Area, but all development would be subject to the provisions of the various federal and State natural resources regulations discussed in Section 4.4.3, Regulatory Setting and their respective permitting processes. These regulations include requirements for biological studies where potential habitat exists, identification of potential jurisdictional waters, and consultation with applicable regulatory agencies where special-status resources are found. Plan goals and policies that would encourage the conservation and protection of public open space and natural resources and reduce potential impacts to special-status species and sensitive habitats…

Regulatory requirements related to western Joshua tree are reinforced by goals and policies in the proposed Plan, including the federal Endangered Species Act (ESA), CESA, and the City's Native Vegetation Preservation Ordinance. The impact discussion concludes: "Implementation of these goals and policies would ensure that projects carried out under the proposed Plan would be completed in accordance with protecting and preserving SEAs."

Furthermore, the discussion under Impact BIO-4 on page 4.4-26 of the Draft EIR states:

> PMC Chapter 14.04 prohibits the removal of any desert vegetation unless a native desert vegetation removal permit has been issued from the City.… Per the Ordinance, western Joshua Trees (dead trees or dead limbs) and California Juniper trees shall not be removed from any parcel of land unless a permit has been obtained from the City. Furthermore, any development proposal on a parcel of land containing native desert vegetation requires a desert vegetation preservation plan prepared in compliance with the PMC. Listing of the western Joshua tree under the CESA gives that species additional legal protections, such that any take of the species (including removal of western Joshua tree or similar actions) requires a permit from CDFW. Development carried out under the proposed Plan would be required to adhere to City ordinances and CDFW requirements protecting desert vegetation such as Joshua trees, which would ensure that such vegetation is not damaged or removed unless properly permitted.

As described therein, the protections provided by the PMC related to western Joshua trees protects the species as individuals as well as "native desert vegetation" as a whole, which includes a variety of vegetation found in Joshua tree habitats. Furthermore, an ITP from CDFW would be required for removal of live western Joshua trees, pursuant to CESA.

Potential impacts to Joshua trees were adequately addressed in these discussions in the Draft EIR; therefore, no modifications to the Draft EIR are required, such as the addition of new mitigation measures. Pursuant to CEQA Guidelines Section 15126.4(a)(3), mitigation measures are not required for effects which are not found to be significant. Furthermore, pursuant to CEQA Guidelines Section 15126.4(a)(4), there must be a nexus between the identified impact and the proposed mitigation measure, and mitigation should be "roughly proportional" to the identified impact.

Specific project-level details regarding future development under the proposed Plan are not available at this time; therefore, specific project level or site-specific impacts related to Joshua tree removal are unknown. As required, future discretionary development projects would be subject to additional analysis under CEQA, which would include specific project-level impacts and mitigation (if necessary). The regulatory requirements identified above would be applicable to future projects that would be constructed on sites containing Joshua trees, and would address the impact to this species from potential future projects if and when those project-level details are available to provide site-specific impact analysis and if necessary, project-specific mitigation measures or Conditions of Approval to reduce or avoid any potential biological resources that may occur on the site.

Response 2.4

The commenter asserts that future development under the proposed Plan could result in reproductive suppression, mortality, injury to wildlife, or population decline. The commenter states that 19 of the 24 identified development sites are vacant land, and development would remove habitat from these sites, resulting in habitat modification and impacts to special-status species. The commenter asserts that proposed Plan Goals do not prescribe, require, or impose actions that would mitigate potential impacts, and asserts that project impacts remain unmitigated. The commenter states that impacts to special-status species requires mandatory findings of significance. The commenter recommends mitigation that would require biological studies for future projects, including field surveys and other requirements; consultation with USFWS and/or CDFW for required permits; full avoidance of rare plants and sensitive natural communities or compensatory mitigation to ensure no net loss; and obtaining appropriate authorization for take of special-status species.

Special-status species are described on pages 4.4-12 through 4.4-13 of the Draft EIR, which includes a description of listed species, special-status wildlife, and special-status plant species.

Section 4.4.2 of the Draft EIR, beginning on page 4.4-15, describes the regulations applicable to future development as a result of the proposed Plan. As described therein, special-status species are protected under the ESA, the Migratory Bird Treaty Act, CESA, the California Fish and Game Code, the California Native Plant Protection Act, and the City's Native Vegetation Ordinance require developers to obtain permits and/or other approvals for actions that would directly result in "take" of a special-status species. Such permits would be required for future development projects where applicable, including the future development sites referenced by the comments, and additional mitigation is not necessary to reinforce such regulatory requirements. The ITP processes under the ESA and CESA require that impacts be mitigated; absent this, the requested take permits cannot be issued. Therefore, future development projects would not result in unmitigated impacts on threatened or endangered species. For the same reason, these projects would not cause fish or wildlife populations to drop below self-sustaining levels.

Potential impacts to special-status species are discussed under Impact BIO-1 (pages 4.4-19 through 4.4-22 of the Draft EIR). This impact discussion describes the regulatory requirements that would be protective of special-status species and their habitats, as follows:

> Under the proposed Plan, development that could alter biological habitats could occur in portions of the Planning Area, but all development would be subject to the provisions of the various federal and State natural resources regulations discussed in Section 4.4.3, Regulatory Setting and their respective permitting processes. These regulations include requirements for biological studies where potential habitat exists, identification of potential jurisdictional waters, and consultation with applicable regulatory agencies where special-status resources are found. Plan goals and policies that would encourage the conservation and protection of public open space and natural resources and reduce potential impacts to special-status species and sensitive habitats…

Regulatory requirements related to special-status species are reinforced by goals and policies in the proposed Plan, including the ESA, CESA, and the West Mojave Plan. The impact discussion concludes:

> Implementation of these goals and policies would ensure that projects carried out under the proposed Plan would be completed in accordance with protecting and preserving SEAs. While these goals and polices generally aim at protecting special-status species, if vegetation and trees are to be trimmed or removed during project construction or if construction would occur near trees and vegetation, nesting birds could be impacted. Therefore, impacts related to nesting birds would be potentially significant and Mitigation Measure BIO-1 would be required for projects where mature trees and other habitat are present and construction activities are scheduled from early spring to late summer. With implementation of Plan goals and policies and Mitigation Measure BIO-1, potential impacts to special-status species and sensitive habitat would be reduced to a less than significant level.

Additionally, the Draft EIR states the following (page 4.4-20):

> These regulations include requirements for biological studies where potential habitat exists, identification of potential jurisdictional waters, and consultation with applicable regulatory agencies where special-status resources are found.

Potential impacts to special-status species were adequately addressed under Impact BIO-1 in the Draft EIR, which required mitigation related to pre-construction surveys for nesting birds (Mitigation Measure BIO-1) be implemented for future development projects. This discussion also addresses mandatory findings of significance related to substantially reducing habitat for species or resulting in species populations falling below self-sustaining levels. Pursuant to CEQA Guidelines Section 15126.4(a)(4), there must be a nexus between the identified impact and the proposed mitigation measure, and mitigation should be “roughly proportional” to the identified impact.

Specific project-level details regarding future development under the proposed Plan are not available at this time and the regulatory requirements identified above would be applicable to future projects, which would address potential project-level impacts to special-status species from potential future projects if and when those project-level details are available to provide site-specific impact analysis and if necessary, project-specific mitigation measures or Conditions of Approval to reduce or avoid any potential biological resources that may occur on the site.

Response 2.5

The commenter states that development could result in erosion and earth movement that could impair streams, necessitating the capture of runoff. The commenter specifies concerns related to a development site adjacent to Amargosa Channel from ground disturbance and vegetation removal. The commenter states that impacts to vegetation near streams would also affect the stream itself. The commenter states that future projects may channelize streams or divert runoff, asserts that proposed Plan Goals do not prescribe, require, or impose actions that would mitigate potential impacts, and asserts that project impacts remain unmitigated. The commenter summarizes the CGFC Section 1602 requirements, including Lake and Streambed Alteration Agreements. The commenter recommends mitigation measures for the preparation of jurisdictional delineations, implementing vegetative buffers from streams or wetlands, and notification of CDFW pursuant to CGFC Section 1602. The commenter recommends the preparation of additional studies of downstream channels from future projects. The commenter states that when CDFW is a Responsible Agency with permitting authority, the CEQA document prepared by the Lead Agency should include full identification of potential impacts to stream and riparian resources.

Wetlands and aquatic resources are described on pages 4.4-9 through 4.4-12 of the Draft EIR, which includes a description of freshwater emergent wetland, freshwater forested/shrub wetland, freshwater pond, and riverine habitats.

Section 4.4.2 of the Draft EIR, beginning on page 4.4-15, describes the regulations applicable to future development as a result of the proposed Plan. As described therein, wetlands and riparian areas are protected under the Clean Water Act, the California Fish and Game Code, and the Porter-Cologne Water Quality Control Act. These regulations require developers to obtain permits and/or other approvals for actions that would discharge material into waters of the U.S. (including wetlands), or conduct work within the bed or bank of a lake or stream. Such permits would be required for future development projects where applicable, and would be issued in accordance with federal and state agency requirements, which include restoration of temporarily impacted waters and compensatory mitigation for permanently impacted waters. Additional mitigation in this Program EIR for the proposed Plan is not necessary to reinforce such regulatory requirements.

Potential impacts to riparian habitats and wetlands are discussed under Impact BIO-2 (pages 4.4-22 through 4.4-24 of the Draft EIR). This impact discussion describes the regulatory requirements that would be protective of riparian areas and wetlands, as follows:

> Development in the Planning Area, along with other sites near or bisected by waterways and other tributaries and drainages throughout the Planning Area, may be subject to USACE, CDFW, and RWQCB permitting requirements.

Impact BIO-2 describes the anticipated impacts of future projects as follows:

> Under the Plan, new development would generally result from re-use of properties, infill development on vacant lots, conversion of uses in response to market demand (e.g., mixed use developments), and more intense use of land in defined areas. While most development carried out under the Plan would be infill development in already urbanized areas not near wetlands or waterways, development could reasonably occur in undeveloped areas due to the significantly undeveloped nature of the Planning Area. Therefore, a jurisdictional delineation would be required in accordance with CWA Section 404 for development that would occur in areas near wetlands or waterways. More specifically, any proposed development in areas identified as jurisdictional waters and/or wetlands, streambed/banks, or riparian vegetation would be

> subject to the permit requirements of the USACE, RWQCB, and CDFW, pursuant to Section 404 of CWA and the Porter-Cologne Water Quality Control Act. Actual jurisdictional areas are determined by the State and federal authorities at the time that permits are requested.

Therefore, the Draft EIR already acknowledges the requirement for avoiding filling wetlands or waterways without a permit, which may require conducting a jurisdictional delineation when necessary, pursuant to CWA Section 404. As this is a regulatory requirement, it is not necessary to include it as a separate mitigation measure, as suggested by the commenter. Similarly, Impact BIO-2 acknowledges that future projects could have direct impacts to wetland habitat, and PMC Section 8.04.265 requires developers to obtain other permits required by State and federal agencies, as appropriate, as standard Conditions of Approval for grading work to commence. This discussion also describes National Pollutant Discharge Elimination System Construction General Permit requirements and PMC design standard requirements related to erosion and sediment control. Potential impacts would be reduced by the above-mentioned regulatory requirements related to wetlands and riparian habitats, and impacts would be further reinforced by goals and policies in the proposed Plan, including Goals CON-1, CON-4, CON-5, CON-6, and CON-7, and policies related to those goals. The impact discussion concludes:

> Implementation of these goals and policies would reduce direct impacts to riparian habitat during construction and operation by reducing direct and indirect modifications to creeks, embankments, and other waterways in the Planning Area. Furthermore, if jurisdictional waters occur on any site developed under the proposed Plan, jurisdictional delineation and RWQCB permits would be required that would address potential impacts to those waters. Adherence to state and federal regulations, the PMC, and implementation of Plan goals and polices would reduce impact to a less than significant level.

Potential impacts to wetland and riparian habitats were adequately addressed under Impact BIO-2 in the Draft EIR; therefore, no modifications to the Draft EIR are required, such as the addition of new mitigation measures. Pursuant to CEQA Guidelines Section 15126.4(a)(3), mitigation measures are not required for effects which are not found to be significant. Furthermore, pursuant to CEQA Guidelines Section 15126.4(a)(4), there must be a nexus between the identified impact and the proposed mitigation measure, and mitigation should be "roughly proportional" to the identified impact.

Specific project-level details regarding future development under the proposed Plan are not available at this time; therefore, specific project-level and site-specific impacts related to wetland and riparian habitats are unknown. However, the regulatory requirements identified above would be applicable to future projects that would be constructed on sites containing or adjacent to wetland and riparian habitats, and would address the impacts from potential future projects with project-specific measures.

Response 2.6

The commenter provides an underline/strikeout revision to Mitigation Measure BIO-1 of the Draft EIR, modifying the breeding season dates. The commenter notes that halting project activities within nesting buffers does not mitigate for habitat loss, and additional mitigation would be necessary for the permanent removal of nesting habitat.

Based on the commenter's suggested edits, the following revision has been made to pages 4.4-21 through 4.4-22 of the Draft EIR:

BIO-1 Pre-Construction Nesting Bird Surveys

To avoid disturbance of nesting and special-status birds, including raptorial species protected by the MBTA and CFGC, activities related to construction projects carried out under the Plan, including, but not limited to, vegetation removal, ground disturbance, and construction and demolition shall occur outside of the bird breeding season, February 15 through September 15 (as early as January 1 for some raptors) ~~(February 1 through August 31)~~. If construction must begin during the breeding season, then a pre-construction nesting bird survey shall be conducted no more than three days prior to initiation of ground disturbance and vegetation removal activities. The nesting bird pre-construction survey shall be conducted on foot inside the area of proposed development, including a 300-foot buffer (500-foot for raptors), and in inaccessible areas (e.g., private lands) from afar using binoculars to the extent practical. The survey shall be conducted by a biologist familiar with the identification of avian species known to occur in southern California desert communities.

If nests are found, an avoidance buffer (dependent upon the species, the proposed work activity, and existing disturbances associated with land uses outside of the site) shall be determined and demarcated by the biologist with bright orange construction fencing, flagging, construction lathe, or other means to mark the boundary. All construction personnel shall be notified as to the existence of the buffer zone and to avoid entering the buffer zone during the nesting season. No ground disturbing activities shall occur within this buffer until the avian biologist has confirmed that breeding/nesting is completed and the young have fledged the nest. Encroachment into the buffer shall occur only at the discretion of the qualified biologist.

The changes reflected above would not result in substantial alterations to the degree of impact or conclusions presented in the Draft EIR, and therefore do not constitute significant new information that would trigger Draft EIR recirculation under CEQA *Guidelines* Section 15088.5. Rather, the changes serve to clarify and strengthen the content of the Draft EIR.

This mitigation measure is intended to reduce potential impacts from future development projects to nesting birds and is not intended to mitigate impacts related to habitat loss. As discussed under Impact BIO-1 of the Draft EIR, beginning on page 4.4-19, potential impacts to sensitive natural communities would be less than significant and mitigation is not required. Impacts to vegetation that is not sensitive would also be less than significant, because these communities are widespread and abundant in the region and would not be substantially diminished by projects in the City implemented under the proposed Plan.

Response 2.7

The commenter asserts that information in CEQA documents must be incorporated into a database for supplemental environmental determinations (PRC 21003[e]). The commenter requests that California Natural Diversity Database Field Survey Forms are submitted if special-status species are detected, with the City ensuring proper submittal of the form.

This comment is noted. The Draft EIR, Administrative Record, and related documents will be maintained by the City, as required. The commenter's request is acknowledged and will be presented for review and consideration by the City's decision-making body. Since this comment does not raise specific environmental concerns about the Draft EIR or the proposed Plan, no further response is required.

Response 2.8

The commenter provides an attached MMRP with suggested mitigation measures and recommendations. The commenter states that the project would be required to pay CDFW fees upon filing the Notice of Determination for the project.

Please refer to Response 2.3 through Response 2.6 regarding the commenter's proposed mitigation measures. The MMRP will include all mitigation measures from the Draft EIR, as well as any revisions determined to be necessary in this Final EIR.

Filing fees will be paid upon filing of the Notice of Determination, as required by law. Pursuant to CEQA Guidelines Section 15088(b), written responses will be provided to public agencies that commented on the Draft EIR at least 10 days prior to certification of the EIR.

Amendments to the Draft EIR

The following pages provide a summary record of all proposed text amendments to the Draft EIR. Most amendments are the result of comments received during the public review period, and directly respond to those comments, or correction of typographical errors within the Draft EIR. These amendments serve as clarifications and amplifications on the content of the Draft EIR. None of the changes would warrant recirculation of the EIR pursuant to CEQA Guidelines Section 15088.5. The amendments serve to clarify and strengthen the content of the EIR, but do not introduce significant new information.

Changes in text are signified by strikeouts (~~strikeouts~~) where text is removed and by underlined font (underline font) where text is added.

Executive Summary

Page ES-12 to ES-13:

Impact	Mitigation Measure	Significance After Mitigation
Biological Resources		
Impact BIO-1: Development carried out under the Plan would have the potential to adversely affect special-status species, including nesting birds, or their habitat. Impacts would be less than significant with mitigation.	**MM-BIO-1 Pre-Construction Nesting Bird Surveys** To avoid disturbance of nesting and special-status birds, including raptorial species protected by the MBTA and CFGC, activities related to construction projects carried out under the Plan, including, but not limited to, vegetation removal, ground disturbance, and construction and demolition shall occur outside of the bird breeding season, February 15 through September 15 (as early as January 1 for some raptors) ~~(February 1 through August 31)~~. If construction must begin during the breeding season, then a pre-construction nesting bird survey shall be conducted no more than 3 days prior to initiation of ground disturbance and vegetation removal activities. The nesting bird pre-construction survey shall be conducted on foot inside the area of proposed development, including a 300-foot buffer (500-foot for raptors), and in inaccessible areas (e.g., private lands) from afar using binoculars to the extent practical. The survey shall be conducted by a biologist familiar with the identification of avian species known to occur in southern California desert communities. If nests are found, an avoidance buffer (dependent upon the species, the proposed work activity, and existing disturbances associated with land uses outside of the site) shall be determined and demarcated by the biologist with bright orange construction fencing, flagging, construction lathe, or other means to mark the boundary. All construction personnel shall be notified as to the existence of the buffer zone and to avoid entering the buffer zone during the nesting season. No ground disturbing activities shall occur within this buffer until the avian biologist has confirmed that breeding/nesting is completed and the young have fledged the nest. Encroachment into the buffer shall occur only at the discretion of the qualified biologist.	Implementation of Mitigation Measure BIO-1 would reduce potential impacts to nesting birds and associated habitat to a less than significant level by requiring pre-construction surveys and avoidance measures.

Section 4.4, Biological Resources

Page 4.4-18:

Palmdale Native Desert Vegetation Ordinance

PMC Chapter 14.04, Joshua Tree and Native Desert Vegetation Preservation, establishes regulations and standards to preserve desert vegetation in the City. This ordinance is designed to protect western Joshua trees and California Junipers in the City. Joshua Trees and California Junipers both provide a unique natural desert aesthetic to the community, which the City aims to maintain. The Ordinance was originally adopted in 1992 and was amended by Emergency Ordinance No. 1556 in 2020 in response to the California Fish and Game Commission's vote to list the western Joshua tree as a candidate species under the CESA. Per the Ordinance, western Joshua Trees (dead trees or dead limbs) and California Junipers trees shall not be removed from any parcel of land unless a permit has been obtained from the City. Furthermore, any development proposal on a parcel of land containing native desert vegetation requires a desert vegetation preservation plan prepared in compliance with the Palmdale Municipal Code. Listing of the western Joshua tree under the CESA gives that species additional legal protections, such that any take of the species (including removal of western Joshua tree or similar actions) requires a permit from CDFW.

Page 4.4-21 to 4.4-22:

BIO-1 Pre-Construction Nesting Bird Surveys

To avoid disturbance of nesting and special-status birds, including raptorial species protected by the MBTA and CFGC, activities related to construction projects carried out under the Plan, including, but not limited to, vegetation removal, ground disturbance, and construction and demolition shall occur outside of the bird breeding season, February 15 through September 15 (as early as January 1 for some raptors) ~~(February 1 through August 31)~~. If construction must begin during the breeding season, then a pre-construction nesting bird survey shall be conducted no more than three days prior to initiation of ground disturbance and vegetation removal activities. The nesting bird pre-construction survey shall be conducted on foot inside the area of proposed development, including a 300-foot buffer (500-foot for raptors), and in inaccessible areas (e.g., private lands) from afar using binoculars to the extent practical. The survey shall be conducted by a biologist familiar with the identification of avian species known to occur in southern California desert communities.

If nests are found, an avoidance buffer (dependent upon the species, the proposed work activity, and existing disturbances associated with land uses outside of the site) shall be determined and demarcated by the biologist with bright orange construction fencing, flagging, construction lathe, or other means to mark the boundary. All construction personnel shall be notified as to the existence of the buffer zone and to avoid entering the buffer zone during the nesting season. No ground disturbing activities shall occur within this buffer until the avian biologist has confirmed that breeding/nesting is completed and the young have fledged the nest. Encroachment into the buffer shall occur only at the discretion of the qualified biologist.

Page 4.4-26:

PMC Chapter 14.04 prohibits the removal of any desert vegetation unless a native desert vegetation removal permit has been issued from the City. Section 14.04.040 protects desert vegetation and allows for its removal only if it creates an imminent threat to public health or safety. The Ordinance was originally adopted in 1992 and was amended by Emergency Ordinance No. 1556 in 2020 in response to the California Fish and Game Commission's vote to list the western Joshua tree as a candidate species under the CESA. Per the Ordinance, western Joshua Trees (dead trees or dead limbs) and California Junipers trees shall not be removed from any parcel of land unless a permit has been obtained from the City. Furthermore, any development proposal on a parcel of land containing native desert vegetation requires a desert vegetation preservation plan prepared in compliance with the PMC. Listing of the western Joshua tree under the CESA gives that species additional legal protections, such that any take of the species (including removal of western Joshua tree or similar actions) requires a permit from CDFW. Development carried out under the proposed Plan would be required to adhere to City ordinances and CDFW requirements protecting desert vegetation such as Joshua Trees, which would ensure that such vegetation is not damaged or removed unless properly permitted.

This page intentionally left blank.

EXHIBIT II

Appendix A

Notice of Preparation

City of Palmdale
Palmdale 2045
General Plan Update
(General Plan Amendment 20-003)
(Zoning Ordinance Amendment 21-007)

Notice of Preparation of a
Draft Environmental Impact Report

The City of Palmdale will be the Lead Agency for the preparation of an Environmental Impact Report (EIR) that will analyze the environmental impacts associated with a proposed update to the Palmdale General Plan (Palmdale 2045), referred to herein as the "proposed project" or "General Plan." The actions that make up the proposed project are described below. More information on the proposed project is available on the project website at: https://www.palmdale2045.org/. The Planning Area for the proposed project includes the land within the City Limits, the Sphere of Influence (SOI), and several unincorporated Los Angeles County 'islands.' The proposed General Plan land use map showing the Planning Area is shown at the end of this Notice of Preparation (NOP).

Project Description

The proposed project is a three-plus-year comprehensive update to the City's General Plan, the guiding document for the future of Palmdale over 25 years (2020-2045). The General Plan serves as the City's primary guide for land use and development decisions and is a key tool for influencing and improving the quality of life for residents and businesses. As such, it serves as the "blueprint" for future development and conservation of a community. The General Plan will help the City plan for important community issues such as new growth, housing and infrastructure needs, and environmental protection. It also sets the stage for future social, physical, and economic development of the City. It addresses issues that impact the entire community, such as how land is used, where buildings are constructed, and the locations of infrastructure.

Under State law, the General Plan must serve as the foundation upon which all land use decisions are to be based, and must also be comprehensive, internally consistent, and have a long-term perspective. State law further mandates that the General Plan:

- Identify land use, circulation, environmental, economic, and social goals and policies for the City and its surrounding planning area as they relate to future growth and development;
- Provide a basis for local government decision-making, including decisions on development approvals and exactions;

- Provide citizens the opportunity to participate in the planning and decision-making process of their communities; and
- Inform citizens, developers, decision-makers, and other cities and counties of the ground rules that guide development within a particular community.

According to State law, General Plans are required to cover nine topics: land use, circulation, housing, conservation, open space, noise, air quality, safety, and environmental justice. Jurisdictions may include any other topic that is relevant to planning its future. The updated City of Palmdale General Plan will include the State required topics plus economic development, urban design, infrastructure, military readiness, community facilities, sustainability and resilience, and climate change.

The General Plan will focus on enhancing the community identity, building on planned infrastructure investments, improving multi-modal active transportation and connectivity, integrating health and equity, and capitalizing on the City's unique location in the region. Palmdale 2045's vision for the future includes the following vision themes.

- **Unified and welcoming community.** The Palmdale community values opportunity, diversity, and unity, and seeks to promote Palmdale's positive reputation while boosting community beautification
- **Active and vibrant downtown.** Palmdale residents desire a future downtown that fosters a sense of place, promotes local businesses, provides gathering spaces, and events, and improves the overall appearance of Palmdale
- **Diverse and high-quality job options.** Palmdale seeks to retain and expand its employment base through training for key industries, connecting residents to local jobs, and promoting telecommuting within the City
- **Diverse and resilient local economy.** The City of Palmdale values its existing aerospace presence and aims to leverage and diversify new economic opportunities from expanded transportation connections
- **Safe, healthy place to live and work.** Palmdale residents want to address crime and safety, increase access to parks and open space, and support marginalized communities like foster youth and those experiencing homelessness
- **High quality medical and mental healthcare.** As a medical provider shortage area, Palmdale seeks to improve access to quality medical and mental healthcare services and facilities by attracting physicians, maintaining the Palmdale Regional Medical Center, and expanding services
- **Housing options for residents at different stages of life and ability.** The residents of Palmdale desire to preserve and expand affordable housing and diversify housing types across the City that support residents of all abilities through different stages of life
- **High quality and accessible educational opportunities.** Citizens of Palmdale seek to promote and expand educational opportunities in the City including higher education, trade school, and formal and informal training programs
- **Beautiful natural setting.** The Palmdale community values its natural setting and seeks to improve connectivity to trails and open space, maintain mountain views, healthy air quality, and dark night sky

- **Forefront of transportation innovations.** On the cusp of major regional transportation improvements, Palmdale seeks to leverage planned investments and improve local transit opportunities
- **General Plan implementation.** Residents of Palmdale value the long-term vision of the General Plan Update and desire regular review and update of the Plan including metrics for tracking implementation

Palmdale 2045 identifies major strategies and physical improvements for the City over the next 25 years. These strategies include creating a vibrant downtown near the future multimodal transit station, establishing three health and wellness districts and two education districts, transforming Palmdale Boulevard into a mixed-use corridor, promoting a diversity of housing types in the City, forming village centers that offer a mix of residential choices and daily goods and services near existing neighborhoods, and building off existing industrial and aerospace business opportunities. These strategies will support existing and future employees, businesses, and residents by improving quality of life in Palmdale.

The following actions will also be taken by the City of Palmdale in connection with the General Plan Update and are also considered part of the proposed project to be analyzed in the forthcoming EIR:

- Adoption and implementation of the General Plan Update (Palmdale 2045 Plan)
- Adoption and implementation of the Climate Action Plan
- Adoption and implementation of the Zoning Ordinance Amendment

The Plan will also include an update of the City's Housing Element, in compliance with the requirements of State Housing Element law, which requires the City to adopt an updated Housing Element by October 2021. This Housing Element update will also be analyzed in the EIR.

Environmental Impact Report

The Draft EIR will be a program EIR. Per Section 15168 of the State *CEQA Guidelines*, a program EIR is an EIR that may be prepared on a series of actions that can be characterized as one large project. The purpose of a program EIR is to allow the lead agency to consider broad policy alternatives and program wide mitigation measures early in the process when the agency has greater flexibility to deal with basic problems or cumulative impacts.

The EIR will examine each of the issue areas on the City's environmental checklist. Issues to be discussed include the following:

- Aesthetics
- Agriculture and Forestry Resources
- Air Quality
- Biological Resources
- Cultural Resources
- Energy
- Geology/Soils
- Mineral Resources
- Noise
- Population/Housing
- Public Services
- Recreation
- Transportation
- Tribal Cultural Resources

- Greenhouse Gas Emissions
- Hazards & Hazardous Materials
- Hydrology/Water Quality
- Land Use/Planning
- Utilities/Service Systems
- Wildfire
- Mandatory Findings of Significance

In addition to the CEQA-required "no project" alternative, the EIR will examine a range of land use scenarios that address one or more of the potential environmental effects of the proposed project.

The City of Palmdale would like to know your views or the views of your organization as to the scope and content of the environmental information that should be addressed in connection with the proposed project. Public agencies may need to use the EIR prepared by the City of Palmdale when considering permits or other approvals regarding certain aspects of the proposed actions. Due to time limits mandated by State law, your response must be sent at the earliest possible date but not later than 30 days after receipt of this notice.

Please send your response to Megan Taggart, Planning Manager, at:

City of Palmdale

Department of Economic and Community Development

38250 Sierra Highway

Palmdale, California 93550

Megan Taggart can be reached at 661-267-5213, or by emailing mtaggart@cityofpalmdale.org. When responding to the NOP, please provide the name for a contact person in your agency.

The City of Palmdale will hold an EIR Scoping Meeting to provide an additional opportunity for input on the scope and content of the EIR. The Scoping Meeting is scheduled for Wednesday, June 30, at 5:30 p.m. Please check the project website (https://www.palmdale2045.org/) to confirm this meeting time prior to the meeting. Due to ongoing restriction related to the COVID-19 pandemic, the meeting will be conducted virtually.

To join this meeting, please register in advance by clicking on, or pasting into your web browser, the following link:

https://us02web.zoom.us/meeting/register/tZwocemvrTIsHtYjmm9iVRZyXjtO_-TEK9Rg

After registering, you will receive a confirmation email containing information about joining the meeting. Please note that this meeting will occur prior to a Joint General Plan Advisory Committee and Public Workshop (and will use the same meeting link).

Project Title: City of Palmdale 2045 General Plan Update (GPA 20-003 & ZOA 21-007)

Project Sponsor: City of Palmdale

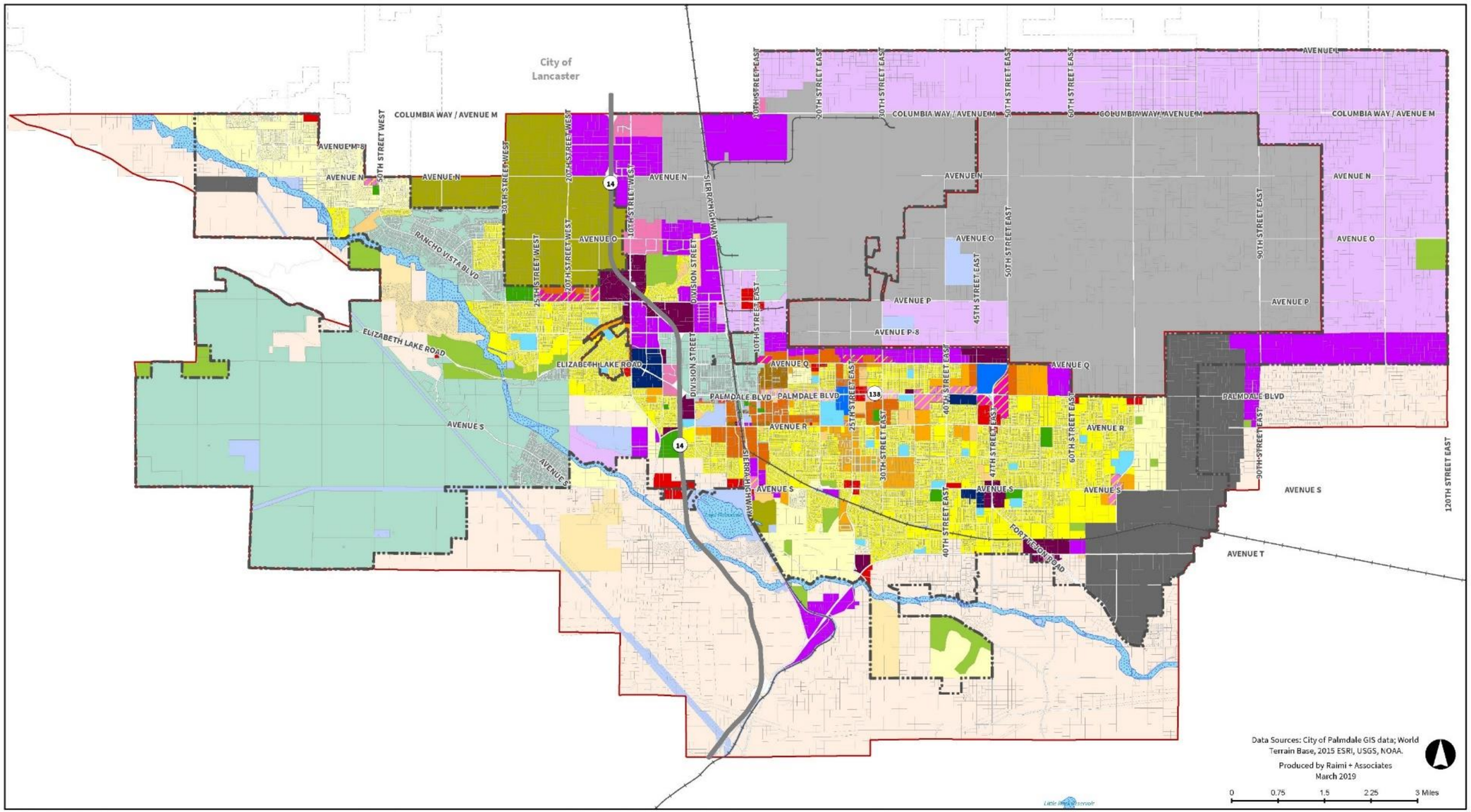
Date 6/23/21

Signature Megan Taggart

Title Planning Manager

Telephone 661-267-5213

City of Palmdale Proposed General Plan Land Use Map



DEPARTMENT OF TRANSPORTATION
DISTRICT 7 – Office of Regional Planning
100 S. MAIN STREET, MS 16
LOS ANGELES, CA 90012
PHONE (213) 266-3562
FAX (213) 897-1337
TTY 711
www.dot.ca.gov

Making Conservation a California Way of Life.

June 29, 2021

Megan Taggart
City of Palmdale
38250 Sierra Highway
Palmdale, CA 93550

RE: City of Palmdale 2045 General Plan Update – Notice of Preparation of an Environmental Impact Report (NOP)
SCH # 2021060494
GTS # 07-LA-2021-03634
Vic. LA-138/PM: 44.445

Dear Megan Taggart:

Thank you for including the California Department of Transportation (Caltrans) in the environmental review process for the above referenced NOP. The proposed project (Palmdale 2045) is a three-plus-year comprehensive update to the City's General Plan, the guiding document for the future of Palmdale over 25 years (2020-2045). The General Plan will focus on enhancing community identity, building on planned infrastructure investments, improving multi-modal active transportation and connectivity, integrating health and equity, and capitalizing on the City's unique location in the region. Palmdale 2045 identifies major strategies and physical improvements for the City over the next 25 years. These strategies include creating a vibrant downtown near the future multimodal transit station, establishing three health and wellness districts and two education districts, transforming Palmdale Boulevard into a mixed-use corridor, promoting a diversity of housing types in the City, forming village centers that offer a mix of residential choices and daily goods and services near existing neighborhoods, and building off existing industrial and aerospace business opportunities. The City of Palmdale is the Lead Agency under the California Environmental Quality Act (CEQA).

Since the project covers the entire City, it is located near State Routes 14 and 138. After reviewing the NOP, Caltrans looks forward to reviewing this project's forthcoming Vehicle Miles Traveled (VMT) analysis. As a reminder, Senate Bill 743 (2013) mandates that VMT be used as the primary metric in identifying transportation impacts of all future projects under CEQA, starting July 1, 2020.

For information on determining transportation impacts in terms of VMT on the State Highway System, see the *Technical Advisory on Evaluating Transportation Impacts in CEQA* by the California Governor's Office of Planning and Research (OPR), dated December 2018: http://opr.ca.gov/docs/20190122-743_Technical_Advisory.pdf. The City can also refer to Caltrans' updated *Vehicle Miles Traveled-Focused Transportation Impact Study Guide* (TISG), dated May 2020 and released on Caltrans' website in July 2020: https://dot.ca.gov/-/media/dot-media/programs/transportation-planning/documents/sb-743/2020-05-20-approved-vmt-focused-tisg-a11y.pdf. Caltrans' new TISG is largely based on the OPR 2018 Technical Advisory.

Note that the updated TISG states, "Additional future guidance will include the basis for requesting

transportation impact analysis that is not based on VMT. This guidance will include a simplified safety analysis approach that reduces risks to all road users and that focuses on multi-modal conflict analysis as well as access management issues." Since releasing the TISG, Caltrans has released interim safety analysis guidance, dated December 2020 and found here, for the City's reference: https://dot.ca.gov/-/media/dot-media/programs/transportation-planning/documents/sb-743/2020-12-22-updated-interim-ldigr-safety-review-guidance-a11y.pdf. Caltrans encourages lead agencies to complete traffic safety impact analysis in the CEQA review process so that, through partnerships and collaboration, California can reach zero fatalities and serious injuries by 2050.

Caltrans also encourages lead agencies to promote alternative transportation, as the City of Palmdale will do by supporting local transit opportunities in the General Plan Update. This will increase accessibility and decrease Greenhouse Gas Emissions, which supports Caltrans' mission to provide a safe and reliable transportation network that serves all people and respects the environment. For additional strategies to integrate into the General Plan Update that will promote equity and environmental preservation, please refer to:

- The 2010 *Quantifying Greenhouse Gas Mitigation Measures* report by the California Air Pollution Control Officers Association (CAPCOA), available at http://www.capcoa.org/wp-content/uploads/2010/11/CAPCOA-Quantification-Report-9-14-Final.pdf, or
- *Integrating Demand Management into the Transportation Planning Process: A Desk Reference* (Chapter 8) by the Federal Highway Administration (FHWA), available at https://ops.fhwa.dot.gov/publications/fhwahop12035/index.htm.

If you have any questions about these comments, please contact Emily Gibson, the project coordinator, at Emily.Gibson@dot.ca.gov, and refer to GTS # 07-LA-2021-03634.

Sincerely,

Emily Gibson

EMILY GIBSON
Acting IGR/CEQA Branch Chief

cc: Scott Morgan, State Clearinghouse

STATE OF CALIFORNIA Gavin Newsom, Governor

NATIVE AMERICAN HERITAGE COMMISSION

CHAIRPERSON
Laura Miranda
Luiseño

VICE CHAIRPERSON
Reginald Pagaling
Chumash

SECRETARY
Merri Lopez-Keifer
Luiseño

PARLIAMENTARIAN
Russell Attebery
Karuk

COMMISSIONER
William Mungary
Paiute/White Mountain Apache

COMMISSIONER
Julie Tumamait-Stenslie
Chumash

COMMISSIONER
[Vacant]

COMMISSIONER
[Vacant]

COMMISSIONER
[Vacant]

EXECUTIVE SECRETARY
Christina Snider
Pomo

NAHC HEADQUARTERS
1550 Harbor Boulevard
Suite 100
West Sacramento,
California 95691
(916) 373-3710
nahc@nahc.ca.gov
NAHC.ca.gov

June 30, 2021

RECEIVED
JUL 06 2021
PLANNING DEPT.

Megan Taggart
City of Palmdale
38250 Sierra Highway
Palmdale, CA 93550

Re: 2021060494, City of Palmdale 2045 General Plan Update Project, Los Angeles County

Dear Ms. Taggart:

The Native American Heritage Commission (NAHC) has received the Notice of Preparation (NOP), Draft Environmental Impact Report (DEIR) or Early Consultation for the project referenced above. The California Environmental Quality Act (CEQA) (Pub. Resources Code §21000 et seq.), specifically Public Resources Code §21084.1, states that a project that may cause a substantial adverse change in the significance of a historical resource, is a project that may have a significant effect on the environment. (Pub. Resources Code § 21084.1; Cal. Code Regs., tit.14, §15064.5 (b) (CEQA Guidelines §15064.5 (b)). If there is substantial evidence, in light of the whole record before a lead agency, that a project may have a significant effect on the environment, an Environmental Impact Report (EIR) shall be prepared. (Pub. Resources Code §21080 (d); Cal. Code Regs., tit. 14, § 5064 subd.(a)(1) (CEQA Guidelines §15064 (a)(1)). In order to determine whether a project will cause a substantial adverse change in the significance of a historical resource, a lead agency will need to determine whether there are historical resources within the area of potential effect (APE).

CEQA was amended significantly in 2014. Assembly Bill 52 (Gatto, Chapter 532, Statutes of 2014) (AB 52) amended CEQA to create a separate category of cultural resources, "tribal cultural resources" (Pub. Resources Code §21074) and provides that a project with an effect that may cause a substantial adverse change in the significance of a tribal cultural resource is a project that may have a significant effect on the environment. (Pub. Resources Code §21084.2). Public agencies shall, when feasible, avoid damaging effects to any tribal cultural resource. (Pub. Resources Code §21084.3 (a)). **AB 52 applies to any project for which a notice of preparation, a notice of negative declaration, or a mitigated negative declaration is filed on or after July 1, 2015.** If your project involves the adoption of or amendment to a general plan or a specific plan, or the designation or proposed designation of open space, on or after March 1, 2005, it may also be subject to Senate Bill 18 (Burton, Chapter 905, Statutes of 2004) (SB 18). **Both SB 18 and AB 52 have tribal consultation requirements.** If your project is also subject to the federal National Environmental Policy Act (42 U.S.C. § 4321 et seq.) (NEPA), the tribal consultation requirements of Section 106 of the National Historic Preservation Act of 1966 (154 U.S.C. 300101, 36 C.F.R. §800 et seq.) may also apply.

The NAHC recommends consultation with California Native American tribes that are traditionally and culturally affiliated with the geographic area of your proposed project as early as possible in order to avoid inadvertent discoveries of Native American human remains and best protect tribal cultural resources. Below is a brief summary of portions of AB 52 and SB 18 as well as the NAHC's recommendations for conducting cultural resources assessments.

Consult your legal counsel about compliance with AB 52 and SB 18 as well as compliance with any other applicable laws.

AB 52

AB 52 has added to CEQA the additional requirements listed below, along with many other requirements:

1. Fourteen Day Period to Provide Notice of Completion of an Application/Decision to Undertake a Project: Within fourteen (14) days of determining that an application for a project is complete or of a decision by a public agency to undertake a project, a lead agency shall provide formal notification to a designated contact of, or tribal representative of, traditionally and culturally affiliated California Native American tribes that have requested notice, to be accomplished by at least one written notice that includes:

a. A brief description of the project.

b. The lead agency contact information.

c. Notification that the California Native American tribe has 30 days to request consultation. (Pub. Resources Code §21080.3.1 (d)).

d. A "California Native American tribe" is defined as a Native American tribe located in California that is on the contact list maintained by the NAHC for the purposes of Chapter 905 of Statutes of 2004 (SB 18). (Pub. Resources Code §21073).

2. Begin Consultation Within 30 Days of Receiving a Tribe's Request for Consultation and Before Releasing a Negative Declaration, Mitigated Negative Declaration, or Environmental Impact Report: A lead agency shall begin the consultation process within 30 days of receiving a request for consultation from a California Native American tribe that is traditionally and culturally affiliated with the geographic area of the proposed project. (Pub. Resources Code §21080.3.1, subds. (d) and (e)) and prior to the release of a negative declaration, mitigated negative declaration or Environmental Impact Report. (Pub. Resources Code §21080.3.1(b)).

a. For purposes of AB 52, "consultation shall have the same meaning as provided in Gov. Code §65352.4 (SB 18). (Pub. Resources Code §21080.3.1 (b)).

3. Mandatory Topics of Consultation If Requested by a Tribe: The following topics of consultation, if a tribe requests to discuss them, are mandatory topics of consultation:

a. Alternatives to the project.

b. Recommended mitigation measures.

c. Significant effects. (Pub. Resources Code §21080.3.2 (a)).

4. Discretionary Topics of Consultation: The following topics are discretionary topics of consultation:

a. Type of environmental review necessary.

b. Significance of the tribal cultural resources.

c. Significance of the project's impacts on tribal cultural resources.

d. If necessary, project alternatives or appropriate measures for preservation or mitigation that the tribe may recommend to the lead agency. (Pub. Resources Code §21080.3.2 (a)).

5. Confidentiality of Information Submitted by a Tribe During the Environmental Review Process: With some exceptions, any information, including but not limited to, the location, description, and use of tribal cultural resources submitted by a California Native American tribe during the environmental review process shall not be included in the environmental document or otherwise disclosed by the lead agency or any other public agency to the public, consistent with Government Code §6254 (r) and §6254.10. Any information submitted by a California Native American tribe during the consultation or environmental review process shall be published in a confidential appendix to the environmental document unless the tribe that provided the information consents, in writing, to the disclosure of some or all of the information to the public. (Pub. Resources Code §21082.3 (c)(1)).

6. Discussion of Impacts to Tribal Cultural Resources in the Environmental Document: If a project may have a significant impact on a tribal cultural resource, the lead agency's environmental document shall discuss both of the following:

a. Whether the proposed project has a significant impact on an identified tribal cultural resource.

b. Whether feasible alternatives or mitigation measures, including those measures that may be agreed to pursuant to Public Resources Code §21082.3, subdivision (a), avoid or substantially lessen the impact on the identified tribal cultural resource. (Pub. Resources Code §21082.3 (b)).

7. Conclusion of Consultation: Consultation with a tribe shall be considered concluded when either of the following occurs:

a. The parties agree to measures to mitigate or avoid a significant effect, if a significant effect exists, on a tribal cultural resource; or

b. A party, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached. (Pub. Resources Code §21080.3.2 (b)).

8. Recommending Mitigation Measures Agreed Upon in Consultation in the Environmental Document: Any mitigation measures agreed upon in the consultation conducted pursuant to Public Resources Code §21080.3.2 shall be recommended for inclusion in the environmental document and in an adopted mitigation monitoring and reporting program, if determined to avoid or lessen the impact pursuant to Public Resources Code §21082.3, subdivision (b), paragraph 2, and shall be fully enforceable. (Pub. Resources Code §21082.3 (a)).

9. Required Consideration of Feasible Mitigation: If mitigation measures recommended by the staff of the lead agency as a result of the consultation process are not included in the environmental document or if there are no agreed upon mitigation measures at the conclusion of consultation, or if consultation does not occur, and if substantial evidence demonstrates that a project will cause a significant effect to a tribal cultural resource, the lead agency shall consider feasible mitigation pursuant to Public Resources Code §21084.3 (b). (Pub. Resources Code §21082.3 (e)).

10. Examples of Mitigation Measures That, If Feasible, May Be Considered to Avoid or Minimize Significant Adverse Impacts to Tribal Cultural Resources:

a. Avoidance and preservation of the resources in place, including, but not limited to:

i. Planning and construction to avoid the resources and protect the cultural and natural context.

ii. Planning greenspace, parks, or other open space, to incorporate the resources with culturally appropriate protection and management criteria.

b. Treating the resource with culturally appropriate dignity, taking into account the tribal cultural values and meaning of the resource, including, but not limited to, the following:

i. Protecting the cultural character and integrity of the resource.

ii. Protecting the traditional use of the resource.

iii. Protecting the confidentiality of the resource.

c. Permanent conservation easements or other interests in real property, with culturally appropriate management criteria for the purposes of preserving or utilizing the resources or places.

d. Protecting the resource. (Pub. Resource Code §21084.3 (b)).

e. Please note that a federally recognized California Native American tribe or a non-federally recognized California Native American tribe that is on the contact list maintained by the NAHC to protect a California prehistoric, archaeological, cultural, spiritual, or ceremonial place may acquire and hold conservation easements if the conservation easement is voluntarily conveyed. (Civ. Code §815.3 (c)).

f. Please note that it is the policy of the state that Native American remains and associated grave artifacts shall be repatriated. (Pub. Resources Code §5097.991).

11. Prerequisites for Certifying an Environmental Impact Report or Adopting a Mitigated Negative Declaration or Negative Declaration with a Significant Impact on an Identified Tribal Cultural Resource: An Environmental Impact Report may not be certified, nor may a mitigated negative declaration or a negative declaration be adopted unless one of the following occurs:

a. The consultation process between the tribes and the lead agency has occurred as provided in Public Resources Code §21080.3.1 and §21080.3.2 and concluded pursuant to Public Resources Code §21080.3.2.

b. The tribe that requested consultation failed to provide comments to the lead agency or otherwise failed to engage in the consultation process.

c. The lead agency provided notice of the project to the tribe in compliance with Public Resources Code §21080.3.1 (d) and the tribe failed to request consultation within 30 days. (Pub. Resources Code §21082.3 (d)).

The NAHC's PowerPoint presentation titled, "Tribal Consultation Under AB 52: Requirements and Best Practices" may be found online at: http://nahc.ca.gov/wp-content/uploads/2015/10/AB52TribalConsultation_CalEPAPDF.pdf

SB 18

SB 18 applies to local governments and requires local governments to contact, provide notice to, refer plans to, and consult with tribes prior to the adoption or amendment of a general plan or a specific plan, or the designation of open space. (Gov. Code §65352.3). Local governments should consult the Governor's Office of Planning and Research's "Tribal Consultation Guidelines," which can be found online at: https://www.opr.ca.gov/docs/09_14_05_Updated_Guidelines_922.pdf.

Some of SB 18's provisions include:

1. Tribal Consultation: If a local government considers a proposal to adopt or amend a general plan or a specific plan, or to designate open space it is required to contact the appropriate tribes identified by the NAHC by requesting a "Tribal Consultation List." If a tribe, once contacted, requests consultation the local government must consult with the tribe on the plan proposal. **A tribe has 90 days from the date of receipt of notification to request consultation unless a shorter timeframe has been agreed to by the tribe.** (Gov. Code §65352.3 (a)(2)).
2. No Statutory Time Limit on SB 18 Tribal Consultation. There is no statutory time limit on SB 18 tribal consultation.
3. Confidentiality: Consistent with the guidelines developed and adopted by the Office of Planning and Research pursuant to Gov. Code §65040.2, the city or county shall protect the confidentiality of the information concerning the specific identity, location, character, and use of places, features and objects described in Public Resources Code §5097.9 and §5097.993 that are within the city's or county's jurisdiction. (Gov. Code §65352.3 (b)).
4. Conclusion of SB 18 Tribal Consultation: Consultation should be concluded at the point in which:
    a. The parties to the consultation come to a mutual agreement concerning the appropriate measures for preservation or mitigation; or
    b. Either the local government or the tribe, acting in good faith and after reasonable effort, concludes that mutual agreement cannot be reached concerning the appropriate measures of preservation or mitigation. (Tribal Consultation Guidelines, Governor's Office of Planning and Research (2005) at p. 18).

Agencies should be aware that neither AB 52 nor SB 18 precludes agencies from initiating tribal consultation with tribes that are traditionally and culturally affiliated with their jurisdictions before the timeframes provided in AB 52 and SB 18. For that reason, we urge you to continue to request Native American Tribal Contact Lists and "Sacred Lands File" searches from the NAHC. The request forms can be found online at: http://nahc.ca.gov/resources/forms/.

NAHC Recommendations for Cultural Resources Assessments

To adequately assess the existence and significance of tribal cultural resources and plan for avoidance, preservation in place, or barring both, mitigation of project-related impacts to tribal cultural resources, the NAHC recommends the following actions:

1. Contact the appropriate regional California Historical Research Information System (CHRIS) Center (http://ohp.parks.ca.gov/?page_id=1068) for an archaeological records search. The records search will determine:
    a. If part or all of the APE has been previously surveyed for cultural resources.
    b. If any known cultural resources have already been recorded on or adjacent to the APE.
    c. If the probability is low, moderate, or high that cultural resources are located in the APE.
    d. If a survey is required to determine whether previously unrecorded cultural resources are present.

2. If an archaeological inventory survey is required, the final stage is the preparation of a professional report detailing the findings and recommendations of the records search and field survey.
    a. The final report containing site forms, site significance, and mitigation measures should be submitted immediately to the planning department. All information regarding site locations, Native American human remains, and associated funerary objects should be in a separate confidential addendum and not be made available for public disclosure.
    b. The final written report should be submitted within 3 months after work has been completed to the appropriate regional CHRIS center.

3. Contact the NAHC for:
   a. A Sacred Lands File search. Remember that tribes do not always record their sacred sites in the Sacred Lands File, nor are they required to do so. A Sacred Lands File search is not a substitute for consultation with tribes that are traditionally and culturally affiliated with the geographic area of the project's APE.
   b. A Native American Tribal Consultation List of appropriate tribes for consultation concerning the project site and to assist in planning for avoidance, preservation in place, or, failing both, mitigation measures.

4. Remember that the lack of surface evidence of archaeological resources (including tribal cultural resources) does not preclude their subsurface existence.
   a. Lead agencies should include in their mitigation and monitoring reporting program plan provisions for the identification and evaluation of inadvertently discovered archaeological resources per Cal. Code Regs., tit. 14, §15064.5(f) (CEQA Guidelines §15064.5(f)). In areas of identified archaeological sensitivity, a certified archaeologist and a culturally affiliated Native American with knowledge of cultural resources should monitor all ground-disturbing activities.
   b. Lead agencies should include in their mitigation and monitoring reporting program plans provisions for the disposition of recovered cultural items that are not burial associated in consultation with culturally affiliated Native Americans.
   c. Lead agencies should include in their mitigation and monitoring reporting program plans provisions for the treatment and disposition of inadvertently discovered Native American human remains. Health and Safety Code §7050.5, Public Resources Code §5097.98, and Cal. Code Regs., tit. 14, §15064.5, subdivisions (d) and (e) (CEQA Guidelines §15064.5, subds. (d) and (e)) address the processes to be followed in the event of an inadvertent discovery of any Native American human remains and associated grave goods in a location other than a dedicated cemetery.

If you have any questions or need additional information, please contact me at my email address: Andrew.Green@nahc.ca.gov.

Sincerely,

Andrew Green

Andrew Green
Cultural Resources Analyst

cc: State Clearinghouse

LOS ANGELES COUNTY
SANITATION DISTRICTS
Converting Waste Into Resources

Robert C. Ferrante
Chief Engineer and General Manager

1955 Workman Mill Road, Whittier, CA 90601-1400
Mailing Address: P.O. Box 4998, Whittier, CA 90607-4998
(562) 699-7411 • www.lacsd.org

July 16, 2021

Ref. DOC 6232747

Ms. Megan Taggart, Planning Manager
City of Palmdale
Department of Economic and Community Development
38250 Sierra Highway
Palmdale, CA 93550

Dear Ms. Taggart:

NOP Response for City of Palmdale 2045 General Plan Update

The Los Angeles County Sanitation Districts (Districts) received a Notice of Preparation of a Draft Environmental Impact Report (NOP) for the subject project on June 25, 2021. The City of Palmdale (City) is located within the jurisdictional boundaries of District Nos. 14 and 20. We offer the following comments regarding sewerage service:

1. The Districts own, operate, and maintain the large trunk sewers that form the backbone of the regional wastewater conveyance system. Local collector and/or lateral sewer lines are the responsibility of the jurisdiction in which they are located. As such, the Districts cannot comment on any deficiencies in the sewerage system in the City except to state that presently no deficiencies exist in Districts' facilities that serve the City. For information on deficiencies in the City sewerage system, please contact the City Department of Public Works and/or the Los Angeles County Department of Public Works.

2. The Districts should review individual developments within the City to determine whether or not sufficient trunk sewer capacity exists to serve each project and if Districts' facilities will be affected by the project.

3. The wastewater generated by the City is treated at the Palmdale Water Reclamation Plant, which has a capacity of 12 million gallons per day (mgd) and currently processes an average flow of 9.3 mgd, or the Lancaster Water Reclamation Plant, which has a capacity of 18 mgd and currently processes an average flow of 14.3 mgd.

4. In order to estimate the volume of wastewater the project will generate, go to www.lacsd.org, under Services, then Wastewater Program and Permits, select Will Serve Program, and scroll down to click on the Table 1, Loadings for Each Class of Land Use link for a copy of the Districts' average wastewater generation factors.

5. The Districts are empowered by the California Health and Safety Code to charge a fee to connect facilities (directly or indirectly) to the Districts' Sewerage System or to increase the strength or quantity of wastewater discharged from connected facilities. This connection fee is a capital facilities fee that is used by the Districts to upgrade or expand the Sewerage System. Payment of a connection fee may be required before this project is permitted to discharge to the Districts' Sewerage System. For more information and a copy of the Connection Fee Information Sheet, go to www.lacsd.org, under Services, then Wastewater (Sewage) and select Rates & Fees. In determining the impact to the Sewerage System and applicable connection fees, the Districts will determine the user category (e.g. Condominium, Single Family home, etc.) that best represents the actual or anticipated use of the parcel(s) or facilities on the parcel(s) in the development. For more

specific information regarding the connection fee application procedure and fees, the developer should contact the Districts' Wastewater Fee Public Counter at (562) 908-4288, extension 2727.

6. In order for the Districts to conform to the requirements of the Federal Clean Air Act (CAA), the capacities of the Districts' wastewater treatment facilities are based on the regional growth forecast adopted by the Southern California Association of Governments (SCAG). Specific policies included in the development of the SCAG regional growth forecast are incorporated into clean air plans, which are prepared by the South Coast and Antelope Valley Air Quality Management Districts in order to improve air quality in the South Coast and Mojave Desert Air Basins as mandated by the CCA. All expansions of Districts' facilities must be sized and service phased in a manner that will be consistent with the SCAG regional growth forecast for the counties of Los Angeles, Orange, San Bernardino, Riverside, Ventura, and Imperial. The available capacity of the Districts' treatment facilities will, therefore, be limited to levels associated with the approved growth identified by SCAG. As such, this letter does not constitute a guarantee of wastewater service, but is to advise the developer that the Districts intend to provide this service up to the levels that are legally permitted and to inform the developer of the currently existing capacity and any proposed expansion of the Districts' facilities.

If you have any questions, please contact the undersigned at (562) 908-4288, extension 2743 or at mandyng@lacsd.org.

Very truly yours,

Mandy Ng

Mandy Ng
Environmental Planner
Facilities Planning Department

MMN:mmn

COUNTY OF LOS ANGELES
FIRE DEPARTMENT

1320 NORTH EASTERN AVENUE
LOS ANGELES, CALIFORNIA 90063-3294
(323) 881-2401
www.fire.lacounty.gov

"Proud Protectors of Life, Property, and the Environment"

DARYL L. OSBY
FIRE CHIEF
FORESTER & FIRE WARDEN

BOARD OF SUPERVISORS

HILDA L. SOLIS
FIRST DISTRICT

HOLLY J. MITCHELL
SECOND DISTRICT

SHEILA KUEHL
THIRD DISTRICT

JANICE HAHN
FOURTH DISTRICT

KATHRYN BARGER
FIFTH DISTRICT

July 20, 2021

RECEIVED
JUL 26 2021
PLANNING DEPT.

Megan Taggart, Planning Manager
City of Palmdale
Department of Economic and Community Development
38250 Sierra Highway
Palmdale, CA 93550

Dear Ms. Taggart:

NOTICE OF PREPARATION OF A DRAFT ENVIRONMENTAL IMPACT REPORT, "PALMDALE 2045 GENERAL PLAN UPDATE," WILL HELP THE CITY PLAN FOR IMPORTANT COMMUNITY ISSUES SUCH AS NEW GROWTH, HOUSING AND INFRASTRUCTURE NEEDS, AND ENVIRONMENTAL PROTECTION, IT ALSO SETS THE STAGE FOR FUTURE SOCIAL, PHYSICAL, AND ECONOMIC DEVELOPMENT OF THE CITY, PALMDALE, FFER 2021006978

The Notice of Preparation of a Draft Environmental Impact Report has been reviewed by the Planning Division, Land Development Unit, Forestry Division, and Health Hazardous Materials Division of the County of Los Angeles Fire Department.

The following are their comments:

PLANNING DIVISION:

We have no comments.

For any questions regarding this response, please contact Kien Chin, Planning Analyst, at (323) 881-2404 or Kien.Chin@fire.lacounty.gov.

LAND DEVELOPMENT UNIT:

1. Each development must comply with all applicable code and ordinance requirements for construction, access, water mains, fire flows, and fire hydrants.

2. Every building constructed shall be accessible to Fire Department apparatus by way of access roadways, with an all-weather surface of not less than 20 feet in width. The roadway width shall be increased based on the type development proposed by the applicant. The roadway shall be extended to within 150 feet of all portions of the exterior walls when measured by an unobstructed route around the exterior of the building. The roadway shall provide approved signs and/or stripping stating, "NO PARKING - FIRE LANE" and shall be maintained in accordance with the County of Los Angeles Fire Code.

3. Every building constructed shall provide an adequate water supply for fire protection purposes. The fire hydrant spacing shall be in compliance with Appendix C in the County of Los Angeles Fire Code (Title 32). The fire flow requirements should be addressed in Appendix B of the County of Los Angeles Fire Code (Title 32).

4. A property which is located within an area described by the Fire Department as a Fire Hazard Severity Zone, a "Fuel Modification Plan" shall be submitted for review by the Fuel Modification Unit prior to building plan approval. Please contact the Department's Fuel Modification Unit for details. The Fuel Modification Plan Review Unit is located at 605 North Angeleno Avenue in the City of Azusa CA 91702-2904. They may be reached at (626) 969-5205 or visit https://www.fire.lacounty.gov/forestry-division/forestry-fuel-modification

5. When involved with subdivision in a city contracting fire protection with the County of Los Angeles Fire Department, Fire Department requirements for access, fire flows, and hydrants are addressed during the subdivision tentative map stage by the Land Development Unit.

6. Specific fire and life safety requirements for the construction phase will be addressed at the Fire Department building plan check review. There may be additional fire and life safety requirements during this time.

The Land Development Unit appreciates the opportunity to comment on this project. Should any questions arise regarding the Land Development Unit response, please contact Wally Collins at (323) 890-4243 or Wally.Collins@fire.lacounty.gov.

FORESTRY DIVISION – OTHER ENVIRONMENTAL CONCERNS:

The statutory responsibilities of the County of Los Angeles Fire Department's Forestry Division include erosion control, watershed management, rare and endangered species, vegetation, fuel modification for Very High Fire Hazard Severity Zones, archeological and cultural resources, and the County Oak Tree Ordinance. Potential impacts in these areas should be addressed.

Under the Los Angeles County Oak tree Ordinance, a permit is required to cut, destroy, remove, relocate, inflict damage or encroach into the protected zone of any tree of the Oak genus which is 25 inches or more in circumference (eight inches in diameter), as measured 4 1/2 feet above mean natural grade.

If Oak trees are known to exist in the proposed project area further field studies should be conducted to determine the presence of this species on the project site.

The County of Los Angeles Fire Department's Forestry Division has no further comments regarding this project.

For any questions regarding this response, please contact Forestry Assistant, Nicholas Alegria at (818) 890-5719.

HEALTH HAZARDOUS MATERIALS DIVISION:

The Health Hazardous Materials Division of the Los Angeles County Fire Department has no comments or requirements for the project at this time.

Please contact HHMD senior typist-clerk, Perla Garcia at (323) 890-4035 or Perla.garcia@fire.lacounty.gov if you have any questions.

If you have any additional questions, please contact this office at (323) 890-4330

Very truly yours,

RONALD M. DURBIN, CHIEF, FORESTRY DIVISION
PREVENTION SERVICES BUREAU

RMD:ac

DocuSign Envelope ID: 132E193C-2D75-42BC-906C-9C9124D45E18

State of California – Natural Resources Agency
DEPARTMENT OF FISH AND WILDLIFE
South Coast Region
3883 Ruffin Road
San Diego, CA 92123
(858) 467-4201
www.wildlife.ca.gov

GAVIN NEWSOM, Governor
CHARLTON H. BONHAM, Director

July 21, 2021

Megan Taggert
City of Palmdale
38250 Sierra Highway
Palmdale, CA 93550
MTaggart@cityofpalmdale.org

Subject: Notice of Preparation of a Draft Environmental Impact Report for City of Palmdale General Plan Update (Palmdale 2045) Project, SCH #2021060494, City of Palmdale, Los Angeles County

Dear Ms. Taggert:

The California Department of Fish and Wildlife (CDFW) has reviewed the Notice of Preparation (NOP) of a Draft Environmental Impact Report (DEIR) from the City of Palmdale (City; Lead Agency) for the Palmdale General Plan Update (Project). Thank you for the opportunity to provide comments and recommendations regarding those activities involved in the Project that may affect California fish and wildlife. Likewise, we appreciate the opportunity to provide comments regarding those aspects of the Project that CDFW, by law, may be required to carry out or approve through the exercise of its own regulatory authority under the Fish and Game Code.

CDFW's Role

CDFW is California's Trustee Agency for fish and wildlife resources and holds those resources in trust by statute for all the people of the State [Fish & G. Code, §§ 711.7, subdivision (a) & 1802; Pub. Resources Code, § 21070; California Environmental Quality Act (CEQA) Guidelines, § 15386, subdivision (a)]. CDFW, in its trustee capacity, has jurisdiction over the conservation, protection, and management of fish, wildlife, native plants, and habitat necessary for biologically sustainable populations of those species (Id., § 1802). Similarly, for purposes of CEQA, CDFW is charged by law to provide, as available, biological expertise during public agency environmental review efforts, focusing specifically on projects and related activities that have the potential to adversely affect State fish and wildlife resources.

CDFW is also submitting comments as a Responsible Agency under CEQA (Pub. Resources Code, § 21069; CEQA Guidelines, § 15381). CDFW expects that it may need to exercise regulatory authority as provided by the Fish and Game Code, including lake and streambed alteration regulatory authority (Fish & G. Code, § 1600 *et seq*.). Likewise, to the extent implementation of the Project as proposed may result in "take", as defined by State law, of any species protected under the California Endangered Species Act (CESA) (Fish & G. Code, § 2050 *et seq.*), or CESA-listed rare plant pursuant to the Native Plant Protection Act (NPPA; Fish & G. Code, §1900 *et seq.*), CDFW recommends the Project proponent obtain appropriate authorization under the Fish and Game Code.

DocuSign Envelope ID: 132E193C-2D75-42BC-906C-9C9124D45E18

Project Description and Summary

Objective: The proposed Project is a comprehensive update to the City's General Plan, which is the guiding document for the future of Palmdale over 25 years (2020-2045). The General Plan will focus on enhancing community identity, building on planned infrastructure investments, and improving multi-modal active transportation and connectivity. The Project identifies major strategies and physical improvements for the City over the next 25 years. These strategies include creating a downtown near the future multimodal transit station, establishing three health and wellness districts and two education districts, and transforming Palmdale Boulevard into a mixed-use corridor. The Project also aims to promote a diversity of housing types in the City, form village centers that offer a mix of residential choices and daily goods and services near existing neighborhoods, and building off existing industrial and aerospace business opportunities. The following actions will also be taken by the City in connection with the General Plan Update and are also considered part of the proposed Project to be analyzed in the forthcoming DEIR: Adoption and implementation of the General Plan Update; Adoption and implementation of the Climate Action Plan; and Housing Element Update.

Location: The Project would apply to the entire geographic area located within the boundaries of the City of Palmdale. The City is located in the southern region of the Antelope Valley, approximately 60 miles northeast of downtown Los Angeles along State Highway 14.

Comments and Recommendations

CDFW offers the comments and recommendations below to assist the City in adequately identifying, avoiding, and/or mitigating the Project's significant, or potentially significant, direct, and indirect impacts on fish and wildlife (biological) resources.

Specific Comments

1) Joshua tree. Joshua trees (*Yucca brevifolia*) are known to occur on vacant land within the City. Joshua tree is a CESA-listed candidate species. As a CESA-listed candidate species, western Joshua tree is granted full protection of a threatened species under CESA. Activities related to housing or infrastructure development may directly remove habitats or indirectly cause added pressures to the habitats in which these species reside, leading to further species decline. Any project activities that involve grading or vegetation removal would likely result in "take" or adverse impacts to western Joshua tree, its seed bank, and its sole pollinator, the Joshua tree yucca moth (*Tegeticula synthetica*).

   Fish and Game Commission approved a Special Order (2084) on December 10, 2020, which delegated authority to the City of Palmdale for the issuance of some permits pertaining to new and existing single-family residences on behalf of CDFW. Special Order 749.11 authorizes the take of western Joshua trees during the candidacy period when a dead western Joshua tree needs to be removed or a western Joshua tree needs to be trimmed (CDFW 2021a). Special Order 749.12 authorizes the take of western Joshua trees by the City of Palmdale for certain projects pertaining to accessory structures in developed parcels within an existing single-family residence (CDFW 2021a). For this Project, take of western Joshua trees is not authorized by Special Order 749.11 or 749.12. Therefore, CDFW concurs, that the City require the Project Applicant to consult with CDFW for authorization to take western Joshua trees pursuant to Fish and Game Code section

DocuSign Envelope ID: 132E193C-2D75-42BC-906C-9C9124D45E18

2080.1.

CDFW primarily recommends the City avoid impacts to western Joshua tree to the greatest extent feasible. If "take" or adverse impacts to western Joshua trees cannot be avoided during any project activities or over the life of the Project, the City should apply for a CESA Incidental Take Permit (ITP), pursuant to Fish and Game Code section 2080 *et seq*. Early consultation is encouraged, as significant modification to a Project and mitigation measures may be required to obtain a CESA Permit. The City should consult with CDFW to obtain additional Joshua tree survey requirements. CDFW may require separate CEQA documentation for the issuance of an ITP unless the Project CEQA document addresses all Project impacts to CESA-listed species and specifies a mitigation monitoring and reporting program that will meet the requirements of an ITP. For these reasons, biological mitigation monitoring and reporting proposals should be of sufficient detail and resolution to satisfy the requirements for a CESA ITP.

2) Additional CESA- and Endangered Species Act (ESA)-Covered Species. The City and its surrounding vicinity may support additional CESA- and ESA-listed species. Activities related to housing or infrastructure development may directly remove habitats or indirectly cause added pressures to the habitats in which these species reside, leading to further species decline. CDFW recommends the DEIR discuss the Project's potential impacts on the following species and associated habitat: tricolored blackbird (*Agelaius tricolor*), Swainson's hawk (*Buteo swainsoni*), and Mohave ground squirrel (*Xerspermophilus mohavensis*), which are CESA-listed; and least Bell's vireo (*Vireo bellii pusillus*), which is ESA- and CESA-listed.

   CDFW considers adverse impacts to a species protected by CESA to be significant without mitigation under CEQA. As to CESA, take of any endangered, threatened, candidate species, or CESA-listed plant species that results from the Project is prohibited, except as authorized by State law (Fish & G. Code §§ 2080, 2085; Cal. Code Regs., tit. 14, §786.9). Consequently, if the Project or any Project-related activity during the life of the Project will result in take of a species designated as endangered or threatened, or a candidate for listing under CESA, CDFW recommends that the Project proponent seek appropriate take authorization under CESA prior to implementing the Project. Appropriate authorization from CDFW may include an ITP or a consistency determination in certain circumstances Please refer to Specific Comment #1 regarding consultation with CDFW on ITPs.

3) Additional Special Status Species. The City and its surrounding vicinity may also support additional special status species, namely, those considered Species of Special Concern by CDFW. Activities related to housing or infrastructure development may directly remove habitats or indirectly cause added pressures to the habitats in which these species reside, leading to further species decline. CDFW recommends the DEIR discuss the Project's potential impacts on the following species and associated habitat: northern California legless lizard (*Anniella pulchra*), California glossy snake (*Arizona elegans occidentalis*), burrowing owl (*Athene cunicularia*), mountain plover (*Charadrius montanus*), western pond turtle (*Emys marmorata*), loggerhead shrike (*Lanius ludovicianus*), coast horned lizard (*Phrynosoma blainvillii*), two-striped garter snake (*Thamnophis hammondii*), and Le Conte's thrasher (*Toxostoma lecontei*).

4) Crotch's Bumble Bee. The City and its surrounding vicinity may also support additional

DocuSign Envelope ID: 132E193C-2D75-42BC-906C-9C9124D45E18

special status species, namely, Crotch's bumble bee (*Bombus crotchii*). Project activities related to housing or infrastructure development will involve ground disturbing activities in occupied habitat may result in loss of foraging habitat, crushing or filling of active bee colonies, causing the death or injury of adults, eggs, and larvae.

Crotch's bumble bee has a State ranking of S1/S2. This means that the Crotch's bumble bee is considered critically imperiled or imperiled and is extremely rare (often 5 or fewer populations). Also, Crotch's bumble bee has a very restricted range and steep population declines make the species vulnerable to extirpation from the State (CDFW 2017). Accordingly, Crotch's bumble bee meets the CEQA definition of rare, threatened, or endangered species (CEQA Guidelines, § 15380). Therefore, take of Crotch's bumble bee could require a mandatory finding of significance by the City (CEQA Guidelines, § 15065). The Project's associated housing and infrastructure development activities have the potential to substantially reduce or adversely modify habitat, impair the viability of populations, and reduce the number and range of the Crotch's bumble bee. CDFW recommends the DEIR discuss the Project's potential impacts on the Crotch's bumble bee and associated habitat.

5) Biologically Significant Sites Inventory. CDFW recommends the City identify and prepare a map of the following areas if present within or adjacent to the City boundary. In addition, the City should consider the Project's potential impacts on the following areas if present within or adjacent to the Project boundary:

   a) Conservation easements or mitigation lands;
   b) U.S. Fish and Wildlife Service Threatened & Endangered Species Active Critical Habitat (USFWS 2020);
   c) County of Los Angeles Significant Ecological Areas (SEAs);
   d) Wildlife corridors;
   e) Sensitive Natural Communities [see General Comment #3 (Biological Baseline Assessment)];
   f) Aquatic and riparian resources including (but not limited to) rivers, channels, streams, wetlands, and vernal pools, and associated natural plant communities; and
   g) City parks and open space, particularly areas with undeveloped land.

   CDFW recommends the City avoid sites that may have a direct or indirect impact on conservation easements or lands set aside as mitigation. CDFW recommends the DEIR include measures where future housing development or infrastructure facilitated by the Project mitigate (avoid if feasible) for impacts on biological resources occurring within SEAs and critical habitat, as well as mitigate for impacts on wildlife corridors, sensitive natural communities, aquatic and riparian resources, and urban forests.

6) Development and Conservation. To accommodate increased housing and infrastructure needs, the City is expected to build more units in the coming years. CDFW recommends the City maximize development where it already exists in order to protect natural lands from development and habitat loss. CDFW recommends the City consider regional and State-wide natural resource conservation strategies outlined in the following reports: Safeguarding California Plan: 2018 Update (CNRA 2018); California State Wildlife Action Plan: A Conservation Legacy for Californians (CDFW 2015); and, California 2030 Natural and Working Lands Climate Change Implementation Plan: January 2019 Draft (CalEPA et al.

DocuSign Envelope ID: 132E193C-2D75-42BC-906C-9C9124D45E18

2019).

7) Jurisdictional Waters. According to the US Fish and Wildlife Service (USFWS) National Wetlands Inventory, there are multiple segments of streams running throughout the City (USFWS 2021). As a Responsible Agency under CEQA, CDFW has authority over activities in streams and/or lakes that will divert or obstruct the natural flow, or change the bed, channel, or bank (including vegetation associated with the stream or lake) of a river or stream, or use material from a streambed. For any such activities, the project applicant (or "entity") must provide written notification to CDFW pursuant to Fish and Game Code Section 1600 *et seq*.

   a) CDFW's issuance of a Lake and Streambed Alteration (LSA) Agreement for a project that is subject to CEQA will require CEQA compliance actions by CDFW as a Responsible Agency. As a Responsible Agency, CDFW may consider the environmental document of the local jurisdiction (Lead Agency) for the project. To minimize additional requirements by CDFW pursuant to section 1600 *et seq.* and/or under CEQA, the environmental document should fully identify the potential impacts to the stream or riparian resources and provide adequate avoidance, mitigation, monitoring and reporting commitments for issuance of the LSA Agreement. Please visit CDFW's Lake and Streambed Alteration Program webpage for information about LSA Notification (CDFW 2021f).

   b) In the event the project area may support aquatic, riparian, and wetland habitats; a preliminary delineation of the streams and their associated riparian habitats should be included in the environmental document. The delineation should be conducted pursuant to the U.S. Fish and Wildlife Service (USFWS) wetland definition adopted by CDFW (Cowardin et al. 1970). Be advised that some wetland and riparian habitats subject to CDFW's authority may extend beyond the jurisdictional limits of the U.S. Army Corps of Engineers' Section 404 permit and Regional Water Quality Control Board Section 401 Certification.

   c) In project areas which may support ephemeral or episodic streams, herbaceous vegetation, woody vegetation, and woodlands also serve to protect the integrity of these resources and help maintain natural sedimentation processes; therefore, CDFW recommends effective setbacks be established to maintain appropriately sized vegetated buffer areas adjoining ephemeral drainages.

   d) Project-related changes in upstream and downstream drainage patterns, runoff, and sedimentation should be included and evaluated in the environmental document.

   e) As part of the LSA Notification process, CDFW requests a hydrological evaluation of the 100, 50, 25, 10, 5, and 2-year frequency storm event for existing and proposed conditions. CDFW recommends the environmental document evaluate the results and address avoidance, minimization, and/or mitigation measures that may be necessary to reduce potential significant impacts.

8) Wetland Resources. According to the US Fish and Wildlife Service (USFWS) National Wetlands Inventory, there are a number of wetland sites throughout the City (USFWS 2021). CDFW, as described in Fish and Game Code section 703(a), is guided by the Fish and

DocuSign Envelope ID: 132E193C-2D75-42BC-906C-9C9124D45E18

Game Commission's (Commission) policies. The Wetlands Resources policy the Commission "…seek[s] to provide for the protection, preservation, restoration, enhancement and expansion of wetland habitat in California. Further, it is the policy of the Fish and Game Commission to strongly discourage development in or conversion of wetlands. It opposes, consistent with its legal authority, any development or conversion that would result in a reduction of wetland acreage or wetland habitat values. To that end, the Commission opposes wetland development proposals unless, at a minimum, project mitigation assures there will be 'no net loss' of either wetland habitat values or acreage. The Commission strongly prefers mitigation which would achieve expansion of wetland acreage and enhancement of wetland habitat values" (CFGC 2005).

a) The Wetlands Resources policy provides a framework for maintaining wetland resources and establishes mitigation guidance. CDFW encourages avoidance of wetland resources as a primary mitigation measure and discourages the development or type conversion of wetlands to uplands. These wetlands include, but are not limited to, those along Anaverde Creek, Amargosa Creek, Lake Palmdale, Little Rock Wash, Rogers Creek, and Pine Creek. CDFW encourages activities that would avoid the reduction of wetland acreage, function, or habitat values. Once avoidance and minimization measures have been exhausted, a project must include mitigation measures to assure a "no net loss" of either wetland habitat values, or acreage, for unavoidable impacts to wetland resources. Conversions include, but are not limited to, conversion to subsurface drains, placement of fill or building of structures within the wetland, and channelization or removal of materials from the streambed. All wetlands and watercourses, whether ephemeral, intermittent, or perennial, should be retained and provided with substantial setbacks, which preserve the riparian and aquatic values and functions for the benefit to on-site and off-site wildlife populations. CDFW recommends mitigation measures to compensate for unavoidable impacts be included in an environmental document and these measures should compensate for the loss of function and value.

b) The Fish and Game Commission's Water policy guides CDFW on the quantity and quality of the waters of this State that should be apportioned and maintained respectively so as to produce and sustain maximum numbers of fish and wildlife; to provide maximum protection and enhancement of fish and wildlife and their habitat; encourage and support programs to maintain or restore a high quality of the waters of this State; prevent the degradation thereof caused by pollution and contamination; and, endeavor to keep as much water as possible open and accessible to the public for the use and enjoyment of fish and wildlife (CFGC 1994). CDFW recommends avoidance of water practices and structures that use excessive amounts of water, and minimization of impacts that negatively affect water quality, to the extent feasible (Fish & G. Code, § 5650).

9) Nesting Birds. The City supports habitats, such as Joshua tree woodland, that numerous bird species depend on. CDFW recommends the DEIR include measures where future housing and infrastructure development facilitated by the Project avoids potential impacts to nesting birds. Project activities occurring during the bird and raptor breeding and nesting season could result in the incidental loss of fertile eggs or nestlings, or otherwise lead to nest abandonment.

a) Migratory nongame native bird species are protected by international treaty under the

DocuSign Envelope ID: 132E193C-2D75-42BC-906C-9C9124D45E18

Federal Migratory Bird Treaty Act (MBTA) of 1918 (Code of Federal Regulations, Title 50, § 10.13). Sections 3503, 3503.5, and 3513 of the California Fish and Game Code prohibit take of all birds and their active nests including raptors and other migratory nongame birds (as listed under the Federal MBTA). It is unlawful to take, possess, or needlessly destroy the nest or eggs of any raptor.

b) CDFW recommends that measures be taken to fully avoid impacts to nesting birds and raptors. Ground-disturbing activities (e.g., mobilizing, staging, drilling, and excavating) and vegetation removal should occur outside of the avian breeding season which generally runs from February 15 through September 15 (as early as January 1 for some raptors) to avoid take of birds, raptors, or their eggs.

c) If impacts to nesting birds and raptors cannot be avoided, CDFW recommends the DEIR include measures where future housing development facilitated by the Project mitigates for impacts. CDFW recommends surveys by a qualified biologist with experience conducting breeding bird and raptor surveys. Surveys are needed to detect protected native birds and raptors occurring in suitable nesting habitat that may be disturbed and any other such habitat within 300 feet of the project disturbance area, to the extent allowable and accessible. For raptors, this radius should be expanded to 500 feet and 0.5 mile for special status species, if feasible. Project personnel, including all contractors working on site, should be instructed on the sensitivity of the area. Reductions in the nest buffer distance may be appropriate depending on the avian species involved, ambient levels of human activity, screening vegetation, or possibly other factors.

10) Loss of Bird and Raptor Nesting and Foraging Habitat. Joshua tree woodland habitat in the City supports nesting birds, including sensitive and special status species. Development occurring adjacent to the wildlife urban interface and habitats such as Joshua tree woodland could impact nesting and breeding habitat for birds and raptors. Direct impacts such as habitat loss and indirect impacts such as increased edge effects could eliminate habitat or reduce habitat quality.

a) CDFW recommends the DEIR analyze and discuss the Project's impacts on bird and raptor nesting and breeding habitat. Edge effects should also be analyzed and discussed. CDFW recommends the DEIR disclose the amount of bird and raptor nesting and breeding habitat that would be impacted and lost as a result of the proposed Project.

b) CDFW recommends the Project avoid developing and encroaching onto nesting and breeding habitat for birds and raptors. If avoidance is not feasible, CDFW recommends the DEIR provide measures to mitigate for impacts on bird and raptor nesting and breeding habitat. Depending on the status of the bird or raptor species impacted, replacement habitat acres should increase with the occurrence of a Species of Special Concern. Replacement habitat acres should further increase with the occurrence of a CESA-listed threatened or endangered species.

c) CDFW recommends the DEIR provide measures where future development facilitated by the Project avoids removal of any native trees, large and dense-canopied native and non-native trees, and trees occurring in high density. CDFW also recommends avoiding impacts to understory vegetation (e.g., ground cover, subshrubs, and shrubs). If trees are removed, CDFW recommends future development facilitated by the Project provides

DocuSign Envelope ID: 132E193C-2D75-42BC-906C-9C9124D45E18

replacement to compensate for temporal or permanent loss habitat within a project site. CDFW recommends planting native tree and shrub species preferred by birds and are native to the area.

General Comments

1) Disclosure. An environmental document should provide an adequate, complete, and detailed disclosure about the effect which a proposed project is likely to have on the environment (Pub. Resources Code, § 20161; CEQA Guidelines, §15151). Adequate disclosure is necessary so CDFW may provide comments on the adequacy of proposed avoidance, minimization, or mitigation measures, as well as to assess the significance of the specific impact relative to the species (e.g., current range, distribution, population trends, and connectivity).

2) Mitigation Measures. Public agencies have a duty under CEQA to prevent significant, avoidable damage to the environment by requiring changes in projects through the use of feasible alternatives or mitigation measures [CEQA Guidelines, §§ 15002(a)(3), 15021]. Pursuant to CEQA Guidelines section 15126.4, an environmental document shall describe feasible measures which could mitigate for impacts below a significant level under CEQA.

   a) Level of Detail. Mitigation measures must be feasible, effective, implemented, and fully enforceable/imposed by the lead agency through permit conditions, agreements, or other legally binding instruments (Pub. Resources Code, § 21081.6(b); CEQA Guidelines, §§ 15126.4, 15041). A public agency shall provide the measures that are fully enforceable through permit conditions, agreements, or other measures (Pub. Resources Code, § 21081.6). CDFW recommends that the City prepare mitigation measures that are specific, detailed (i.e., responsible party, timing, specific actions, location), and clear in order for a measure to be fully enforceable and implemented successfully via a mitigation monitoring and/or reporting program (CEQA Guidelines, § 15097; Pub. Resources Code, § 21081.6). Adequate disclosure is necessary so CDFW may provide comments on the adequacy and feasibility of proposed mitigation measures.

   b) Disclosure of Impacts. If a proposed mitigation measure would cause one or more significant effects, in addition to impacts caused by the Project as proposed, the environmental document should include a discussion of the effects of proposed mitigation measures [CEQA Guidelines, § 15126.4(a)(1)]. In that regard, the environmental document should provide an adequate, complete, and detailed disclosure about a project's proposed mitigation measure(s). Adequate disclosure is necessary so CDFW may assess the potential impacts of proposed mitigation measures.

3) Biological Baseline Assessment. An adequate biological resources assessment should provide a complete assessment and impact analysis of the flora and fauna within and adjacent to a project site and where a project may result in ground disturbance. The assessment and analysis should place emphasis upon identifying endangered, threatened, sensitive, regionally, and locally unique species, and sensitive habitats. Impact analysis will aid in determining any direct, indirect, and cumulative biological impacts, as well as specific mitigation or avoidance measures necessary to offset those impacts. CDFW recommends avoiding any sensitive natural communities found on or adjacent to a project. CDFW also

DocuSign Envelope ID: 132E193C-2D75-42BC-906C-9C9124D45E18

considers impacts to Species of Special Concern a significant direct and cumulative adverse effect without implementing appropriate avoid and/or mitigation measures. A project-level environmental document should include the following information:

a) Information on the regional setting that is critical to an assessment of environmental impacts, with special emphasis on resources that are rare or unique to the region [CEQA Guidelines, § 15125(c)]. An environmental document should include measures to fully avoid and otherwise protect Sensitive Natural Communities from project-related impacts. CDFW considers these communities as threatened habitats having both regional and local significance. Plant communities, alliances, and associations with a state-wide ranking of S1, S2, S3 and S4 should be considered sensitive and declining at the local and regional level. These ranks can be obtained by visiting Vegetation Classification and Mapping Program - Natural Communities webpage (CDFW 2021b);

b) A thorough, recent, floristic-based assessment of special status plants and natural communities following CDFW's Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Sensitive Natural Communities (CDFW 2018). Adjoining habitat areas should be included where project construction and activities could lead to direct or indirect impacts off site;

c) Floristic, alliance- and/or association-based mapping and vegetation impact assessments conducted at a project site and within the neighboring vicinity. The Manual of California Vegetation (MCV), second edition, should also be used to inform this mapping and assessment (Sawyer et al. 2009). Adjoining habitat areas should be included in this assessment where project activities could lead to direct or indirect impacts off site. Habitat mapping at the alliance level will help establish baseline vegetation conditions;

d) A complete, recent, assessment of the biological resources associated with each habitat type on site and within adjacent areas that could also be affected by a project. CDFW's California Natural Diversity Database (CNDDB) in Sacramento should be contacted to obtain current information on any previously reported sensitive species and habitat (CDFW 2021c). An assessment should include a nine-quadrangle search of the CNDDB to determine a list of species potentially present at a project site. A lack of records in the CNDDB does not mean that rare, threatened, or endangered plants and wildlife do not occur in the project site. Field verification for the presence or absence of sensitive species is necessary to provide a complete biological assessment for adequate CEQA review [CEQA Guidelines, § 15003(i)];

e) A complete, recent, assessment of rare, threatened, and endangered, and other sensitive species on site and within the area of potential effect, including California Species of Special Concern, and California Fully Protected Species (Fish & G. Code, §§ 3511, 4700, 5050, and 5515). Species to be addressed should include all those which meet the CEQA definition of endangered, rare, or threatened species (CEQA Guidelines, § 15380). Seasonal variations in use of a project site should also be addressed such as wintering, roosting, nesting, and foraging habitat. Focused species-specific surveys, conducted at the appropriate time of year and time of day when the sensitive species are active or otherwise identifiable, may be required if suitable habitat is present. See CDFW's Survey and Monitoring Protocols and Guidelines for established

DocuSign Envelope ID: 132E193C-2D75-42BC-906C-9C9124D45E18

survey protocol for select species (CDFW 2021d). Acceptable species-specific survey procedures may be developed in consultation with CDFW and the U.S. Fish and Wildlife Service; and,

f) A recent wildlife and rare plant survey. CDFW generally considers biological field assessments for wildlife to be valid for a one-year period, and assessments for rare plants may be considered valid for a period of up to three years. Some aspects of a proposed project may warrant periodic updated surveys for certain sensitive taxa, particularly if build out could occur over a protracted time frame or in phases.

g) A biological resources survey should include identification and delineation of any rivers, streams, and lakes and their associated natural plant communities/habitats. This includes any culverts, ditches, storm channels that may transport water, sediment, pollutants, and discharge into rivers, streams, and lakes.

4) Data. CEQA requires that information developed in environmental impact reports be incorporated into a database which may be used to make subsequent or supplemental environmental determinations [Pub. Resources Code, § 21003, subd. (e)]. Accordingly, please report any special status species and natural communities detected by completing and submitting CNDDB Field Survey Forms (CDFW 2021e). The City should ensure data collected at a project-level has been properly submitted, with all data fields applicable filled out. The data entry should also list pending development as a threat and then update this occurrence after impacts have occurred.

5) Biological Direct, Indirect, and Cumulative Impacts. CDFW recommends providing a thorough discussion of direct, indirect, and cumulative impacts expected to adversely affect biological resources, with specific measures to offset such impacts. The DEIR should address the following:

a) A discussion regarding Project-related indirect impacts on biological resources, including resources in nearby public lands, open space, adjacent natural habitats, riparian ecosystems, and any designated and/or proposed or existing reserve lands [e.g., preserve lands associated with a Natural Community Conservation Plan (NCCP, Fish & G. Code, § 2800 et. seq.)]. Impacts on, and maintenance of, wildlife corridor/movement areas, including access to undisturbed habitats in adjacent areas, should be fully evaluated in the DEIR;

b) A discussion of both the short-term and long-term effects to species population distribution and concentration and alterations of the ecosystem supporting the species impacted [CEQA Guidelines, § 15126.2(a)];

c) A discussion of potential adverse impacts from lighting, noise, temporary and permanent human activity, and exotic species, and identification of any mitigation measures;

d) A discussion on Project-related changes on drainage patterns; the volume, velocity, and frequency of existing and post-Project surface flows; polluted runoff; soil erosion and/or sedimentation in streams and water bodies; and, post-Project fate of runoff from the Project sites. The discussion should also address the potential water extraction activities and the potential resulting impacts on the habitat (if any) supported by the groundwater.

DocuSign Envelope ID: 132E193C-2D75-42BC-906C-9C9124D45E18

Mitigation measures proposed to alleviate such Project impacts should be included;

e) An analysis of impacts from proposed changes to land use designations and zoning, and existing land use designation and zoning located nearby or adjacent to natural areas that may inadvertently contribute to wildlife-human interactions. A discussion of possible conflicts and mitigation measures to reduce these conflicts should be included in the DEIR; and,

f) A cumulative effects analysis, as described under CEQA Guidelines section 15130. General and specific plans, as well as past, present, and anticipated future projects, should be analyzed relative to their impacts on similar plant and wildlife species, habitat, and vegetation communities. If the City determines that the Project would not have a cumulative impact, the environmental document should indicate why the cumulative impact is not significant. The City's conclusion should be supported by facts and analyses [CEQA Guidelines, § 15130(a)(2)].

6) Project Description and Alternatives. To enable CDFW to adequately review and comment on the proposed Project from the standpoint of the protection of plants, fish, and wildlife, we recommend the following information be included in the DEIR:

a) A complete discussion of the purpose and need for, and description of, the proposed Project;

b) CEQA Guidelines section 15126.6(a) states that an environmental document shall describe a reasonable range of potentially feasible alternatives to the Project, or to the location of the Project, which would feasibly attain most of the basic objectives of the Project but would avoid or substantially lessen any of the significant effects of the Project. CEQA Guidelines section 15126.6(f)(2) states if the Lead Agency concludes that no feasible alternative locations exist, it must disclose the reasons for this conclusion and should include reasons in the environmental document; and,

c) A range of feasible alternatives to Project component location and design features to avoid or otherwise minimize direct and indirect impacts to sensitive biological resources and wildlife movement areas. CDFW recommends the City consider configuring Project construction and activities, as well as the development footprint, in such a way as to fully avoid impacts to sensitive and special status plants and wildlife species, habitat, and sensitive vegetation communities. CDFW also recommends the City consider establishing appropriate setbacks from sensitive and special status biological resources. Setbacks should not be impacted by ground disturbance or hydrological changes for the duration of the Project and from any future development. As a general rule, CDFW recommends reducing or clustering the development footprint to retain unobstructed spaces for vegetation and wildlife and provide connections for wildlife between properties and minimize obstacles to open space.

Project alternatives should be thoroughly evaluated, even if an alternative would impede, to some degree, the attainment of the Project objectives or would be more costly (CEQA Guidelines, § 15126.6).

DocuSign Envelope ID: 132E193C-2D75-42BC-906C-9C9124D45E18

d) Where the Project may impact aquatic and riparian resources, CDFW recommends the City consider alternatives that would fully avoid impacts to such resources. CDFW also recommends alternatives that would allow not impede, alter, or otherwise modify existing surface flow; watercourse and meander; and water-dependent ecosystems and vegetation communities. Project-related designs should consider elevated crossings to avoid channelizing or narrowing of streams. Any modifications to a river, creek, or stream may cause or magnify upstream bank erosion, channel incision, and drop in water level and cause the stream to alter its course of flow.

7) Translocation/Salvage of Plants and Animal Species. Translocation and transplantation is the process of moving an individual from a project site and permanently moving it to a new location. CDFW generally does not support the use of, translocation or transplantation as the primary mitigation strategy for unavoidable impacts to rare, threatened, or endangered plant or animal species. Studies have shown that these efforts are experimental and the outcome unreliable. CDFW has found that permanent preservation and management of habitat capable of supporting these species is often a more effective long-term strategy for conserving sensitive plants and animals and their habitats.

8) Compensatory Mitigation. An environmental document should include mitigation measures for adverse Project related direct or indirect impacts to sensitive plants, animals, and habitats. Mitigation measures should emphasize avoidance and reduction of project-related impacts. For unavoidable impacts, on-site habitat restoration or enhancement should be discussed in detail. If on-site mitigation is not feasible or would not be biologically viable and therefore not adequately mitigate the loss of biological functions and values, off-site mitigation through habitat creation and/or acquisition and preservation in perpetuity should be addressed. Areas proposed as mitigation lands should be protected in perpetuity with a conservation easement, financial assurance and dedicated to a qualified entity for long-term management and monitoring. Under Government Code, section 65967, the Lead Agency must exercise due diligence in reviewing the qualifications of a governmental entity, special district, or nonprofit organization to effectively manage and steward land, water, or natural resources on mitigation lands it approves.

9) Long-term Management of Mitigation Lands. For proposed preservation and/or restoration, an environmental document should include measures to protect the targeted habitat values from direct and indirect negative impacts in perpetuity. The objective should be to offset the project-induced qualitative and quantitative losses of wildlife habitat values. Issues that should be addressed include (but are not limited to) restrictions on access, proposed land dedications, monitoring and management programs, control of illegal dumping, water pollution, and increased human intrusion. An appropriate non-wasting endowment should be set aside to provide for long-term management of mitigation lands.

Conclusion

We appreciate the opportunity to comment on the NOP for the Palmdale General Plan Update to assist the City of Palmdale in identifying and mitigating Project impacts on biological resources. If you have any questions or comments regarding this letter, please contact Felicia Silva, Environmental Scientist, at Felicia.Silva@wildlife.ca.gov or (562) 292-8105.

DocuSign Envelope ID: 132E193C-2D75-42BC-906C-9C9124D45E18

Sincerely,

DocuSigned by:
5991E19EF8094C3...
Victoria Tang signing for

Erinn Wilson-Olgin
Environmental Program Manager I
South Coast Region

ec: CDFW
Erinn Wilson-Olgin, Los Alamitos – Erinn.Wilson-Olgin@wildlife.ca.gov
Victoria Tang, Los Alamitos – Victoria.Tang@wildlife.ca.gov
Ruby Kwan-Davis, Los Alamitos – Ruby.Kwan-Davis@wildlife.ca.gov
Felicia Silva, Los Alamitos – Felicia.Silva@wildlife.ca.gov
Susan Howell, San Diego – Susan.Howell@wildlife.ca.gov
CEQA Program Coordinator, Sacramento – CEQACommentLetters@wildlife.ca.gov

State Clearinghouse, Office of Planning and Research – State.Clearinghouse@opr.ca.gov

References

[Cal EPA] California Environmental Protection Agency, California Natural Resources agency, California Department of Food and Agriculture, California Air Resources Board, and California Strategic Growth Council. 2019. Draft California 2030 Natural and Working Lands Climate Change Implementation Plan. Available from: https://ww2.arb.ca.gov/resources/documents/nwl-implementation-draft

[CDFW] California Department of Fish and Wildlife. 2017. California Terrestrial and Vernal Pool Invertebrates of Conservation Priority. Accessed at: https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=157415&inline

[CDFWa] California Department of Fish and Wildlife. 2021. Trimming of western Joshua trees and removal of dead western Joshua trees. Accessed at: https://wildlife.ca.gov/Conservation/CESA/WJT

[CDFWb] California Department of Fish and Wildlife. 2021. Natural Communities. Accessed at: https://wildlife.ca.gov/Data/VegCAMP/Natural-Communities.

[CDFWc] California Department of Fish and Wildlife. 2021. California Natural Diversity Database. Available from: https://wildlife.ca.gov/Data/CNDDB

[CDFWd] California Department of Fish and Wildlife. 2021. Survey and Monitoring Protocols and Guidelines. Available from: https://wildlife.ca.gov/conservation/survey-protocols

[CDFWe] California Department of Fish and Wildlife. 2021. Submitting Data to the CNDDB. Available from: https://wildlife.ca.gov/Data/CNDDB/Submitting-Data

[CDFWf] California Department of Fish and Wildlife. 2021. Lake and Streambed Alteration Program. Available from: https://wildlife.ca.gov/Conservation/LSA.

[CDFW] California Department of Fish and Wildlife. 2018. Protocols for Surveying and Evaluating Impacts to Special Status Native Plant Populations and Sensitive Natural Communities. Accessed at: https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=18959&inline.

DocuSign Envelope ID: 132E193C-2D75-42BC-906C-9C9124D45E18

[CDFW] California Department of Fish and Wildlife. 2015. SWAP Final 2015 Document. Available from: https://wildlife.ca.gov/SWAP/Final

[CFGC] California Fish and Game Commission. 2005. Policies. Retention of Wetland Acreage and Habitat Values. Accessed: https://fgc.ca.gov/About/Policies/Miscellaneous.

[CFGC] California Fish and Game Commission. 1994. Policies. Miscellaneous: Water. Accessed: https://fgc.ca.gov/About/Policies/Miscellaneous#Water

[CNPS] California Native Plant Society. 2020. Rare Plant ranks. Available from: https://www.cnps.org/rare-plants/cnps-rare-plant-ranks.

[CNRA] California Natural Resources Agency. 2018. Safeguarding California Plan: 2018 Update. California's Climate Adaptation Strategy. Available from: https://files.resources.ca.gov/climate/safeguarding/

Cowardin, L.M., V. Carter, F.C. Golet, and E.T. LaRoe. 1979. Classification of wetlands and deepwater habitats of the United States. U.S. Fish and Wildlife Service. FWS/OBS-79/31. Washington, DC.

Sawyer, J. O., Keeler-Wolf, T., and Evens J.M. 2009. A Manual of California Vegetation, 2nd ed. ISBN 978-0-943460-49-9.

[USFWS] U.S. Fish and Wildlife Service. 2021. USFWS Threatened & Endangered Species Active Critical Habitat Report. Online Mapper. [Accessed 1 July 2021]. Available from: https://ecos.fws.gov/ecp/report/table/critical-habitat.html

SCAG
INNOVATING FOR A BETTER TOMORROW

SOUTHERN CALIFORNIA
ASSOCIATION OF GOVERNMENTS
900 Wilshire Blvd., Ste. 1700
Los Angeles, CA 90017
T: (213) 236-1800
www.scag.ca.gov

REGIONAL COUNCIL OFFICERS

President
Clint Lorimore, Eastvale

First Vice President
Jan C. Harnik, Riverside County Transportation Commission

Second Vice President
Carmen Ramirez, County of Ventura

Immediate Past President
Rex Richardson, Long Beach

COMMITTEE CHAIRS

Executive/Administration
Clint Lorimore, Eastvale

Community, Economic & Human Development
Jorge Marquez, Covina

Energy & Environment
David Pollock, Moorpark

Transportation
Sean Ashton, Downey

July 28, 2021

Ms. Megan Taggart, Planning Manager
City of Palmdale, Department of Economic and Community Development
38250 Sierra Highway
Palmdale, California 93550
Phone: (661) 267-5213
E-mail: mtaggart@cityofpalmdale.org

RE: SCAG Comments on the Notice of Preparation of a Draft Environmental Impact Report for the Palmdale 2045 General Plan Update [SCAG NO. IGR10425]

Dear Ms. Taggart,

Thank you for submitting the Notice of Preparation of a Draft Environmental Impact Report for the Palmdale 2045 General Plan Update ("proposed project") to the Southern California Association of Governments (SCAG) for review and comment. SCAG is responsible for providing informational resources to regionally significant plans, projects, and programs per the California Environmental Quality Act (CEQA) to facilitate the consistency of these projects with SCAG's adopted regional plans, to be determined by the lead agencies.[1]

Pursuant to Senate Bill (SB) 375, SCAG is the designated Regional Transportation Planning Agency under state law and is responsible for preparation of the Regional Transportation Plan (RTP) including the Sustainable Communities Strategy (SCS). SCAG's feedback is intended to assist local jurisdictions and project proponents to implement projects that have the potential to contribute to attainment of Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) goals and align with RTP/SCS policies. Finally, SCAG is also the authorized regional agency for Inter-Governmental Review (IGR) of programs proposed for Federal financial assistance and direct Federal development activities, pursuant to Presidential Executive Order 12372.

SCAG staff has reviewed the Notice of Preparation of a Draft Environmental Impact Report for the Palmdale 2045 General Plan Update in Los Angeles County. The proposed project is a General Plan Update for 2020 – 2045 that covers the state-required nine topics and economic development, urban design, infrastructure, military readiness, community facilities, sustainability and resilience, and climate change.

When available, please email environmental documentation to *IGR@scag.ca.gov* providing, at a minimum, the full public comment period for review.

If you have any questions regarding the attached comments, please contact the Inter-Governmental Review (IGR) Program, attn.: Anita Au, Senior Regional Planner, at (213) 236-1874 or IGR@scag.ca.gov. Thank you.

Sincerely,

Rongsheng Luo
Acting Manager, Compliance and Performance Monitoring

[1] Lead agencies such as local jurisdictions have the sole discretion in determining a local project's consistency with the 2020 RTP/SCS (Connect SoCal) for the purpose of determining consistency for CEQA.

COMMENTS ON THE NOTICE OF PREPARATION OF A DRAFT ENVIRONMENTAL IMPACT REPORT FOR THE PALMDALE 2045 GENERAL PLAN UPDATE [SCAG NO. IGR10425]

CONSISTENCY WITH CONNECT SOCAL

SCAG provides informational resources to facilitate the consistency of the proposed project with the adopted 2020-2045 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS or Connect SoCal). For the purpose of determining consistency with CEQA, lead agencies such as local jurisdictions have the sole discretion in determining a local project's consistency with Connect SoCal.

CONNECT SOCAL GOALS

The SCAG Regional Council fully adopted Connect SoCal in September 2020. Connect SoCal, also known as the 2020 – 2045 RTP/SCS, builds upon and expands land use and transportation strategies established over several planning cycles to increase mobility options and achieve a more sustainable growth pattern. The long-range visioning plan balances future mobility and housing needs with goals for the environment, the regional economy, social equity and environmental justice, and public health. The goals included in Connect SoCal may be pertinent to the proposed project. These goals are meant to provide guidance for considering the proposed project. Among the relevant goals of Connect SoCal are the following:

SCAG CONNECT SOCAL GOALS	
Goal #1:	*Encourage regional economic prosperity and global competitiveness*
Goal #2:	*Improve mobility, accessibility, reliability and travel safety for people and goods*
Goal #3:	*Enhance the preservation, security, and resilience of the regional transportation system*
Goal #4:	*Increase person and goods movement and travel choices within the transportation system*
Goal #5:	*Reduce greenhouse gas emissions and improve air quality*
Goal #6:	*Support healthy and equitable communities*
Goal #7:	*Adapt to a changing climate and support an integrated regional development pattern and transportation network*
Goal #8:	*Leverage new transportation technologies and data-driven solutions that result in more efficient travel*
Goal #9:	*Encourage development of diverse housing types in areas that are supported by multiple transportation options*
Goal #10:	*Promote conservation of natural and agricultural lands and restoration of habitats*

For ease of review, we encourage the use of a side-by-side comparison of SCAG goals with discussions of the consistency, non-consistency or non-applicability of the goals and supportive analysis in a table format. Suggested format is as follows:

SCAG CONNECT SOCAL GOALS		
	Goal	Analysis
Goal #1:	*Encourage regional economic prosperity and global competitiveness*	*Consistent: Statement as to why;* *Not-Consistent: Statement as to why;* *Or* *Not Applicable: Statement as to why;* *DEIR page number reference*
Goal #2:	*Improve mobility, accessibility, reliability and travel safety for people and goods*	*Consistent: Statement as to why;* *Not-Consistent: Statement as to why;* *Or* *Not Applicable: Statement as to why;* *DEIR page number reference*
etc.		etc.

Connect SoCal Strategies

To achieve the goals of Connect SoCal, a wide range of land use and transportation strategies are included in the accompanying twenty (20) technical reports. Of particular note are multiple strategies included in Chapter 3 of Connect SoCal intended to support implementation of the regional Sustainable Communities Strategy (SCS) framed within the context of focusing growth near destinations and mobility options; promoting diverse housing choices; leveraging technology innovations; supporting implementation of sustainability policies; and promoting a Green Region. To view Connect SoCal and the accompanying technical reports, please visit the Connect SoCal webpage. Connect SoCal builds upon the progress from previous RTP/SCS cycles and continues to focus on integrated, coordinated, and balanced planning for land use and transportation that helps the SCAG region strive towards a more sustainable region, while meeting statutory requirements pertinent to RTP/SCSs. These strategies within the regional context are provided as guidance for lead agencies such as local jurisdictions when the proposed project is under consideration.

SCAG staff would like to call your attention to resources available from SCAG's Regional Climate Adaptation Framework including the Southern California Climate Adaptation Planning Guide, Communication and Outreach Toolkit, Library of Model Policies, and SB 379 Compliance Curriculum for Local Jurisdictions.

DEMOGRAPHICS AND GROWTH FORECASTS

A key, formative step in projecting future population, households, and employment through 2045 for Connect SoCal was the generation of a forecast of regional and county level growth in collaboration with expert demographers and economists on Southern California. From there, jurisdictional level forecasts were ground-truthed by subregions and local agencies, which helped SCAG identify opportunities and barriers to future development. This forecast helps the region understand, in a very general sense, where we are expected to grow, and allows SCAG to focus attention on areas that are experiencing change and may have increased transportation needs. After a year-long engagement effort with all 197 jurisdictions one-on-one, 82 percent of SCAG's 197 jurisdictions provided feedback on the forecast of future growth for Connect SoCal. SCAG also sought feedback on potential sustainable growth strategies from a broad range of stakeholder groups – including local jurisdictions, county transportation commissions, other partner agencies, industry groups, community-based organizations, and the general public. Connect SoCal utilizes a bottom-up approach in that total projected growth for each jurisdiction reflects feedback received from jurisdiction staff, including city managers, community development/planning directors, and local staff. Growth at the neighborhood level (i.e., transportation analysis zone (TAZ) reflects entitled projects and adheres to current general and specific plan maximum densities as conveyed by jurisdictions (except in cases where entitled projects and development agreements exceed these capacities as calculated by SCAG). Neighborhood level growth projections also feature strategies that help to reduce greenhouse gas emissions (GHG) from automobiles and light trucks to achieve Southern California's GHG reduction target, approved by the California Air Resources Board (CARB) in accordance

with state planning law. Connect SoCal's Forecasted Development Pattern is utilized for long range modeling purposes and does not supersede actions taken by elected bodies on future development, including entitlements and development agreements. SCAG does not have the authority to implement the plan -- neither through decisions about what type of development is built where, nor what transportation projects are ultimately built, as Connect SoCal is adopted at the jurisdictional level. Achieving a sustained regional outcome depends upon informed and intentional local action. To access jurisdictional level growth estimates and forecasts for years 2016 and 2045, please refer to the Connect SoCal Demographics and Growth Forecast Technical Report. The growth forecasts for the region and applicable jurisdictions are below.

	Adopted SCAG Region Wide Forecasts				Adopted City of Palmdale Forecasts			
	Year 2020	**Year 2030**	**Year 2035**	**Year 2045**	**Year 2020**	**Year 2030**	**Year 2035**	**Year 2045**
Population	19,517,731	20,821,171	21,443,006	22,503,899	162,262	179,535	188,171	207,047
Households	6,333,458	6,902,821	7,170,110	7,633,451	45,820	53,046	56,660	61,798
Employment	8,695,427	9,303,627	9,566,384	10,048,822	38,610	41,655	43,178	45,938

MITIGATION MEASURES

SCAG staff recommends that you review the Final Program Environmental Impact Report (Final PEIR) for Connect SoCal for guidance, as appropriate. SCAG's Regional Council certified the PEIR and adopted the associated Findings of Fact and a Statement of Overriding Considerations (FOF/SOC) and Mitigation Monitoring and Reporting Program (MMRP) on May 7, 2020 and also adopted a PEIR Addendum and amended the MMRP on September 3, 2020 (please see the PEIR webpage and scroll to the bottom of the page for the PEIR Addendum). The PEIR includes a list of project-level performance standards-based mitigation measures that may be considered for adoption and implementation by lead, responsible, or trustee agencies in the region, as applicable and feasible. Project-level mitigation measures are within responsibility, authority, and/or jurisdiction of project-implementing agency or other public agency serving as lead agency under CEQA in subsequent project- and site- specific design, CEQA review, and decision-making processes, to meet the performance standards for each of the CEQA resource categories.

REGIONAL HOUSING NEEDS ALLOCATION

On March 4, 2021 SCAG's Regional Council adopted the 6th cycle Final Regional Housing Needs Assessment (RHNA) Allocation Plan which covers the planning period October 2021 through October 2029. The 6th cycle Final RHNA allocation for the applicable jurisdiction is below.

SCAG 6th Cycle Final RHNA Allocation for City of Palmdale	
Very low income	1,777
Low income	935
Moderate income	1,004
Above moderate income	2,924
Total RHNA Allocation	6,640

Sixth cycle housing elements are due to the California Department of Housing and Community Development (HCD) by October 15, 2021. SCAG encourages jurisdictions to prepare the draft housing element in advance of the due date to ensure adequate time to address HCD comments and adopt a final housing element. Jurisdictions that do not have a compliant housing element may be ineligible for certain State funding and grant opportunities and may be at risk for legal action from stakeholders or HCD.

SCAG staff would like to call your attention to SCAG's HELPR 2.0, a web-mapping tool developed by SCAG to help local jurisdictions and stakeholders understand local land use, site opportunities, and environmental sensitivities for aligning housing planning with the state Department of Housing and Community Development's (HCD) 6th cycle housing element requirements.

ENVIRONMENTAL JUSTICE

Per Senate Bill 1000 (SB 1000), local jurisdictions in California with disadvantaged communities are required to develop an Environmental Justice (EJ) Element or consider EJ goals, policies, and objectives in their General Plans when updating two or more General Plan Elements. SCAG staff recommends that you review the Environmental Justice Technical Report and the updated Environmental Justice Toolbox, which is a resource document to assist local jurisdictions in developing EJ-related goals and policies regarding solutions for EJ-related community issues.

Appendix B

CalEEMod Modeling Outputs

Palmdale GPU - General Office -Construction Only - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Palmdale GPU - General Office -Construction Only

Los Angeles-Mojave Desert County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	171.28	1000sqft	3.93	171,275.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	9			**Operational Year**	2023
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	390.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics - See Assumptions

Land Use - See Assumptions

Construction Phase - See Assumptions

Demolition - See Assumptions

Architectural Coating - Based on AVAQMD requirements for VOC content

Vehicle Trips - Operational Emissions Modeled Separately

Consumer Products - Operational Emissions Modeled Separately

Area Coating - Operational Emissions Modeled Separately

Landscape Equipment - Operational Emissions Modeled Separately

Energy Use - Operational Emissions Modeled Separately

Water And Wastewater - Operational Emissions Modeled Separately

Solid Waste - Operational Emissions Modeled Separately

Palmdale GPU - General Office -Construction Only - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Construction Off-road Equipment Mitigation - Water 2x daily based on AVAQMD regulations for dust control; not mitigation

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	250.00	150.00
tblArchitecturalCoating	EF_Nonresidential_Interior	250.00	50.00
tblAreaCoating	ReapplicationRatePercent	10	0
tblConstEquipMitigation	FuelType	Diesel	Electrical
tblConstEquipMitigation	FuelType	Diesel	Electrical
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	7.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final

Palmdale GPU - General Office -Construction Only - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	PhaseEndDate	2/23/2023	12/28/2022
tblConstructionPhase	PhaseEndDate	1/4/2023	12/26/2022
tblConstructionPhase	PhaseEndDate	2/16/2022	2/8/2022
tblConstructionPhase	PhaseEndDate	1/30/2023	3/3/2022
tblConstructionPhase	PhaseStartDate	1/31/2023	12/5/2022
tblConstructionPhase	PhaseStartDate	2/17/2022	2/8/2022
tblConstructionPhase	PhaseStartDate	2/5/2022	1/28/2022
tblConstructionPhase	PhaseStartDate	1/5/2023	2/8/2022
tblConsumerProducts	ROG_EF	2.14E-05	0
tblConsumerProducts	ROG_EF_Degreaser	3.542E-07	0
tblConsumerProducts	ROG_EF_PesticidesFertilizers	5.152E-08	0
tblEnergyUse	LightingElect	3.77	0.00
tblEnergyUse	NT24E	4.62	0.00
tblEnergyUse	NT24NG	0.39	0.00
tblEnergyUse	T24E	4.11	0.00
tblEnergyUse	T24NG	9.92	0.00
tblLandscapeEquipment	NumberSummerDays	180	0
tblSolidWaste	SolidWasteGenerationRate	159.29	0.00
tblVehicleTrips	ST_TR	2.21	0.00
tblVehicleTrips	SU_TR	0.70	0.00
tblVehicleTrips	WD_TR	9.74	0.00
tblWater	IndoorWaterUseRate	30,442,236.36	0.00
tblWater	OutdoorWaterUseRate	18,658,144.86	0.00

Palmdale GPU - General Office -Construction Only - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2022	0.8624	2.4231	2.5264	4.9600e-003	0.1048	0.1163	0.2211	0.0345	0.1092	0.1437	0.0000	438.1743	438.1743	0.0852	0.0107	443.4869
Maximum	**0.8624**	**2.4231**	**2.5264**	**4.9600e-003**	**0.1048**	**0.1163**	**0.2211**	**0.0345**	**0.1092**	**0.1437**	**0.0000**	**438.1743**	**438.1743**	**0.0852**	**0.0107**	**443.4869**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2022	0.6623	0.3659	2.5294	4.6600e-003	0.0891	7.4200e-003	0.0966	0.0269	7.3200e-003	0.0343	0.0000	415.9099	415.9099	0.0826	0.0107	421.1561
Maximum	**0.6623**	**0.3659**	**2.5294**	**4.6600e-003**	**0.0891**	**7.4200e-003**	**0.0966**	**0.0269**	**7.3200e-003**	**0.0343**	**0.0000**	**415.9099**	**415.9099**	**0.0826**	**0.0107**	**421.1561**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e

Palmdale GPU - General Office -Construction Only - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Percent Reduction	**23.20**	**84.90**	**-0.12**	**6.05**	**14.91**	**93.62**	**56.32**	**21.89**	**93.30**	**76.15**	**0.00**	**5.08**	**5.08**	**3.12**	**0.00**	**5.04**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	**1-1-2022**	**3-31-2022**	0.8292	0.1073
2	**4-1-2022**	**6-30-2022**	0.6201	0.1064
3	**7-1-2022**	**9-30-2022**	0.6269	0.1075
		Highest	0.8292	0.1075

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2022	1/28/2022	5	20	
2	Grading	Grading	1/28/2022	2/8/2022	5	8	
3	Building Construction	Building Construction	2/8/2022	12/26/2022	5	230	

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

4	Paving	Paving	2/8/2022	3/3/2022	5	18	
5	Architectural Coating	Architectural Coating	12/5/2022	12/28/2022	5	18	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 8

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 256,913; Non-Residential Outdoor: 85,638; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Paving	Cement and Mortar Mixers	2	6.00	9	0.56
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Building Construction	Cranes	1	7.00	231	0.29
Demolition	Excavators	3	8.00	158	0.38
Grading	Excavators	1	8.00	158	0.38
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Grading	Graders	1	8.00	187	0.41
Paving	Pavers	1	8.00	130	0.42
Paving	Paving Equipment	2	6.00	132	0.36
Paving	Rollers	2	6.00	80	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Building Construction	Welders	1	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Architectural Coating	1	11.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	55.00	28.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Demolition	6	15.00	0.00	1.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Alternative Fuel for Construction Equipment

Use Cleaner Engines for Construction Equipment

Water Exposed Area

3.2 Demolition - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					8.0000e-005	0.0000	8.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0264	0.2572	0.2059	3.9000e-004		0.0124	0.0124		0.0116	0.0116	0.0000	33.9902	33.9902	9.5500e-003	0.0000	34.2289
Total	**0.0264**	**0.2572**	**0.2059**	**3.9000e-004**	**8.0000e-005**	**0.0124**	**0.0125**	**1.0000e-005**	**0.0116**	**0.0116**	**0.0000**	**33.9902**	**33.9902**	**9.5500e-003**	**0.0000**	**34.2289**

Palmdale GPU - General Office -Construction Only - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	9.0000e-005	2.0000e-005	0.0000	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0309	0.0309	0.0000	0.0000	0.0324
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.3000e-004	3.3000e-004	4.2900e-003	1.0000e-005	1.2100e-003	1.0000e-005	1.2200e-003	3.2000e-004	1.0000e-005	3.3000e-004	0.0000	1.0003	1.0003	3.0000e-005	3.0000e-005	1.0099
Total	**4.3000e-004**	**4.2000e-004**	**4.3100e-003**	**1.0000e-005**	**1.2200e-003**	**1.0000e-005**	**1.2300e-003**	**3.2000e-004**	**1.0000e-005**	**3.3000e-004**	**0.0000**	**1.0312**	**1.0312**	**3.0000e-005**	**3.0000e-005**	**1.0423**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					4.0000e-005	0.0000	4.0000e-005	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	4.6200e-003	0.0200	0.2328	3.9000e-004		6.2000e-004	6.2000e-004		6.2000e-004	6.2000e-004	0.0000	33.9902	33.9902	9.5500e-003	0.0000	34.2289
Total	**4.6200e-003**	**0.0200**	**0.2328**	**3.9000e-004**	**4.0000e-005**	**6.2000e-004**	**6.6000e-004**	**1.0000e-005**	**6.2000e-004**	**6.3000e-004**	**0.0000**	**33.9902**	**33.9902**	**9.5500e-003**	**0.0000**	**34.2289**

Palmdale GPU - General Office -Construction Only - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	9.0000e-005	2.0000e-005	0.0000	1.0000e-005	0.0000	1.0000e-005	0.0000	0.0000	0.0000	0.0000	0.0309	0.0309	0.0000	0.0000	0.0324
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.3000e-004	3.3000e-004	4.2900e-003	1.0000e-005	1.2100e-003	1.0000e-005	1.2200e-003	3.2000e-004	1.0000e-005	3.3000e-004	0.0000	1.0003	1.0003	3.0000e-005	3.0000e-005	1.0099
Total	**4.3000e-004**	**4.2000e-004**	**4.3100e-003**	**1.0000e-005**	**1.2200e-003**	**1.0000e-005**	**1.2300e-003**	**3.2000e-004**	**1.0000e-005**	**3.3000e-004**	**0.0000**	**1.0312**	**1.0312**	**3.0000e-005**	**3.0000e-005**	**1.0423**

3.3 Grading - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0283	0.0000	0.0283	0.0137	0.0000	0.0137	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	7.7900e-003	0.0834	0.0611	1.2000e-004		3.7600e-003	3.7600e-003		3.4600e-003	3.4600e-003	0.0000	10.4219	10.4219	3.3700e-003	0.0000	10.5062
Total	**7.7900e-003**	**0.0834**	**0.0611**	**1.2000e-004**	**0.0283**	**3.7600e-003**	**0.0321**	**0.0137**	**3.4600e-003**	**0.0172**	**0.0000**	**10.4219**	**10.4219**	**3.3700e-003**	**0.0000**	**10.5062**

Palmdale GPU - General Office -Construction Only - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.7000e-004	1.3000e-004	1.7200e-003	0.0000	4.8000e-004	0.0000	4.9000e-004	1.3000e-004	0.0000	1.3000e-004	0.0000	0.4001	0.4001	1.0000e-005	1.0000e-005	0.4040
Total	**1.7000e-004**	**1.3000e-004**	**1.7200e-003**	**0.0000**	**4.8000e-004**	**0.0000**	**4.9000e-004**	**1.3000e-004**	**0.0000**	**1.3000e-004**	**0.0000**	**0.4001**	**0.4001**	**1.0000e-005**	**1.0000e-005**	**0.4040**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0128	0.0000	0.0128	6.1600e-003	0.0000	6.1600e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.4500e-003	6.2900e-003	0.0710	1.2000e-004		1.9000e-004	1.9000e-004		1.9000e-004	1.9000e-004	0.0000	10.4219	10.4219	3.3700e-003	0.0000	10.5062
Total	**1.4500e-003**	**6.2900e-003**	**0.0710**	**1.2000e-004**	**0.0128**	**1.9000e-004**	**0.0129**	**6.1600e-003**	**1.9000e-004**	**6.3500e-003**	**0.0000**	**10.4219**	**10.4219**	**3.3700e-003**	**0.0000**	**10.5062**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.7000e-004	1.3000e-004	1.7200e-003	0.0000	4.8000e-004	0.0000	4.9000e-004	1.3000e-004	0.0000	1.3000e-004	0.0000	0.4001	0.4001	1.0000e-005	1.0000e-005	0.4040
Total	**1.7000e-004**	**1.3000e-004**	**1.7200e-003**	**0.0000**	**4.8000e-004**	**0.0000**	**4.9000e-004**	**1.3000e-004**	**0.0000**	**1.3000e-004**	**0.0000**	**0.4001**	**0.4001**	**1.0000e-005**	**1.0000e-005**	**0.4040**

3.4 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1962	1.7958	1.8818	3.1000e-003		0.0930	0.0930		0.0875	0.0875	0.0000	266.4840	266.4840	0.0638	0.0000	268.0801
Total	**0.1962**	**1.7958**	**1.8818**	**3.1000e-003**		**0.0930**	**0.0930**		**0.0875**	**0.0875**	**0.0000**	**266.4840**	**266.4840**	**0.0638**	**0.0000**	**268.0801**

Palmdale GPU - General Office -Construction Only - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	6.5300e-003	0.1730	0.0564	6.6000e-004	0.0215	1.5900e-003	0.0231	6.1900e-003	1.5200e-003	7.7200e-003	0.0000	64.7691	64.7691	2.1600e-003	9.3400e-003	67.6060
Worker	0.0180	0.0141	0.1811	4.6000e-004	0.0509	3.4000e-004	0.0513	0.0135	3.1000e-004	0.0138	0.0000	42.1809	42.1809	1.4000e-003	1.2400e-003	42.5852
Total	**0.0245**	**0.1871**	**0.2375**	**1.1200e-003**	**0.0724**	**1.9300e-003**	**0.0743**	**0.0197**	**1.8300e-003**	**0.0216**	**0.0000**	**106.9500**	**106.9500**	**3.5600e-003**	**0.0106**	**110.1912**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0327	0.1415	1.8358	2.8000e-003		4.3500e-003	4.3500e-003		4.3500e-003	4.3500e-003	0.0000	244.8384	244.8384	0.0613	0.0000	246.3697
Total	**0.0327**	**0.1415**	**1.8358**	**2.8000e-003**		**4.3500e-003**	**4.3500e-003**		**4.3500e-003**	**4.3500e-003**	**0.0000**	**244.8384**	**244.8384**	**0.0613**	**0.0000**	**246.3697**

Palmdale GPU - General Office -Construction Only - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	6.5300e-003	0.1730	0.0564	6.6000e-004	0.0215	1.5900e-003	0.0231	6.1900e-003	1.5200e-003	7.7200e-003	0.0000	64.7691	64.7691	2.1600e-003	9.3400e-003	67.6060
Worker	0.0180	0.0141	0.1811	4.6000e-004	0.0509	3.4000e-004	0.0513	0.0135	3.1000e-004	0.0138	0.0000	42.1809	42.1809	1.4000e-003	1.2400e-003	42.5852
Total	**0.0245**	**0.1871**	**0.2375**	**1.1200e-003**	**0.0724**	**1.9300e-003**	**0.0743**	**0.0197**	**1.8300e-003**	**0.0216**	**0.0000**	**106.9500**	**106.9500**	**3.5600e-003**	**0.0106**	**110.1912**

3.5 Paving - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	8.7900e-003	0.0857	0.1098	1.7000e-004		4.3900e-003	4.3900e-003		4.0500e-003	4.0500e-003	0.0000	14.7383	14.7383	4.6300e-003	0.0000	14.8540
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**8.7900e-003**	**0.0857**	**0.1098**	**1.7000e-004**		**4.3900e-003**	**4.3900e-003**		**4.0500e-003**	**4.0500e-003**	**0.0000**	**14.7383**	**14.7383**	**4.6300e-003**	**0.0000**	**14.8540**

Palmdale GPU - General Office -Construction Only - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.1000e-004	4.0000e-004	5.1500e-003	1.0000e-005	1.4500e-003	1.0000e-005	1.4600e-003	3.9000e-004	1.0000e-005	3.9000e-004	0.0000	1.2004	1.2004	4.0000e-005	4.0000e-005	1.2119
Total	**5.1000e-004**	**4.0000e-004**	**5.1500e-003**	**1.0000e-005**	**1.4500e-003**	**1.0000e-005**	**1.4600e-003**	**3.9000e-004**	**1.0000e-005**	**3.9000e-004**	**0.0000**	**1.2004**	**1.2004**	**4.0000e-005**	**4.0000e-005**	**1.2119**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	1.9700e-003	8.5600e-003	0.1218	1.6000e-004		2.6000e-004	2.6000e-004		2.6000e-004	2.6000e-004	0.0000	14.1196	14.1196	4.5700e-003	0.0000	14.2338
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**1.9700e-003**	**8.5600e-003**	**0.1218**	**1.6000e-004**		**2.6000e-004**	**2.6000e-004**		**2.6000e-004**	**2.6000e-004**	**0.0000**	**14.1196**	**14.1196**	**4.5700e-003**	**0.0000**	**14.2338**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	5.1000e-004	4.0000e-004	5.1500e-003	1.0000e-005	1.4500e-003	1.0000e-005	1.4600e-003	3.9000e-004	1.0000e-005	3.9000e-004	0.0000	1.2004	1.2004	4.0000e-005	4.0000e-005	1.2119
Total	**5.1000e-004**	**4.0000e-004**	**5.1500e-003**	**1.0000e-005**	**1.4500e-003**	**1.0000e-005**	**1.4600e-003**	**3.9000e-004**	**1.0000e-005**	**3.9000e-004**	**0.0000**	**1.2004**	**1.2004**	**4.0000e-005**	**4.0000e-005**	**1.2119**

3.6 Architectural Coating - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.5954					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.8400e-003	0.0127	0.0163	3.0000e-005		7.4000e-004	7.4000e-004		7.4000e-004	7.4000e-004	0.0000	2.2979	2.2979	1.5000e-004	0.0000	2.3017
Total	**0.5972**	**0.0127**	**0.0163**	**3.0000e-005**		**7.4000e-004**	**7.4000e-004**		**7.4000e-004**	**7.4000e-004**	**0.0000**	**2.2979**	**2.2979**	**1.5000e-004**	**0.0000**	**2.3017**

Palmdale GPU - General Office -Construction Only - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.8000e-004	2.2000e-004	2.8300e-003	1.0000e-005	8.0000e-004	1.0000e-005	8.0000e-004	2.1000e-004	0.0000	2.2000e-004	0.0000	0.6602	0.6602	2.0000e-005	2.0000e-005	0.6666
Total	**2.8000e-004**	**2.2000e-004**	**2.8300e-003**	**1.0000e-005**	**8.0000e-004**	**1.0000e-005**	**8.0000e-004**	**2.1000e-004**	**0.0000**	**2.2000e-004**	**0.0000**	**0.6602**	**0.6602**	**2.0000e-005**	**2.0000e-005**	**0.6666**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.5954					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.7000e-004	1.1600e-003	0.0165	3.0000e-005		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	2.2979	2.2979	1.5000e-004	0.0000	2.3017
Total	**0.5957**	**1.1600e-003**	**0.0165**	**3.0000e-005**		**4.0000e-005**	**4.0000e-005**		**4.0000e-005**	**4.0000e-005**	**0.0000**	**2.2979**	**2.2979**	**1.5000e-004**	**0.0000**	**2.3017**

Palmdale GPU - General Office -Construction Only - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.8000e-004	2.2000e-004	2.8300e-003	1.0000e-005	8.0000e-004	1.0000e-005	8.0000e-004	2.1000e-004	0.0000	2.2000e-004	0.0000	0.6602	0.6602	2.0000e-005	2.0000e-005	0.6666
Total	**2.8000e-004**	**2.2000e-004**	**2.8300e-003**	**1.0000e-005**	**8.0000e-004**	**1.0000e-005**	**8.0000e-004**	**2.1000e-004**	**0.0000**	**2.2000e-004**	**0.0000**	**0.6602**	**0.6602**	**2.0000e-005**	**2.0000e-005**	**0.6666**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Office Building	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
General Office Building	9.50	7.30	7.30	33.00	48.00	19.00	77	19	4

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Office Building	0.544785	0.062844	0.187478	0.127235	0.023089	0.006083	0.010475	0.008012	0.000925	0.000611	0.024394	0.000698	0.003374

5.0 Energy Detail

Historical Energy Use: N

Palmdale GPU - General Office -Construction Only - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
General Office Building	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
General Office Building	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use		Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	tons/yr	MT/yr			
General Office Building	0		0.0000	0.0000	0.0000	0.0000
Total			**0.0000**	**0.0000**	**0.0000**	**0.0000**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Mitigated

	Electricity Use		Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	tons/yr	MT/yr			
General Office Building	0		0.0000	0.0000	0.0000	0.0000
Total			**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Palmdale GPU - General Office -Construction Only - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Palmdale GPU - General Office -Construction Only - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

7.0 Water Detail

7.1 Mitigation Measures Water

		Total CO2	CH4	N2O	CO2e
Category	tons/yr	MT/yr			
Mitigated		0.0000	0.0000	0.0000	0.0000
Unmitigated		0.0000	0.0000	0.0000	0.0000

Palmdale GPU - General Office -Construction Only - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use		Total CO2	CH4	N2O	CO2e
Land Use	Mgal	tons/yr	MT/yr			
General Office Building	0 / 0		0.0000	0.0000	0.0000	0.0000
Total			**0.0000**	**0.0000**	**0.0000**	**0.0000**

Palmdale GPU - General Office -Construction Only - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Mitigated

	Indoor/Outdoor Use		Total CO2	CH4	N2O	CO2e
Land Use	Mgal	tons/yr	MT/yr			
General Office Building	0 / 0		0.0000	0.0000	0.0000	0.0000
Total			**0.0000**	**0.0000**	**0.0000**	**0.0000**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

		Total CO2	CH4	N2O	CO2e
	tons/yr	MT/yr			
Mitigated		0.0000	0.0000	0.0000	0.0000
Unmitigated		0.0000	0.0000	0.0000	0.0000

Palmdale GPU - General Office -Construction Only - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

8.2 Waste by Land Use

Unmitigated

	Waste Disposed		Total CO2	CH4	N2O	CO2e
Land Use	tons	tons/yr	MT/yr			
General Office Building	0		0.0000	0.0000	0.0000	0.0000
Total			**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Waste Disposed		Total CO2	CH4	N2O	CO2e
Land Use	tons	tons/yr	MT/yr			
General Office Building	0		0.0000	0.0000	0.0000	0.0000
Total			**0.0000**	**0.0000**	**0.0000**	**0.0000**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

Palmdale GPU - General Office -Construction Only - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Palmdale GPU - General Office -Construction Only - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Palmdale GPU - General Office -Construction Only

Los Angeles-Mojave Desert County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	171.28	1000sqft	3.93	171,275.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	9			**Operational Year**	2023
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	390.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics - See Assumptions

Land Use - See Assumptions

Construction Phase - See Assumptions

Demolition - See Assumptions

Architectural Coating - Based on AVAQMD requirements for VOC content

Vehicle Trips - Operational Emissions Modeled Separately

Consumer Products - Operational Emissions Modeled Separately

Area Coating - Operational Emissions Modeled Separately

Landscape Equipment - Operational Emissions Modeled Separately

Energy Use - Operational Emissions Modeled Separately

Water And Wastewater - Operational Emissions Modeled Separately

Solid Waste - Operational Emissions Modeled Separately

Palmdale GPU - General Office -Construction Only - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Construction Off-road Equipment Mitigation - Water 2x daily based on AVAQMD regulations for dust control; not mitigation

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	250.00	150.00
tblArchitecturalCoating	EF_Nonresidential_Interior	250.00	50.00
tblAreaCoating	ReapplicationRatePercent	10	0
tblConstEquipMitigation	FuelType	Diesel	Electrical
tblConstEquipMitigation	FuelType	Diesel	Electrical
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	7.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final

Palmdale GPU - General Office -Construction Only - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	PhaseEndDate	2/23/2023	12/28/2022
tblConstructionPhase	PhaseEndDate	1/4/2023	12/26/2022
tblConstructionPhase	PhaseEndDate	2/16/2022	2/8/2022
tblConstructionPhase	PhaseEndDate	1/30/2023	3/3/2022
tblConstructionPhase	PhaseStartDate	1/31/2023	12/5/2022
tblConstructionPhase	PhaseStartDate	2/17/2022	2/8/2022
tblConstructionPhase	PhaseStartDate	2/5/2022	1/28/2022
tblConstructionPhase	PhaseStartDate	1/5/2023	2/8/2022
tblConsumerProducts	ROG_EF	2.14E-05	0
tblConsumerProducts	ROG_EF_Degreaser	3.542E-07	0
tblConsumerProducts	ROG_EF_PesticidesFertilizers	5.152E-08	0
tblEnergyUse	LightingElect	3.77	0.00
tblEnergyUse	NT24E	4.62	0.00
tblEnergyUse	NT24NG	0.39	0.00
tblEnergyUse	T24E	4.11	0.00
tblEnergyUse	T24NG	9.92	0.00
tblLandscapeEquipment	NumberSummerDays	180	0
tblSolidWaste	SolidWasteGenerationRate	159.29	0.00
tblVehicleTrips	ST_TR	2.21	0.00
tblVehicleTrips	SU_TR	0.70	0.00
tblVehicleTrips	WD_TR	9.74	0.00
tblWater	IndoorWaterUseRate	30,442,236.36	0.00
tblWater	OutdoorWaterUseRate	18,658,144.86	0.00

Palmdale GPU - General Office -Construction Only - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2022	68.3146	47.6035	47.0238	0.0881	8.0116	2.2562	10.2678	3.6755	2.0948	5.7702	0.0000	8,540.3337	8,540.3337	2.1502	0.1074	8,626.0849
Maximum	**68.3146**	**47.6035**	**47.0238**	**0.0881**	**8.0116**	**2.2562**	**10.2678**	**3.6755**	**2.0948**	**5.7702**	**0.0000**	**8,540.3337**	**8,540.3337**	**2.1502**	**0.1074**	**8,626.0849**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2022	66.7175	5.3659	50.4421	0.0845	4.1162	0.1342	4.2504	1.7919	0.1332	1.9251	0.0000	8,257.0815	8,257.0815	2.1175	0.1074	8,342.0154
Maximum	**66.7175**	**5.3659**	**50.4421**	**0.0845**	**4.1162**	**0.1342**	**4.2504**	**1.7919**	**0.1332**	**1.9251**	**0.0000**	**8,257.0815**	**8,257.0815**	**2.1175**	**0.1074**	**8,342.0154**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Percent Reduction	**2.34**	**88.73**	**-7.27**	**4.11**	**48.62**	**94.05**	**58.60**	**51.25**	**93.64**	**66.64**	**0.00**	**3.32**	**3.32**	**1.52**	**0.00**	**3.29**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	1.6200e-003	1.6000e-004	0.0175	0.0000		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005		0.0375	0.0375	1.0000e-004		0.0399
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total	**1.6200e-003**	**1.6000e-004**	**0.0175**	**0.0000**	**0.0000**	**6.0000e-005**	**6.0000e-005**	**0.0000**	**6.0000e-005**	**6.0000e-005**		**0.0375**	**0.0375**	**1.0000e-004**	**0.0000**	**0.0399**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	1.6200e-003	1.6000e-004	0.0175	0.0000		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005		0.0375	0.0375	1.0000e-004		0.0399
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total	**1.6200e-003**	**1.6000e-004**	**0.0175**	**0.0000**	**0.0000**	**6.0000e-005**	**6.0000e-005**	**0.0000**	**6.0000e-005**	**6.0000e-005**		**0.0375**	**0.0375**	**1.0000e-004**	**0.0000**	**0.0399**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2022	1/28/2022	5	20	
2	Grading	Grading	1/28/2022	2/8/2022	5	8	
3	Building Construction	Building Construction	2/8/2022	12/26/2022	5	230	
4	Paving	Paving	2/8/2022	3/3/2022	5	18	
5	Architectural Coating	Architectural Coating	12/5/2022	12/28/2022	5	18	

Palmdale GPU - General Office -Construction Only - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 8

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 256,913; Non-Residential Outdoor: 85,638; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Paving	Cement and Mortar Mixers	2	6.00	9	0.56
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Building Construction	Cranes	1	7.00	231	0.29
Demolition	Excavators	3	8.00	158	0.38
Grading	Excavators	1	8.00	158	0.38
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Grading	Graders	1	8.00	187	0.41
Paving	Pavers	1	8.00	130	0.42
Paving	Paving Equipment	2	6.00	132	0.36
Paving	Rollers	2	6.00	80	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45

Trips and VMT

Palmdale GPU - General Office -Construction Only - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Architectural Coating	1	11.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	55.00	28.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Demolition	6	15.00	0.00	1.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Alternative Fuel for Construction Equipment

Use Cleaner Engines for Construction Equipment

Water Exposed Area

3.2 Demolition - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.4300e-003	0.0000	8.4300e-003	1.2800e-003	0.0000	1.2800e-003			0.0000			0.0000
Off-Road	2.6392	25.7194	20.5941	0.0388		1.2427	1.2427		1.1553	1.1553		3,746.7812	3,746.7812	1.0524		3,773.0920
Total	**2.6392**	**25.7194**	**20.5941**	**0.0388**	**8.4300e-003**	**1.2427**	**1.2511**	**1.2800e-003**	**1.1553**	**1.1565**		**3,746.7812**	**3,746.7812**	**1.0524**		**3,773.0920**

Palmdale GPU - General Office -Construction Only - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	2.3000e-004	8.4000e-003	1.9600e-003	3.0000e-005	8.8000e-004	6.0000e-005	9.4000e-004	2.4000e-004	6.0000e-005	3.0000e-004		3.4039	3.4039	1.8000e-004	5.4000e-004	3.5693
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0435	0.0297	0.4517	1.1300e-003	0.1232	8.1000e-004	0.1240	0.0327	7.4000e-004	0.0334		114.6809	114.6809	3.5800e-003	2.9900e-003	115.6624
Total	**0.0437**	**0.0381**	**0.4537**	**1.1600e-003**	**0.1241**	**8.7000e-004**	**0.1250**	**0.0329**	**8.0000e-004**	**0.0337**		**118.0848**	**118.0848**	**3.7600e-003**	**3.5300e-003**	**119.2317**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					3.7900e-003	0.0000	3.7900e-003	5.7000e-004	0.0000	5.7000e-004			0.0000			0.0000
Off-Road	0.4623	2.0032	23.2798	0.0388		0.0616	0.0616		0.0616	0.0616	0.0000	3,746.7812	3,746.7812	1.0524		3,773.0920
Total	**0.4623**	**2.0032**	**23.2798**	**0.0388**	**3.7900e-003**	**0.0616**	**0.0654**	**5.7000e-004**	**0.0616**	**0.0622**	**0.0000**	**3,746.7812**	**3,746.7812**	**1.0524**		**3,773.0920**

Palmdale GPU - General Office -Construction Only - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	2.3000e-004	8.4000e-003	1.9600e-003	3.0000e-005	8.8000e-004	6.0000e-005	9.4000e-004	2.4000e-004	6.0000e-005	3.0000e-004		3.4039	3.4039	1.8000e-004	5.4000e-004	3.5693
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0435	0.0297	0.4517	1.1300e-003	0.1232	8.1000e-004	0.1240	0.0327	7.4000e-004	0.0334		114.6809	114.6809	3.5800e-003	2.9900e-003	115.6624
Total	**0.0437**	**0.0381**	**0.4537**	**1.1600e-003**	**0.1241**	**8.7000e-004**	**0.1250**	**0.0329**	**8.0000e-004**	**0.0337**		**118.0848**	**118.0848**	**3.7600e-003**	**3.5300e-003**	**119.2317**

3.3 Grading - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					7.0826	0.0000	7.0826	3.4247	0.0000	3.4247			0.0000			0.0000
Off-Road	1.9486	20.8551	15.2727	0.0297		0.9409	0.9409		0.8656	0.8656		2,872.0464	2,872.0464	0.9289		2,895.2684
Total	**1.9486**	**20.8551**	**15.2727**	**0.0297**	**7.0826**	**0.9409**	**8.0234**	**3.4247**	**0.8656**	**4.2903**		**2,872.0464**	**2,872.0464**	**0.9289**		**2,895.2684**

Palmdale GPU - General Office -Construction Only - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0435	0.0297	0.4517	1.1300e-003	0.1232	8.1000e-004	0.1240	0.0327	7.4000e-004	0.0334		114.6809	114.6809	3.5800e-003	2.9900e-003	115.6624
Total	**0.0435**	**0.0297**	**0.4517**	**1.1300e-003**	**0.1232**	**8.1000e-004**	**0.1240**	**0.0327**	**7.4000e-004**	**0.0334**		**114.6809**	**114.6809**	**3.5800e-003**	**2.9900e-003**	**115.6624**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					3.1872	0.0000	3.1872	1.5411	0.0000	1.5411			0.0000			0.0000
Off-Road	0.3632	1.5737	17.7527	0.0297		0.0484	0.0484		0.0484	0.0484	0.0000	2,872.0464	2,872.0464	0.9289		2,895.2684
Total	**0.3632**	**1.5737**	**17.7527**	**0.0297**	**3.1872**	**0.0484**	**3.2356**	**1.5411**	**0.0484**	**1.5896**	**0.0000**	**2,872.0464**	**2,872.0464**	**0.9289**		**2,895.2684**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0435	0.0297	0.4517	1.1300e-003	0.1232	8.1000e-004	0.1240	0.0327	7.4000e-004	0.0334		114.6809	114.6809	3.5800e-003	2.9900e-003	115.6624
Total	**0.0435**	**0.0297**	**0.4517**	**1.1300e-003**	**0.1232**	**8.1000e-004**	**0.1240**	**0.0327**	**7.4000e-004**	**0.0334**		**114.6809**	**114.6809**	**3.5800e-003**	**2.9900e-003**	**115.6624**

3.4 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.7062	15.6156	16.3634	0.0269		0.8090	0.8090		0.7612	0.7612		2,554.3336	2,554.3336	0.6120		2,569.6322
Total	**1.7062**	**15.6156**	**16.3634**	**0.0269**		**0.8090**	**0.8090**		**0.7612**	**0.7612**		**2,554.3336**	**2,554.3336**	**0.6120**		**2,569.6322**

Palmdale GPU - General Office -Construction Only - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0572	1.4323	0.4833	5.7800e-003	0.1897	0.0138	0.2035	0.0546	0.0132	0.0678		620.7386	620.7386	0.0207	0.0894	647.9009
Worker	0.1595	0.1090	1.6563	4.1600e-003	0.4518	2.9600e-003	0.4548	0.1198	2.7300e-003	0.1226		420.4966	420.4966	0.0131	0.0110	424.0955
Total	**0.2167**	**1.5413**	**2.1396**	**9.9400e-003**	**0.6415**	**0.0168**	**0.6583**	**0.1745**	**0.0159**	**0.1904**		**1,041.2352**	**1,041.2352**	**0.0339**	**0.1004**	**1,071.9964**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.2840	1.2307	15.9634	0.0244		0.0379	0.0379		0.0379	0.0379	0.0000	2,346.8559	2,346.8559	0.5871		2,361.5338
Total	**0.2840**	**1.2307**	**15.9634**	**0.0244**		**0.0379**	**0.0379**		**0.0379**	**0.0379**	**0.0000**	**2,346.8559**	**2,346.8559**	**0.5871**		**2,361.5338**

Palmdale GPU - General Office -Construction Only - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0572	1.4323	0.4833	5.7800e-003	0.1897	0.0138	0.2035	0.0546	0.0132	0.0678		620.7386	620.7386	0.0207	0.0894	647.9009
Worker	0.1595	0.1090	1.6563	4.1600e-003	0.4518	2.9600e-003	0.4548	0.1198	2.7300e-003	0.1226		420.4966	420.4966	0.0131	0.0110	424.0955
Total	**0.2167**	**1.5413**	**2.1396**	**9.9400e-003**	**0.6415**	**0.0168**	**0.6583**	**0.1745**	**0.0159**	**0.1904**		**1,041.2352**	**1,041.2352**	**0.0339**	**0.1004**	**1,071.9964**

3.5 Paving - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.9765	9.5221	12.1940	0.0189		0.4877	0.4877		0.4504	0.4504		1,805.1297	1,805.1297	0.5672		1,819.3091
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.9765**	**9.5221**	**12.1940**	**0.0189**		**0.4877**	**0.4877**		**0.4504**	**0.4504**		**1,805.1297**	**1,805.1297**	**0.5672**		**1,819.3091**

Palmdale GPU - General Office -Construction Only - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0580	0.0396	0.6023	1.5100e-003	0.1643	1.0800e-003	0.1654	0.0436	9.9000e-004	0.0446		152.9079	152.9079	4.7700e-003	3.9900e-003	154.2165
Total	**0.0580**	**0.0396**	**0.6023**	**1.5100e-003**	**0.1643**	**1.0800e-003**	**0.1654**	**0.0436**	**9.9000e-004**	**0.0446**		**152.9079**	**152.9079**	**4.7700e-003**	**3.9900e-003**	**154.2165**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.2194	0.9509	13.5323	0.0179		0.0293	0.0293		0.0293	0.0293	0.0000	1,729.3552	1,729.3552	0.5593		1,743.3379
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.2194**	**0.9509**	**13.5323**	**0.0179**		**0.0293**	**0.0293**		**0.0293**	**0.0293**	**0.0000**	**1,729.3552**	**1,729.3552**	**0.5593**		**1,743.3379**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0580	0.0396	0.6023	1.5100e-003	0.1643	1.0800e-003	0.1654	0.0436	9.9000e-004	0.0446		152.9079	152.9079	4.7700e-003	3.9900e-003	154.2165
Total	**0.0580**	**0.0396**	**0.6023**	**1.5100e-003**	**0.1643**	**1.0800e-003**	**0.1654**	**0.0436**	**9.9000e-004**	**0.0446**		**152.9079**	**152.9079**	**4.7700e-003**	**3.9900e-003**	**154.2165**

3.6 Architectural Coating - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	66.1552					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817		281.4481	281.4481	0.0183		281.9062
Total	**66.3598**	**1.4085**	**1.8136**	**2.9700e-003**		**0.0817**	**0.0817**		**0.0817**	**0.0817**		**281.4481**	**281.4481**	**0.0183**		**281.9062**

Palmdale GPU - General Office -Construction Only - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0319	0.0218	0.3313	8.3000e-004	0.0904	5.9000e-004	0.0910	0.0240	5.5000e-004	0.0245		84.0993	84.0993	2.6200e-003	2.2000e-003	84.8191
Total	**0.0319**	**0.0218**	**0.3313**	**8.3000e-004**	**0.0904**	**5.9000e-004**	**0.0910**	**0.0240**	**5.5000e-004**	**0.0245**		**84.0993**	**84.0993**	**2.6200e-003**	**2.2000e-003**	**84.8191**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	66.1552					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.0297	0.1288	1.8324	2.9700e-003		3.9600e-003	3.9600e-003		3.9600e-003	3.9600e-003	0.0000	281.4481	281.4481	0.0183		281.9062
Total	**66.1849**	**0.1288**	**1.8324**	**2.9700e-003**		**3.9600e-003**	**3.9600e-003**		**3.9600e-003**	**3.9600e-003**	**0.0000**	**281.4481**	**281.4481**	**0.0183**		**281.9062**

Palmdale GPU - General Office -Construction Only - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0319	0.0218	0.3313	8.3000e-004	0.0904	5.9000e-004	0.0910	0.0240	5.5000e-004	0.0245		84.0993	84.0993	2.6200e-003	2.2000e-003	84.8191
Total	**0.0319**	**0.0218**	**0.3313**	**8.3000e-004**	**0.0904**	**5.9000e-004**	**0.0910**	**0.0240**	**5.5000e-004**	**0.0245**		**84.0993**	**84.0993**	**2.6200e-003**	**2.2000e-003**	**84.8191**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Office Building	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
General Office Building	9.50	7.30	7.30	33.00	48.00	19.00	77	19	4

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Office Building	0.544785	0.062844	0.187478	0.127235	0.023089	0.006083	0.010475	0.008012	0.000925	0.000611	0.024394	0.000698	0.003374

5.0 Energy Detail

Historical Energy Use: N

Palmdale GPU - General Office -Construction Only - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
General Office Building	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
General Office Building	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	1.6200e-003	1.6000e-004	0.0175	0.0000		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005		0.0375	0.0375	1.0000e-004		0.0399
Unmitigated	1.6200e-003	1.6000e-004	0.0175	0.0000		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005		0.0375	0.0375	1.0000e-004		0.0399

Palmdale GPU - General Office -Construction Only - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.6200e-003	1.6000e-004	0.0175	0.0000		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005		0.0375	0.0375	1.0000e-004		0.0399
Total	**1.6200e-003**	**1.6000e-004**	**0.0175**	**0.0000**		**6.0000e-005**	**6.0000e-005**		**6.0000e-005**	**6.0000e-005**		**0.0375**	**0.0375**	**1.0000e-004**		**0.0399**

Palmdale GPU - General Office -Construction Only - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.6200e-003	1.6000e-004	0.0175	0.0000		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005		0.0375	0.0375	1.0000e-004		0.0399
Total	**1.6200e-003**	**1.6000e-004**	**0.0175**	**0.0000**		**6.0000e-005**	**6.0000e-005**		**6.0000e-005**	**6.0000e-005**		**0.0375**	**0.0375**	**1.0000e-004**		**0.0399**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Palmdale GPU - General Office -Construction Only - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Palmdale GPU - General Office -Construction Only - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Palmdale GPU - General Office -Construction Only

Los Angeles-Mojave Desert County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
General Office Building	171.28	1000sqft	3.93	171,275.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	9			**Operational Year**	2023
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	390.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics - See Assumptions

Land Use - See Assumptions

Construction Phase - See Assumptions

Demolition - See Assumptions

Architectural Coating - Based on AVAQMD requirements for VOC content

Vehicle Trips - Operational Emissions Modeled Separately

Consumer Products - Operational Emissions Modeled Separately

Area Coating - Operational Emissions Modeled Separately

Landscape Equipment - Operational Emissions Modeled Separately

Energy Use - Operational Emissions Modeled Separately

Water And Wastewater - Operational Emissions Modeled Separately

Solid Waste - Operational Emissions Modeled Separately

Palmdale GPU - General Office -Construction Only - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Construction Off-road Equipment Mitigation - Water 2x daily based on AVAQMD regulations for dust control; not mitigation

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	250.00	150.00
tblArchitecturalCoating	EF_Nonresidential_Interior	250.00	50.00
tblAreaCoating	ReapplicationRatePercent	10	0
tblConstEquipMitigation	FuelType	Diesel	Electrical
tblConstEquipMitigation	FuelType	Diesel	Electrical
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	7.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final

Palmdale GPU - General Office -Construction Only - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	PhaseEndDate	2/23/2023	12/28/2022
tblConstructionPhase	PhaseEndDate	1/4/2023	12/26/2022
tblConstructionPhase	PhaseEndDate	2/16/2022	2/8/2022
tblConstructionPhase	PhaseEndDate	1/30/2023	3/3/2022
tblConstructionPhase	PhaseStartDate	1/31/2023	12/5/2022
tblConstructionPhase	PhaseStartDate	2/17/2022	2/8/2022
tblConstructionPhase	PhaseStartDate	2/5/2022	1/28/2022
tblConstructionPhase	PhaseStartDate	1/5/2023	2/8/2022
tblConsumerProducts	ROG_EF	2.14E-05	0
tblConsumerProducts	ROG_EF_Degreaser	3.542E-07	0
tblConsumerProducts	ROG_EF_PesticidesFertilizers	5.152E-08	0
tblEnergyUse	LightingElect	3.77	0.00
tblEnergyUse	NT24E	4.62	0.00
tblEnergyUse	NT24NG	0.39	0.00
tblEnergyUse	T24E	4.11	0.00
tblEnergyUse	T24NG	9.92	0.00
tblLandscapeEquipment	NumberSummerDays	180	0
tblSolidWaste	SolidWasteGenerationRate	159.29	0.00
tblVehicleTrips	ST_TR	2.21	0.00
tblVehicleTrips	SU_TR	0.70	0.00
tblVehicleTrips	WD_TR	9.74	0.00
tblWater	IndoorWaterUseRate	30,442,236.36	0.00
tblWater	OutdoorWaterUseRate	18,658,144.86	0.00

Palmdale GPU - General Office -Construction Only - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2022	68.3246	47.6811	46.8481	0.0877	8.0116	2.2562	10.2678	3.6755	2.0948	5.7703	0.0000	8,504.3791	8,504.3791	2.1508	0.1087	8,590.5437
Maximum	**68.3246**	**47.6811**	**46.8481**	**0.0877**	**8.0116**	**2.2562**	**10.2678**	**3.6755**	**2.0948**	**5.7703**	**0.0000**	**8,504.3791**	**8,504.3791**	**2.1508**	**0.1087**	**8,590.5437**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2022	66.7276	5.4436	50.2663	0.0841	4.1162	0.1343	4.2504	1.7919	0.1333	1.9251	0.0000	8,221.1269	8,221.1269	2.1181	0.1087	8,306.4742
Maximum	**66.7276**	**5.4436**	**50.2663**	**0.0841**	**4.1162**	**0.1343**	**4.2504**	**1.7919**	**0.1333**	**1.9251**	**0.0000**	**8,221.1269**	**8,221.1269**	**2.1181**	**0.1087**	**8,306.4742**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e

Palmdale GPU - General Office -Construction Only - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Percent Reduction	**2.34**	**88.58**	**-7.30**	**4.13**	**48.62**	**94.05**	**58.60**	**51.25**	**93.64**	**66.64**	**0.00**	**3.33**	**3.33**	**1.52**	**0.00**	**3.31**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	1.6200e-003	1.6000e-004	0.0175	0.0000		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005		0.0375	0.0375	1.0000e-004		0.0399
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total	**1.6200e-003**	**1.6000e-004**	**0.0175**	**0.0000**	**0.0000**	**6.0000e-005**	**6.0000e-005**	**0.0000**	**6.0000e-005**	**6.0000e-005**		**0.0375**	**0.0375**	**1.0000e-004**	**0.0000**	**0.0399**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	1.6200e-003	1.6000e-004	0.0175	0.0000		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005		0.0375	0.0375	1.0000e-004		0.0399
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total	**1.6200e-003**	**1.6000e-004**	**0.0175**	**0.0000**	**0.0000**	**6.0000e-005**	**6.0000e-005**	**0.0000**	**6.0000e-005**	**6.0000e-005**		**0.0375**	**0.0375**	**1.0000e-004**	**0.0000**	**0.0399**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2022	1/28/2022	5	20	
2	Grading	Grading	1/28/2022	2/8/2022	5	8	
3	Building Construction	Building Construction	2/8/2022	12/26/2022	5	230	
4	Paving	Paving	2/8/2022	3/3/2022	5	18	
5	Architectural Coating	Architectural Coating	12/5/2022	12/28/2022	5	18	

Palmdale GPU - General Office -Construction Only - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 8

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 256,913; Non-Residential Outdoor: 85,638; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Paving	Cement and Mortar Mixers	2	6.00	9	0.56
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Building Construction	Cranes	1	7.00	231	0.29
Demolition	Excavators	3	8.00	158	0.38
Grading	Excavators	1	8.00	158	0.38
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Grading	Graders	1	8.00	187	0.41
Paving	Pavers	1	8.00	130	0.42
Paving	Paving Equipment	2	6.00	132	0.36
Paving	Rollers	2	6.00	80	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Grading	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45

Trips and VMT

Palmdale GPU - General Office -Construction Only - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Architectural Coating	1	11.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	55.00	28.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Demolition	6	15.00	0.00	1.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Alternative Fuel for Construction Equipment

Use Cleaner Engines for Construction Equipment

Water Exposed Area

3.2 Demolition - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					8.4300e-003	0.0000	8.4300e-003	1.2800e-003	0.0000	1.2800e-003			0.0000			0.0000
Off-Road	2.6392	25.7194	20.5941	0.0388		1.2427	1.2427		1.1553	1.1553		3,746.7812	3,746.7812	1.0524		3,773.0920
Total	**2.6392**	**25.7194**	**20.5941**	**0.0388**	**8.4300e-003**	**1.2427**	**1.2511**	**1.2800e-003**	**1.1553**	**1.1565**		**3,746.7812**	**3,746.7812**	**1.0524**		**3,773.0920**

Palmdale GPU - General Office -Construction Only - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	2.3000e-004	8.7400e-003	1.9900e-003	3.0000e-005	8.8000e-004	6.0000e-005	9.4000e-004	2.4000e-004	6.0000e-005	3.0000e-004		3.4049	3.4049	1.8000e-004	5.4000e-004	3.5704
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0459	0.0328	0.4198	1.0700e-003	0.1232	8.1000e-004	0.1240	0.0327	7.4000e-004	0.0334		108.6516	108.6516	3.6800e-003	3.2000e-003	109.6966
Total	**0.0462**	**0.0416**	**0.4217**	**1.1000e-003**	**0.1241**	**8.7000e-004**	**0.1250**	**0.0329**	**8.0000e-004**	**0.0337**		**112.0565**	**112.0565**	**3.8600e-003**	**3.7400e-003**	**113.2670**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					3.7900e-003	0.0000	3.7900e-003	5.7000e-004	0.0000	5.7000e-004			0.0000			0.0000
Off-Road	0.4623	2.0032	23.2798	0.0388		0.0616	0.0616		0.0616	0.0616	0.0000	3,746.7812	3,746.7812	1.0524		3,773.0920
Total	**0.4623**	**2.0032**	**23.2798**	**0.0388**	**3.7900e-003**	**0.0616**	**0.0654**	**5.7000e-004**	**0.0616**	**0.0622**	**0.0000**	**3,746.7812**	**3,746.7812**	**1.0524**		**3,773.0920**

Palmdale GPU - General Office -Construction Only - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	2.3000e-004	8.7400e-003	1.9900e-003	3.0000e-005	8.8000e-004	6.0000e-005	9.4000e-004	2.4000e-004	6.0000e-005	3.0000e-004		3.4049	3.4049	1.8000e-004	5.4000e-004	3.5704
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0459	0.0328	0.4198	1.0700e-003	0.1232	8.1000e-004	0.1240	0.0327	7.4000e-004	0.0334		108.6516	108.6516	3.6800e-003	3.2000e-003	109.6966
Total	**0.0462**	**0.0416**	**0.4217**	**1.1000e-003**	**0.1241**	**8.7000e-004**	**0.1250**	**0.0329**	**8.0000e-004**	**0.0337**		**112.0565**	**112.0565**	**3.8600e-003**	**3.7400e-003**	**113.2670**

3.3 Grading - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					7.0826	0.0000	7.0826	3.4247	0.0000	3.4247			0.0000			0.0000
Off-Road	1.9486	20.8551	15.2727	0.0297		0.9409	0.9409		0.8656	0.8656		2,872.0464	2,872.0464	0.9289		2,895.2684
Total	**1.9486**	**20.8551**	**15.2727**	**0.0297**	**7.0826**	**0.9409**	**8.0234**	**3.4247**	**0.8656**	**4.2903**		**2,872.0464**	**2,872.0464**	**0.9289**		**2,895.2684**

Palmdale GPU - General Office -Construction Only - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0459	0.0328	0.4198	1.0700e-003	0.1232	8.1000e-004	0.1240	0.0327	7.4000e-004	0.0334		108.6516	108.6516	3.6800e-003	3.2000e-003	109.6966
Total	**0.0459**	**0.0328**	**0.4198**	**1.0700e-003**	**0.1232**	**8.1000e-004**	**0.1240**	**0.0327**	**7.4000e-004**	**0.0334**		**108.6516**	**108.6516**	**3.6800e-003**	**3.2000e-003**	**109.6966**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					3.1872	0.0000	3.1872	1.5411	0.0000	1.5411			0.0000			0.0000
Off-Road	0.3632	1.5737	17.7527	0.0297		0.0484	0.0484		0.0484	0.0484	0.0000	2,872.0464	2,872.0464	0.9289		2,895.2684
Total	**0.3632**	**1.5737**	**17.7527**	**0.0297**	**3.1872**	**0.0484**	**3.2356**	**1.5411**	**0.0484**	**1.5896**	**0.0000**	**2,872.0464**	**2,872.0464**	**0.9289**		**2,895.2684**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0459	0.0328	0.4198	1.0700e-003	0.1232	8.1000e-004	0.1240	0.0327	7.4000e-004	0.0334		108.6516	108.6516	3.6800e-003	3.2000e-003	109.6966
Total	**0.0459**	**0.0328**	**0.4198**	**1.0700e-003**	**0.1232**	**8.1000e-004**	**0.1240**	**0.0327**	**7.4000e-004**	**0.0334**		**108.6516**	**108.6516**	**3.6800e-003**	**3.2000e-003**	**109.6966**

3.4 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.7062	15.6156	16.3634	0.0269		0.8090	0.8090		0.7612	0.7612		2,554.3336	2,554.3336	0.6120		2,569.6322
Total	**1.7062**	**15.6156**	**16.3634**	**0.0269**		**0.8090**	**0.8090**		**0.7612**	**0.7612**		**2,554.3336**	**2,554.3336**	**0.6120**		**2,569.6322**

Palmdale GPU - General Office -Construction Only - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0566	1.4912	0.4994	5.7800e-003	0.1897	0.0139	0.2036	0.0546	0.0133	0.0679		620.9598	620.9598	0.0207	0.0895	648.1542
Worker	0.1684	0.1204	1.5391	3.9400e-003	0.4518	2.9600e-003	0.4548	0.1198	2.7300e-003	0.1226		398.3892	398.3892	0.0135	0.0117	402.2210
Total	**0.2249**	**1.6116**	**2.0385**	**9.7200e-003**	**0.6415**	**0.0168**	**0.6583**	**0.1745**	**0.0160**	**0.1904**		**1,019.3491**	**1,019.3491**	**0.0342**	**0.1013**	**1,050.3752**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.2840	1.2307	15.9634	0.0244		0.0379	0.0379		0.0379	0.0379	0.0000	2,346.8559	2,346.8559	0.5871		2,361.5338
Total	**0.2840**	**1.2307**	**15.9634**	**0.0244**		**0.0379**	**0.0379**		**0.0379**	**0.0379**	**0.0000**	**2,346.8559**	**2,346.8559**	**0.5871**		**2,361.5338**

Palmdale GPU - General Office -Construction Only - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0566	1.4912	0.4994	5.7800e-003	0.1897	0.0139	0.2036	0.0546	0.0133	0.0679		620.9598	620.9598	0.0207	0.0895	648.1542
Worker	0.1684	0.1204	1.5391	3.9400e-003	0.4518	2.9600e-003	0.4548	0.1198	2.7300e-003	0.1226		398.3892	398.3892	0.0135	0.0117	402.2210
Total	**0.2249**	**1.6116**	**2.0385**	**9.7200e-003**	**0.6415**	**0.0168**	**0.6583**	**0.1745**	**0.0160**	**0.1904**		**1,019.3491**	**1,019.3491**	**0.0342**	**0.1013**	**1,050.3752**

3.5 Paving - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.9765	9.5221	12.1940	0.0189		0.4877	0.4877		0.4504	0.4504		1,805.1297	1,805.1297	0.5672		1,819.3091
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.9765**	**9.5221**	**12.1940**	**0.0189**		**0.4877**	**0.4877**		**0.4504**	**0.4504**		**1,805.1297**	**1,805.1297**	**0.5672**		**1,819.3091**

Palmdale GPU - General Office -Construction Only - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0612	0.0438	0.5597	1.4300e-003	0.1643	1.0800e-003	0.1654	0.0436	9.9000e-004	0.0446		144.8688	144.8688	4.9000e-003	4.2600e-003	146.2622
Total	**0.0612**	**0.0438**	**0.5597**	**1.4300e-003**	**0.1643**	**1.0800e-003**	**0.1654**	**0.0436**	**9.9000e-004**	**0.0446**		**144.8688**	**144.8688**	**4.9000e-003**	**4.2600e-003**	**146.2622**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.2194	0.9509	13.5323	0.0179		0.0293	0.0293		0.0293	0.0293	0.0000	1,729.3552	1,729.3552	0.5593		1,743.3379
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.2194**	**0.9509**	**13.5323**	**0.0179**		**0.0293**	**0.0293**		**0.0293**	**0.0293**	**0.0000**	**1,729.3552**	**1,729.3552**	**0.5593**		**1,743.3379**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0612	0.0438	0.5597	1.4300e-003	0.1643	1.0800e-003	0.1654	0.0436	9.9000e-004	0.0446		144.8688	144.8688	4.9000e-003	4.2600e-003	146.2622
Total	**0.0612**	**0.0438**	**0.5597**	**1.4300e-003**	**0.1643**	**1.0800e-003**	**0.1654**	**0.0436**	**9.9000e-004**	**0.0446**		**144.8688**	**144.8688**	**4.9000e-003**	**4.2600e-003**	**146.2622**

3.6 Architectural Coating - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	66.1552					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817		281.4481	281.4481	0.0183		281.9062
Total	**66.3598**	**1.4085**	**1.8136**	**2.9700e-003**		**0.0817**	**0.0817**		**0.0817**	**0.0817**		**281.4481**	**281.4481**	**0.0183**		**281.9062**

Palmdale GPU - General Office -Construction Only - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0337	0.0241	0.3078	7.9000e-004	0.0904	5.9000e-004	0.0910	0.0240	5.5000e-004	0.0245		79.6779	79.6779	2.7000e-003	2.3500e-003	80.4442
Total	**0.0337**	**0.0241**	**0.3078**	**7.9000e-004**	**0.0904**	**5.9000e-004**	**0.0910**	**0.0240**	**5.5000e-004**	**0.0245**		**79.6779**	**79.6779**	**2.7000e-003**	**2.3500e-003**	**80.4442**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	66.1552					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.0297	0.1288	1.8324	2.9700e-003		3.9600e-003	3.9600e-003		3.9600e-003	3.9600e-003	0.0000	281.4481	281.4481	0.0183		281.9062
Total	**66.1849**	**0.1288**	**1.8324**	**2.9700e-003**		**3.9600e-003**	**3.9600e-003**		**3.9600e-003**	**3.9600e-003**	**0.0000**	**281.4481**	**281.4481**	**0.0183**		**281.9062**

Palmdale GPU - General Office -Construction Only - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0337	0.0241	0.3078	7.9000e-004	0.0904	5.9000e-004	0.0910	0.0240	5.5000e-004	0.0245		79.6779	79.6779	2.7000e-003	2.3500e-003	80.4442
Total	**0.0337**	**0.0241**	**0.3078**	**7.9000e-004**	**0.0904**	**5.9000e-004**	**0.0910**	**0.0240**	**5.5000e-004**	**0.0245**		**79.6779**	**79.6779**	**2.7000e-003**	**2.3500e-003**	**80.4442**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
General Office Building	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
General Office Building	9.50	7.30	7.30	33.00	48.00	19.00	77	19	4

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
General Office Building	0.544785	0.062844	0.187478	0.127235	0.023089	0.006083	0.010475	0.008012	0.000925	0.000611	0.024394	0.000698	0.003374

5.0 Energy Detail

Historical Energy Use: N

Palmdale GPU - General Office -Construction Only - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
General Office Building	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
General Office Building	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	1.6200e-003	1.6000e-004	0.0175	0.0000		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005		0.0375	0.0375	1.0000e-004		0.0399
Unmitigated	1.6200e-003	1.6000e-004	0.0175	0.0000		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005		0.0375	0.0375	1.0000e-004		0.0399

Palmdale GPU - General Office -Construction Only - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.6200e-003	1.6000e-004	0.0175	0.0000		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005		0.0375	0.0375	1.0000e-004		0.0399
Total	**1.6200e-003**	**1.6000e-004**	**0.0175**	**0.0000**		**6.0000e-005**	**6.0000e-005**		**6.0000e-005**	**6.0000e-005**		**0.0375**	**0.0375**	**1.0000e-004**		**0.0399**

Palmdale GPU - General Office -Construction Only - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	1.6200e-003	1.6000e-004	0.0175	0.0000		6.0000e-005	6.0000e-005		6.0000e-005	6.0000e-005		0.0375	0.0375	1.0000e-004		0.0399
Total	**1.6200e-003**	**1.6000e-004**	**0.0175**	**0.0000**		**6.0000e-005**	**6.0000e-005**		**6.0000e-005**	**6.0000e-005**		**0.0375**	**0.0375**	**1.0000e-004**		**0.0399**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Palmdale GPU - General Office -Construction Only - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Palmdale GPU - Government Office - Construction - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Palmdale GPU - Government Office - Construction

Los Angeles-Mojave Desert County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Government Office Building	7.30	1000sqft	0.17	7,300.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	9			**Operational Year**	2023
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	390.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics - See Assumptions

Land Use - See Assumptions

Construction Phase - See Assumptions

Demolition - See Assumptions

Architectural Coating - Based on AVAQMD requirements for VOC content

Vehicle Trips - Operational Emissions Modeled Separately

Consumer Products - Operational Emissions Modeled Separately

Area Coating - Operational Emissions Modeled Separately

Landscape Equipment - Operational Emissions Modeled Separately

Energy Use - Operational Emissions Modeled Separately

Water And Wastewater - Operational Emissions Modeled Separately

Solid Waste - Operational Emissions Modeled Separately

Palmdale GPU - Government Office - Construction - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Construction Off-road Equipment Mitigation - Water 2x daily based on AVAQMD regulations for dust control; not mitigation

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	250.00	150.00
tblArchitecturalCoating	EF_Nonresidential_Interior	250.00	50.00
tblAreaCoating	ReapplicationRatePercent	10	0
tblConstEquipMitigation	FuelType	Diesel	Electrical
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	PhaseEndDate	6/22/2022	6/8/2022
tblConstructionPhase	PhaseEndDate	6/8/2022	6/7/2022
tblConstructionPhase	PhaseEndDate	1/19/2022	1/18/2022
tblConstructionPhase	PhaseEndDate	6/15/2022	1/25/2022
tblConstructionPhase	PhaseStartDate	6/16/2022	6/2/2022
tblConstructionPhase	PhaseStartDate	1/20/2022	1/19/2022
tblConstructionPhase	PhaseStartDate	1/18/2022	1/15/2022

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

tblConstructionPhase	PhaseStartDate	6/9/2022	1/19/2022
tblConsumerProducts	ROG_EF	2.14E-05	0
tblConsumerProducts	ROG_EF_Degreaser	3.542E-07	0
tblConsumerProducts	ROG_EF_PesticidesFertilizers	5.152E-08	0
tblEnergyUse	LightingElect	3.77	0.00
tblEnergyUse	NT24E	4.62	0.00
tblEnergyUse	NT24NG	0.39	0.00
tblEnergyUse	T24E	4.11	0.00
tblEnergyUse	T24NG	9.92	0.00
tblLandscapeEquipment	NumberSummerDays	180	0
tblSolidWaste	SolidWasteGenerationRate	6.79	0.00
tblVehicleTrips	WD_TR	22.59	0.00
tblWater	IndoorWaterUseRate	1,450,215.71	0.00
tblWater	OutdoorWaterUseRate	888,841.88	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2022	0.0672	0.4197	0.4304	7.1000e-004	0.0111	0.0218	0.0329	3.7100e-003	0.0201	0.0239	0.0000	62.8937	62.8937	0.0184	3.5000e-004	63.4574
Maximum	**0.0672**	**0.4197**	**0.4304**	**7.1000e-004**	**0.0111**	**0.0218**	**0.0329**	**3.7100e-003**	**0.0201**	**0.0239**	**0.0000**	**62.8937**	**62.8937**	**0.0184**	**3.5000e-004**	**63.4574**

Palmdale GPU - Government Office - Construction - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2022	0.0499	0.2275	0.4483	7.1000e-004	6.2400e-003	0.0115	0.0178	2.0100e-003	0.0106	0.0126	0.0000	62.5500	62.5500	0.0184	3.5000e-004	63.1127
Maximum	**0.0499**	**0.2275**	**0.4483**	**7.1000e-004**	**6.2400e-003**	**0.0115**	**0.0178**	**2.0100e-003**	**0.0106**	**0.0126**	**0.0000**	**62.5500**	**62.5500**	**0.0184**	**3.5000e-004**	**63.1127**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**25.70**	**45.79**	**-4.16**	**0.00**	**43.83**	**47.20**	**46.07**	**45.82**	**47.22**	**47.02**	**0.00**	**0.55**	**0.55**	**0.22**	**0.00**	**0.54**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	**1-1-2022**	**3-31-2022**	0.2742	0.1564
2	**4-1-2022**	**6-30-2022**	0.2182	0.1249
		Highest	0.2742	0.1564

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					

Palmdale GPU - Government Office - Construction - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Area	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2022	1/14/2022	5	10	
2	Grading	Grading	1/15/2022	1/18/2022	5	2	
3	Building Construction	Building Construction	1/19/2022	6/7/2022	5	100	

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

4	Paving	Paving	1/19/2022	1/25/2022	5	5	
5	Architectural Coating	Architectural Coating	6/2/2022	6/8/2022	5	5	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 1.5

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 10,950; Non-Residential Outdoor: 3,650; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Paving	Cement and Mortar Mixers	4	6.00	9	0.56
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Building Construction	Cranes	1	4.00	231	0.29
Building Construction	Forklifts	2	6.00	89	0.20
Grading	Graders	1	6.00	187	0.41
Paving	Pavers	1	7.00	130	0.42
Paving	Rollers	1	7.00	80	0.38
Demolition	Rubber Tired Dozers	1	1.00	247	0.40
Grading	Rubber Tired Dozers	1	6.00	247	0.40
Building Construction	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Demolition	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Grading	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Paving	Tractors/Loaders/Backhoes	1	7.00	97	0.37

Trips and VMT

Palmdale GPU - Government Office - Construction - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Architectural Coating	1	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	5	2.00	1.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Demolition	4	10.00	0.00	33.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	3	8.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Alternative Fuel for Construction Equipment

Use Cleaner Engines for Construction Equipment

Water Exposed Area

3.2 Demolition - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					3.5400e-003	0.0000	3.5400e-003	5.4000e-004	0.0000	5.4000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.5500e-003	0.0321	0.0374	6.0000e-005		1.6900e-003	1.6900e-003		1.6100e-003	1.6100e-003	0.0000	5.2068	5.2068	9.6000e-004	0.0000	5.2308
Total	**3.5500e-003**	**0.0321**	**0.0374**	**6.0000e-005**	**3.5400e-003**	**1.6900e-003**	**5.2300e-003**	**5.4000e-004**	**1.6100e-003**	**2.1500e-003**	**0.0000**	**5.2068**	**5.2068**	**9.6000e-004**	**0.0000**	**5.2308**

Palmdale GPU - Government Office - Construction - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	8.0000e-005	2.9200e-003	6.5000e-004	1.0000e-005	2.8000e-004	2.0000e-005	3.0000e-004	8.0000e-005	2.0000e-005	1.0000e-004	0.0000	1.0192	1.0192	5.0000e-005	1.6000e-004	1.0687
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.4000e-004	1.1000e-004	1.4300e-003	0.0000	4.0000e-004	0.0000	4.1000e-004	1.1000e-004	0.0000	1.1000e-004	0.0000	0.3356	0.3356	1.0000e-005	1.0000e-005	0.3388
Total	**2.2000e-004**	**3.0300e-003**	**2.0800e-003**	**1.0000e-005**	**6.8000e-004**	**2.0000e-005**	**7.1000e-004**	**1.9000e-004**	**2.0000e-005**	**2.1000e-004**	**0.0000**	**1.3548**	**1.3548**	**6.0000e-005**	**1.7000e-004**	**1.4075**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					1.5900e-003	0.0000	1.5900e-003	2.4000e-004	0.0000	2.4000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.0700e-003	0.0194	0.0383	6.0000e-005		9.8000e-004	9.8000e-004		9.0000e-004	9.0000e-004	0.0000	5.2068	5.2068	9.6000e-004	0.0000	5.2308
Total	**2.0700e-003**	**0.0194**	**0.0383**	**6.0000e-005**	**1.5900e-003**	**9.8000e-004**	**2.5700e-003**	**2.4000e-004**	**9.0000e-004**	**1.1400e-003**	**0.0000**	**5.2068**	**5.2068**	**9.6000e-004**	**0.0000**	**5.2308**

Palmdale GPU - Government Office - Construction - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	8.0000e-005	2.9200e-003	6.5000e-004	1.0000e-005	2.8000e-004	2.0000e-005	3.0000e-004	8.0000e-005	2.0000e-005	1.0000e-004	0.0000	1.0192	1.0192	5.0000e-005	1.6000e-004	1.0687
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.4000e-004	1.1000e-004	1.4300e-003	0.0000	4.0000e-004	0.0000	4.1000e-004	1.1000e-004	0.0000	1.1000e-004	0.0000	0.3356	0.3356	1.0000e-005	1.0000e-005	0.3388
Total	**2.2000e-004**	**3.0300e-003**	**2.0800e-003**	**1.0000e-005**	**6.8000e-004**	**2.0000e-005**	**7.1000e-004**	**1.9000e-004**	**2.0000e-005**	**2.1000e-004**	**0.0000**	**1.3548**	**1.3548**	**6.0000e-005**	**1.7000e-004**	**1.4075**

3.3 Grading - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					5.3100e-003	0.0000	5.3100e-003	2.5700e-003	0.0000	2.5700e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.0800e-003	0.0120	5.9400e-003	1.0000e-005		5.2000e-004	5.2000e-004		4.8000e-004	4.8000e-004	0.0000	1.2381	1.2381	4.0000e-004	0.0000	1.2482
Total	**1.0800e-003**	**0.0120**	**5.9400e-003**	**1.0000e-005**	**5.3100e-003**	**5.2000e-004**	**5.8300e-003**	**2.5700e-003**	**4.8000e-004**	**3.0500e-003**	**0.0000**	**1.2381**	**1.2381**	**4.0000e-004**	**0.0000**	**1.2482**

Palmdale GPU - Government Office - Construction - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.0000e-005	2.0000e-005	2.3000e-004	0.0000	6.0000e-005	0.0000	6.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0537	0.0537	0.0000	0.0000	0.0542
Total	**2.0000e-005**	**2.0000e-005**	**2.3000e-004**	**0.0000**	**6.0000e-005**	**0.0000**	**6.0000e-005**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0537**	**0.0537**	**0.0000**	**0.0000**	**0.0542**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					2.3900e-003	0.0000	2.3900e-003	1.1600e-003	0.0000	1.1600e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	8.3000e-004	8.3300e-003	6.8800e-003	1.0000e-005		4.0000e-004	4.0000e-004		3.7000e-004	3.7000e-004	0.0000	1.2381	1.2381	4.0000e-004	0.0000	1.2482
Total	**8.3000e-004**	**8.3300e-003**	**6.8800e-003**	**1.0000e-005**	**2.3900e-003**	**4.0000e-004**	**2.7900e-003**	**1.1600e-003**	**3.7000e-004**	**1.5300e-003**	**0.0000**	**1.2381**	**1.2381**	**4.0000e-004**	**0.0000**	**1.2482**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.0000e-005	2.0000e-005	2.3000e-004	0.0000	6.0000e-005	0.0000	6.0000e-005	2.0000e-005	0.0000	2.0000e-005	0.0000	0.0537	0.0537	0.0000	0.0000	0.0542
Total	**2.0000e-005**	**2.0000e-005**	**2.3000e-004**	**0.0000**	**6.0000e-005**	**0.0000**	**6.0000e-005**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**0.0000**	**0.0537**	**0.0537**	**0.0000**	**0.0000**	**0.0542**

3.4 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0343	0.3513	0.3576	5.7000e-004		0.0186	0.0186		0.0171	0.0171	0.0000	50.0739	50.0739	0.0162	0.0000	50.4787
Total	**0.0343**	**0.3513**	**0.3576**	**5.7000e-004**		**0.0186**	**0.0186**		**0.0171**	**0.0171**	**0.0000**	**50.0739**	**50.0739**	**0.0162**	**0.0000**	**50.4787**

Palmdale GPU - Government Office - Construction - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.0000e-004	2.6900e-003	8.8000e-004	1.0000e-005	3.3000e-004	2.0000e-005	3.6000e-004	1.0000e-004	2.0000e-005	1.2000e-004	0.0000	1.0057	1.0057	3.0000e-005	1.5000e-004	1.0498
Worker	2.8000e-004	2.2000e-004	2.8700e-003	1.0000e-005	8.1000e-004	1.0000e-005	8.1000e-004	2.1000e-004	0.0000	2.2000e-004	0.0000	0.6712	0.6712	2.0000e-005	2.0000e-005	0.6776
Total	**3.8000e-004**	**2.9100e-003**	**3.7500e-003**	**2.0000e-005**	**1.1400e-003**	**3.0000e-005**	**1.1700e-003**	**3.1000e-004**	**2.0000e-005**	**3.4000e-004**	**0.0000**	**1.6769**	**1.6769**	**5.0000e-005**	**1.7000e-004**	**1.7274**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0197	0.1814	0.3759	5.7000e-004		9.4400e-003	9.4400e-003		8.7200e-003	8.7200e-003	0.0000	50.0738	50.0738	0.0162	0.0000	50.4787
Total	**0.0197**	**0.1814**	**0.3759**	**5.7000e-004**		**9.4400e-003**	**9.4400e-003**		**8.7200e-003**	**8.7200e-003**	**0.0000**	**50.0738**	**50.0738**	**0.0162**	**0.0000**	**50.4787**

Palmdale GPU - Government Office - Construction - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.0000e-004	2.6900e-003	8.8000e-004	1.0000e-005	3.3000e-004	2.0000e-005	3.6000e-004	1.0000e-004	2.0000e-005	1.2000e-004	0.0000	1.0057	1.0057	3.0000e-005	1.5000e-004	1.0498
Worker	2.8000e-004	2.2000e-004	2.8700e-003	1.0000e-005	8.1000e-004	1.0000e-005	8.1000e-004	2.1000e-004	0.0000	2.2000e-004	0.0000	0.6712	0.6712	2.0000e-005	2.0000e-005	0.6776
Total	**3.8000e-004**	**2.9100e-003**	**3.7500e-003**	**2.0000e-005**	**1.1400e-003**	**3.0000e-005**	**1.1700e-003**	**3.1000e-004**	**2.0000e-005**	**3.4000e-004**	**0.0000**	**1.6769**	**1.6769**	**5.0000e-005**	**1.7000e-004**	**1.7274**

3.5 Paving - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	1.6200e-003	0.0148	0.0176	3.0000e-005		7.4000e-004	7.4000e-004		6.9000e-004	6.9000e-004	0.0000	2.3492	2.3492	6.8000e-004	0.0000	2.3663
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**1.6200e-003**	**0.0148**	**0.0176**	**3.0000e-005**		**7.4000e-004**	**7.4000e-004**		**6.9000e-004**	**6.9000e-004**	**0.0000**	**2.3492**	**2.3492**	**6.8000e-004**	**0.0000**	**2.3663**

Palmdale GPU - Government Office - Construction - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.3000e-004	1.0000e-004	1.2900e-003	0.0000	3.6000e-004	0.0000	3.6000e-004	1.0000e-004	0.0000	1.0000e-004	0.0000	0.3020	0.3020	1.0000e-005	1.0000e-005	0.3049
Total	**1.3000e-004**	**1.0000e-004**	**1.2900e-003**	**0.0000**	**3.6000e-004**	**0.0000**	**3.6000e-004**	**1.0000e-004**	**0.0000**	**1.0000e-004**	**0.0000**	**0.3020**	**0.3020**	**1.0000e-005**	**1.0000e-005**	**0.3049**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	1.1800e-003	0.0120	0.0153	2.0000e-005		6.3000e-004	6.3000e-004		5.8000e-004	5.8000e-004	0.0000	2.0055	2.0055	6.5000e-004	0.0000	2.0217
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**1.1800e-003**	**0.0120**	**0.0153**	**2.0000e-005**		**6.3000e-004**	**6.3000e-004**		**5.8000e-004**	**5.8000e-004**	**0.0000**	**2.0055**	**2.0055**	**6.5000e-004**	**0.0000**	**2.0217**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.3000e-004	1.0000e-004	1.2900e-003	0.0000	3.6000e-004	0.0000	3.6000e-004	1.0000e-004	0.0000	1.0000e-004	0.0000	0.3020	0.3020	1.0000e-005	1.0000e-005	0.3049
Total	**1.3000e-004**	**1.0000e-004**	**1.2900e-003**	**0.0000**	**3.6000e-004**	**0.0000**	**3.6000e-004**	**1.0000e-004**	**0.0000**	**1.0000e-004**	**0.0000**	**0.3020**	**0.3020**	**1.0000e-005**	**1.0000e-005**	**0.3049**

3.6 Architectural Coating - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.0254					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	5.1000e-004	3.5200e-003	4.5300e-003	1.0000e-005		2.0000e-004	2.0000e-004		2.0000e-004	2.0000e-004	0.0000	0.6383	0.6383	4.0000e-005	0.0000	0.6394
Total	**0.0259**	**3.5200e-003**	**4.5300e-003**	**1.0000e-005**		**2.0000e-004**	**2.0000e-004**		**2.0000e-004**	**2.0000e-004**	**0.0000**	**0.6383**	**0.6383**	**4.0000e-005**	**0.0000**	**0.6394**

Palmdale GPU - Government Office - Construction - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.0254					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	7.0000e-005	3.2000e-004	4.5800e-003	1.0000e-005		1.0000e-005	1.0000e-005		1.0000e-005	1.0000e-005	0.0000	0.6383	0.6383	4.0000e-005	0.0000	0.6394
Total	**0.0255**	**3.2000e-004**	**4.5800e-003**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**		**1.0000e-005**	**1.0000e-005**	**0.0000**	**0.6383**	**0.6383**	**4.0000e-005**	**0.0000**	**0.6394**

Palmdale GPU - Government Office - Construction - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Palmdale GPU - Government Office - Construction - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Government Office Building	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Government Office Building	9.50	7.30	7.30	33.00	62.00	5.00	50	34	16

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Government Office Building	0.544785	0.062844	0.187478	0.127235	0.023089	0.006083	0.010475	0.008012	0.000925	0.000611	0.024394	0.000698	0.003374

5.0 Energy Detail

Historical Energy Use: N

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Government Office Building	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Government Office Building	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use		Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	tons/yr	MT/yr			
Government Office Building	0		0.0000	0.0000	0.0000	0.0000
Total			**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Electricity Use		Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	tons/yr	MT/yr			
Government Office Building	0		0.0000	0.0000	0.0000	0.0000
Total			**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Palmdale GPU - Government Office - Construction - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Palmdale GPU - Government Office - Construction - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

7.0 Water Detail

7.1 Mitigation Measures Water

		Total CO2	CH4	N2O	CO2e
Category	tons/yr	MT/yr			
Mitigated		0.0000	0.0000	0.0000	0.0000
Unmitigated		0.0000	0.0000	0.0000	0.0000

Palmdale GPU - Government Office - Construction - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use		Total CO2	CH4	N2O	CO2e
Land Use	Mgal	tons/yr	MT/yr			
Government Office Building	0 / 0		0.0000	0.0000	0.0000	0.0000
Total			**0.0000**	**0.0000**	**0.0000**	**0.0000**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Mitigated

	Indoor/Outdoor Use		Total CO2	CH4	N2O	CO2e
Land Use	Mgal	tons/yr	MT/yr			
Government Office Building	0 / 0		0.0000	0.0000	0.0000	0.0000
Total			**0.0000**	**0.0000**	**0.0000**	**0.0000**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

		Total CO2	CH4	N2O	CO2e
	tons/yr	MT/yr			
Mitigated		0.0000	0.0000	0.0000	0.0000
Unmitigated		0.0000	0.0000	0.0000	0.0000

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

8.2 Waste by Land Use

Unmitigated

	Waste Disposed		Total CO2	CH4	N2O	CO2e
Land Use	tons	tons/yr	MT/yr			
Government Office Building	0		0.0000	0.0000	0.0000	0.0000
Total			**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Waste Disposed		Total CO2	CH4	N2O	CO2e
Land Use	tons	tons/yr	MT/yr			
Government Office Building	0		0.0000	0.0000	0.0000	0.0000
Total			**0.0000**	**0.0000**	**0.0000**	**0.0000**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

Palmdale GPU - Government Office - Construction - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Palmdale GPU - Government Office - Construction - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Palmdale GPU - Government Office - Construction

Los Angeles-Mojave Desert County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Government Office Building	7.30	1000sqft	0.17	7,300.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	9			**Operational Year**	2023
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	390.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics - See Assumptions

Land Use - See Assumptions

Construction Phase - See Assumptions

Demolition - See Assumptions

Architectural Coating - Based on AVAQMD requirements for VOC content

Vehicle Trips - Operational Emissions Modeled Separately

Consumer Products - Operational Emissions Modeled Separately

Area Coating - Operational Emissions Modeled Separately

Landscape Equipment - Operational Emissions Modeled Separately

Energy Use - Operational Emissions Modeled Separately

Water And Wastewater - Operational Emissions Modeled Separately

Solid Waste - Operational Emissions Modeled Separately

Palmdale GPU - Government Office - Construction - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Construction Off-road Equipment Mitigation - Water 2x daily based on AVAQMD regulations for dust control; not mitigation

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	250.00	150.00
tblArchitecturalCoating	EF_Nonresidential_Interior	250.00	50.00
tblAreaCoating	ReapplicationRatePercent	10	0
tblConstEquipMitigation	FuelType	Diesel	Electrical
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	PhaseEndDate	6/22/2022	6/8/2022
tblConstructionPhase	PhaseEndDate	6/8/2022	6/7/2022
tblConstructionPhase	PhaseEndDate	1/19/2022	1/18/2022
tblConstructionPhase	PhaseEndDate	6/15/2022	1/25/2022
tblConstructionPhase	PhaseStartDate	6/16/2022	6/2/2022
tblConstructionPhase	PhaseStartDate	1/20/2022	1/19/2022
tblConstructionPhase	PhaseStartDate	1/18/2022	1/15/2022

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

tblConstructionPhase	PhaseStartDate	6/9/2022	1/19/2022
tblConsumerProducts	ROG_EF	2.14E-05	0
tblConsumerProducts	ROG_EF_Degreaser	3.542E-07	0
tblConsumerProducts	ROG_EF_PesticidesFertilizers	5.152E-08	0
tblEnergyUse	LightingElect	3.77	0.00
tblEnergyUse	NT24E	4.62	0.00
tblEnergyUse	NT24NG	0.39	0.00
tblEnergyUse	T24E	4.11	0.00
tblEnergyUse	T24NG	9.92	0.00
tblLandscapeEquipment	NumberSummerDays	180	0
tblSolidWaste	SolidWasteGenerationRate	6.79	0.00
tblVehicleTrips	WD_TR	22.59	0.00
tblWater	IndoorWaterUseRate	1,450,215.71	0.00
tblWater	OutdoorWaterUseRate	888,841.88	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2022	11.0493	13.0340	14.8079	0.0244	5.3777	0.6696	5.8954	2.5860	0.6195	3.0623	0.0000	2,315.8301	2,315.8301	0.6643	0.0376	2,334.5779
Maximum	**11.0493**	**13.0340**	**14.8079**	**0.0244**	**5.3777**	**0.6696**	**5.8954**	**2.5860**	**0.6195**	**3.0623**	**0.0000**	**2,315.8301**	**2,315.8301**	**0.6643**	**0.0376**	**2,334.5779**

Palmdale GPU - Government Office - Construction - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2022	10.5813	8.5310	14.2477	0.0223	2.4561	0.4434	2.8565	1.1733	0.4087	1.5423	0.0000	2,164.2812	2,164.2812	0.6485	0.0376	2,182.6357
Maximum	**10.5813**	**8.5310**	**14.2477**	**0.0223**	**2.4561**	**0.4434**	**2.8565**	**1.1733**	**0.4087**	**1.5423**	**0.0000**	**2,164.2812**	**2,164.2812**	**0.6485**	**0.0376**	**2,182.6357**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**4.24**	**34.55**	**3.78**	**8.77**	**54.33**	**33.77**	**51.55**	**54.63**	**34.03**	**49.63**	**0.00**	**6.54**	**6.54**	**2.37**	**0.00**	**6.51**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	7.0000e-005	1.0000e-005	7.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.6000e-003	1.6000e-003	0.0000		1.7000e-003
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

Palmdale GPU - Government Office - Construction - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Total	**7.0000e-005**	**1.0000e-005**	**7.5000e-004**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**1.6000e-003**	**1.6000e-003**	**0.0000**	**0.0000**	**1.7000e-003**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	7.0000e-005	1.0000e-005	7.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.6000e-003	1.6000e-003	0.0000		1.7000e-003
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total	**7.0000e-005**	**1.0000e-005**	**7.5000e-004**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**1.6000e-003**	**1.6000e-003**	**0.0000**	**0.0000**	**1.7000e-003**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2022	1/14/2022	5	10	
2	Grading	Grading	1/15/2022	1/18/2022	5	2	
3	Building Construction	Building Construction	1/19/2022	6/7/2022	5	100	
4	Paving	Paving	1/19/2022	1/25/2022	5	5	
5	Architectural Coating	Architectural Coating	6/2/2022	6/8/2022	5	5	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 1.5

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 10,950; Non-Residential Outdoor: 3,650; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Paving	Cement and Mortar Mixers	4	6.00	9	0.56
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Building Construction	Cranes	1	4.00	231	0.29
Building Construction	Forklifts	2	6.00	89	0.20
Grading	Graders	1	6.00	187	0.41

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Paving	Pavers	1	7.00	130	0.42
Paving	Rollers	1	7.00	80	0.38
Demolition	Rubber Tired Dozers	1	1.00	247	0.40
Grading	Rubber Tired Dozers	1	6.00	247	0.40
Building Construction	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Demolition	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Grading	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Paving	Tractors/Loaders/Backhoes	1	7.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Architectural Coating	1	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	5	2.00	1.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Demolition	4	10.00	0.00	33.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	3	8.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Alternative Fuel for Construction Equipment

Use Cleaner Engines for Construction Equipment

Water Exposed Area

3.2 Demolition - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Category	lb/day										lb/day					
Fugitive Dust					0.7087	0.0000	0.7087	0.1073	0.0000	0.1073			0.0000			0.0000
Off-Road	0.7094	6.4138	7.4693	0.0120		0.3375	0.3375		0.3225	0.3225		1,147.9025	1,147.9025	0.2119		1,153.2001
Total	**0.7094**	**6.4138**	**7.4693**	**0.0120**	**0.7087**	**0.3375**	**1.0463**	**0.1073**	**0.3225**	**0.4299**		**1,147.9025**	**1,147.9025**	**0.2119**		**1,153.2001**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0154	0.5542	0.1292	2.0500e-003	0.0578	4.1200e-003	0.0619	0.0158	3.9400e-003	0.0198		224.6560	224.6560	0.0119	0.0356	235.5763
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0290	0.0198	0.3016	7.6000e-004	0.0822	5.4000e-004	0.0827	0.0218	5.0000e-004	0.0223		76.9485	76.9485	2.3800e-003	2.0000e-003	77.6028
Total	**0.0444**	**0.5741**	**0.4308**	**2.8100e-003**	**0.1399**	**4.6600e-003**	**0.1446**	**0.0376**	**4.4400e-003**	**0.0421**		**301.6045**	**301.6045**	**0.0143**	**0.0376**	**313.1792**

Palmdale GPU - Government Office - Construction - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.3189	0.0000	0.3189	0.0483	0.0000	0.0483			0.0000			0.0000
Off-Road	0.4143	3.8838	7.6633	0.0120		0.1957	0.1957		0.1807	0.1807	0.0000	1,147.9025	1,147.9025	0.2119		1,153.2001
Total	**0.4143**	**3.8838**	**7.6633**	**0.0120**	**0.3189**	**0.1957**	**0.5146**	**0.0483**	**0.1807**	**0.2290**	**0.0000**	**1,147.9025**	**1,147.9025**	**0.2119**		**1,153.2001**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0154	0.5542	0.1292	2.0500e-003	0.0578	4.1200e-003	0.0619	0.0158	3.9400e-003	0.0198		224.6560	224.6560	0.0119	0.0356	235.5763
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0290	0.0198	0.3016	7.6000e-004	0.0822	5.4000e-004	0.0827	0.0218	5.0000e-004	0.0223		76.9485	76.9485	2.3800e-003	2.0000e-003	77.6028
Total	**0.0444**	**0.5741**	**0.4308**	**2.8100e-003**	**0.1399**	**4.6600e-003**	**0.1446**	**0.0376**	**4.4400e-003**	**0.0421**		**301.6045**	**301.6045**	**0.0143**	**0.0376**	**313.1792**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.3 Grading - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					5.3119	0.0000	5.3119	2.5686	0.0000	2.5686			0.0000			0.0000
Off-Road	1.0832	12.0046	5.9360	0.0141		0.5173	0.5173		0.4759	0.4759		1,364.8198	1,364.8198	0.4414		1,375.8551
Total	**1.0832**	**12.0046**	**5.9360**	**0.0141**	**5.3119**	**0.5173**	**5.8292**	**2.5686**	**0.4759**	**3.0445**		**1,364.8198**	**1,364.8198**	**0.4414**		**1,375.8551**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0232	0.0159	0.2413	6.1000e-004	0.0657	4.3000e-004	0.0662	0.0174	4.0000e-004	0.0178		61.5588	61.5588	1.9100e-003	1.6000e-003	62.0823
Total	**0.0232**	**0.0159**	**0.2413**	**6.1000e-004**	**0.0657**	**4.3000e-004**	**0.0662**	**0.0174**	**4.0000e-004**	**0.0178**		**61.5588**	**61.5588**	**1.9100e-003**	**1.6000e-003**	**62.0823**

Palmdale GPU - Government Office - Construction - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.3904	0.0000	2.3904	1.1559	0.0000	1.1559			0.0000			0.0000
Off-Road	0.8328	8.3251	6.8759	0.0141		0.4000	0.4000		0.3686	0.3686	0.0000	1,364.8198	1,364.8198	0.4414		1,375.8551
Total	**0.8328**	**8.3251**	**6.8759**	**0.0141**	**2.3904**	**0.4000**	**2.7904**	**1.1559**	**0.3686**	**1.5245**	**0.0000**	**1,364.8198**	**1,364.8198**	**0.4414**		**1,375.8551**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0232	0.0159	0.2413	6.1000e-004	0.0657	4.3000e-004	0.0662	0.0174	4.0000e-004	0.0178		61.5588	61.5588	1.9100e-003	1.6000e-003	62.0823
Total	**0.0232**	**0.0159**	**0.2413**	**6.1000e-004**	**0.0657**	**4.3000e-004**	**0.0662**	**0.0174**	**4.0000e-004**	**0.0178**		**61.5588**	**61.5588**	**1.9100e-003**	**1.6000e-003**	**62.0823**

Palmdale GPU - Government Office - Construction - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.4 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.6863	7.0258	7.1527	0.0114		0.3719	0.3719		0.3422	0.3422		1,103.9393	1,103.9393	0.3570		1,112.8652
Total	**0.6863**	**7.0258**	**7.1527**	**0.0114**		**0.3719**	**0.3719**		**0.3422**	**0.3422**		**1,103.9393**	**1,103.9393**	**0.3570**		**1,112.8652**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.0400e-003	0.0512	0.0173	2.1000e-004	6.7800e-003	4.9000e-004	7.2700e-003	1.9500e-003	4.7000e-004	2.4200e-003		22.1692	22.1692	7.4000e-004	3.1900e-003	23.1393
Worker	5.8000e-003	3.9600e-003	0.0603	1.5000e-004	0.0164	1.1000e-004	0.0165	4.3600e-003	1.0000e-004	4.4600e-003		15.3897	15.3897	4.8000e-004	4.0000e-004	15.5206
Total	**7.8400e-003**	**0.0551**	**0.0776**	**3.6000e-004**	**0.0232**	**6.0000e-004**	**0.0238**	**6.3100e-003**	**5.7000e-004**	**6.8800e-003**		**37.5589**	**37.5589**	**1.2200e-003**	**3.5900e-003**	**38.6599**

Palmdale GPU - Government Office - Construction - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.3931	3.6273	7.5179	0.0114		0.1887	0.1887		0.1743	0.1743	0.0000	1,103.9393	1,103.9393	0.3570		1,112.8652
Total	**0.3931**	**3.6273**	**7.5179**	**0.0114**		**0.1887**	**0.1887**		**0.1743**	**0.1743**	**0.0000**	**1,103.9393**	**1,103.9393**	**0.3570**		**1,112.8652**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.0400e-003	0.0512	0.0173	2.1000e-004	6.7800e-003	4.9000e-004	7.2700e-003	1.9500e-003	4.7000e-004	2.4200e-003		22.1692	22.1692	7.4000e-004	3.1900e-003	23.1393
Worker	5.8000e-003	3.9600e-003	0.0603	1.5000e-004	0.0164	1.1000e-004	0.0165	4.3600e-003	1.0000e-004	4.4600e-003		15.3897	15.3897	4.8000e-004	4.0000e-004	15.5206
Total	**7.8400e-003**	**0.0551**	**0.0776**	**3.6000e-004**	**0.0232**	**6.0000e-004**	**0.0238**	**6.3100e-003**	**5.7000e-004**	**6.8800e-003**		**37.5589**	**37.5589**	**1.2200e-003**	**3.5900e-003**	**38.6599**

Palmdale GPU - Government Office - Construction - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.5 Paving - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.6469	5.9174	7.0348	0.0113		0.2961	0.2961		0.2758	0.2758		1,035.8246	1,035.8246	0.3017		1,043.3677
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.6469**	**5.9174**	**7.0348**	**0.0113**		**0.2961**	**0.2961**		**0.2758**	**0.2758**		**1,035.8246**	**1,035.8246**	**0.3017**		**1,043.3677**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0522	0.0357	0.5428	1.3600e-003	0.1479	9.7000e-004	0.1488	0.0392	8.9000e-004	0.0401		138.5073	138.5073	4.2900e-003	3.5900e-003	139.6851
Total	**0.0522**	**0.0357**	**0.5428**	**1.3600e-003**	**0.1479**	**9.7000e-004**	**0.1488**	**0.0392**	**8.9000e-004**	**0.0401**		**138.5073**	**138.5073**	**4.2900e-003**	**3.5900e-003**	**139.6851**

Palmdale GPU - Government Office - Construction - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.4707	4.8129	6.1094	9.1300e-003		0.2531	0.2531		0.2329	0.2329	0.0000	884.2756	884.2756	0.2860		891.4254
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.4707**	**4.8129**	**6.1094**	**9.1300e-003**		**0.2531**	**0.2531**		**0.2329**	**0.2329**	**0.0000**	**884.2756**	**884.2756**	**0.2860**		**891.4254**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0522	0.0357	0.5428	1.3600e-003	0.1479	9.7000e-004	0.1488	0.0392	8.9000e-004	0.0401		138.5073	138.5073	4.2900e-003	3.5900e-003	139.6851
Total	**0.0522**	**0.0357**	**0.5428**	**1.3600e-003**	**0.1479**	**9.7000e-004**	**0.1488**	**0.0392**	**8.9000e-004**	**0.0401**		**138.5073**	**138.5073**	**4.2900e-003**	**3.5900e-003**	**139.6851**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.6 Architectural Coating - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	10.1507					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817		281.4481	281.4481	0.0183		281.9062
Total	**10.3552**	**1.4085**	**1.8136**	**2.9700e-003**		**0.0817**	**0.0817**		**0.0817**	**0.0817**		**281.4481**	**281.4481**	**0.0183**		**281.9062**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Palmdale GPU - Government Office - Construction - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	10.1507					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.0297	0.1288	1.8324	2.9700e-003		3.9600e-003	3.9600e-003		3.9600e-003	3.9600e-003	0.0000	281.4481	281.4481	0.0183		281.9062
Total	**10.1804**	**0.1288**	**1.8324**	**2.9700e-003**		**3.9600e-003**	**3.9600e-003**		**3.9600e-003**	**3.9600e-003**	**0.0000**	**281.4481**	**281.4481**	**0.0183**		**281.9062**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Palmdale GPU - Government Office - Construction - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Government Office Building	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Government Office Building	9.50	7.30	7.30	33.00	62.00	5.00	50	34	16

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Government Office Building	0.544785	0.062844	0.187478	0.127235	0.023089	0.006083	0.010475	0.008012	0.000925	0.000611	0.024394	0.000698	0.003374

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Government Office Building	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Government Office Building	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

Palmdale GPU - Government Office - Construction - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	7.0000e-005	1.0000e-005	7.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.6000e-003	1.6000e-003	0.0000		1.7000e-003
Unmitigated	7.0000e-005	1.0000e-005	7.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.6000e-003	1.6000e-003	0.0000		1.7000e-003

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	7.0000e-005	1.0000e-005	7.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.6000e-003	1.6000e-003	0.0000		1.7000e-003
Total	**7.0000e-005**	**1.0000e-005**	**7.5000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**1.6000e-003**	**1.6000e-003**	**0.0000**		**1.7000e-003**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	7.0000e-005	1.0000e-005	7.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.6000e-003	1.6000e-003	0.0000		1.7000e-003
Total	**7.0000e-005**	**1.0000e-005**	**7.5000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**1.6000e-003**	**1.6000e-003**	**0.0000**		**1.7000e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Palmdale GPU - Government Office - Construction - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Palmdale GPU - Government Office - Construction - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Palmdale GPU - Government Office - Construction

Los Angeles-Mojave Desert County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Government Office Building	7.30	1000sqft	0.17	7,300.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	9			**Operational Year**	2023
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	390.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics - See Assumptions

Land Use - See Assumptions

Construction Phase - See Assumptions

Demolition - See Assumptions

Architectural Coating - Based on AVAQMD requirements for VOC content

Vehicle Trips - Operational Emissions Modeled Separately

Consumer Products - Operational Emissions Modeled Separately

Area Coating - Operational Emissions Modeled Separately

Landscape Equipment - Operational Emissions Modeled Separately

Energy Use - Operational Emissions Modeled Separately

Water And Wastewater - Operational Emissions Modeled Separately

Solid Waste - Operational Emissions Modeled Separately

Palmdale GPU - Government Office - Construction - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Construction Off-road Equipment Mitigation - Water 2x daily based on AVAQMD regulations for dust control; not mitigation

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	250.00	150.00
tblArchitecturalCoating	EF_Nonresidential_Interior	250.00	50.00
tblAreaCoating	ReapplicationRatePercent	10	0
tblConstEquipMitigation	FuelType	Diesel	Electrical
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	4.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	PhaseEndDate	6/22/2022	6/8/2022
tblConstructionPhase	PhaseEndDate	6/8/2022	6/7/2022
tblConstructionPhase	PhaseEndDate	1/19/2022	1/18/2022
tblConstructionPhase	PhaseEndDate	6/15/2022	1/25/2022
tblConstructionPhase	PhaseStartDate	6/16/2022	6/2/2022
tblConstructionPhase	PhaseStartDate	1/20/2022	1/19/2022
tblConstructionPhase	PhaseStartDate	1/18/2022	1/15/2022

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

tblConstructionPhase	PhaseStartDate	6/9/2022	1/19/2022
tblConsumerProducts	ROG_EF	2.14E-05	0
tblConsumerProducts	ROG_EF_Degreaser	3.542E-07	0
tblConsumerProducts	ROG_EF_PesticidesFertilizers	5.152E-08	0
tblEnergyUse	LightingElect	3.77	0.00
tblEnergyUse	NT24E	4.62	0.00
tblEnergyUse	NT24NG	0.39	0.00
tblEnergyUse	T24E	4.11	0.00
tblEnergyUse	T24NG	9.92	0.00
tblLandscapeEquipment	NumberSummerDays	180	0
tblSolidWaste	SolidWasteGenerationRate	6.79	0.00
tblVehicleTrips	WD_TR	22.59	0.00
tblWater	IndoorWaterUseRate	1,450,215.71	0.00
tblWater	OutdoorWaterUseRate	888,841.88	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2022	11.0496	13.0402	14.7657	0.0243	5.3777	0.6696	5.8954	2.5860	0.6195	3.0623	0.0000	2,307.7467	2,307.7467	0.6644	0.0378	2,326.5804
Maximum	**11.0496**	**13.0402**	**14.7657**	**0.0243**	**5.3777**	**0.6696**	**5.8954**	**2.5860**	**0.6195**	**3.0623**	**0.0000**	**2,307.7467**	**2,307.7467**	**0.6644**	**0.0378**	**2,326.5804**

Palmdale GPU - Government Office - Construction - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2022	10.5816	8.5372	14.2056	0.0222	2.4561	0.4435	2.8565	1.1733	0.4087	1.5423	0.0000	2,156.1978	2,156.1978	0.6487	0.0378	2,174.6381
Maximum	**10.5816**	**8.5372**	**14.2056**	**0.0222**	**2.4561**	**0.4435**	**2.8565**	**1.1733**	**0.4087**	**1.5423**	**0.0000**	**2,156.1978**	**2,156.1978**	**0.6487**	**0.0378**	**2,174.6381**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**4.24**	**34.53**	**3.79**	**8.80**	**54.33**	**33.77**	**51.55**	**54.63**	**34.03**	**49.63**	**0.00**	**6.57**	**6.57**	**2.37**	**0.00**	**6.53**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	7.0000e-005	1.0000e-005	7.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.6000e-003	1.6000e-003	0.0000		1.7000e-003
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

Palmdale GPU - Government Office - Construction - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Total	**7.0000e-005**	**1.0000e-005**	**7.5000e-004**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**1.6000e-003**	**1.6000e-003**	**0.0000**	**0.0000**	**1.7000e-003**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	7.0000e-005	1.0000e-005	7.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.6000e-003	1.6000e-003	0.0000		1.7000e-003
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total	**7.0000e-005**	**1.0000e-005**	**7.5000e-004**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**1.6000e-003**	**1.6000e-003**	**0.0000**	**0.0000**	**1.7000e-003**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2022	1/14/2022	5	10	
2	Grading	Grading	1/15/2022	1/18/2022	5	2	
3	Building Construction	Building Construction	1/19/2022	6/7/2022	5	100	
4	Paving	Paving	1/19/2022	1/25/2022	5	5	
5	Architectural Coating	Architectural Coating	6/2/2022	6/8/2022	5	5	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 1.5

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 10,950; Non-Residential Outdoor: 3,650; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Paving	Cement and Mortar Mixers	4	6.00	9	0.56
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Building Construction	Cranes	1	4.00	231	0.29
Building Construction	Forklifts	2	6.00	89	0.20
Grading	Graders	1	6.00	187	0.41

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Paving	Pavers	1	7.00	130	0.42
Paving	Rollers	1	7.00	80	0.38
Demolition	Rubber Tired Dozers	1	1.00	247	0.40
Grading	Rubber Tired Dozers	1	6.00	247	0.40
Building Construction	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Demolition	Tractors/Loaders/Backhoes	2	6.00	97	0.37
Grading	Tractors/Loaders/Backhoes	1	7.00	97	0.37
Paving	Tractors/Loaders/Backhoes	1	7.00	97	0.37

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Architectural Coating	1	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	5	2.00	1.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Demolition	4	10.00	0.00	33.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	3	8.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	7	18.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Alternative Fuel for Construction Equipment

Use Cleaner Engines for Construction Equipment

Water Exposed Area

3.2 Demolition - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Palmdale GPU - Government Office - Construction - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Category	lb/day										lb/day					
Fugitive Dust					0.7087	0.0000	0.7087	0.1073	0.0000	0.1073			0.0000			0.0000
Off-Road	0.7094	6.4138	7.4693	0.0120		0.3375	0.3375		0.3225	0.3225		1,147.9025	1,147.9025	0.2119		1,153.2001
Total	**0.7094**	**6.4138**	**7.4693**	**0.0120**	**0.7087**	**0.3375**	**1.0463**	**0.1073**	**0.3225**	**0.4299**		**1,147.9025**	**1,147.9025**	**0.2119**		**1,153.2001**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0150	0.5767	0.1315	2.0500e-003	0.0578	4.1300e-003	0.0619	0.0158	3.9500e-003	0.0198		224.7218	224.7218	0.0119	0.0357	235.6452
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0306	0.0219	0.2802	7.2000e-004	0.0822	5.4000e-004	0.0827	0.0218	5.0000e-004	0.0223		72.9029	72.9029	2.4500e-003	2.1300e-003	73.5996
Total	**0.0456**	**0.5986**	**0.4117**	**2.7700e-003**	**0.1399**	**4.6700e-003**	**0.1446**	**0.0376**	**4.4500e-003**	**0.0421**		**297.6247**	**297.6247**	**0.0144**	**0.0378**	**309.2447**

Palmdale GPU - Government Office - Construction - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.3189	0.0000	0.3189	0.0483	0.0000	0.0483			0.0000			0.0000
Off-Road	0.4143	3.8838	7.6633	0.0120		0.1957	0.1957		0.1807	0.1807	0.0000	1,147.9025	1,147.9025	0.2119		1,153.2001
Total	**0.4143**	**3.8838**	**7.6633**	**0.0120**	**0.3189**	**0.1957**	**0.5146**	**0.0483**	**0.1807**	**0.2290**	**0.0000**	**1,147.9025**	**1,147.9025**	**0.2119**		**1,153.2001**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0150	0.5767	0.1315	2.0500e-003	0.0578	4.1300e-003	0.0619	0.0158	3.9500e-003	0.0198		224.7218	224.7218	0.0119	0.0357	235.6452
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0306	0.0219	0.2802	7.2000e-004	0.0822	5.4000e-004	0.0827	0.0218	5.0000e-004	0.0223		72.9029	72.9029	2.4500e-003	2.1300e-003	73.5996
Total	**0.0456**	**0.5986**	**0.4117**	**2.7700e-003**	**0.1399**	**4.6700e-003**	**0.1446**	**0.0376**	**4.4500e-003**	**0.0421**		**297.6247**	**297.6247**	**0.0144**	**0.0378**	**309.2447**

Palmdale GPU - Government Office - Construction - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.3 Grading - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					5.3119	0.0000	5.3119	2.5686	0.0000	2.5686			0.0000			0.0000
Off-Road	1.0832	12.0046	5.9360	0.0141		0.5173	0.5173		0.4759	0.4759		1,364.8198	1,364.8198	0.4414		1,375.8551
Total	**1.0832**	**12.0046**	**5.9360**	**0.0141**	**5.3119**	**0.5173**	**5.8292**	**2.5686**	**0.4759**	**3.0445**		**1,364.8198**	**1,364.8198**	**0.4414**		**1,375.8551**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0245	0.0175	0.2242	5.7000e-004	0.0657	4.3000e-004	0.0662	0.0174	4.0000e-004	0.0178		58.3223	58.3223	1.9600e-003	1.7100e-003	58.8796
Total	**0.0245**	**0.0175**	**0.2242**	**5.7000e-004**	**0.0657**	**4.3000e-004**	**0.0662**	**0.0174**	**4.0000e-004**	**0.0178**		**58.3223**	**58.3223**	**1.9600e-003**	**1.7100e-003**	**58.8796**

Palmdale GPU - Government Office - Construction - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.3904	0.0000	2.3904	1.1559	0.0000	1.1559			0.0000			0.0000
Off-Road	0.8328	8.3251	6.8759	0.0141		0.4000	0.4000		0.3686	0.3686	0.0000	1,364.8198	1,364.8198	0.4414		1,375.8551
Total	**0.8328**	**8.3251**	**6.8759**	**0.0141**	**2.3904**	**0.4000**	**2.7904**	**1.1559**	**0.3686**	**1.5245**	**0.0000**	**1,364.8198**	**1,364.8198**	**0.4414**		**1,375.8551**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0245	0.0175	0.2242	5.7000e-004	0.0657	4.3000e-004	0.0662	0.0174	4.0000e-004	0.0178		58.3223	58.3223	1.9600e-003	1.7100e-003	58.8796
Total	**0.0245**	**0.0175**	**0.2242**	**5.7000e-004**	**0.0657**	**4.3000e-004**	**0.0662**	**0.0174**	**4.0000e-004**	**0.0178**		**58.3223**	**58.3223**	**1.9600e-003**	**1.7100e-003**	**58.8796**

Palmdale GPU - Government Office - Construction - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.4 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.6863	7.0258	7.1527	0.0114		0.3719	0.3719		0.3422	0.3422		1,103.9393	1,103.9393	0.3570		1,112.8652
Total	**0.6863**	**7.0258**	**7.1527**	**0.0114**		**0.3719**	**0.3719**		**0.3422**	**0.3422**		**1,103.9393**	**1,103.9393**	**0.3570**		**1,112.8652**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.0200e-003	0.0533	0.0178	2.1000e-004	6.7800e-003	4.9000e-004	7.2700e-003	1.9500e-003	4.7000e-004	2.4200e-003		22.1771	22.1771	7.4000e-004	3.2000e-003	23.1484
Worker	6.1200e-003	4.3800e-003	0.0560	1.4000e-004	0.0164	1.1000e-004	0.0165	4.3600e-003	1.0000e-004	4.4600e-003		14.5806	14.5806	4.9000e-004	4.3000e-004	14.7199
Total	**8.1400e-003**	**0.0576**	**0.0739**	**3.5000e-004**	**0.0232**	**6.0000e-004**	**0.0238**	**6.3100e-003**	**5.7000e-004**	**6.8800e-003**		**36.7577**	**36.7577**	**1.2300e-003**	**3.6300e-003**	**37.8683**

Palmdale GPU - Government Office - Construction - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.3931	3.6273	7.5179	0.0114		0.1887	0.1887		0.1743	0.1743	0.0000	1,103.9393	1,103.9393	0.3570		1,112.8652
Total	**0.3931**	**3.6273**	**7.5179**	**0.0114**		**0.1887**	**0.1887**		**0.1743**	**0.1743**	**0.0000**	**1,103.9393**	**1,103.9393**	**0.3570**		**1,112.8652**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.0200e-003	0.0533	0.0178	2.1000e-004	6.7800e-003	4.9000e-004	7.2700e-003	1.9500e-003	4.7000e-004	2.4200e-003		22.1771	22.1771	7.4000e-004	3.2000e-003	23.1484
Worker	6.1200e-003	4.3800e-003	0.0560	1.4000e-004	0.0164	1.1000e-004	0.0165	4.3600e-003	1.0000e-004	4.4600e-003		14.5806	14.5806	4.9000e-004	4.3000e-004	14.7199
Total	**8.1400e-003**	**0.0576**	**0.0739**	**3.5000e-004**	**0.0232**	**6.0000e-004**	**0.0238**	**6.3100e-003**	**5.7000e-004**	**6.8800e-003**		**36.7577**	**36.7577**	**1.2300e-003**	**3.6300e-003**	**37.8683**

Palmdale GPU - Government Office - Construction - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.5 Paving - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.6469	5.9174	7.0348	0.0113		0.2961	0.2961		0.2758	0.2758		1,035.8246	1,035.8246	0.3017		1,043.3677
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.6469**	**5.9174**	**7.0348**	**0.0113**		**0.2961**	**0.2961**		**0.2758**	**0.2758**		**1,035.8246**	**1,035.8246**	**0.3017**		**1,043.3677**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0551	0.0394	0.5044	1.2900e-003	0.1479	9.7000e-004	0.1488	0.0392	8.9000e-004	0.0401		131.2251	131.2251	4.4100e-003	3.8400e-003	132.4792
Total	**0.0551**	**0.0394**	**0.5044**	**1.2900e-003**	**0.1479**	**9.7000e-004**	**0.1488**	**0.0392**	**8.9000e-004**	**0.0401**		**131.2251**	**131.2251**	**4.4100e-003**	**3.8400e-003**	**132.4792**

Palmdale GPU - Government Office - Construction - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.4707	4.8129	6.1094	9.1300e-003		0.2531	0.2531		0.2329	0.2329	0.0000	884.2756	884.2756	0.2860		891.4254
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.4707**	**4.8129**	**6.1094**	**9.1300e-003**		**0.2531**	**0.2531**		**0.2329**	**0.2329**	**0.0000**	**884.2756**	**884.2756**	**0.2860**		**891.4254**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0551	0.0394	0.5044	1.2900e-003	0.1479	9.7000e-004	0.1488	0.0392	8.9000e-004	0.0401		131.2251	131.2251	4.4100e-003	3.8400e-003	132.4792
Total	**0.0551**	**0.0394**	**0.5044**	**1.2900e-003**	**0.1479**	**9.7000e-004**	**0.1488**	**0.0392**	**8.9000e-004**	**0.0401**		**131.2251**	**131.2251**	**4.4100e-003**	**3.8400e-003**	**132.4792**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.6 Architectural Coating - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	10.1507					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817		281.4481	281.4481	0.0183		281.9062
Total	**10.3552**	**1.4085**	**1.8136**	**2.9700e-003**		**0.0817**	**0.0817**		**0.0817**	**0.0817**		**281.4481**	**281.4481**	**0.0183**		**281.9062**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Palmdale GPU - Government Office - Construction - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	10.1507					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.0297	0.1288	1.8324	2.9700e-003		3.9600e-003	3.9600e-003		3.9600e-003	3.9600e-003	0.0000	281.4481	281.4481	0.0183		281.9062
Total	**10.1804**	**0.1288**	**1.8324**	**2.9700e-003**		**3.9600e-003**	**3.9600e-003**		**3.9600e-003**	**3.9600e-003**	**0.0000**	**281.4481**	**281.4481**	**0.0183**		**281.9062**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Palmdale GPU - Government Office - Construction - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Government Office Building	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Government Office Building	9.50	7.30	7.30	33.00	62.00	5.00	50	34	16

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Government Office Building	0.544785	0.062844	0.187478	0.127235	0.023089	0.006083	0.010475	0.008012	0.000925	0.000611	0.024394	0.000698	0.003374

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Government Office Building	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Government Office Building	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

Palmdale GPU - Government Office - Construction - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	7.0000e-005	1.0000e-005	7.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.6000e-003	1.6000e-003	0.0000		1.7000e-003
Unmitigated	7.0000e-005	1.0000e-005	7.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.6000e-003	1.6000e-003	0.0000		1.7000e-003

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	7.0000e-005	1.0000e-005	7.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.6000e-003	1.6000e-003	0.0000		1.7000e-003
Total	**7.0000e-005**	**1.0000e-005**	**7.5000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**1.6000e-003**	**1.6000e-003**	**0.0000**		**1.7000e-003**

Palmdale GPU - Government Office - Construction - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	7.0000e-005	1.0000e-005	7.5000e-004	0.0000		0.0000	0.0000		0.0000	0.0000		1.6000e-003	1.6000e-003	0.0000		1.7000e-003
Total	**7.0000e-005**	**1.0000e-005**	**7.5000e-004**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**1.6000e-003**	**1.6000e-003**	**0.0000**		**1.7000e-003**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Palmdale GPU - Government Office - Construction - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Palmdale GPU - Hotel Construction Only - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Palmdale GPU - Hotel Construction Only

Los Angeles-Mojave Desert County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Hotel	58.00	Room	1.93	84,216.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	9			**Operational Year**	2023
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	390.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics - See Assumptions

Land Use - See Assumptions

Construction Phase -

Demolition - See Assumptions

Architectural Coating - See Assumptions

Vehicle Trips - Operational Emissions Modeled Separately

Consumer Products - Operational Emissions Modeled Separately

Area Coating - Operational Emissions Modeled Separately

Landscape Equipment - Operational Emissions Modeled Separately

Energy Use - Operational Emissions Modeled Separately

Water And Wastewater - Operational Emissions Modeled Separately

Solid Waste - Operational Emissions Modeled Separately

Palmdale GPU - Hotel Construction Only - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Construction Off-road Equipment Mitigation - Water 2x daily based on AVAQMD regulations for dust control; not mitigation

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	250.00	15.00
tblArchitecturalCoating	EF_Nonresidential_Interior	250.00	50.00
tblAreaCoating	ReapplicationRatePercent	10	0
tblConstEquipMitigation	FuelType	Diesel	Electrical
tblConstEquipMitigation	FuelType	Diesel	Electrical
tblConstEquipMitigation	FuelType	Diesel	Electrical
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	7.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConsumerProducts	ROG_EF	2.14E-05	0
tblConsumerProducts	ROG_EF_Degreaser	3.542E-07	0
tblConsumerProducts	ROG_EF_PesticidesFertilizers	5.152E-08	0
tblEnergyUse	LightingElect	2.14	0.00
tblEnergyUse	NT24E	2.89	0.00
tblEnergyUse	NT24NG	4.06	0.00
tblEnergyUse	T24E	2.28	0.00
tblEnergyUse	T24NG	19.72	0.00
tblLandscapeEquipment	NumberSummerDays	180	0
tblSolidWaste	SolidWasteGenerationRate	31.75	0.00
tblVehicleTrips	ST_TR	8.19	0.00
tblVehicleTrips	SU_TR	5.95	0.00
tblVehicleTrips	WD_TR	8.36	0.00
tblWater	IndoorWaterUseRate	1,471,272.66	0.00
tblWater	OutdoorWaterUseRate	163,474.74	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					

Palmdale GPU - Hotel Construction Only - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

2022	0.3647	1.6081	1.6232	3.2500e-003	0.0974	0.0720	0.1694	0.0246	0.0692	0.0937	0.0000	278.3176	278.3176	0.0425	6.6300e-003	281.3551
Maximum	**0.3647**	**1.6081**	**1.6232**	**3.2500e-003**	**0.0974**	**0.0720**	**0.1694**	**0.0246**	**0.0692**	**0.0937**	**0.0000**	**278.3176**	**278.3176**	**0.0425**	**6.6300e-003**	**281.3551**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2022	0.1892	0.1766	0.8245	1.8200e-003	0.0673	2.9700e-003	0.0703	0.0174	2.9200e-003	0.0204	0.0000	165.1587	165.1587	0.0330	6.6300e-003	167.9597
Maximum	**0.1892**	**0.1766**	**0.8245**	**1.8200e-003**	**0.0673**	**2.9700e-003**	**0.0703**	**0.0174**	**2.9200e-003**	**0.0204**	**0.0000**	**165.1587**	**165.1587**	**0.0330**	**6.6300e-003**	**167.9597**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**48.11**	**89.02**	**49.20**	**44.00**	**30.86**	**95.88**	**58.49**	**29.05**	**95.78**	**78.28**	**0.00**	**40.66**	**40.66**	**22.26**	**0.00**	**40.30**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

1	**1-1-2022**	**3-31-2022**	0.5377	0.0795
2	**4-1-2022**	**6-30-2022**	0.4897	0.0464
3	**7-1-2022**	**9-30-2022**	0.4951	0.0469
		Highest	0.5377	0.0795

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Palmdale GPU - Hotel Construction Only - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2022	1/28/2022	5	20	
2	Grading	Grading	2/2/2022	2/7/2022	5	4	
3	Building Construction	Building Construction	2/8/2022	11/14/2022	5	200	

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

4	Paving	Paving	11/15/2022	11/28/2022	5	10	
5	Architectural Coating	Architectural Coating	11/29/2022	12/12/2022	5	10	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 4

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 126,324; Non-Residential Outdoor: 42,108; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Paving	Cement and Mortar Mixers	1	6.00	9	0.56
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Building Construction	Cranes	1	6.00	231	0.29
Building Construction	Forklifts	1	6.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Grading	Graders	1	8.00	187	0.41
Paving	Pavers	1	6.00	130	0.42
Paving	Paving Equipment	1	8.00	132	0.36
Paving	Rollers	1	7.00	80	0.38
Demolition	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Building Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Demolition	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Grading	Tractors/Loaders/Backhoes	2	7.00	97	0.37
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Building Construction	Welders	3	8.00	46	0.45

Palmdale GPU - Hotel Construction Only - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Architectural Coating	1	7.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	7	35.00	14.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Demolition	5	13.00	0.00	374.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	4	10.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	5	13.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Alternative Fuel for Construction Equipment

Use Cleaner Engines for Construction Equipment

Water Exposed Area

3.2 Demolition - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0405	0.0000	0.0405	6.1300e-003	0.0000	6.1300e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0169	0.1662	0.1396	2.4000e-004		8.3800e-003	8.3800e-003		7.8300e-003	7.8300e-003	0.0000	21.0777	21.0777	5.3700e-003	0.0000	21.2120
Total	**0.0169**	**0.1662**	**0.1396**	**2.4000e-004**	**0.0405**	**8.3800e-003**	**0.0488**	**6.1300e-003**	**7.8300e-003**	**0.0140**	**0.0000**	**21.0777**	**21.0777**	**5.3700e-003**	**0.0000**	**21.2120**

Palmdale GPU - Hotel Construction Only - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	8.6000e-004	0.0331	7.3700e-003	1.2000e-004	3.2200e-003	2.3000e-004	3.4500e-003	8.8000e-004	2.2000e-004	1.1100e-003	0.0000	11.5503	11.5503	6.1000e-004	1.8300e-003	12.1118
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.7000e-004	2.9000e-004	3.7300e-003	1.0000e-005	1.0500e-003	1.0000e-005	1.0500e-003	2.8000e-004	1.0000e-005	2.8000e-004	0.0000	0.8726	0.8726	3.0000e-005	3.0000e-005	0.8809
Total	**1.2300e-003**	**0.0334**	**0.0111**	**1.3000e-004**	**4.2700e-003**	**2.4000e-004**	**4.5000e-003**	**1.1600e-003**	**2.3000e-004**	**1.3900e-003**	**0.0000**	**12.4229**	**12.4229**	**6.4000e-004**	**1.8600e-003**	**12.9927**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0182	0.0000	0.0182	2.7600e-003	0.0000	2.7600e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.8100e-003	0.0122	0.1472	2.4000e-004		3.7000e-004	3.7000e-004		3.7000e-004	3.7000e-004	0.0000	21.0777	21.0777	5.3700e-003	0.0000	21.2119
Total	**2.8100e-003**	**0.0122**	**0.1472**	**2.4000e-004**	**0.0182**	**3.7000e-004**	**0.0186**	**2.7600e-003**	**3.7000e-004**	**3.1300e-003**	**0.0000**	**21.0777**	**21.0777**	**5.3700e-003**	**0.0000**	**21.2119**

Palmdale GPU - Hotel Construction Only - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	8.6000e-004	0.0331	7.3700e-003	1.2000e-004	3.2200e-003	2.3000e-004	3.4500e-003	8.8000e-004	2.2000e-004	1.1100e-003	0.0000	11.5503	11.5503	6.1000e-004	1.8300e-003	12.1118
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.7000e-004	2.9000e-004	3.7300e-003	1.0000e-005	1.0500e-003	1.0000e-005	1.0500e-003	2.8000e-004	1.0000e-005	2.8000e-004	0.0000	0.8726	0.8726	3.0000e-005	3.0000e-005	0.8809
Total	**1.2300e-003**	**0.0334**	**0.0111**	**1.3000e-004**	**4.2700e-003**	**2.4000e-004**	**4.5000e-003**	**1.1600e-003**	**2.3000e-004**	**1.3900e-003**	**0.0000**	**12.4229**	**12.4229**	**6.4000e-004**	**1.8600e-003**	**12.9927**

3.3 Grading - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0142	0.0000	0.0142	6.8500e-003	0.0000	6.8500e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.0800e-003	0.0340	0.0184	4.0000e-005		1.4800e-003	1.4800e-003		1.3700e-003	1.3700e-003	0.0000	3.6205	3.6205	1.1700e-003	0.0000	3.6498
Total	**3.0800e-003**	**0.0340**	**0.0184**	**4.0000e-005**	**0.0142**	**1.4800e-003**	**0.0157**	**6.8500e-003**	**1.3700e-003**	**8.2200e-003**	**0.0000**	**3.6205**	**3.6205**	**1.1700e-003**	**0.0000**	**3.6498**

Palmdale GPU - Hotel Construction Only - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.0000e-005	4.0000e-005	5.7000e-004	0.0000	1.6000e-004	0.0000	1.6000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.1342	0.1342	0.0000	0.0000	0.1355
Total	**6.0000e-005**	**4.0000e-005**	**5.7000e-004**	**0.0000**	**1.6000e-004**	**0.0000**	**1.6000e-004**	**4.0000e-005**	**0.0000**	**4.0000e-005**	**0.0000**	**0.1342**	**0.1342**	**0.0000**	**0.0000**	**0.1355**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					6.3700e-003	0.0000	6.3700e-003	3.0800e-003	0.0000	3.0800e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	5.0000e-004	2.1900e-003	0.0218	4.0000e-005		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005	0.0000	3.6205	3.6205	1.1700e-003	0.0000	3.6498
Total	**5.0000e-004**	**2.1900e-003**	**0.0218**	**4.0000e-005**	**6.3700e-003**	**7.0000e-005**	**6.4400e-003**	**3.0800e-003**	**7.0000e-005**	**3.1500e-003**	**0.0000**	**3.6205**	**3.6205**	**1.1700e-003**	**0.0000**	**3.6498**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.0000e-005	4.0000e-005	5.7000e-004	0.0000	1.6000e-004	0.0000	1.6000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.1342	0.1342	0.0000	0.0000	0.1355
Total	**6.0000e-005**	**4.0000e-005**	**5.7000e-004**	**0.0000**	**1.6000e-004**	**0.0000**	**1.6000e-004**	**4.0000e-005**	**0.0000**	**4.0000e-005**	**0.0000**	**0.1342**	**0.1342**	**0.0000**	**0.0000**	**0.1355**

3.4 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1649	1.2503	1.2726	2.2100e-003		0.0589	0.0589		0.0569	0.0569	0.0000	181.5769	181.5769	0.0316	0.0000	182.3675
Total	**0.1649**	**1.2503**	**1.2726**	**2.2100e-003**		**0.0589**	**0.0589**		**0.0569**	**0.0569**	**0.0000**	**181.5769**	**181.5769**	**0.0316**	**0.0000**	**182.3675**

Palmdale GPU - Hotel Construction Only - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.8400e-003	0.0752	0.0245	2.9000e-004	9.3300e-003	6.9000e-004	0.0100	2.6900e-003	6.6000e-004	3.3500e-003	0.0000	28.1605	28.1605	9.4000e-004	4.0600e-003	29.3939
Worker	9.9700e-003	7.8200e-003	0.1003	2.5000e-004	0.0282	1.9000e-004	0.0284	7.4900e-003	1.7000e-004	7.6600e-003	0.0000	23.4922	23.4922	7.8000e-004	6.9000e-004	23.7159
Total	**0.0128**	**0.0830**	**0.1249**	**5.4000e-004**	**0.0375**	**8.8000e-004**	**0.0384**	**0.0102**	**8.3000e-004**	**0.0110**	**0.0000**	**51.6526**	**51.6526**	**1.7200e-003**	**4.7500e-003**	**53.1098**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	9.5800e-003	0.0415	0.4577	7.8000e-004		1.2800e-003	1.2800e-003		1.2800e-003	1.2800e-003	0.0000	68.5899	68.5899	0.0222	0.0000	69.1445
Total	**9.5800e-003**	**0.0415**	**0.4577**	**7.8000e-004**		**1.2800e-003**	**1.2800e-003**		**1.2800e-003**	**1.2800e-003**	**0.0000**	**68.5899**	**68.5899**	**0.0222**	**0.0000**	**69.1445**

Palmdale GPU - Hotel Construction Only - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.8400e-003	0.0752	0.0245	2.9000e-004	9.3300e-003	6.9000e-004	0.0100	2.6900e-003	6.6000e-004	3.3500e-003	0.0000	28.1605	28.1605	9.4000e-004	4.0600e-003	29.3939
Worker	9.9700e-003	7.8200e-003	0.1003	2.5000e-004	0.0282	1.9000e-004	0.0284	7.4900e-003	1.7000e-004	7.6600e-003	0.0000	23.4922	23.4922	7.8000e-004	6.9000e-004	23.7159
Total	**0.0128**	**0.0830**	**0.1249**	**5.4000e-004**	**0.0375**	**8.8000e-004**	**0.0384**	**0.0102**	**8.3000e-004**	**0.0110**	**0.0000**	**51.6526**	**51.6526**	**1.7200e-003**	**4.7500e-003**	**53.1098**

3.5 Paving - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	3.4400e-003	0.0339	0.0440	7.0000e-005		1.7400e-003	1.7400e-003		1.6000e-003	1.6000e-003	0.0000	5.8848	5.8848	1.8700e-003	0.0000	5.9315
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**3.4400e-003**	**0.0339**	**0.0440**	**7.0000e-005**		**1.7400e-003**	**1.7400e-003**		**1.6000e-003**	**1.6000e-003**	**0.0000**	**5.8848**	**5.8848**	**1.8700e-003**	**0.0000**	**5.9315**

Palmdale GPU - Hotel Construction Only - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.9000e-004	1.5000e-004	1.8600e-003	0.0000	5.2000e-004	0.0000	5.3000e-004	1.4000e-004	0.0000	1.4000e-004	0.0000	0.4363	0.4363	1.0000e-005	1.0000e-005	0.4404
Total	**1.9000e-004**	**1.5000e-004**	**1.8600e-003**	**0.0000**	**5.2000e-004**	**0.0000**	**5.3000e-004**	**1.4000e-004**	**0.0000**	**1.4000e-004**	**0.0000**	**0.4363**	**0.4363**	**1.0000e-005**	**1.0000e-005**	**0.4404**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	8.0000e-004	3.4600e-003	0.0493	7.0000e-005		1.1000e-004	1.1000e-004		1.1000e-004	1.1000e-004	0.0000	5.7130	5.7130	1.8500e-003	0.0000	5.7591
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**8.0000e-004**	**3.4600e-003**	**0.0493**	**7.0000e-005**		**1.1000e-004**	**1.1000e-004**		**1.1000e-004**	**1.1000e-004**	**0.0000**	**5.7130**	**5.7130**	**1.8500e-003**	**0.0000**	**5.7591**

Palmdale GPU - Hotel Construction Only - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.9000e-004	1.5000e-004	1.8600e-003	0.0000	5.2000e-004	0.0000	5.3000e-004	1.4000e-004	0.0000	1.4000e-004	0.0000	0.4363	0.4363	1.0000e-005	1.0000e-005	0.4404
Total	**1.9000e-004**	**1.5000e-004**	**1.8600e-003**	**0.0000**	**5.2000e-004**	**0.0000**	**5.3000e-004**	**1.4000e-004**	**0.0000**	**1.4000e-004**	**0.0000**	**0.4363**	**0.4363**	**1.0000e-005**	**1.0000e-005**	**0.4404**

3.6 Architectural Coating - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.1610					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.0200e-003	7.0400e-003	9.0700e-003	1.0000e-005		4.1000e-004	4.1000e-004		4.1000e-004	4.1000e-004	0.0000	1.2766	1.2766	8.0000e-005	0.0000	1.2787
Total	**0.1620**	**7.0400e-003**	**9.0700e-003**	**1.0000e-005**		**4.1000e-004**	**4.1000e-004**		**4.1000e-004**	**4.1000e-004**	**0.0000**	**1.2766**	**1.2766**	**8.0000e-005**	**0.0000**	**1.2787**

Palmdale GPU - Hotel Construction Only - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0000e-004	8.0000e-005	1.0000e-003	0.0000	2.8000e-004	0.0000	2.8000e-004	7.0000e-005	0.0000	8.0000e-005	0.0000	0.2349	0.2349	1.0000e-005	1.0000e-005	0.2372
Total	**1.0000e-004**	**8.0000e-005**	**1.0000e-003**	**0.0000**	**2.8000e-004**	**0.0000**	**2.8000e-004**	**7.0000e-005**	**0.0000**	**8.0000e-005**	**0.0000**	**0.2349**	**0.2349**	**1.0000e-005**	**1.0000e-005**	**0.2372**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.1610					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.5000e-004	6.4000e-004	9.1600e-003	1.0000e-005		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	1.2766	1.2766	8.0000e-005	0.0000	1.2787
Total	**0.1612**	**6.4000e-004**	**9.1600e-003**	**1.0000e-005**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**	**0.0000**	**1.2766**	**1.2766**	**8.0000e-005**	**0.0000**	**1.2787**

Palmdale GPU - Hotel Construction Only - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.0000e-004	8.0000e-005	1.0000e-003	0.0000	2.8000e-004	0.0000	2.8000e-004	7.0000e-005	0.0000	8.0000e-005	0.0000	0.2349	0.2349	1.0000e-005	1.0000e-005	0.2372
Total	**1.0000e-004**	**8.0000e-005**	**1.0000e-003**	**0.0000**	**2.8000e-004**	**0.0000**	**2.8000e-004**	**7.0000e-005**	**0.0000**	**8.0000e-005**	**0.0000**	**0.2349**	**0.2349**	**1.0000e-005**	**1.0000e-005**	**0.2372**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Hotel	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Hotel	9.50	7.30	7.30	19.40	61.60	19.00	58	38	4

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Hotel	0.544785	0.062844	0.187478	0.127235	0.023089	0.006083	0.010475	0.008012	0.000925	0.000611	0.024394	0.000698	0.003374

5.0 Energy Detail

Historical Energy Use: N

Palmdale GPU - Hotel Construction Only - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Hotel	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Hotel	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use		Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	tons/yr	MT/yr			
Hotel	0		0.0000	0.0000	0.0000	0.0000
Total			**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Electricity Use		Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	tons/yr	MT/yr			
Hotel	0		0.0000	0.0000	0.0000	0.0000
Total			**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Palmdale GPU - Hotel Construction Only - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Palmdale GPU - Hotel Construction Only - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

7.0 Water Detail

7.1 Mitigation Measures Water

		Total CO2	CH4	N2O	CO2e
Category	tons/yr	MT/yr			
Mitigated		0.0000	0.0000	0.0000	0.0000
Unmitigated		0.0000	0.0000	0.0000	0.0000

Palmdale GPU - Hotel Construction Only - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use		Total CO2	CH4	N2O	CO2e
Land Use	Mgal	tons/yr	MT/yr			
Hotel	0 / 0		0.0000	0.0000	0.0000	0.0000
Total			**0.0000**	**0.0000**	**0.0000**	**0.0000**

Palmdale GPU - Hotel Construction Only - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Mitigated

	Indoor/Outdoor Use		Total CO2	CH4	N2O	CO2e
Land Use	Mgal	tons/yr	MT/yr			
Hotel	0 / 0		0.0000	0.0000	0.0000	0.0000
Total			**0.0000**	**0.0000**	**0.0000**	**0.0000**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

		Total CO2	CH4	N2O	CO2e
	tons/yr	MT/yr			
Mitigated		0.0000	0.0000	0.0000	0.0000
Unmitigated		0.0000	0.0000	0.0000	0.0000

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

8.2 Waste by Land Use

Unmitigated

	Waste Disposed		Total CO2	CH4	N2O	CO2e
Land Use	tons	tons/yr	MT/yr			
Hotel	0		0.0000	0.0000	0.0000	0.0000
Total			**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Waste Disposed		Total CO2	CH4	N2O	CO2e
Land Use	tons	tons/yr	MT/yr			
Hotel	0		0.0000	0.0000	0.0000	0.0000
Total			**0.0000**	**0.0000**	**0.0000**	**0.0000**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

Palmdale GPU - Hotel Construction Only - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Palmdale GPU - Hotel Construction Only

Los Angeles-Mojave Desert County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Hotel	58.00	Room	1.93	84,216.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	9			**Operational Year**	2023
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	390.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics - See Assumptions

Land Use - See Assumptions

Construction Phase -

Demolition - See Assumptions

Architectural Coating - See Assumptions

Vehicle Trips - Operational Emissions Modeled Separately

Consumer Products - Operational Emissions Modeled Separately

Area Coating - Operational Emissions Modeled Separately

Landscape Equipment - Operational Emissions Modeled Separately

Energy Use - Operational Emissions Modeled Separately

Water And Wastewater - Operational Emissions Modeled Separately

Solid Waste - Operational Emissions Modeled Separately

Palmdale GPU - Hotel Construction Only - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Construction Off-road Equipment Mitigation - Water 2x daily based on AVAQMD regulations for dust control; not mitigation

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	250.00	15.00
tblArchitecturalCoating	EF_Nonresidential_Interior	250.00	50.00
tblAreaCoating	ReapplicationRatePercent	10	0
tblConstEquipMitigation	FuelType	Diesel	Electrical
tblConstEquipMitigation	FuelType	Diesel	Electrical
tblConstEquipMitigation	FuelType	Diesel	Electrical
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	7.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConsumerProducts	ROG_EF	2.14E-05	0
tblConsumerProducts	ROG_EF_Degreaser	3.542E-07	0
tblConsumerProducts	ROG_EF_PesticidesFertilizers	5.152E-08	0
tblEnergyUse	LightingElect	2.14	0.00
tblEnergyUse	NT24E	2.89	0.00
tblEnergyUse	NT24NG	4.06	0.00
tblEnergyUse	T24E	2.28	0.00
tblEnergyUse	T24NG	19.72	0.00
tblLandscapeEquipment	NumberSummerDays	180	0
tblSolidWaste	SolidWasteGenerationRate	31.75	0.00
tblVehicleTrips	ST_TR	8.19	0.00
tblVehicleTrips	SU_TR	5.95	0.00
tblVehicleTrips	WD_TR	8.36	0.00
tblWater	IndoorWaterUseRate	1,471,272.66	0.00
tblWater	OutdoorWaterUseRate	163,474.74	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

2022	32.4280	19.7881	15.0848	0.0367	7.1647	0.8619	7.9076	3.4465	0.8059	4.1299	0.0000	3,696.5003	3,696.5003	0.6628	0.2046	3,774.0353
Maximum	**32.4280**	**19.7881**	**15.0848**	**0.0367**	**7.1647**	**0.8619**	**7.9076**	**3.4465**	**0.8059**	**4.1299**	**0.0000**	**3,696.5003**	**3,696.5003**	**0.6628**	**0.2046**	**3,774.0353**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2022	32.2532	4.3844	15.8427	0.0367	3.2693	0.0615	3.3035	1.5629	0.0604	1.5970	0.0000	3,696.5003	3,696.5003	0.6628	0.2046	3,774.0353
Maximum	**32.2532**	**4.3844**	**15.8427**	**0.0367**	**3.2693**	**0.0615**	**3.3035**	**1.5629**	**0.0604**	**1.5970**	**0.0000**	**3,696.5003**	**3,696.5003**	**0.6628**	**0.2046**	**3,774.0353**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.54**	**77.84**	**-5.02**	**0.00**	**54.37**	**92.86**	**58.22**	**54.65**	**92.50**	**61.33**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Palmdale GPU - Hotel Construction Only - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	5.5000e-004	5.0000e-005	5.9200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0127	0.0127	3.0000e-005		0.0135
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total	**5.5000e-004**	**5.0000e-005**	**5.9200e-003**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**2.0000e-005**		**0.0127**	**0.0127**	**3.0000e-005**	**0.0000**	**0.0135**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	5.5000e-004	5.0000e-005	5.9200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0127	0.0127	3.0000e-005		0.0135
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total	**5.5000e-004**	**5.0000e-005**	**5.9200e-003**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**2.0000e-005**		**0.0127**	**0.0127**	**3.0000e-005**	**0.0000**	**0.0135**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2022	1/28/2022	5	20	
2	Grading	Grading	2/2/2022	2/7/2022	5	4	
3	Building Construction	Building Construction	2/8/2022	11/14/2022	5	200	
4	Paving	Paving	11/15/2022	11/28/2022	5	10	
5	Architectural Coating	Architectural Coating	11/29/2022	12/12/2022	5	10	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 4

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 126,324; Non-Residential Outdoor: 42,108; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Paving	Cement and Mortar Mixers	1	6.00	9	0.56
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Building Construction	Cranes	1	6.00	231	0.29
Building Construction	Forklifts	1	6.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Grading	Graders	1	8.00	187	0.41
Paving	Pavers	1	6.00	130	0.42
Paving	Paving Equipment	1	8.00	132	0.36
Paving	Rollers	1	7.00	80	0.38
Demolition	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Building Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Demolition	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Grading	Tractors/Loaders/Backhoes	2	7.00	97	0.37
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Building Construction	Welders	3	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Architectural Coating	1	7.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	7	35.00	14.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Demolition	5	13.00	0.00	374.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	4	10.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	5	13.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Alternative Fuel for Construction Equipment

Use Cleaner Engines for Construction Equipment

Water Exposed Area

3.2 Demolition - 2022

Unmitigated Construction On-Site

Palmdale GPU - Hotel Construction Only - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					4.0465	0.0000	4.0465	0.6127	0.0000	0.6127			0.0000			0.0000
Off-Road	1.6889	16.6217	13.9605	0.0241		0.8379	0.8379		0.7829	0.7829		2,323.4168	2,323.4168	0.5921		2,338.2191
Total	**1.6889**	**16.6217**	**13.9605**	**0.0241**	**4.0465**	**0.8379**	**4.8844**	**0.6127**	**0.7829**	**1.3956**		**2,323.4168**	**2,323.4168**	**0.5921**		**2,338.2191**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0871	3.1406	0.7323	0.0116	0.3273	0.0233	0.3507	0.0897	0.0223	0.1121		1,273.0504	1,273.0504	0.0676	0.2020	1,334.9326
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0377	0.0258	0.3921	9.8000e-004	0.1068	7.0000e-004	0.1075	0.0283	6.5000e-004	0.0290		100.0331	100.0331	3.1000e-003	2.5900e-003	100.8837
Total	**0.1248**	**3.1664**	**1.1243**	**0.0126**	**0.4341**	**0.0240**	**0.4581**	**0.1181**	**0.0230**	**0.1410**		**1,373.0834**	**1,373.0834**	**0.0707**	**0.2046**	**1,435.8163**

Palmdale GPU - Hotel Construction Only - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					1.8209	0.0000	1.8209	0.2757	0.0000	0.2757			0.0000			0.0000
Off-Road	0.2811	1.2179	14.7184	0.0241		0.0375	0.0375		0.0375	0.0375	0.0000	2,323.4168	2,323.4168	0.5921		2,338.2191
Total	**0.2811**	**1.2179**	**14.7184**	**0.0241**	**1.8209**	**0.0375**	**1.8584**	**0.2757**	**0.0375**	**0.3132**	**0.0000**	**2,323.4168**	**2,323.4168**	**0.5921**		**2,338.2191**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0871	3.1406	0.7323	0.0116	0.3273	0.0233	0.3507	0.0897	0.0223	0.1121		1,273.0504	1,273.0504	0.0676	0.2020	1,334.9326
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0377	0.0258	0.3921	9.8000e-004	0.1068	7.0000e-004	0.1075	0.0283	6.5000e-004	0.0290		100.0331	100.0331	3.1000e-003	2.5900e-003	100.8837
Total	**0.1248**	**3.1664**	**1.1243**	**0.0126**	**0.4341**	**0.0240**	**0.4581**	**0.1181**	**0.0230**	**0.1410**		**1,373.0834**	**1,373.0834**	**0.0707**	**0.2046**	**1,435.8163**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.3 Grading - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					7.0826	0.0000	7.0826	3.4247	0.0000	3.4247			0.0000			0.0000
Off-Road	1.5403	16.9836	9.2202	0.0206		0.7423	0.7423		0.6829	0.6829		1,995.4825	1,995.4825	0.6454		2,011.6169
Total	**1.5403**	**16.9836**	**9.2202**	**0.0206**	**7.0826**	**0.7423**	**7.8249**	**3.4247**	**0.6829**	**4.1076**		**1,995.4825**	**1,995.4825**	**0.6454**		**2,011.6169**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0290	0.0198	0.3016	7.6000e-004	0.0822	5.4000e-004	0.0827	0.0218	5.0000e-004	0.0223		76.9485	76.9485	2.3800e-003	2.0000e-003	77.6028
Total	**0.0290**	**0.0198**	**0.3016**	**7.6000e-004**	**0.0822**	**5.4000e-004**	**0.0827**	**0.0218**	**5.0000e-004**	**0.0223**		**76.9485**	**76.9485**	**2.3800e-003**	**2.0000e-003**	**77.6028**

Palmdale GPU - Hotel Construction Only - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					3.1872	0.0000	3.1872	1.5411	0.0000	1.5411			0.0000			0.0000
Off-Road	0.2522	1.0927	10.9071	0.0206		0.0336	0.0336		0.0336	0.0336	0.0000	1,995.4825	1,995.4825	0.6454		2,011.6169
Total	**0.2522**	**1.0927**	**10.9071**	**0.0206**	**3.1872**	**0.0336**	**3.2208**	**1.5411**	**0.0336**	**1.5748**	**0.0000**	**1,995.4825**	**1,995.4825**	**0.6454**		**2,011.6169**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0290	0.0198	0.3016	7.6000e-004	0.0822	5.4000e-004	0.0827	0.0218	5.0000e-004	0.0223		76.9485	76.9485	2.3800e-003	2.0000e-003	77.6028
Total	**0.0290**	**0.0198**	**0.3016**	**7.6000e-004**	**0.0822**	**5.4000e-004**	**0.0827**	**0.0218**	**5.0000e-004**	**0.0223**		**76.9485**	**76.9485**	**2.3800e-003**	**2.0000e-003**	**77.6028**

Palmdale GPU - Hotel Construction Only - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.4 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.6487	12.5031	12.7264	0.0221		0.5889	0.5889		0.5689	0.5689		2,001.5429	2,001.5429	0.3486		2,010.2581
Total	**1.6487**	**12.5031**	**12.7264**	**0.0221**		**0.5889**	**0.5889**		**0.5689**	**0.5689**		**2,001.5429**	**2,001.5429**	**0.3486**		**2,010.2581**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0286	0.7161	0.2416	2.8900e-003	0.0949	6.9000e-003	0.1018	0.0273	6.6000e-003	0.0339		310.3693	310.3693	0.0104	0.0447	323.9505
Worker	0.1015	0.0694	1.0555	2.6500e-003	0.2875	1.8900e-003	0.2894	0.0763	1.7400e-003	0.0780		269.3198	269.3198	8.3400e-003	6.9900e-003	271.6099
Total	**0.1301**	**0.7855**	**1.2971**	**5.5400e-003**	**0.3824**	**8.7900e-003**	**0.3912**	**0.1036**	**8.3400e-003**	**0.1119**		**579.6891**	**579.6891**	**0.0187**	**0.0517**	**595.5604**

Palmdale GPU - Hotel Construction Only - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.0958	0.4150	4.5772	7.8100e-003		0.0128	0.0128		0.0128	0.0128	0.0000	756.0751	756.0751	0.2445		762.1884
Total	**0.0958**	**0.4150**	**4.5772**	**7.8100e-003**		**0.0128**	**0.0128**		**0.0128**	**0.0128**	**0.0000**	**756.0751**	**756.0751**	**0.2445**		**762.1884**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0286	0.7161	0.2416	2.8900e-003	0.0949	6.9000e-003	0.1018	0.0273	6.6000e-003	0.0339		310.3693	310.3693	0.0104	0.0447	323.9505
Worker	0.1015	0.0694	1.0555	2.6500e-003	0.2875	1.8900e-003	0.2894	0.0763	1.7400e-003	0.0780		269.3198	269.3198	8.3400e-003	6.9900e-003	271.6099
Total	**0.1301**	**0.7855**	**1.2971**	**5.5400e-003**	**0.3824**	**8.7900e-003**	**0.3912**	**0.1036**	**8.3400e-003**	**0.1119**		**579.6891**	**579.6891**	**0.0187**	**0.0517**	**595.5604**

Palmdale GPU - Hotel Construction Only - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.5 Paving - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.6877	6.7738	8.8060	0.0135		0.3474	0.3474		0.3205	0.3205		1,297.3789	1,297.3789	0.4113		1,307.6608
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.6877**	**6.7738**	**8.8060**	**0.0135**		**0.3474**	**0.3474**		**0.3205**	**0.3205**		**1,297.3789**	**1,297.3789**	**0.4113**		**1,307.6608**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0377	0.0258	0.3921	9.8000e-004	0.1068	7.0000e-004	0.1075	0.0283	6.5000e-004	0.0290		100.0331	100.0331	3.1000e-003	2.5900e-003	100.8837
Total	**0.0377**	**0.0258**	**0.3921**	**9.8000e-004**	**0.1068**	**7.0000e-004**	**0.1075**	**0.0283**	**6.5000e-004**	**0.0290**		**100.0331**	**100.0331**	**3.1000e-003**	**2.5900e-003**	**100.8837**

Palmdale GPU - Hotel Construction Only - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.1598	0.6922	9.8512	0.0130		0.0213	0.0213		0.0213	0.0213	0.0000	1,259.4916	1,259.4916	0.4074		1,269.6753
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.1598**	**0.6922**	**9.8512**	**0.0130**		**0.0213**	**0.0213**		**0.0213**	**0.0213**	**0.0000**	**1,259.4916**	**1,259.4916**	**0.4074**		**1,269.6753**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0377	0.0258	0.3921	9.8000e-004	0.1068	7.0000e-004	0.1075	0.0283	6.5000e-004	0.0290		100.0331	100.0331	3.1000e-003	2.5900e-003	100.8837
Total	**0.0377**	**0.0258**	**0.3921**	**9.8000e-004**	**0.1068**	**7.0000e-004**	**0.1075**	**0.0283**	**6.5000e-004**	**0.0290**		**100.0331**	**100.0331**	**3.1000e-003**	**2.5900e-003**	**100.8837**

Palmdale GPU - Hotel Construction Only - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.6 Architectural Coating - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	32.2032					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817		281.4481	281.4481	0.0183		281.9062
Total	**32.4077**	**1.4085**	**1.8136**	**2.9700e-003**		**0.0817**	**0.0817**		**0.0817**	**0.0817**		**281.4481**	**281.4481**	**0.0183**		**281.9062**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0203	0.0139	0.2111	5.3000e-004	0.0575	3.8000e-004	0.0579	0.0153	3.5000e-004	0.0156		53.8640	53.8640	1.6700e-003	1.4000e-003	54.3220
Total	**0.0203**	**0.0139**	**0.2111**	**5.3000e-004**	**0.0575**	**3.8000e-004**	**0.0579**	**0.0153**	**3.5000e-004**	**0.0156**		**53.8640**	**53.8640**	**1.6700e-003**	**1.4000e-003**	**54.3220**

Palmdale GPU - Hotel Construction Only - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	32.2032					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.0297	0.1288	1.8324	2.9700e-003		3.9600e-003	3.9600e-003		3.9600e-003	3.9600e-003	0.0000	281.4481	281.4481	0.0183		281.9062
Total	**32.2329**	**0.1288**	**1.8324**	**2.9700e-003**		**3.9600e-003**	**3.9600e-003**		**3.9600e-003**	**3.9600e-003**	**0.0000**	**281.4481**	**281.4481**	**0.0183**		**281.9062**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0203	0.0139	0.2111	5.3000e-004	0.0575	3.8000e-004	0.0579	0.0153	3.5000e-004	0.0156		53.8640	53.8640	1.6700e-003	1.4000e-003	54.3220
Total	**0.0203**	**0.0139**	**0.2111**	**5.3000e-004**	**0.0575**	**3.8000e-004**	**0.0579**	**0.0153**	**3.5000e-004**	**0.0156**		**53.8640**	**53.8640**	**1.6700e-003**	**1.4000e-003**	**54.3220**

Palmdale GPU - Hotel Construction Only - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Hotel	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Hotel	9.50	7.30	7.30	19.40	61.60	19.00	58	38	4

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Hotel	0.544785	0.062844	0.187478	0.127235	0.023089	0.006083	0.010475	0.008012	0.000925	0.000611	0.024394	0.000698	0.003374

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Hotel	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Hotel	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	5.5000e-004	5.0000e-005	5.9200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0127	0.0127	3.0000e-005		0.0135
Unmitigated	5.5000e-004	5.0000e-005	5.9200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0127	0.0127	3.0000e-005		0.0135

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	5.5000e-004	5.0000e-005	5.9200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0127	0.0127	3.0000e-005		0.0135
Total	**5.5000e-004**	**5.0000e-005**	**5.9200e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**		**0.0127**	**0.0127**	**3.0000e-005**		**0.0135**

Palmdale GPU - Hotel Construction Only - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	5.5000e-004	5.0000e-005	5.9200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0127	0.0127	3.0000e-005		0.0135
Total	**5.5000e-004**	**5.0000e-005**	**5.9200e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**		**0.0127**	**0.0127**	**3.0000e-005**		**0.0135**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Palmdale GPU - Hotel Construction Only - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Palmdale GPU - Hotel Construction Only - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Palmdale GPU - Hotel Construction Only

Los Angeles-Mojave Desert County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Hotel	58.00	Room	1.93	84,216.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	9			**Operational Year**	2023
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	390.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics - See Assumptions

Land Use - See Assumptions

Construction Phase -

Demolition - See Assumptions

Architectural Coating - See Assumptions

Vehicle Trips - Operational Emissions Modeled Separately

Consumer Products - Operational Emissions Modeled Separately

Area Coating - Operational Emissions Modeled Separately

Landscape Equipment - Operational Emissions Modeled Separately

Energy Use - Operational Emissions Modeled Separately

Water And Wastewater - Operational Emissions Modeled Separately

Solid Waste - Operational Emissions Modeled Separately

Palmdale GPU - Hotel Construction Only - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Construction Off-road Equipment Mitigation - Water 2x daily based on AVAQMD regulations for dust control; not mitigation

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	250.00	15.00
tblArchitecturalCoating	EF_Nonresidential_Interior	250.00	50.00
tblAreaCoating	ReapplicationRatePercent	10	0
tblConstEquipMitigation	FuelType	Diesel	Electrical
tblConstEquipMitigation	FuelType	Diesel	Electrical
tblConstEquipMitigation	FuelType	Diesel	Electrical
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	7.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConsumerProducts	ROG_EF	2.14E-05	0
tblConsumerProducts	ROG_EF_Degreaser	3.542E-07	0
tblConsumerProducts	ROG_EF_PesticidesFertilizers	5.152E-08	0
tblEnergyUse	LightingElect	2.14	0.00
tblEnergyUse	NT24E	2.89	0.00
tblEnergyUse	NT24NG	4.06	0.00
tblEnergyUse	T24E	2.28	0.00
tblEnergyUse	T24NG	19.72	0.00
tblLandscapeEquipment	NumberSummerDays	180	0
tblSolidWaste	SolidWasteGenerationRate	31.75	0.00
tblVehicleTrips	ST_TR	8.19	0.00
tblVehicleTrips	SU_TR	5.95	0.00
tblVehicleTrips	WD_TR	8.36	0.00
tblWater	IndoorWaterUseRate	1,471,272.66	0.00
tblWater	OutdoorWaterUseRate	163,474.74	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

2022	32.4291	19.9183	15.0700	0.0367	7.1647	0.8620	7.9076	3.4465	0.8059	4.1299	0.0000	3,691.6141	3,691.6141	0.6628	0.2048	3,769.2211
Maximum	**32.4291**	**19.9183**	**15.0700**	**0.0367**	**7.1647**	**0.8620**	**7.9076**	**3.4465**	**0.8059**	**4.1299**	**0.0000**	**3,691.6141**	**3,691.6141**	**0.6628**	**0.2048**	**3,769.2211**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2022	32.2543	4.5145	15.8279	0.0367	3.2693	0.0616	3.3035	1.5629	0.0605	1.5970	0.0000	3,691.6141	3,691.6141	0.6628	0.2048	3,769.2211
Maximum	**32.2543**	**4.5145**	**15.8279**	**0.0367**	**3.2693**	**0.0616**	**3.3035**	**1.5629**	**0.0605**	**1.5970**	**0.0000**	**3,691.6141**	**3,691.6141**	**0.6628**	**0.2048**	**3,769.2211**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.54**	**77.33**	**-5.03**	**0.00**	**54.37**	**92.86**	**58.22**	**54.65**	**92.49**	**61.33**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Palmdale GPU - Hotel Construction Only - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	5.5000e-004	5.0000e-005	5.9200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0127	0.0127	3.0000e-005		0.0135
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total	**5.5000e-004**	**5.0000e-005**	**5.9200e-003**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**2.0000e-005**		**0.0127**	**0.0127**	**3.0000e-005**	**0.0000**	**0.0135**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	5.5000e-004	5.0000e-005	5.9200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0127	0.0127	3.0000e-005		0.0135
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total	**5.5000e-004**	**5.0000e-005**	**5.9200e-003**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**2.0000e-005**		**0.0127**	**0.0127**	**3.0000e-005**	**0.0000**	**0.0135**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2022	1/28/2022	5	20	
2	Grading	Grading	2/2/2022	2/7/2022	5	4	
3	Building Construction	Building Construction	2/8/2022	11/14/2022	5	200	
4	Paving	Paving	11/15/2022	11/28/2022	5	10	
5	Architectural Coating	Architectural Coating	11/29/2022	12/12/2022	5	10	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 4

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 126,324; Non-Residential Outdoor: 42,108; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Paving	Cement and Mortar Mixers	1	6.00	9	0.56
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Building Construction	Cranes	1	6.00	231	0.29
Building Construction	Forklifts	1	6.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Grading	Graders	1	8.00	187	0.41
Paving	Pavers	1	6.00	130	0.42
Paving	Paving Equipment	1	8.00	132	0.36
Paving	Rollers	1	7.00	80	0.38
Demolition	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Building Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Demolition	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Grading	Tractors/Loaders/Backhoes	2	7.00	97	0.37
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Building Construction	Welders	3	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Architectural Coating	1	7.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	7	35.00	14.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Demolition	5	13.00	0.00	374.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	4	10.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	5	13.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Alternative Fuel for Construction Equipment

Use Cleaner Engines for Construction Equipment

Water Exposed Area

3.2 Demolition - 2022

Unmitigated Construction On-Site

Palmdale GPU - Hotel Construction Only - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					4.0465	0.0000	4.0465	0.6127	0.0000	0.6127			0.0000			0.0000
Off-Road	1.6889	16.6217	13.9605	0.0241		0.8379	0.8379		0.7829	0.7829		2,323.4168	2,323.4168	0.5921		2,338.2191
Total	**1.6889**	**16.6217**	**13.9605**	**0.0241**	**4.0465**	**0.8379**	**4.8844**	**0.6127**	**0.7829**	**1.3956**		**2,323.4168**	**2,323.4168**	**0.5921**		**2,338.2191**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0850	3.2681	0.7452	0.0116	0.3273	0.0234	0.3507	0.0897	0.0224	0.1121		1,273.4236	1,273.4236	0.0675	0.2021	1,335.3226
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0398	0.0285	0.3643	9.3000e-004	0.1068	7.0000e-004	0.1075	0.0283	6.5000e-004	0.0290		94.7737	94.7737	3.1900e-003	2.7700e-003	95.6794
Total	**0.1248**	**3.2966**	**1.1095**	**0.0126**	**0.4341**	**0.0241**	**0.4582**	**0.1181**	**0.0230**	**0.1411**		**1,368.1973**	**1,368.1973**	**0.0707**	**0.2048**	**1,431.0020**

Palmdale GPU - Hotel Construction Only - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					1.8209	0.0000	1.8209	0.2757	0.0000	0.2757			0.0000			0.0000
Off-Road	0.2811	1.2179	14.7184	0.0241		0.0375	0.0375		0.0375	0.0375	0.0000	2,323.4168	2,323.4168	0.5921		2,338.2191
Total	**0.2811**	**1.2179**	**14.7184**	**0.0241**	**1.8209**	**0.0375**	**1.8584**	**0.2757**	**0.0375**	**0.3132**	**0.0000**	**2,323.4168**	**2,323.4168**	**0.5921**		**2,338.2191**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0850	3.2681	0.7452	0.0116	0.3273	0.0234	0.3507	0.0897	0.0224	0.1121		1,273.4236	1,273.4236	0.0675	0.2021	1,335.3226
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0398	0.0285	0.3643	9.3000e-004	0.1068	7.0000e-004	0.1075	0.0283	6.5000e-004	0.0290		94.7737	94.7737	3.1900e-003	2.7700e-003	95.6794
Total	**0.1248**	**3.2966**	**1.1095**	**0.0126**	**0.4341**	**0.0241**	**0.4582**	**0.1181**	**0.0230**	**0.1411**		**1,368.1973**	**1,368.1973**	**0.0707**	**0.2048**	**1,431.0020**

Palmdale GPU - Hotel Construction Only - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.3 Grading - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					7.0826	0.0000	7.0826	3.4247	0.0000	3.4247			0.0000			0.0000
Off-Road	1.5403	16.9836	9.2202	0.0206		0.7423	0.7423		0.6829	0.6829		1,995.4825	1,995.4825	0.6454		2,011.6169
Total	**1.5403**	**16.9836**	**9.2202**	**0.0206**	**7.0826**	**0.7423**	**7.8249**	**3.4247**	**0.6829**	**4.1076**		**1,995.4825**	**1,995.4825**	**0.6454**		**2,011.6169**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0306	0.0219	0.2802	7.2000e-004	0.0822	5.4000e-004	0.0827	0.0218	5.0000e-004	0.0223		72.9029	72.9029	2.4500e-003	2.1300e-003	73.5996
Total	**0.0306**	**0.0219**	**0.2802**	**7.2000e-004**	**0.0822**	**5.4000e-004**	**0.0827**	**0.0218**	**5.0000e-004**	**0.0223**		**72.9029**	**72.9029**	**2.4500e-003**	**2.1300e-003**	**73.5996**

Palmdale GPU - Hotel Construction Only - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					3.1872	0.0000	3.1872	1.5411	0.0000	1.5411			0.0000			0.0000
Off-Road	0.2522	1.0927	10.9071	0.0206		0.0336	0.0336		0.0336	0.0336	0.0000	1,995.4825	1,995.4825	0.6454		2,011.6169
Total	**0.2522**	**1.0927**	**10.9071**	**0.0206**	**3.1872**	**0.0336**	**3.2208**	**1.5411**	**0.0336**	**1.5748**	**0.0000**	**1,995.4825**	**1,995.4825**	**0.6454**		**2,011.6169**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0306	0.0219	0.2802	7.2000e-004	0.0822	5.4000e-004	0.0827	0.0218	5.0000e-004	0.0223		72.9029	72.9029	2.4500e-003	2.1300e-003	73.5996
Total	**0.0306**	**0.0219**	**0.2802**	**7.2000e-004**	**0.0822**	**5.4000e-004**	**0.0827**	**0.0218**	**5.0000e-004**	**0.0223**		**72.9029**	**72.9029**	**2.4500e-003**	**2.1300e-003**	**73.5996**

Palmdale GPU - Hotel Construction Only - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.4 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.6487	12.5031	12.7264	0.0221		0.5889	0.5889		0.5689	0.5689		2,001.5429	2,001.5429	0.3486		2,010.2581
Total	**1.6487**	**12.5031**	**12.7264**	**0.0221**		**0.5889**	**0.5889**		**0.5689**	**0.5689**		**2,001.5429**	**2,001.5429**	**0.3486**		**2,010.2581**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0283	0.7456	0.2497	2.8900e-003	0.0949	6.9300e-003	0.1018	0.0273	6.6300e-003	0.0339		310.4799	310.4799	0.0103	0.0448	324.0771
Worker	0.1072	0.0766	0.9808	2.5100e-003	0.2875	1.8900e-003	0.2894	0.0763	1.7400e-003	0.0780		255.1600	255.1600	8.5800e-003	7.4600e-003	257.5984
Total	**0.1355**	**0.8223**	**1.2305**	**5.4000e-003**	**0.3824**	**8.8200e-003**	**0.3912**	**0.1036**	**8.3700e-003**	**0.1119**		**565.6399**	**565.6399**	**0.0189**	**0.0522**	**581.6755**

Palmdale GPU - Hotel Construction Only - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.0958	0.4150	4.5772	7.8100e-003		0.0128	0.0128		0.0128	0.0128	0.0000	756.0751	756.0751	0.2445		762.1884
Total	**0.0958**	**0.4150**	**4.5772**	**7.8100e-003**		**0.0128**	**0.0128**		**0.0128**	**0.0128**	**0.0000**	**756.0751**	**756.0751**	**0.2445**		**762.1884**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0283	0.7456	0.2497	2.8900e-003	0.0949	6.9300e-003	0.1018	0.0273	6.6300e-003	0.0339		310.4799	310.4799	0.0103	0.0448	324.0771
Worker	0.1072	0.0766	0.9808	2.5100e-003	0.2875	1.8900e-003	0.2894	0.0763	1.7400e-003	0.0780		255.1600	255.1600	8.5800e-003	7.4600e-003	257.5984
Total	**0.1355**	**0.8223**	**1.2305**	**5.4000e-003**	**0.3824**	**8.8200e-003**	**0.3912**	**0.1036**	**8.3700e-003**	**0.1119**		**565.6399**	**565.6399**	**0.0189**	**0.0522**	**581.6755**

Palmdale GPU - Hotel Construction Only - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.5 Paving - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.6877	6.7738	8.8060	0.0135		0.3474	0.3474		0.3205	0.3205		1,297.3789	1,297.3789	0.4113		1,307.6608
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.6877**	**6.7738**	**8.8060**	**0.0135**		**0.3474**	**0.3474**		**0.3205**	**0.3205**		**1,297.3789**	**1,297.3789**	**0.4113**		**1,307.6608**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0398	0.0285	0.3643	9.3000e-004	0.1068	7.0000e-004	0.1075	0.0283	6.5000e-004	0.0290		94.7737	94.7737	3.1900e-003	2.7700e-003	95.6794
Total	**0.0398**	**0.0285**	**0.3643**	**9.3000e-004**	**0.1068**	**7.0000e-004**	**0.1075**	**0.0283**	**6.5000e-004**	**0.0290**		**94.7737**	**94.7737**	**3.1900e-003**	**2.7700e-003**	**95.6794**

Palmdale GPU - Hotel Construction Only - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.1598	0.6922	9.8512	0.0130		0.0213	0.0213		0.0213	0.0213	0.0000	1,259.4916	1,259.4916	0.4074		1,269.6753
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.1598**	**0.6922**	**9.8512**	**0.0130**		**0.0213**	**0.0213**		**0.0213**	**0.0213**	**0.0000**	**1,259.4916**	**1,259.4916**	**0.4074**		**1,269.6753**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0398	0.0285	0.3643	9.3000e-004	0.1068	7.0000e-004	0.1075	0.0283	6.5000e-004	0.0290		94.7737	94.7737	3.1900e-003	2.7700e-003	95.6794
Total	**0.0398**	**0.0285**	**0.3643**	**9.3000e-004**	**0.1068**	**7.0000e-004**	**0.1075**	**0.0283**	**6.5000e-004**	**0.0290**		**94.7737**	**94.7737**	**3.1900e-003**	**2.7700e-003**	**95.6794**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.6 Architectural Coating - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	32.2032					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817		281.4481	281.4481	0.0183		281.9062
Total	**32.4077**	**1.4085**	**1.8136**	**2.9700e-003**		**0.0817**	**0.0817**		**0.0817**	**0.0817**		**281.4481**	**281.4481**	**0.0183**		**281.9062**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0214	0.0153	0.1962	5.0000e-004	0.0575	3.8000e-004	0.0579	0.0153	3.5000e-004	0.0156		51.0320	51.0320	1.7200e-003	1.4900e-003	51.5197
Total	**0.0214**	**0.0153**	**0.1962**	**5.0000e-004**	**0.0575**	**3.8000e-004**	**0.0579**	**0.0153**	**3.5000e-004**	**0.0156**		**51.0320**	**51.0320**	**1.7200e-003**	**1.4900e-003**	**51.5197**

Palmdale GPU - Hotel Construction Only - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	32.2032					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.0297	0.1288	1.8324	2.9700e-003		3.9600e-003	3.9600e-003		3.9600e-003	3.9600e-003	0.0000	281.4481	281.4481	0.0183		281.9062
Total	**32.2329**	**0.1288**	**1.8324**	**2.9700e-003**		**3.9600e-003**	**3.9600e-003**		**3.9600e-003**	**3.9600e-003**	**0.0000**	**281.4481**	**281.4481**	**0.0183**		**281.9062**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0214	0.0153	0.1962	5.0000e-004	0.0575	3.8000e-004	0.0579	0.0153	3.5000e-004	0.0156		51.0320	51.0320	1.7200e-003	1.4900e-003	51.5197
Total	**0.0214**	**0.0153**	**0.1962**	**5.0000e-004**	**0.0575**	**3.8000e-004**	**0.0579**	**0.0153**	**3.5000e-004**	**0.0156**		**51.0320**	**51.0320**	**1.7200e-003**	**1.4900e-003**	**51.5197**

Palmdale GPU - Hotel Construction Only - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Hotel	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Hotel	9.50	7.30	7.30	19.40	61.60	19.00	58	38	4

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Hotel	0.544785	0.062844	0.187478	0.127235	0.023089	0.006083	0.010475	0.008012	0.000925	0.000611	0.024394	0.000698	0.003374

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Hotel	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Hotel	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	5.5000e-004	5.0000e-005	5.9200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0127	0.0127	3.0000e-005		0.0135
Unmitigated	5.5000e-004	5.0000e-005	5.9200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0127	0.0127	3.0000e-005		0.0135

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	5.5000e-004	5.0000e-005	5.9200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0127	0.0127	3.0000e-005		0.0135
Total	**5.5000e-004**	**5.0000e-005**	**5.9200e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**		**0.0127**	**0.0127**	**3.0000e-005**		**0.0135**

Palmdale GPU - Hotel Construction Only - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	5.5000e-004	5.0000e-005	5.9200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0127	0.0127	3.0000e-005		0.0135
Total	**5.5000e-004**	**5.0000e-005**	**5.9200e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**		**0.0127**	**0.0127**	**3.0000e-005**		**0.0135**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Palmdale GPU - Hotel Construction Only - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Palmdale GPU - Industrial Construction Only - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Palmdale GPU - Industrial Construction Only

Los Angeles-Mojave Desert County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Unrefrigerated Warehouse-No Rail	502.34	1000sqft	11.53	502,343.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	9			**Operational Year**	2023
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	390.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics - See Assumptions

Land Use -

Construction Phase - See Assumptions

Grading -

Demolition - See Assumptions

Architectural Coating - Based on AVAQMD requirements for VOC content

Vehicle Trips - Operational Emissions Modeled Separately

Consumer Products - Operational Emissions Modeled Separately

Area Coating - Operational Emissions Modeled Separately

Landscape Equipment - Operational Emissions Modeled Separately

Energy Use - Operational Emissions Modeled Separately

Water And Wastewater - Operational Emissions Modeled Separately

Palmdale GPU - Industrial Construction Only - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Solid Waste - Operational Emissions Modeled Separately

Construction Off-road Equipment Mitigation - Water 2x daily based on AVAQMD regulations for dust control; not mitigation

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	250.00	150.00
tblArchitecturalCoating	EF_Nonresidential_Interior	250.00	50.00
tblConstEquipMitigation	FuelType	Diesel	Electrical
tblConstEquipMitigation	FuelType	Diesel	Electrical
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	5.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	5.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final

Palmdale GPU - Industrial Construction Only - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	NumDays	300.00	223.00
tblConstructionPhase	NumDays	20.00	15.00
tblConstructionPhase	NumDays	30.00	22.00
tblConstructionPhase	PhaseEndDate	7/14/2023	12/30/2022
tblConstructionPhase	PhaseEndDate	5/19/2023	12/30/2022
tblConstructionPhase	PhaseEndDate	1/28/2022	1/21/2022
tblConstructionPhase	PhaseEndDate	3/25/2022	2/22/2022
tblConstructionPhase	PhaseEndDate	6/16/2023	3/22/2022
tblConstructionPhase	PhaseStartDate	6/17/2023	12/5/2022
tblConstructionPhase	PhaseStartDate	3/26/2022	2/23/2022
tblConstructionPhase	PhaseStartDate	2/12/2022	1/22/2022
tblConstructionPhase	PhaseStartDate	5/20/2023	2/23/2022
tblConsumerProducts	ROG_EF	2.14E-05	0
tblConsumerProducts	ROG_EF_Degreaser	3.542E-07	0
tblConsumerProducts	ROG_EF_PesticidesFertilizers	5.152E-08	0
tblEnergyUse	LightingElect	1.91	0.00
tblEnergyUse	NT24E	1.34	0.00
tblEnergyUse	NT24NG	0.03	0.00
tblEnergyUse	T24E	0.58	0.00
tblEnergyUse	T24NG	0.83	0.00
tblLandscapeEquipment	NumberSummerDays	180	0
tblSolidWaste	SolidWasteGenerationRate	472.20	0.00
tblVehicleTrips	ST_TR	1.74	0.00

Palmdale GPU - Industrial Construction Only - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

tblVehicleTrips	SU_TR	1.74	0.00
tblVehicleTrips	WD_TR	1.74	0.00
tblWater	IndoorWaterUseRate	116,166,125.00	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2022	2.1026	3.2344	3.3670	8.6100e-003	0.6258	0.1313	0.7571	0.1529	0.1230	0.2759	0.0000	783.8263	783.8263	0.1104	0.0425	799.2513
Maximum	**2.1026**	**3.2344**	**3.3670**	**8.6100e-003**	**0.6258**	**0.1313**	**0.7571**	**0.1529**	**0.1230**	**0.2759**	**0.0000**	**783.8263**	**783.8263**	**0.1104**	**0.0425**	**799.2513**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2022	1.8789	0.9180	2.9611	7.5900e-003	0.4342	0.0125	0.4467	0.1102	0.0121	0.1223	0.0000	699.8188	699.8188	0.1049	0.0425	715.1061
Maximum	**1.8789**	**0.9180**	**2.9611**	**7.5900e-003**	**0.4342**	**0.0125**	**0.4467**	**0.1102**	**0.0121**	**0.1223**	**0.0000**	**699.8188**	**699.8188**	**0.1049**	**0.0425**	**715.1061**

Palmdale GPU - Industrial Construction Only - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**10.64**	**71.62**	**12.05**	**11.85**	**30.63**	**90.48**	**41.00**	**27.93**	**90.14**	**55.67**	**0.00**	**10.72**	**10.72**	**4.99**	**0.00**	**10.53**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
1	**1-1-2022**	**3-31-2022**	1.3312	0.3772
2	**4-1-2022**	**6-30-2022**	0.7382	0.2131
3	**7-1-2022**	**9-30-2022**	0.7463	0.2154
		Highest	1.3312	0.3772

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Palmdale GPU - Industrial Construction Only - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Category	tons/yr										MT/yr					
Area	0.5821	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.5821**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.5821	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.5821**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2022	1/21/2022	5	15	
2	Grading	Grading	1/22/2022	2/22/2022	5	22	
3	Building Construction	Building Construction	2/23/2022	12/30/2022	5	223	

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

4	Paving	Paving	2/23/2022	3/22/2022	5	20	
5	Architectural Coating	Architectural Coating	12/5/2022	12/30/2022	5	20	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 66

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 753,515; Non-Residential Outdoor: 251,172; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Building Construction	Cranes	1	7.00	231	0.29
Demolition	Excavators	3	8.00	158	0.38
Grading	Excavators	2	8.00	158	0.38
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Grading	Graders	1	8.00	187	0.41
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45

Palmdale GPU - Industrial Construction Only - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Architectural Coating	1	42.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	211.00	82.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Demolition	6	15.00	0.00	2,285.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Alternative Fuel for Construction Equipment

Use Cleaner Engines for Construction Equipment

Water Exposed Area

3.2 Demolition - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.2472	0.0000	0.2472	0.0374	0.0000	0.0374	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0198	0.1929	0.1545	2.9000e-004		9.3200e-003	9.3200e-003		8.6600e-003	8.6600e-003	0.0000	25.4927	25.4927	7.1600e-003	0.0000	25.6717
Total	**0.0198**	**0.1929**	**0.1545**	**2.9000e-004**	**0.2472**	**9.3200e-003**	**0.2566**	**0.0374**	**8.6600e-003**	**0.0461**	**0.0000**	**25.4927**	**25.4927**	**7.1600e-003**	**0.0000**	**25.6717**

Palmdale GPU - Industrial Construction Only - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	5.2700e-003	0.2021	0.0451	7.1000e-004	0.0197	1.4300e-003	0.0211	5.4000e-003	1.3700e-003	6.7600e-003	0.0000	70.5682	70.5682	3.7500e-003	0.0112	73.9986
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.2000e-004	2.5000e-004	3.2200e-003	1.0000e-005	9.1000e-004	1.0000e-005	9.1000e-004	2.4000e-004	1.0000e-005	2.5000e-004	0.0000	0.7503	0.7503	2.0000e-005	2.0000e-005	0.7574
Total	**5.5900e-003**	**0.2024**	**0.0483**	**7.2000e-004**	**0.0206**	**1.4400e-003**	**0.0220**	**5.6400e-003**	**1.3800e-003**	**7.0100e-003**	**0.0000**	**71.3185**	**71.3185**	**3.7700e-003**	**0.0112**	**74.7560**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1113	0.0000	0.1113	0.0169	0.0000	0.0169	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.4700e-003	0.0150	0.1746	2.9000e-004		4.6000e-004	4.6000e-004		4.6000e-004	4.6000e-004	0.0000	25.4926	25.4926	7.1600e-003	0.0000	25.6717
Total	**3.4700e-003**	**0.0150**	**0.1746**	**2.9000e-004**	**0.1113**	**4.6000e-004**	**0.1117**	**0.0169**	**4.6000e-004**	**0.0173**	**0.0000**	**25.4926**	**25.4926**	**7.1600e-003**	**0.0000**	**25.6717**

Palmdale GPU - Industrial Construction Only - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	5.2700e-003	0.2021	0.0451	7.1000e-004	0.0197	1.4300e-003	0.0211	5.4000e-003	1.3700e-003	6.7600e-003	0.0000	70.5682	70.5682	3.7500e-003	0.0112	73.9986
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.2000e-004	2.5000e-004	3.2200e-003	1.0000e-005	9.1000e-004	1.0000e-005	9.1000e-004	2.4000e-004	1.0000e-005	2.5000e-004	0.0000	0.7503	0.7503	2.0000e-005	2.0000e-005	0.7574
Total	**5.5900e-003**	**0.2024**	**0.0483**	**7.2000e-004**	**0.0206**	**1.4400e-003**	**0.0220**	**5.6400e-003**	**1.3800e-003**	**7.0100e-003**	**0.0000**	**71.3185**	**71.3185**	**3.7700e-003**	**0.0112**	**74.7560**

3.3 Grading - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1012	0.0000	0.1012	0.0402	0.0000	0.0402	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0399	0.4273	0.3195	6.8000e-004		0.0180	0.0180		0.0166	0.0166	0.0000	59.9881	59.9881	0.0194	0.0000	60.4731
Total	**0.0399**	**0.4273**	**0.3195**	**6.8000e-004**	**0.1012**	**0.0180**	**0.1192**	**0.0402**	**0.0166**	**0.0567**	**0.0000**	**59.9881**	**59.9881**	**0.0194**	**0.0000**	**60.4731**

Palmdale GPU - Industrial Construction Only - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.3000e-004	4.9000e-004	6.3000e-003	2.0000e-005	1.7700e-003	1.0000e-005	1.7800e-003	4.7000e-004	1.0000e-005	4.8000e-004	0.0000	1.4672	1.4672	5.0000e-005	4.0000e-005	1.4812
Total	**6.3000e-004**	**4.9000e-004**	**6.3000e-003**	**2.0000e-005**	**1.7700e-003**	**1.0000e-005**	**1.7800e-003**	**4.7000e-004**	**1.0000e-005**	**4.8000e-004**	**0.0000**	**1.4672**	**1.4672**	**5.0000e-005**	**4.0000e-005**	**1.4812**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0456	0.0000	0.0456	0.0181	0.0000	0.0181	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	8.3800e-003	0.0363	0.3630	6.8000e-004		1.1200e-003	1.1200e-003		1.1200e-003	1.1200e-003	0.0000	59.9880	59.9880	0.0194	0.0000	60.4730
Total	**8.3800e-003**	**0.0363**	**0.3630**	**6.8000e-004**	**0.0456**	**1.1200e-003**	**0.0467**	**0.0181**	**1.1200e-003**	**0.0192**	**0.0000**	**59.9880**	**59.9880**	**0.0194**	**0.0000**	**60.4730**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.3000e-004	4.9000e-004	6.3000e-003	2.0000e-005	1.7700e-003	1.0000e-005	1.7800e-003	4.7000e-004	1.0000e-005	4.8000e-004	0.0000	1.4672	1.4672	5.0000e-005	4.0000e-005	1.4812
Total	**6.3000e-004**	**4.9000e-004**	**6.3000e-003**	**2.0000e-005**	**1.7700e-003**	**1.0000e-005**	**1.7800e-003**	**4.7000e-004**	**1.0000e-005**	**4.8000e-004**	**0.0000**	**1.4672**	**1.4672**	**5.0000e-005**	**4.0000e-005**	**1.4812**

3.4 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1903	1.7411	1.8245	3.0000e-003		0.0902	0.0902		0.0849	0.0849	0.0000	258.3737	258.3737	0.0619	0.0000	259.9211
Total	**0.1903**	**1.7411**	**1.8245**	**3.0000e-003**		**0.0902**	**0.0902**		**0.0849**	**0.0849**	**0.0000**	**258.3737**	**258.3737**	**0.0619**	**0.0000**	**259.9211**

Palmdale GPU - Industrial Construction Only - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0185	0.4911	0.1602	1.8900e-003	0.0610	4.5100e-003	0.0655	0.0176	4.3200e-003	0.0219	0.0000	183.9080	183.9080	6.1400e-003	0.0265	191.9633
Worker	0.0670	0.0525	0.6736	1.7100e-003	0.1895	1.2700e-003	0.1907	0.0503	1.1700e-003	0.0515	0.0000	156.8962	156.8962	5.2200e-003	4.6100e-003	158.4002
Total	**0.0855**	**0.5437**	**0.8337**	**3.6000e-003**	**0.2504**	**5.7800e-003**	**0.2562**	**0.0679**	**5.4900e-003**	**0.0734**	**0.0000**	**340.8042**	**340.8042**	**0.0114**	**0.0311**	**350.3635**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0243	0.1054	1.3276	1.9800e-003		3.2400e-003	3.2400e-003		3.2400e-003	3.2400e-003	0.0000	174.3662	174.3662	0.0564	0.0000	175.7761
Total	**0.0243**	**0.1054**	**1.3276**	**1.9800e-003**		**3.2400e-003**	**3.2400e-003**		**3.2400e-003**	**3.2400e-003**	**0.0000**	**174.3662**	**174.3662**	**0.0564**	**0.0000**	**175.7761**

Palmdale GPU - Industrial Construction Only - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0185	0.4911	0.1602	1.8900e-003	0.0610	4.5100e-003	0.0655	0.0176	4.3200e-003	0.0219	0.0000	183.9080	183.9080	6.1400e-003	0.0265	191.9633
Worker	0.0670	0.0525	0.6736	1.7100e-003	0.1895	1.2700e-003	0.1907	0.0503	1.1700e-003	0.0515	0.0000	156.8962	156.8962	5.2200e-003	4.6100e-003	158.4002
Total	**0.0855**	**0.5437**	**0.8337**	**3.6000e-003**	**0.2504**	**5.7800e-003**	**0.2562**	**0.0679**	**5.4900e-003**	**0.0734**	**0.0000**	**340.8042**	**340.8042**	**0.0114**	**0.0311**	**350.3635**

3.5 Paving - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0110	0.1113	0.1458	2.3000e-004		5.6800e-003	5.6800e-003		5.2200e-003	5.2200e-003	0.0000	20.0276	20.0276	6.4800e-003	0.0000	20.1895
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0110**	**0.1113**	**0.1458**	**2.3000e-004**		**5.6800e-003**	**5.6800e-003**		**5.2200e-003**	**5.2200e-003**	**0.0000**	**20.0276**	**20.0276**	**6.4800e-003**	**0.0000**	**20.1895**

Palmdale GPU - Industrial Construction Only - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.3000e-004	3.3000e-004	4.2900e-003	1.0000e-005	1.2100e-003	1.0000e-005	1.2200e-003	3.2000e-004	1.0000e-005	3.3000e-004	0.0000	1.0003	1.0003	3.0000e-005	3.0000e-005	1.0099
Total	**4.3000e-004**	**3.3000e-004**	**4.2900e-003**	**1.0000e-005**	**1.2100e-003**	**1.0000e-005**	**1.2200e-003**	**3.2000e-004**	**1.0000e-005**	**3.3000e-004**	**0.0000**	**1.0003**	**1.0003**	**3.0000e-005**	**3.0000e-005**	**1.0099**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	2.8000e-003	0.0122	0.1730	2.3000e-004		3.7000e-004	3.7000e-004		3.7000e-004	3.7000e-004	0.0000	20.0275	20.0275	6.4800e-003	0.0000	20.1895
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**2.8000e-003**	**0.0122**	**0.1730**	**2.3000e-004**		**3.7000e-004**	**3.7000e-004**		**3.7000e-004**	**3.7000e-004**	**0.0000**	**20.0275**	**20.0275**	**6.4800e-003**	**0.0000**	**20.1895**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	4.3000e-004	3.3000e-004	4.2900e-003	1.0000e-005	1.2100e-003	1.0000e-005	1.2200e-003	3.2000e-004	1.0000e-005	3.3000e-004	0.0000	1.0003	1.0003	3.0000e-005	3.0000e-005	1.0099
Total	**4.3000e-004**	**3.3000e-004**	**4.2900e-003**	**1.0000e-005**	**1.2100e-003**	**1.0000e-005**	**1.2200e-003**	**3.2000e-004**	**1.0000e-005**	**3.3000e-004**	**0.0000**	**1.0003**	**1.0003**	**3.0000e-005**	**3.0000e-005**	**1.0099**

3.6 Architectural Coating - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.7463					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.0500e-003	0.0141	0.0181	3.0000e-005		8.2000e-004	8.2000e-004		8.2000e-004	8.2000e-004	0.0000	2.5533	2.5533	1.7000e-004	0.0000	2.5574
Total	**1.7483**	**0.0141**	**0.0181**	**3.0000e-005**		**8.2000e-004**	**8.2000e-004**		**8.2000e-004**	**8.2000e-004**	**0.0000**	**2.5533**	**2.5533**	**1.7000e-004**	**0.0000**	**2.5574**

Palmdale GPU - Industrial Construction Only - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.2000e-003	9.4000e-004	0.0120	3.0000e-005	3.3800e-003	2.0000e-005	3.4100e-003	9.0000e-004	2.0000e-005	9.2000e-004	0.0000	2.8009	2.8009	9.0000e-005	8.0000e-005	2.8278
Total	**1.2000e-003**	**9.4000e-004**	**0.0120**	**3.0000e-005**	**3.3800e-003**	**2.0000e-005**	**3.4100e-003**	**9.0000e-004**	**2.0000e-005**	**9.2000e-004**	**0.0000**	**2.8009**	**2.8009**	**9.0000e-005**	**8.0000e-005**	**2.8278**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	1.7463					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.0000e-004	1.2900e-003	0.0183	3.0000e-005		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	2.5533	2.5533	1.7000e-004	0.0000	2.5574
Total	**1.7466**	**1.2900e-003**	**0.0183**	**3.0000e-005**		**4.0000e-005**	**4.0000e-005**		**4.0000e-005**	**4.0000e-005**	**0.0000**	**2.5533**	**2.5533**	**1.7000e-004**	**0.0000**	**2.5574**

Palmdale GPU - Industrial Construction Only - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.2000e-003	9.4000e-004	0.0120	3.0000e-005	3.3800e-003	2.0000e-005	3.4100e-003	9.0000e-004	2.0000e-005	9.2000e-004	0.0000	2.8009	2.8009	9.0000e-005	8.0000e-005	2.8278
Total	**1.2000e-003**	**9.4000e-004**	**0.0120**	**3.0000e-005**	**3.3800e-003**	**2.0000e-005**	**3.4100e-003**	**9.0000e-004**	**2.0000e-005**	**9.2000e-004**	**0.0000**	**2.8009**	**2.8009**	**9.0000e-005**	**8.0000e-005**	**2.8278**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Unrefrigerated Warehouse-No Rail	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Unrefrigerated Warehouse-No	9.50	7.30	7.30	59.00	0.00	41.00	92	5	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Unrefrigerated Warehouse-No Rail	0.544785	0.062844	0.187478	0.127235	0.023089	0.006083	0.010475	0.008012	0.000925	0.000611	0.024394	0.000698	0.003374

5.0 Energy Detail

Historical Energy Use: N

Palmdale GPU - Industrial Construction Only - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Unrefrigerated Warehouse-No Rail	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Unrefrigerated Warehouse-No Rail	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use		Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	tons/yr	MT/yr			
Unrefrigerated Warehouse-No Rail	0		0.0000	0.0000	0.0000	0.0000
Total			**0.0000**	**0.0000**	**0.0000**	**0.0000**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Mitigated

	Electricity Use		Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	tons/yr	MT/yr			
Unrefrigerated Warehouse-No Rail	0		0.0000	0.0000	0.0000	0.0000
Total			**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.5821	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.5821	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Palmdale GPU - Industrial Construction Only - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.5821					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.5821**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.5821					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.5821**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

7.0 Water Detail

7.1 Mitigation Measures Water

		Total CO2	CH4	N2O	CO2e
Category	tons/yr	MT/yr			
Mitigated		0.0000	0.0000	0.0000	0.0000
Unmitigated		0.0000	0.0000	0.0000	0.0000

Palmdale GPU - Industrial Construction Only - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use		Total CO2	CH4	N2O	CO2e
Land Use	Mgal	tons/yr	MT/yr			
Unrefrigerated Warehouse-No Rail	0 / 0		0.0000	0.0000	0.0000	0.0000
Total			**0.0000**	**0.0000**	**0.0000**	**0.0000**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Mitigated

	Indoor/Outdoor Use		Total CO2	CH4	N2O	CO2e
Land Use	Mgal	tons/yr	MT/yr			
Unrefrigerated Warehouse-No Rail	0 / 0		0.0000	0.0000	0.0000	0.0000
Total			**0.0000**	**0.0000**	**0.0000**	**0.0000**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

		Total CO2	CH4	N2O	CO2e
	tons/yr	MT/yr			
Mitigated		0.0000	0.0000	0.0000	0.0000
Unmitigated		0.0000	0.0000	0.0000	0.0000

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

8.2 Waste by Land Use

Unmitigated

	Waste Disposed		Total CO2	CH4	N2O	CO2e
Land Use	tons	tons/yr	MT/yr			
Unrefrigerated Warehouse-No Rail	0		0.0000	0.0000	0.0000	0.0000
Total			**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Waste Disposed		Total CO2	CH4	N2O	CO2e
Land Use	tons	tons/yr	MT/yr			
Unrefrigerated Warehouse-No Rail	0		0.0000	0.0000	0.0000	0.0000
Total			**0.0000**	**0.0000**	**0.0000**	**0.0000**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Palmdale GPU - Industrial Construction Only - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Palmdale GPU - Industrial Construction Only

Los Angeles-Mojave Desert County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Unrefrigerated Warehouse-No Rail	502.34	1000sqft	11.53	502,343.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	9			**Operational Year**	2023
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	390.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics - See Assumptions

Land Use -

Construction Phase - See Assumptions

Grading -

Demolition - See Assumptions

Architectural Coating - Based on AVAQMD requirements for VOC content

Vehicle Trips - Operational Emissions Modeled Separately

Consumer Products - Operational Emissions Modeled Separately

Area Coating - Operational Emissions Modeled Separately

Landscape Equipment - Operational Emissions Modeled Separately

Energy Use - Operational Emissions Modeled Separately

Water And Wastewater - Operational Emissions Modeled Separately

Palmdale GPU - Industrial Construction Only - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Solid Waste - Operational Emissions Modeled Separately

Construction Off-road Equipment Mitigation - Water 2x daily based on AVAQMD regulations for dust control; not mitigation

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	250.00	150.00
tblArchitecturalCoating	EF_Nonresidential_Interior	250.00	50.00
tblConstEquipMitigation	FuelType	Diesel	Electrical
tblConstEquipMitigation	FuelType	Diesel	Electrical
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	5.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	5.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final

Palmdale GPU - Industrial Construction Only - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	NumDays	300.00	223.00
tblConstructionPhase	NumDays	20.00	15.00
tblConstructionPhase	NumDays	30.00	22.00
tblConstructionPhase	PhaseEndDate	7/14/2023	12/30/2022
tblConstructionPhase	PhaseEndDate	5/19/2023	12/30/2022
tblConstructionPhase	PhaseEndDate	1/28/2022	1/21/2022
tblConstructionPhase	PhaseEndDate	3/25/2022	2/22/2022
tblConstructionPhase	PhaseEndDate	6/16/2023	3/22/2022
tblConstructionPhase	PhaseStartDate	6/17/2023	12/5/2022
tblConstructionPhase	PhaseStartDate	3/26/2022	2/23/2022
tblConstructionPhase	PhaseStartDate	2/12/2022	1/22/2022
tblConstructionPhase	PhaseStartDate	5/20/2023	2/23/2022
tblConsumerProducts	ROG_EF	2.14E-05	0
tblConsumerProducts	ROG_EF_Degreaser	3.542E-07	0
tblConsumerProducts	ROG_EF_PesticidesFertilizers	5.152E-08	0
tblEnergyUse	LightingElect	1.91	0.00
tblEnergyUse	NT24E	1.34	0.00
tblEnergyUse	NT24NG	0.03	0.00
tblEnergyUse	T24E	0.58	0.00
tblEnergyUse	T24NG	0.83	0.00
tblLandscapeEquipment	NumberSummerDays	180	0
tblSolidWaste	SolidWasteGenerationRate	472.20	0.00
tblVehicleTrips	ST_TR	1.74	0.00

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

tblVehicleTrips	SU_TR	1.74	0.00
tblVehicleTrips	WD_TR	1.74	0.00
tblWater	IndoorWaterUseRate	116,166,125.00	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2022	177.4391	51.3333	39.1652	0.1346	35.7552	1.6360	37.1887	5.7550	1.5051	7.0929	0.0000	14,231.9436	14,231.9436	1.9490	1.6484	14,763.3388
Maximum	**177.4391**	**51.3333**	**39.1652**	**0.1346**	**35.7552**	**1.6360**	**37.1887**	**5.7550**	**1.5051**	**7.0929**	**0.0000**	**14,231.9436**	**14,231.9436**	**1.9490**	**1.6484**	**14,763.3388**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2022	175.7763	27.6172	37.4240	0.1346	17.6241	0.2525	17.8766	3.0098	0.2442	3.2541	0.0000	14,231.9436	14,231.9436	1.9490	1.6484	14,763.3388
Maximum	**175.7763**	**27.6172**	**37.4240**	**0.1346**	**17.6241**	**0.2525**	**17.8766**	**3.0098**	**0.2442**	**3.2541**	**0.0000**	**14,231.9436**	**14,231.9436**	**1.9490**	**1.6484**	**14,763.3388**

Palmdale GPU - Industrial Construction Only - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.94**	**46.20**	**4.45**	**0.00**	**50.71**	**84.56**	**51.93**	**47.70**	**83.77**	**54.12**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	3.1943	4.7000e-004	0.0513	0.0000		1.8000e-004	1.8000e-004		1.8000e-004	1.8000e-004		0.1099	0.1099	2.9000e-004		0.1172
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Total	**3.1943**	**4.7000e-004**	**0.0513**	**0.0000**	**0.0000**	**1.8000e-004**	**1.8000e-004**	**0.0000**	**1.8000e-004**	**1.8000e-004**		**0.1099**	**0.1099**	**2.9000e-004**	**0.0000**	**0.1172**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	3.1943	4.7000e-004	0.0513	0.0000		1.8000e-004	1.8000e-004		1.8000e-004	1.8000e-004		0.1099	0.1099	2.9000e-004		0.1172
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total	**3.1943**	**4.7000e-004**	**0.0513**	**0.0000**	**0.0000**	**1.8000e-004**	**1.8000e-004**	**0.0000**	**1.8000e-004**	**1.8000e-004**		**0.1099**	**0.1099**	**2.9000e-004**	**0.0000**	**0.1172**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2022	1/21/2022	5	15	
2	Grading	Grading	1/22/2022	2/22/2022	5	22	
3	Building Construction	Building Construction	2/23/2022	12/30/2022	5	223	
4	Paving	Paving	2/23/2022	3/22/2022	5	20	
5	Architectural Coating	Architectural Coating	12/5/2022	12/30/2022	5	20	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 66

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 753,515; Non-Residential Outdoor: 251,172; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Building Construction	Cranes	1	7.00	231	0.29
Demolition	Excavators	3	8.00	158	0.38
Grading	Excavators	2	8.00	158	0.38
Building Construction	Forklifts	3	8.00	89	0.20

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Building Construction	Generator Sets	1	8.00	84	0.74
Grading	Graders	1	8.00	187	0.41
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Architectural Coating	1	42.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	211.00	82.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Demolition	6	15.00	0.00	2,285.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Alternative Fuel for Construction Equipment

Use Cleaner Engines for Construction Equipment

Water Exposed Area

3.2 Demolition - 2022

Unmitigated Construction On-Site

Palmdale GPU - Industrial Construction Only - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					32.9656	0.0000	32.9656	4.9913	0.0000	4.9913			0.0000			0.0000
Off-Road	2.6392	25.7194	20.5941	0.0388		1.2427	1.2427		1.1553	1.1553		3,746.7812	3,746.7812	1.0524		3,773.0920
Total	**2.6392**	**25.7194**	**20.5941**	**0.0388**	**32.9656**	**1.2427**	**34.2082**	**4.9913**	**1.1553**	**6.1465**		**3,746.7812**	**3,746.7812**	**1.0524**		**3,773.0920**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.7097	25.5842	5.9653	0.0947	2.6664	0.1901	2.8565	0.7310	0.1819	0.9129		10,370.4816	10,370.4816	0.5508	1.6454	10,874.5844
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0435	0.0297	0.4517	1.1300e-003	0.1232	8.1000e-004	0.1240	0.0327	7.4000e-004	0.0334		114.6809	114.6809	3.5800e-003	2.9900e-003	115.6624
Total	**0.7532**	**25.6139**	**6.4170**	**0.0958**	**2.7896**	**0.1909**	**2.9805**	**0.7637**	**0.1826**	**0.9463**		**10,485.1625**	**10,485.1625**	**0.5544**	**1.6484**	**10,990.2468**

Palmdale GPU - Industrial Construction Only - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					14.8345	0.0000	14.8345	2.2461	0.0000	2.2461			0.0000			0.0000
Off-Road	0.4623	2.0032	23.2798	0.0388		0.0616	0.0616		0.0616	0.0616	0.0000	3,746.7812	3,746.7812	1.0524		3,773.0920
Total	**0.4623**	**2.0032**	**23.2798**	**0.0388**	**14.8345**	**0.0616**	**14.8961**	**2.2461**	**0.0616**	**2.3077**	**0.0000**	**3,746.7812**	**3,746.7812**	**1.0524**		**3,773.0920**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.7097	25.5842	5.9653	0.0947	2.6664	0.1901	2.8565	0.7310	0.1819	0.9129		10,370.4816	10,370.4816	0.5508	1.6454	10,874.5844
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0435	0.0297	0.4517	1.1300e-003	0.1232	8.1000e-004	0.1240	0.0327	7.4000e-004	0.0334		114.6809	114.6809	3.5800e-003	2.9900e-003	115.6624
Total	**0.7532**	**25.6139**	**6.4170**	**0.0958**	**2.7896**	**0.1909**	**2.9805**	**0.7637**	**0.1826**	**0.9463**		**10,485.1625**	**10,485.1625**	**0.5544**	**1.6484**	**10,990.2468**

Palmdale GPU - Industrial Construction Only - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.3 Grading - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					9.2036	0.0000	9.2036	3.6538	0.0000	3.6538			0.0000			0.0000
Off-Road	3.6248	38.8435	29.0415	0.0621		1.6349	1.6349		1.5041	1.5041		6,011.4105	6,011.4105	1.9442		6,060.0158
Total	**3.6248**	**38.8435**	**29.0415**	**0.0621**	**9.2036**	**1.6349**	**10.8385**	**3.6538**	**1.5041**	**5.1579**		**6,011.4105**	**6,011.4105**	**1.9442**		**6,060.0158**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0580	0.0396	0.6023	1.5100e-003	0.1643	1.0800e-003	0.1654	0.0436	9.9000e-004	0.0446		152.9079	152.9079	4.7700e-003	3.9900e-003	154.2165
Total	**0.0580**	**0.0396**	**0.6023**	**1.5100e-003**	**0.1643**	**1.0800e-003**	**0.1654**	**0.0436**	**9.9000e-004**	**0.0446**		**152.9079**	**152.9079**	**4.7700e-003**	**3.9900e-003**	**154.2165**

Palmdale GPU - Industrial Construction Only - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					4.1416	0.0000	4.1416	1.6442	0.0000	1.6442			0.0000			0.0000
Off-Road	0.7616	3.3000	32.9991	0.0621		0.1015	0.1015		0.1015	0.1015	0.0000	6,011.4105	6,011.4105	1.9442		6,060.0158
Total	**0.7616**	**3.3000**	**32.9991**	**0.0621**	**4.1416**	**0.1015**	**4.2432**	**1.6442**	**0.1015**	**1.7457**	**0.0000**	**6,011.4105**	**6,011.4105**	**1.9442**		**6,060.0158**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0580	0.0396	0.6023	1.5100e-003	0.1643	1.0800e-003	0.1654	0.0436	9.9000e-004	0.0446		152.9079	152.9079	4.7700e-003	3.9900e-003	154.2165
Total	**0.0580**	**0.0396**	**0.6023**	**1.5100e-003**	**0.1643**	**1.0800e-003**	**0.1654**	**0.0436**	**9.9000e-004**	**0.0446**		**152.9079**	**152.9079**	**4.7700e-003**	**3.9900e-003**	**154.2165**

Palmdale GPU - Industrial Construction Only - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.4 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.7062	15.6156	16.3634	0.0269		0.8090	0.8090		0.7612	0.7612		2,554.3336	2,554.3336	0.6120		2,569.6322
Total	**1.7062**	**15.6156**	**16.3634**	**0.0269**		**0.8090**	**0.8090**		**0.7612**	**0.7612**		**2,554.3336**	**2,554.3336**	**0.6120**		**2,569.6322**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.1675	4.1945	1.4153	0.0169	0.5556	0.0404	0.5960	0.1600	0.0387	0.1986		1,817.8773	1,817.8773	0.0608	0.2618	1,897.4241
Worker	0.6118	0.4181	6.3543	0.0160	1.7333	0.0114	1.7447	0.4598	0.0105	0.4702		1,613.1780	1,613.1780	0.0503	0.0421	1,626.9844
Total	**0.7793**	**4.6126**	**7.7696**	**0.0329**	**2.2889**	**0.0518**	**2.3407**	**0.6197**	**0.0491**	**0.6688**		**3,431.0553**	**3,431.0553**	**0.1111**	**0.3040**	**3,524.4085**

Palmdale GPU - Industrial Construction Only - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.2182	0.9457	11.9070	0.0178		0.0291	0.0291		0.0291	0.0291	0.0000	1,723.8213	1,723.8213	0.5575		1,737.7593
Total	**0.2182**	**0.9457**	**11.9070**	**0.0178**		**0.0291**	**0.0291**		**0.0291**	**0.0291**	**0.0000**	**1,723.8213**	**1,723.8213**	**0.5575**		**1,737.7593**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.1675	4.1945	1.4153	0.0169	0.5556	0.0404	0.5960	0.1600	0.0387	0.1986		1,817.8773	1,817.8773	0.0608	0.2618	1,897.4241
Worker	0.6118	0.4181	6.3543	0.0160	1.7333	0.0114	1.7447	0.4598	0.0105	0.4702		1,613.1780	1,613.1780	0.0503	0.0421	1,626.9844
Total	**0.7793**	**4.6126**	**7.7696**	**0.0329**	**2.2889**	**0.0518**	**2.3407**	**0.6197**	**0.0491**	**0.6688**		**3,431.0553**	**3,431.0553**	**0.1111**	**0.3040**	**3,524.4085**

Palmdale GPU - Industrial Construction Only - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.5 Paving - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.1028	11.1249	14.5805	0.0228		0.5679	0.5679		0.5225	0.5225		2,207.6603	2,207.6603	0.7140		2,225.5104
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.1028**	**11.1249**	**14.5805**	**0.0228**		**0.5679**	**0.5679**		**0.5225**	**0.5225**		**2,207.6603**	**2,207.6603**	**0.7140**		**2,225.5104**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0435	0.0297	0.4517	1.1300e-003	0.1232	8.1000e-004	0.1240	0.0327	7.4000e-004	0.0334		114.6809	114.6809	3.5800e-003	2.9900e-003	115.6624
Total	**0.0435**	**0.0297**	**0.4517**	**1.1300e-003**	**0.1232**	**8.1000e-004**	**0.1240**	**0.0327**	**7.4000e-004**	**0.0334**		**114.6809**	**114.6809**	**3.5800e-003**	**2.9900e-003**	**115.6624**

Palmdale GPU - Industrial Construction Only - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.2805	1.2154	17.2957	0.0228		0.0374	0.0374		0.0374	0.0374	0.0000	2,207.6603	2,207.6603	0.7140		2,225.5104
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.2805**	**1.2154**	**17.2957**	**0.0228**		**0.0374**	**0.0374**		**0.0374**	**0.0374**	**0.0000**	**2,207.6603**	**2,207.6603**	**0.7140**		**2,225.5104**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0435	0.0297	0.4517	1.1300e-003	0.1232	8.1000e-004	0.1240	0.0327	7.4000e-004	0.0334		114.6809	114.6809	3.5800e-003	2.9900e-003	115.6624
Total	**0.0435**	**0.0297**	**0.4517**	**1.1300e-003**	**0.1232**	**8.1000e-004**	**0.1240**	**0.0327**	**7.4000e-004**	**0.0334**		**114.6809**	**114.6809**	**3.5800e-003**	**2.9900e-003**	**115.6624**

Palmdale GPU - Industrial Construction Only - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.6 Architectural Coating - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	174.6272					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817		281.4481	281.4481	0.0183		281.9062
Total	**174.8318**	**1.4085**	**1.8136**	**2.9700e-003**		**0.0817**	**0.0817**		**0.0817**	**0.0817**		**281.4481**	**281.4481**	**0.0183**		**281.9062**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.1218	0.0832	1.2648	3.1800e-003	0.3450	2.2600e-003	0.3473	0.0915	2.0800e-003	0.0936		321.1065	321.1065	0.0100	8.3800e-003	323.8547
Total	**0.1218**	**0.0832**	**1.2648**	**3.1800e-003**	**0.3450**	**2.2600e-003**	**0.3473**	**0.0915**	**2.0800e-003**	**0.0936**		**321.1065**	**321.1065**	**0.0100**	**8.3800e-003**	**323.8547**

Palmdale GPU - Industrial Construction Only - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	174.6272					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.0297	0.1288	1.8324	2.9700e-003		3.9600e-003	3.9600e-003		3.9600e-003	3.9600e-003	0.0000	281.4481	281.4481	0.0183		281.9062
Total	**174.6569**	**0.1288**	**1.8324**	**2.9700e-003**		**3.9600e-003**	**3.9600e-003**		**3.9600e-003**	**3.9600e-003**	**0.0000**	**281.4481**	**281.4481**	**0.0183**		**281.9062**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.1218	0.0832	1.2648	3.1800e-003	0.3450	2.2600e-003	0.3473	0.0915	2.0800e-003	0.0936		321.1065	321.1065	0.0100	8.3800e-003	323.8547
Total	**0.1218**	**0.0832**	**1.2648**	**3.1800e-003**	**0.3450**	**2.2600e-003**	**0.3473**	**0.0915**	**2.0800e-003**	**0.0936**		**321.1065**	**321.1065**	**0.0100**	**8.3800e-003**	**323.8547**

Palmdale GPU - Industrial Construction Only - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Unrefrigerated Warehouse-No Rail	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Unrefrigerated Warehouse-No	9.50	7.30	7.30	59.00	0.00	41.00	92	5	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Unrefrigerated Warehouse-No Rail	0.544785	0.062844	0.187478	0.127235	0.023089	0.006083	0.010475	0.008012	0.000925	0.000611	0.024394	0.000698	0.003374

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Unrefrigerated Warehouse-No Rail	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Unrefrigerated Warehouse-No Rail	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

Palmdale GPU - Industrial Construction Only - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	3.1943	4.7000e-004	0.0513	0.0000		1.8000e-004	1.8000e-004		1.8000e-004	1.8000e-004		0.1099	0.1099	2.9000e-004		0.1172
Unmitigated	3.1943	4.7000e-004	0.0513	0.0000		1.8000e-004	1.8000e-004		1.8000e-004	1.8000e-004		0.1099	0.1099	2.9000e-004		0.1172

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	3.1895					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	4.7500e-003	4.7000e-004	0.0513	0.0000		1.8000e-004	1.8000e-004		1.8000e-004	1.8000e-004		0.1099	0.1099	2.9000e-004		0.1172
Total	**3.1943**	**4.7000e-004**	**0.0513**	**0.0000**		**1.8000e-004**	**1.8000e-004**		**1.8000e-004**	**1.8000e-004**		**0.1099**	**0.1099**	**2.9000e-004**		**0.1172**

Palmdale GPU - Industrial Construction Only - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	3.1895					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	4.7500e-003	4.7000e-004	0.0513	0.0000		1.8000e-004	1.8000e-004		1.8000e-004	1.8000e-004		0.1099	0.1099	2.9000e-004		0.1172
Total	**3.1943**	**4.7000e-004**	**0.0513**	**0.0000**		**1.8000e-004**	**1.8000e-004**		**1.8000e-004**	**1.8000e-004**		**0.1099**	**0.1099**	**2.9000e-004**		**0.1172**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Palmdale GPU - Industrial Construction Only - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Palmdale GPU - Industrial Construction Only

Los Angeles-Mojave Desert County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Unrefrigerated Warehouse-No Rail	502.34	1000sqft	11.53	502,343.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	9			**Operational Year**	2023
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	390.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics - See Assumptions

Land Use -

Construction Phase - See Assumptions

Grading -

Demolition - See Assumptions

Architectural Coating - Based on AVAQMD requirements for VOC content

Vehicle Trips - Operational Emissions Modeled Separately

Consumer Products - Operational Emissions Modeled Separately

Area Coating - Operational Emissions Modeled Separately

Landscape Equipment - Operational Emissions Modeled Separately

Energy Use - Operational Emissions Modeled Separately

Water And Wastewater - Operational Emissions Modeled Separately

Palmdale GPU - Industrial Construction Only - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Solid Waste - Operational Emissions Modeled Separately

Construction Off-road Equipment Mitigation - Water 2x daily based on AVAQMD regulations for dust control; not mitigation

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	250.00	150.00
tblArchitecturalCoating	EF_Nonresidential_Interior	250.00	50.00
tblConstEquipMitigation	FuelType	Diesel	Electrical
tblConstEquipMitigation	FuelType	Diesel	Electrical
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	5.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	5.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final

Palmdale GPU - Industrial Construction Only - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	NumDays	300.00	223.00
tblConstructionPhase	NumDays	20.00	15.00
tblConstructionPhase	NumDays	30.00	22.00
tblConstructionPhase	PhaseEndDate	7/14/2023	12/30/2022
tblConstructionPhase	PhaseEndDate	5/19/2023	12/30/2022
tblConstructionPhase	PhaseEndDate	1/28/2022	1/21/2022
tblConstructionPhase	PhaseEndDate	3/25/2022	2/22/2022
tblConstructionPhase	PhaseEndDate	6/16/2023	3/22/2022
tblConstructionPhase	PhaseStartDate	6/17/2023	12/5/2022
tblConstructionPhase	PhaseStartDate	3/26/2022	2/23/2022
tblConstructionPhase	PhaseStartDate	2/12/2022	1/22/2022
tblConstructionPhase	PhaseStartDate	5/20/2023	2/23/2022
tblConsumerProducts	ROG_EF	2.14E-05	0
tblConsumerProducts	ROG_EF_Degreaser	3.542E-07	0
tblConsumerProducts	ROG_EF_PesticidesFertilizers	5.152E-08	0
tblEnergyUse	LightingElect	1.91	0.00
tblEnergyUse	NT24E	1.34	0.00
tblEnergyUse	NT24NG	0.03	0.00
tblEnergyUse	T24E	0.58	0.00
tblEnergyUse	T24NG	0.83	0.00
tblLandscapeEquipment	NumberSummerDays	180	0
tblSolidWaste	SolidWasteGenerationRate	472.20	0.00
tblVehicleTrips	ST_TR	1.74	0.00

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

tblVehicleTrips	SU_TR	1.74	0.00
tblVehicleTrips	WD_TR	1.74	0.00
tblWater	IndoorWaterUseRate	116,166,125.00	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2022	177.4782	52.3747	38.7307	0.1346	35.7552	1.6360	37.1891	5.7550	1.5051	7.0932	0.0000	14,228.9545	14,228.9545	1.9491	1.6492	14,760.5502
Maximum	**177.4782**	**52.3747**	**38.7307**	**0.1346**	**35.7552**	**1.6360**	**37.1891**	**5.7550**	**1.5051**	**7.0932**	**0.0000**	**14,228.9545**	**14,228.9545**	**1.9491**	**1.6492**	**14,760.5502**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2022	175.8153	28.6585	36.9895	0.1346	17.6241	0.2529	17.8770	3.0098	0.2446	3.2544	0.0000	14,228.9545	14,228.9545	1.9491	1.6492	14,760.5502
Maximum	**175.8153**	**28.6585**	**36.9895**	**0.1346**	**17.6241**	**0.2529**	**17.8770**	**3.0098**	**0.2446**	**3.2544**	**0.0000**	**14,228.9545**	**14,228.9545**	**1.9491**	**1.6492**	**14,760.5502**

Palmdale GPU - Industrial Construction Only - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.94**	**45.28**	**4.50**	**0.00**	**50.71**	**84.54**	**51.93**	**47.70**	**83.75**	**54.12**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	3.1943	4.7000e-004	0.0513	0.0000		1.8000e-004	1.8000e-004		1.8000e-004	1.8000e-004		0.1099	0.1099	2.9000e-004		0.1172
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Total	**3.1943**	**4.7000e-004**	**0.0513**	**0.0000**	**0.0000**	**1.8000e-004**	**1.8000e-004**	**0.0000**	**1.8000e-004**	**1.8000e-004**		**0.1099**	**0.1099**	**2.9000e-004**	**0.0000**	**0.1172**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	3.1943	4.7000e-004	0.0513	0.0000		1.8000e-004	1.8000e-004		1.8000e-004	1.8000e-004		0.1099	0.1099	2.9000e-004		0.1172
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total	**3.1943**	**4.7000e-004**	**0.0513**	**0.0000**	**0.0000**	**1.8000e-004**	**1.8000e-004**	**0.0000**	**1.8000e-004**	**1.8000e-004**		**0.1099**	**0.1099**	**2.9000e-004**	**0.0000**	**0.1172**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2022	1/21/2022	5	15	
2	Grading	Grading	1/22/2022	2/22/2022	5	22	
3	Building Construction	Building Construction	2/23/2022	12/30/2022	5	223	
4	Paving	Paving	2/23/2022	3/22/2022	5	20	
5	Architectural Coating	Architectural Coating	12/5/2022	12/30/2022	5	20	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 66

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 753,515; Non-Residential Outdoor: 251,172; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Building Construction	Cranes	1	7.00	231	0.29
Demolition	Excavators	3	8.00	158	0.38
Grading	Excavators	2	8.00	158	0.38
Building Construction	Forklifts	3	8.00	89	0.20

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Building Construction	Generator Sets	1	8.00	84	0.74
Grading	Graders	1	8.00	187	0.41
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Architectural Coating	1	42.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	211.00	82.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Demolition	6	15.00	0.00	2,285.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Alternative Fuel for Construction Equipment

Use Cleaner Engines for Construction Equipment

Water Exposed Area

3.2 Demolition - 2022

Unmitigated Construction On-Site

Palmdale GPU - Industrial Construction Only - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					32.9656	0.0000	32.9656	4.9913	0.0000	4.9913			0.0000			0.0000
Off-Road	2.6392	25.7194	20.5941	0.0388		1.2427	1.2427		1.1553	1.1553		3,746.7812	3,746.7812	1.0524		3,773.0920
Total	**2.6392**	**25.7194**	**20.5941**	**0.0388**	**32.9656**	**1.2427**	**34.2082**	**4.9913**	**1.1553**	**6.1465**		**3,746.7812**	**3,746.7812**	**1.0524**		**3,773.0920**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.6927	26.6224	6.0703	0.0947	2.6664	0.1905	2.8569	0.7310	0.1822	0.9133		10,373.5217	10,373.5217	0.5499	1.6460	10,877.7615
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0459	0.0328	0.4198	1.0700e-003	0.1232	8.1000e-004	0.1240	0.0327	7.4000e-004	0.0334		108.6516	108.6516	3.6800e-003	3.2000e-003	109.6966
Total	**0.7386**	**26.6553**	**6.4900**	**0.0958**	**2.7896**	**0.1913**	**2.9809**	**0.7637**	**0.1830**	**0.9467**		**10,482.1733**	**10,482.1733**	**0.5536**	**1.6492**	**10,987.4582**

Palmdale GPU - Industrial Construction Only - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					14.8345	0.0000	14.8345	2.2461	0.0000	2.2461			0.0000			0.0000
Off-Road	0.4623	2.0032	23.2798	0.0388		0.0616	0.0616		0.0616	0.0616	0.0000	3,746.7812	3,746.7812	1.0524		3,773.0920
Total	**0.4623**	**2.0032**	**23.2798**	**0.0388**	**14.8345**	**0.0616**	**14.8961**	**2.2461**	**0.0616**	**2.3077**	**0.0000**	**3,746.7812**	**3,746.7812**	**1.0524**		**3,773.0920**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.6927	26.6224	6.0703	0.0947	2.6664	0.1905	2.8569	0.7310	0.1822	0.9133		10,373.5217	10,373.5217	0.5499	1.6460	10,877.7615
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0459	0.0328	0.4198	1.0700e-003	0.1232	8.1000e-004	0.1240	0.0327	7.4000e-004	0.0334		108.6516	108.6516	3.6800e-003	3.2000e-003	109.6966
Total	**0.7386**	**26.6553**	**6.4900**	**0.0958**	**2.7896**	**0.1913**	**2.9809**	**0.7637**	**0.1830**	**0.9467**		**10,482.1733**	**10,482.1733**	**0.5536**	**1.6492**	**10,987.4582**

Palmdale GPU - Industrial Construction Only - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.3 Grading - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					9.2036	0.0000	9.2036	3.6538	0.0000	3.6538			0.0000			0.0000
Off-Road	3.6248	38.8435	29.0415	0.0621		1.6349	1.6349		1.5041	1.5041		6,011.4105	6,011.4105	1.9442		6,060.0158
Total	**3.6248**	**38.8435**	**29.0415**	**0.0621**	**9.2036**	**1.6349**	**10.8385**	**3.6538**	**1.5041**	**5.1579**		**6,011.4105**	**6,011.4105**	**1.9442**		**6,060.0158**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0612	0.0438	0.5597	1.4300e-003	0.1643	1.0800e-003	0.1654	0.0436	9.9000e-004	0.0446		144.8688	144.8688	4.9000e-003	4.2600e-003	146.2622
Total	**0.0612**	**0.0438**	**0.5597**	**1.4300e-003**	**0.1643**	**1.0800e-003**	**0.1654**	**0.0436**	**9.9000e-004**	**0.0446**		**144.8688**	**144.8688**	**4.9000e-003**	**4.2600e-003**	**146.2622**

Palmdale GPU - Industrial Construction Only - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					4.1416	0.0000	4.1416	1.6442	0.0000	1.6442			0.0000			0.0000
Off-Road	0.7616	3.3000	32.9991	0.0621		0.1015	0.1015		0.1015	0.1015	0.0000	6,011.4105	6,011.4105	1.9442		6,060.0158
Total	**0.7616**	**3.3000**	**32.9991**	**0.0621**	**4.1416**	**0.1015**	**4.2432**	**1.6442**	**0.1015**	**1.7457**	**0.0000**	**6,011.4105**	**6,011.4105**	**1.9442**		**6,060.0158**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0612	0.0438	0.5597	1.4300e-003	0.1643	1.0800e-003	0.1654	0.0436	9.9000e-004	0.0446		144.8688	144.8688	4.9000e-003	4.2600e-003	146.2622
Total	**0.0612**	**0.0438**	**0.5597**	**1.4300e-003**	**0.1643**	**1.0800e-003**	**0.1654**	**0.0436**	**9.9000e-004**	**0.0446**		**144.8688**	**144.8688**	**4.9000e-003**	**4.2600e-003**	**146.2622**

Palmdale GPU - Industrial Construction Only - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.4 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.7062	15.6156	16.3634	0.0269		0.8090	0.8090		0.7612	0.7612		2,554.3336	2,554.3336	0.6120		2,569.6322
Total	**1.7062**	**15.6156**	**16.3634**	**0.0269**		**0.8090**	**0.8090**		**0.7612**	**0.7612**		**2,554.3336**	**2,554.3336**	**0.6120**		**2,569.6322**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.1657	4.3672	1.4626	0.0169	0.5556	0.0406	0.5961	0.1600	0.0388	0.1988		1,818.5252	1,818.5252	0.0606	0.2622	1,898.1659
Worker	0.6459	0.4618	5.9045	0.0151	1.7333	0.0114	1.7447	0.4598	0.0105	0.4702		1,528.3660	1,528.3660	0.0518	0.0450	1,543.0661
Total	**0.8116**	**4.8290**	**7.3670**	**0.0320**	**2.2889**	**0.0519**	**2.3408**	**0.6197**	**0.0493**	**0.6690**		**3,346.8912**	**3,346.8912**	**0.1123**	**0.3072**	**3,441.2320**

Palmdale GPU - Industrial Construction Only - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.2182	0.9457	11.9070	0.0178		0.0291	0.0291		0.0291	0.0291	0.0000	1,723.8213	1,723.8213	0.5575		1,737.7593
Total	**0.2182**	**0.9457**	**11.9070**	**0.0178**		**0.0291**	**0.0291**		**0.0291**	**0.0291**	**0.0000**	**1,723.8213**	**1,723.8213**	**0.5575**		**1,737.7593**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.1657	4.3672	1.4626	0.0169	0.5556	0.0406	0.5961	0.1600	0.0388	0.1988		1,818.5252	1,818.5252	0.0606	0.2622	1,898.1659
Worker	0.6459	0.4618	5.9045	0.0151	1.7333	0.0114	1.7447	0.4598	0.0105	0.4702		1,528.3660	1,528.3660	0.0518	0.0450	1,543.0661
Total	**0.8116**	**4.8290**	**7.3670**	**0.0320**	**2.2889**	**0.0519**	**2.3408**	**0.6197**	**0.0493**	**0.6690**		**3,346.8912**	**3,346.8912**	**0.1123**	**0.3072**	**3,441.2320**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.5 Paving - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.1028	11.1249	14.5805	0.0228		0.5679	0.5679		0.5225	0.5225		2,207.6603	2,207.6603	0.7140		2,225.5104
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.1028**	**11.1249**	**14.5805**	**0.0228**		**0.5679**	**0.5679**		**0.5225**	**0.5225**		**2,207.6603**	**2,207.6603**	**0.7140**		**2,225.5104**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0459	0.0328	0.4198	1.0700e-003	0.1232	8.1000e-004	0.1240	0.0327	7.4000e-004	0.0334		108.6516	108.6516	3.6800e-003	3.2000e-003	109.6966
Total	**0.0459**	**0.0328**	**0.4198**	**1.0700e-003**	**0.1232**	**8.1000e-004**	**0.1240**	**0.0327**	**7.4000e-004**	**0.0334**		**108.6516**	**108.6516**	**3.6800e-003**	**3.2000e-003**	**109.6966**

Palmdale GPU - Industrial Construction Only - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.2805	1.2154	17.2957	0.0228		0.0374	0.0374		0.0374	0.0374	0.0000	2,207.6603	2,207.6603	0.7140		2,225.5104
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.2805**	**1.2154**	**17.2957**	**0.0228**		**0.0374**	**0.0374**		**0.0374**	**0.0374**	**0.0000**	**2,207.6603**	**2,207.6603**	**0.7140**		**2,225.5104**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0459	0.0328	0.4198	1.0700e-003	0.1232	8.1000e-004	0.1240	0.0327	7.4000e-004	0.0334		108.6516	108.6516	3.6800e-003	3.2000e-003	109.6966
Total	**0.0459**	**0.0328**	**0.4198**	**1.0700e-003**	**0.1232**	**8.1000e-004**	**0.1240**	**0.0327**	**7.4000e-004**	**0.0334**		**108.6516**	**108.6516**	**3.6800e-003**	**3.2000e-003**	**109.6966**

Palmdale GPU - Industrial Construction Only - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

3.6 Architectural Coating - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	174.6272					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817		281.4481	281.4481	0.0183		281.9062
Total	**174.8318**	**1.4085**	**1.8136**	**2.9700e-003**		**0.0817**	**0.0817**		**0.0817**	**0.0817**		**281.4481**	**281.4481**	**0.0183**		**281.9062**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.1286	0.0919	1.1753	3.0100e-003	0.3450	2.2600e-003	0.3473	0.0915	2.0800e-003	0.0936		304.2245	304.2245	0.0103	8.9500e-003	307.1506
Total	**0.1286**	**0.0919**	**1.1753**	**3.0100e-003**	**0.3450**	**2.2600e-003**	**0.3473**	**0.0915**	**2.0800e-003**	**0.0936**		**304.2245**	**304.2245**	**0.0103**	**8.9500e-003**	**307.1506**

Palmdale GPU - Industrial Construction Only - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	174.6272					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.0297	0.1288	1.8324	2.9700e-003		3.9600e-003	3.9600e-003		3.9600e-003	3.9600e-003	0.0000	281.4481	281.4481	0.0183		281.9062
Total	**174.6569**	**0.1288**	**1.8324**	**2.9700e-003**		**3.9600e-003**	**3.9600e-003**		**3.9600e-003**	**3.9600e-003**	**0.0000**	**281.4481**	**281.4481**	**0.0183**		**281.9062**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.1286	0.0919	1.1753	3.0100e-003	0.3450	2.2600e-003	0.3473	0.0915	2.0800e-003	0.0936		304.2245	304.2245	0.0103	8.9500e-003	307.1506
Total	**0.1286**	**0.0919**	**1.1753**	**3.0100e-003**	**0.3450**	**2.2600e-003**	**0.3473**	**0.0915**	**2.0800e-003**	**0.0936**		**304.2245**	**304.2245**	**0.0103**	**8.9500e-003**	**307.1506**

Palmdale GPU - Industrial Construction Only - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Unrefrigerated Warehouse-No Rail	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Unrefrigerated Warehouse-No	9.50	7.30	7.30	59.00	0.00	41.00	92	5	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Unrefrigerated Warehouse-No Rail	0.544785	0.062844	0.187478	0.127235	0.023089	0.006083	0.010475	0.008012	0.000925	0.000611	0.024394	0.000698	0.003374

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Unrefrigerated Warehouse-No Rail	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Unrefrigerated Warehouse-No Rail	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

Palmdale GPU - Industrial Construction Only - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	3.1943	4.7000e-004	0.0513	0.0000		1.8000e-004	1.8000e-004		1.8000e-004	1.8000e-004		0.1099	0.1099	2.9000e-004		0.1172
Unmitigated	3.1943	4.7000e-004	0.0513	0.0000		1.8000e-004	1.8000e-004		1.8000e-004	1.8000e-004		0.1099	0.1099	2.9000e-004		0.1172

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	3.1895					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	4.7500e-003	4.7000e-004	0.0513	0.0000		1.8000e-004	1.8000e-004		1.8000e-004	1.8000e-004		0.1099	0.1099	2.9000e-004		0.1172
Total	**3.1943**	**4.7000e-004**	**0.0513**	**0.0000**		**1.8000e-004**	**1.8000e-004**		**1.8000e-004**	**1.8000e-004**		**0.1099**	**0.1099**	**2.9000e-004**		**0.1172**

Palmdale GPU - Industrial Construction Only - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	3.1895					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	4.7500e-003	4.7000e-004	0.0513	0.0000		1.8000e-004	1.8000e-004		1.8000e-004	1.8000e-004		0.1099	0.1099	2.9000e-004		0.1172
Total	**3.1943**	**4.7000e-004**	**0.0513**	**0.0000**		**1.8000e-004**	**1.8000e-004**		**1.8000e-004**	**1.8000e-004**		**0.1099**	**0.1099**	**2.9000e-004**		**0.1172**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Palmdale GPU - Industrial Construction Only - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Not Applied

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Palmdale GPU - MFR construction Only - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Palmdale GPU - MFR construction Only

Los Angeles-Mojave Desert County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Apartments Mid Rise	1,045.00	Dwelling Unit	27.50	1,045,000.00	3598

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	9			**Operational Year**	2023
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	390.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics - See Assumptions

Land Use - See Assumptions

Construction Phase - See Assumptions

Grading -

Demolition - See Assumptions

Architectural Coating - See Assumptions

Vehicle Trips - Operational Emissions modeled separately

Road Dust - Operational Emissions modeled separately

Woodstoves - Operational Emissions modeled separately

Consumer Products - Operational Emissions modeled separately

Area Coating - Operational Emissions modeled separately

Landscape Equipment - Operational Emissions modeled separately

Palmdale GPU - MFR construction Only - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Energy Use - Operational Emissions modeled separately

Water And Wastewater - Operational Emissions modeled separately

Solid Waste - Operational Emissions modeled separately

Construction Off-road Equipment Mitigation - 2x per day watering is compliant with AVAQMD regulations for reducing fugitive dust, it is not mitigation

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	250.00	150.00
tblArchitecturalCoating	EF_Nonresidential_Interior	250.00	50.00
tblArchitecturalCoating	EF_Residential_Exterior	250.00	150.00
tblArchitecturalCoating	EF_Residential_Interior	250.00	50.00
tblAreaCoating	ReapplicationRatePercent	10	0
tblConstEquipMitigation	FuelType	Diesel	Electrical
tblConstEquipMitigation	FuelType	Diesel	Electrical
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	5.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	5.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final

Palmdale GPU - MFR construction Only - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	NumDays	440.00	222.00
tblConstructionPhase	NumDays	30.00	15.00
tblConstructionPhase	NumDays	45.00	23.00
tblConstructionPhase	PhaseEndDate	4/26/2024	12/30/2022
tblConstructionPhase	PhaseEndDate	1/19/2024	12/29/2022
tblConstructionPhase	PhaseEndDate	2/11/2022	1/21/2022
tblConstructionPhase	PhaseEndDate	5/13/2022	2/23/2022
tblConstructionPhase	PhaseEndDate	3/8/2024	4/12/2022
tblConstructionPhase	PhaseStartDate	3/9/2024	11/14/2022
tblConstructionPhase	PhaseStartDate	5/14/2022	2/23/2022
tblConstructionPhase	PhaseStartDate	3/12/2022	1/22/2022
tblConstructionPhase	PhaseStartDate	1/20/2024	2/23/2022
tblConsumerProducts	ROG_EF	2.14E-05	0
tblConsumerProducts	ROG_EF_Degreaser	3.542E-07	0
tblConsumerProducts	ROG_EF_PesticidesFertilizers	5.152E-08	0
tblEnergyUse	LightingElect	741.44	0.00
tblEnergyUse	NT24E	3,054.10	0.00
tblEnergyUse	NT24NG	6,384.00	0.00

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

tblEnergyUse	T24E	53.81	0.00
tblEnergyUse	T24NG	6,682.59	0.00
tblFireplaces	FireplaceDayYear	82.00	0.00
tblFireplaces	FireplaceHourDay	3.00	0.00
tblFireplaces	FireplaceWoodMass	3,078.40	0.00
tblFireplaces	NumberGas	574.75	0.00
tblFireplaces	NumberNoFireplace	104.50	0.00
tblFireplaces	NumberWood	365.75	0.00
tblLandscapeEquipment	NumberSummerDays	180	0
tblLandUse	Population	2,989.00	3,598.00
tblRoadDust	RoadPercentPave	100	0
tblSolidWaste	SolidWasteGenerationRate	480.70	0.00
tblVehicleTrips	ST_TR	4.91	0.00
tblVehicleTrips	SU_TR	4.09	0.00
tblVehicleTrips	WD_TR	5.44	0.00
tblWater	IndoorWaterUseRate	68,085,956.77	0.00
tblWater	OutdoorWaterUseRate	42,923,755.36	0.00
tblWoodstoves	NumberCatalytic	52.25	0.00
tblWoodstoves	NumberNoncatalytic	52.25	0.00
tblWoodstoves	WoodstoveDayYear	82.00	0.00
tblWoodstoves	WoodstoveWoodMass	3,019.20	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Palmdale GPU - MFR construction Only - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

					PM10	PM10	Total	PM2.5	PM2.5	Total						
Year	tons/yr										MT/yr					
2022	5.4504	3.4658	5.2978	0.0134	0.9029	0.1402	1.0431	0.2540	0.1313	0.3853	0.0000	1,221.1519	1,221.1519	0.1285	0.0537	1,240.3689
Maximum	**5.4504**	**3.4658**	**5.2978**	**0.0134**	**0.9029**	**0.1402**	**1.0431**	**0.2540**	**0.1313**	**0.3853**	**0.0000**	**1,221.1519**	**1,221.1519**	**0.1285**	**0.0537**	**1,240.3689**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2022	5.2185	1.0550	4.9167	0.0124	0.8366	0.0165	0.8530	0.2296	0.0158	0.2455	0.0000	1,137.5210	1,137.5210	0.1230	0.0537	1,156.6010
Maximum	**5.2185**	**1.0550**	**4.9167**	**0.0124**	**0.8366**	**0.0165**	**0.8530**	**0.2296**	**0.0158**	**0.2455**	**0.0000**	**1,137.5210**	**1,137.5210**	**0.1230**	**0.0537**	**1,156.6010**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**4.25**	**69.56**	**7.19**	**7.56**	**7.35**	**88.24**	**18.22**	**9.58**	**87.93**	**36.28**	**0.00**	**6.85**	**6.85**	**4.26**	**0.00**	**6.75**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)

Palmdale GPU - MFR construction Only - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

1	**1-1-2022**	**3-31-2022**	1.2527	0.2506
2	**4-1-2022**	**6-30-2022**	0.9287	0.3575
3	**7-1-2022**	**9-30-2022**	0.8856	0.3547
		Highest	1.2527	0.3575

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Palmdale GPU - MFR construction Only - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2022	1/21/2022	5	15	
2	Grading	Grading	1/22/2022	2/23/2022	5	23	
3	Building Construction	Building Construction	2/23/2022	12/29/2022	5	222	

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

4	Paving	Paving	2/23/2022	4/12/2022	5	35	
5	Architectural Coating	Architectural Coating	11/14/2022	12/30/2022	5	35	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 69

Acres of Paving: 0

Residential Indoor: 2,116,125; Residential Outdoor: 705,375; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Building Construction	Cranes	1	7.00	231	0.29
Demolition	Excavators	3	8.00	158	0.38
Grading	Excavators	2	8.00	158	0.38
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Grading	Graders	1	8.00	187	0.41
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45

Palmdale GPU - MFR construction Only - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Architectural Coating	1	150.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	752.00	112.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Demolition	6	15.00	0.00	136.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Alternative Fuel for Construction Equipment

Use Cleaner Engines for Construction Equipment

Water Exposed Area

3.2 Demolition - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0148	0.0000	0.0148	2.2400e-003	0.0000	2.2400e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0198	0.1929	0.1545	2.9000e-004		9.3200e-003	9.3200e-003		8.6600e-003	8.6600e-003	0.0000	25.4927	25.4927	7.1600e-003	0.0000	25.6717
Total	**0.0198**	**0.1929**	**0.1545**	**2.9000e-004**	**0.0148**	**9.3200e-003**	**0.0241**	**2.2400e-003**	**8.6600e-003**	**0.0109**	**0.0000**	**25.4927**	**25.4927**	**7.1600e-003**	**0.0000**	**25.6717**

Palmdale GPU - MFR construction Only - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	3.1000e-004	0.0120	2.6800e-003	4.0000e-005	1.1700e-003	8.0000e-005	1.2500e-003	3.2000e-004	8.0000e-005	4.0000e-004	0.0000	4.2001	4.2001	2.2000e-004	6.7000e-004	4.4043
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.2000e-004	2.5000e-004	3.2300e-003	1.0000e-005	9.1000e-004	1.0000e-005	9.1000e-004	2.4000e-004	1.0000e-005	2.5000e-004	0.0000	0.7551	0.7551	2.0000e-005	2.0000e-005	0.7623
Total	**6.3000e-004**	**0.0123**	**5.9100e-003**	**5.0000e-005**	**2.0800e-003**	**9.0000e-005**	**2.1600e-003**	**5.6000e-004**	**9.0000e-005**	**6.5000e-004**	**0.0000**	**4.9552**	**4.9552**	**2.4000e-004**	**6.9000e-004**	**5.1666**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					6.6400e-003	0.0000	6.6400e-003	1.0100e-003	0.0000	1.0100e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.4700e-003	0.0150	0.1746	2.9000e-004		4.6000e-004	4.6000e-004		4.6000e-004	4.6000e-004	0.0000	25.4926	25.4926	7.1600e-003	0.0000	25.6717
Total	**3.4700e-003**	**0.0150**	**0.1746**	**2.9000e-004**	**6.6400e-003**	**4.6000e-004**	**7.1000e-003**	**1.0100e-003**	**4.6000e-004**	**1.4700e-003**	**0.0000**	**25.4926**	**25.4926**	**7.1600e-003**	**0.0000**	**25.6717**

Palmdale GPU - MFR construction Only - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	3.1000e-004	0.0120	2.6800e-003	4.0000e-005	1.1700e-003	8.0000e-005	1.2500e-003	3.2000e-004	8.0000e-005	4.0000e-004	0.0000	4.2001	4.2001	2.2000e-004	6.7000e-004	4.4043
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.2000e-004	2.5000e-004	3.2300e-003	1.0000e-005	9.1000e-004	1.0000e-005	9.1000e-004	2.4000e-004	1.0000e-005	2.5000e-004	0.0000	0.7551	0.7551	2.0000e-005	2.0000e-005	0.7623
Total	**6.3000e-004**	**0.0123**	**5.9100e-003**	**5.0000e-005**	**2.0800e-003**	**9.0000e-005**	**2.1600e-003**	**5.6000e-004**	**9.0000e-005**	**6.5000e-004**	**0.0000**	**4.9552**	**4.9552**	**2.4000e-004**	**6.9000e-004**	**5.1666**

3.3 Grading - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1058	0.0000	0.1058	0.0420	0.0000	0.0420	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0417	0.4467	0.3340	7.1000e-004		0.0188	0.0188		0.0173	0.0173	0.0000	62.7148	62.7148	0.0203	0.0000	63.2219
Total	**0.0417**	**0.4467**	**0.3340**	**7.1000e-004**	**0.1058**	**0.0188**	**0.1246**	**0.0420**	**0.0173**	**0.0593**	**0.0000**	**62.7148**	**62.7148**	**0.0203**	**0.0000**	**63.2219**

Palmdale GPU - MFR construction Only - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.6000e-004	5.1000e-004	6.5900e-003	2.0000e-005	1.8500e-003	1.0000e-005	1.8600e-003	4.9000e-004	1.0000e-005	5.0000e-004	0.0000	1.5438	1.5438	5.0000e-005	5.0000e-005	1.5585
Total	**6.6000e-004**	**5.1000e-004**	**6.5900e-003**	**2.0000e-005**	**1.8500e-003**	**1.0000e-005**	**1.8600e-003**	**4.9000e-004**	**1.0000e-005**	**5.0000e-004**	**0.0000**	**1.5438**	**1.5438**	**5.0000e-005**	**5.0000e-005**	**1.5585**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0476	0.0000	0.0476	0.0189	0.0000	0.0189	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	8.7600e-003	0.0380	0.3795	7.1000e-004		1.1700e-003	1.1700e-003		1.1700e-003	1.1700e-003	0.0000	62.7147	62.7147	0.0203	0.0000	63.2218
Total	**8.7600e-003**	**0.0380**	**0.3795**	**7.1000e-004**	**0.0476**	**1.1700e-003**	**0.0488**	**0.0189**	**1.1700e-003**	**0.0201**	**0.0000**	**62.7147**	**62.7147**	**0.0203**	**0.0000**	**63.2218**

Palmdale GPU - MFR construction Only - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.6000e-004	5.1000e-004	6.5900e-003	2.0000e-005	1.8500e-003	1.0000e-005	1.8600e-003	4.9000e-004	1.0000e-005	5.0000e-004	0.0000	1.5438	1.5438	5.0000e-005	5.0000e-005	1.5585
Total	**6.6000e-004**	**5.1000e-004**	**6.5900e-003**	**2.0000e-005**	**1.8500e-003**	**1.0000e-005**	**1.8600e-003**	**4.9000e-004**	**1.0000e-005**	**5.0000e-004**	**0.0000**	**1.5438**	**1.5438**	**5.0000e-005**	**5.0000e-005**	**1.5585**

3.4 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1894	1.7333	1.8163	2.9900e-003		0.0898	0.0898		0.0845	0.0845	0.0000	257.2150	257.2150	0.0616	0.0000	258.7556
Total	**0.1894**	**1.7333**	**1.8163**	**2.9900e-003**		**0.0898**	**0.0898**		**0.0845**	**0.0845**	**0.0000**	**257.2150**	**257.2150**	**0.0616**	**0.0000**	**258.7556**

Palmdale GPU - MFR construction Only - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0252	0.6678	0.2178	2.5700e-003	0.0829	6.1400e-003	0.0890	0.0239	5.8700e-003	0.0298	0.0000	250.0651	250.0651	8.3400e-003	0.0361	261.0180
Worker	0.2378	0.1865	2.3931	6.0700e-003	0.6722	4.5000e-003	0.6767	0.1786	4.1500e-003	0.1827	0.0000	560.2679	560.2679	0.0185	0.0164	565.6040
Total	**0.2630**	**0.8543**	**2.6109**	**8.6400e-003**	**0.7551**	**0.0106**	**0.7658**	**0.2025**	**0.0100**	**0.2125**	**0.0000**	**810.3329**	**810.3329**	**0.0269**	**0.0524**	**826.6221**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0242	0.1050	1.3217	1.9800e-003		3.2300e-003	3.2300e-003		3.2300e-003	3.2300e-003	0.0000	173.5843	173.5843	0.0561	0.0000	174.9878
Total	**0.0242**	**0.1050**	**1.3217**	**1.9800e-003**		**3.2300e-003**	**3.2300e-003**		**3.2300e-003**	**3.2300e-003**	**0.0000**	**173.5843**	**173.5843**	**0.0561**	**0.0000**	**174.9878**

Palmdale GPU - MFR construction Only - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0252	0.6678	0.2178	2.5700e-003	0.0829	6.1400e-003	0.0890	0.0239	5.8700e-003	0.0298	0.0000	250.0651	250.0651	8.3400e-003	0.0361	261.0180
Worker	0.2378	0.1865	2.3931	6.0700e-003	0.6722	4.5000e-003	0.6767	0.1786	4.1500e-003	0.1827	0.0000	560.2679	560.2679	0.0185	0.0164	565.6040
Total	**0.2630**	**0.8543**	**2.6109**	**8.6400e-003**	**0.7551**	**0.0106**	**0.7658**	**0.2025**	**0.0100**	**0.2125**	**0.0000**	**810.3329**	**810.3329**	**0.0269**	**0.0524**	**826.6221**

3.5 Paving - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0193	0.1947	0.2552	4.0000e-004		9.9400e-003	9.9400e-003		9.1400e-003	9.1400e-003	0.0000	35.0482	35.0482	0.0113	0.0000	35.3316
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0193**	**0.1947**	**0.2552**	**4.0000e-004**		**9.9400e-003**	**9.9400e-003**		**9.1400e-003**	**9.1400e-003**	**0.0000**	**35.0482**	**35.0482**	**0.0113**	**0.0000**	**35.3316**

Palmdale GPU - MFR construction Only - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.5000e-004	5.9000e-004	7.5300e-003	2.0000e-005	2.1100e-003	1.0000e-005	2.1300e-003	5.6000e-004	1.0000e-005	5.7000e-004	0.0000	1.7619	1.7619	6.0000e-005	5.0000e-005	1.7787
Total	**7.5000e-004**	**5.9000e-004**	**7.5300e-003**	**2.0000e-005**	**2.1100e-003**	**1.0000e-005**	**2.1300e-003**	**5.6000e-004**	**1.0000e-005**	**5.7000e-004**	**0.0000**	**1.7619**	**1.7619**	**6.0000e-005**	**5.0000e-005**	**1.7787**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	4.9100e-003	0.0213	0.3027	4.0000e-004		6.5000e-004	6.5000e-004		6.5000e-004	6.5000e-004	0.0000	35.0482	35.0482	0.0113	0.0000	35.3316
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**4.9100e-003**	**0.0213**	**0.3027**	**4.0000e-004**		**6.5000e-004**	**6.5000e-004**		**6.5000e-004**	**6.5000e-004**	**0.0000**	**35.0482**	**35.0482**	**0.0113**	**0.0000**	**35.3316**

Palmdale GPU - MFR construction Only - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.5000e-004	5.9000e-004	7.5300e-003	2.0000e-005	2.1100e-003	1.0000e-005	2.1300e-003	5.6000e-004	1.0000e-005	5.7000e-004	0.0000	1.7619	1.7619	6.0000e-005	5.0000e-005	1.7787
Total	**7.5000e-004**	**5.9000e-004**	**7.5300e-003**	**2.0000e-005**	**2.1100e-003**	**1.0000e-005**	**2.1300e-003**	**5.6000e-004**	**1.0000e-005**	**5.7000e-004**	**0.0000**	**1.7619**	**1.7619**	**6.0000e-005**	**5.0000e-005**	**1.7787**

3.6 Architectural Coating - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	4.9041					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.5800e-003	0.0247	0.0317	5.0000e-005		1.4300e-003	1.4300e-003		1.4300e-003	1.4300e-003	0.0000	4.4682	4.4682	2.9000e-004	0.0000	4.4755
Total	**4.9077**	**0.0247**	**0.0317**	**5.0000e-005**		**1.4300e-003**	**1.4300e-003**		**1.4300e-003**	**1.4300e-003**	**0.0000**	**4.4682**	**4.4682**	**2.9000e-004**	**0.0000**	**4.4755**

Palmdale GPU - MFR construction Only - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.4800e-003	5.8600e-003	0.0753	1.9000e-004	0.0211	1.4000e-004	0.0213	5.6200e-003	1.3000e-004	5.7500e-003	0.0000	17.6191	17.6191	5.8000e-004	5.1000e-004	17.7869
Total	**7.4800e-003**	**5.8600e-003**	**0.0753**	**1.9000e-004**	**0.0211**	**1.4000e-004**	**0.0213**	**5.6200e-003**	**1.3000e-004**	**5.7500e-003**	**0.0000**	**17.6191**	**17.6191**	**5.8000e-004**	**5.1000e-004**	**17.7869**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	4.9041					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	5.2000e-004	2.2500e-003	0.0321	5.0000e-005		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005	0.0000	4.4682	4.4682	2.9000e-004	0.0000	4.4755
Total	**4.9046**	**2.2500e-003**	**0.0321**	**5.0000e-005**		**7.0000e-005**	**7.0000e-005**		**7.0000e-005**	**7.0000e-005**	**0.0000**	**4.4682**	**4.4682**	**2.9000e-004**	**0.0000**	**4.4755**

Palmdale GPU - MFR construction Only - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	7.4800e-003	5.8600e-003	0.0753	1.9000e-004	0.0211	1.4000e-004	0.0213	5.6200e-003	1.3000e-004	5.7500e-003	0.0000	17.6191	17.6191	5.8000e-004	5.1000e-004	17.7869
Total	**7.4800e-003**	**5.8600e-003**	**0.0753**	**1.9000e-004**	**0.0211**	**1.4000e-004**	**0.0213**	**5.6200e-003**	**1.3000e-004**	**5.7500e-003**	**0.0000**	**17.6191**	**17.6191**	**5.8000e-004**	**5.1000e-004**	**17.7869**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Mid Rise	10.80	7.30	7.50	40.20	19.20	40.60	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Mid Rise	0.544785	0.062844	0.187478	0.127235	0.023089	0.006083	0.010475	0.008012	0.000925	0.000611	0.024394	0.000698	0.003374

5.0 Energy Detail

Historical Energy Use: N

Palmdale GPU - MFR construction Only - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Mid Rise	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Mid Rise	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use		Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	tons/yr	MT/yr			
Apartments Mid Rise	0		0.0000	0.0000	0.0000	0.0000
Total			**0.0000**	**0.0000**	**0.0000**	**0.0000**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Mitigated

	Electricity Use		Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	tons/yr	MT/yr			
Apartments Mid Rise	0		0.0000	0.0000	0.0000	0.0000
Total			**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Palmdale GPU - MFR construction Only - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Palmdale GPU - MFR construction Only - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

7.0 Water Detail

7.1 Mitigation Measures Water

		Total CO2	CH4	N2O	CO2e
Category	tons/yr	MT/yr			
Mitigated		0.0000	0.0000	0.0000	0.0000

Palmdale GPU - MFR construction Only - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Unmitigated		0.0000	0.0000	0.0000	0.0000

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use		Total CO2	CH4	N2O	CO2e
Land Use	Mgal	tons/yr	MT/yr			
Apartments Mid Rise	0 / 0		0.0000	0.0000	0.0000	0.0000
Total			**0.0000**	**0.0000**	**0.0000**	**0.0000**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Mitigated

	Indoor/Outdoor Use		Total CO2	CH4	N2O	CO2e
Land Use	Mgal	tons/yr	MT/yr			
Apartments Mid Rise	0 / 0		0.0000	0.0000	0.0000	0.0000
Total			**0.0000**	**0.0000**	**0.0000**	**0.0000**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

		Total CO2	CH4	N2O	CO2e
	tons/yr	MT/yr			
Mitigated		0.0000	0.0000	0.0000	0.0000
Unmitigated		0.0000	0.0000	0.0000	0.0000

Palmdale GPU - MFR construction Only - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

8.2 Waste by Land Use

Unmitigated

	Waste Disposed		Total CO2	CH4	N2O	CO2e
Land Use	tons	tons/yr	MT/yr			
Apartments Mid Rise	0		0.0000	0.0000	0.0000	0.0000
Total			**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Waste Disposed		Total CO2	CH4	N2O	CO2e
Land Use	tons	tons/yr	MT/yr			
Apartments Mid Rise	0		0.0000	0.0000	0.0000	0.0000
Total			**0.0000**	**0.0000**	**0.0000**	**0.0000**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

Palmdale GPU - MFR construction Only - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Palmdale GPU - MFR construction Only - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Palmdale GPU - MFR construction Only

Los Angeles-Mojave Desert County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Apartments Mid Rise	1,045.00	Dwelling Unit	27.50	1,045,000.00	3598

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	9			**Operational Year**	2023
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	390.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics - See Assumptions

Land Use - See Assumptions

Construction Phase - See Assumptions

Grading -

Demolition - See Assumptions

Architectural Coating - See Assumptions

Vehicle Trips - Operational Emissions modeled separately

Road Dust - Operational Emissions modeled separately

Woodstoves - Operational Emissions modeled separately

Consumer Products - Operational Emissions modeled separately

Area Coating - Operational Emissions modeled separately

Landscape Equipment - Operational Emissions modeled separately

Palmdale GPU - MFR construction Only - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Energy Use - Operational Emissions modeled separately

Water And Wastewater - Operational Emissions modeled separately

Solid Waste - Operational Emissions modeled separately

Construction Off-road Equipment Mitigation - 2x per day watering is compliant with AVAQMD regulations for reducing fugitive dust, it is not mitigation

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	250.00	150.00
tblArchitecturalCoating	EF_Nonresidential_Interior	250.00	50.00
tblArchitecturalCoating	EF_Residential_Exterior	250.00	150.00
tblArchitecturalCoating	EF_Residential_Interior	250.00	50.00
tblAreaCoating	ReapplicationRatePercent	10	0
tblConstEquipMitigation	FuelType	Diesel	Electrical
tblConstEquipMitigation	FuelType	Diesel	Electrical
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	5.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	5.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final

Palmdale GPU - MFR construction Only - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	NumDays	440.00	222.00
tblConstructionPhase	NumDays	30.00	15.00
tblConstructionPhase	NumDays	45.00	23.00
tblConstructionPhase	PhaseEndDate	4/26/2024	12/30/2022
tblConstructionPhase	PhaseEndDate	1/19/2024	12/29/2022
tblConstructionPhase	PhaseEndDate	2/11/2022	1/21/2022
tblConstructionPhase	PhaseEndDate	5/13/2022	2/23/2022
tblConstructionPhase	PhaseEndDate	3/8/2024	4/12/2022
tblConstructionPhase	PhaseStartDate	3/9/2024	11/14/2022
tblConstructionPhase	PhaseStartDate	5/14/2022	2/23/2022
tblConstructionPhase	PhaseStartDate	3/12/2022	1/22/2022
tblConstructionPhase	PhaseStartDate	1/20/2024	2/23/2022
tblConsumerProducts	ROG_EF	2.14E-05	0
tblConsumerProducts	ROG_EF_Degreaser	3.542E-07	0
tblConsumerProducts	ROG_EF_PesticidesFertilizers	5.152E-08	0
tblEnergyUse	LightingElect	741.44	0.00
tblEnergyUse	NT24E	3,054.10	0.00
tblEnergyUse	NT24NG	6,384.00	0.00

Palmdale GPU - MFR construction Only - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

tblEnergyUse	T24E	53.81	0.00
tblEnergyUse	T24NG	6,682.59	0.00
tblFireplaces	FireplaceDayYear	82.00	0.00
tblFireplaces	FireplaceHourDay	3.00	0.00
tblFireplaces	FireplaceWoodMass	3,078.40	0.00
tblFireplaces	NumberGas	574.75	0.00
tblFireplaces	NumberNoFireplace	104.50	0.00
tblFireplaces	NumberWood	365.75	0.00
tblLandscapeEquipment	NumberSummerDays	180	0
tblLandUse	Population	2,989.00	3,598.00
tblRoadDust	RoadPercentPave	100	0
tblSolidWaste	SolidWasteGenerationRate	480.70	0.00
tblVehicleTrips	ST_TR	4.91	0.00
tblVehicleTrips	SU_TR	4.09	0.00
tblVehicleTrips	WD_TR	5.44	0.00
tblWater	IndoorWaterUseRate	68,085,956.77	0.00
tblWater	OutdoorWaterUseRate	42,923,755.36	0.00
tblWoodstoves	NumberCatalytic	52.25	0.00
tblWoodstoves	NumberNoncatalytic	52.25	0.00
tblWoodstoves	WoodstoveDayYear	82.00	0.00
tblWoodstoves	WoodstoveWoodMass	3,019.20	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Palmdale GPU - MFR construction Only - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

					PM10	PM10	Total	PM2.5	PM2.5	Total						
Year	lb/day										lb/day					
2022	284.9914	72.8733	85.6523	0.1944	16.4274	3.1095	19.5369	5.5870	2.8796	8.4667	0.0000	19,312.2065	19,312.2065	3.5408	0.5377	19,554.1056
Maximum	**284.9914**	**72.8733**	**85.6523**	**0.1944**	**16.4274**	**3.1095**	**19.5369**	**5.5870**	**2.8796**	**8.4667**	**0.0000**	**19,312.2065**	**19,312.2065**	**3.5408**	**0.5377**	**19,554.1056**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2022	283.3285	12.7504	87.8688	0.1853	11.3654	0.2657	11.6312	3.5775	0.2599	3.8374	0.0000	18,481.6942	18,481.6942	3.4863	0.5377	18,722.2327
Maximum	**283.3285**	**12.7504**	**87.8688**	**0.1853**	**11.3654**	**0.2657**	**11.6312**	**3.5775**	**0.2599**	**3.8374**	**0.0000**	**18,481.6942**	**18,481.6942**	**3.4863**	**0.5377**	**18,722.2327**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.58**	**82.50**	**-2.59**	**4.70**	**30.81**	**91.45**	**40.47**	**35.97**	**90.97**	**54.68**	**0.00**	**4.30**	**4.30**	**1.54**	**0.00**	**4.25**

Palmdale GPU - MFR construction Only - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	2.5979	0.9940	86.2330	4.5500e-003		0.4773	0.4773		0.4773	0.4773	0.0000	155.2372	155.2372	0.1493	0.0000	158.9691
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total	**2.5979**	**0.9940**	**86.2330**	**4.5500e-003**	**0.0000**	**0.4773**	**0.4773**	**0.0000**	**0.4773**	**0.4773**	**0.0000**	**155.2372**	**155.2372**	**0.1493**	**0.0000**	**158.9691**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	2.5979	0.9940	86.2330	4.5500e-003		0.4773	0.4773		0.4773	0.4773	0.0000	155.2372	155.2372	0.1493	0.0000	158.9691
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total	**2.5979**	**0.9940**	**86.2330**	**4.5500e-003**	**0.0000**	**0.4773**	**0.4773**	**0.0000**	**0.4773**	**0.4773**	**0.0000**	**155.2372**	**155.2372**	**0.1493**	**0.0000**	**158.9691**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2022	1/21/2022	5	15	
2	Grading	Grading	1/22/2022	2/23/2022	5	23	
3	Building Construction	Building Construction	2/23/2022	12/29/2022	5	222	
4	Paving	Paving	2/23/2022	4/12/2022	5	35	
5	Architectural Coating	Architectural Coating	11/14/2022	12/30/2022	5	35	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 69

Acres of Paving: 0

Residential Indoor: 2,116,125; Residential Outdoor: 705,375; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Building Construction	Cranes	1	7.00	231	0.29
Demolition	Excavators	3	8.00	158	0.38
Grading	Excavators	2	8.00	158	0.38
Building Construction	Forklifts	3	8.00	89	0.20

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Building Construction	Generator Sets	1	8.00	84	0.74
Grading	Graders	1	8.00	187	0.41
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Architectural Coating	1	150.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	752.00	112.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Demolition	6	15.00	0.00	136.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Alternative Fuel for Construction Equipment

Use Cleaner Engines for Construction Equipment

Water Exposed Area

3.2 Demolition - 2022

Unmitigated Construction On-Site

Palmdale GPU - MFR construction Only - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					1.9687	0.0000	1.9687	0.2981	0.0000	0.2981			0.0000			0.0000
Off-Road	2.6392	25.7194	20.5941	0.0388		1.2427	1.2427		1.1553	1.1553		3,746.7812	3,746.7812	1.0524		3,773.0920
Total	**2.6392**	**25.7194**	**20.5941**	**0.0388**	**1.9687**	**1.2427**	**3.2114**	**0.2981**	**1.1553**	**1.4533**		**3,746.7812**	**3,746.7812**	**1.0524**		**3,773.0920**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0422	1.5227	0.3551	5.6300e-003	0.1587	0.0113	0.1700	0.0435	0.0108	0.0543		617.2365	617.2365	0.0328	0.0979	647.2400
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0435	0.0297	0.4524	1.1300e-003	0.1232	8.1000e-004	0.1240	0.0327	7.5000e-004	0.0334		115.4228	115.4228	3.5800e-003	2.9900e-003	116.4043
Total	**0.0858**	**1.5525**	**0.8074**	**6.7600e-003**	**0.2819**	**0.0121**	**0.2940**	**0.0762**	**0.0116**	**0.0878**		**732.6593**	**732.6593**	**0.0364**	**0.1009**	**763.6443**

Palmdale GPU - MFR construction Only - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.8859	0.0000	0.8859	0.1341	0.0000	0.1341			0.0000			0.0000
Off-Road	0.4623	2.0032	23.2798	0.0388		0.0616	0.0616		0.0616	0.0616	0.0000	3,746.7812	3,746.7812	1.0524		3,773.0920
Total	**0.4623**	**2.0032**	**23.2798**	**0.0388**	**0.8859**	**0.0616**	**0.9476**	**0.1341**	**0.0616**	**0.1958**	**0.0000**	**3,746.7812**	**3,746.7812**	**1.0524**		**3,773.0920**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0422	1.5227	0.3551	5.6300e-003	0.1587	0.0113	0.1700	0.0435	0.0108	0.0543		617.2365	617.2365	0.0328	0.0979	647.2400
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0435	0.0297	0.4524	1.1300e-003	0.1232	8.1000e-004	0.1240	0.0327	7.5000e-004	0.0334		115.4228	115.4228	3.5800e-003	2.9900e-003	116.4043
Total	**0.0858**	**1.5525**	**0.8074**	**6.7600e-003**	**0.2819**	**0.0121**	**0.2940**	**0.0762**	**0.0116**	**0.0878**		**732.6593**	**732.6593**	**0.0364**	**0.1009**	**763.6443**

Palmdale GPU - MFR construction Only - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.3 Grading - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					9.2036	0.0000	9.2036	3.6538	0.0000	3.6538			0.0000			0.0000
Off-Road	3.6248	38.8435	29.0415	0.0621		1.6349	1.6349		1.5041	1.5041		6,011.4105	6,011.4105	1.9442		6,060.0158
Total	**3.6248**	**38.8435**	**29.0415**	**0.0621**	**9.2036**	**1.6349**	**10.8385**	**3.6538**	**1.5041**	**5.1579**		**6,011.4105**	**6,011.4105**	**1.9442**		**6,060.0158**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0580	0.0397	0.6032	1.5100e-003	0.1643	1.0800e-003	0.1654	0.0436	9.9000e-004	0.0446		153.8970	153.8970	4.7700e-003	3.9900e-003	155.2057
Total	**0.0580**	**0.0397**	**0.6032**	**1.5100e-003**	**0.1643**	**1.0800e-003**	**0.1654**	**0.0436**	**9.9000e-004**	**0.0446**		**153.8970**	**153.8970**	**4.7700e-003**	**3.9900e-003**	**155.2057**

Palmdale GPU - MFR construction Only - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					4.1416	0.0000	4.1416	1.6442	0.0000	1.6442			0.0000			0.0000
Off-Road	0.7616	3.3000	32.9991	0.0621		0.1015	0.1015		0.1015	0.1015	0.0000	6,011.4105	6,011.4105	1.9442		6,060.0158
Total	**0.7616**	**3.3000**	**32.9991**	**0.0621**	**4.1416**	**0.1015**	**4.2432**	**1.6442**	**0.1015**	**1.7457**	**0.0000**	**6,011.4105**	**6,011.4105**	**1.9442**		**6,060.0158**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0580	0.0397	0.6032	1.5100e-003	0.1643	1.0800e-003	0.1654	0.0436	9.9000e-004	0.0446		153.8970	153.8970	4.7700e-003	3.9900e-003	155.2057
Total	**0.0580**	**0.0397**	**0.6032**	**1.5100e-003**	**0.1643**	**1.0800e-003**	**0.1654**	**0.0436**	**9.9000e-004**	**0.0446**		**153.8970**	**153.8970**	**4.7700e-003**	**3.9900e-003**	**155.2057**

Palmdale GPU - MFR construction Only - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.4 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.7062	15.6156	16.3634	0.0269		0.8090	0.8090		0.7612	0.7612		2,554.3336	2,554.3336	0.6120		2,569.6322
Total	**1.7062**	**15.6156**	**16.3634**	**0.0269**		**0.8090**	**0.8090**		**0.7612**	**0.7612**		**2,554.3336**	**2,554.3336**	**0.6120**		**2,569.6322**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.2288	5.7290	1.9330	0.0231	0.7588	0.0552	0.8140	0.2185	0.0528	0.2713		2,482.9544	2,482.9544	0.0830	0.3576	2,591.6036
Worker	2.1813	1.4908	22.6784	0.0569	6.1775	0.0406	6.2181	1.6386	0.0374	1.6759		5,786.5279	5,786.5279	0.1793	0.1501	5,835.7337
Total	**2.4101**	**7.2199**	**24.6114**	**0.0800**	**6.9363**	**0.0958**	**7.0321**	**1.8570**	**0.0902**	**1.9472**		**8,269.4823**	**8,269.4823**	**0.2623**	**0.5077**	**8,427.3373**

Palmdale GPU - MFR construction Only - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.2182	0.9457	11.9070	0.0178		0.0291	0.0291		0.0291	0.0291	0.0000	1,723.8213	1,723.8213	0.5575		1,737.7593
Total	**0.2182**	**0.9457**	**11.9070**	**0.0178**		**0.0291**	**0.0291**		**0.0291**	**0.0291**	**0.0000**	**1,723.8213**	**1,723.8213**	**0.5575**		**1,737.7593**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.2288	5.7290	1.9330	0.0231	0.7588	0.0552	0.8140	0.2185	0.0528	0.2713		2,482.9544	2,482.9544	0.0830	0.3576	2,591.6036
Worker	2.1813	1.4908	22.6784	0.0569	6.1775	0.0406	6.2181	1.6386	0.0374	1.6759		5,786.5279	5,786.5279	0.1793	0.1501	5,835.7337
Total	**2.4101**	**7.2199**	**24.6114**	**0.0800**	**6.9363**	**0.0958**	**7.0321**	**1.8570**	**0.0902**	**1.9472**		**8,269.4823**	**8,269.4823**	**0.2623**	**0.5077**	**8,427.3373**

Palmdale GPU - MFR construction Only - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.5 Paving - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.1028	11.1249	14.5805	0.0228		0.5679	0.5679		0.5225	0.5225		2,207.6603	2,207.6603	0.7140		2,225.5104
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.1028**	**11.1249**	**14.5805**	**0.0228**		**0.5679**	**0.5679**		**0.5225**	**0.5225**		**2,207.6603**	**2,207.6603**	**0.7140**		**2,225.5104**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0435	0.0297	0.4524	1.1300e-003	0.1232	8.1000e-004	0.1240	0.0327	7.5000e-004	0.0334		115.4228	115.4228	3.5800e-003	2.9900e-003	116.4043
Total	**0.0435**	**0.0297**	**0.4524**	**1.1300e-003**	**0.1232**	**8.1000e-004**	**0.1240**	**0.0327**	**7.5000e-004**	**0.0334**		**115.4228**	**115.4228**	**3.5800e-003**	**2.9900e-003**	**116.4043**

Palmdale GPU - MFR construction Only - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.2805	1.2154	17.2957	0.0228		0.0374	0.0374		0.0374	0.0374	0.0000	2,207.6603	2,207.6603	0.7140		2,225.5104
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.2805**	**1.2154**	**17.2957**	**0.0228**		**0.0374**	**0.0374**		**0.0374**	**0.0374**	**0.0000**	**2,207.6603**	**2,207.6603**	**0.7140**		**2,225.5104**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0435	0.0297	0.4524	1.1300e-003	0.1232	8.1000e-004	0.1240	0.0327	7.5000e-004	0.0334		115.4228	115.4228	3.5800e-003	2.9900e-003	116.4043
Total	**0.0435**	**0.0297**	**0.4524**	**1.1300e-003**	**0.1232**	**8.1000e-004**	**0.1240**	**0.0327**	**7.5000e-004**	**0.0334**		**115.4228**	**115.4228**	**3.5800e-003**	**2.9900e-003**	**116.4043**

Palmdale GPU - MFR construction Only - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.6 Architectural Coating - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	280.2354					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817		281.4481	281.4481	0.0183		281.9062
Total	**280.4400**	**1.4085**	**1.8136**	**2.9700e-003**		**0.0817**	**0.0817**		**0.0817**	**0.0817**		**281.4481**	**281.4481**	**0.0183**		**281.9062**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.4351	0.2974	4.5236	0.0114	1.2322	8.0900e-003	1.2403	0.3268	7.4500e-003	0.3343		1,154.2276	1,154.2276	0.0358	0.0299	1,164.0426
Total	**0.4351**	**0.2974**	**4.5236**	**0.0114**	**1.2322**	**8.0900e-003**	**1.2403**	**0.3268**	**7.4500e-003**	**0.3343**		**1,154.2276**	**1,154.2276**	**0.0358**	**0.0299**	**1,164.0426**

Palmdale GPU - MFR construction Only - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	280.2354					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.0297	0.1288	1.8324	2.9700e-003		3.9600e-003	3.9600e-003		3.9600e-003	3.9600e-003	0.0000	281.4481	281.4481	0.0183		281.9062
Total	**280.2651**	**0.1288**	**1.8324**	**2.9700e-003**		**3.9600e-003**	**3.9600e-003**		**3.9600e-003**	**3.9600e-003**	**0.0000**	**281.4481**	**281.4481**	**0.0183**		**281.9062**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.4351	0.2974	4.5236	0.0114	1.2322	8.0900e-003	1.2403	0.3268	7.4500e-003	0.3343		1,154.2276	1,154.2276	0.0358	0.0299	1,164.0426
Total	**0.4351**	**0.2974**	**4.5236**	**0.0114**	**1.2322**	**8.0900e-003**	**1.2403**	**0.3268**	**7.4500e-003**	**0.3343**		**1,154.2276**	**1,154.2276**	**0.0358**	**0.0299**	**1,164.0426**

Palmdale GPU - MFR construction Only - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Mid Rise	10.80	7.30	7.50	40.20	19.20	40.60	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Apartments Mid Rise	0.544785	0.062844	0.187478	0.127235	0.023089	0.006083	0.010475	0.008012	0.000925	0.000611	0.024394	0.000698	0.003374

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Mid Rise	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Mid Rise	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

Palmdale GPU - MFR construction Only - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	2.5979	0.9940	86.2330	4.5500e-003		0.4773	0.4773		0.4773	0.4773	0.0000	155.2372	155.2372	0.1493	0.0000	158.9691
Unmitigated	2.5979	0.9940	86.2330	4.5500e-003		0.4773	0.4773		0.4773	0.4773	0.0000	155.2372	155.2372	0.1493	0.0000	158.9691

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	2.5979	0.9940	86.2330	4.5500e-003		0.4773	0.4773		0.4773	0.4773		155.2372	155.2372	0.1493		158.9691
Total	**2.5979**	**0.9940**	**86.2330**	**4.5500e-003**		**0.4773**	**0.4773**		**0.4773**	**0.4773**	**0.0000**	**155.2372**	**155.2372**	**0.1493**	**0.0000**	**158.9691**

Palmdale GPU - MFR construction Only - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	2.5979	0.9940	86.2330	4.5500e-003		0.4773	0.4773		0.4773	0.4773		155.2372	155.2372	0.1493		158.9691
Total	**2.5979**	**0.9940**	**86.2330**	**4.5500e-003**		**0.4773**	**0.4773**		**0.4773**	**0.4773**	**0.0000**	**155.2372**	**155.2372**	**0.1493**	**0.0000**	**158.9691**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Palmdale GPU - MFR construction Only - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Palmdale GPU - MFR construction Only - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Palmdale GPU - MFR construction Only

Los Angeles-Mojave Desert County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Apartments Mid Rise	1,045.00	Dwelling Unit	27.50	1,045,000.00	3598

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	9			**Operational Year**	2023
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	390.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics - See Assumptions

Land Use - See Assumptions

Construction Phase - See Assumptions

Grading -

Demolition - See Assumptions

Architectural Coating - See Assumptions

Vehicle Trips - Operational Emissions modeled separately

Road Dust - Operational Emissions modeled separately

Woodstoves - Operational Emissions modeled separately

Consumer Products - Operational Emissions modeled separately

Area Coating - Operational Emissions modeled separately

Landscape Equipment - Operational Emissions modeled separately

Palmdale GPU - MFR construction Only - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Energy Use - Operational Emissions modeled separately

Water And Wastewater - Operational Emissions modeled separately

Solid Waste - Operational Emissions modeled separately

Construction Off-road Equipment Mitigation - 2x per day watering is compliant with AVAQMD regulations for reducing fugitive dust, it is not mitigation

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	250.00	150.00
tblArchitecturalCoating	EF_Nonresidential_Interior	250.00	50.00
tblArchitecturalCoating	EF_Residential_Exterior	250.00	150.00
tblArchitecturalCoating	EF_Residential_Interior	250.00	50.00
tblAreaCoating	ReapplicationRatePercent	10	0
tblConstEquipMitigation	FuelType	Diesel	Electrical
tblConstEquipMitigation	FuelType	Diesel	Electrical
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	5.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	5.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final

Palmdale GPU - MFR construction Only - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	NumDays	440.00	222.00
tblConstructionPhase	NumDays	30.00	15.00
tblConstructionPhase	NumDays	45.00	23.00
tblConstructionPhase	PhaseEndDate	4/26/2024	12/30/2022
tblConstructionPhase	PhaseEndDate	1/19/2024	12/29/2022
tblConstructionPhase	PhaseEndDate	2/11/2022	1/21/2022
tblConstructionPhase	PhaseEndDate	5/13/2022	2/23/2022
tblConstructionPhase	PhaseEndDate	3/8/2024	4/12/2022
tblConstructionPhase	PhaseStartDate	3/9/2024	11/14/2022
tblConstructionPhase	PhaseStartDate	5/14/2022	2/23/2022
tblConstructionPhase	PhaseStartDate	3/12/2022	1/22/2022
tblConstructionPhase	PhaseStartDate	1/20/2024	2/23/2022
tblConsumerProducts	ROG_EF	2.14E-05	0
tblConsumerProducts	ROG_EF_Degreaser	3.542E-07	0
tblConsumerProducts	ROG_EF_PesticidesFertilizers	5.152E-08	0
tblEnergyUse	LightingElect	741.44	0.00
tblEnergyUse	NT24E	3,054.10	0.00
tblEnergyUse	NT24NG	6,384.00	0.00

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

tblEnergyUse	T24E	53.81	0.00
tblEnergyUse	T24NG	6,682.59	0.00
tblFireplaces	FireplaceDayYear	82.00	0.00
tblFireplaces	FireplaceHourDay	3.00	0.00
tblFireplaces	FireplaceWoodMass	3,078.40	0.00
tblFireplaces	NumberGas	574.75	0.00
tblFireplaces	NumberNoFireplace	104.50	0.00
tblFireplaces	NumberWood	365.75	0.00
tblLandscapeEquipment	NumberSummerDays	180	0
tblLandUse	Population	2,989.00	3,598.00
tblRoadDust	RoadPercentPave	100	0
tblSolidWaste	SolidWasteGenerationRate	480.70	0.00
tblVehicleTrips	ST_TR	4.91	0.00
tblVehicleTrips	SU_TR	4.09	0.00
tblVehicleTrips	WD_TR	5.44	0.00
tblWater	IndoorWaterUseRate	68,085,956.77	0.00
tblWater	OutdoorWaterUseRate	42,923,755.36	0.00
tblWoodstoves	NumberCatalytic	52.25	0.00
tblWoodstoves	NumberNoncatalytic	52.25	0.00
tblWoodstoves	WoodstoveDayYear	82.00	0.00
tblWoodstoves	WoodstoveWoodMass	3,019.20	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Palmdale GPU - MFR construction Only - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

					PM10	PM10	Total	PM2.5	PM2.5	Total						
Year	lb/day										lb/day					
2022	285.1345	73.2721	84.0367	0.1913	16.4274	3.1097	19.5371	5.5870	2.8798	8.4669	0.0000	18,994.6985	18,994.6985	3.5459	0.5504	19,240.0595
Maximum	**285.1345**	**73.2721**	**84.0367**	**0.1913**	**16.4274**	**3.1097**	**19.5371**	**5.5870**	**2.8798**	**8.4669**	**0.0000**	**18,994.6985**	**18,994.6985**	**3.5459**	**0.5504**	**19,240.0595**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2022	283.4717	13.1492	86.2531	0.1822	11.3654	0.2659	11.6313	3.5775	0.2601	3.8376	0.0000	18,164.1862	18,164.1862	3.4914	0.5504	18,408.1865
Maximum	**283.4717**	**13.1492**	**86.2531**	**0.1822**	**11.3654**	**0.2659**	**11.6313**	**3.5775**	**0.2601**	**3.8376**	**0.0000**	**18,164.1862**	**18,164.1862**	**3.4914**	**0.5504**	**18,408.1865**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.58**	**82.05**	**-2.64**	**4.77**	**30.81**	**91.45**	**40.47**	**35.97**	**90.97**	**54.67**	**0.00**	**4.37**	**4.37**	**1.54**	**0.00**	**4.32**

Palmdale GPU - MFR construction Only - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	2.5979	0.9940	86.2330	4.5500e-003		0.4773	0.4773		0.4773	0.4773	0.0000	155.2372	155.2372	0.1493	0.0000	158.9691
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total	**2.5979**	**0.9940**	**86.2330**	**4.5500e-003**	**0.0000**	**0.4773**	**0.4773**	**0.0000**	**0.4773**	**0.4773**	**0.0000**	**155.2372**	**155.2372**	**0.1493**	**0.0000**	**158.9691**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	2.5979	0.9940	86.2330	4.5500e-003		0.4773	0.4773		0.4773	0.4773	0.0000	155.2372	155.2372	0.1493	0.0000	158.9691
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total	**2.5979**	**0.9940**	**86.2330**	**4.5500e-003**	**0.0000**	**0.4773**	**0.4773**	**0.0000**	**0.4773**	**0.4773**	**0.0000**	**155.2372**	**155.2372**	**0.1493**	**0.0000**	**158.9691**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2022	1/21/2022	5	15	
2	Grading	Grading	1/22/2022	2/23/2022	5	23	
3	Building Construction	Building Construction	2/23/2022	12/29/2022	5	222	
4	Paving	Paving	2/23/2022	4/12/2022	5	35	
5	Architectural Coating	Architectural Coating	11/14/2022	12/30/2022	5	35	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 69

Acres of Paving: 0

Residential Indoor: 2,116,125; Residential Outdoor: 705,375; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Building Construction	Cranes	1	7.00	231	0.29
Demolition	Excavators	3	8.00	158	0.38
Grading	Excavators	2	8.00	158	0.38
Building Construction	Forklifts	3	8.00	89	0.20

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Building Construction	Generator Sets	1	8.00	84	0.74
Grading	Graders	1	8.00	187	0.41
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Architectural Coating	1	150.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	752.00	112.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Demolition	6	15.00	0.00	136.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Alternative Fuel for Construction Equipment

Use Cleaner Engines for Construction Equipment

Water Exposed Area

3.2 Demolition - 2022

Unmitigated Construction On-Site

Palmdale GPU - MFR construction Only - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					1.9687	0.0000	1.9687	0.2981	0.0000	0.2981			0.0000			0.0000
Off-Road	2.6392	25.7194	20.5941	0.0388		1.2427	1.2427		1.1553	1.1553		3,746.7812	3,746.7812	1.0524		3,773.0920
Total	**2.6392**	**25.7194**	**20.5941**	**0.0388**	**1.9687**	**1.2427**	**3.2114**	**0.2981**	**1.1553**	**1.4533**		**3,746.7812**	**3,746.7812**	**1.0524**		**3,773.0920**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0412	1.5845	0.3613	5.6400e-003	0.1587	0.0113	0.1700	0.0435	0.0109	0.0544		617.4175	617.4175	0.0327	0.0980	647.4291
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0459	0.0328	0.4203	1.0700e-003	0.1232	8.1000e-004	0.1240	0.0327	7.5000e-004	0.0334		109.3543	109.3543	3.6800e-003	3.2000e-003	110.3993
Total	**0.0872**	**1.6174**	**0.7816**	**6.7100e-003**	**0.2819**	**0.0122**	**0.2941**	**0.0762**	**0.0116**	**0.0878**		**726.7718**	**726.7718**	**0.0364**	**0.1012**	**757.8285**

Palmdale GPU - MFR construction Only - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.8859	0.0000	0.8859	0.1341	0.0000	0.1341			0.0000			0.0000
Off-Road	0.4623	2.0032	23.2798	0.0388		0.0616	0.0616		0.0616	0.0616	0.0000	3,746.7812	3,746.7812	1.0524		3,773.0920
Total	**0.4623**	**2.0032**	**23.2798**	**0.0388**	**0.8859**	**0.0616**	**0.9476**	**0.1341**	**0.0616**	**0.1958**	**0.0000**	**3,746.7812**	**3,746.7812**	**1.0524**		**3,773.0920**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0412	1.5845	0.3613	5.6400e-003	0.1587	0.0113	0.1700	0.0435	0.0109	0.0544		617.4175	617.4175	0.0327	0.0980	647.4291
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0459	0.0328	0.4203	1.0700e-003	0.1232	8.1000e-004	0.1240	0.0327	7.5000e-004	0.0334		109.3543	109.3543	3.6800e-003	3.2000e-003	110.3993
Total	**0.0872**	**1.6174**	**0.7816**	**6.7100e-003**	**0.2819**	**0.0122**	**0.2941**	**0.0762**	**0.0116**	**0.0878**		**726.7718**	**726.7718**	**0.0364**	**0.1012**	**757.8285**

Palmdale GPU - MFR construction Only - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.3 Grading - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					9.2036	0.0000	9.2036	3.6538	0.0000	3.6538			0.0000			0.0000
Off-Road	3.6248	38.8435	29.0415	0.0621		1.6349	1.6349		1.5041	1.5041		6,011.4105	6,011.4105	1.9442		6,060.0158
Total	**3.6248**	**38.8435**	**29.0415**	**0.0621**	**9.2036**	**1.6349**	**10.8385**	**3.6538**	**1.5041**	**5.1579**		**6,011.4105**	**6,011.4105**	**1.9442**		**6,060.0158**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0612	0.0438	0.5605	1.4300e-003	0.1643	1.0800e-003	0.1654	0.0436	9.9000e-004	0.0446		145.8057	145.8057	4.9000e-003	4.2600e-003	147.1991
Total	**0.0612**	**0.0438**	**0.5605**	**1.4300e-003**	**0.1643**	**1.0800e-003**	**0.1654**	**0.0436**	**9.9000e-004**	**0.0446**		**145.8057**	**145.8057**	**4.9000e-003**	**4.2600e-003**	**147.1991**

Palmdale GPU - MFR construction Only - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					4.1416	0.0000	4.1416	1.6442	0.0000	1.6442			0.0000			0.0000
Off-Road	0.7616	3.3000	32.9991	0.0621		0.1015	0.1015		0.1015	0.1015	0.0000	6,011.4105	6,011.4105	1.9442		6,060.0158
Total	**0.7616**	**3.3000**	**32.9991**	**0.0621**	**4.1416**	**0.1015**	**4.2432**	**1.6442**	**0.1015**	**1.7457**	**0.0000**	**6,011.4105**	**6,011.4105**	**1.9442**		**6,060.0158**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0612	0.0438	0.5605	1.4300e-003	0.1643	1.0800e-003	0.1654	0.0436	9.9000e-004	0.0446		145.8057	145.8057	4.9000e-003	4.2600e-003	147.1991
Total	**0.0612**	**0.0438**	**0.5605**	**1.4300e-003**	**0.1643**	**1.0800e-003**	**0.1654**	**0.0436**	**9.9000e-004**	**0.0446**		**145.8057**	**145.8057**	**4.9000e-003**	**4.2600e-003**	**147.1991**

Palmdale GPU - MFR construction Only - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.4 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.7062	15.6156	16.3634	0.0269		0.8090	0.8090		0.7612	0.7612		2,554.3336	2,554.3336	0.6120		2,569.6322
Total	**1.7062**	**15.6156**	**16.3634**	**0.0269**		**0.8090**	**0.8090**		**0.7612**	**0.7612**		**2,554.3336**	**2,554.3336**	**0.6120**		**2,569.6322**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.2263	5.9649	1.9977	0.0231	0.7588	0.0554	0.8142	0.2185	0.0530	0.2715		2,483.8393	2,483.8393	0.0827	0.3581	2,592.6169
Worker	2.3027	1.6466	21.0728	0.0539	6.1775	0.0406	6.2181	1.6386	0.0374	1.6759		5,482.2948	5,482.2948	0.1844	0.1603	5,534.6858
Total	**2.5290**	**7.6115**	**23.0705**	**0.0770**	**6.9363**	**0.0960**	**7.0323**	**1.8570**	**0.0904**	**1.9474**		**7,966.1341**	**7,966.1341**	**0.2671**	**0.5184**	**8,127.3027**

Palmdale GPU - MFR construction Only - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.2182	0.9457	11.9070	0.0178		0.0291	0.0291		0.0291	0.0291	0.0000	1,723.8213	1,723.8213	0.5575		1,737.7593
Total	**0.2182**	**0.9457**	**11.9070**	**0.0178**		**0.0291**	**0.0291**		**0.0291**	**0.0291**	**0.0000**	**1,723.8213**	**1,723.8213**	**0.5575**		**1,737.7593**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.2263	5.9649	1.9977	0.0231	0.7588	0.0554	0.8142	0.2185	0.0530	0.2715		2,483.8393	2,483.8393	0.0827	0.3581	2,592.6169
Worker	2.3027	1.6466	21.0728	0.0539	6.1775	0.0406	6.2181	1.6386	0.0374	1.6759		5,482.2948	5,482.2948	0.1844	0.1603	5,534.6858
Total	**2.5290**	**7.6115**	**23.0705**	**0.0770**	**6.9363**	**0.0960**	**7.0323**	**1.8570**	**0.0904**	**1.9474**		**7,966.1341**	**7,966.1341**	**0.2671**	**0.5184**	**8,127.3027**

Palmdale GPU - MFR construction Only - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.5 Paving - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.1028	11.1249	14.5805	0.0228		0.5679	0.5679		0.5225	0.5225		2,207.6603	2,207.6603	0.7140		2,225.5104
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.1028**	**11.1249**	**14.5805**	**0.0228**		**0.5679**	**0.5679**		**0.5225**	**0.5225**		**2,207.6603**	**2,207.6603**	**0.7140**		**2,225.5104**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0459	0.0328	0.4203	1.0700e-003	0.1232	8.1000e-004	0.1240	0.0327	7.5000e-004	0.0334		109.3543	109.3543	3.6800e-003	3.2000e-003	110.3993
Total	**0.0459**	**0.0328**	**0.4203**	**1.0700e-003**	**0.1232**	**8.1000e-004**	**0.1240**	**0.0327**	**7.5000e-004**	**0.0334**		**109.3543**	**109.3543**	**3.6800e-003**	**3.2000e-003**	**110.3993**

Palmdale GPU - MFR construction Only - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.2805	1.2154	17.2957	0.0228		0.0374	0.0374		0.0374	0.0374	0.0000	2,207.6603	2,207.6603	0.7140		2,225.5104
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.2805**	**1.2154**	**17.2957**	**0.0228**		**0.0374**	**0.0374**		**0.0374**	**0.0374**	**0.0000**	**2,207.6603**	**2,207.6603**	**0.7140**		**2,225.5104**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0459	0.0328	0.4203	1.0700e-003	0.1232	8.1000e-004	0.1240	0.0327	7.5000e-004	0.0334		109.3543	109.3543	3.6800e-003	3.2000e-003	110.3993
Total	**0.0459**	**0.0328**	**0.4203**	**1.0700e-003**	**0.1232**	**8.1000e-004**	**0.1240**	**0.0327**	**7.5000e-004**	**0.0334**		**109.3543**	**109.3543**	**3.6800e-003**	**3.2000e-003**	**110.3993**

Palmdale GPU - MFR construction Only - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.6 Architectural Coating - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	280.2354					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817		281.4481	281.4481	0.0183		281.9062
Total	**280.4400**	**1.4085**	**1.8136**	**2.9700e-003**		**0.0817**	**0.0817**		**0.0817**	**0.0817**		**281.4481**	**281.4481**	**0.0183**		**281.9062**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.4593	0.3285	4.2034	0.0108	1.2322	8.0900e-003	1.2403	0.3268	7.4500e-003	0.3343		1,093.5428	1,093.5428	0.0368	0.0320	1,103.9932
Total	**0.4593**	**0.3285**	**4.2034**	**0.0108**	**1.2322**	**8.0900e-003**	**1.2403**	**0.3268**	**7.4500e-003**	**0.3343**		**1,093.5428**	**1,093.5428**	**0.0368**	**0.0320**	**1,103.9932**

Palmdale GPU - MFR construction Only - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	280.2354					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.0297	0.1288	1.8324	2.9700e-003		3.9600e-003	3.9600e-003		3.9600e-003	3.9600e-003	0.0000	281.4481	281.4481	0.0183		281.9062
Total	**280.2651**	**0.1288**	**1.8324**	**2.9700e-003**		**3.9600e-003**	**3.9600e-003**		**3.9600e-003**	**3.9600e-003**	**0.0000**	**281.4481**	**281.4481**	**0.0183**		**281.9062**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.4593	0.3285	4.2034	0.0108	1.2322	8.0900e-003	1.2403	0.3268	7.4500e-003	0.3343		1,093.5428	1,093.5428	0.0368	0.0320	1,103.9932
Total	**0.4593**	**0.3285**	**4.2034**	**0.0108**	**1.2322**	**8.0900e-003**	**1.2403**	**0.3268**	**7.4500e-003**	**0.3343**		**1,093.5428**	**1,093.5428**	**0.0368**	**0.0320**	**1,103.9932**

Palmdale GPU - MFR construction Only - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Mid Rise	10.80	7.30	7.50	40.20	19.20	40.60	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Apartments Mid Rise	0.544785	0.062844	0.187478	0.127235	0.023089	0.006083	0.010475	0.008012	0.000925	0.000611	0.024394	0.000698	0.003374

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Mid Rise	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Apartments Mid Rise	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

Palmdale GPU - MFR construction Only - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	2.5979	0.9940	86.2330	4.5500e-003		0.4773	0.4773		0.4773	0.4773	0.0000	155.2372	155.2372	0.1493	0.0000	158.9691
Unmitigated	2.5979	0.9940	86.2330	4.5500e-003		0.4773	0.4773		0.4773	0.4773	0.0000	155.2372	155.2372	0.1493	0.0000	158.9691

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	2.5979	0.9940	86.2330	4.5500e-003		0.4773	0.4773		0.4773	0.4773		155.2372	155.2372	0.1493		158.9691
Total	**2.5979**	**0.9940**	**86.2330**	**4.5500e-003**		**0.4773**	**0.4773**		**0.4773**	**0.4773**	**0.0000**	**155.2372**	**155.2372**	**0.1493**	**0.0000**	**158.9691**

Palmdale GPU - MFR construction Only - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	2.5979	0.9940	86.2330	4.5500e-003		0.4773	0.4773		0.4773	0.4773		155.2372	155.2372	0.1493		158.9691
Total	**2.5979**	**0.9940**	**86.2330**	**4.5500e-003**		**0.4773**	**0.4773**		**0.4773**	**0.4773**	**0.0000**	**155.2372**	**155.2372**	**0.1493**	**0.0000**	**158.9691**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Palmdale GPU - MFR construction Only - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Palmdale GPU - 2023 Operational Year Emissions - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Palmdale GPU - 2023 Operational Year Emissions

Los Angeles-Mojave Desert County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	56.00	Dwelling Unit	18.18	100,800.00	193
Apartments Mid Rise	1,045.00	Dwelling Unit	27.50	1,045,000.00	3598
Strip Mall	68.62	1000sqft	1.58	68,623.00	0
Hotel	58.00	Room	1.93	84,216.00	0
General Office Building	171.28	1000sqft	3.93	171,275.00	0
Unrefrigerated Warehouse-No Rail	502.34	1000sqft	11.53	502,343.00	0
Elementary School	51.10	1000sqft	1.17	51,102.00	0
Government Office Building	7.30	1000sqft	0.17	7,300.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	9			**Operational Year**	2023
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	390.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics - See Assumptions

Land Use - See Assumptions

Construction Phase - Construction Modeled Separately

Off-road Equipment - Construction Modeled Separately

Trips and VMT - Construction Modeled Separately

Palmdale GPU - 2023 Operational Year Emissions - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Architectural Coating - Construction Modeled Separately

Vehicle Trips - See Assumptions

Woodstoves - AVAQMD and GP Policies

Area Coating - See Assumptions

Energy Use - See Assumptions. Adjusted for 100% electric development

Water And Wastewater - Water emissions not applicable to AQ output

Solid Waste - Solid waste not applicble to AQ emissions output

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	250.00	0.00
tblArchitecturalCoating	EF_Nonresidential_Interior	250.00	0.00
tblArchitecturalCoating	EF_Parking	250.00	0.00
tblArchitecturalCoating	EF_Residential_Exterior	250.00	0.00
tblArchitecturalCoating	EF_Residential_Interior	250.00	0.00
tblAreaCoating	Area_EF_Nonresidential_Exterior	250	150
tblAreaCoating	Area_EF_Nonresidential_Interior	250	50
tblAreaCoating	Area_EF_Residential_Exterior	250	150
tblAreaCoating	Area_EF_Residential_Interior	250	50
tblConstructionPhase	NumDays	75.00	1.00
tblConstructionPhase	PhaseEndDate	1/28/2028	10/18/2027
tblEnergyUse	NT24E	3,054.10	4,924.61
tblEnergyUse	NT24E	1.59	1.91
tblEnergyUse	NT24E	4.62	4.73
tblEnergyUse	NT24E	4.62	4.73
tblEnergyUse	NT24E	2.89	4.08
tblEnergyUse	NT24E	6,155.97	8,026.48
tblEnergyUse	NT24E	3.23	3.46
tblEnergyUse	NT24E	1.34	1.35
tblEnergyUse	NT24NG	6,384.00	0.00

Palmdale GPU - 2023 Operational Year Emissions - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

tblEnergyUse	NT24NG	1.08	0.00
tblEnergyUse	NT24NG	0.39	0.00
tblEnergyUse	NT24NG	0.39	0.00
tblEnergyUse	NT24NG	4.06	0.00
tblEnergyUse	NT24NG	6,384.00	0.00
tblEnergyUse	NT24NG	0.49	0.00
tblEnergyUse	NT24NG	0.03	0.00
tblEnergyUse	T24E	53.81	2,011.81
tblEnergyUse	T24E	1.56	4.26
tblEnergyUse	T24E	4.11	7.02
tblEnergyUse	T24E	4.11	7.02
tblEnergyUse	T24E	2.28	8.06
tblEnergyUse	T24E	93.13	5,691.80
tblEnergyUse	T24E	3.58	3.91
tblEnergyUse	T24E	0.58	0.82
tblEnergyUse	T24NG	6,682.59	0.00
tblEnergyUse	T24NG	9.23	0.00
tblEnergyUse	T24NG	9.92	0.00
tblEnergyUse	T24NG	9.92	0.00
tblEnergyUse	T24NG	19.72	0.00
tblEnergyUse	T24NG	19,108.08	0.00
tblEnergyUse	T24NG	1.14	0.00
tblEnergyUse	T24NG	0.83	0.00
tblFireplaces	FireplaceDayYear	82.00	0.00
tblFireplaces	FireplaceDayYear	82.00	0.00
tblFireplaces	FireplaceHourDay	3.00	0.00
tblFireplaces	FireplaceHourDay	3.00	0.00
tblFireplaces	FireplaceWoodMass	3,078.40	0.00

Palmdale GPU - 2023 Operational Year Emissions - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

tblFireplaces	FireplaceWoodMass	3,078.40	0.00
tblFireplaces	NumberGas	574.75	0.00
tblFireplaces	NumberGas	30.80	0.00
tblFireplaces	NumberNoFireplace	104.50	1,045.00
tblFireplaces	NumberNoFireplace	5.60	56.00
tblFireplaces	NumberWood	365.75	0.00
tblFireplaces	NumberWood	19.60	0.00
tblLandUse	Population	160.00	193.00
tblLandUse	Population	2,989.00	3,598.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblSolidWaste	SolidWasteGenerationRate	480.70	0.00
tblSolidWaste	SolidWasteGenerationRate	66.43	0.00
tblSolidWaste	SolidWasteGenerationRate	159.29	0.00
tblSolidWaste	SolidWasteGenerationRate	6.79	0.00
tblSolidWaste	SolidWasteGenerationRate	31.75	0.00
tblSolidWaste	SolidWasteGenerationRate	79.13	0.00
tblSolidWaste	SolidWasteGenerationRate	72.05	0.00
tblSolidWaste	SolidWasteGenerationRate	472.20	0.00
tblTripsAndVMT	WorkerTripNumber	224.00	0.00
tblVehicleTrips	DV_TP	11.00	0.00
tblVehicleTrips	HO_TL	7.50	12.62
tblVehicleTrips	HS_TL	7.30	12.62
tblVehicleTrips	HW_TL	10.80	12.62
tblVehicleTrips	PB_TP	3.00	0.00
tblVehicleTrips	PR_TP	86.00	100.00
tblVehicleTrips	ST_TR	4.91	4.78
tblVehicleTrips	ST_TR	2.21	0.00
tblVehicleTrips	ST_TR	8.19	0.00

Palmdale GPU - 2023 Operational Year Emissions - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

tblVehicleTrips	ST_TR	9.54	0.00
tblVehicleTrips	ST_TR	42.04	0.00
tblVehicleTrips	ST_TR	1.74	0.00
tblVehicleTrips	SU_TR	4.09	4.78
tblVehicleTrips	SU_TR	0.70	0.00
tblVehicleTrips	SU_TR	5.95	0.00
tblVehicleTrips	SU_TR	8.55	0.00
tblVehicleTrips	SU_TR	20.43	0.00
tblVehicleTrips	SU_TR	1.74	0.00
tblVehicleTrips	WD_TR	5.44	4.78
tblVehicleTrips	WD_TR	19.52	0.00
tblVehicleTrips	WD_TR	9.74	0.00
tblVehicleTrips	WD_TR	22.59	0.00
tblVehicleTrips	WD_TR	8.36	0.00
tblVehicleTrips	WD_TR	9.44	0.00
tblVehicleTrips	WD_TR	44.32	0.00
tblVehicleTrips	WD_TR	1.74	0.00
tblWater	IndoorWaterUseRate	68,085,956.77	0.00
tblWater	IndoorWaterUseRate	1,481,742.47	0.00
tblWater	IndoorWaterUseRate	30,442,236.36	0.00
tblWater	IndoorWaterUseRate	1,450,215.71	0.00
tblWater	IndoorWaterUseRate	1,471,272.66	0.00
tblWater	IndoorWaterUseRate	3,648,625.43	0.00
tblWater	IndoorWaterUseRate	5,082,856.42	0.00
tblWater	IndoorWaterUseRate	116,166,125.00	0.00
tblWater	OutdoorWaterUseRate	42,923,755.36	0.00
tblWater	OutdoorWaterUseRate	3,810,194.92	0.00
tblWater	OutdoorWaterUseRate	18,658,144.86	0.00

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

tblWater	OutdoorWaterUseRate	888,841.88	0.00
tblWater	OutdoorWaterUseRate	163,474.74	0.00
tblWater	OutdoorWaterUseRate	2,300,220.38	0.00
tblWater	OutdoorWaterUseRate	3,115,299.10	0.00
tblWoodstoves	NumberCatalytic	52.25	0.00
tblWoodstoves	NumberCatalytic	2.80	0.00
tblWoodstoves	NumberNoncatalytic	52.25	0.00
tblWoodstoves	NumberNoncatalytic	2.80	0.00
tblWoodstoves	WoodstoveDayYear	82.00	0.00
tblWoodstoves	WoodstoveDayYear	82.00	0.00
tblWoodstoves	WoodstoveWoodMass	3,019.20	0.00
tblWoodstoves	WoodstoveWoodMass	3,019.20	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2027	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**						

Palmdale GPU - 2023 Operational Year Emissions - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2027	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**						

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)
		Highest		

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	9.0231	0.0943	8.1848	4.3000e-004		0.0453	0.0453		0.0453	0.0453						

Palmdale GPU - 2023 Operational Year Emissions - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						
Mobile	3.2412	4.1206	37.1579	0.0831	8.6143	0.0603	8.6745	2.2981	0.0560	2.3540						
Waste						0.0000	0.0000		0.0000	0.0000						
Water						0.0000	0.0000		0.0000	0.0000						
Total	**12.2644**	**4.2149**	**45.3426**	**0.0835**	**8.6143**	**0.1056**	**8.7198**	**2.2981**	**0.1013**	**2.3993**						

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	9.0231	0.0943	8.1848	4.3000e-004		0.0453	0.0453		0.0453	0.0453						
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						
Mobile	3.2412	4.1206	37.1579	0.0831	8.6143	0.0603	8.6745	2.2981	0.0560	2.3540						
Waste						0.0000	0.0000		0.0000	0.0000						
Water						0.0000	0.0000		0.0000	0.0000						
Total	**12.2644**	**4.2149**	**45.3426**	**0.0835**	**8.6143**	**0.1056**	**8.7198**	**2.2981**	**0.1013**	**2.3993**						

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Architectural Coating	Architectural Coating	10/16/2027	10/18/2027	5	1	

Acres of Grading (Site Preparation Phase): 0

Palmdale GPU - 2023 Operational Year Emissions - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 2,320,245; Residential Outdoor: 773,415; Non-Residential Indoor: 1,327,289; Non-Residential Outdoor: 442,430; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	0	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Architectural Coating	0	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Architectural Coating - 2027

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.0000					0.0000	0.0000		0.0000	0.0000						
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**						

Palmdale GPU - 2023 Operational Year Emissions - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**						

Palmdale GPU - 2023 Operational Year Emissions - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.0000					0.0000	0.0000		0.0000	0.0000						
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**						

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**						

Palmdale GPU - 2023 Operational Year Emissions - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	3.2412	4.1206	37.1579	0.0831	8.6143	0.0603	8.6745	2.2981	0.0560	2.3540						
Unmitigated	3.2412	4.1206	37.1579	0.0831	8.6143	0.0603	8.6745	2.2981	0.0560	2.3540						

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	4,991.76	4,991.76	4991.76	22,930,530	22,930,530
Elementary School	0.00	0.00	0.00		
General Office Building	0.00	0.00	0.00		
Government Office Building	0.00	0.00	0.00		
Hotel	0.00	0.00	0.00		
Single Family Housing	0.00	0.00	0.00		
Strip Mall	0.00	0.00	0.00		
Unrefrigerated Warehouse-No Rail	0.00	0.00	0.00		
Total	4,991.76	4,991.76	4,991.76	22,930,530	22,930,530

4.3 Trip Type Information

Palmdale GPU - 2023 Operational Year Emissions - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Mid Rise	12.62	12.62	12.62	40.20	19.20	40.60	100	0	0
Elementary School	9.50	7.30	7.30	65.00	30.00	5.00	63	25	12
General Office Building	9.50	7.30	7.30	33.00	48.00	19.00	77	19	4
Government Office Building	9.50	7.30	7.30	33.00	62.00	5.00	50	34	16
Hotel	9.50	7.30	7.30	19.40	61.60	19.00	58	38	4
Single Family Housing	10.80	7.30	7.50	40.20	19.20	40.60	86	11	3
Strip Mall	9.50	7.30	7.30	16.60	64.40	19.00	45	40	15
Unrefrigerated Warehouse-No	9.50	7.30	7.30	59.00	0.00	41.00	92	5	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Mid Rise	0.544785	0.062844	0.187478	0.127235	0.023089	0.006083	0.010475	0.008012	0.000925	0.000611	0.024394	0.000698	0.003374
Elementary School	0.544785	0.062844	0.187478	0.127235	0.023089	0.006083	0.010475	0.008012	0.000925	0.000611	0.024394	0.000698	0.003374
General Office Building	0.544785	0.062844	0.187478	0.127235	0.023089	0.006083	0.010475	0.008012	0.000925	0.000611	0.024394	0.000698	0.003374
Government Office Building	0.544785	0.062844	0.187478	0.127235	0.023089	0.006083	0.010475	0.008012	0.000925	0.000611	0.024394	0.000698	0.003374
Hotel	0.544785	0.062844	0.187478	0.127235	0.023089	0.006083	0.010475	0.008012	0.000925	0.000611	0.024394	0.000698	0.003374
Single Family Housing	0.544785	0.062844	0.187478	0.127235	0.023089	0.006083	0.010475	0.008012	0.000925	0.000611	0.024394	0.000698	0.003374
Strip Mall	0.544785	0.062844	0.187478	0.127235	0.023089	0.006083	0.010475	0.008012	0.000925	0.000611	0.024394	0.000698	0.003374
Unrefrigerated Warehouse-No Rail	0.544785	0.062844	0.187478	0.127235	0.023089	0.006083	0.010475	0.008012	0.000925	0.000611	0.024394	0.000698	0.003374

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Palmdale GPU - 2023 Operational Year Emissions - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000						
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000						
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Mid Rise	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						
Elementary School	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						
General Office Building	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						
Government Office Building	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						
Hotel	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						
Single Family Housing	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						
Strip Mall	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						
Unrefrigerated Warehouse-No Rail	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**						

Palmdale GPU - 2023 Operational Year Emissions - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Mid Rise	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						
Elementary School	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						
General Office Building	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						
Government Office Building	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						
Hotel	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						
Single Family Housing	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						
Strip Mall	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						
Unrefrigerated Warehouse-No Rail	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**						

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use		Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	tons/yr	MT/yr			
Apartments Mid Rise	8.02336e+006					
Elementary School	447654					
General Office Building	2.65819e+006					
Government Office Building	113296					
Hotel	1.2026e+006					
Single Family Housing	858319					
Strip Mall	935331					
Unrefrigerated Warehouse-No Rail	2.04956e+006					
Total						

Mitigated

	Electricity Use		Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	tons/yr	MT/yr			
Apartments Mid Rise	8.02336e+006					
Elementary School	447654					
General Office Building	2.65819e+006					
Government Office Building	113296					
Hotel	1.2026e+006					
Single Family Housing	858319					
Strip Mall	935331					
Unrefrigerated Warehouse-No Rail	2.04956e+006					
Total						

6.0 Area Detail

6.1 Mitigation Measures Area

Palmdale GPU - 2023 Operational Year Emissions - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	9.0231	0.0943	8.1848	4.3000e-004		0.0453	0.0453		0.0453	0.0453						
Unmitigated	9.0231	0.0943	8.1848	4.3000e-004		0.0453	0.0453		0.0453	0.0453						

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.8453					0.0000	0.0000		0.0000	0.0000						
Consumer Products	7.9307					0.0000	0.0000		0.0000	0.0000						
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						
Landscaping	0.2471	0.0943	8.1848	4.3000e-004		0.0453	0.0453		0.0453	0.0453						
Total	**9.0231**	**0.0943**	**8.1848**	**4.3000e-004**		**0.0453**	**0.0453**		**0.0453**	**0.0453**						

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.8453					0.0000	0.0000		0.0000	0.0000						
Consumer Products	7.9307					0.0000	0.0000		0.0000	0.0000						
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						
Landscaping	0.2471	0.0943	8.1848	4.3000e-004		0.0453	0.0453		0.0453	0.0453						
Total	**9.0231**	**0.0943**	**8.1848**	**4.3000e-004**		**0.0453**	**0.0453**		**0.0453**	**0.0453**						

7.0 Water Detail

7.1 Mitigation Measures Water

		Total CO2	CH4	N2O	CO2e
Category	tons/yr	MT/yr			
Mitigated					

Palmdale GPU - 2023 Operational Year Emissions - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Unmitigated					

Palmdale GPU - 2023 Operational Year Emissions - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use		Total CO2	CH4	N2O	CO2e
Land Use	Mgal	tons/yr	MT/yr			
Apartments Mid Rise	0 / 0					
Elementary School	0 / 0					
General Office Building	0 / 0					
Government Office Building	0 / 0					
Hotel	0 / 0					
Single Family Housing	0 / 0					
Strip Mall	0 / 0					
Unrefrigerated Warehouse-No Rail	0 / 0					
Total						

Palmdale GPU - 2023 Operational Year Emissions - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Mitigated

	Indoor/Outdoor Use		Total CO2	CH4	N2O	CO2e
Land Use	Mgal	tons/yr	MT/yr			
Apartments Mid Rise	0 / 0					
Elementary School	0 / 0					
General Office Building	0 / 0					
Government Office Building	0 / 0					
Hotel	0 / 0					
Single Family Housing	0 / 0					
Strip Mall	0 / 0					
Unrefrigerated Warehouse-No Rail	0 / 0					
Total						

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

Palmdale GPU - 2023 Operational Year Emissions - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

		Total CO2	CH4	N2O	CO2e
	tons/yr	MT/yr			
Mitigated					
Unmitigated					

Palmdale GPU - 2023 Operational Year Emissions - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

8.2 Waste by Land Use

Unmitigated

	Waste Disposed		Total CO2	CH4	N2O	CO2e
Land Use	tons	tons/yr	MT/yr			
Apartments Mid Rise	0					
Elementary School	0					
General Office Building	0					
Government Office Building	0					
Hotel	0					
Single Family Housing	0					
Strip Mall	0					
Unrefrigerated Warehouse-No Rail	0					
Total						

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Mitigated

	Waste Disposed		Total CO2	CH4	N2O	CO2e
Land Use	tons	tons/yr	MT/yr			
Apartments Mid Rise	0					
Elementary School	0					
General Office Building	0					
Government Office Building	0					
Hotel	0					
Single Family Housing	0					
Strip Mall	0					
Unrefrigerated Warehouse-No Rail	0					
Total						

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Palmdale GPU - 2023 Operational Year Emissions - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Palmdale General Plan - Buildout Year Operational Emissions

Los Angeles-Mojave Desert County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	1,115.00	Dwelling Unit	362.01	2,007,000.00	3838
Apartments Mid Rise	20,885.00	Dwelling Unit	549.61	20,885,000.00	71918
Strip Mall	1,372.00	1000sqft	31.50	1,372,000.00	0
Hotel	174.00	Room	5.80	252,000.00	0
General Office Building	3,425.00	1000sqft	78.63	3,425,000.00	0
Unrefrigerated Warehouse-No Rail	10,047.00	1000sqft	230.65	10,047,000.00	0
Elementary School	1,022.00	1000sqft	23.46	1,022,000.00	0
Government Office Building	146.00	1000sqft	3.35	146,000.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	9			**Operational Year**	2045
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	390.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics - See Assumptions

Land Use - See Assumptions

Construction Phase - construction modeled separately

Off-road Equipment - construction modeled separately

Trips and VMT - construction modeled separately

Palmdale General Plan - Buildout Year Operational Emissions - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Architectural Coating - construction modeled separately

Vehicle Trips - See Assumptions

Woodstoves - No wood burning hearts or natural gas fireplaces. AVAQMD and GP Policys

Area Coating - AVAQMD regulations

Energy Use - 100% Electric development

Water And Wastewater - See Assumptions

Solid Waste - See Assumptins

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	250.00	0.00
tblArchitecturalCoating	EF_Nonresidential_Interior	250.00	0.00
tblArchitecturalCoating	EF_Parking	250.00	0.00
tblArchitecturalCoating	EF_Residential_Exterior	250.00	0.00
tblArchitecturalCoating	EF_Residential_Interior	250.00	0.00
tblAreaCoating	Area_EF_Nonresidential_Exterior	250	150
tblAreaCoating	Area_EF_Nonresidential_Interior	250	50
tblAreaCoating	Area_EF_Residential_Exterior	250	150
tblAreaCoating	Area_EF_Residential_Interior	250	50
tblConstructionPhase	NumDays	11,000.00	1.00
tblConstructionPhase	PhaseEndDate	3/12/2821	1/15/2779
tblEnergyUse	NT24E	3,054.10	4,924.61
tblEnergyUse	NT24E	1.59	1.19
tblEnergyUse	NT24E	4.62	4.73
tblEnergyUse	NT24E	4.62	4.73
tblEnergyUse	NT24E	2.89	4.08
tblEnergyUse	NT24E	6,155.97	8,026.48
tblEnergyUse	NT24E	3.23	3.46
tblEnergyUse	NT24E	1.34	1.35
tblEnergyUse	NT24NG	6,384.00	0.00

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

tblEnergyUse	NT24NG	1.08	0.00
tblEnergyUse	NT24NG	0.39	0.00
tblEnergyUse	NT24NG	0.39	0.00
tblEnergyUse	NT24NG	4.06	0.00
tblEnergyUse	NT24NG	6,384.00	0.00
tblEnergyUse	NT24NG	0.49	0.00
tblEnergyUse	NT24NG	0.03	0.00
tblEnergyUse	T24E	53.81	2,011.81
tblEnergyUse	T24E	1.56	4.26
tblEnergyUse	T24E	4.11	7.02
tblEnergyUse	T24E	4.11	7.02
tblEnergyUse	T24E	2.28	8.06
tblEnergyUse	T24E	93.13	5,691.80
tblEnergyUse	T24E	3.58	3.91
tblEnergyUse	T24E	0.58	0.82
tblEnergyUse	T24NG	6,682.59	0.00
tblEnergyUse	T24NG	9.23	0.00
tblEnergyUse	T24NG	9.92	0.00
tblEnergyUse	T24NG	9.92	0.00
tblEnergyUse	T24NG	19.72	0.00
tblEnergyUse	T24NG	19,108.08	0.00
tblEnergyUse	T24NG	1.14	0.00
tblEnergyUse	T24NG	0.83	0.00
tblFireplaces	FireplaceDayYear	82.00	0.00
tblFireplaces	FireplaceDayYear	82.00	0.00
tblFireplaces	FireplaceHourDay	3.00	0.00
tblFireplaces	FireplaceHourDay	3.00	0.00
tblFireplaces	FireplaceWoodMass	3,078.40	0.00

Palmdale General Plan - Buildout Year Operational Emissions - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

tblFireplaces	FireplaceWoodMass	3,078.40	0.00
tblFireplaces	NumberGas	11,486.75	0.00
tblFireplaces	NumberGas	613.25	0.00
tblFireplaces	NumberNoFireplace	2,088.50	20,885.00
tblFireplaces	NumberNoFireplace	111.50	1,115.00
tblFireplaces	NumberWood	7,309.75	0.00
tblFireplaces	NumberWood	390.25	0.00
tblLandUse	LandUseSquareFeet	252,648.00	252,000.00
tblLandUse	Population	3,189.00	3,838.00
tblLandUse	Population	59,731.00	71,918.00
tblOffRoadEquipment	OffRoadEquipmentUnitAmount	1.00	0.00
tblSolidWaste	SolidWasteGenerationRate	9,607.10	43,662.00
tblSolidWaste	SolidWasteGenerationRate	1,328.60	0.00
tblSolidWaste	SolidWasteGenerationRate	3,185.25	0.00
tblSolidWaste	SolidWasteGenerationRate	135.78	0.00
tblSolidWaste	SolidWasteGenerationRate	95.27	0.00
tblSolidWaste	SolidWasteGenerationRate	1,573.58	0.00
tblSolidWaste	SolidWasteGenerationRate	1,440.60	0.00
tblSolidWaste	SolidWasteGenerationRate	9,444.18	0.00
tblTripsAndVMT	WorkerTripNumber	4,355.00	0.00
tblVehicleTrips	DV_TP	11.00	0.00
tblVehicleTrips	HO_TL	7.50	12.62
tblVehicleTrips	HS_TL	7.30	12.62
tblVehicleTrips	HW_TL	10.80	12.62
tblVehicleTrips	PB_TP	3.00	0.00
tblVehicleTrips	PR_TP	86.00	100.00
tblVehicleTrips	ST_TR	4.91	4.78
tblVehicleTrips	ST_TR	2.21	0.00

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

tblVehicleTrips	ST_TR	8.19	0.00
tblVehicleTrips	ST_TR	9.54	0.00
tblVehicleTrips	ST_TR	42.04	0.00
tblVehicleTrips	ST_TR	1.74	0.00
tblVehicleTrips	SU_TR	4.09	4.78
tblVehicleTrips	SU_TR	0.70	0.00
tblVehicleTrips	SU_TR	5.95	0.00
tblVehicleTrips	SU_TR	8.55	0.00
tblVehicleTrips	SU_TR	20.43	0.00
tblVehicleTrips	SU_TR	1.74	0.00
tblVehicleTrips	WD_TR	5.44	4.78
tblVehicleTrips	WD_TR	19.52	0.00
tblVehicleTrips	WD_TR	9.74	0.00
tblVehicleTrips	WD_TR	22.59	0.00
tblVehicleTrips	WD_TR	8.36	0.00
tblVehicleTrips	WD_TR	9.44	0.00
tblVehicleTrips	WD_TR	44.32	0.00
tblVehicleTrips	WD_TR	1.74	0.00
tblWater	AerobicPercent	87.46	97.54
tblWater	AnaerobicandFacultativeLagoonsPercent	2.21	2.46
tblWater	IndoorWaterUseRate	1,360,741,825.10	1,739,319,900.00
tblWater	IndoorWaterUseRate	29,634,849.39	0.00
tblWater	IndoorWaterUseRate	608,738,086.88	0.00
tblWater	IndoorWaterUseRate	29,004,314.14	0.00
tblWater	IndoorWaterUseRate	4,413,817.98	0.00
tblWater	IndoorWaterUseRate	72,646,738.57	0.00
tblWater	IndoorWaterUseRate	101,627,499.48	0.00
tblWater	IndoorWaterUseRate	2,323,368,750.00	0.00

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

tblWater	OutdoorWaterUseRate	857,858,976.70	170,818,662.00
tblWater	OutdoorWaterUseRate	76,203,898.43	0.00
tblWater	OutdoorWaterUseRate	373,097,537.12	0.00
tblWater	OutdoorWaterUseRate	17,776,837.70	0.00
tblWater	OutdoorWaterUseRate	490,424.22	0.00
tblWater	OutdoorWaterUseRate	45,799,030.84	0.00
tblWater	OutdoorWaterUseRate	62,287,822.26	0.00
tblWater	SepticTankPercent	10.33	0.00
tblWoodstoves	NumberCatalytic	1,044.25	0.00
tblWoodstoves	NumberCatalytic	55.75	0.00
tblWoodstoves	NumberNoncatalytic	1,044.25	0.00
tblWoodstoves	NumberNoncatalytic	55.75	0.00
tblWoodstoves	WoodstoveDayYear	82.00	0.00
tblWoodstoves	WoodstoveDayYear	82.00	0.00
tblWoodstoves	WoodstoveWoodMass	3,019.20	0.00
tblWoodstoves	WoodstoveWoodMass	3,019.20	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2779	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**						

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2779	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Maximum	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**						

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)

Palmdale General Plan - Buildout Year Operational Emissions - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

		Highest		

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	174.1984	1.8786	162.7827	8.6400e-003		0.9064	0.9064		0.9064	0.9064						
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						
Mobile	52.7692	52.7040	551.9966	1.2188	172.3052	0.5827	172.8878	45.9942	0.5443	46.5385						
Waste						0.0000	0.0000		0.0000	0.0000						
Water						0.0000	0.0000		0.0000	0.0000						
Total	**226.9676**	**54.5826**	**714.7793**	**1.2275**	**172.3052**	**1.4891**	**173.7942**	**45.9942**	**1.4507**	**47.4449**						

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	174.1984	1.8786	162.7827	8.6400e-003		0.9064	0.9064		0.9064	0.9064						
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						
Mobile	52.7692	52.7040	551.9966	1.2188	172.3052	0.5827	172.8878	45.9942	0.5443	46.5385						
Waste						0.0000	0.0000		0.0000	0.0000						
Water						0.0000	0.0000		0.0000	0.0000						
Total	**226.9676**	**54.5826**	**714.7793**	**1.2275**	**172.3052**	**1.4891**	**173.7942**	**45.9942**	**1.4507**	**47.4449**						

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Architectural Coating	Architectural Coating	1/13/2779	1/15/2779	5	1	

Acres of Grading (Site Preparation Phase): 0

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Acres of Grading (Grading Phase): 0

Acres of Paving: 0

Residential Indoor: 46,356,300; Residential Outdoor: 15,452,100; Non-Residential Indoor: 24,396,000; Non-Residential Outdoor: 8,132,000; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	0	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Architectural Coating	0	0.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

3.2 Architectural Coating - 2779

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.0000					0.0000	0.0000		0.0000	0.0000						
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**						

Palmdale General Plan - Buildout Year Operational Emissions - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Vendor					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Total					**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**						

Palmdale General Plan - Buildout Year Operational Emissions - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.0000					0.0000	0.0000		0.0000	0.0000						
Off-Road	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**						

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Vendor					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Worker					0.0000	0.0000	0.0000	0.0000	0.0000	0.0000						
Total					**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**						

Palmdale General Plan - Buildout Year Operational Emissions - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	52.7692	52.7040	551.9966	1.2188	172.3052	0.5827	172.8878	45.9942	0.5443	46.5385						
Unmitigated	52.7692	52.7040	551.9966	1.2188	172.3052	0.5827	172.8878	45.9942	0.5443	46.5385						

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Apartments Mid Rise	99,746.76	99,746.76	99746.76	458,204,696	458,204,696
Elementary School	0.00	0.00	0.00		
General Office Building	0.00	0.00	0.00		
Government Office Building	0.00	0.00	0.00		
Hotel	0.00	0.00	0.00		
Single Family Housing	0.00	0.00	0.00		
Strip Mall	0.00	0.00	0.00		
Unrefrigerated Warehouse-No Rail	0.00	0.00	0.00		
Total	99,746.76	99,746.76	99,746.76	458,204,696	458,204,696

4.3 Trip Type Information

Palmdale General Plan - Buildout Year Operational Emissions - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Apartments Mid Rise	12.62	12.62	12.62	40.20	19.20	40.60	100	0	0
Elementary School	9.50	7.30	7.30	65.00	30.00	5.00	63	25	12
General Office Building	9.50	7.30	7.30	33.00	48.00	19.00	77	19	4
Government Office Building	9.50	7.30	7.30	33.00	62.00	5.00	50	34	16
Hotel	9.50	7.30	7.30	19.40	61.60	19.00	58	38	4
Single Family Housing	10.80	7.30	7.50	40.20	19.20	40.60	86	11	3
Strip Mall	9.50	7.30	7.30	16.60	64.40	19.00	45	40	15
Unrefrigerated Warehouse-No	9.50	7.30	7.30	59.00	0.00	41.00	92	5	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Apartments Mid Rise	0.513803	0.071730	0.195358	0.129140	0.026589	0.008109	0.012209	0.007596	0.000946	0.000535	0.029664	0.000785	0.003536
Elementary School	0.513803	0.071730	0.195358	0.129140	0.026589	0.008109	0.012209	0.007596	0.000946	0.000535	0.029664	0.000785	0.003536
General Office Building	0.513803	0.071730	0.195358	0.129140	0.026589	0.008109	0.012209	0.007596	0.000946	0.000535	0.029664	0.000785	0.003536
Government Office Building	0.513803	0.071730	0.195358	0.129140	0.026589	0.008109	0.012209	0.007596	0.000946	0.000535	0.029664	0.000785	0.003536
Hotel	0.513803	0.071730	0.195358	0.129140	0.026589	0.008109	0.012209	0.007596	0.000946	0.000535	0.029664	0.000785	0.003536
Single Family Housing	0.513803	0.071730	0.195358	0.129140	0.026589	0.008109	0.012209	0.007596	0.000946	0.000535	0.029664	0.000785	0.003536
Strip Mall	0.513803	0.071730	0.195358	0.129140	0.026589	0.008109	0.012209	0.007596	0.000946	0.000535	0.029664	0.000785	0.003536
Unrefrigerated Warehouse-No Rail	0.513803	0.071730	0.195358	0.129140	0.026589	0.008109	0.012209	0.007596	0.000946	0.000535	0.029664	0.000785	0.003536

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

Palmdale General Plan - Buildout Year Operational Emissions - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000						
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000						
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Mid Rise	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						
Elementary School	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						
General Office Building	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						
Government Office Building	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						
Hotel	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						
Single Family Housing	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						
Strip Mall	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						
Unrefrigerated Warehouse-No Rail	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**						

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Apartments Mid Rise	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						
Elementary School	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						
General Office Building	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						
Government Office Building	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						
Hotel	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						
Single Family Housing	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						
Strip Mall	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						
Unrefrigerated Warehouse-No Rail	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**						

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use		Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	tons/yr	MT/yr			
Apartments Mid Rise	1.60352e+008					
Elementary School	8.21688e+006					
General Office Building	5.3156e+007					
Government Office Building	2.26592e+006					
Hotel	3.59856e+006					
Single Family Housing	1.70897e+007					
Strip Mall	1.87004e+007					
Unrefrigerated Warehouse-No Rail	4.09918e+007					
Total						

Mitigated

	Electricity Use		Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	tons/yr	MT/yr			
Apartments Mid Rise	1.60352e+008					
Elementary School	8.21688e+006					
General Office Building	5.3156e+007					
Government Office Building	2.26592e+006					
Hotel	3.59856e+006					
Single Family Housing	1.70897e+007					
Strip Mall	1.87004e+007					
Unrefrigerated Warehouse-No Rail	4.09918e+007					
Total						

6.0 Area Detail

6.1 Mitigation Measures Area

Palmdale General Plan - Buildout Year Operational Emissions - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	174.1984	1.8786	162.7827	8.6400e-003		0.9064	0.9064		0.9064	0.9064						
Unmitigated	174.1984	1.8786	162.7827	8.6400e-003		0.9064	0.9064		0.9064	0.9064						

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	16.3969					0.0000	0.0000		0.0000	0.0000						
Consumer Products	152.9238					0.0000	0.0000		0.0000	0.0000						
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						
Landscaping	4.8778	1.8786	162.7827	8.6400e-003		0.9064	0.9064		0.9064	0.9064						
Total	**174.1984**	**1.8786**	**162.7827**	**8.6400e-003**		**0.9064**	**0.9064**		**0.9064**	**0.9064**						

Palmdale General Plan - Buildout Year Operational Emissions - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	16.3969					0.0000	0.0000		0.0000	0.0000						
Consumer Products	152.9238					0.0000	0.0000		0.0000	0.0000						
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000						
Landscaping	4.8778	1.8786	162.7827	8.6400e-003		0.9064	0.9064		0.9064	0.9064						
Total	**174.1984**	**1.8786**	**162.7827**	**8.6400e-003**		**0.9064**	**0.9064**		**0.9064**	**0.9064**						

7.0 Water Detail

7.1 Mitigation Measures Water

		Total CO2	CH4	N2O	CO2e
Category	tons/yr	MT/yr			
Mitigated					

Palmdale General Plan - Buildout Year Operational Emissions - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Unmitigated					

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use		Total CO2	CH4	N2O	CO2e
Land Use	Mgal	tons/yr	MT/yr			
Apartments Mid Rise	1739.32 / 170.819					
Elementary School	0 / 0					
General Office Building	0 / 0					
Government Office Building	0 / 0					
Hotel	0 / 0					
Single Family Housing	0 / 0					
Strip Mall	0 / 0					
Unrefrigerated Warehouse-No Rail	0 / 0					
Total						

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Mitigated

	Indoor/Outdoor Use		Total CO2	CH4	N2O	CO2e
Land Use	Mgal	tons/yr	MT/yr			
Apartments Mid Rise	1739.32 / 170.819					
Elementary School	0 / 0					
General Office Building	0 / 0					
Government Office Building	0 / 0					
Hotel	0 / 0					
Single Family Housing	0 / 0					
Strip Mall	0 / 0					
Unrefrigerated Warehouse-No Rail	0 / 0					
Total						

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

Palmdale General Plan - Buildout Year Operational Emissions - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

		Total CO2	CH4	N2O	CO2e
	tons/yr	MT/yr			
Mitigated					
Unmitigated					

8.2 Waste by Land Use

Unmitigated

	Waste Disposed		Total CO2	CH4	N2O	CO2e
Land Use	tons	tons/yr	MT/yr			
Apartments Mid Rise	43662					
Elementary School	0					
General Office Building	0					
Government Office Building	0					
Hotel	0					
Single Family Housing	0					
Strip Mall	0					
Unrefrigerated Warehouse-No Rail	0					
Total						

Mitigated

	Waste Disposed		Total CO2	CH4	N2O	CO2e
Land Use	tons	tons/yr	MT/yr			
Apartments Mid Rise	43662					
Elementary School	0					
General Office Building	0					
Government Office Building	0					
Hotel	0					
Single Family Housing	0					
Strip Mall	0					
Unrefrigerated Warehouse-No Rail	0					
Total						

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Palmdale General Plan - Buildout Year Operational Emissions - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Palmdale GPU - Retail/Restaurant Construction Only - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Palmdale GPU - Retail/Restaurant Construction Only

Los Angeles-Mojave Desert County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Strip Mall	68.62	1000sqft	1.58	68,623.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	9			**Operational Year**	2023
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	390.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics - See Assumptions

Land Use - See Assumptions

Construction Phase -

Demolition - See Assumptions

Architectural Coating - Based on AVAQMD requirements for VOC content

Vehicle Trips - Operational Emissions Modeled Separately

Consumer Products - Operational Emissions Modeled Separately

Area Coating - Operational Emissions Modeled Separately

Landscape Equipment - Operational Emissions Modeled Separately

Energy Use - Operational Emissions Modeled Separately

Water And Wastewater - Operational Emissions Modeled Separately

Solid Waste - Operational Emissions Modeled Separately

Palmdale GPU - Retail/Restaurant Construction Only - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Construction Off-road Equipment Mitigation - Water 2x daily based on AVAQMD regulations for dust control; not mitigation

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	250.00	150.00
tblArchitecturalCoating	EF_Nonresidential_Interior	250.00	50.00
tblAreaCoating	ReapplicationRatePercent	10	0
tblConstEquipMitigation	FuelType	Diesel	Electrical
tblConstEquipMitigation	FuelType	Diesel	Electrical
tblConstEquipMitigation	FuelType	Diesel	Electrical
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	7.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConsumerProducts	ROG_EF	2.14E-05	0
tblConsumerProducts	ROG_EF_Degreaser	3.542E-07	0
tblConsumerProducts	ROG_EF_PesticidesFertilizers	5.152E-08	0
tblEnergyUse	LightingElect	6.26	0.00
tblEnergyUse	NT24E	3.23	0.00
tblEnergyUse	NT24NG	0.49	0.00
tblEnergyUse	T24E	3.58	0.00
tblEnergyUse	T24NG	1.14	0.00
tblLandscapeEquipment	NumberSummerDays	180	0
tblLandUse	LandUseSquareFeet	68,620.00	68,623.00
tblSolidWaste	SolidWasteGenerationRate	72.05	0.00
tblVehicleTrips	ST_TR	42.04	0.00
tblVehicleTrips	SU_TR	20.43	0.00
tblVehicleTrips	WD_TR	44.32	0.00
tblWater	IndoorWaterUseRate	5,082,856.42	0.00
tblWater	OutdoorWaterUseRate	3,115,299.10	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Palmdale GPU - Retail/Restaurant Construction Only - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Year	tons/yr										MT/yr					
2022	0.4377	1.5835	1.5790	3.0700e-003	0.0776	0.0718	0.1493	0.0200	0.0689	0.0889	0.0000	261.5421	261.5421	0.0419	5.2000e-003	264.1382
Maximum	**0.4377**	**1.5835**	**1.5790**	**3.0700e-003**	**0.0776**	**0.0718**	**0.1493**	**0.0200**	**0.0689**	**0.0889**	**0.0000**	**261.5421**	**261.5421**	**0.0419**	**5.2000e-003**	**264.1382**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2022	0.2623	0.1521	0.7804	1.6400e-003	0.0512	2.7100e-003	0.0539	0.0135	2.6700e-003	0.0161	0.0000	148.3832	148.3832	0.0325	5.2000e-003	150.7428
Maximum	**0.2623**	**0.1521**	**0.7804**	**1.6400e-003**	**0.0512**	**2.7100e-003**	**0.0539**	**0.0135**	**2.6700e-003**	**0.0161**	**0.0000**	**148.3832**	**148.3832**	**0.0325**	**5.2000e-003**	**150.7428**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**40.08**	**90.39**	**50.58**	**46.58**	**34.00**	**96.22**	**63.90**	**32.85**	**96.13**	**81.88**	**0.00**	**43.27**	**43.27**	**22.57**	**0.00**	**42.93**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)

Palmdale GPU - Retail/Restaurant Construction Only - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

1	**1-1-2022**	**3-31-2022**	0.5814	0.0755
2	**4-1-2022**	**6-30-2022**	0.4824	0.0391
3	**7-1-2022**	**9-30-2022**	0.4877	0.0395
		Highest	0.5814	0.0755

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2022	1/28/2022	5	20	
2	Grading	Grading	1/29/2022	2/3/2022	5	4	
3	Building Construction	Building Construction	2/5/2022	11/11/2022	5	200	

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

4	Paving	Paving	2/5/2022	2/18/2022	5	10	
5	Architectural Coating	Architectural Coating	11/4/2022	11/17/2022	5	10	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 4

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 102,935; Non-Residential Outdoor: 34,312; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Rubber Tired Dozers	1	8.00	247	0.40
Demolition	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Tractors/Loaders/Backhoes	2	7.00	97	0.37
Building Construction	Cranes	1	6.00	231	0.29
Building Construction	Forklifts	1	6.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Building Construction	Welders	3	8.00	46	0.45
Paving	Cement and Mortar Mixers	1	6.00	9	0.56
Paving	Pavers	1	6.00	130	0.42
Paving	Paving Equipment	1	8.00	132	0.36
Paving	Rollers	1	7.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Architectural Coating	Air Compressors	1	6.00	78	0.48

Palmdale GPU - Retail/Restaurant Construction Only - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	5	13.00	0.00	312.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	4	10.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	7	22.00	11.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	5	13.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	4.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Alternative Fuel for Construction Equipment

Use Cleaner Engines for Construction Equipment

Water Exposed Area

3.2 Demolition - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0338	0.0000	0.0338	5.1100e-003	0.0000	5.1100e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0169	0.1662	0.1396	2.4000e-004		8.3800e-003	8.3800e-003		7.8300e-003	7.8300e-003	0.0000	21.0777	21.0777	5.3700e-003	0.0000	21.2120
Total	**0.0169**	**0.1662**	**0.1396**	**2.4000e-004**	**0.0338**	**8.3800e-003**	**0.0422**	**5.1100e-003**	**7.8300e-003**	**0.0129**	**0.0000**	**21.0777**	**21.0777**	**5.3700e-003**	**0.0000**	**21.2120**

Palmdale GPU - Retail/Restaurant Construction Only - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	7.2000e-004	0.0276	6.1500e-003	1.0000e-004	2.6800e-003	1.9000e-004	2.8800e-003	7.4000e-004	1.9000e-004	9.2000e-004	0.0000	9.6356	9.6356	5.1000e-004	1.5300e-003	10.1040
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.7000e-004	2.9000e-004	3.7300e-003	1.0000e-005	1.0500e-003	1.0000e-005	1.0500e-003	2.8000e-004	1.0000e-005	2.8000e-004	0.0000	0.8726	0.8726	3.0000e-005	3.0000e-005	0.8809
Total	**1.0900e-003**	**0.0279**	**9.8800e-003**	**1.1000e-004**	**3.7300e-003**	**2.0000e-004**	**3.9300e-003**	**1.0200e-003**	**2.0000e-004**	**1.2000e-003**	**0.0000**	**10.5082**	**10.5082**	**5.4000e-004**	**1.5600e-003**	**10.9848**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0152	0.0000	0.0152	2.3000e-003	0.0000	2.3000e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.8100e-003	0.0122	0.1472	2.4000e-004		3.7000e-004	3.7000e-004		3.7000e-004	3.7000e-004	0.0000	21.0777	21.0777	5.3700e-003	0.0000	21.2119
Total	**2.8100e-003**	**0.0122**	**0.1472**	**2.4000e-004**	**0.0152**	**3.7000e-004**	**0.0156**	**2.3000e-003**	**3.7000e-004**	**2.6700e-003**	**0.0000**	**21.0777**	**21.0777**	**5.3700e-003**	**0.0000**	**21.2119**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	7.2000e-004	0.0276	6.1500e-003	1.0000e-004	2.6800e-003	1.9000e-004	2.8800e-003	7.4000e-004	1.9000e-004	9.2000e-004	0.0000	9.6356	9.6356	5.1000e-004	1.5300e-003	10.1040
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.7000e-004	2.9000e-004	3.7300e-003	1.0000e-005	1.0500e-003	1.0000e-005	1.0500e-003	2.8000e-004	1.0000e-005	2.8000e-004	0.0000	0.8726	0.8726	3.0000e-005	3.0000e-005	0.8809
Total	**1.0900e-003**	**0.0279**	**9.8800e-003**	**1.1000e-004**	**3.7300e-003**	**2.0000e-004**	**3.9300e-003**	**1.0200e-003**	**2.0000e-004**	**1.2000e-003**	**0.0000**	**10.5082**	**10.5082**	**5.4000e-004**	**1.5600e-003**	**10.9848**

3.3 Grading - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0142	0.0000	0.0142	6.8500e-003	0.0000	6.8500e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.0800e-003	0.0340	0.0184	4.0000e-005		1.4800e-003	1.4800e-003		1.3700e-003	1.3700e-003	0.0000	3.6205	3.6205	1.1700e-003	0.0000	3.6498
Total	**3.0800e-003**	**0.0340**	**0.0184**	**4.0000e-005**	**0.0142**	**1.4800e-003**	**0.0157**	**6.8500e-003**	**1.3700e-003**	**8.2200e-003**	**0.0000**	**3.6205**	**3.6205**	**1.1700e-003**	**0.0000**	**3.6498**

Palmdale GPU - Retail/Restaurant Construction Only - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.0000e-005	4.0000e-005	5.7000e-004	0.0000	1.6000e-004	0.0000	1.6000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.1342	0.1342	0.0000	0.0000	0.1355
Total	**6.0000e-005**	**4.0000e-005**	**5.7000e-004**	**0.0000**	**1.6000e-004**	**0.0000**	**1.6000e-004**	**4.0000e-005**	**0.0000**	**4.0000e-005**	**0.0000**	**0.1342**	**0.1342**	**0.0000**	**0.0000**	**0.1355**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					6.3700e-003	0.0000	6.3700e-003	3.0800e-003	0.0000	3.0800e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	5.0000e-004	2.1900e-003	0.0218	4.0000e-005		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005	0.0000	3.6205	3.6205	1.1700e-003	0.0000	3.6498
Total	**5.0000e-004**	**2.1900e-003**	**0.0218**	**4.0000e-005**	**6.3700e-003**	**7.0000e-005**	**6.4400e-003**	**3.0800e-003**	**7.0000e-005**	**3.1500e-003**	**0.0000**	**3.6205**	**3.6205**	**1.1700e-003**	**0.0000**	**3.6498**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.0000e-005	4.0000e-005	5.7000e-004	0.0000	1.6000e-004	0.0000	1.6000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.1342	0.1342	0.0000	0.0000	0.1355
Total	**6.0000e-005**	**4.0000e-005**	**5.7000e-004**	**0.0000**	**1.6000e-004**	**0.0000**	**1.6000e-004**	**4.0000e-005**	**0.0000**	**4.0000e-005**	**0.0000**	**0.1342**	**0.1342**	**0.0000**	**0.0000**	**0.1355**

3.4 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1649	1.2503	1.2726	2.2100e-003		0.0589	0.0589		0.0569	0.0569	0.0000	181.5769	181.5769	0.0316	0.0000	182.3675
Total	**0.1649**	**1.2503**	**1.2726**	**2.2100e-003**		**0.0589**	**0.0589**		**0.0569**	**0.0569**	**0.0000**	**181.5769**	**181.5769**	**0.0316**	**0.0000**	**182.3675**

Palmdale GPU - Retail/Restaurant Construction Only - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.2300e-003	0.0591	0.0193	2.3000e-004	7.3300e-003	5.4000e-004	7.8800e-003	2.1200e-003	5.2000e-004	2.6400e-003	0.0000	22.1261	22.1261	7.4000e-004	3.1900e-003	23.0952
Worker	6.2700e-003	4.9100e-003	0.0631	1.6000e-004	0.0177	1.2000e-004	0.0178	4.7100e-003	1.1000e-004	4.8200e-003	0.0000	14.7665	14.7665	4.9000e-004	4.3000e-004	14.9071
Total	**8.5000e-003**	**0.0640**	**0.0823**	**3.9000e-004**	**0.0251**	**6.6000e-004**	**0.0257**	**6.8300e-003**	**6.3000e-004**	**7.4600e-003**	**0.0000**	**36.8926**	**36.8926**	**1.2300e-003**	**3.6200e-003**	**38.0024**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	9.5800e-003	0.0415	0.4577	7.8000e-004		1.2800e-003	1.2800e-003		1.2800e-003	1.2800e-003	0.0000	68.5899	68.5899	0.0222	0.0000	69.1445
Total	**9.5800e-003**	**0.0415**	**0.4577**	**7.8000e-004**		**1.2800e-003**	**1.2800e-003**		**1.2800e-003**	**1.2800e-003**	**0.0000**	**68.5899**	**68.5899**	**0.0222**	**0.0000**	**69.1445**

Palmdale GPU - Retail/Restaurant Construction Only - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	2.2300e-003	0.0591	0.0193	2.3000e-004	7.3300e-003	5.4000e-004	7.8800e-003	2.1200e-003	5.2000e-004	2.6400e-003	0.0000	22.1261	22.1261	7.4000e-004	3.1900e-003	23.0952
Worker	6.2700e-003	4.9100e-003	0.0631	1.6000e-004	0.0177	1.2000e-004	0.0178	4.7100e-003	1.1000e-004	4.8200e-003	0.0000	14.7665	14.7665	4.9000e-004	4.3000e-004	14.9071
Total	**8.5000e-003**	**0.0640**	**0.0823**	**3.9000e-004**	**0.0251**	**6.6000e-004**	**0.0257**	**6.8300e-003**	**6.3000e-004**	**7.4600e-003**	**0.0000**	**36.8926**	**36.8926**	**1.2300e-003**	**3.6200e-003**	**38.0024**

3.5 Paving - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	3.4400e-003	0.0339	0.0440	7.0000e-005		1.7400e-003	1.7400e-003		1.6000e-003	1.6000e-003	0.0000	5.8848	5.8848	1.8700e-003	0.0000	5.9315
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**3.4400e-003**	**0.0339**	**0.0440**	**7.0000e-005**		**1.7400e-003**	**1.7400e-003**		**1.6000e-003**	**1.6000e-003**	**0.0000**	**5.8848**	**5.8848**	**1.8700e-003**	**0.0000**	**5.9315**

Palmdale GPU - Retail/Restaurant Construction Only - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.9000e-004	1.5000e-004	1.8600e-003	0.0000	5.2000e-004	0.0000	5.3000e-004	1.4000e-004	0.0000	1.4000e-004	0.0000	0.4363	0.4363	1.0000e-005	1.0000e-005	0.4404
Total	**1.9000e-004**	**1.5000e-004**	**1.8600e-003**	**0.0000**	**5.2000e-004**	**0.0000**	**5.3000e-004**	**1.4000e-004**	**0.0000**	**1.4000e-004**	**0.0000**	**0.4363**	**0.4363**	**1.0000e-005**	**1.0000e-005**	**0.4404**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	8.0000e-004	3.4600e-003	0.0493	7.0000e-005		1.1000e-004	1.1000e-004		1.1000e-004	1.1000e-004	0.0000	5.7130	5.7130	1.8500e-003	0.0000	5.7591
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**8.0000e-004**	**3.4600e-003**	**0.0493**	**7.0000e-005**		**1.1000e-004**	**1.1000e-004**		**1.1000e-004**	**1.1000e-004**	**0.0000**	**5.7130**	**5.7130**	**1.8500e-003**	**0.0000**	**5.7591**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.9000e-004	1.5000e-004	1.8600e-003	0.0000	5.2000e-004	0.0000	5.3000e-004	1.4000e-004	0.0000	1.4000e-004	0.0000	0.4363	0.4363	1.0000e-005	1.0000e-005	0.4404
Total	**1.9000e-004**	**1.5000e-004**	**1.8600e-003**	**0.0000**	**5.2000e-004**	**0.0000**	**5.3000e-004**	**1.4000e-004**	**0.0000**	**1.4000e-004**	**0.0000**	**0.4363**	**0.4363**	**1.0000e-005**	**1.0000e-005**	**0.4404**

3.6 Architectural Coating - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.2386					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.0200e-003	7.0400e-003	9.0700e-003	1.0000e-005		4.1000e-004	4.1000e-004		4.1000e-004	4.1000e-004	0.0000	1.2766	1.2766	8.0000e-005	0.0000	1.2787
Total	**0.2396**	**7.0400e-003**	**9.0700e-003**	**1.0000e-005**		**4.1000e-004**	**4.1000e-004**		**4.1000e-004**	**4.1000e-004**	**0.0000**	**1.2766**	**1.2766**	**8.0000e-005**	**0.0000**	**1.2787**

Palmdale GPU - Retail/Restaurant Construction Only - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.0000e-005	4.0000e-005	5.7000e-004	0.0000	1.6000e-004	0.0000	1.6000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.1342	0.1342	0.0000	0.0000	0.1355
Total	**6.0000e-005**	**4.0000e-005**	**5.7000e-004**	**0.0000**	**1.6000e-004**	**0.0000**	**1.6000e-004**	**4.0000e-005**	**0.0000**	**4.0000e-005**	**0.0000**	**0.1342**	**0.1342**	**0.0000**	**0.0000**	**0.1355**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.2386					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.5000e-004	6.4000e-004	9.1600e-003	1.0000e-005		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	1.2766	1.2766	8.0000e-005	0.0000	1.2787
Total	**0.2387**	**6.4000e-004**	**9.1600e-003**	**1.0000e-005**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**	**0.0000**	**1.2766**	**1.2766**	**8.0000e-005**	**0.0000**	**1.2787**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.0000e-005	4.0000e-005	5.7000e-004	0.0000	1.6000e-004	0.0000	1.6000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.1342	0.1342	0.0000	0.0000	0.1355
Total	**6.0000e-005**	**4.0000e-005**	**5.7000e-004**	**0.0000**	**1.6000e-004**	**0.0000**	**1.6000e-004**	**4.0000e-005**	**0.0000**	**4.0000e-005**	**0.0000**	**0.1342**	**0.1342**	**0.0000**	**0.0000**	**0.1355**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Strip Mall	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Strip Mall	9.50	7.30	7.30	16.60	64.40	19.00	45	40	15

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Strip Mall	0.544785	0.062844	0.187478	0.127235	0.023089	0.006083	0.010475	0.008012	0.000925	0.000611	0.024394	0.000698	0.003374

5.0 Energy Detail

Historical Energy Use: N

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Strip Mall	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Strip Mall	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use		Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	tons/yr	MT/yr			
Strip Mall	0		0.0000	0.0000	0.0000	0.0000
Total			**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Electricity Use		Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	tons/yr	MT/yr			
Strip Mall	0		0.0000	0.0000	0.0000	0.0000
Total			**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Palmdale GPU - Retail/Restaurant Construction Only - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

7.0 Water Detail

7.1 Mitigation Measures Water

		Total CO2	CH4	N2O	CO2e
Category	tons/yr	MT/yr			
Mitigated		0.0000	0.0000	0.0000	0.0000
Unmitigated		0.0000	0.0000	0.0000	0.0000

Palmdale GPU - Retail/Restaurant Construction Only - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use		Total CO2	CH4	N2O	CO2e
Land Use	Mgal	tons/yr	MT/yr			
Strip Mall	0 / 0		0.0000	0.0000	0.0000	0.0000
Total			**0.0000**	**0.0000**	**0.0000**	**0.0000**

Palmdale GPU - Retail/Restaurant Construction Only - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Mitigated

	Indoor/Outdoor Use		Total CO2	CH4	N2O	CO2e
Land Use	Mgal	tons/yr	MT/yr			
Strip Mall	0 / 0		0.0000	0.0000	0.0000	0.0000
Total			**0.0000**	**0.0000**	**0.0000**	**0.0000**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

		Total CO2	CH4	N2O	CO2e
	tons/yr	MT/yr			
Mitigated		0.0000	0.0000	0.0000	0.0000
Unmitigated		0.0000	0.0000	0.0000	0.0000

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

8.2 Waste by Land Use

Unmitigated

	Waste Disposed		Total CO2	CH4	N2O	CO2e
Land Use	tons	tons/yr	MT/yr			
Strip Mall	0		0.0000	0.0000	0.0000	0.0000
Total			**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Waste Disposed		Total CO2	CH4	N2O	CO2e
Land Use	tons	tons/yr	MT/yr			
Strip Mall	0		0.0000	0.0000	0.0000	0.0000
Total			**0.0000**	**0.0000**	**0.0000**	**0.0000**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

Palmdale GPU - Retail/Restaurant Construction Only - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Palmdale GPU - Retail/Restaurant Construction Only - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Palmdale GPU - Retail/Restaurant Construction Only

Los Angeles-Mojave Desert County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Strip Mall	68.62	1000sqft	1.58	68,623.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	9			**Operational Year**	2023
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	390.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics - See Assumptions

Land Use - See Assumptions

Construction Phase -

Demolition - See Assumptions

Architectural Coating - Based on AVAQMD requirements for VOC content

Vehicle Trips - Operational Emissions Modeled Separately

Consumer Products - Operational Emissions Modeled Separately

Area Coating - Operational Emissions Modeled Separately

Landscape Equipment - Operational Emissions Modeled Separately

Energy Use - Operational Emissions Modeled Separately

Water And Wastewater - Operational Emissions Modeled Separately

Solid Waste - Operational Emissions Modeled Separately

Palmdale GPU - Retail/Restaurant Construction Only - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Construction Off-road Equipment Mitigation - Water 2x daily based on AVAQMD regulations for dust control; not mitigation

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	250.00	150.00
tblArchitecturalCoating	EF_Nonresidential_Interior	250.00	50.00
tblAreaCoating	ReapplicationRatePercent	10	0
tblConstEquipMitigation	FuelType	Diesel	Electrical
tblConstEquipMitigation	FuelType	Diesel	Electrical
tblConstEquipMitigation	FuelType	Diesel	Electrical
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	7.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConsumerProducts	ROG_EF	2.14E-05	0
tblConsumerProducts	ROG_EF_Degreaser	3.542E-07	0
tblConsumerProducts	ROG_EF_PesticidesFertilizers	5.152E-08	0
tblEnergyUse	LightingElect	6.26	0.00
tblEnergyUse	NT24E	3.23	0.00
tblEnergyUse	NT24NG	0.49	0.00
tblEnergyUse	T24E	3.58	0.00
tblEnergyUse	T24NG	1.14	0.00
tblLandscapeEquipment	NumberSummerDays	180	0
tblLandUse	LandUseSquareFeet	68,620.00	68,623.00
tblSolidWaste	SolidWasteGenerationRate	72.05	0.00
tblVehicleTrips	ST_TR	42.04	0.00
tblVehicleTrips	SU_TR	20.43	0.00
tblVehicleTrips	WD_TR	44.32	0.00
tblWater	IndoorWaterUseRate	5,082,856.42	0.00
tblWater	OutdoorWaterUseRate	3,115,299.10	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Palmdale GPU - Retail/Restaurant Construction Only - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Year	lb/day										lb/day					
2022	49.6617	19.9089	22.7778	0.0405	7.1647	0.9436	7.9076	3.4465	0.8963	4.1299	0.0000	3,812.1031	3,812.1031	0.7764	0.1711	3,844.0613
Maximum	**49.6617**	**19.9089**	**22.7778**	**0.0405**	**7.1647**	**0.9436**	**7.9076**	**3.4465**	**0.8963**	**4.1299**	**0.0000**	**3,812.1031**	**3,812.1031**	**0.7764**	**0.1711**	**3,844.0613**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2022	47.9340	3.8637	15.7214	0.0348	3.2693	0.0576	3.3035	1.5629	0.0567	1.5970	0.0000	3,485.4598	3,485.4598	0.6684	0.1711	3,552.7363
Maximum	**47.9340**	**3.8637**	**15.7214**	**0.0348**	**3.2693**	**0.0576**	**3.3035**	**1.5629**	**0.0567**	**1.5970**	**0.0000**	**3,485.4598**	**3,485.4598**	**0.6684**	**0.1711**	**3,552.7363**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**3.48**	**80.59**	**30.98**	**14.10**	**54.37**	**93.89**	**58.22**	**54.65**	**93.67**	**61.33**	**0.00**	**8.57**	**8.57**	**13.91**	**0.00**	**7.58**

Palmdale GPU - Retail/Restaurant Construction Only - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	6.5000e-004	6.0000e-005	7.0000e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0150	0.0150	4.0000e-005		0.0160
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total	**6.5000e-004**	**6.0000e-005**	**7.0000e-003**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**2.0000e-005**		**0.0150**	**0.0150**	**4.0000e-005**	**0.0000**	**0.0160**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	6.5000e-004	6.0000e-005	7.0000e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0150	0.0150	4.0000e-005		0.0160
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total	**6.5000e-004**	**6.0000e-005**	**7.0000e-003**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**2.0000e-005**		**0.0150**	**0.0150**	**4.0000e-005**	**0.0000**	**0.0160**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2022	1/28/2022	5	20	
2	Grading	Grading	1/29/2022	2/3/2022	5	4	
3	Building Construction	Building Construction	2/5/2022	11/11/2022	5	200	
4	Paving	Paving	2/5/2022	2/18/2022	5	10	
5	Architectural Coating	Architectural Coating	11/4/2022	11/17/2022	5	10	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 4

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 102,935; Non-Residential Outdoor: 34,312; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Rubber Tired Dozers	1	8.00	247	0.40
Demolition	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Tractors/Loaders/Backhoes	2	7.00	97	0.37

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Building Construction	Cranes	1	6.00	231	0.29
Building Construction	Forklifts	1	6.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Building Construction	Welders	3	8.00	46	0.45
Paving	Cement and Mortar Mixers	1	6.00	9	0.56
Paving	Pavers	1	6.00	130	0.42
Paving	Paving Equipment	1	8.00	132	0.36
Paving	Rollers	1	7.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	5	13.00	0.00	312.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	4	10.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	7	22.00	11.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	5	13.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	4.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Alternative Fuel for Construction Equipment

Use Cleaner Engines for Construction Equipment

Water Exposed Area

3.2 Demolition - 2022

Unmitigated Construction On-Site

Palmdale GPU - Retail/Restaurant Construction Only - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					3.3775	0.0000	3.3775	0.5114	0.0000	0.5114			0.0000			0.0000
Off-Road	1.6889	16.6217	13.9605	0.0241		0.8379	0.8379		0.7829	0.7829		2,323.4168	2,323.4168	0.5921		2,338.2191
Total	**1.6889**	**16.6217**	**13.9605**	**0.0241**	**3.3775**	**0.8379**	**4.2154**	**0.5114**	**0.7829**	**1.2943**		**2,323.4168**	**2,323.4168**	**0.5921**		**2,338.2191**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0727	2.6200	0.6109	9.6900e-003	0.2731	0.0195	0.2925	0.0749	0.0186	0.0935		1,062.0099	1,062.0099	0.0564	0.1685	1,113.6336
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0377	0.0258	0.3921	9.8000e-004	0.1068	7.0000e-004	0.1075	0.0283	6.5000e-004	0.0290		100.0331	100.0331	3.1000e-003	2.5900e-003	100.8837
Total	**0.1104**	**2.6458**	**1.0029**	**0.0107**	**0.3799**	**0.0202**	**0.4000**	**0.1032**	**0.0193**	**0.1225**		**1,162.0430**	**1,162.0430**	**0.0595**	**0.1711**	**1,214.5173**

Palmdale GPU - Retail/Restaurant Construction Only - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					1.5199	0.0000	1.5199	0.2301	0.0000	0.2301			0.0000			0.0000
Off-Road	0.2811	1.2179	14.7184	0.0241		0.0375	0.0375		0.0375	0.0375	0.0000	2,323.4168	2,323.4168	0.5921		2,338.2191
Total	**0.2811**	**1.2179**	**14.7184**	**0.0241**	**1.5199**	**0.0375**	**1.5573**	**0.2301**	**0.0375**	**0.2676**	**0.0000**	**2,323.4168**	**2,323.4168**	**0.5921**		**2,338.2191**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0727	2.6200	0.6109	9.6900e-003	0.2731	0.0195	0.2925	0.0749	0.0186	0.0935		1,062.0099	1,062.0099	0.0564	0.1685	1,113.6336
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0377	0.0258	0.3921	9.8000e-004	0.1068	7.0000e-004	0.1075	0.0283	6.5000e-004	0.0290		100.0331	100.0331	3.1000e-003	2.5900e-003	100.8837
Total	**0.1104**	**2.6458**	**1.0029**	**0.0107**	**0.3799**	**0.0202**	**0.4000**	**0.1032**	**0.0193**	**0.1225**		**1,162.0430**	**1,162.0430**	**0.0595**	**0.1711**	**1,214.5173**

Palmdale GPU - Retail/Restaurant Construction Only - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.3 Grading - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					7.0826	0.0000	7.0826	3.4247	0.0000	3.4247			0.0000			0.0000
Off-Road	1.5403	16.9836	9.2202	0.0206		0.7423	0.7423		0.6829	0.6829		1,995.4825	1,995.4825	0.6454		2,011.6169
Total	**1.5403**	**16.9836**	**9.2202**	**0.0206**	**7.0826**	**0.7423**	**7.8249**	**3.4247**	**0.6829**	**4.1076**		**1,995.4825**	**1,995.4825**	**0.6454**		**2,011.6169**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0290	0.0198	0.3016	7.6000e-004	0.0822	5.4000e-004	0.0827	0.0218	5.0000e-004	0.0223		76.9485	76.9485	2.3800e-003	2.0000e-003	77.6028
Total	**0.0290**	**0.0198**	**0.3016**	**7.6000e-004**	**0.0822**	**5.4000e-004**	**0.0827**	**0.0218**	**5.0000e-004**	**0.0223**		**76.9485**	**76.9485**	**2.3800e-003**	**2.0000e-003**	**77.6028**

Palmdale GPU - Retail/Restaurant Construction Only - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					3.1872	0.0000	3.1872	1.5411	0.0000	1.5411			0.0000			0.0000
Off-Road	0.2522	1.0927	10.9071	0.0206		0.0336	0.0336		0.0336	0.0336	0.0000	1,995.4825	1,995.4825	0.6454		2,011.6169
Total	**0.2522**	**1.0927**	**10.9071**	**0.0206**	**3.1872**	**0.0336**	**3.2208**	**1.5411**	**0.0336**	**1.5748**	**0.0000**	**1,995.4825**	**1,995.4825**	**0.6454**		**2,011.6169**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0290	0.0198	0.3016	7.6000e-004	0.0822	5.4000e-004	0.0827	0.0218	5.0000e-004	0.0223		76.9485	76.9485	2.3800e-003	2.0000e-003	77.6028
Total	**0.0290**	**0.0198**	**0.3016**	**7.6000e-004**	**0.0822**	**5.4000e-004**	**0.0827**	**0.0218**	**5.0000e-004**	**0.0223**		**76.9485**	**76.9485**	**2.3800e-003**	**2.0000e-003**	**77.6028**

Palmdale GPU - Retail/Restaurant Construction Only - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.4 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.6487	12.5031	12.7264	0.0221		0.5889	0.5889		0.5689	0.5689		2,001.5429	2,001.5429	0.3486		2,010.2581
Total	**1.6487**	**12.5031**	**12.7264**	**0.0221**		**0.5889**	**0.5889**		**0.5689**	**0.5689**		**2,001.5429**	**2,001.5429**	**0.3486**		**2,010.2581**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0225	0.5627	0.1899	2.2700e-003	0.0745	5.4200e-003	0.0800	0.0215	5.1900e-003	0.0266		243.8616	243.8616	8.1500e-003	0.0351	254.5325
Worker	0.0638	0.0436	0.6635	1.6600e-003	0.1807	1.1900e-003	0.1819	0.0479	1.0900e-003	0.0490		169.2867	169.2867	5.2400e-003	4.3900e-003	170.7263
Total	**0.0863**	**0.6063**	**0.8533**	**3.9300e-003**	**0.2553**	**6.6100e-003**	**0.2619**	**0.0694**	**6.2800e-003**	**0.0757**		**413.1483**	**413.1483**	**0.0134**	**0.0395**	**425.2588**

Palmdale GPU - Retail/Restaurant Construction Only - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.0958	0.4150	4.5772	7.8100e-003		0.0128	0.0128		0.0128	0.0128	0.0000	756.0751	756.0751	0.2445		762.1884
Total	**0.0958**	**0.4150**	**4.5772**	**7.8100e-003**		**0.0128**	**0.0128**		**0.0128**	**0.0128**	**0.0000**	**756.0751**	**756.0751**	**0.2445**		**762.1884**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0225	0.5627	0.1899	2.2700e-003	0.0745	5.4200e-003	0.0800	0.0215	5.1900e-003	0.0266		243.8616	243.8616	8.1500e-003	0.0351	254.5325
Worker	0.0638	0.0436	0.6635	1.6600e-003	0.1807	1.1900e-003	0.1819	0.0479	1.0900e-003	0.0490		169.2867	169.2867	5.2400e-003	4.3900e-003	170.7263
Total	**0.0863**	**0.6063**	**0.8533**	**3.9300e-003**	**0.2553**	**6.6100e-003**	**0.2619**	**0.0694**	**6.2800e-003**	**0.0757**		**413.1483**	**413.1483**	**0.0134**	**0.0395**	**425.2588**

Palmdale GPU - Retail/Restaurant Construction Only - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.5 Paving - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.6877	6.7738	8.8060	0.0135		0.3474	0.3474		0.3205	0.3205		1,297.3789	1,297.3789	0.4113		1,307.6608
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.6877**	**6.7738**	**8.8060**	**0.0135**		**0.3474**	**0.3474**		**0.3205**	**0.3205**		**1,297.3789**	**1,297.3789**	**0.4113**		**1,307.6608**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0377	0.0258	0.3921	9.8000e-004	0.1068	7.0000e-004	0.1075	0.0283	6.5000e-004	0.0290		100.0331	100.0331	3.1000e-003	2.5900e-003	100.8837
Total	**0.0377**	**0.0258**	**0.3921**	**9.8000e-004**	**0.1068**	**7.0000e-004**	**0.1075**	**0.0283**	**6.5000e-004**	**0.0290**		**100.0331**	**100.0331**	**3.1000e-003**	**2.5900e-003**	**100.8837**

Palmdale GPU - Retail/Restaurant Construction Only - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.1598	0.6922	9.8512	0.0130		0.0213	0.0213		0.0213	0.0213	0.0000	1,259.4916	1,259.4916	0.4074		1,269.6753
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.1598**	**0.6922**	**9.8512**	**0.0130**		**0.0213**	**0.0213**		**0.0213**	**0.0213**	**0.0000**	**1,259.4916**	**1,259.4916**	**0.4074**		**1,269.6753**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0377	0.0258	0.3921	9.8000e-004	0.1068	7.0000e-004	0.1075	0.0283	6.5000e-004	0.0290		100.0331	100.0331	3.1000e-003	2.5900e-003	100.8837
Total	**0.0377**	**0.0258**	**0.3921**	**9.8000e-004**	**0.1068**	**7.0000e-004**	**0.1075**	**0.0283**	**6.5000e-004**	**0.0290**		**100.0331**	**100.0331**	**3.1000e-003**	**2.5900e-003**	**100.8837**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.6 Architectural Coating - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	47.7106					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817		281.4481	281.4481	0.0183		281.9062
Total	**47.9151**	**1.4085**	**1.8136**	**2.9700e-003**		**0.0817**	**0.0817**		**0.0817**	**0.0817**		**281.4481**	**281.4481**	**0.0183**		**281.9062**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0116	7.9300e-003	0.1206	3.0000e-004	0.0329	2.2000e-004	0.0331	8.7200e-003	2.0000e-004	8.9100e-003		30.7794	30.7794	9.5000e-004	8.0000e-004	31.0411
Total	**0.0116**	**7.9300e-003**	**0.1206**	**3.0000e-004**	**0.0329**	**2.2000e-004**	**0.0331**	**8.7200e-003**	**2.0000e-004**	**8.9100e-003**		**30.7794**	**30.7794**	**9.5000e-004**	**8.0000e-004**	**31.0411**

Palmdale GPU - Retail/Restaurant Construction Only - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	47.7106					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.0297	0.1288	1.8324	2.9700e-003		3.9600e-003	3.9600e-003		3.9600e-003	3.9600e-003	0.0000	281.4481	281.4481	0.0183		281.9062
Total	**47.7403**	**0.1288**	**1.8324**	**2.9700e-003**		**3.9600e-003**	**3.9600e-003**		**3.9600e-003**	**3.9600e-003**	**0.0000**	**281.4481**	**281.4481**	**0.0183**		**281.9062**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0116	7.9300e-003	0.1206	3.0000e-004	0.0329	2.2000e-004	0.0331	8.7200e-003	2.0000e-004	8.9100e-003		30.7794	30.7794	9.5000e-004	8.0000e-004	31.0411
Total	**0.0116**	**7.9300e-003**	**0.1206**	**3.0000e-004**	**0.0329**	**2.2000e-004**	**0.0331**	**8.7200e-003**	**2.0000e-004**	**8.9100e-003**		**30.7794**	**30.7794**	**9.5000e-004**	**8.0000e-004**	**31.0411**

Palmdale GPU - Retail/Restaurant Construction Only - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Strip Mall	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Strip Mall	9.50	7.30	7.30	16.60	64.40	19.00	45	40	15

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Strip Mall	0.544785	0.062844	0.187478	0.127235	0.023089	0.006083	0.010475	0.008012	0.000925	0.000611	0.024394	0.000698	0.003374

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Strip Mall	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Strip Mall	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

Palmdale GPU - Retail/Restaurant Construction Only - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	6.5000e-004	6.0000e-005	7.0000e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0150	0.0150	4.0000e-005		0.0160
Unmitigated	6.5000e-004	6.0000e-005	7.0000e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0150	0.0150	4.0000e-005		0.0160

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	6.5000e-004	6.0000e-005	7.0000e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0150	0.0150	4.0000e-005		0.0160
Total	**6.5000e-004**	**6.0000e-005**	**7.0000e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**		**0.0150**	**0.0150**	**4.0000e-005**		**0.0160**

Palmdale GPU - Retail/Restaurant Construction Only - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	6.5000e-004	6.0000e-005	7.0000e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0150	0.0150	4.0000e-005		0.0160
Total	**6.5000e-004**	**6.0000e-005**	**7.0000e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**		**0.0150**	**0.0150**	**4.0000e-005**		**0.0160**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Palmdale GPU - Retail/Restaurant Construction Only - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Palmdale GPU - Retail/Restaurant Construction Only - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Palmdale GPU - Retail/Restaurant Construction Only

Los Angeles-Mojave Desert County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Strip Mall	68.62	1000sqft	1.58	68,623.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	9			**Operational Year**	2023
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	390.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics - See Assumptions

Land Use - See Assumptions

Construction Phase -

Demolition - See Assumptions

Architectural Coating - Based on AVAQMD requirements for VOC content

Vehicle Trips - Operational Emissions Modeled Separately

Consumer Products - Operational Emissions Modeled Separately

Area Coating - Operational Emissions Modeled Separately

Landscape Equipment - Operational Emissions Modeled Separately

Energy Use - Operational Emissions Modeled Separately

Water And Wastewater - Operational Emissions Modeled Separately

Solid Waste - Operational Emissions Modeled Separately

Palmdale GPU - Retail/Restaurant Construction Only - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Construction Off-road Equipment Mitigation - Water 2x daily based on AVAQMD regulations for dust control; not mitigation

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	250.00	150.00
tblArchitecturalCoating	EF_Nonresidential_Interior	250.00	50.00
tblAreaCoating	ReapplicationRatePercent	10	0
tblConstEquipMitigation	FuelType	Diesel	Electrical
tblConstEquipMitigation	FuelType	Diesel	Electrical
tblConstEquipMitigation	FuelType	Diesel	Electrical
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	7.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConsumerProducts	ROG_EF	2.14E-05	0
tblConsumerProducts	ROG_EF_Degreaser	3.542E-07	0
tblConsumerProducts	ROG_EF_PesticidesFertilizers	5.152E-08	0
tblEnergyUse	LightingElect	6.26	0.00
tblEnergyUse	NT24E	3.23	0.00
tblEnergyUse	NT24NG	0.49	0.00
tblEnergyUse	T24E	3.58	0.00
tblEnergyUse	T24NG	1.14	0.00
tblLandscapeEquipment	NumberSummerDays	180	0
tblLandUse	LandUseSquareFeet	68,620.00	68,623.00
tblSolidWaste	SolidWasteGenerationRate	72.05	0.00
tblVehicleTrips	ST_TR	42.04	0.00
tblVehicleTrips	SU_TR	20.43	0.00
tblVehicleTrips	WD_TR	44.32	0.00
tblWater	IndoorWaterUseRate	5,082,856.42	0.00
tblWater	OutdoorWaterUseRate	3,115,299.10	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Palmdale GPU - Retail/Restaurant Construction Only - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Year	lb/day										lb/day					
2022	49.6657	19.9393	22.7094	0.0404	7.1647	0.9437	7.9076	3.4465	0.8963	4.1299	0.0000	3,798.0302	3,798.0302	0.7766	0.1713	3,830.1493
Maximum	**49.6657**	**19.9393**	**22.7094**	**0.0404**	**7.1647**	**0.9437**	**7.9076**	**3.4465**	**0.8963**	**4.1299**	**0.0000**	**3,798.0302**	**3,798.0302**	**0.7766**	**0.1713**	**3,830.1493**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2022	47.9379	3.9727	15.7043	0.0348	3.2693	0.0577	3.3035	1.5629	0.0568	1.5970	0.0000	3,480.5118	3,480.5118	0.6686	0.1713	3,547.8574
Maximum	**47.9379**	**3.9727**	**15.7043**	**0.0348**	**3.2693**	**0.0577**	**3.3035**	**1.5629**	**0.0568**	**1.5970**	**0.0000**	**3,480.5118**	**3,480.5118**	**0.6686**	**0.1713**	**3,547.8574**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**3.48**	**80.08**	**30.85**	**13.92**	**54.37**	**93.89**	**58.22**	**54.65**	**93.67**	**61.33**	**0.00**	**8.36**	**8.36**	**13.91**	**0.00**	**7.37**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	6.5000e-004	6.0000e-005	7.0000e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0150	0.0150	4.0000e-005		0.0160
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total	**6.5000e-004**	**6.0000e-005**	**7.0000e-003**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**2.0000e-005**		**0.0150**	**0.0150**	**4.0000e-005**	**0.0000**	**0.0160**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	6.5000e-004	6.0000e-005	7.0000e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0150	0.0150	4.0000e-005		0.0160
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total	**6.5000e-004**	**6.0000e-005**	**7.0000e-003**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**2.0000e-005**		**0.0150**	**0.0150**	**4.0000e-005**	**0.0000**	**0.0160**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2022	1/28/2022	5	20	
2	Grading	Grading	1/29/2022	2/3/2022	5	4	
3	Building Construction	Building Construction	2/5/2022	11/11/2022	5	200	
4	Paving	Paving	2/5/2022	2/18/2022	5	10	
5	Architectural Coating	Architectural Coating	11/4/2022	11/17/2022	5	10	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 4

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 102,935; Non-Residential Outdoor: 34,312; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Demolition	Rubber Tired Dozers	1	8.00	247	0.40
Demolition	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Grading	Graders	1	8.00	187	0.41
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Tractors/Loaders/Backhoes	2	7.00	97	0.37

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Building Construction	Cranes	1	6.00	231	0.29
Building Construction	Forklifts	1	6.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Building Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Building Construction	Welders	3	8.00	46	0.45
Paving	Cement and Mortar Mixers	1	6.00	9	0.56
Paving	Pavers	1	6.00	130	0.42
Paving	Paving Equipment	1	8.00	132	0.36
Paving	Rollers	1	7.00	80	0.38
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Architectural Coating	Air Compressors	1	6.00	78	0.48

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	5	13.00	0.00	312.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	4	10.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	7	22.00	11.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	5	13.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	4.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Alternative Fuel for Construction Equipment

Use Cleaner Engines for Construction Equipment

Water Exposed Area

3.2 Demolition - 2022

Unmitigated Construction On-Site

Palmdale GPU - Retail/Restaurant Construction Only - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					3.3775	0.0000	3.3775	0.5114	0.0000	0.5114			0.0000			0.0000
Off-Road	1.6889	16.6217	13.9605	0.0241		0.8379	0.8379		0.7829	0.7829		2,323.4168	2,323.4168	0.5921		2,338.2191
Total	**1.6889**	**16.6217**	**13.9605**	**0.0241**	**3.3775**	**0.8379**	**4.2154**	**0.5114**	**0.7829**	**1.2943**		**2,323.4168**	**2,323.4168**	**0.5921**		**2,338.2191**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0709	2.7263	0.6216	9.7000e-003	0.2731	0.0195	0.2926	0.0749	0.0187	0.0935		1,062.3213	1,062.3213	0.0563	0.1686	1,113.9590
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0398	0.0285	0.3643	9.3000e-004	0.1068	7.0000e-004	0.1075	0.0283	6.5000e-004	0.0290		94.7737	94.7737	3.1900e-003	2.7700e-003	95.6794
Total	**0.1107**	**2.7548**	**0.9859**	**0.0106**	**0.3799**	**0.0202**	**0.4001**	**0.1032**	**0.0193**	**0.1225**		**1,157.0950**	**1,157.0950**	**0.0595**	**0.1713**	**1,209.6384**

Palmdale GPU - Retail/Restaurant Construction Only - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					1.5199	0.0000	1.5199	0.2301	0.0000	0.2301			0.0000			0.0000
Off-Road	0.2811	1.2179	14.7184	0.0241		0.0375	0.0375		0.0375	0.0375	0.0000	2,323.4168	2,323.4168	0.5921		2,338.2191
Total	**0.2811**	**1.2179**	**14.7184**	**0.0241**	**1.5199**	**0.0375**	**1.5573**	**0.2301**	**0.0375**	**0.2676**	**0.0000**	**2,323.4168**	**2,323.4168**	**0.5921**		**2,338.2191**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0709	2.7263	0.6216	9.7000e-003	0.2731	0.0195	0.2926	0.0749	0.0187	0.0935		1,062.3213	1,062.3213	0.0563	0.1686	1,113.9590
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0398	0.0285	0.3643	9.3000e-004	0.1068	7.0000e-004	0.1075	0.0283	6.5000e-004	0.0290		94.7737	94.7737	3.1900e-003	2.7700e-003	95.6794
Total	**0.1107**	**2.7548**	**0.9859**	**0.0106**	**0.3799**	**0.0202**	**0.4001**	**0.1032**	**0.0193**	**0.1225**		**1,157.0950**	**1,157.0950**	**0.0595**	**0.1713**	**1,209.6384**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.3 Grading - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					7.0826	0.0000	7.0826	3.4247	0.0000	3.4247			0.0000			0.0000
Off-Road	1.5403	16.9836	9.2202	0.0206		0.7423	0.7423		0.6829	0.6829		1,995.4825	1,995.4825	0.6454		2,011.6169
Total	**1.5403**	**16.9836**	**9.2202**	**0.0206**	**7.0826**	**0.7423**	**7.8249**	**3.4247**	**0.6829**	**4.1076**		**1,995.4825**	**1,995.4825**	**0.6454**		**2,011.6169**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0306	0.0219	0.2802	7.2000e-004	0.0822	5.4000e-004	0.0827	0.0218	5.0000e-004	0.0223		72.9029	72.9029	2.4500e-003	2.1300e-003	73.5996
Total	**0.0306**	**0.0219**	**0.2802**	**7.2000e-004**	**0.0822**	**5.4000e-004**	**0.0827**	**0.0218**	**5.0000e-004**	**0.0223**		**72.9029**	**72.9029**	**2.4500e-003**	**2.1300e-003**	**73.5996**

Palmdale GPU - Retail/Restaurant Construction Only - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					3.1872	0.0000	3.1872	1.5411	0.0000	1.5411			0.0000			0.0000
Off-Road	0.2522	1.0927	10.9071	0.0206		0.0336	0.0336		0.0336	0.0336	0.0000	1,995.4825	1,995.4825	0.6454		2,011.6169
Total	**0.2522**	**1.0927**	**10.9071**	**0.0206**	**3.1872**	**0.0336**	**3.2208**	**1.5411**	**0.0336**	**1.5748**	**0.0000**	**1,995.4825**	**1,995.4825**	**0.6454**		**2,011.6169**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0306	0.0219	0.2802	7.2000e-004	0.0822	5.4000e-004	0.0827	0.0218	5.0000e-004	0.0223		72.9029	72.9029	2.4500e-003	2.1300e-003	73.5996
Total	**0.0306**	**0.0219**	**0.2802**	**7.2000e-004**	**0.0822**	**5.4000e-004**	**0.0827**	**0.0218**	**5.0000e-004**	**0.0223**		**72.9029**	**72.9029**	**2.4500e-003**	**2.1300e-003**	**73.5996**

Palmdale GPU - Retail/Restaurant Construction Only - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.4 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.6487	12.5031	12.7264	0.0221		0.5889	0.5889		0.5689	0.5689		2,001.5429	2,001.5429	0.3486		2,010.2581
Total	**1.6487**	**12.5031**	**12.7264**	**0.0221**		**0.5889**	**0.5889**		**0.5689**	**0.5689**		**2,001.5429**	**2,001.5429**	**0.3486**		**2,010.2581**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0222	0.5858	0.1962	2.2700e-003	0.0745	5.4400e-003	0.0800	0.0215	5.2100e-003	0.0267		243.9485	243.9485	8.1200e-003	0.0352	254.6320
Worker	0.0674	0.0482	0.6165	1.5800e-003	0.1807	1.1900e-003	0.1819	0.0479	1.0900e-003	0.0490		160.3863	160.3863	5.4000e-003	4.6900e-003	161.9190
Total	**0.0896**	**0.6340**	**0.8127**	**3.8500e-003**	**0.2553**	**6.6300e-003**	**0.2619**	**0.0694**	**6.3000e-003**	**0.0757**		**404.3348**	**404.3348**	**0.0135**	**0.0399**	**416.5510**

Palmdale GPU - Retail/Restaurant Construction Only - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.0958	0.4150	4.5772	7.8100e-003		0.0128	0.0128		0.0128	0.0128	0.0000	756.0751	756.0751	0.2445		762.1884
Total	**0.0958**	**0.4150**	**4.5772**	**7.8100e-003**		**0.0128**	**0.0128**		**0.0128**	**0.0128**	**0.0000**	**756.0751**	**756.0751**	**0.2445**		**762.1884**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0222	0.5858	0.1962	2.2700e-003	0.0745	5.4400e-003	0.0800	0.0215	5.2100e-003	0.0267		243.9485	243.9485	8.1200e-003	0.0352	254.6320
Worker	0.0674	0.0482	0.6165	1.5800e-003	0.1807	1.1900e-003	0.1819	0.0479	1.0900e-003	0.0490		160.3863	160.3863	5.4000e-003	4.6900e-003	161.9190
Total	**0.0896**	**0.6340**	**0.8127**	**3.8500e-003**	**0.2553**	**6.6300e-003**	**0.2619**	**0.0694**	**6.3000e-003**	**0.0757**		**404.3348**	**404.3348**	**0.0135**	**0.0399**	**416.5510**

Palmdale GPU - Retail/Restaurant Construction Only - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.5 Paving - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.6877	6.7738	8.8060	0.0135		0.3474	0.3474		0.3205	0.3205		1,297.3789	1,297.3789	0.4113		1,307.6608
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.6877**	**6.7738**	**8.8060**	**0.0135**		**0.3474**	**0.3474**		**0.3205**	**0.3205**		**1,297.3789**	**1,297.3789**	**0.4113**		**1,307.6608**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0398	0.0285	0.3643	9.3000e-004	0.1068	7.0000e-004	0.1075	0.0283	6.5000e-004	0.0290		94.7737	94.7737	3.1900e-003	2.7700e-003	95.6794
Total	**0.0398**	**0.0285**	**0.3643**	**9.3000e-004**	**0.1068**	**7.0000e-004**	**0.1075**	**0.0283**	**6.5000e-004**	**0.0290**		**94.7737**	**94.7737**	**3.1900e-003**	**2.7700e-003**	**95.6794**

Palmdale GPU - Retail/Restaurant Construction Only - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.1598	0.6922	9.8512	0.0130		0.0213	0.0213		0.0213	0.0213	0.0000	1,259.4916	1,259.4916	0.4074		1,269.6753
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.1598**	**0.6922**	**9.8512**	**0.0130**		**0.0213**	**0.0213**		**0.0213**	**0.0213**	**0.0000**	**1,259.4916**	**1,259.4916**	**0.4074**		**1,269.6753**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0398	0.0285	0.3643	9.3000e-004	0.1068	7.0000e-004	0.1075	0.0283	6.5000e-004	0.0290		94.7737	94.7737	3.1900e-003	2.7700e-003	95.6794
Total	**0.0398**	**0.0285**	**0.3643**	**9.3000e-004**	**0.1068**	**7.0000e-004**	**0.1075**	**0.0283**	**6.5000e-004**	**0.0290**		**94.7737**	**94.7737**	**3.1900e-003**	**2.7700e-003**	**95.6794**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.6 Architectural Coating - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	47.7106					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817		281.4481	281.4481	0.0183		281.9062
Total	**47.9151**	**1.4085**	**1.8136**	**2.9700e-003**		**0.0817**	**0.0817**		**0.0817**	**0.0817**		**281.4481**	**281.4481**	**0.0183**		**281.9062**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0123	8.7600e-003	0.1121	2.9000e-004	0.0329	2.2000e-004	0.0331	8.7200e-003	2.0000e-004	8.9100e-003		29.1611	29.1611	9.8000e-004	8.5000e-004	29.4398
Total	**0.0123**	**8.7600e-003**	**0.1121**	**2.9000e-004**	**0.0329**	**2.2000e-004**	**0.0331**	**8.7200e-003**	**2.0000e-004**	**8.9100e-003**		**29.1611**	**29.1611**	**9.8000e-004**	**8.5000e-004**	**29.4398**

Palmdale GPU - Retail/Restaurant Construction Only - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	47.7106					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.0297	0.1288	1.8324	2.9700e-003		3.9600e-003	3.9600e-003		3.9600e-003	3.9600e-003	0.0000	281.4481	281.4481	0.0183		281.9062
Total	**47.7403**	**0.1288**	**1.8324**	**2.9700e-003**		**3.9600e-003**	**3.9600e-003**		**3.9600e-003**	**3.9600e-003**	**0.0000**	**281.4481**	**281.4481**	**0.0183**		**281.9062**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0123	8.7600e-003	0.1121	2.9000e-004	0.0329	2.2000e-004	0.0331	8.7200e-003	2.0000e-004	8.9100e-003		29.1611	29.1611	9.8000e-004	8.5000e-004	29.4398
Total	**0.0123**	**8.7600e-003**	**0.1121**	**2.9000e-004**	**0.0329**	**2.2000e-004**	**0.0331**	**8.7200e-003**	**2.0000e-004**	**8.9100e-003**		**29.1611**	**29.1611**	**9.8000e-004**	**8.5000e-004**	**29.4398**

Palmdale GPU - Retail/Restaurant Construction Only - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Strip Mall	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Strip Mall	9.50	7.30	7.30	16.60	64.40	19.00	45	40	15

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Strip Mall	0.544785	0.062844	0.187478	0.127235	0.023089	0.006083	0.010475	0.008012	0.000925	0.000611	0.024394	0.000698	0.003374

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Strip Mall	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Strip Mall	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

Palmdale GPU - Retail/Restaurant Construction Only - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	6.5000e-004	6.0000e-005	7.0000e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0150	0.0150	4.0000e-005		0.0160
Unmitigated	6.5000e-004	6.0000e-005	7.0000e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0150	0.0150	4.0000e-005		0.0160

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	6.5000e-004	6.0000e-005	7.0000e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0150	0.0150	4.0000e-005		0.0160
Total	**6.5000e-004**	**6.0000e-005**	**7.0000e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**		**0.0150**	**0.0150**	**4.0000e-005**		**0.0160**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	6.5000e-004	6.0000e-005	7.0000e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0150	0.0150	4.0000e-005		0.0160
Total	**6.5000e-004**	**6.0000e-005**	**7.0000e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**		**0.0150**	**0.0150**	**4.0000e-005**		**0.0160**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Palmdale GPU - School - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Palmdale GPU - School

Los Angeles-Mojave Desert County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Elementary School	51.10	1000sqft	1.17	51,102.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	9			**Operational Year**	2023
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	390.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics - See Assumptions

Land Use - See Assumptions

Construction Phase - See Assumptions

Grading -

Demolition -

Architectural Coating - Based on AVAQMD requirements for VOC content

Vehicle Trips - Operational Emissions Modeled Separately

Consumer Products - Operational Emissions Modeled Separately

Area Coating - Operational Emissions Modeled Separately

Landscape Equipment - Operational Emissions Modeled Separately

Energy Use - Operational Emissions Modeled Separately

Water And Wastewater - Operational Emissions Modeled Separately

Palmdale GPU - School - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Solid Waste - Operational Emissions Modeled Separately

Construction Off-road Equipment Mitigation - Water 2x daily based on AVAQMD regulations for dust control; not mitigation

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	250.00	150.00
tblArchitecturalCoating	EF_Nonresidential_Interior	250.00	50.00
tblAreaCoating	ReapplicationRatePercent	10	0
tblConstEquipMitigation	FuelType	Diesel	Electrical
tblConstEquipMitigation	FuelType	Diesel	Electrical
tblConstEquipMitigation	FuelType	Diesel	Electrical
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	7.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	PhaseEndDate	12/8/2022	11/14/2022
tblConstructionPhase	PhaseEndDate	11/24/2022	2/17/2022
tblConstructionPhase	PhaseStartDate	11/25/2022	11/1/2022
tblConstructionPhase	PhaseStartDate	11/11/2022	2/4/2022
tblConsumerProducts	ROG_EF	2.14E-05	0
tblConsumerProducts	ROG_EF_Degreaser	3.542E-07	0
tblConsumerProducts	ROG_EF_PesticidesFertilizers	5.152E-08	0
tblEnergyUse	LightingElect	2.59	0.00
tblEnergyUse	NT24E	1.59	0.00
tblEnergyUse	NT24NG	1.08	0.00
tblEnergyUse	T24E	1.56	0.00
tblEnergyUse	T24NG	9.23	0.00
tblLandscapeEquipment	NumberSummerDays	180	0
tblSolidWaste	SolidWasteGenerationRate	66.43	0.00
tblVehicleTrips	WD_TR	19.52	0.00
tblWater	IndoorWaterUseRate	1,481,742.47	0.00
tblWater	OutdoorWaterUseRate	3,810,194.92	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Palmdale GPU - School - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

					PM10	PM10	Total	PM2.5	PM2.5	Total						
Year	tons/yr										MT/yr					
2022	0.3758	1.5601	1.5693	2.9800e-003	0.0655	0.0716	0.1370	0.0177	0.0687	0.0865	0.0000	252.3658	252.3658	0.0416	3.9100e-003	254.5711
Maximum	**0.3758**	**1.5601**	**1.5693**	**2.9800e-003**	**0.0655**	**0.0716**	**0.1370**	**0.0177**	**0.0687**	**0.0865**	**0.0000**	**252.3658**	**252.3658**	**0.0416**	**3.9100e-003**	**254.5711**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2022	0.2003	0.1287	0.7707	1.5500e-003	0.0438	2.5100e-003	0.0463	0.0119	2.4800e-003	0.0144	0.0000	139.2069	139.2069	0.0321	3.9100e-003	141.1757
Maximum	**0.2003**	**0.1287**	**0.7707**	**1.5500e-003**	**0.0438**	**2.5100e-003**	**0.0463**	**0.0119**	**2.4800e-003**	**0.0144**	**0.0000**	**139.2069**	**139.2069**	**0.0321**	**3.9100e-003**	**141.1757**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**46.70**	**91.75**	**50.89**	**47.99**	**33.03**	**96.49**	**66.18**	**33.03**	**96.39**	**83.39**	**0.00**	**44.84**	**44.84**	**22.77**	**0.00**	**44.54**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

1	**1-1-2022**	**3-31-2022**	0.5761	0.0653
2	**4-1-2022**	**6-30-2022**	0.4771	0.0338
3	**7-1-2022**	**9-30-2022**	0.4823	0.0341
		Highest	0.5761	0.0653

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2022	1/28/2022	5	20	
2	Grading	Grading	1/29/2022	2/3/2022	5	4	
3	Building Construction	Building Construction	2/4/2022	11/10/2022	5	200	

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

4	Paving	Paving	2/4/2022	2/17/2022	5	10	
5	Architectural Coating	Architectural Coating	11/1/2022	11/14/2022	5	10	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 4

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 76,653; Non-Residential Outdoor: 25,551; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Paving	Cement and Mortar Mixers	1	6.00	9	0.56
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Building Construction	Cranes	1	6.00	231	0.29
Building Construction	Forklifts	1	6.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Grading	Graders	1	8.00	187	0.41
Demolition	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Paving	Pavers	1	6.00	130	0.42
Paving	Paving Equipment	1	8.00	132	0.36
Paving	Rollers	1	7.00	80	0.38
Demolition	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Building Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Grading	Tractors/Loaders/Backhoes	2	7.00	97	0.37
Building Construction	Welders	3	8.00	46	0.45

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Architectural Coating	1	4.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	7	21.00	8.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Demolition	5	13.00	0.00	232.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	4	10.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	5	13.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Alternative Fuel for Construction Equipment

Use Cleaner Engines for Construction Equipment

Water Exposed Area

3.2 Demolition - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0252	0.0000	0.0252	3.8100e-003	0.0000	3.8100e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0169	0.1662	0.1396	2.4000e-004		8.3800e-003	8.3800e-003		7.8300e-003	7.8300e-003	0.0000	21.0777	21.0777	5.3700e-003	0.0000	21.2120
Total	**0.0169**	**0.1662**	**0.1396**	**2.4000e-004**	**0.0252**	**8.3800e-003**	**0.0335**	**3.8100e-003**	**7.8300e-003**	**0.0116**	**0.0000**	**21.0777**	**21.0777**	**5.3700e-003**	**0.0000**	**21.2120**

Palmdale GPU - School - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	5.3000e-004	0.0205	4.5700e-003	7.0000e-005	2.0000e-003	1.4000e-004	2.1400e-003	5.5000e-004	1.4000e-004	6.9000e-004	0.0000	7.1649	7.1649	3.8000e-004	1.1400e-003	7.5132
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.7000e-004	2.9000e-004	3.7300e-003	1.0000e-005	1.0500e-003	1.0000e-005	1.0500e-003	2.8000e-004	1.0000e-005	2.8000e-004	0.0000	0.8726	0.8726	3.0000e-005	3.0000e-005	0.8809
Total	**9.0000e-004**	**0.0208**	**8.3000e-003**	**8.0000e-005**	**3.0500e-003**	**1.5000e-004**	**3.1900e-003**	**8.3000e-004**	**1.5000e-004**	**9.7000e-004**	**0.0000**	**8.0375**	**8.0375**	**4.1000e-004**	**1.1700e-003**	**8.3941**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0113	0.0000	0.0113	1.7100e-003	0.0000	1.7100e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.8100e-003	0.0122	0.1472	2.4000e-004		3.7000e-004	3.7000e-004		3.7000e-004	3.7000e-004	0.0000	21.0777	21.0777	5.3700e-003	0.0000	21.2119
Total	**2.8100e-003**	**0.0122**	**0.1472**	**2.4000e-004**	**0.0113**	**3.7000e-004**	**0.0117**	**1.7100e-003**	**3.7000e-004**	**2.0800e-003**	**0.0000**	**21.0777**	**21.0777**	**5.3700e-003**	**0.0000**	**21.2119**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	5.3000e-004	0.0205	4.5700e-003	7.0000e-005	2.0000e-003	1.4000e-004	2.1400e-003	5.5000e-004	1.4000e-004	6.9000e-004	0.0000	7.1649	7.1649	3.8000e-004	1.1400e-003	7.5132
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.7000e-004	2.9000e-004	3.7300e-003	1.0000e-005	1.0500e-003	1.0000e-005	1.0500e-003	2.8000e-004	1.0000e-005	2.8000e-004	0.0000	0.8726	0.8726	3.0000e-005	3.0000e-005	0.8809
Total	**9.0000e-004**	**0.0208**	**8.3000e-003**	**8.0000e-005**	**3.0500e-003**	**1.5000e-004**	**3.1900e-003**	**8.3000e-004**	**1.5000e-004**	**9.7000e-004**	**0.0000**	**8.0375**	**8.0375**	**4.1000e-004**	**1.1700e-003**	**8.3941**

3.3 Grading - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0142	0.0000	0.0142	6.8500e-003	0.0000	6.8500e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.0800e-003	0.0340	0.0184	4.0000e-005		1.4800e-003	1.4800e-003		1.3700e-003	1.3700e-003	0.0000	3.6205	3.6205	1.1700e-003	0.0000	3.6498
Total	**3.0800e-003**	**0.0340**	**0.0184**	**4.0000e-005**	**0.0142**	**1.4800e-003**	**0.0157**	**6.8500e-003**	**1.3700e-003**	**8.2200e-003**	**0.0000**	**3.6205**	**3.6205**	**1.1700e-003**	**0.0000**	**3.6498**

Palmdale GPU - School - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.0000e-005	4.0000e-005	5.7000e-004	0.0000	1.6000e-004	0.0000	1.6000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.1342	0.1342	0.0000	0.0000	0.1355
Total	**6.0000e-005**	**4.0000e-005**	**5.7000e-004**	**0.0000**	**1.6000e-004**	**0.0000**	**1.6000e-004**	**4.0000e-005**	**0.0000**	**4.0000e-005**	**0.0000**	**0.1342**	**0.1342**	**0.0000**	**0.0000**	**0.1355**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					6.3700e-003	0.0000	6.3700e-003	3.0800e-003	0.0000	3.0800e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	5.0000e-004	2.1900e-003	0.0218	4.0000e-005		7.0000e-005	7.0000e-005		7.0000e-005	7.0000e-005	0.0000	3.6205	3.6205	1.1700e-003	0.0000	3.6498
Total	**5.0000e-004**	**2.1900e-003**	**0.0218**	**4.0000e-005**	**6.3700e-003**	**7.0000e-005**	**6.4400e-003**	**3.0800e-003**	**7.0000e-005**	**3.1500e-003**	**0.0000**	**3.6205**	**3.6205**	**1.1700e-003**	**0.0000**	**3.6498**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.0000e-005	4.0000e-005	5.7000e-004	0.0000	1.6000e-004	0.0000	1.6000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.1342	0.1342	0.0000	0.0000	0.1355
Total	**6.0000e-005**	**4.0000e-005**	**5.7000e-004**	**0.0000**	**1.6000e-004**	**0.0000**	**1.6000e-004**	**4.0000e-005**	**0.0000**	**4.0000e-005**	**0.0000**	**0.1342**	**0.1342**	**0.0000**	**0.0000**	**0.1355**

3.4 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1649	1.2503	1.2726	2.2100e-003		0.0589	0.0589		0.0569	0.0569	0.0000	181.5769	181.5769	0.0316	0.0000	182.3675
Total	**0.1649**	**1.2503**	**1.2726**	**2.2100e-003**		**0.0589**	**0.0589**		**0.0569**	**0.0569**	**0.0000**	**181.5769**	**181.5769**	**0.0316**	**0.0000**	**182.3675**

Palmdale GPU - School - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.6200e-003	0.0430	0.0140	1.7000e-004	5.3300e-003	3.9000e-004	5.7300e-003	1.5400e-003	3.8000e-004	1.9200e-003	0.0000	16.0917	16.0917	5.4000e-004	2.3200e-003	16.7965
Worker	5.9800e-003	4.6900e-003	0.0602	1.5000e-004	0.0169	1.1000e-004	0.0170	4.4900e-003	1.0000e-004	4.6000e-003	0.0000	14.0953	14.0953	4.7000e-004	4.1000e-004	14.2295
Total	**7.6000e-003**	**0.0477**	**0.0742**	**3.2000e-004**	**0.0222**	**5.0000e-004**	**0.0228**	**6.0300e-003**	**4.8000e-004**	**6.5200e-003**	**0.0000**	**30.1870**	**30.1870**	**1.0100e-003**	**2.7300e-003**	**31.0261**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	9.5800e-003	0.0415	0.4577	7.8000e-004		1.2800e-003	1.2800e-003		1.2800e-003	1.2800e-003	0.0000	68.5899	68.5899	0.0222	0.0000	69.1445
Total	**9.5800e-003**	**0.0415**	**0.4577**	**7.8000e-004**		**1.2800e-003**	**1.2800e-003**		**1.2800e-003**	**1.2800e-003**	**0.0000**	**68.5899**	**68.5899**	**0.0222**	**0.0000**	**69.1445**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.6200e-003	0.0430	0.0140	1.7000e-004	5.3300e-003	3.9000e-004	5.7300e-003	1.5400e-003	3.8000e-004	1.9200e-003	0.0000	16.0917	16.0917	5.4000e-004	2.3200e-003	16.7965
Worker	5.9800e-003	4.6900e-003	0.0602	1.5000e-004	0.0169	1.1000e-004	0.0170	4.4900e-003	1.0000e-004	4.6000e-003	0.0000	14.0953	14.0953	4.7000e-004	4.1000e-004	14.2295
Total	**7.6000e-003**	**0.0477**	**0.0742**	**3.2000e-004**	**0.0222**	**5.0000e-004**	**0.0228**	**6.0300e-003**	**4.8000e-004**	**6.5200e-003**	**0.0000**	**30.1870**	**30.1870**	**1.0100e-003**	**2.7300e-003**	**31.0261**

3.5 Paving - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	3.4400e-003	0.0339	0.0440	7.0000e-005		1.7400e-003	1.7400e-003		1.6000e-003	1.6000e-003	0.0000	5.8848	5.8848	1.8700e-003	0.0000	5.9315
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**3.4400e-003**	**0.0339**	**0.0440**	**7.0000e-005**		**1.7400e-003**	**1.7400e-003**		**1.6000e-003**	**1.6000e-003**	**0.0000**	**5.8848**	**5.8848**	**1.8700e-003**	**0.0000**	**5.9315**

Palmdale GPU - School - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.9000e-004	1.5000e-004	1.8600e-003	0.0000	5.2000e-004	0.0000	5.3000e-004	1.4000e-004	0.0000	1.4000e-004	0.0000	0.4363	0.4363	1.0000e-005	1.0000e-005	0.4404
Total	**1.9000e-004**	**1.5000e-004**	**1.8600e-003**	**0.0000**	**5.2000e-004**	**0.0000**	**5.3000e-004**	**1.4000e-004**	**0.0000**	**1.4000e-004**	**0.0000**	**0.4363**	**0.4363**	**1.0000e-005**	**1.0000e-005**	**0.4404**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	8.0000e-004	3.4600e-003	0.0493	7.0000e-005		1.1000e-004	1.1000e-004		1.1000e-004	1.1000e-004	0.0000	5.7130	5.7130	1.8500e-003	0.0000	5.7591
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**8.0000e-004**	**3.4600e-003**	**0.0493**	**7.0000e-005**		**1.1000e-004**	**1.1000e-004**		**1.1000e-004**	**1.1000e-004**	**0.0000**	**5.7130**	**5.7130**	**1.8500e-003**	**0.0000**	**5.7591**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.9000e-004	1.5000e-004	1.8600e-003	0.0000	5.2000e-004	0.0000	5.3000e-004	1.4000e-004	0.0000	1.4000e-004	0.0000	0.4363	0.4363	1.0000e-005	1.0000e-005	0.4404
Total	**1.9000e-004**	**1.5000e-004**	**1.8600e-003**	**0.0000**	**5.2000e-004**	**0.0000**	**5.3000e-004**	**1.4000e-004**	**0.0000**	**1.4000e-004**	**0.0000**	**0.4363**	**0.4363**	**1.0000e-005**	**1.0000e-005**	**0.4404**

3.6 Architectural Coating - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.1776					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.0200e-003	7.0400e-003	9.0700e-003	1.0000e-005		4.1000e-004	4.1000e-004		4.1000e-004	4.1000e-004	0.0000	1.2766	1.2766	8.0000e-005	0.0000	1.2787
Total	**0.1787**	**7.0400e-003**	**9.0700e-003**	**1.0000e-005**		**4.1000e-004**	**4.1000e-004**		**4.1000e-004**	**4.1000e-004**	**0.0000**	**1.2766**	**1.2766**	**8.0000e-005**	**0.0000**	**1.2787**

Palmdale GPU - School - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.0000e-005	4.0000e-005	5.7000e-004	0.0000	1.6000e-004	0.0000	1.6000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.1342	0.1342	0.0000	0.0000	0.1355
Total	**6.0000e-005**	**4.0000e-005**	**5.7000e-004**	**0.0000**	**1.6000e-004**	**0.0000**	**1.6000e-004**	**4.0000e-005**	**0.0000**	**4.0000e-005**	**0.0000**	**0.1342**	**0.1342**	**0.0000**	**0.0000**	**0.1355**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.1776					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	1.5000e-004	6.4000e-004	9.1600e-003	1.0000e-005		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005	0.0000	1.2766	1.2766	8.0000e-005	0.0000	1.2787
Total	**0.1778**	**6.4000e-004**	**9.1600e-003**	**1.0000e-005**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**	**0.0000**	**1.2766**	**1.2766**	**8.0000e-005**	**0.0000**	**1.2787**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.0000e-005	4.0000e-005	5.7000e-004	0.0000	1.6000e-004	0.0000	1.6000e-004	4.0000e-005	0.0000	4.0000e-005	0.0000	0.1342	0.1342	0.0000	0.0000	0.1355
Total	**6.0000e-005**	**4.0000e-005**	**5.7000e-004**	**0.0000**	**1.6000e-004**	**0.0000**	**1.6000e-004**	**4.0000e-005**	**0.0000**	**4.0000e-005**	**0.0000**	**0.1342**	**0.1342**	**0.0000**	**0.0000**	**0.1355**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Elementary School	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Elementary School	9.50	7.30	7.30	65.00	30.00	5.00	63	25	12

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Elementary School	0.544785	0.062844	0.187478	0.127235	0.023089	0.006083	0.010475	0.008012	0.000925	0.000611	0.024394	0.000698	0.003374

5.0 Energy Detail

Historical Energy Use: N

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Elementary School	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Elementary School	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use		Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	tons/yr	MT/yr			
Elementary School	0		0.0000	0.0000	0.0000	0.0000
Total			**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Electricity Use		Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	tons/yr	MT/yr			
Elementary School	0		0.0000	0.0000	0.0000	0.0000
Total			**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Palmdale GPU - School - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

7.0 Water Detail

7.1 Mitigation Measures Water

		Total CO2	CH4	N2O	CO2e
Category	tons/yr	MT/yr			
Mitigated		0.0000	0.0000	0.0000	0.0000
Unmitigated		0.0000	0.0000	0.0000	0.0000

Palmdale GPU - School - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use		Total CO2	CH4	N2O	CO2e
Land Use	Mgal	tons/yr	MT/yr			
Elementary School	0 / 0		0.0000	0.0000	0.0000	0.0000
Total			**0.0000**	**0.0000**	**0.0000**	**0.0000**

Palmdale GPU - School - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Mitigated

	Indoor/Outdoor Use		Total CO2	CH4	N2O	CO2e
Land Use	Mgal	tons/yr	MT/yr			
Elementary School	0 / 0		0.0000	0.0000	0.0000	0.0000
Total			**0.0000**	**0.0000**	**0.0000**	**0.0000**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

		Total CO2	CH4	N2O	CO2e
	tons/yr	MT/yr			
Mitigated		0.0000	0.0000	0.0000	0.0000
Unmitigated		0.0000	0.0000	0.0000	0.0000

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

8.2 Waste by Land Use

Unmitigated

	Waste Disposed		Total CO2	CH4	N2O	CO2e
Land Use	tons	tons/yr	MT/yr			
Elementary School	0		0.0000	0.0000	0.0000	0.0000
Total			**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Waste Disposed		Total CO2	CH4	N2O	CO2e
Land Use	tons	tons/yr	MT/yr			
Elementary School	0		0.0000	0.0000	0.0000	0.0000
Total			**0.0000**	**0.0000**	**0.0000**	**0.0000**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Palmdale GPU - School - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Palmdale GPU - School

Los Angeles-Mojave Desert County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Elementary School	51.10	1000sqft	1.17	51,102.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	9			**Operational Year**	2023
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	390.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics - See Assumptions

Land Use - See Assumptions

Construction Phase - See Assumptions

Grading -

Demolition -

Architectural Coating - Based on AVAQMD requirements for VOC content

Vehicle Trips - Operational Emissions Modeled Separately

Consumer Products - Operational Emissions Modeled Separately

Area Coating - Operational Emissions Modeled Separately

Landscape Equipment - Operational Emissions Modeled Separately

Energy Use - Operational Emissions Modeled Separately

Water And Wastewater - Operational Emissions Modeled Separately

Palmdale GPU - School - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Solid Waste - Operational Emissions Modeled Separately

Construction Off-road Equipment Mitigation - Water 2x daily based on AVAQMD regulations for dust control; not mitigation

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	250.00	150.00
tblArchitecturalCoating	EF_Nonresidential_Interior	250.00	50.00
tblAreaCoating	ReapplicationRatePercent	10	0
tblConstEquipMitigation	FuelType	Diesel	Electrical
tblConstEquipMitigation	FuelType	Diesel	Electrical
tblConstEquipMitigation	FuelType	Diesel	Electrical
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	7.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	PhaseEndDate	12/8/2022	11/14/2022
tblConstructionPhase	PhaseEndDate	11/24/2022	2/17/2022
tblConstructionPhase	PhaseStartDate	11/25/2022	11/1/2022
tblConstructionPhase	PhaseStartDate	11/11/2022	2/4/2022
tblConsumerProducts	ROG_EF	2.14E-05	0
tblConsumerProducts	ROG_EF_Degreaser	3.542E-07	0
tblConsumerProducts	ROG_EF_PesticidesFertilizers	5.152E-08	0
tblEnergyUse	LightingElect	2.59	0.00
tblEnergyUse	NT24E	1.59	0.00
tblEnergyUse	NT24NG	1.08	0.00
tblEnergyUse	T24E	1.56	0.00
tblEnergyUse	T24NG	9.23	0.00
tblLandscapeEquipment	NumberSummerDays	180	0
tblSolidWaste	SolidWasteGenerationRate	66.43	0.00
tblVehicleTrips	WD_TR	19.52	0.00
tblWater	IndoorWaterUseRate	1,481,742.47	0.00
tblWater	OutdoorWaterUseRate	3,810,194.92	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Palmdale GPU - School - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

					PM10	PM10	Total	PM2.5	PM2.5	Total						
Year	lb/day										lb/day					
2022	37.4707	19.7534	22.6959	0.0398	7.1647	0.9421	7.9076	3.4465	0.8948	4.1299	0.0000	3,737.9005	3,737.9005	0.7739	0.1279	3,766.8831
Maximum	**37.4707**	**19.7534**	**22.6959**	**0.0398**	**7.1647**	**0.9421**	**7.9076**	**3.4465**	**0.8948**	**4.1299**	**0.0000**	**3,737.9005**	**3,737.9005**	**0.7739**	**0.1279**	**3,766.8831**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2022	35.7430	3.1919	15.5918	0.0323	3.2693	0.0527	3.3035	1.5629	0.0520	1.5970	0.0000	3,213.1496	3,213.1496	0.6659	0.1279	3,267.1893
Maximum	**35.7430**	**3.1919**	**15.5918**	**0.0323**	**3.2693**	**0.0527**	**3.3035**	**1.5629**	**0.0520**	**1.5970**	**0.0000**	**3,213.1496**	**3,213.1496**	**0.6659**	**0.1279**	**3,267.1893**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**4.61**	**83.84**	**31.30**	**18.84**	**54.37**	**94.41**	**58.22**	**54.65**	**94.19**	**61.33**	**0.00**	**14.04**	**14.04**	**13.96**	**0.00**	**13.27**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	4.8000e-004	5.0000e-005	5.2200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0112	0.0112	3.0000e-005		0.0119
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total	**4.8000e-004**	**5.0000e-005**	**5.2200e-003**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**2.0000e-005**		**0.0112**	**0.0112**	**3.0000e-005**	**0.0000**	**0.0119**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	4.8000e-004	5.0000e-005	5.2200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0112	0.0112	3.0000e-005		0.0119
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total	**4.8000e-004**	**5.0000e-005**	**5.2200e-003**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**2.0000e-005**		**0.0112**	**0.0112**	**3.0000e-005**	**0.0000**	**0.0119**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2022	1/28/2022	5	20	
2	Grading	Grading	1/29/2022	2/3/2022	5	4	
3	Building Construction	Building Construction	2/4/2022	11/10/2022	5	200	
4	Paving	Paving	2/4/2022	2/17/2022	5	10	
5	Architectural Coating	Architectural Coating	11/1/2022	11/14/2022	5	10	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 4

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 76,653; Non-Residential Outdoor: 25,551; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Paving	Cement and Mortar Mixers	1	6.00	9	0.56
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Building Construction	Cranes	1	6.00	231	0.29
Building Construction	Forklifts	1	6.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Grading	Graders	1	8.00	187	0.41
Demolition	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Paving	Pavers	1	6.00	130	0.42
Paving	Paving Equipment	1	8.00	132	0.36
Paving	Rollers	1	7.00	80	0.38
Demolition	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Building Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Grading	Tractors/Loaders/Backhoes	2	7.00	97	0.37
Building Construction	Welders	3	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Architectural Coating	1	4.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	7	21.00	8.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Demolition	5	13.00	0.00	232.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	4	10.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	5	13.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Alternative Fuel for Construction Equipment

Use Cleaner Engines for Construction Equipment

Water Exposed Area

3.2 Demolition - 2022

Unmitigated Construction On-Site

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.5151	0.0000	2.5151	0.3808	0.0000	0.3808			0.0000			0.0000
Off-Road	1.6889	16.6217	13.9605	0.0241		0.8379	0.8379		0.7829	0.7829		2,323.4168	2,323.4168	0.5921		2,338.2191
Total	**1.6889**	**16.6217**	**13.9605**	**0.0241**	**2.5151**	**0.8379**	**3.3530**	**0.3808**	**0.7829**	**1.1637**		**2,323.4168**	**2,323.4168**	**0.5921**		**2,338.2191**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0540	1.9482	0.4543	7.2100e-003	0.2030	0.0145	0.2175	0.0557	0.0139	0.0695		789.6997	789.6997	0.0419	0.1253	828.0865
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0377	0.0258	0.3921	9.8000e-004	0.1068	7.0000e-004	0.1075	0.0283	6.5000e-004	0.0290		100.0331	100.0331	3.1000e-003	2.5900e-003	100.8837
Total	**0.0918**	**1.9740**	**0.8463**	**8.1900e-003**	**0.3098**	**0.0152**	**0.3250**	**0.0840**	**0.0145**	**0.0985**		**889.7328**	**889.7328**	**0.0450**	**0.1279**	**928.9702**

Palmdale GPU - School - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					1.1318	0.0000	1.1318	0.1714	0.0000	0.1714			0.0000			0.0000
Off-Road	0.2811	1.2179	14.7184	0.0241		0.0375	0.0375		0.0375	0.0375	0.0000	2,323.4168	2,323.4168	0.5921		2,338.2191
Total	**0.2811**	**1.2179**	**14.7184**	**0.0241**	**1.1318**	**0.0375**	**1.1693**	**0.1714**	**0.0375**	**0.2089**	**0.0000**	**2,323.4168**	**2,323.4168**	**0.5921**		**2,338.2191**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0540	1.9482	0.4543	7.2100e-003	0.2030	0.0145	0.2175	0.0557	0.0139	0.0695		789.6997	789.6997	0.0419	0.1253	828.0865
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0377	0.0258	0.3921	9.8000e-004	0.1068	7.0000e-004	0.1075	0.0283	6.5000e-004	0.0290		100.0331	100.0331	3.1000e-003	2.5900e-003	100.8837
Total	**0.0918**	**1.9740**	**0.8463**	**8.1900e-003**	**0.3098**	**0.0152**	**0.3250**	**0.0840**	**0.0145**	**0.0985**		**889.7328**	**889.7328**	**0.0450**	**0.1279**	**928.9702**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.3 Grading - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					7.0826	0.0000	7.0826	3.4247	0.0000	3.4247			0.0000			0.0000
Off-Road	1.5403	16.9836	9.2202	0.0206		0.7423	0.7423		0.6829	0.6829		1,995.4825	1,995.4825	0.6454		2,011.6169
Total	**1.5403**	**16.9836**	**9.2202**	**0.0206**	**7.0826**	**0.7423**	**7.8249**	**3.4247**	**0.6829**	**4.1076**		**1,995.4825**	**1,995.4825**	**0.6454**		**2,011.6169**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0290	0.0198	0.3016	7.6000e-004	0.0822	5.4000e-004	0.0827	0.0218	5.0000e-004	0.0223		76.9485	76.9485	2.3800e-003	2.0000e-003	77.6028
Total	**0.0290**	**0.0198**	**0.3016**	**7.6000e-004**	**0.0822**	**5.4000e-004**	**0.0827**	**0.0218**	**5.0000e-004**	**0.0223**		**76.9485**	**76.9485**	**2.3800e-003**	**2.0000e-003**	**77.6028**

Palmdale GPU - School - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					3.1872	0.0000	3.1872	1.5411	0.0000	1.5411			0.0000			0.0000
Off-Road	0.2522	1.0927	10.9071	0.0206		0.0336	0.0336		0.0336	0.0336	0.0000	1,995.4825	1,995.4825	0.6454		2,011.6169
Total	**0.2522**	**1.0927**	**10.9071**	**0.0206**	**3.1872**	**0.0336**	**3.2208**	**1.5411**	**0.0336**	**1.5748**	**0.0000**	**1,995.4825**	**1,995.4825**	**0.6454**		**2,011.6169**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0290	0.0198	0.3016	7.6000e-004	0.0822	5.4000e-004	0.0827	0.0218	5.0000e-004	0.0223		76.9485	76.9485	2.3800e-003	2.0000e-003	77.6028
Total	**0.0290**	**0.0198**	**0.3016**	**7.6000e-004**	**0.0822**	**5.4000e-004**	**0.0827**	**0.0218**	**5.0000e-004**	**0.0223**		**76.9485**	**76.9485**	**2.3800e-003**	**2.0000e-003**	**77.6028**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.4 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.6487	12.5031	12.7264	0.0221		0.5889	0.5889		0.5689	0.5689		2,001.5429	2,001.5429	0.3486		2,010.2581
Total	**1.6487**	**12.5031**	**12.7264**	**0.0221**		**0.5889**	**0.5889**		**0.5689**	**0.5689**		**2,001.5429**	**2,001.5429**	**0.3486**		**2,010.2581**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0163	0.4092	0.1381	1.6500e-003	0.0542	3.9400e-003	0.0581	0.0156	3.7700e-003	0.0194		177.3539	177.3539	5.9300e-003	0.0256	185.1145
Worker	0.0609	0.0416	0.6333	1.5900e-003	0.1725	1.1300e-003	0.1736	0.0458	1.0400e-003	0.0468		161.5919	161.5919	5.0100e-003	4.1900e-003	162.9660
Total	**0.0773**	**0.4509**	**0.7714**	**3.2400e-003**	**0.2267**	**5.0700e-003**	**0.2318**	**0.0614**	**4.8100e-003**	**0.0662**		**338.9458**	**338.9458**	**0.0109**	**0.0297**	**348.0805**

Palmdale GPU - School - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.0958	0.4150	4.5772	7.8100e-003		0.0128	0.0128		0.0128	0.0128	0.0000	756.0751	756.0751	0.2445		762.1884
Total	**0.0958**	**0.4150**	**4.5772**	**7.8100e-003**		**0.0128**	**0.0128**		**0.0128**	**0.0128**	**0.0000**	**756.0751**	**756.0751**	**0.2445**		**762.1884**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0163	0.4092	0.1381	1.6500e-003	0.0542	3.9400e-003	0.0581	0.0156	3.7700e-003	0.0194		177.3539	177.3539	5.9300e-003	0.0256	185.1145
Worker	0.0609	0.0416	0.6333	1.5900e-003	0.1725	1.1300e-003	0.1736	0.0458	1.0400e-003	0.0468		161.5919	161.5919	5.0100e-003	4.1900e-003	162.9660
Total	**0.0773**	**0.4509**	**0.7714**	**3.2400e-003**	**0.2267**	**5.0700e-003**	**0.2318**	**0.0614**	**4.8100e-003**	**0.0662**		**338.9458**	**338.9458**	**0.0109**	**0.0297**	**348.0805**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.5 Paving - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.6877	6.7738	8.8060	0.0135		0.3474	0.3474		0.3205	0.3205		1,297.3789	1,297.3789	0.4113		1,307.6608
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.6877**	**6.7738**	**8.8060**	**0.0135**		**0.3474**	**0.3474**		**0.3205**	**0.3205**		**1,297.3789**	**1,297.3789**	**0.4113**		**1,307.6608**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0377	0.0258	0.3921	9.8000e-004	0.1068	7.0000e-004	0.1075	0.0283	6.5000e-004	0.0290		100.0331	100.0331	3.1000e-003	2.5900e-003	100.8837
Total	**0.0377**	**0.0258**	**0.3921**	**9.8000e-004**	**0.1068**	**7.0000e-004**	**0.1075**	**0.0283**	**6.5000e-004**	**0.0290**		**100.0331**	**100.0331**	**3.1000e-003**	**2.5900e-003**	**100.8837**

Palmdale GPU - School - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.1598	0.6922	9.8512	0.0130		0.0213	0.0213		0.0213	0.0213	0.0000	1,259.4916	1,259.4916	0.4074		1,269.6753
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.1598**	**0.6922**	**9.8512**	**0.0130**		**0.0213**	**0.0213**		**0.0213**	**0.0213**	**0.0000**	**1,259.4916**	**1,259.4916**	**0.4074**		**1,269.6753**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0377	0.0258	0.3921	9.8000e-004	0.1068	7.0000e-004	0.1075	0.0283	6.5000e-004	0.0290		100.0331	100.0331	3.1000e-003	2.5900e-003	100.8837
Total	**0.0377**	**0.0258**	**0.3921**	**9.8000e-004**	**0.1068**	**7.0000e-004**	**0.1075**	**0.0283**	**6.5000e-004**	**0.0290**		**100.0331**	**100.0331**	**3.1000e-003**	**2.5900e-003**	**100.8837**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.6 Architectural Coating - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	35.5287					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817		281.4481	281.4481	0.0183		281.9062
Total	**35.7332**	**1.4085**	**1.8136**	**2.9700e-003**		**0.0817**	**0.0817**		**0.0817**	**0.0817**		**281.4481**	**281.4481**	**0.0183**		**281.9062**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0116	7.9300e-003	0.1206	3.0000e-004	0.0329	2.2000e-004	0.0331	8.7200e-003	2.0000e-004	8.9100e-003		30.7794	30.7794	9.5000e-004	8.0000e-004	31.0411
Total	**0.0116**	**7.9300e-003**	**0.1206**	**3.0000e-004**	**0.0329**	**2.2000e-004**	**0.0331**	**8.7200e-003**	**2.0000e-004**	**8.9100e-003**		**30.7794**	**30.7794**	**9.5000e-004**	**8.0000e-004**	**31.0411**

Palmdale GPU - School - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	35.5287					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.0297	0.1288	1.8324	2.9700e-003		3.9600e-003	3.9600e-003		3.9600e-003	3.9600e-003	0.0000	281.4481	281.4481	0.0183		281.9062
Total	**35.5584**	**0.1288**	**1.8324**	**2.9700e-003**		**3.9600e-003**	**3.9600e-003**		**3.9600e-003**	**3.9600e-003**	**0.0000**	**281.4481**	**281.4481**	**0.0183**		**281.9062**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0116	7.9300e-003	0.1206	3.0000e-004	0.0329	2.2000e-004	0.0331	8.7200e-003	2.0000e-004	8.9100e-003		30.7794	30.7794	9.5000e-004	8.0000e-004	31.0411
Total	**0.0116**	**7.9300e-003**	**0.1206**	**3.0000e-004**	**0.0329**	**2.2000e-004**	**0.0331**	**8.7200e-003**	**2.0000e-004**	**8.9100e-003**		**30.7794**	**30.7794**	**9.5000e-004**	**8.0000e-004**	**31.0411**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Elementary School	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Elementary School	9.50	7.30	7.30	65.00	30.00	5.00	63	25	12

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Elementary School	0.544785	0.062844	0.187478	0.127235	0.023089	0.006083	0.010475	0.008012	0.000925	0.000611	0.024394	0.000698	0.003374

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Elementary School	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Elementary School	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	4.8000e-004	5.0000e-005	5.2200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0112	0.0112	3.0000e-005		0.0119
Unmitigated	4.8000e-004	5.0000e-005	5.2200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0112	0.0112	3.0000e-005		0.0119

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	4.8000e-004	5.0000e-005	5.2200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0112	0.0112	3.0000e-005		0.0119
Total	**4.8000e-004**	**5.0000e-005**	**5.2200e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**		**0.0112**	**0.0112**	**3.0000e-005**		**0.0119**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	4.8000e-004	5.0000e-005	5.2200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0112	0.0112	3.0000e-005		0.0119
Total	**4.8000e-004**	**5.0000e-005**	**5.2200e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**		**0.0112**	**0.0112**	**3.0000e-005**		**0.0119**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Palmdale GPU - School - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Palmdale GPU - School

Los Angeles-Mojave Desert County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Elementary School	51.10	1000sqft	1.17	51,102.00	0

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	9			**Operational Year**	2023
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	390.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics - See Assumptions

Land Use - See Assumptions

Construction Phase - See Assumptions

Grading -

Demolition -

Architectural Coating - Based on AVAQMD requirements for VOC content

Vehicle Trips - Operational Emissions Modeled Separately

Consumer Products - Operational Emissions Modeled Separately

Area Coating - Operational Emissions Modeled Separately

Landscape Equipment - Operational Emissions Modeled Separately

Energy Use - Operational Emissions Modeled Separately

Water And Wastewater - Operational Emissions Modeled Separately

Palmdale GPU - School - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Solid Waste - Operational Emissions Modeled Separately

Construction Off-road Equipment Mitigation - Water 2x daily based on AVAQMD regulations for dust control; not mitigation

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	250.00	150.00
tblArchitecturalCoating	EF_Nonresidential_Interior	250.00	50.00
tblAreaCoating	ReapplicationRatePercent	10	0
tblConstEquipMitigation	FuelType	Diesel	Electrical
tblConstEquipMitigation	FuelType	Diesel	Electrical
tblConstEquipMitigation	FuelType	Diesel	Electrical
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	7.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	PhaseEndDate	12/8/2022	11/14/2022
tblConstructionPhase	PhaseEndDate	11/24/2022	2/17/2022
tblConstructionPhase	PhaseStartDate	11/25/2022	11/1/2022
tblConstructionPhase	PhaseStartDate	11/11/2022	2/4/2022
tblConsumerProducts	ROG_EF	2.14E-05	0
tblConsumerProducts	ROG_EF_Degreaser	3.542E-07	0
tblConsumerProducts	ROG_EF_PesticidesFertilizers	5.152E-08	0
tblEnergyUse	LightingElect	2.59	0.00
tblEnergyUse	NT24E	1.59	0.00
tblEnergyUse	NT24NG	1.08	0.00
tblEnergyUse	T24E	1.56	0.00
tblEnergyUse	T24NG	9.23	0.00
tblLandscapeEquipment	NumberSummerDays	180	0
tblSolidWaste	SolidWasteGenerationRate	66.43	0.00
tblVehicleTrips	WD_TR	19.52	0.00
tblWater	IndoorWaterUseRate	1,481,742.47	0.00
tblWater	OutdoorWaterUseRate	3,810,194.92	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Palmdale GPU - School - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

					PM10	PM10	Total	PM2.5	PM2.5	Total						
Year	lb/day										lb/day					
2022	37.4746	19.7773	22.6279	0.0397	7.1647	0.9421	7.9076	3.4465	0.8948	4.1299	0.0000	3,724.2085	3,724.2085	0.7741	0.1281	3,753.3443
Maximum	**37.4746**	**19.7773**	**22.6279**	**0.0397**	**7.1647**	**0.9421**	**7.9076**	**3.4465**	**0.8948**	**4.1299**	**0.0000**	**3,724.2085**	**3,724.2085**	**0.7741**	**0.1281**	**3,753.3443**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2022	35.7469	3.2737	15.5449	0.0323	3.2693	0.0527	3.3035	1.5629	0.0520	1.5970	0.0000	3,208.1217	3,208.1217	0.6661	0.1281	3,262.2269
Maximum	**35.7469**	**3.2737**	**15.5449**	**0.0323**	**3.2693**	**0.0527**	**3.3035**	**1.5629**	**0.0520**	**1.5970**	**0.0000**	**3,208.1217**	**3,208.1217**	**0.6661**	**0.1281**	**3,262.2269**

	ROG	**NOx**	**CO**	**SO2**	**Fugitive PM10**	**Exhaust PM10**	**PM10 Total**	**Fugitive PM2.5**	**Exhaust PM2.5**	**PM2.5 Total**	**Bio- CO2**	**NBio-CO2**	**Total CO2**	**CH4**	**N20**	**CO2e**
Percent Reduction	**4.61**	**83.45**	**31.30**	**18.68**	**54.37**	**94.41**	**58.22**	**54.65**	**94.19**	**61.33**	**0.00**	**13.86**	**13.86**	**13.95**	**0.00**	**13.08**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	4.8000e-004	5.0000e-005	5.2200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0112	0.0112	3.0000e-005		0.0119
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total	**4.8000e-004**	**5.0000e-005**	**5.2200e-003**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**2.0000e-005**		**0.0112**	**0.0112**	**3.0000e-005**	**0.0000**	**0.0119**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	4.8000e-004	5.0000e-005	5.2200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0112	0.0112	3.0000e-005		0.0119
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total	**4.8000e-004**	**5.0000e-005**	**5.2200e-003**	**0.0000**	**0.0000**	**2.0000e-005**	**2.0000e-005**	**0.0000**	**2.0000e-005**	**2.0000e-005**		**0.0112**	**0.0112**	**3.0000e-005**	**0.0000**	**0.0119**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2022	1/28/2022	5	20	
2	Grading	Grading	1/29/2022	2/3/2022	5	4	
3	Building Construction	Building Construction	2/4/2022	11/10/2022	5	200	
4	Paving	Paving	2/4/2022	2/17/2022	5	10	
5	Architectural Coating	Architectural Coating	11/1/2022	11/14/2022	5	10	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 4

Acres of Paving: 0

Residential Indoor: 0; Residential Outdoor: 0; Non-Residential Indoor: 76,653; Non-Residential Outdoor: 25,551; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Paving	Cement and Mortar Mixers	1	6.00	9	0.56
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Building Construction	Cranes	1	6.00	231	0.29
Building Construction	Forklifts	1	6.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Grading	Graders	1	8.00	187	0.41
Demolition	Tractors/Loaders/Backhoes	3	8.00	97	0.37
Paving	Pavers	1	6.00	130	0.42
Paving	Paving Equipment	1	8.00	132	0.36
Paving	Rollers	1	7.00	80	0.38
Demolition	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Paving	Tractors/Loaders/Backhoes	1	8.00	97	0.37
Building Construction	Tractors/Loaders/Backhoes	1	6.00	97	0.37
Grading	Tractors/Loaders/Backhoes	2	7.00	97	0.37
Building Construction	Welders	3	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Architectural Coating	1	4.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	7	21.00	8.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Demolition	5	13.00	0.00	232.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	4	10.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	5	13.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Alternative Fuel for Construction Equipment

Use Cleaner Engines for Construction Equipment

Water Exposed Area

3.2 Demolition - 2022

Unmitigated Construction On-Site

Palmdale GPU - School - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					2.5151	0.0000	2.5151	0.3808	0.0000	0.3808			0.0000			0.0000
Off-Road	1.6889	16.6217	13.9605	0.0241		0.8379	0.8379		0.7829	0.7829		2,323.4168	2,323.4168	0.5921		2,338.2191
Total	**1.6889**	**16.6217**	**13.9605**	**0.0241**	**2.5151**	**0.8379**	**3.3530**	**0.3808**	**0.7829**	**1.1637**		**2,323.4168**	**2,323.4168**	**0.5921**		**2,338.2191**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0528	2.0273	0.4622	7.2100e-003	0.2030	0.0145	0.2176	0.0557	0.0139	0.0695		789.9312	789.9312	0.0419	0.1253	828.3285
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0398	0.0285	0.3643	9.3000e-004	0.1068	7.0000e-004	0.1075	0.0283	6.5000e-004	0.0290		94.7737	94.7737	3.1900e-003	2.7700e-003	95.6794
Total	**0.0926**	**2.0557**	**0.8265**	**8.1400e-003**	**0.3098**	**0.0152**	**0.3250**	**0.0840**	**0.0145**	**0.0985**		**884.7049**	**884.7049**	**0.0451**	**0.1281**	**924.0079**

Palmdale GPU - School - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					1.1318	0.0000	1.1318	0.1714	0.0000	0.1714			0.0000			0.0000
Off-Road	0.2811	1.2179	14.7184	0.0241		0.0375	0.0375		0.0375	0.0375	0.0000	2,323.4168	2,323.4168	0.5921		2,338.2191
Total	**0.2811**	**1.2179**	**14.7184**	**0.0241**	**1.1318**	**0.0375**	**1.1693**	**0.1714**	**0.0375**	**0.2089**	**0.0000**	**2,323.4168**	**2,323.4168**	**0.5921**		**2,338.2191**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0528	2.0273	0.4622	7.2100e-003	0.2030	0.0145	0.2176	0.0557	0.0139	0.0695		789.9312	789.9312	0.0419	0.1253	828.3285
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0398	0.0285	0.3643	9.3000e-004	0.1068	7.0000e-004	0.1075	0.0283	6.5000e-004	0.0290		94.7737	94.7737	3.1900e-003	2.7700e-003	95.6794
Total	**0.0926**	**2.0557**	**0.8265**	**8.1400e-003**	**0.3098**	**0.0152**	**0.3250**	**0.0840**	**0.0145**	**0.0985**		**884.7049**	**884.7049**	**0.0451**	**0.1281**	**924.0079**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.3 Grading - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					7.0826	0.0000	7.0826	3.4247	0.0000	3.4247			0.0000			0.0000
Off-Road	1.5403	16.9836	9.2202	0.0206		0.7423	0.7423		0.6829	0.6829		1,995.4825	1,995.4825	0.6454		2,011.6169
Total	**1.5403**	**16.9836**	**9.2202**	**0.0206**	**7.0826**	**0.7423**	**7.8249**	**3.4247**	**0.6829**	**4.1076**		**1,995.4825**	**1,995.4825**	**0.6454**		**2,011.6169**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0306	0.0219	0.2802	7.2000e-004	0.0822	5.4000e-004	0.0827	0.0218	5.0000e-004	0.0223		72.9029	72.9029	2.4500e-003	2.1300e-003	73.5996
Total	**0.0306**	**0.0219**	**0.2802**	**7.2000e-004**	**0.0822**	**5.4000e-004**	**0.0827**	**0.0218**	**5.0000e-004**	**0.0223**		**72.9029**	**72.9029**	**2.4500e-003**	**2.1300e-003**	**73.5996**

Palmdale GPU - School - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					3.1872	0.0000	3.1872	1.5411	0.0000	1.5411			0.0000			0.0000
Off-Road	0.2522	1.0927	10.9071	0.0206		0.0336	0.0336		0.0336	0.0336	0.0000	1,995.4825	1,995.4825	0.6454		2,011.6169
Total	**0.2522**	**1.0927**	**10.9071**	**0.0206**	**3.1872**	**0.0336**	**3.2208**	**1.5411**	**0.0336**	**1.5748**	**0.0000**	**1,995.4825**	**1,995.4825**	**0.6454**		**2,011.6169**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0306	0.0219	0.2802	7.2000e-004	0.0822	5.4000e-004	0.0827	0.0218	5.0000e-004	0.0223		72.9029	72.9029	2.4500e-003	2.1300e-003	73.5996
Total	**0.0306**	**0.0219**	**0.2802**	**7.2000e-004**	**0.0822**	**5.4000e-004**	**0.0827**	**0.0218**	**5.0000e-004**	**0.0223**		**72.9029**	**72.9029**	**2.4500e-003**	**2.1300e-003**	**73.5996**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.4 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.6487	12.5031	12.7264	0.0221		0.5889	0.5889		0.5689	0.5689		2,001.5429	2,001.5429	0.3486		2,010.2581
Total	**1.6487**	**12.5031**	**12.7264**	**0.0221**		**0.5889**	**0.5889**		**0.5689**	**0.5689**		**2,001.5429**	**2,001.5429**	**0.3486**		**2,010.2581**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0162	0.4261	0.1427	1.6500e-003	0.0542	3.9600e-003	0.0582	0.0156	3.7900e-003	0.0194		177.4171	177.4171	5.9100e-003	0.0256	185.1869
Worker	0.0643	0.0460	0.5885	1.5000e-003	0.1725	1.1300e-003	0.1736	0.0458	1.0400e-003	0.0468		153.0960	153.0960	5.1500e-003	4.4800e-003	154.5590
Total	**0.0805**	**0.4720**	**0.7312**	**3.1500e-003**	**0.2267**	**5.0900e-003**	**0.2318**	**0.0614**	**4.8300e-003**	**0.0662**		**330.5131**	**330.5131**	**0.0111**	**0.0301**	**339.7460**

Palmdale GPU - School - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.0958	0.4150	4.5772	7.8100e-003		0.0128	0.0128		0.0128	0.0128	0.0000	756.0751	756.0751	0.2445		762.1884
Total	**0.0958**	**0.4150**	**4.5772**	**7.8100e-003**		**0.0128**	**0.0128**		**0.0128**	**0.0128**	**0.0000**	**756.0751**	**756.0751**	**0.2445**		**762.1884**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0162	0.4261	0.1427	1.6500e-003	0.0542	3.9600e-003	0.0582	0.0156	3.7900e-003	0.0194		177.4171	177.4171	5.9100e-003	0.0256	185.1869
Worker	0.0643	0.0460	0.5885	1.5000e-003	0.1725	1.1300e-003	0.1736	0.0458	1.0400e-003	0.0468		153.0960	153.0960	5.1500e-003	4.4800e-003	154.5590
Total	**0.0805**	**0.4720**	**0.7312**	**3.1500e-003**	**0.2267**	**5.0900e-003**	**0.2318**	**0.0614**	**4.8300e-003**	**0.0662**		**330.5131**	**330.5131**	**0.0111**	**0.0301**	**339.7460**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.5 Paving - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.6877	6.7738	8.8060	0.0135		0.3474	0.3474		0.3205	0.3205		1,297.3789	1,297.3789	0.4113		1,307.6608
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.6877**	**6.7738**	**8.8060**	**0.0135**		**0.3474**	**0.3474**		**0.3205**	**0.3205**		**1,297.3789**	**1,297.3789**	**0.4113**		**1,307.6608**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0398	0.0285	0.3643	9.3000e-004	0.1068	7.0000e-004	0.1075	0.0283	6.5000e-004	0.0290		94.7737	94.7737	3.1900e-003	2.7700e-003	95.6794
Total	**0.0398**	**0.0285**	**0.3643**	**9.3000e-004**	**0.1068**	**7.0000e-004**	**0.1075**	**0.0283**	**6.5000e-004**	**0.0290**		**94.7737**	**94.7737**	**3.1900e-003**	**2.7700e-003**	**95.6794**

Palmdale GPU - School - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.1598	0.6922	9.8512	0.0130		0.0213	0.0213		0.0213	0.0213	0.0000	1,259.4916	1,259.4916	0.4074		1,269.6753
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.1598**	**0.6922**	**9.8512**	**0.0130**		**0.0213**	**0.0213**		**0.0213**	**0.0213**	**0.0000**	**1,259.4916**	**1,259.4916**	**0.4074**		**1,269.6753**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0398	0.0285	0.3643	9.3000e-004	0.1068	7.0000e-004	0.1075	0.0283	6.5000e-004	0.0290		94.7737	94.7737	3.1900e-003	2.7700e-003	95.6794
Total	**0.0398**	**0.0285**	**0.3643**	**9.3000e-004**	**0.1068**	**7.0000e-004**	**0.1075**	**0.0283**	**6.5000e-004**	**0.0290**		**94.7737**	**94.7737**	**3.1900e-003**	**2.7700e-003**	**95.6794**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.6 Architectural Coating - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	35.5287					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817		281.4481	281.4481	0.0183		281.9062
Total	**35.7332**	**1.4085**	**1.8136**	**2.9700e-003**		**0.0817**	**0.0817**		**0.0817**	**0.0817**		**281.4481**	**281.4481**	**0.0183**		**281.9062**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0123	8.7600e-003	0.1121	2.9000e-004	0.0329	2.2000e-004	0.0331	8.7200e-003	2.0000e-004	8.9100e-003		29.1611	29.1611	9.8000e-004	8.5000e-004	29.4398
Total	**0.0123**	**8.7600e-003**	**0.1121**	**2.9000e-004**	**0.0329**	**2.2000e-004**	**0.0331**	**8.7200e-003**	**2.0000e-004**	**8.9100e-003**		**29.1611**	**29.1611**	**9.8000e-004**	**8.5000e-004**	**29.4398**

Palmdale GPU - School - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	35.5287					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.0297	0.1288	1.8324	2.9700e-003		3.9600e-003	3.9600e-003		3.9600e-003	3.9600e-003	0.0000	281.4481	281.4481	0.0183		281.9062
Total	**35.5584**	**0.1288**	**1.8324**	**2.9700e-003**		**3.9600e-003**	**3.9600e-003**		**3.9600e-003**	**3.9600e-003**	**0.0000**	**281.4481**	**281.4481**	**0.0183**		**281.9062**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0123	8.7600e-003	0.1121	2.9000e-004	0.0329	2.2000e-004	0.0331	8.7200e-003	2.0000e-004	8.9100e-003		29.1611	29.1611	9.8000e-004	8.5000e-004	29.4398
Total	**0.0123**	**8.7600e-003**	**0.1121**	**2.9000e-004**	**0.0329**	**2.2000e-004**	**0.0331**	**8.7200e-003**	**2.0000e-004**	**8.9100e-003**		**29.1611**	**29.1611**	**9.8000e-004**	**8.5000e-004**	**29.4398**

Palmdale GPU - School - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Elementary School	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Elementary School	9.50	7.30	7.30	65.00	30.00	5.00	63	25	12

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Elementary School	0.544785	0.062844	0.187478	0.127235	0.023089	0.006083	0.010475	0.008012	0.000925	0.000611	0.024394	0.000698	0.003374

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Elementary School	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Elementary School	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	4.8000e-004	5.0000e-005	5.2200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0112	0.0112	3.0000e-005		0.0119
Unmitigated	4.8000e-004	5.0000e-005	5.2200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0112	0.0112	3.0000e-005		0.0119

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	4.8000e-004	5.0000e-005	5.2200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0112	0.0112	3.0000e-005		0.0119
Total	**4.8000e-004**	**5.0000e-005**	**5.2200e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**		**0.0112**	**0.0112**	**3.0000e-005**		**0.0119**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Landscaping	4.8000e-004	5.0000e-005	5.2200e-003	0.0000		2.0000e-005	2.0000e-005		2.0000e-005	2.0000e-005		0.0112	0.0112	3.0000e-005		0.0119
Total	**4.8000e-004**	**5.0000e-005**	**5.2200e-003**	**0.0000**		**2.0000e-005**	**2.0000e-005**		**2.0000e-005**	**2.0000e-005**		**0.0112**	**0.0112**	**3.0000e-005**		**0.0119**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Palmdale GPU - School - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Palmdale GPU - SFR Annual Construction - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Palmdale GPU - SFR Annual Construction

Los Angeles-Mojave Desert County, Annual

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	56.00	Dwelling Unit	18.18	100,800.00	193

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	9			**Operational Year**	2023
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	390.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics - See Assumptions

Land Use - See Assumptions

Construction Phase - See Assumptions

Grading -

Demolition - See Assumptions

Architectural Coating - See Assumptions

Vehicle Trips - Operational modeled separately

Woodstoves - Operational modeled separately

Consumer Products - Operational modeled separately

Area Coating - Operational modeled separately

Landscape Equipment - Operational modeled separately

Energy Use - Operational modeled separately

Palmdale GPU - SFR Annual Construction - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Water And Wastewater - Operational modeled separately

Solid Waste - Operational modeled separately

Construction Off-road Equipment Mitigation - 2x per day watering exposed area based on AVAQMD regulations for dust suppression and is not mitigated scenario.

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	250.00	150.00
tblArchitecturalCoating	EF_Nonresidential_Interior	250.00	50.00
tblArchitecturalCoating	EF_Residential_Exterior	250.00	150.00
tblArchitecturalCoating	EF_Residential_Interior	250.00	50.00
tblAreaCoating	ReapplicationRatePercent	10	0
tblConstEquipMitigation	FuelType	Diesel	Electrical
tblConstEquipMitigation	FuelType	Diesel	Electrical
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	5.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	5.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final

Palmdale GPU - SFR Annual Construction - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	NumDays	300.00	223.00
tblConstructionPhase	NumDays	20.00	15.00
tblConstructionPhase	NumDays	30.00	22.00
tblConstructionPhase	NumDays	20.00	10.00
tblConstructionPhase	PhaseEndDate	7/14/2023	12/30/2022
tblConstructionPhase	PhaseEndDate	5/19/2023	12/30/2022
tblConstructionPhase	PhaseEndDate	1/28/2022	1/21/2022
tblConstructionPhase	PhaseEndDate	3/25/2022	2/22/2022
tblConstructionPhase	PhaseEndDate	6/16/2023	3/8/2022
tblConstructionPhase	PhaseStartDate	6/17/2023	12/5/2022
tblConstructionPhase	PhaseStartDate	3/26/2022	2/23/2022
tblConstructionPhase	PhaseStartDate	2/12/2022	1/22/2022
tblConstructionPhase	PhaseStartDate	5/20/2023	2/23/2022
tblConsumerProducts	ROG_EF	2.14E-05	0
tblConsumerProducts	ROG_EF_Degreaser	3.542E-07	0
tblConsumerProducts	ROG_EF_PesticidesFertilizers	5.152E-08	0
tblEnergyUse	LightingElect	1,608.84	0.00
tblEnergyUse	NT24E	6,155.97	0.00

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

tblEnergyUse	NT24NG	6,384.00	0.00
tblEnergyUse	T24E	93.13	0.00
tblEnergyUse	T24NG	19,108.08	0.00
tblFireplaces	FireplaceDayYear	82.00	0.00
tblFireplaces	FireplaceHourDay	3.00	0.00
tblFireplaces	FireplaceWoodMass	3,078.40	0.00
tblFireplaces	NumberGas	30.80	0.00
tblFireplaces	NumberNoFireplace	5.60	0.00
tblFireplaces	NumberWood	19.60	0.00
tblLandscapeEquipment	NumberSummerDays	180	0
tblLandUse	Population	160.00	193.00
tblSolidWaste	SolidWasteGenerationRate	79.13	0.00
tblVehicleTrips	ST_TR	9.54	0.00
tblVehicleTrips	SU_TR	8.55	0.00
tblVehicleTrips	WD_TR	9.44	0.00
tblWater	IndoorWaterUseRate	3,648,625.43	0.00
tblWater	OutdoorWaterUseRate	2,300,220.38	0.00
tblWoodstoves	NumberCatalytic	2.80	0.00
tblWoodstoves	NumberNoncatalytic	2.80	0.00
tblWoodstoves	WoodstoveDayYear	82.00	0.00
tblWoodstoves	WoodstoveWoodMass	3,019.20	0.00

2.0 Emissions Summary

2.1 Overall Construction

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Palmdale GPU - SFR Annual Construction - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

					PM10	PM10	Total	PM2.5	PM2.5	Total						
Year	tons/yr										MT/yr					
2022	0.7397	2.4802	2.4796	4.4800e-003	0.1368	0.1217	0.2585	0.0487	0.1140	0.1628	0.0000	390.3820	390.3820	0.0930	2.8700e-003	393.5624
Maximum	**0.7397**	**2.4802**	**2.4796**	**4.4800e-003**	**0.1368**	**0.1217**	**0.2585**	**0.0487**	**0.1140**	**0.1628**	**0.0000**	**390.3820**	**390.3820**	**0.0930**	**2.8700e-003**	**393.5624**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	tons/yr										MT/yr					
2022	0.5201	0.2133	2.0601	3.4600e-003	0.0763	5.5800e-003	0.0819	0.0259	5.5500e-003	0.0315	0.0000	306.3745	306.3745	0.0875	2.8700e-003	309.4172
Maximum	**0.5201**	**0.2133**	**2.0601**	**3.4600e-003**	**0.0763**	**5.5800e-003**	**0.0819**	**0.0259**	**5.5500e-003**	**0.0315**	**0.0000**	**306.3745**	**306.3745**	**0.0875**	**2.8700e-003**	**309.4172**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**29.69**	**91.40**	**16.92**	**22.77**	**44.26**	**95.41**	**68.34**	**46.86**	**95.13**	**80.68**	**0.00**	**21.52**	**21.52**	**5.91**	**0.00**	**21.38**

Quarter	Start Date	End Date	Maximum Unmitigated ROG + NOX (tons/quarter)	Maximum Mitigated ROG + NOX (tons/quarter)

Palmdale GPU - SFR Annual Construction - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

1	**1-1-2022**	**3-31-2022**	1.0034	0.1031
2	**4-1-2022**	**6-30-2022**	0.5765	0.0514
3	**7-1-2022**	**9-30-2022**	0.5828	0.0519
		Highest	1.0034	0.1031

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Palmdale GPU - SFR Annual Construction - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Area	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Waste						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Water						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2022	1/21/2022	5	15	
2	Grading	Grading	1/22/2022	2/22/2022	5	22	
3	Building Construction	Building Construction	2/23/2022	12/30/2022	5	223	

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

4	Paving	Paving	2/23/2022	3/8/2022	5	10	
5	Architectural Coating	Architectural Coating	12/5/2022	12/30/2022	5	20	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 66

Acres of Paving: 0

Residential Indoor: 204,120; Residential Outdoor: 68,040; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Building Construction	Cranes	1	7.00	231	0.29
Demolition	Excavators	3	8.00	158	0.38
Grading	Excavators	2	8.00	158	0.38
Building Construction	Forklifts	3	8.00	89	0.20
Building Construction	Generator Sets	1	8.00	84	0.74
Grading	Graders	1	8.00	187	0.41
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45

Palmdale GPU - SFR Annual Construction - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	6	15.00	0.00	82.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	20.00	6.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	4.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Alternative Fuel for Construction Equipment

Use Cleaner Engines for Construction Equipment

Water Exposed Area

3.2 Demolition - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					8.8600e-003	0.0000	8.8600e-003	1.3400e-003	0.0000	1.3400e-003	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0198	0.1929	0.1545	2.9000e-004		9.3200e-003	9.3200e-003		8.6600e-003	8.6600e-003	0.0000	25.4927	25.4927	7.1600e-003	0.0000	25.6717
Total	**0.0198**	**0.1929**	**0.1545**	**2.9000e-004**	**8.8600e-003**	**9.3200e-003**	**0.0182**	**1.3400e-003**	**8.6600e-003**	**1.0000e-002**	**0.0000**	**25.4927**	**25.4927**	**7.1600e-003**	**0.0000**	**25.6717**

Palmdale GPU - SFR Annual Construction - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.9000e-004	7.2500e-003	1.6200e-003	3.0000e-005	7.1000e-004	5.0000e-005	7.6000e-004	1.9000e-004	5.0000e-005	2.4000e-004	0.0000	2.5324	2.5324	1.3000e-004	4.0000e-004	2.6555
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.2000e-004	2.5000e-004	3.2300e-003	1.0000e-005	9.1000e-004	1.0000e-005	9.1000e-004	2.4000e-004	1.0000e-005	2.5000e-004	0.0000	0.7551	0.7551	2.0000e-005	2.0000e-005	0.7623
Total	**5.1000e-004**	**7.5000e-003**	**4.8500e-003**	**4.0000e-005**	**1.6200e-003**	**6.0000e-005**	**1.6700e-003**	**4.3000e-004**	**6.0000e-005**	**4.9000e-004**	**0.0000**	**3.2875**	**3.2875**	**1.5000e-004**	**4.2000e-004**	**3.4178**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					3.9900e-003	0.0000	3.9900e-003	6.0000e-004	0.0000	6.0000e-004	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.4700e-003	0.0150	0.1746	2.9000e-004		4.6000e-004	4.6000e-004		4.6000e-004	4.6000e-004	0.0000	25.4926	25.4926	7.1600e-003	0.0000	25.6717
Total	**3.4700e-003**	**0.0150**	**0.1746**	**2.9000e-004**	**3.9900e-003**	**4.6000e-004**	**4.4500e-003**	**6.0000e-004**	**4.6000e-004**	**1.0600e-003**	**0.0000**	**25.4926**	**25.4926**	**7.1600e-003**	**0.0000**	**25.6717**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	1.9000e-004	7.2500e-003	1.6200e-003	3.0000e-005	7.1000e-004	5.0000e-005	7.6000e-004	1.9000e-004	5.0000e-005	2.4000e-004	0.0000	2.5324	2.5324	1.3000e-004	4.0000e-004	2.6555
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	3.2000e-004	2.5000e-004	3.2300e-003	1.0000e-005	9.1000e-004	1.0000e-005	9.1000e-004	2.4000e-004	1.0000e-005	2.5000e-004	0.0000	0.7551	0.7551	2.0000e-005	2.0000e-005	0.7623
Total	**5.1000e-004**	**7.5000e-003**	**4.8500e-003**	**4.0000e-005**	**1.6200e-003**	**6.0000e-005**	**1.6700e-003**	**4.3000e-004**	**6.0000e-005**	**4.9000e-004**	**0.0000**	**3.2875**	**3.2875**	**1.5000e-004**	**4.2000e-004**	**3.4178**

3.3 Grading - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.1012	0.0000	0.1012	0.0402	0.0000	0.0402	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	0.0399	0.4273	0.3195	6.8000e-004		0.0180	0.0180		0.0166	0.0166	0.0000	59.9881	59.9881	0.0194	0.0000	60.4731
Total	**0.0399**	**0.4273**	**0.3195**	**6.8000e-004**	**0.1012**	**0.0180**	**0.1192**	**0.0402**	**0.0166**	**0.0567**	**0.0000**	**59.9881**	**59.9881**	**0.0194**	**0.0000**	**60.4731**

Palmdale GPU - SFR Annual Construction - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.3000e-004	4.9000e-004	6.3100e-003	2.0000e-005	1.7700e-003	1.0000e-005	1.7800e-003	4.7000e-004	1.0000e-005	4.8000e-004	0.0000	1.4767	1.4767	5.0000e-005	4.0000e-005	1.4907
Total	**6.3000e-004**	**4.9000e-004**	**6.3100e-003**	**2.0000e-005**	**1.7700e-003**	**1.0000e-005**	**1.7800e-003**	**4.7000e-004**	**1.0000e-005**	**4.8000e-004**	**0.0000**	**1.4767**	**1.4767**	**5.0000e-005**	**4.0000e-005**	**1.4907**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Fugitive Dust					0.0456	0.0000	0.0456	0.0181	0.0000	0.0181	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	8.3800e-003	0.0363	0.3630	6.8000e-004		1.1200e-003	1.1200e-003		1.1200e-003	1.1200e-003	0.0000	59.9880	59.9880	0.0194	0.0000	60.4730
Total	**8.3800e-003**	**0.0363**	**0.3630**	**6.8000e-004**	**0.0456**	**1.1200e-003**	**0.0467**	**0.0181**	**1.1200e-003**	**0.0192**	**0.0000**	**59.9880**	**59.9880**	**0.0194**	**0.0000**	**60.4730**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	6.3000e-004	4.9000e-004	6.3100e-003	2.0000e-005	1.7700e-003	1.0000e-005	1.7800e-003	4.7000e-004	1.0000e-005	4.8000e-004	0.0000	1.4767	1.4767	5.0000e-005	4.0000e-005	1.4907
Total	**6.3000e-004**	**4.9000e-004**	**6.3100e-003**	**2.0000e-005**	**1.7700e-003**	**1.0000e-005**	**1.7800e-003**	**4.7000e-004**	**1.0000e-005**	**4.8000e-004**	**0.0000**	**1.4767**	**1.4767**	**5.0000e-005**	**4.0000e-005**	**1.4907**

3.4 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.1903	1.7411	1.8245	3.0000e-003		0.0902	0.0902		0.0849	0.0849	0.0000	258.3737	258.3737	0.0619	0.0000	259.9211
Total	**0.1903**	**1.7411**	**1.8245**	**3.0000e-003**		**0.0902**	**0.0902**		**0.0849**	**0.0849**	**0.0000**	**258.3737**	**258.3737**	**0.0619**	**0.0000**	**259.9211**

Palmdale GPU - SFR Annual Construction - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.3600e-003	0.0359	0.0117	1.4000e-004	4.4600e-003	3.3000e-004	4.7900e-003	1.2900e-003	3.2000e-004	1.6000e-003	0.0000	13.4567	13.4567	4.5000e-004	1.9400e-003	14.0461
Worker	6.3500e-003	4.9800e-003	0.0639	1.6000e-004	0.0180	1.2000e-004	0.0181	4.7700e-003	1.1000e-004	4.8800e-003	0.0000	14.9679	14.9679	4.9000e-004	4.4000e-004	15.1104
Total	**7.7100e-003**	**0.0409**	**0.0757**	**3.0000e-004**	**0.0224**	**4.5000e-004**	**0.0229**	**6.0600e-003**	**4.3000e-004**	**6.4800e-003**	**0.0000**	**28.4246**	**28.4246**	**9.4000e-004**	**2.3800e-003**	**29.1565**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	0.0243	0.1054	1.3276	1.9800e-003		3.2400e-003	3.2400e-003		3.2400e-003	3.2400e-003	0.0000	174.3662	174.3662	0.0564	0.0000	175.7761
Total	**0.0243**	**0.1054**	**1.3276**	**1.9800e-003**		**3.2400e-003**	**3.2400e-003**		**3.2400e-003**	**3.2400e-003**	**0.0000**	**174.3662**	**174.3662**	**0.0564**	**0.0000**	**175.7761**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	1.3600e-003	0.0359	0.0117	1.4000e-004	4.4600e-003	3.3000e-004	4.7900e-003	1.2900e-003	3.2000e-004	1.6000e-003	0.0000	13.4567	13.4567	4.5000e-004	1.9400e-003	14.0461
Worker	6.3500e-003	4.9800e-003	0.0639	1.6000e-004	0.0180	1.2000e-004	0.0181	4.7700e-003	1.1000e-004	4.8800e-003	0.0000	14.9679	14.9679	4.9000e-004	4.4000e-004	15.1104
Total	**7.7100e-003**	**0.0409**	**0.0757**	**3.0000e-004**	**0.0224**	**4.5000e-004**	**0.0229**	**6.0600e-003**	**4.3000e-004**	**6.4800e-003**	**0.0000**	**28.4246**	**28.4246**	**9.4000e-004**	**2.3800e-003**	**29.1565**

3.5 Paving - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	5.5100e-003	0.0556	0.0729	1.1000e-004		2.8400e-003	2.8400e-003		2.6100e-003	2.6100e-003	0.0000	10.0138	10.0138	3.2400e-003	0.0000	10.0948
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**5.5100e-003**	**0.0556**	**0.0729**	**1.1000e-004**		**2.8400e-003**	**2.8400e-003**		**2.6100e-003**	**2.6100e-003**	**0.0000**	**10.0138**	**10.0138**	**3.2400e-003**	**0.0000**	**10.0948**

Palmdale GPU - SFR Annual Construction - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.1000e-004	1.7000e-004	2.1500e-003	1.0000e-005	6.0000e-004	0.0000	6.1000e-004	1.6000e-004	0.0000	1.6000e-004	0.0000	0.5034	0.5034	2.0000e-005	1.0000e-005	0.5082
Total	**2.1000e-004**	**1.7000e-004**	**2.1500e-003**	**1.0000e-005**	**6.0000e-004**	**0.0000**	**6.1000e-004**	**1.6000e-004**	**0.0000**	**1.6000e-004**	**0.0000**	**0.5034**	**0.5034**	**2.0000e-005**	**1.0000e-005**	**0.5082**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Off-Road	1.4000e-003	6.0800e-003	0.0865	1.1000e-004		1.9000e-004	1.9000e-004		1.9000e-004	1.9000e-004	0.0000	10.0138	10.0138	3.2400e-003	0.0000	10.0947
Paving	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**1.4000e-003**	**6.0800e-003**	**0.0865**	**1.1000e-004**		**1.9000e-004**	**1.9000e-004**		**1.9000e-004**	**1.9000e-004**	**0.0000**	**10.0138**	**10.0138**	**3.2400e-003**	**0.0000**	**10.0947**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	2.1000e-004	1.7000e-004	2.1500e-003	1.0000e-005	6.0000e-004	0.0000	6.1000e-004	1.6000e-004	0.0000	1.6000e-004	0.0000	0.5034	0.5034	2.0000e-005	1.0000e-005	0.5082
Total	**2.1000e-004**	**1.7000e-004**	**2.1500e-003**	**1.0000e-005**	**6.0000e-004**	**0.0000**	**6.1000e-004**	**1.6000e-004**	**0.0000**	**1.6000e-004**	**0.0000**	**0.5034**	**0.5034**	**2.0000e-005**	**1.0000e-005**	**0.5082**

3.6 Architectural Coating - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.4731					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	2.0500e-003	0.0141	0.0181	3.0000e-005		8.2000e-004	8.2000e-004		8.2000e-004	8.2000e-004	0.0000	2.5533	2.5533	1.7000e-004	0.0000	2.5574
Total	**0.4751**	**0.0141**	**0.0181**	**3.0000e-005**		**8.2000e-004**	**8.2000e-004**		**8.2000e-004**	**8.2000e-004**	**0.0000**	**2.5533**	**2.5533**	**1.7000e-004**	**0.0000**	**2.5574**

Palmdale GPU - SFR Annual Construction - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.1000e-004	9.0000e-005	1.1500e-003	0.0000	3.2000e-004	0.0000	3.2000e-004	9.0000e-005	0.0000	9.0000e-005	0.0000	0.2685	0.2685	1.0000e-005	1.0000e-005	0.2710
Total	**1.1000e-004**	**9.0000e-005**	**1.1500e-003**	**0.0000**	**3.2000e-004**	**0.0000**	**3.2000e-004**	**9.0000e-005**	**0.0000**	**9.0000e-005**	**0.0000**	**0.2685**	**0.2685**	**1.0000e-005**	**1.0000e-005**	**0.2710**

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Archit. Coating	0.4731					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Off-Road	3.0000e-004	1.2900e-003	0.0183	3.0000e-005		4.0000e-005	4.0000e-005		4.0000e-005	4.0000e-005	0.0000	2.5533	2.5533	1.7000e-004	0.0000	2.5574
Total	**0.4734**	**1.2900e-003**	**0.0183**	**3.0000e-005**		**4.0000e-005**	**4.0000e-005**		**4.0000e-005**	**4.0000e-005**	**0.0000**	**2.5533**	**2.5533**	**1.7000e-004**	**0.0000**	**2.5574**

Palmdale GPU - SFR Annual Construction - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Worker	1.1000e-004	9.0000e-005	1.1500e-003	0.0000	3.2000e-004	0.0000	3.2000e-004	9.0000e-005	0.0000	9.0000e-005	0.0000	0.2685	0.2685	1.0000e-005	1.0000e-005	0.2710
Total	**1.1000e-004**	**9.0000e-005**	**1.1500e-003**	**0.0000**	**3.2000e-004**	**0.0000**	**3.2000e-004**	**9.0000e-005**	**0.0000**	**9.0000e-005**	**0.0000**	**0.2685**	**0.2685**	**1.0000e-005**	**1.0000e-005**	**0.2710**

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Single Family Housing	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Single Family Housing	10.80	7.30	7.50	40.20	19.20	40.60	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH
Single Family Housing	0.544785	0.062844	0.187478	0.127235	0.023089	0.006083	0.010475	0.008012	0.000925	0.000611	0.024394	0.000698	0.003374

5.0 Energy Detail

Historical Energy Use: N

Palmdale GPU - SFR Annual Construction - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Electricity Mitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Electricity Unmitigated						0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Single Family Housing	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	tons/yr										MT/yr					
Single Family Housing	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

5.3 Energy by Land Use - Electricity

Unmitigated

	Electricity Use		Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	tons/yr	MT/yr			
Single Family Housing	0		0.0000	0.0000	0.0000	0.0000
Total			**0.0000**	**0.0000**	**0.0000**	**0.0000**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Mitigated

	Electricity Use		Total CO2	CH4	N2O	CO2e
Land Use	kWh/yr	tons/yr	MT/yr			
Single Family Housing	0		0.0000	0.0000	0.0000	0.0000
Total			**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	tons/yr										MT/yr					
Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

Palmdale GPU - SFR Annual Construction - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	tons/yr										MT/yr					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

7.0 Water Detail

7.1 Mitigation Measures Water

		Total CO2	CH4	N2O	CO2e
Category	tons/yr	MT/yr			
Mitigated		0.0000	0.0000	0.0000	0.0000

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Unmitigated		0.0000	0.0000	0.0000	0.0000

7.2 Water by Land Use

Unmitigated

	Indoor/Outdoor Use		Total CO2	CH4	N2O	CO2e
Land Use	Mgal	tons/yr	MT/yr			
Single Family Housing	0 / 0		0.0000	0.0000	0.0000	0.0000
Total			**0.0000**	**0.0000**	**0.0000**	**0.0000**

Palmdale GPU - SFR Annual Construction - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Mitigated

	Indoor/Outdoor Use		Total CO2	CH4	N2O	CO2e
Land Use	Mgal	tons/yr	MT/yr			
Single Family Housing	0 / 0		0.0000	0.0000	0.0000	0.0000
Total			**0.0000**	**0.0000**	**0.0000**	**0.0000**

8.0 Waste Detail

8.1 Mitigation Measures Waste

Category/Year

		Total CO2	CH4	N2O	CO2e
	tons/yr	MT/yr			
Mitigated		0.0000	0.0000	0.0000	0.0000
Unmitigated		0.0000	0.0000	0.0000	0.0000

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

8.2 Waste by Land Use

Unmitigated

	Waste Disposed		Total CO2	CH4	N2O	CO2e
Land Use	tons	tons/yr	MT/yr			
Single Family Housing	0		0.0000	0.0000	0.0000	0.0000
Total			**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	Waste Disposed		Total CO2	CH4	N2O	CO2e
Land Use	tons	tons/yr	MT/yr			
Single Family Housing	0		0.0000	0.0000	0.0000	0.0000
Total			**0.0000**	**0.0000**	**0.0000**	**0.0000**

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

Palmdale GPU - SFR Annual Construction - Los Angeles-Mojave Desert County, Annual

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

10.0 Stationary Equipment

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Palmdale GPU - SFR Annual Construction - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Palmdale GPU - SFR Annual Construction

Los Angeles-Mojave Desert County, Summer

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	56.00	Dwelling Unit	18.18	100,800.00	193

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	9			**Operational Year**	2023
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	390.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics - See Assumptions

Land Use - See Assumptions

Construction Phase - See Assumptions

Grading -

Demolition - See Assumptions

Architectural Coating - See Assumptions

Vehicle Trips - Operational modeled separately

Woodstoves - Operational modeled separately

Consumer Products - Operational modeled separately

Area Coating - Operational modeled separately

Landscape Equipment - Operational modeled separately

Energy Use - Operational modeled separately

Palmdale GPU - SFR Annual Construction - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Water And Wastewater - Operational modeled separately

Solid Waste - Operational modeled separately

Construction Off-road Equipment Mitigation - 2x per day watering exposed area based on AVAQMD regulations for dust suppression and is not mitigated scenario.

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	250.00	150.00
tblArchitecturalCoating	EF_Nonresidential_Interior	250.00	50.00
tblArchitecturalCoating	EF_Residential_Exterior	250.00	150.00
tblArchitecturalCoating	EF_Residential_Interior	250.00	50.00
tblAreaCoating	ReapplicationRatePercent	10	0
tblConstEquipMitigation	FuelType	Diesel	Electrical
tblConstEquipMitigation	FuelType	Diesel	Electrical
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	5.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	5.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	NumDays	300.00	223.00
tblConstructionPhase	NumDays	20.00	15.00
tblConstructionPhase	NumDays	30.00	22.00
tblConstructionPhase	NumDays	20.00	10.00
tblConstructionPhase	PhaseEndDate	7/14/2023	12/30/2022
tblConstructionPhase	PhaseEndDate	5/19/2023	12/30/2022
tblConstructionPhase	PhaseEndDate	1/28/2022	1/21/2022
tblConstructionPhase	PhaseEndDate	3/25/2022	2/22/2022
tblConstructionPhase	PhaseEndDate	6/16/2023	3/8/2022
tblConstructionPhase	PhaseStartDate	6/17/2023	12/5/2022
tblConstructionPhase	PhaseStartDate	3/26/2022	2/23/2022
tblConstructionPhase	PhaseStartDate	2/12/2022	1/22/2022
tblConstructionPhase	PhaseStartDate	5/20/2023	2/23/2022
tblConsumerProducts	ROG_EF	2.14E-05	0
tblConsumerProducts	ROG_EF_Degreaser	3.542E-07	0
tblConsumerProducts	ROG_EF_PesticidesFertilizers	5.152E-08	0
tblEnergyUse	LightingElect	1,608.84	0.00
tblEnergyUse	NT24E	6,155.97	0.00

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

tblEnergyUse	NT24NG	6,384.00	0.00
tblEnergyUse	T24E	93.13	0.00
tblEnergyUse	T24NG	19,108.08	0.00
tblFireplaces	FireplaceDayYear	82.00	0.00
tblFireplaces	FireplaceHourDay	3.00	0.00
tblFireplaces	FireplaceWoodMass	3,078.40	0.00
tblFireplaces	NumberGas	30.80	0.00
tblFireplaces	NumberNoFireplace	5.60	0.00
tblFireplaces	NumberWood	19.60	0.00
tblLandscapeEquipment	NumberSummerDays	180	0
tblLandUse	Population	160.00	193.00
tblSolidWaste	SolidWasteGenerationRate	79.13	0.00
tblVehicleTrips	ST_TR	9.54	0.00
tblVehicleTrips	SU_TR	8.55	0.00
tblVehicleTrips	WD_TR	9.44	0.00
tblWater	IndoorWaterUseRate	3,648,625.43	0.00
tblWater	OutdoorWaterUseRate	2,300,220.38	0.00
tblWoodstoves	NumberCatalytic	2.80	0.00
tblWoodstoves	NumberNoncatalytic	2.80	0.00
tblWoodstoves	WoodstoveDayYear	82.00	0.00
tblWoodstoves	WoodstoveWoodMass	3,019.20	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Palmdale GPU - SFR Annual Construction - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

					PM10	PM10	Total	PM2.5	PM2.5	Total						
Year	lb/day										lb/day					
2022	49.2975	38.8831	32.1030	0.0636	9.3679	1.6360	11.0039	3.6973	1.5051	5.2024	0.0000	6,165.3076	6,165.3076	1.9490	0.0620	6,215.2215
Maximum	**49.2975**	**38.8831**	**32.1030**	**0.0636**	**9.3679**	**1.6360**	**11.0039**	**3.6973**	**1.5051**	**5.2024**	**0.0000**	**6,165.3076**	**6,165.3076**	**1.9490**	**0.0620**	**6,215.2215**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2022	47.6346	3.3397	33.6023	0.0636	4.3059	0.1026	4.4085	1.6878	0.1025	1.7903	0.0000	6,165.3076	6,165.3076	1.9490	0.0620	6,215.2215
Maximum	**47.6346**	**3.3397**	**33.6023**	**0.0636**	**4.3059**	**0.1026**	**4.4085**	**1.6878**	**0.1025**	**1.7903**	**0.0000**	**6,165.3076**	**6,165.3076**	**1.9490**	**0.0620**	**6,215.2215**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**3.37**	**91.41**	**-4.67**	**0.00**	**54.04**	**93.73**	**59.94**	**54.35**	**93.19**	**65.59**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Palmdale GPU - SFR Annual Construction - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.1392	0.0533	4.6211	2.4000e-004		0.0256	0.0256		0.0256	0.0256	0.0000	8.3189	8.3189	8.0000e-003	0.0000	8.5189
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.1392**	**0.0533**	**4.6211**	**2.4000e-004**	**0.0000**	**0.0256**	**0.0256**	**0.0000**	**0.0256**	**0.0256**	**0.0000**	**8.3189**	**8.3189**	**8.0000e-003**	**0.0000**	**8.5189**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.1392	0.0533	4.6211	2.4000e-004		0.0256	0.0256		0.0256	0.0256	0.0000	8.3189	8.3189	8.0000e-003	0.0000	8.5189
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.1392**	**0.0533**	**4.6211**	**2.4000e-004**	**0.0000**	**0.0256**	**0.0256**	**0.0000**	**0.0256**	**0.0256**	**0.0000**	**8.3189**	**8.3189**	**8.0000e-003**	**0.0000**	**8.5189**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2022	1/21/2022	5	15	
2	Grading	Grading	1/22/2022	2/22/2022	5	22	
3	Building Construction	Building Construction	2/23/2022	12/30/2022	5	223	
4	Paving	Paving	2/23/2022	3/8/2022	5	10	
5	Architectural Coating	Architectural Coating	12/5/2022	12/30/2022	5	20	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 66

Acres of Paving: 0

Residential Indoor: 204,120; Residential Outdoor: 68,040; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Building Construction	Cranes	1	7.00	231	0.29
Demolition	Excavators	3	8.00	158	0.38
Grading	Excavators	2	8.00	158	0.38
Building Construction	Forklifts	3	8.00	89	0.20

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Building Construction	Generator Sets	1	8.00	84	0.74
Grading	Graders	1	8.00	187	0.41
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	6	15.00	0.00	82.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	20.00	6.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	4.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Alternative Fuel for Construction Equipment

Use Cleaner Engines for Construction Equipment

Water Exposed Area

3.2 Demolition - 2022

Unmitigated Construction On-Site

Palmdale GPU - SFR Annual Construction - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					1.1812	0.0000	1.1812	0.1789	0.0000	0.1789			0.0000			0.0000
Off-Road	2.6392	25.7194	20.5941	0.0388		1.2427	1.2427		1.1553	1.1553		3,746.7812	3,746.7812	1.0524		3,773.0920
Total	**2.6392**	**25.7194**	**20.5941**	**0.0388**	**1.1812**	**1.2427**	**2.4239**	**0.1789**	**1.1553**	**1.3341**		**3,746.7812**	**3,746.7812**	**1.0524**		**3,773.0920**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0255	0.9181	0.2141	3.4000e-003	0.0957	6.8200e-003	0.1025	0.0262	6.5300e-003	0.0328		372.1573	372.1573	0.0198	0.0591	390.2477
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0435	0.0297	0.4524	1.1300e-003	0.1232	8.1000e-004	0.1240	0.0327	7.5000e-004	0.0334		115.4228	115.4228	3.5800e-003	2.9900e-003	116.4043
Total	**0.0690**	**0.9479**	**0.6664**	**4.5300e-003**	**0.2189**	**7.6300e-003**	**0.2265**	**0.0589**	**7.2800e-003**	**0.0662**		**487.5801**	**487.5801**	**0.0234**	**0.0620**	**506.6519**

Palmdale GPU - SFR Annual Construction - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.5316	0.0000	0.5316	0.0805	0.0000	0.0805			0.0000			0.0000
Off-Road	0.4623	2.0032	23.2798	0.0388		0.0616	0.0616		0.0616	0.0616	0.0000	3,746.7812	3,746.7812	1.0524		3,773.0920
Total	**0.4623**	**2.0032**	**23.2798**	**0.0388**	**0.5316**	**0.0616**	**0.5932**	**0.0805**	**0.0616**	**0.1421**	**0.0000**	**3,746.7812**	**3,746.7812**	**1.0524**		**3,773.0920**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0255	0.9181	0.2141	3.4000e-003	0.0957	6.8200e-003	0.1025	0.0262	6.5300e-003	0.0328		372.1573	372.1573	0.0198	0.0591	390.2477
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0435	0.0297	0.4524	1.1300e-003	0.1232	8.1000e-004	0.1240	0.0327	7.5000e-004	0.0334		115.4228	115.4228	3.5800e-003	2.9900e-003	116.4043
Total	**0.0690**	**0.9479**	**0.6664**	**4.5300e-003**	**0.2189**	**7.6300e-003**	**0.2265**	**0.0589**	**7.2800e-003**	**0.0662**		**487.5801**	**487.5801**	**0.0234**	**0.0620**	**506.6519**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.3 Grading - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					9.2036	0.0000	9.2036	3.6538	0.0000	3.6538			0.0000			0.0000
Off-Road	3.6248	38.8435	29.0415	0.0621		1.6349	1.6349		1.5041	1.5041		6,011.4105	6,011.4105	1.9442		6,060.0158
Total	**3.6248**	**38.8435**	**29.0415**	**0.0621**	**9.2036**	**1.6349**	**10.8385**	**3.6538**	**1.5041**	**5.1579**		**6,011.4105**	**6,011.4105**	**1.9442**		**6,060.0158**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0580	0.0397	0.6032	1.5100e-003	0.1643	1.0800e-003	0.1654	0.0436	9.9000e-004	0.0446		153.8970	153.8970	4.7700e-003	3.9900e-003	155.2057
Total	**0.0580**	**0.0397**	**0.6032**	**1.5100e-003**	**0.1643**	**1.0800e-003**	**0.1654**	**0.0436**	**9.9000e-004**	**0.0446**		**153.8970**	**153.8970**	**4.7700e-003**	**3.9900e-003**	**155.2057**

Palmdale GPU - SFR Annual Construction - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					4.1416	0.0000	4.1416	1.6442	0.0000	1.6442			0.0000			0.0000
Off-Road	0.7616	3.3000	32.9991	0.0621		0.1015	0.1015		0.1015	0.1015	0.0000	6,011.4105	6,011.4105	1.9442		6,060.0158
Total	**0.7616**	**3.3000**	**32.9991**	**0.0621**	**4.1416**	**0.1015**	**4.2432**	**1.6442**	**0.1015**	**1.7457**	**0.0000**	**6,011.4105**	**6,011.4105**	**1.9442**		**6,060.0158**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0580	0.0397	0.6032	1.5100e-003	0.1643	1.0800e-003	0.1654	0.0436	9.9000e-004	0.0446		153.8970	153.8970	4.7700e-003	3.9900e-003	155.2057
Total	**0.0580**	**0.0397**	**0.6032**	**1.5100e-003**	**0.1643**	**1.0800e-003**	**0.1654**	**0.0436**	**9.9000e-004**	**0.0446**		**153.8970**	**153.8970**	**4.7700e-003**	**3.9900e-003**	**155.2057**

Palmdale GPU - SFR Annual Construction - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.4 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.7062	15.6156	16.3634	0.0269		0.8090	0.8090		0.7612	0.7612		2,554.3336	2,554.3336	0.6120		2,569.6322
Total	**1.7062**	**15.6156**	**16.3634**	**0.0269**		**0.8090**	**0.8090**		**0.7612**	**0.7612**		**2,554.3336**	**2,554.3336**	**0.6120**		**2,569.6322**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0123	0.3069	0.1036	1.2400e-003	0.0407	2.9600e-003	0.0436	0.0117	2.8300e-003	0.0145		133.0154	133.0154	4.4500e-003	0.0192	138.8359
Worker	0.0580	0.0397	0.6032	1.5100e-003	0.1643	1.0800e-003	0.1654	0.0436	9.9000e-004	0.0446		153.8970	153.8970	4.7700e-003	3.9900e-003	155.2057
Total	**0.0703**	**0.3466**	**0.7067**	**2.7500e-003**	**0.2050**	**4.0400e-003**	**0.2090**	**0.0553**	**3.8200e-003**	**0.0591**		**286.9124**	**286.9124**	**9.2200e-003**	**0.0232**	**294.0416**

Palmdale GPU - SFR Annual Construction - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.2182	0.9457	11.9070	0.0178		0.0291	0.0291		0.0291	0.0291	0.0000	1,723.8213	1,723.8213	0.5575		1,737.7593
Total	**0.2182**	**0.9457**	**11.9070**	**0.0178**		**0.0291**	**0.0291**		**0.0291**	**0.0291**	**0.0000**	**1,723.8213**	**1,723.8213**	**0.5575**		**1,737.7593**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0123	0.3069	0.1036	1.2400e-003	0.0407	2.9600e-003	0.0436	0.0117	2.8300e-003	0.0145		133.0154	133.0154	4.4500e-003	0.0192	138.8359
Worker	0.0580	0.0397	0.6032	1.5100e-003	0.1643	1.0800e-003	0.1654	0.0436	9.9000e-004	0.0446		153.8970	153.8970	4.7700e-003	3.9900e-003	155.2057
Total	**0.0703**	**0.3466**	**0.7067**	**2.7500e-003**	**0.2050**	**4.0400e-003**	**0.2090**	**0.0553**	**3.8200e-003**	**0.0591**		**286.9124**	**286.9124**	**9.2200e-003**	**0.0232**	**294.0416**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.5 Paving - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.1028	11.1249	14.5805	0.0228		0.5679	0.5679		0.5225	0.5225		2,207.6603	2,207.6603	0.7140		2,225.5104
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.1028**	**11.1249**	**14.5805**	**0.0228**		**0.5679**	**0.5679**		**0.5225**	**0.5225**		**2,207.6603**	**2,207.6603**	**0.7140**		**2,225.5104**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0435	0.0297	0.4524	1.1300e-003	0.1232	8.1000e-004	0.1240	0.0327	7.5000e-004	0.0334		115.4228	115.4228	3.5800e-003	2.9900e-003	116.4043
Total	**0.0435**	**0.0297**	**0.4524**	**1.1300e-003**	**0.1232**	**8.1000e-004**	**0.1240**	**0.0327**	**7.5000e-004**	**0.0334**		**115.4228**	**115.4228**	**3.5800e-003**	**2.9900e-003**	**116.4043**

Palmdale GPU - SFR Annual Construction - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.2805	1.2154	17.2957	0.0228		0.0374	0.0374		0.0374	0.0374	0.0000	2,207.6603	2,207.6603	0.7140		2,225.5104
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.2805**	**1.2154**	**17.2957**	**0.0228**		**0.0374**	**0.0374**		**0.0374**	**0.0374**	**0.0000**	**2,207.6603**	**2,207.6603**	**0.7140**		**2,225.5104**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0435	0.0297	0.4524	1.1300e-003	0.1232	8.1000e-004	0.1240	0.0327	7.5000e-004	0.0334		115.4228	115.4228	3.5800e-003	2.9900e-003	116.4043
Total	**0.0435**	**0.0297**	**0.4524**	**1.1300e-003**	**0.1232**	**8.1000e-004**	**0.1240**	**0.0327**	**7.5000e-004**	**0.0334**		**115.4228**	**115.4228**	**3.5800e-003**	**2.9900e-003**	**116.4043**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.6 Architectural Coating - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	47.3048					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817		281.4481	281.4481	0.0183		281.9062
Total	**47.5094**	**1.4085**	**1.8136**	**2.9700e-003**		**0.0817**	**0.0817**		**0.0817**	**0.0817**		**281.4481**	**281.4481**	**0.0183**		**281.9062**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0116	7.9300e-003	0.1206	3.0000e-004	0.0329	2.2000e-004	0.0331	8.7200e-003	2.0000e-004	8.9100e-003		30.7794	30.7794	9.5000e-004	8.0000e-004	31.0411
Total	**0.0116**	**7.9300e-003**	**0.1206**	**3.0000e-004**	**0.0329**	**2.2000e-004**	**0.0331**	**8.7200e-003**	**2.0000e-004**	**8.9100e-003**		**30.7794**	**30.7794**	**9.5000e-004**	**8.0000e-004**	**31.0411**

Palmdale GPU - SFR Annual Construction - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	47.3048					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.0297	0.1288	1.8324	2.9700e-003		3.9600e-003	3.9600e-003		3.9600e-003	3.9600e-003	0.0000	281.4481	281.4481	0.0183		281.9062
Total	**47.3345**	**0.1288**	**1.8324**	**2.9700e-003**		**3.9600e-003**	**3.9600e-003**		**3.9600e-003**	**3.9600e-003**	**0.0000**	**281.4481**	**281.4481**	**0.0183**		**281.9062**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0116	7.9300e-003	0.1206	3.0000e-004	0.0329	2.2000e-004	0.0331	8.7200e-003	2.0000e-004	8.9100e-003		30.7794	30.7794	9.5000e-004	8.0000e-004	31.0411
Total	**0.0116**	**7.9300e-003**	**0.1206**	**3.0000e-004**	**0.0329**	**2.2000e-004**	**0.0331**	**8.7200e-003**	**2.0000e-004**	**8.9100e-003**		**30.7794**	**30.7794**	**9.5000e-004**	**8.0000e-004**	**31.0411**

Palmdale GPU - SFR Annual Construction - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Single Family Housing	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Single Family Housing	10.80	7.30	7.50	40.20	19.20	40.60	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Single Family Housing	0.544785	0.062844	0.187478	0.127235	0.023089	0.006083	0.010475	0.008012	0.000925	0.000611	0.024394	0.000698	0.003374

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Single Family Housing	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Single Family Housing	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

Palmdale GPU - SFR Annual Construction - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.1392	0.0533	4.6211	2.4000e-004		0.0256	0.0256		0.0256	0.0256	0.0000	8.3189	8.3189	8.0000e-003	0.0000	8.5189
Unmitigated	0.1392	0.0533	4.6211	2.4000e-004		0.0256	0.0256		0.0256	0.0256	0.0000	8.3189	8.3189	8.0000e-003	0.0000	8.5189

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.1392	0.0533	4.6211	2.4000e-004		0.0256	0.0256		0.0256	0.0256		8.3189	8.3189	8.0000e-003		8.5189
Total	**0.1392**	**0.0533**	**4.6211**	**2.4000e-004**		**0.0256**	**0.0256**		**0.0256**	**0.0256**	**0.0000**	**8.3189**	**8.3189**	**8.0000e-003**	**0.0000**	**8.5189**

Palmdale GPU - SFR Annual Construction - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.1392	0.0533	4.6211	2.4000e-004		0.0256	0.0256		0.0256	0.0256		8.3189	8.3189	8.0000e-003		8.5189
Total	**0.1392**	**0.0533**	**4.6211**	**2.4000e-004**		**0.0256**	**0.0256**		**0.0256**	**0.0256**	**0.0000**	**8.3189**	**8.3189**	**8.0000e-003**	**0.0000**	**8.5189**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Palmdale GPU - SFR Annual Construction - Los Angeles-Mojave Desert County, Summer

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Palmdale GPU - SFR Annual Construction - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Palmdale GPU - SFR Annual Construction

Los Angeles-Mojave Desert County, Winter

1.0 Project Characteristics

1.1 Land Usage

Land Uses	Size	Metric	Lot Acreage	Floor Surface Area	Population
Single Family Housing	56.00	Dwelling Unit	18.18	100,800.00	193

1.2 Other Project Characteristics

Urbanization	Urban	**Wind Speed (m/s)**	2.2	**Precipitation Freq (Days)**	33
Climate Zone	9			**Operational Year**	2023
Utility Company	Southern California Edison				
CO2 Intensity (lb/MWhr)	390.98	**CH4 Intensity (lb/MWhr)**	0.033	**N2O Intensity (lb/MWhr)**	0.004

1.3 User Entered Comments & Non-Default Data

Project Characteristics - See Assumptions

Land Use - See Assumptions

Construction Phase - See Assumptions

Grading -

Demolition - See Assumptions

Architectural Coating - See Assumptions

Vehicle Trips - Operational modeled separately

Woodstoves - Operational modeled separately

Consumer Products - Operational modeled separately

Area Coating - Operational modeled separately

Landscape Equipment - Operational modeled separately

Energy Use - Operational modeled separately

Palmdale GPU - SFR Annual Construction - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Water And Wastewater - Operational modeled separately

Solid Waste - Operational modeled separately

Construction Off-road Equipment Mitigation - 2x per day watering exposed area based on AVAQMD regulations for dust suppression and is not mitigated scenario.

Table Name	Column Name	Default Value	New Value
tblArchitecturalCoating	EF_Nonresidential_Exterior	250.00	150.00
tblArchitecturalCoating	EF_Nonresidential_Interior	250.00	50.00
tblArchitecturalCoating	EF_Residential_Exterior	250.00	150.00
tblArchitecturalCoating	EF_Residential_Interior	250.00	50.00
tblAreaCoating	ReapplicationRatePercent	10	0
tblConstEquipMitigation	FuelType	Diesel	Electrical
tblConstEquipMitigation	FuelType	Diesel	Electrical
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	5.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	3.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	5.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	2.00
tblConstEquipMitigation	NumberOfEquipmentMitigated	0.00	1.00
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final

Palmdale GPU - SFR Annual Construction - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstEquipMitigation	Tier	No Change	Tier 4 Final
tblConstructionPhase	NumDays	300.00	223.00
tblConstructionPhase	NumDays	20.00	15.00
tblConstructionPhase	NumDays	30.00	22.00
tblConstructionPhase	NumDays	20.00	10.00
tblConstructionPhase	PhaseEndDate	7/14/2023	12/30/2022
tblConstructionPhase	PhaseEndDate	5/19/2023	12/30/2022
tblConstructionPhase	PhaseEndDate	1/28/2022	1/21/2022
tblConstructionPhase	PhaseEndDate	3/25/2022	2/22/2022
tblConstructionPhase	PhaseEndDate	6/16/2023	3/8/2022
tblConstructionPhase	PhaseStartDate	6/17/2023	12/5/2022
tblConstructionPhase	PhaseStartDate	3/26/2022	2/23/2022
tblConstructionPhase	PhaseStartDate	2/12/2022	1/22/2022
tblConstructionPhase	PhaseStartDate	5/20/2023	2/23/2022
tblConsumerProducts	ROG_EF	2.14E-05	0
tblConsumerProducts	ROG_EF_Degreaser	3.542E-07	0
tblConsumerProducts	ROG_EF_PesticidesFertilizers	5.152E-08	0
tblEnergyUse	LightingElect	1,608.84	0.00
tblEnergyUse	NT24E	6,155.97	0.00

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

tblEnergyUse	NT24NG	6,384.00	0.00
tblEnergyUse	T24E	93.13	0.00
tblEnergyUse	T24NG	19,108.08	0.00
tblFireplaces	FireplaceDayYear	82.00	0.00
tblFireplaces	FireplaceHourDay	3.00	0.00
tblFireplaces	FireplaceWoodMass	3,078.40	0.00
tblFireplaces	NumberGas	30.80	0.00
tblFireplaces	NumberNoFireplace	5.60	0.00
tblFireplaces	NumberWood	19.60	0.00
tblLandscapeEquipment	NumberSummerDays	180	0
tblLandUse	Population	160.00	193.00
tblSolidWaste	SolidWasteGenerationRate	79.13	0.00
tblVehicleTrips	ST_TR	9.54	0.00
tblVehicleTrips	SU_TR	8.55	0.00
tblVehicleTrips	WD_TR	9.44	0.00
tblWater	IndoorWaterUseRate	3,648,625.43	0.00
tblWater	OutdoorWaterUseRate	2,300,220.38	0.00
tblWoodstoves	NumberCatalytic	2.80	0.00
tblWoodstoves	NumberNoncatalytic	2.80	0.00
tblWoodstoves	WoodstoveDayYear	82.00	0.00
tblWoodstoves	WoodstoveWoodMass	3,019.20	0.00

2.0 Emissions Summary

2.1 Overall Construction (Maximum Daily Emission)

Unmitigated Construction

	ROG	NOx	CO	SO2	Fugitive	Exhaust	PM10	Fugitive	Exhaust	PM2.5	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e

Palmdale GPU - SFR Annual Construction - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

					PM10	PM10	Total	PM2.5	PM2.5	Total						
Year	lb/day										lb/day					
2022	49.3012	38.8873	32.0317	0.0635	9.3679	1.6360	11.0039	3.6973	1.5051	5.2024	0.0000	6,157.2163	6,157.2163	1.9491	0.0623	6,207.2149
Maximum	**49.3012**	**38.8873**	**32.0317**	**0.0635**	**9.3679**	**1.6360**	**11.0039**	**3.6973**	**1.5051**	**5.2024**	**0.0000**	**6,157.2163**	**6,157.2163**	**1.9491**	**0.0623**	**6,207.2149**

Mitigated Construction

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Year	lb/day										lb/day					
2022	47.6384	3.3438	33.5596	0.0635	4.3059	0.1026	4.4085	1.6878	0.1025	1.7903	0.0000	6,157.2163	6,157.2163	1.9491	0.0623	6,207.2149
Maximum	**47.6384**	**3.3438**	**33.5596**	**0.0635**	**4.3059**	**0.1026**	**4.4085**	**1.6878**	**0.1025**	**1.7903**	**0.0000**	**6,157.2163**	**6,157.2163**	**1.9491**	**0.0623**	**6,207.2149**

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	**3.37**	**91.40**	**-4.77**	**0.00**	**54.04**	**93.73**	**59.94**	**54.35**	**93.19**	**65.59**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**	**0.00**

Palmdale GPU - SFR Annual Construction - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

2.2 Overall Operational

Unmitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.1392	0.0533	4.6211	2.4000e-004		0.0256	0.0256		0.0256	0.0256	0.0000	8.3189	8.3189	8.0000e-003	0.0000	8.5189
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.1392**	**0.0533**	**4.6211**	**2.4000e-004**	**0.0000**	**0.0256**	**0.0256**	**0.0000**	**0.0256**	**0.0256**	**0.0000**	**8.3189**	**8.3189**	**8.0000e-003**	**0.0000**	**8.5189**

Mitigated Operational

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Area	0.1392	0.0533	4.6211	2.4000e-004		0.0256	0.0256		0.0256	0.0256	0.0000	8.3189	8.3189	8.0000e-003	0.0000	8.5189
Energy	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Mobile	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total	**0.1392**	**0.0533**	**4.6211**	**2.4000e-004**	**0.0000**	**0.0256**	**0.0256**	**0.0000**	**0.0256**	**0.0256**	**0.0000**	**8.3189**	**8.3189**	**8.0000e-003**	**0.0000**	**8.5189**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio-CO2	Total CO2	CH4	N20	CO2e
Percent Reduction	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00	0.00

3.0 Construction Detail

Construction Phase

Phase Number	Phase Name	Phase Type	Start Date	End Date	Num Days Week	Num Days	Phase Description
1	Demolition	Demolition	1/1/2022	1/21/2022	5	15	
2	Grading	Grading	1/22/2022	2/22/2022	5	22	
3	Building Construction	Building Construction	2/23/2022	12/30/2022	5	223	
4	Paving	Paving	2/23/2022	3/8/2022	5	10	
5	Architectural Coating	Architectural Coating	12/5/2022	12/30/2022	5	20	

Acres of Grading (Site Preparation Phase): 0

Acres of Grading (Grading Phase): 66

Acres of Paving: 0

Residential Indoor: 204,120; Residential Outdoor: 68,040; Non-Residential Indoor: 0; Non-Residential Outdoor: 0; Striped Parking Area: 0 (Architectural Coating – sqft)

OffRoad Equipment

Phase Name	Offroad Equipment Type	Amount	Usage Hours	Horse Power	Load Factor
Architectural Coating	Air Compressors	1	6.00	78	0.48
Demolition	Concrete/Industrial Saws	1	8.00	81	0.73
Building Construction	Cranes	1	7.00	231	0.29
Demolition	Excavators	3	8.00	158	0.38
Grading	Excavators	2	8.00	158	0.38
Building Construction	Forklifts	3	8.00	89	0.20

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Building Construction	Generator Sets	1	8.00	84	0.74
Grading	Graders	1	8.00	187	0.41
Paving	Pavers	2	8.00	130	0.42
Paving	Paving Equipment	2	8.00	132	0.36
Paving	Rollers	2	8.00	80	0.38
Demolition	Rubber Tired Dozers	2	8.00	247	0.40
Grading	Rubber Tired Dozers	1	8.00	247	0.40
Grading	Scrapers	2	8.00	367	0.48
Building Construction	Tractors/Loaders/Backhoes	3	7.00	97	0.37
Grading	Tractors/Loaders/Backhoes	2	8.00	97	0.37
Building Construction	Welders	1	8.00	46	0.45

Trips and VMT

Phase Name	Offroad Equipment Count	Worker Trip Number	Vendor Trip Number	Hauling Trip Number	Worker Trip Length	Vendor Trip Length	Hauling Trip Length	Worker Vehicle Class	Vendor Vehicle Class	Hauling Vehicle Class
Demolition	6	15.00	0.00	82.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Grading	8	20.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Building Construction	9	20.00	6.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Paving	6	15.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT
Architectural Coating	1	4.00	0.00	0.00	10.80	7.30	20.00	LD_Mix	HDT_Mix	HHDT

3.1 Mitigation Measures Construction

Use Alternative Fuel for Construction Equipment

Use Cleaner Engines for Construction Equipment

Water Exposed Area

3.2 Demolition - 2022

Unmitigated Construction On-Site

Palmdale GPU - SFR Annual Construction - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					1.1812	0.0000	1.1812	0.1789	0.0000	0.1789			0.0000			0.0000
Off-Road	2.6392	25.7194	20.5941	0.0388		1.2427	1.2427		1.1553	1.1553		3,746.7812	3,746.7812	1.0524		3,773.0920
Total	**2.6392**	**25.7194**	**20.5941**	**0.0388**	**1.1812**	**1.2427**	**2.4239**	**0.1789**	**1.1553**	**1.3341**		**3,746.7812**	**3,746.7812**	**1.0524**		**3,773.0920**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0249	0.9554	0.2178	3.4000e-003	0.0957	6.8400e-003	0.1025	0.0262	6.5400e-003	0.0328		372.2664	372.2664	0.0197	0.0591	390.3617
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0459	0.0328	0.4203	1.0700e-003	0.1232	8.1000e-004	0.1240	0.0327	7.5000e-004	0.0334		109.3543	109.3543	3.6800e-003	3.2000e-003	110.3993
Total	**0.0708**	**0.9882**	**0.6382**	**4.4700e-003**	**0.2189**	**7.6500e-003**	**0.2266**	**0.0589**	**7.2900e-003**	**0.0662**		**481.6207**	**481.6207**	**0.0234**	**0.0623**	**500.7610**

Palmdale GPU - SFR Annual Construction - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					0.5316	0.0000	0.5316	0.0805	0.0000	0.0805			0.0000			0.0000
Off-Road	0.4623	2.0032	23.2798	0.0388		0.0616	0.0616		0.0616	0.0616	0.0000	3,746.7812	3,746.7812	1.0524		3,773.0920
Total	**0.4623**	**2.0032**	**23.2798**	**0.0388**	**0.5316**	**0.0616**	**0.5932**	**0.0805**	**0.0616**	**0.1421**	**0.0000**	**3,746.7812**	**3,746.7812**	**1.0524**		**3,773.0920**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0249	0.9554	0.2178	3.4000e-003	0.0957	6.8400e-003	0.1025	0.0262	6.5400e-003	0.0328		372.2664	372.2664	0.0197	0.0591	390.3617
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0459	0.0328	0.4203	1.0700e-003	0.1232	8.1000e-004	0.1240	0.0327	7.5000e-004	0.0334		109.3543	109.3543	3.6800e-003	3.2000e-003	110.3993
Total	**0.0708**	**0.9882**	**0.6382**	**4.4700e-003**	**0.2189**	**7.6500e-003**	**0.2266**	**0.0589**	**7.2900e-003**	**0.0662**		**481.6207**	**481.6207**	**0.0234**	**0.0623**	**500.7610**

Palmdale GPU - SFR Annual Construction - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.3 Grading - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					9.2036	0.0000	9.2036	3.6538	0.0000	3.6538			0.0000			0.0000
Off-Road	3.6248	38.8435	29.0415	0.0621		1.6349	1.6349		1.5041	1.5041		6,011.4105	6,011.4105	1.9442		6,060.0158
Total	**3.6248**	**38.8435**	**29.0415**	**0.0621**	**9.2036**	**1.6349**	**10.8385**	**3.6538**	**1.5041**	**5.1579**		**6,011.4105**	**6,011.4105**	**1.9442**		**6,060.0158**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0612	0.0438	0.5605	1.4300e-003	0.1643	1.0800e-003	0.1654	0.0436	9.9000e-004	0.0446		145.8057	145.8057	4.9000e-003	4.2600e-003	147.1991
Total	**0.0612**	**0.0438**	**0.5605**	**1.4300e-003**	**0.1643**	**1.0800e-003**	**0.1654**	**0.0436**	**9.9000e-004**	**0.0446**		**145.8057**	**145.8057**	**4.9000e-003**	**4.2600e-003**	**147.1991**

Palmdale GPU - SFR Annual Construction - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Fugitive Dust					4.1416	0.0000	4.1416	1.6442	0.0000	1.6442			0.0000			0.0000
Off-Road	0.7616	3.3000	32.9991	0.0621		0.1015	0.1015		0.1015	0.1015	0.0000	6,011.4105	6,011.4105	1.9442		6,060.0158
Total	**0.7616**	**3.3000**	**32.9991**	**0.0621**	**4.1416**	**0.1015**	**4.2432**	**1.6442**	**0.1015**	**1.7457**	**0.0000**	**6,011.4105**	**6,011.4105**	**1.9442**		**6,060.0158**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0612	0.0438	0.5605	1.4300e-003	0.1643	1.0800e-003	0.1654	0.0436	9.9000e-004	0.0446		145.8057	145.8057	4.9000e-003	4.2600e-003	147.1991
Total	**0.0612**	**0.0438**	**0.5605**	**1.4300e-003**	**0.1643**	**1.0800e-003**	**0.1654**	**0.0436**	**9.9000e-004**	**0.0446**		**145.8057**	**145.8057**	**4.9000e-003**	**4.2600e-003**	**147.1991**

Palmdale GPU - SFR Annual Construction - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.4 Building Construction - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.7062	15.6156	16.3634	0.0269		0.8090	0.8090		0.7612	0.7612		2,554.3336	2,554.3336	0.6120		2,569.6322
Total	**1.7062**	**15.6156**	**16.3634**	**0.0269**		**0.8090**	**0.8090**		**0.7612**	**0.7612**		**2,554.3336**	**2,554.3336**	**0.6120**		**2,569.6322**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0121	0.3196	0.1070	1.2400e-003	0.0407	2.9700e-003	0.0436	0.0117	2.8400e-003	0.0145		133.0628	133.0628	4.4300e-003	0.0192	138.8902
Worker	0.0612	0.0438	0.5605	1.4300e-003	0.1643	1.0800e-003	0.1654	0.0436	9.9000e-004	0.0446		145.8057	145.8057	4.9000e-003	4.2600e-003	147.1991
Total	**0.0734**	**0.3633**	**0.6675**	**2.6700e-003**	**0.2050**	**4.0500e-003**	**0.2090**	**0.0553**	**3.8300e-003**	**0.0591**		**278.8685**	**278.8685**	**9.3300e-003**	**0.0234**	**286.0893**

Palmdale GPU - SFR Annual Construction - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.2182	0.9457	11.9070	0.0178		0.0291	0.0291		0.0291	0.0291	0.0000	1,723.8213	1,723.8213	0.5575		1,737.7593
Total	**0.2182**	**0.9457**	**11.9070**	**0.0178**		**0.0291**	**0.0291**		**0.0291**	**0.0291**	**0.0000**	**1,723.8213**	**1,723.8213**	**0.5575**		**1,737.7593**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0121	0.3196	0.1070	1.2400e-003	0.0407	2.9700e-003	0.0436	0.0117	2.8400e-003	0.0145		133.0628	133.0628	4.4300e-003	0.0192	138.8902
Worker	0.0612	0.0438	0.5605	1.4300e-003	0.1643	1.0800e-003	0.1654	0.0436	9.9000e-004	0.0446		145.8057	145.8057	4.9000e-003	4.2600e-003	147.1991
Total	**0.0734**	**0.3633**	**0.6675**	**2.6700e-003**	**0.2050**	**4.0500e-003**	**0.2090**	**0.0553**	**3.8300e-003**	**0.0591**		**278.8685**	**278.8685**	**9.3300e-003**	**0.0234**	**286.0893**

Palmdale GPU - SFR Annual Construction - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.5 Paving - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	1.1028	11.1249	14.5805	0.0228		0.5679	0.5679		0.5225	0.5225		2,207.6603	2,207.6603	0.7140		2,225.5104
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**1.1028**	**11.1249**	**14.5805**	**0.0228**		**0.5679**	**0.5679**		**0.5225**	**0.5225**		**2,207.6603**	**2,207.6603**	**0.7140**		**2,225.5104**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0459	0.0328	0.4203	1.0700e-003	0.1232	8.1000e-004	0.1240	0.0327	7.5000e-004	0.0334		109.3543	109.3543	3.6800e-003	3.2000e-003	110.3993
Total	**0.0459**	**0.0328**	**0.4203**	**1.0700e-003**	**0.1232**	**8.1000e-004**	**0.1240**	**0.0327**	**7.5000e-004**	**0.0334**		**109.3543**	**109.3543**	**3.6800e-003**	**3.2000e-003**	**110.3993**

Palmdale GPU - SFR Annual Construction - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Off-Road	0.2805	1.2154	17.2957	0.0228		0.0374	0.0374		0.0374	0.0374	0.0000	2,207.6603	2,207.6603	0.7140		2,225.5104
Paving	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Total	**0.2805**	**1.2154**	**17.2957**	**0.0228**		**0.0374**	**0.0374**		**0.0374**	**0.0374**	**0.0000**	**2,207.6603**	**2,207.6603**	**0.7140**		**2,225.5104**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0459	0.0328	0.4203	1.0700e-003	0.1232	8.1000e-004	0.1240	0.0327	7.5000e-004	0.0334		109.3543	109.3543	3.6800e-003	3.2000e-003	110.3993
Total	**0.0459**	**0.0328**	**0.4203**	**1.0700e-003**	**0.1232**	**8.1000e-004**	**0.1240**	**0.0327**	**7.5000e-004**	**0.0334**		**109.3543**	**109.3543**	**3.6800e-003**	**3.2000e-003**	**110.3993**

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

3.6 Architectural Coating - 2022

Unmitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	47.3048					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.2045	1.4085	1.8136	2.9700e-003		0.0817	0.0817		0.0817	0.0817		281.4481	281.4481	0.0183		281.9062
Total	**47.5094**	**1.4085**	**1.8136**	**2.9700e-003**		**0.0817**	**0.0817**		**0.0817**	**0.0817**		**281.4481**	**281.4481**	**0.0183**		**281.9062**

Unmitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0123	8.7600e-003	0.1121	2.9000e-004	0.0329	2.2000e-004	0.0331	8.7200e-003	2.0000e-004	8.9100e-003		29.1611	29.1611	9.8000e-004	8.5000e-004	29.4398
Total	**0.0123**	**8.7600e-003**	**0.1121**	**2.9000e-004**	**0.0329**	**2.2000e-004**	**0.0331**	**8.7200e-003**	**2.0000e-004**	**8.9100e-003**		**29.1611**	**29.1611**	**9.8000e-004**	**8.5000e-004**	**29.4398**

Palmdale GPU - SFR Annual Construction - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Mitigated Construction On-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Archit. Coating	47.3048					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Off-Road	0.0297	0.1288	1.8324	2.9700e-003		3.9600e-003	3.9600e-003		3.9600e-003	3.9600e-003	0.0000	281.4481	281.4481	0.0183		281.9062
Total	**47.3345**	**0.1288**	**1.8324**	**2.9700e-003**		**3.9600e-003**	**3.9600e-003**		**3.9600e-003**	**3.9600e-003**	**0.0000**	**281.4481**	**281.4481**	**0.0183**		**281.9062**

Mitigated Construction Off-Site

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Hauling	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Vendor	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Worker	0.0123	8.7600e-003	0.1121	2.9000e-004	0.0329	2.2000e-004	0.0331	8.7200e-003	2.0000e-004	8.9100e-003		29.1611	29.1611	9.8000e-004	8.5000e-004	29.4398
Total	**0.0123**	**8.7600e-003**	**0.1121**	**2.9000e-004**	**0.0329**	**2.2000e-004**	**0.0331**	**8.7200e-003**	**2.0000e-004**	**8.9100e-003**		**29.1611**	**29.1611**	**9.8000e-004**	**8.5000e-004**	**29.4398**

Palmdale GPU - SFR Annual Construction - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

4.0 Operational Detail - Mobile

4.1 Mitigation Measures Mobile

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Unmitigated	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

4.2 Trip Summary Information

	Average Daily Trip Rate			Unmitigated	Mitigated
Land Use	Weekday	Saturday	Sunday	Annual VMT	Annual VMT
Single Family Housing	0.00	0.00	0.00		
Total	0.00	0.00	0.00		

4.3 Trip Type Information

	Miles			Trip %			Trip Purpose %		
Land Use	H-W or C-W	H-S or C-C	H-O or C-NW	H-W or C-W	H-S or C-C	H-O or C-NW	Primary	Diverted	Pass-by
Single Family Housing	10.80	7.30	7.50	40.20	19.20	40.60	86	11	3

4.4 Fleet Mix

Land Use	LDA	LDT1	LDT2	MDV	LHD1	LHD2	MHD	HHD	OBUS	UBUS	MCY	SBUS	MH

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Single Family Housing	0.544785	0.062844	0.187478	0.127235	0.023089	0.006083	0.010475	0.008012	0.000925	0.000611	0.024394	0.000698	0.003374

5.0 Energy Detail

Historical Energy Use: N

5.1 Mitigation Measures Energy

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
NaturalGas Mitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
NaturalGas Unmitigated	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

5.2 Energy by Land Use - NaturalGas

Unmitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Single Family Housing	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

Mitigated

	NaturalGas Use	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Land Use	kBTU/yr	lb/day										lb/day					
Single Family Housing	0	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000
Total		**0.0000**	**0.0000**	**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**		**0.0000**	**0.0000**	**0.0000**	**0.0000**	**0.0000**

6.0 Area Detail

6.1 Mitigation Measures Area

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
Category	lb/day										lb/day					
Mitigated	0.1392	0.0533	4.6211	2.4000e-004		0.0256	0.0256		0.0256	0.0256	0.0000	8.3189	8.3189	8.0000e-003	0.0000	8.5189
Unmitigated	0.1392	0.0533	4.6211	2.4000e-004		0.0256	0.0256		0.0256	0.0256	0.0000	8.3189	8.3189	8.0000e-003	0.0000	8.5189

6.2 Area by SubCategory

Unmitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.1392	0.0533	4.6211	2.4000e-004		0.0256	0.0256		0.0256	0.0256		8.3189	8.3189	8.0000e-003		8.5189
Total	**0.1392**	**0.0533**	**4.6211**	**2.4000e-004**		**0.0256**	**0.0256**		**0.0256**	**0.0256**	**0.0000**	**8.3189**	**8.3189**	**8.0000e-003**	**0.0000**	**8.5189**

Palmdale GPU - SFR Annual Construction - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Mitigated

	ROG	NOx	CO	SO2	Fugitive PM10	Exhaust PM10	PM10 Total	Fugitive PM2.5	Exhaust PM2.5	PM2.5 Total	Bio- CO2	NBio- CO2	Total CO2	CH4	N2O	CO2e
SubCategory	lb/day										lb/day					
Architectural Coating	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Consumer Products	0.0000					0.0000	0.0000		0.0000	0.0000			0.0000			0.0000
Hearth	0.0000	0.0000	0.0000	0.0000		0.0000	0.0000		0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000
Landscaping	0.1392	0.0533	4.6211	2.4000e-004		0.0256	0.0256		0.0256	0.0256		8.3189	8.3189	8.0000e-003		8.5189
Total	**0.1392**	**0.0533**	**4.6211**	**2.4000e-004**		**0.0256**	**0.0256**		**0.0256**	**0.0256**	**0.0000**	**8.3189**	**8.3189**	**8.0000e-003**	**0.0000**	**8.5189**

7.0 Water Detail

7.1 Mitigation Measures Water

8.0 Waste Detail

8.1 Mitigation Measures Waste

9.0 Operational Offroad

Equipment Type	Number	Hours/Day	Days/Year	Horse Power	Load Factor	Fuel Type

10.0 Stationary Equipment

Palmdale GPU - SFR Annual Construction - Los Angeles-Mojave Desert County, Winter

EMFAC Off-Model Adjustment Factors for Gasoline Light Duty Vehicle to Account for the SAFE Vehicle Rule Applied

Fire Pumps and Emergency Generators

Equipment Type	Number	Hours/Day	Hours/Year	Horse Power	Load Factor	Fuel Type

Boilers

Equipment Type	Number	Heat Input/Day	Heat Input/Year	Boiler Rating	Fuel Type

User Defined Equipment

Equipment Type	Number

11.0 Vegetation

Appendix C

Special Status Species List

Appendix C Biological Resources

Scientific Name Common Name	Status	Habitat Requirements
Acanthoscyphus parishii var. *abramsii* Abrams' oxytheca	None/None G4?T1T2/S1S2 1B.2	Annual herb. Blooms Jun-Aug. Occurs in chaparral, granitic sand, shale. 1140-2060m (3740-6760ft).
Acanthoscyphus parishii var. *parishii* Parish's oxytheca	None/None G4?T3T4/S3S4 4.2	Chaparral, Lower montane coniferous forest. Sandy or gravelly places. 1220-2600m. Blooms Jun-Sep.
Androsace elongata ssp. *acuta* California androsace	None/None G5?T3T4/S3S4 4.2	Chaparral, Cismontane woodland, Coastal scrub, Meadows and seeps, Pinyon and juniper woodland, Valley and foothill grassland. Highly localized and often overlooked little plant. 150-1305m. Blooms Mar-Jun.
Arctostaphylos gabilanensis Gabilan Mountains manzanita	None/None G1/S1 1B.2	Chaparral, Cismontane woodland. Grainitic substrates. 300-700m. Blooms Jan.
Arctostaphylos glandulosa ssp. *gabrielensis* San Gabriel manzanita	None/None G5T3/S3 1B.2	Chaparral. Rocky outcrops; can be dominant shrub where it occurs. 595-1500m. Blooms Mar.
Arctostaphylos parryana ssp. *tumescens* interior manzanita	None/None G4T3T4/S3S4 4.3	Chaparral, Cismontane woodland. Montane chaparral or foothill woodland. 2100-2310m. Blooms Feb-Apr.
Astragalus hornii var. *hornii* Horn's milk-vetch	None/None GUT1/S1 1B.1	Meadows and seeps, Playas. Lake margins, alkaline sites. 60-850m. Blooms May-Oct.
Astragalus preussii var. *laxiflorus* Lancaster milk-vetch	None/None G4T2/S1 1B.1	Chenopod scrub. Alkaline clay flats or gravelly or sandy washes and along draws in gullied badlands. 700-735 m in California. 700-700m. Blooms Mar-May.
Calochortus catalinae Catalina mariposa lily	None/None G3G4/S3S4 4.2	Chaparral, Cismontane woodland, Coastal scrub, Valley and foothill grassland. In heavy soils, open slopes, openings in brush. 15-700m. Blooms (Feb)Mar-Jun.
Calochortus clavatus var. *avius* Pleasant Valley mariposa lily	None/None G4T2/S2 1B.2	Lower montane coniferous forest. Josephine silt loam and volcanically derived soil; often in rocky areas. 305-1800m. Blooms May-Jul.
Calochortus clavatus var. *gracilis* slender mariposa-lily	None/None G4T2T3/S2S3 1B.2	Perennial bulbiferous herb. Blooms March to June. Chaparral, coastal scrub. Shaded foothill canyons; often on grassy slopes within other habitat. 420-760m (1380-2495ft).
Calochortus palmeri var. *palmeri* Palmer's mariposa-lily	None/None G3T2/S2 1B.2	Chaparral, Lower montane coniferous forest, Meadows and seeps. Vernally moist places in yellow-pine forest, chaparral. 710-2390m. Blooms Apr-Jul.
Calochortus striatus alkali mariposa lily	None/None G3?/S2S3 1B.2	Chaparral, Chenopod scrub, Meadows and seeps, Mojavean desert scrub. Alkaline meadows and ephemeral washes. 70-1600m. 70-1595m. Blooms Apr-Jun.
Calystegia peirsonii Peirson's morning-glory	None/None G4/S4 4.2	Chaparral, Chenopod scrub, Cismontane woodland, Coastal scrub, Lower montane coniferous forest, Valley and foothill grassland. Often in disturbed areas or along roadsides or in grassy, open areas. 30-1500m. Blooms Apr-Jun.

Scientific Name Common Name	Status	Habitat Requirements
Canbya candida white pygmy-poppy	None/None G3G4/S3S4 4.2	Joshua tree "woodland", Mojavean desert scrub, Pinyon and juniper woodland. Gravelly, sandy, granitic places. 600-1460m. Blooms Mar-Jun.
Castilleja gleasoni Mt. Gleason paintbrush	None/SR G2/S2 1B.2	Chaparral, Lower montane coniferous forest, Pinyon and juniper woodland. On open flats or slopes in granitic soil. Restricted to the San Gabriel Mountains. 1160-2170m. Blooms May-Jun(Sep).
Castilleja plagiotoma Mojave paintbrush	None/None G4/S4 4.3	Great Basin scrub, Joshua tree "woodland", Lower montane coniferous forest, Pinyon and juniper woodland. Alluvial fans. 300-2500m. Blooms Apr-Jun.
Chorizanthe parryi var. *parryi* Parry's spineflower	None/None G3T2/S2 1B.1	Chaparral, Cismontane woodland, Coastal scrub, Valley and foothill grassland. Dry slopes and flats; sometimes at interface of 2 vegetation types, such as chaparral and oak woodland. Dry, sandy soils. 275-1220m. Blooms Apr-Jun.
Chorizanthe spinosa Mojave spineflower	None/None G4/S4 4.2	Chenopod scrub, Joshua tree "woodland", Mojavean desert scrub, Playas. Sometimes on alkaline soils. 6-1300m. Blooms Mar-Jul.
Cryptantha clokeyi Clokey's cryptantha	None/None G3/S3 1B.2	Mojavean desert scrub. Sandy or gravelly soils. 725-1365m. Blooms Apr.
Diplacus johnstonii Johnston's monkeyflower	None/None G4/S4 4.3	Lower montane coniferous forest. On scree, in rocky or gravelly sites. Also in disturbed areas. 975-2920m. Blooms May-Aug.
Eriastrum rosamondense Rosamond eriastrum	None/None G1?/S1? 1B.1	Chenopod scrub, Vernal pools. Alkali pool beds separated by very low hummocks with open cheopod scrub. Often sandy soil. 700-1175m. Blooms Apr-May(Jun-Jul).
Eriogonum umbellatum var. *minus* alpine sulfur-flowered buckwheat	None/None G5T4/S4 4.3	Subalpine coniferous forest, Upper montane coniferous forest. Granitic substrate; usually gravelly or sandy. 1800-3068m. Blooms Jun-Sep.
Frasera neglecta pine green-gentian	None/None G4/S4 4.3	Lower montane coniferous forest, Pinyon and juniper woodland, Upper montane coniferous forest. Dry, open woodlands. 1400-2500m. Blooms May-Jul.
Galium jepsonii Jepson's bedstraw	None/None G3/S3 4.3	Lower montane coniferous forest, Upper montane coniferous forest. On granite; gravelly hillsides and slopes. 1540-2500m. Blooms Jul-Aug.
Galium johnstonii Johnston's bedstraw	None/None G4/S4 4.3	Chaparral, Lower montane coniferous forest, Pinyon and juniper woodland, Riparian woodland. Open, mixed forest. 1220-2300m. Blooms Jun-Jul.
Gilia latiflora ssp. *cuyamensis* Cuyama gilia	None/None G5?T4/S4 4.3	Pinyon and juniper woodland. Sandy flats, lower river valleys. 595-2000m. Blooms Apr-Jun.
Goodmania luteola golden goodmania	None/None G3/S3 4.2	Meadows and seeps, Mojavean desert scrub, Playas, Valley and foothill grassland. Alkaline or clay soils. 20-2200m. Blooms Apr-Aug.
Hulsea vestita ssp. *gabrielensis* San Gabriel Mountains sunflower	None/None G5T3/S3 4.3	Lower montane coniferous forest, Upper montane coniferous forest. Rocky sites. 1500-2500m. Blooms May-Jul.

Scientific Name Common Name	Status	Habitat Requirements
Lilium parryi lemon lily	None/None G3/S3 1B.2	Lower montane coniferous forest, Meadows and seeps, Riparian forest, Upper montane coniferous forest. Wet, mountainous terrain; generally in forested areas; on shady edges of streams, in open boggy meadows & seeps. 1220-2745m. Blooms Jul-Aug.
Linanthus concinnus San Gabriel linanthus	None/None G2/S2 1B.2	Chaparral, Lower montane coniferous forest, Upper montane coniferous forest. Dry rocky slopes, often in Jeffrey pine/canyon oak forest. 1520-2800m. Blooms Apr-Jul.
Loeflingia squarrosa var. *artemisiarum* sagebrush loeflingia	None/None G5T3/S2 2B.2	Desert dunes, Great Basin scrub, Sonoran desert scrub. Sandy flats and dunes. Sandy areas around clay slicks w/Sarcobatus, Atriplex, Tetradymia, etc. 700-1615m. Blooms Apr-May.
Lycium torreyi Torrey's box-thorn	None/None G4G5/S3 4.2	Mojavean desert scrub, Sonoran desert scrub. Sandy, rocky, washes, streambanks, desert valleys. - -50-1220m. Blooms (Jan-Feb)Mar-Jun(Sep-Nov).
Malacothamnus davidsonii Davidson's bush-mallow	None/None G2/S2 1B.2	Chaparral, Cismontane woodland, Coastal scrub, Riparian woodland. Sandy washes. 185-1140m. Blooms Jun-Jan.
Monardella viridis green monardella	None/None G3/S3 4.3	Broadleafed upland forest, Chaparral, Cismontane woodland. 100-1010m. Blooms Jun-Sep.
Muilla coronata crowned muilla	None/None G3/S3 4.2	Chenopod scrub, Joshua tree "woodland", Mojavean desert scrub, Pinyon and juniper woodland. Mostly on barren flats and ridges in sandy, granitic soils. 670-1960m. Blooms Mar-Apr(May).
Opuntia basilaris var. *brachyclada* short-joint beavertail	None/None G5T3/S3 1B.2	Chaparral, Joshua tree "woodland", Mojavean desert scrub, Pinyon and juniper woodland. Sandy soil or coarse, granitic loam. 425-1800m. Blooms Apr-Jun(Aug).
Packera ionophylla Tehachapi ragwort	None/None G4/S4 4.3	Lower montane coniferous forest, Upper montane coniferous forest. Dry, open, granitic talus slopes. 1500-2700m. Blooms Jun-Jul.
Perideridia pringlei adobe yampah	None/None G4/S4 4.3	Chaparral, Cismontane woodland, Coastal scrub, Pinyon and juniper woodland. Serpentine, clay soils. Grassland hillsides; seasonally wet sites. 300-1800m. Blooms Apr-Jun(Jul).
Phacelia mohavensis Mojave phacelia	None/None G4Q/S4 4.3	Cismontane woodland, Lower montane coniferous forest, Meadows and seeps, Pinyon and juniper woodland. Sandy or gravelly soils, dry streambeds. 1400-2500m. Blooms Apr-Aug.
Quercus durata var. *gabrielensis* San Gabriel oak	None/None G4T3/S3 4.2	Chaparral, Cismontane woodland. 450-1000m. Blooms Apr-May.
Symphyotrichum greatae Greata's aster	None/None G2/S2 1B.3	Broadleafed upland forest, Chaparral, Cismontane woodland, Lower montane coniferous forest, Riparian woodland. Mesic canyons. 300-2010m. Blooms Jun-Oct.
Syntrichopappus lemmonii Lemmon's syntrichopappus	None/None G4/S4 4.3	Chaparral, Joshua tree "woodland", Pinyon and juniper woodland. Decomposed granite; sandy or gravelly soils. 500-1830m. Blooms Apr-May(Jun).
Bombus crotchii Crotch bumble bee	None/SCE G3G4/S1S2	Coastal California east to the Sierra-Cascade crest and south into Mexico. Food plant genera include Antirrhinum, Phacelia, Clarkia, Dendromecon, Eschscholzia, and Eriogonum.

Scientific Name Common Name	Status	Habitat Requirements
Branchinecta lynchi vernal pool fairy shrimp	FT/None G3/S3	Endemic to the grasslands of the Central Valley, Central Coast mountains, and South Coast mountains, in astatic rain-filled pools. Inhabit small, clear-water sandstone-depression pools and grassed swale, earth slump, or basalt-flow depression pools.
Euphydryas editha quino quino checkerspot butterfly	FE/None G5T1T2/S1S2	Sunny openings within chaparral & coastal sage shrublands in parts of Riverside & San Diego counties. Hills and mesas near the coast. Need high densities of food plants Plantago erecta, P. insularis, and Orthocarpus purpurescens.
Helminthoglypta fontiphila Soledad shoulderband	None/None G1/S1	Air-breathing terrestrial snail. Known from type locality, Little Rock Creek Cyn on north side of San Gabriels; west to Santa Clarita in Soledad Cyn; east to the vicinity of Big Rock Creek; and north to Elizabeth Lake Cyn in the Sierra Pelona Mtns. Frequently found in riparian habitat (springs, seeps, along streams). May be found in rock piles, flood-borne debris, or under dead yuccas where other cover is not available.
Anaxyrus californicus arroyo toad	FE/None G2G3/S2S3 SSC	Semi-arid regions near washes or intermittent streams, including valley-foothill and desert riparian, desert wash, etc. Rivers with sandy banks, willows, cottonwoods, and sycamores; loose, gravelly areas of streams in drier parts of range.
Rana draytonii California red-legged frog	FT/None G2G3/S2S3 SSC	Lowlands and foothills in or near permanent sources of deep water with dense, shrubby or emergent riparian vegetation. Requires 11-20 weeks of permanent water for larval development. Must have access to estivation habitat.
Rana muscosa southern mountain yellow-legged frog	FE/SE G1/S1 WL	Federal listing refers to populations in the San Gabriel, San Jacinto and San Bernardino mountains (southern DPS). Northern DPS was determined to warrant listing as endangered, Apr 2014, effective Jun 30, 2014. Always encountered within a few feet of water. Tadpoles may require 2 - 4 yrs to complete their aquatic development.
Anniella pulchra Northern California legless lizard	None/None G3/S3 SSC	Sandy or loose loamy soils under sparse vegetation. Soil moisture is essential. They prefer soils with a high moisture content.
Anniella spp. California legless lizard	None/None G3G4/S3S4 SSC	Contra Costa County south to San Diego, within a variety of open habitats.This element represents California records of Anniella not yet assigned to new species within the Anniella pulchra complex. Variety of habitats; generally in moist, loose soil. They prefer soils with a high moisture content.
Arizona elegans occidentalis California glossy snake	None/None G5T2/S2 SSC	Patchily distributed from the eastern portion of San Francisco Bay, southern San Joaquin Valley, and the Coast, Transverse, and Peninsular ranges, south to Baja California. Generalist reported from a range of scrub and grassland habitats, often with loose or sandy soils.
Emys marmorata western pond turtle	None/None G3G4/S3 SSC	A thoroughly aquatic turtle of ponds, marshes, rivers, streams and irrigation ditches, usually with aquatic vegetation, below 6000 ft elevation. Needs basking sites and suitable (sandy banks or grassy open fields) upland habitat up to 0.5 km from water for egg-laying.
Gopherus agassizii desert tortoise	FT/ST G3/S2S3	Most common in desert scrub, desert wash, and Joshua tree habitats; occurs in almost every desert habitat. Require friable soil for burrow and nest construction. Creosote bush habitat with large annual wildflower blooms preferred.

Scientific Name Common Name	Status	Habitat Requirements
Phrynosoma blainvillii coast horned lizard	None/None G3G4/S3S4 SSC	Frequents a wide variety of habitats, most common in lowlands along sandy washes with scattered low bushes. Open areas for sunning, bushes for cover, patches of loose soil for burial, and abundant supply of ants and other insects.
Thamnophis hammondii two-striped gartersnake	None/None G4/S3S4 SSC	Coastal California from vicinity of Salinas to northwest Baja California. From sea to about 7,000 ft elevation. Highly aquatic, found in or near permanent fresh water. Often along streams with rocky beds and riparian growth.
Accipiter cooperii Cooper's hawk	None/None G5/S4 WL	Woodland, chiefly of open, interrupted or marginal type. Nest sites mainly in riparian growths of deciduous trees, as in canyon bottoms on river flood-plains; also, live oaks.
Agelaius tricolor tricolored blackbird	None/ST G1G2/S1S2 SSC	
Aimophila ruficeps canescens southern California rufous-crowned sparrow	None/None G5T3/S3 WL	Resident in Southern California coastal sage scrub and sparse mixed chaparral. Frequents relatively steep, often rocky hillsides with grass and forb patches.
Artemisiospiza belli belli Bell's sage sparrow	None/None G5T2T3/S3 WL	Nests in chaparral dominated by fairly dense stands of chamise. Found in coastal sage scrub in south of range. Nest located on the ground beneath a shrub or in a shrub 6-18 inches above ground. Territories about 50 yds apart.
Athene cunicularia burrowing owl	None/None G4/S3 SSC	Open, dry annual or perennial grasslands, deserts, and scrublands characterized by low-growing vegetation. Subterranean nester, dependent upon burrowing mammals, most notably, the California ground squirrel.
Buteo regalis ferruginous hawk	None/None G4/S3S4 WL	Open grasslands, sagebrush flats, desert scrub, low foothills and fringes of pinyon and juniper habitats. Eats mostly lagomorphs, ground squirrels, and mice. Population trends may follow lagomorph population cycles.
Buteo swainsoni Swainson's hawk	None/ST G5/S3	
Charadrius montanus mountain plover	None/None G3/S2S3 SSC	Short grasslands, freshly plowed fields, newly sprouting grain fields, & sometimes sod farms. Short vegetation, bare ground, and flat topography. Prefers grazed areas and areas with burrowing rodents.
Falco columbarius merlin	None/None G5/S3S4 WL	Seacoast, tidal estuaries, open woodlands, savannahs, edges of grasslands & deserts, farms & ranches. Clumps of trees or windbreaks are required for roosting in open country.
Lanius ludovicianus loggerhead shrike	None/None G4/S4 SSC	Broken woodlands, savannah, pinyon-juniper, Joshua tree, and riparian woodlands, desert oases, scrub & washes. Prefers open country for hunting, with perches for scanning, and fairly dense shrubs and brush for nesting.
Polioptila californica californica coastal California gnatcatcher	FT/None G4G5T3Q/S2 SSC	Obligate, permanent resident of coastal sage scrub below 2500 ft in Southern California. Low, coastal sage scrub in arid washes, on mesas and slopes. Not all areas classified as coastal sage scrub are occupied.
Toxostoma lecontei Le Conte's thrasher	None/None G4/S3 SSC	Desert resident; primarily of open desert wash, desert scrub, alkali desert scrub, and desert succulent scrub habitats. Commonly nests in a dense, spiny shrub or densely branched cactus in desert wash habitat, usually 2-8 feet above ground.

Scientific Name Common Name	Status	Habitat Requirements
Vireo bellii pusillus least Bell's vireo	FE/SE G5T2/S2	Summer resident of Southern California in low riparian in vicinity of water or in dry river bottoms; below 2000 ft. Nests placed along margins of bushes or on twigs projecting into pathways, usually willow, Baccharis, mesquite.
Myotis yumanensis Yuma myotis	None/None G5/S4	Occurs in a variety of lowland and upland habitats including desert scrub, riparian, and woodlands and forests. Distribution is closely tied to bodies of water. Roosts in a variety of areas including caves, cliffs, mines, crevices in live trees, and buildings and other man-made structures.
Onychomys torridus ramona southern grasshopper mouse	None/None G5T3/S3 SSC	Desert areas, especially scrub habitats with friable soils for digging. Prefers low to moderate shrub cover. Feeds almost exclusively on arthropods, especially scorpions and orthopteran insects.
Perognathus inornatus San Joaquin pocket mouse	None/None G2G3/S2S3	Grassland, oak savanna and arid scrubland in the southern Sacramento Valley, Salinas Valley, San Joaquin Valley and adjacent foothills, south to the Mojave Desert. Associated with fine-textured, sandy, friable soils.
Xerospermophilus mohavensis Mohave ground squirrel	None/ST G2G3/S2S3	Open desert scrub, alkali scrub & Joshua tree woodland. Also feeds in annual grasslands. Restricted to Mojave Desert. Prefers sandy to gravelly soils, avoids rocky areas. Uses burrows at base of shrubs for cover. Nests are in burrows.
Mojave Riparian Forest	None/None G1/S1.1	
Southern Coast Live Oak Riparian Forest	None/None G4/S4	
Southern Cottonwood Willow Riparian Forest	None/None G3/S3.2	
Southern Riparian Scrub	None/None G3/S3.2	
Southern Sycamore Alder Riparian Woodland	None/None G4/S4	
Southern Willow Scrub	None/None G3/S2.1	
Valley Needlegrass Grassland	None/None G3/S3.1	All topographic locations. Soils may be deep with high clay content, loamy, sandy, or silty derived from mudstone, sandstone, or serpentine substrates
Wildflower Field	None/None G2/S2.2	

Appendix D

Traffic Report

DRAFT

Palmdale General Plan Update and Program EIR

Traffic Report

City of Palmdale

February 2022

CONTENTS

Report Overview 1
Existing Regional and Local Roadway 1
Functional Street Classifications 3
Palmdale Roadway Classifications 3
Regional Arterials 3
Major Arterials 3
Secondary Arterials 3
County of Los Angeles Classifications 4
Freeways/Expressways 4
Major Highways 4
Secondary Highways 4
Limited Secondary Highways 4
Roadway Facilities 5
Regional Road Network 5
Local Road Network 5
Major East–West Roads 6
Major North–South Roads 8
Methodology 11
Existing Conditions 15
Level of Service Definitions and Standards 18
Summary 23
Future Conditions 24
Roadway Improvements 24
2045 Base 26
Summary 33
2045 Base with High Desert Corridor Freeway 34
Summary 42
2045 Preferred Plan 43
Summary 51
Measures of Effectiveness 52
Summary 58
Vehicle Miles Traveled Impact Criteria Analysis 59
SB 743 Overview 59
Projects Affected by SB 743 59
Los Angeles County VMT Implementation 60
Baseline VMT 60
VMT Thresholds for Land Use Plans 63
VMT Analysis 63
VMT Mitigation Opportunities 68
Conclusion 71

FIGURES

Figure 1. Existing Roadway Network 2
Figure 2: Palmdale Traffic Analysis Zones 12
Figure 3: Palmdale Sphere of Influence 12
Figure 4: 2017 Existing Daily VMT Share Originating in the Palmdale SOI 16
Figure 5: 2017 Existing Daily Assigned Traffic Volumes 17
Figure 6. Future Roadway Network 25
Figure 7: 2045 Base Daily VMT Share Originating in Palmdale Sphere of Influence 27
Figure 8: 2045 Base Daily Traffic Volumes Forecast 28
Figure 9: 2045 Base with High Desert Corridor Daily VMT Share Originating in the Palmdale Sphere of Influence 36
Figure 10: 2045 Base with High Desert Corridor Daily Traffic Volumes Forecast 37
Figure 11: Comparison of 2045 Base to 2045 Base with High Desert Corridor Daily Traffic Volumes Forecasts 37
Figure 12: 2045 Preferred Plan Daily VMT Share Originating in Palmdale Sphere of Influence 45
Figure 13: 2045 Preferred Plan Daily Traffic Volumes 46
Figure 14: Daily VMT by Facility Type within the Palmdale Sphere of Influence for All Scenarios 56
Figure 15: Daily VHT by Facility Type within the Palmdale Sphere of Influence for All Scenarios 57
Figure 16: Daily VHD by Facility Type within the Palmdale Sphere of Influence for All Scenarios 58
Figure 17: Baseline VMT Benchmark Coverage Area for Los Angeles County 61
Figure 18: Palmdale Sphere of Influence 64
Figure 19. 2045 Preferred Plan Land Use and Design Framework 65

TABLES

Table 1: Percentage of the Palmdale Sphere of Influence in the SCAG Region 13
Table 2: Palmdale Sphere of Influence Land Use Comparisons 14
Table 3: 2017 Existing Socio-Economic Data 15
Table 4: 2017 Existing Average Trip Length for Palmdale SOI Trips 15
Table 5: 2017 Existing Palmdale SOI (II, IX and XI*) Daily, VMT, VHT, Average Speed by Facility 16
Table 6: Level of Service Criteria 18
Table 7: 2017 Existing Daily Segment Volumes 19
Table 8: 2017 Existing Palmdale Sphere of Influence VMT/VHT by Facility Type for All Trips 23

Table 9: 2045 Base Socio-Economic Forecast 26
Table 10: 2045 Base Average Trip Length for Palmdale Sphere of Influence Trips 26
Table 11: 2045 Base Palmdale Sphere of Influence (II, IX and XI*) Daily, VMT, VHT, Average Speed by Facility 27
Table 12: 2045 Base Daily Volumes ..... **Error! Bookmark not defined.**
Table 13: 2045 Base Palmdale Sphere of Influence VMT/VHT by Facility Type for All Trips 33
Table 14: 2045 Base with High Desert Corridor Freeway Socio-Economic Forecast 34
Table 15: 2045 Base with High Desert Corridor Average Trip Length for Palmdale SOI Trips 35
Table 16: 2045 Base with High Desert Corridor Palmdale Sphere of Influence (II, IX and XI*) Daily, VMT, VHT, Average Speed by Facility 35
Table 17: 2045 Base with High Desert Corridor Daily Volumes 38
Table 18: 2045 Base with High Desert Corridor Palmdale Sphere of Influence VMT/VHT by Facility Type for All Trips 42
Table 19: 2045 Preferred Plan Socio-Economic Forecast 43
Table 20: 2045 Preferred Plan Palmdale Sphere of Influence (II and IX) Average Trip Length 44
Table 21: 2045 Preferred Plan Palmdale Sphere of Influence (II, IX and XI*) Daily, VMT, VHT, Average Speed by Facility 44
Table 22: 2045 Preferred Plan Daily Volumes 47
Table 23: 2045 Preferred Plan Palmdale Sphere of Influence VMT/VHT by Facility Type for All Trips 51
Table 24: Trip Purpose Statistics 52
Table 25: VMT between Palmdale Sphere and Areas within the SCAG Region 53
Table 26: VMT to/from Palmdale Sphere to Areas within the SCAG Region by Facility Type 53
Table 27: VMT for All Links within the Palmdale Sphere of Influence 53
Table 28: Performance Statistics by Facility Type within the Palmdale Sphere of Influence 54
Table 29. Summary of Roadway Segments at Level of Service E or F 55
Table 30: Baseline VMT Thresholds for North and South County 62
Table 31: Palmdale Sphere of Influence Socio-economic Data 63
Table 32: Baseline VMT Thresholds—Total VMT per Service Population 66
Table 33: Baseline VMT Thresholds—Home-based Trips 67
Table 34: Home-based Trips and VMT Statistics 67
Table 35: All Trips and VMT Statistics 68
Table 37: VMT between Palmdale Sphere and Areas within the SCAG Region 70
Table 38: VMT to/from Palmdale Sphere to Areas within the SCAG Region by Facility Type 70
Table 39: VMT for All Links within the Geographic Area 71

Report Overview

Palmdale is a city in northern Los Angeles County in the state of California. The city lies in the Antelope Valley region of Southern California. The San Gabriel Mountains, which are about 40 miles wide, separate Palmdale from the Los Angeles Basin to the south.

This report provides traffic information about the City of Palmdale including traffic counts, local land use and future travel demand forecasts in support of the General Plan Update. Traffic modeling was performed at the link level using the Regional Model. The SCAG region utilizes the SCAG 2016 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) Travel Demand Model (SCAG model) to produce forecasts for the region. The SCAG model used for the Palmdale General Plan Update (Palmdale GP) is consistent with the RTP assumptions for existing year and future year conditions as all projects in the RTP are included.

EXISTING REGIONAL AND LOCAL ROADWAY

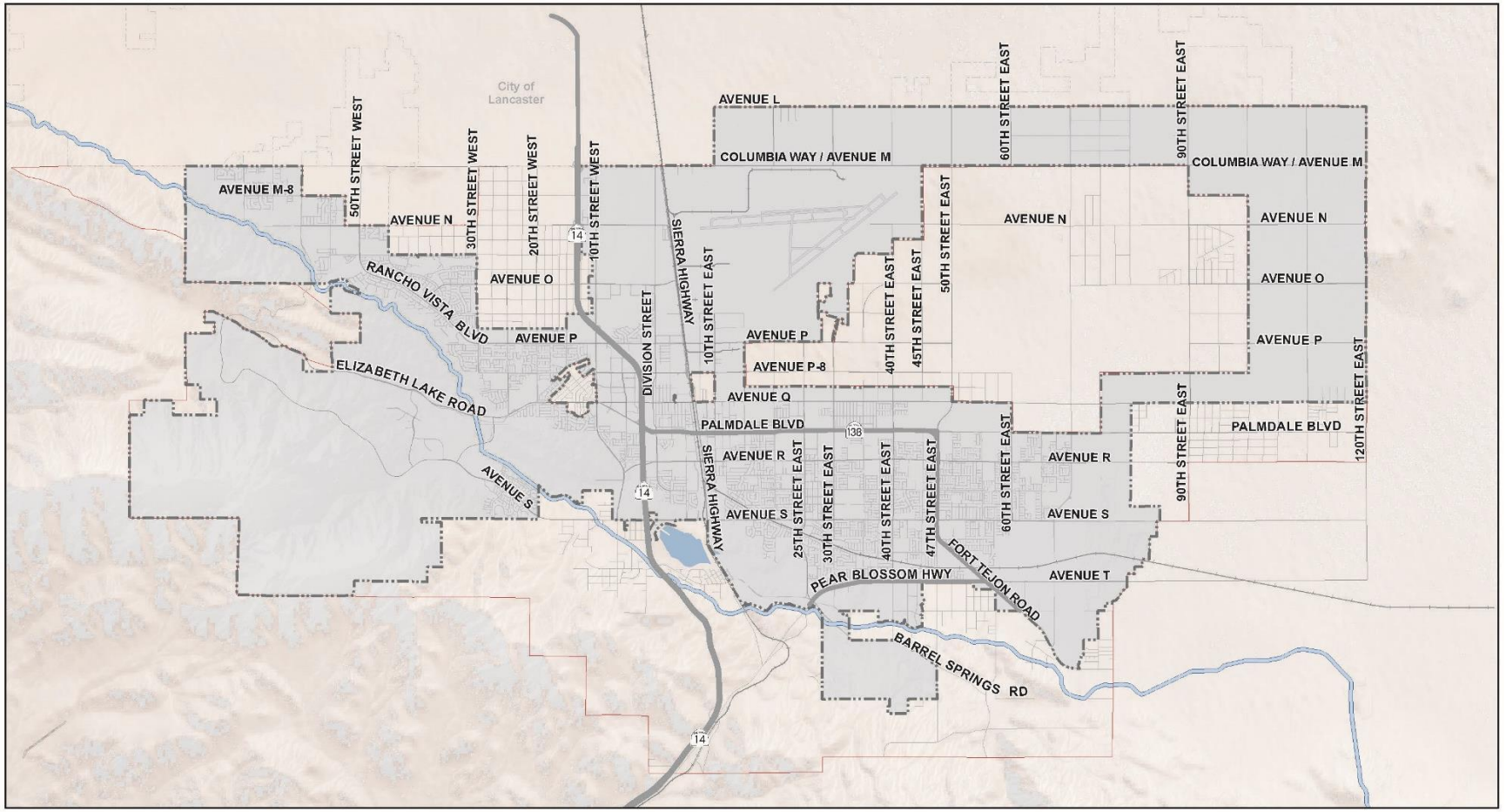
The existing regional and local roadway network in Palmdale is a hierarchical system of highways and local streets developed to provide regional traffic movement and local access. State Route (SR-) 14 provides access to a regional highway route, while SR-138 is a key arterial distributing vehicular traffic through the city.

The city's roadway network has been developed primarily around a suburban grid system in which arterials are spaced approximately every mile and secondary arterials are spaced every half-mile between major arterials. Each east–west lettered avenue is one mile from the next lettered east–west avenue, and each north–south numbered avenue is one mile from the next numbered north–south avenue.

Between arterials, neighborhood local and collector streets are suburban in nature, with limited collector roads to lead traffic into arterials. Common features in neighborhoods are dead-ends, and cul-de-sacs. This design approach facilitates congestion, as arterials are the only options for moving between destinations in the community. Dead-ends and cul-de-sacs also limit connectivity for alternative modes of transportation, particularly people walking or bicycling.

The city is located approximately 60 freeway miles north of Los Angeles. Regional access to the city is provided via the Antelope Valley Freeway (State Route [SR] 14), which extends north to Kern County and south to the San Fernando Valley. Additional arterials providing regional access to the city are Palmdale Boulevard, Elizabeth Lake Road, Pearblossom Highway (SR 138), and Sierra Highway. The city's existing roadway network is illustrated in Figure 1.

Figure 1. Existing Roadway Network



FUNCTIONAL STREET CLASSIFICATIONS

The following section provides a description of the functional classification of the facilities within the study area. The city's roadway system consists of a wide range of transportation facilities, which serve two basic functions: mobility and land access. A circulation network is composed of facilities that emphasize mobility or access to different degrees. The following types of facilities are generically defined.

- Freeway: Mobility with very limited access.
- Expressway: Mobility with more frequent access to arterial streets than a freeway, but no direct land access.
- Arterial: Mobility with access to collectors, some local streets and major traffic.
- Collector: Connects local streets with arterials and also provides access to adjacent land uses, thus balancing mobility with access.
- Local: Provides access to adjacent land uses exclusively.

PALMDALE ROADWAY CLASSIFICATIONS

Regional Arterials

Regional arterials are limited access facilities that provide service to non-local through trips with minimal direct access to adjacent land uses. They have a design cross-section of eight lanes (four in each direction) with medians and turn lanes at a limited number of access points. Regional arterials are designated as 106-foot roadways, typically within a 120-foot right-of-way. At their design capacity of level of service (LOS) D, most regional arterials can carry between 49,500 and 64,000 vehicles per day. Some bike lanes currently exist within primary and regional arterials, however current City policy is to provide new bike lanes on secondary arterials only.

Major Arterials

Major arterials are primarily intended to serve through, non-local traffic and provide limited local access. They have a cross-section of three through lanes, and a raised landscape median and turn lanes at a limited number of access points. Major arterials are designated as 84-foot roadways, within a 100-foot right-of-way. At LOS D, major arterials can accommodate between 40,000 and 44,000 vehicles per day.

Secondary Arterials

Secondary arterials provide more local access than major arterials, while also providing a reduced level of non-local through traffic service. Secondary arterials have a cross-section of four through lanes, a bike lane in each direction and a left-turn lane within 68 feet of curb-to-curb space, within an 84-foot right-of-way. These roadways are usually undivided with the potential for limited on-street parking, turn lanes at major intersections, and partial control of vehicular and pedestrian access from driveways, cross streets, and crosswalks. Secondary arterials can accommodate between 22,000 and 24,000 vehicles per day at an acceptable level of service.

COUNTY OF LOS ANGELES CLASSIFICATIONS

Freeways/Expressways

The freeway is the highest level of roadway in the planning area and accommodates regional and interstate travel. Freeways typically have a minimum 180-foot cross-section and at least four through lanes (two per direction). Freeways have limited access at interchanges and have a typical design capacity of over 2,000 vehicles per hour per lane.

Major Highways

The major highway is intended to accommodate the majority of traffic connecting between cities and communities in the region and the regional freeway system. Major highways have an ultimate design cross-section of at least four lanes (two in each direction) with medians and turn lanes at limited number of access points. The right-of-way for major highways is typically 100 feet. At their design capacity of LOS E, most major highways can carry between 49,500 and 54,000 vehicles per day. Also classified as major highways, are key inter-urban roads, non-urban access ways and recreational roads. While many of these may not be planned for urban-type improvements, the wider right-of-way is needed for other transportation uses including bus turnouts and separate bicycle and pedestrian facilities.

Secondary Highways

The secondary highway is primarily intended to serve through traffic and collect traffic from limited secondary highways and collectors. In rural areas, secondary highways also serve as connecting highways between non-urban communities or in locations where widening a roadway to major highway width is not practical. Secondary highways normally have a cross-section of four through lanes with limited access from cross streets and driveways. Medians and turn lanes at limited locations are usually provided when adequate right-of-way (80 feet is the desired width) is developed and traffic and/or safety conditions warrant. At LOS E, secondary highways can accommodate between 40,000 and 44,000 vehicles per day.

Limited Secondary Highways

Limited secondary highways are typically found in the foothills and mountain and canyon areas. Their primary function is to provide access to low-density settlements and recreational areas. The standard for this type of roadway is two through lanes in a 64-foot right-of-way. These roadways are undivided with possible turn lanes at major intersections, graded shoulders, and limited control of vehicular and pedestrian access from driveways, cross streets, and crosswalks. Limited secondary highways can accommodate between 22,000 and 24,000 vehicles per day at an acceptable level of service; however, they are typically low-volume roads.

ROADWAY FACILITIES

Regional Road Network

State Route 14

State Route 14 is a north–south state highway in southern California, approximately 116.6 miles in length. The southern portion of the highway is signed as Antelope Valley Freeway. The route connects Interstate 5 (I-5), near Santa Clarita, with U.S. Route 395, near Inyokern.

The southern part of the route is a busy commuter freeway serving and connecting the communities of Palmdale and Lancaster with the Greater Los Angeles area. The northern portion is legislatively named Aerospace Highway, as the highway serves Edwards Air Force Base. With U.S. Route 395, this road connects Los Angeles with such places as Mammoth Mountain, Mono Lake, Yosemite National Park and Reno, Nevada. Housing and population growth in Santa Clarita, Lancaster and Palmdale has made the Antelope Valley Freeway one of the most congested freeways in southern California.

State Route 138

State Route 138 (SR 138) is an east–west state highway generally following the northern foothills of the San Gabriel Mountains from its junction with I-5 south of Gorman eastward to Mount Anderson Junction, its eastern junction with State Route 18 south of Crestline in the San Bernardino Mountains. The route is approximately 105.4 miles long.

The western leg of SR 138 extends from I-5 to Gorman Post Road, Lancaster Road from Gorman Post Road to 245th Street West near Neenach School, and Avenue D from 245th Street West to SR 138's north junction with SR 14. After its co-routing with the Antelope Valley Freeway (SR 14) through Lancaster and Palmdale, it passes through the east side of Palmdale as four- to six-lane Palmdale Boulevard, 47th Street East, and Fort Tejon Road to Pearblossom Highway. The state route continues, named locally as Pearblossom Highway, as a four-lane facility to just west of 72nd Street East, where it tapers to three, then two lanes and continues easterly on Pearblossom Highway through Littlerock, Pearblossom and Llano to its junction with SR 18.

Local Road Network

The street system is laid out on a grid. Each lettered east–west avenue is one mile from the next letter. By way of example, Avenue R is one mile north from Avenue S. In between each whole letter avenue, there are 15 sub-avenues labeled -1 through -15. Along with whole letter avenues, the -8 avenues are also major thoroughfares. Avenue R-8, for example, is a major road just like Avenue R and Avenue S. Sometimes the -8 avenues are renamed. Avenue Q-8 is renamed Palmdale Boulevard and Avenue P-8 is renamed Technology Drive.

Major streets which run north to south are numbered inside their direction, i.e., 10th Street West and 10th Street East. Each 0 and 5 street is a major thoroughfare with each 0 street being 1 mile from the previous 0 street. For example, 40th Street East is one mile east of 30th Street East. The east–west dividing line is Division Street, west of the Union Pacific/Metrolink rail corridor, which would be the equivalent of 0 Street East/West.

Major East–West Roads

Avenue L

Avenue L is unpaved from just west of 150th Street East to the arterial's intersection with 60th Street East. Avenue L then becomes a paved two-lane road and begins its operation as a regional arterial. The asphalt is extremely degraded in some places and appears to be simply a farm road at times with no roadway striping. There is a roadway break between 40th Street East and 35th Street East, where East Avenue L picks up again as a two-lane arterial. At 5th Street East, Avenue L begins operating at two lanes in each direction and periodic sections of three lanes in both the east and west directions. East of 42nd Street West, Avenue L transitions back to one lane in each direction to its end as a paved roadway at 90th Street West.

Columbia Way/Avenue M

East Avenue M transitions from a major arterial to a regional arterial and then back to a major arterial as it progresses in an east–west direction through the Palmdale area. The arterial begins as a paved roadway in the east at a right-angle intersection with 100th Street East. There is a break in pavement between 90th Street East and 70th Street East where the roadway continues as a dirt road. The portion of East Avenue M that is paved between 100th Street East and 70th Street East operates as one lane in each direction. The arterial picks up again at 50th Street East with two lanes in each direction, operating as East Avenue M/ColumbiaWay. To the west of 10th Street West, West Avenue M again transitions to one lanein each direction. The arterial terminates in the west at 75th Street West.

Avenue P/Rancho Vista Boulevard

This major arterial extends from 50th Street West to 15th Street East as Rancho Vista Boulevard, and from 15th Street East to 50th Street East as East Avenue P. West of 15th Street West, Rancho Vista Boulevard is a four-lane major arterial servicing residential areas. Between 15th Street West and approximately 0.25-mile west of Division Street, at Fairway Drive, Rancho Vista Boulevard is a six-lane arterial servicing commercial and residential areas with a speed limit of 35 mph. East of Fairway Drive, Rancho Vista Boulevard continues as a four-lane arterial road servicing commercial and industrial areas including the Palmdale Regional Airport and Plant 42. Per the City's most recent General Plan, Avenue P has a plan line dedication of 104 or 114 feet[1] of right-of-way allowing for six lanes with a median at build-out conditions.

There is a two-track railroad crossing of Rancho Vista Boulevard located between Sierra Highway and Eighth Street East/Lockheed Way. The crossing is approximately 50 feet east of and 1,300 feet west of the Sierra Highway and Eighth Street East intersections, respectively. The crossing is currently equipped with two curb-mounted California Public Utilities Commission (CPUC) Standard 9 (flashing light signal assembly with automatic gate arm) warning devices, two median- mounted CPUC Standard 9 (flashing light signal assembly with automatic gate arm) warning devices, railroad advanced warning signage, and pavement markings. A grade separation of the railroad crossing is currently being designed.

[1]The build-out width of the right-of-way on all local roadways is independent on whether or not the street will accommodate a bicycle lane, which will be determined in the City's Bicycle Transportation Plan.

Technology Drive/East Avenue P-8

Technology Drive/East Avenue P-8 is approximately one-half mile south of and parallel to Rancho Vista Boulevard/Avenue P. This secondary arterial has three discontinuous segments which are paved. The western-most segment is named Technology Drive from 10th Street West to Division Street, and East Avenue P-8 from east of Division Street to Sierra Highway This segment is striped for four through lanes and a center shared left-turn lane. The middle paved portion runs between Eighth Street East and 10th Street East and has two through lanes. The eastern paved portion runs between 40th Street East and 50th Street East and also has two through lanes.

Avenue Q

About 0.5-mile north of Palmdale Boulevard, Avenue Q runs parallel to Palmdale Boulevard. Avenue Q is designated as a major and secondary arterial street but is discontinuous. It runs from just west of Trade Center Drive to just east of 40th Street East. West of SR 14, West Avenue Q is a major arterial street from Trade Center Drive to Fifth Street West, servicing a light industrial area. Between Fifth Street West and SR 14, West Avenue Q is a secondary arterial street servicing the Antelope Valley Auto Center. From SR 14 to Third Street East, West/East Avenue Q is again a major arterial street servicing mainly single-family residential land uses.

To the east of the Union Pacific and Metrolink railroad tracks, East Avenue Q begins again as a major arterial at Sierra Highway. East of 15th Street East until East Avenue Q ends just east of 40th Street East, East Avenue Q continues as a major arterial. Per the City's existing General Plan, Avenue Q has a plan line dedication of 104 or 114 feet of right-of-way allowing for six lanes with a median at build-out conditions.

The City of Palmdale aspires to grade separate Avenue Q with the Union Pacific, Metrolink, and future high-speed railroad tracks, thereby connecting the east and westerly segments of this arterial street.

Palmdale Boulevard/SR 138

West of SR 14, West Palmdale Boulevard is a four-lane regional arterial from 10th Street West to the SR 14 southbound ramp terminal intersection. Just east of SR 14, Palmdale Boulevard is a state-owned route, signed as SR 138, running east to 47th Street East. From SR 14, traveling east to 25th Street East, the facility serves a highly concentrated general commercial area. Per the City's General Plan, West Palmdale Boulevard between Elizabeth Lake Road and Division Street has a plan line dedication of 126 or 136 feet of right-of- way allowing for eight lanes with a median at build-out conditions. East Palmdale Boulevard between Division Street and 120th Street East has a plan line dedication of 104 or 114 feet of right-of-way allowing for six lanes with a median at build-out conditions. A design effort is currently underway to widen Palmdale Boulevard to six lanes between Fifth Street East and 10th Street East.

East Avenue R/Rayburn Road

East Avenue R/Rayburn Road is approximately one-half mile south of Palmdale Boulevard. West of Division Street, the roadway is known as Rayburn Road and East Avenue R east of Division Street. Rayburn Road is a two-lane facility. East of Division Street, East Avenue R is a two-lane arterial with a center turning lane. From Sixth Street East to 47th Street East, East Avenue R is a four-lane arterial except for the portion between 35th Street East and 40th Street East, where the eastbound direction narrows to one lane. Per the City's existing General Plan, Rayburn Road/East Avenue R between Tierra

Subida Avenue and 90th Street East has a plan line dedication of 104 or 114 feet of right-of-way allowing for six lanes with a median at build-out conditions.

The City and Caltrans are currently pursuing a safety project along a two-mile long segment of Avenue R between Sierra Highway and 25th Street East. The project will add a dedicated bike lane, a left-turn lane midblock, and continuous pavement and intersection sidewalk ramps that are compliant with the Americans with Disabilities Act (ADA) guidelines.

Avenue S

Avenue S is approximately one mile south of Avenue R/Rayburn Road. It is designated as a major arterial as it runs about 1.75 miles west of SR 14 to about 3,800 feet east of 47th Street East. Avenue S is a four-lane road with combinations of medians and left-turn lanes. East Avenue S has a full diamond interchange with SR 14. Per the City's existing General Plan, Avenue S between City Ranch Road/Ranch Center Drive and Bridge Road has a plan line dedication of 104 or 114 feet of right-of-way, allowing for six lanes with a median at build-out conditions; a plan line dedication of 126 to 136 feet of right-of-way between Bridge Road and 35th Street East allowing for eight lanes at build-out conditions; and a plan line dedication of 104 or 114 feet of right-of-way between 35th Street East and 70th Street East allowing for six lanes at build-out conditions.

Major North–South Roads

10th Street West

Running parallel to SR 14, 10th Street West is an arterial road that runs from the city of Lancaster to Palmdale Boulevard, continuing south where it changes names to become Tierra Subida Avenue. South of SR 14 to Technology Drive, 10th Street West continues as a regional arterial. South of Technology Drive, until it becomes Tierra Subida Avenue at Palmdale Boulevard, 10th Street West is a major arterial road. Per the City's existing General Plan, 10th Street West between West Avenue M and West Palmdale Boulevard has a plan line dedication of 126 or 136 feet of right-of- way allowing for eight lanes with a median at build-out conditions.

A design effort is currently underway to widen 10th Street West south of SR 14 to Palmdale Boulevard.

Division Street

Division Street is a north–south, two-lane arterial that runs from just north of Avenue O to East Avenue R-8. The road is located between Sierra Highway and SR 14 and is discontinuous between Rancho Vista Boulevard and Technology Drive/East Avenue P-8. From Technology Drive/East Avenue P-8 to just north of East Avenue P-12, Division Street is not paved. As mentioned previously, Division Street is the dividing line between east and west naming of streets. Per the City's existing General Plan, Division Street between Avenue M and Avenue R-8 has a plan line dedication of 104 or 114 feet of right-of-way allowing for six lanes with a median at build-out conditions.

Fifth Street East

Fifth Street East is a north–south running arterial west of the Union Pacific/Metrolink rail corridor. The road runs between East Avenue S and East Avenue Q and has two through lanes. Per the City's General Plan, Fifth Street East between East Avenue Q and Palmdale Avenue has a plan line dedication of 84 or 92 feet of right-of-way allowing for four lanes without a median, and a plan line dedication of 84 or

92 feet of right-of-way between Palmdale Boulevard and East Avenue S allowing for four lanes with a median at build-out conditions.

Sierra Highway

Just west of 10th Street East, Sierra Highway is a four-lane regional arterial running in a northwest to southeast direction. From Rancho Vista Boulevard to Pearblossom Highway, Sierra Highway is a four-lane major arterial. Sierra Highway services residential, commercial, and industrial areas. Per the City's existing General Plan, Sierra Highway between East Avenue M and East Avenue P has a plan line dedication of 126 or 136 feet of right-of-way allowing for eight lanes with a median at build-out conditions, and between East Avenue P and Pearblossom Highway has a plan line dedication of 104 or 114 feet of right-of-way allowing for 6 lanes with a median at build-out conditions. A design effort is currently underway to widen Sierra Highway to six lanes between East Avenue Q and East Avenue R.

10th Street East

One mile west of 20th Street East, 10th Street East is a major two-lane arterial street running in a north–south direction. From the Lockheed Martin facility north of East Avenue P to East Avenue Q, the road services commercial and industrial areas. At East Avenue Q, 10th Street East widens to a four-lane major arterial continuing to Palmdale Boulevard. Per the City's existing General Plan, 10th Street East between East Avenue L and Palmdale Boulevard has a plan line dedication of 104 or 114 feet of right-of-way allowing for six lanes with a median at build-out conditions, and between Palmdale Boulevard and East Avenue S has a plan line dedication of 84 or 92 feet of right-of-way allowing for four lanes with a median at build-out conditions.

15th Street East

Fifteenth Street East is a north–south running arterial that is 0.5 mile east of 10th Street East. This road reaches between Lockheed Way and East Avenue R and has two through lanes. Per the City's General Plan, 15th Street East between East Avenue L and East Avenue P has a plan line dedication of 84 or 92 feet of right-of-way allowing for 4 lanes with a median; the section between Avenue P and Avenue P-8 has a plan line dedication of 104 or 114 feet of right-of-way allowing for four lanes with a median at build-out conditions.

20th Street East

Twentieth Street East is a north–south running arterial located one-half mile east of 15th Street East. This road runs from East Avenue P on the north to East Avenue S on the south. Between East Avenue P and Palmdale Boulevard, 20th Street East is two lanes wide and serves some commercial development, but mainly residential land uses. At Palmdale Boulevard, 20th Street East widens to a four-lane secondary arterial road, servicing residential areas. Per the City's existing General Plan, 20th Street East between East Avenue L and East Avenue M has a plan line dedication of 104 or 114 feet of right-of-way allowing for six lanes with a median; and between East Avenue P and East Avenue S has a plan line dedication of 84 or 92 feet of right-of-way allowing for four lanes with a median at build-out conditions. The planned High Desert Corridor freeway would have a local service interchange with 20th Street East.

25th Street East

One-half mile to the east of 20th Street East is 25th Street East, a major arterial which runs from East Avenue P to south of Pearblossom Highway. Like 30th Street, 25th Street is a two-lane road north of Palmdale Boulevard. South of Palmdale Boulevard, it is a four-lane road until Pearblossom Highway,

where it narrows to a two-lane road. Per the City's General Plan, 25th Street East between East Avenue L and East Avenue M has a plan line dedication of 84 or 92 feet of right-of-way allowing for four lanes with a median; and between East Avenue P and Pearblossom Highway/Barrel Springs Road has a 104- or 114-foot right-of-way allowing for six lanes with a median at build-out conditions.

30th Street East

Running parallel to 25th Street East, one-half mile to the east, is 30th Street East. Thirtieth Street East is a two-lane major arterial road which runs from just north of East Avenue P to just south of East Avenue S. At Palmdale Boulevard, 30th Street East widens to four lanes. Per the City's existing General Plan, 30th Street East has a plan line dedication of 104 or 114 feet of right-of-way allowing for six lanes with a median at build-out conditions. The planned High Desert Corridor freeway would have a local service interchange with 30th Street East.

40th Street East

Fortieth Street East is one mile east of 30th Street East. Between East Avenue N, two miles north of East Avenue P, and East Avenue P, 40th Street East is a two- lane secondary arterial road. From East Avenue P to East Avenue R-8, 2.5 miles to the south, 40th Street is a major arterial. South of East Avenue R-8 to Pearblossom Highway, 40th Street East continues as a major arterial which serves residential areas. Per the City's existing General Plan, 40th Street East between East Avenue L and East Avenue P has a plan line dedication of 84 or 92 feet of right-of-way allowing for four lanes with a median, and between East Avenue P and East Avenue S has a dedicated 104- or 114-foot right-of-way allowing for six lanes with a median at build-out conditions.

50th Street East/47th Street East

Approximately six miles to the east of SR 14, 50th Street East runs in a north–south direction, parallel with the SR 14 freeway. Fiftieth Street East is a two-lane expressway that services mainly unincorporated areas of Palmdale. Per the City's existing General Plan, 50th Street East/47th Street East between East Avenue L and East Avenue S-8 has a plan line dedication of 126 or 136 feet of right-of-way allowing for eight lanes with a median at build-out conditions. The planned High Desert Corridor freeway would have a local service interchange with 50th Street East.

70th Street East

Seventieth Street East runs primarily in a north-south direction from its origin at East Avenue D in the north to its terminus operating as a paved roadway. As the secondary arterial makes a 90-degree turn to the west and becomes East Avenue

S. Seventieth Street East continues southward as an unpaved road to the Union Pacific (Colton–Palmdale Cutoff) railroad tracks. The unpaved roadway begins again to the south of East Avenue T and continues to the south past the quarry until its terminus at SR 138. The majority of this roadway operates as one lane in each direction.

90th Street East/87th Street East

Ninetieth Street East begins as a paved major arterial approximately one mile north of East Avenue E in Lancaster. In Littlerock, near Avenue S, 90th Street East makes a jog to the west and becomes 87th Street east, operating as a secondary arterial until its terminus at Mt. Emma Road. The arterial operates in a north-south direction primarily as one lane in each direction.

Methodology

The Southern California Association of Governments (SCAG) region encompasses six counties (Imperial, Los Angeles, Orange, Riverside, San Bernardino, and Ventura) and 191 cities in an area covering more than 38,000 square miles. The agency develops long-range regional transportation plans including sustainable community strategies and growth forecast components, regional transportation improvement programs, and regional housing needs allocations. Palmdale, California is located within the SCAG region.

The SCAG region utilizes the SCAG 2016 Regional Transportation Plan/Sustainable Communities Strategy (RTP/SCS) Travel Demand Model (SCAG model) to produce forecasts for the region. The SCAG model used for the Palmdale General Plan Update (Palmdale GP) is consistent with the RTP assumptions for existing year and future year conditions as all projects in the RTP are included. The 2040 future year model datasets were used to produce the future conditions for the Palmdale GP scenarios. The external-to-internal (XI) and internal-to-external (IX) trips forecast by the SCAG model are terminated at the external zones known as gateways. For Palmdale, the nearest gateway is State Route (SR) 14 at the Kern County line. These external trips with one end in the SCAG region are fixed for each horizon year and do not vary with changes in socioeconomic data. The SCAG model roadway classifications are consistent with the Federal Highway Administration (FHWA) roadway classifications, which are more detailed and do not necessarily align with the City of Palmdale classifications, but are generally similar in nature. The main roadway classifications for the SCAG model are listed below, where each of these roadway types are further sub-divided.

- Freeways
- HOV and express lanes
- Expressways/parkways
- Principal arterials
- Minor arterials
- Major collectors
- Minor collectors
- Ramps
- Centroid connectors

The SCAG traffic analysis zone (TAZ) system was refined for the Palmdale sphere of influence (SOI) only to perform traffic assignments after the original SCAG model was run through the four steps of the complete model with the updated land use datasets for each of the scenarios. The SCAG model had 45 zones in the Tier 1 zone system within the Palmdale SOI. This zone system within the Palmdale SOI was disaggregated to the Tier 3 zone system with 336 zones as illustrated in Figure 2. The expanded zone system in the Palmdale SOI was used for traffic assignment purposes to better reflect the ground conditions in the study area because the original SCAG Tier 1 zones were too large. The SCAG model networks for existing and future conditions were updated with the revised zone system to perform traffic assignments. The SCAG model datasets were available for horizon year 2040 but not beyond; hence, the 2040 datasets were used for the 2045 Palmdale GP scenarios with updated land use within the Palmdale SOI.

Various land use scenarios were developed as part of the General Plan Update for the City of Palmdale, after which the SCAG model results were tabulated for the Palmdale SOI that encompasses Palmdale. The 45 zones in the Tier 1 zone system of the SCAG model were identified as the Palmdale SOI. The geographic area covered by the Palmdale SOI includes Palmdale and the surrounding areas as illustrated in Figure 3.

Figure 2: Palmdale Traffic Analysis Zones

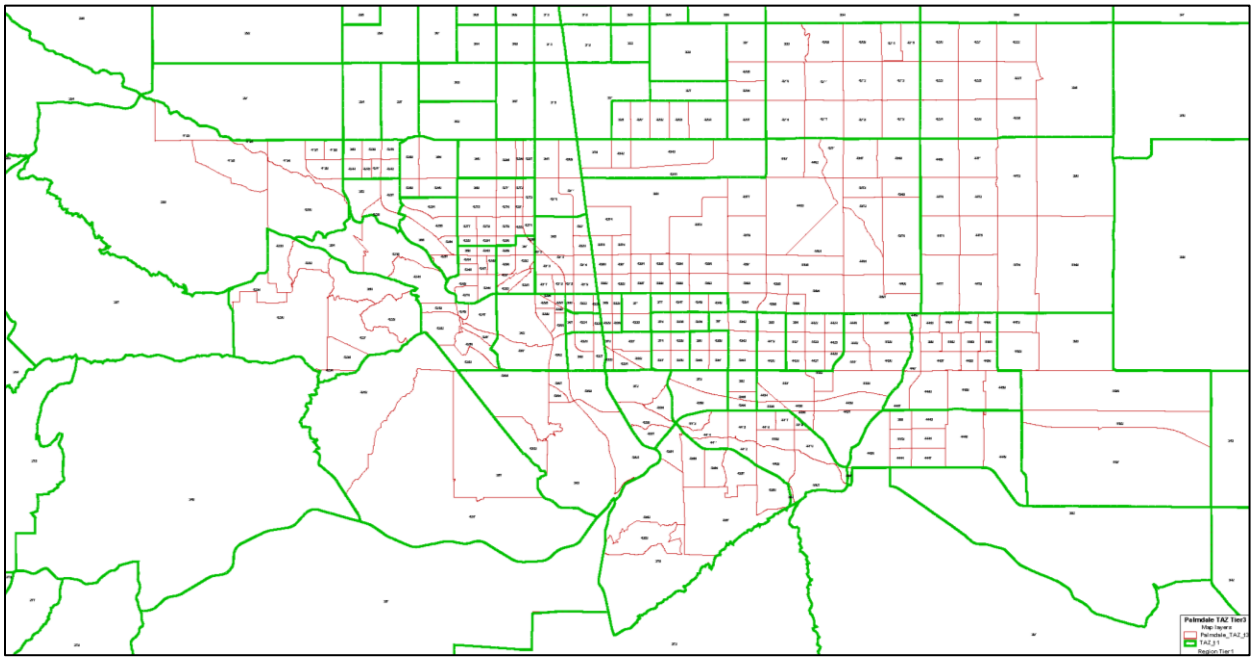
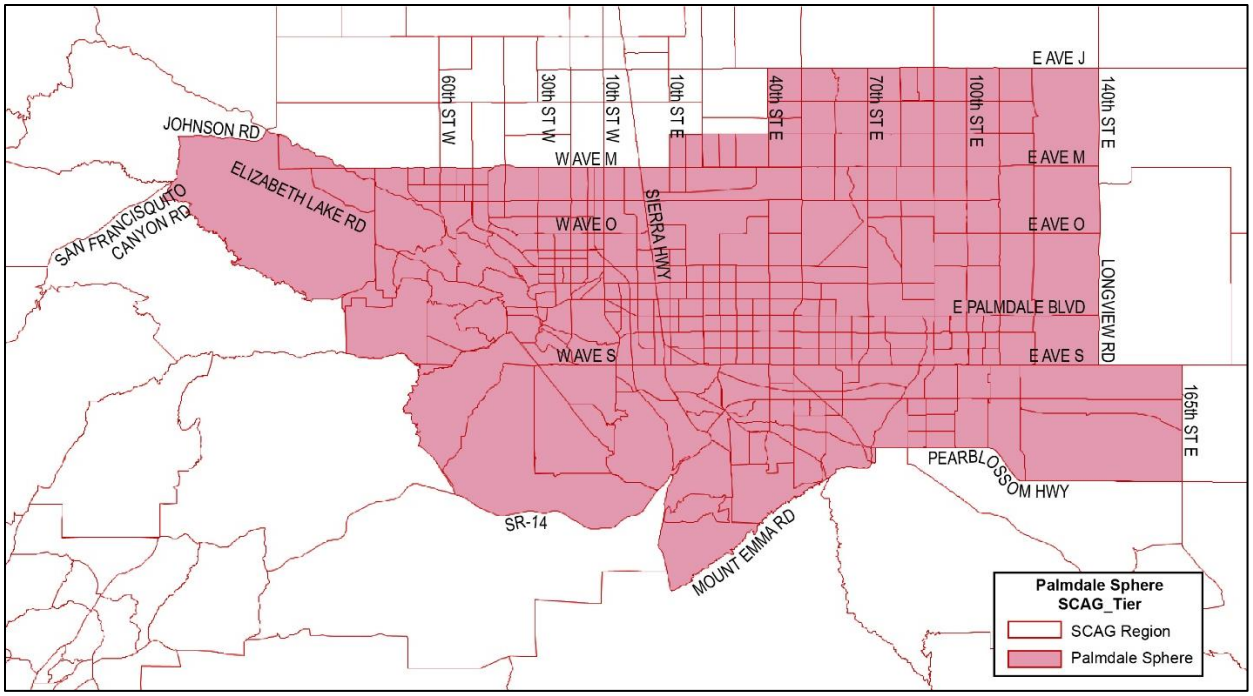


Figure 3: Palmdale Sphere of Influence



The SCAG model comprises the entire SCAG region, which includes the counties of San Bernardino, Los Angeles, Ventura, Orange, Riverside, and Imperial. The Palmdale sphere of influence (SOI) is a very small part of the SCAG region, as shown in Table 1. The contribution of Palmdale SOI to the 2045 Base scenario for the region is 1.09 percent for population, 0.98 percent for households and 0.68 percent for employment. As such, it can be assumed that land use changes in the Palmdale SOI would have very little effect on the region.

Table 1: Percentage of the Palmdale Sphere of Influence in the SCAG Region

District Name	2017 Existing			2045 Base		
	Population	Households	Employment	Population	Households	Employment
Palmdale SOI	188,488	53,626	49,501	240,515	72,840	67,085
Remainder of SCAG region	18,797,418	6,156,694	8,064,233	21,883,490	7,334,073	9,804,345
Total	18,985,906	6,210,320	8,113,734	22,124,005	7,406,913	9,871,430
Percent Share for Palmdale	**0.99%**	**0.86%**	**0.61%**	**1.09%**	**0.98%**	**0.68%**

Most Palmdale trips primarily stay within Los Angeles County, with a small number traveling to nearby San Bernardino, Ventura, and Riverside counties. With the update of the socio-economic data for the Palmdale General Plan, the intent is to make Palmdale less of an exporter of trips, making it more self-sustainable, whereby more trips stay in Palmdale than leave Palmdale. As such, the socio-economic data outside the Palmdale SOI would have much less of an impact. The cities and entities across the SCAG region are developing future land use based on having both employment and population growth, leading to more trips staying within their jurisdiction to the extent possible. Applying standard growth rates across the region would not be possible because different cities have different assumptions for future growth. As such, the current land use data in the SCAG region would be more conservative and the growth is unlikely to be very different in the 5-year period. Like Palmdale, which strives to be less of an exporter of trips to other areas, primarily in Los Angeles County, other cities/agencies may also seek to reduce the exporting of trips. This would lead to the reduction of vehicle miles traveled (VMT) as required by the new SB 743 guidelines.

The SCAG model currently has the last horizon year as 2040, with a calibration year of 2012, and will be used for the SCAG region outside of the Palmdale SOI limits. It is always best to maintain consistency with the regional model to the extent possible. In addition, there is no basis for altering the land use for rest of the region which comprises 99 percent of the population.

The SCAG model was run for the following scenarios with updated land use within the Palmdale SOI:

- **2017 Existing:** The Palmdale SOI land use was updated based on input from the City, the four-step SCAG model procedures were run completely, and the trip tables were expanded to the Tier 3 zone system before performing the traffic assignments. The highway network assumptions are consistent with the SCAG regional assumptions.
- **2045 Base:** The Palmdale SOI land use was updated based on input from the City, the four-step SCAG model procedures were run completely, and the trip tables were expanded to the Tier 3 zone system before performing the traffic assignments. The highway network assumptions are consistent with the SCAG regional assumptions.

- **2045 Base with High Desert Corridor Freeway (HDC):** The highway network was updated to include a proposed facility beginning at SR 14 and joining SR138/SR18 east of Longview Road. Traffic assignments were performed utilizing 2045 Base scenario trip tables. This scenario was run to illustrate the effects of the HDC facility on the Palmdale street system because the proposed HDC facility would be a major east–west freeway connecting Palmdale and Victorville. The HDC may not be built before 2050 or beyond as no funding sources are identified.
- **2045 Preferred Plan:** The Palmdale SOI land use was updated based on the 2045 Preferred Plan scenario assumptions. The four-step SCAG model procedures were run completely, and the trip tables were expanded to the Tier 3 zone system before performing the traffic assignments. This scenario also included the addition of High-Speed Rail (HSR) trips at the Palmdale Station prior to performing the traffic assignments. The highway network assumptions are consistent with the SCAG regional assumptions. In addition, the network was updated based on review and recommendations by the City of Palmdale.

Table 2 summarizes population, households and employment land use for the scenarios in the Palmdale SOI. The detailed land use by traffic analysis zones (TAZ) for the Palmdale SOI is provided in Appendix A.

Table 2: Palmdale Sphere of Influence Land Use Comparisons

	2017 Existing	2045 Base	2045 Preferred Plan
Populations	188,488	240,515	225,692
Households	53,626	72,840	70,618
Employment	49,501	67,085	74,804

The analysis for each of the scenarios include the following within the Palmdale sphere of influence (SOI):

- Daily segment level of service for selected locations.
- Post-processed daily volumes for selected segments.
- Measures of effectiveness (MOEs) metrics, i.e., vehicle miles travelled (VMT), vehicle hours travelled (VHT), vehicle hours of delay (VHD) and congested speeds, will be reported from traffic assignments for the Palmdale SOI on the transportation network performance.
- Select zone will create a subset of the trip table with Palmdale SOI trips only, which in turn will be used to produce trip lengths, VMT and VHT by district (aggregations of TAZs). In addition, the assignment procedures will also produce the VMT and VHT on all links as part of the assignment process and is known as link-based. The results of the link-based and zone-based procedures will be similar, but not equal, as two different procedures are employed.
- Vehicle miles travelled analysis for SB 743 compliance, where SB 743 eliminates level of service (LOS) as the basis for determining significant transportation impacts under CEQA and provides a new performance metric—VMT. The zone-based VMT procedures will be used for these computations. Home-based work and home-based all trips will also be used to compute VMT and other statistics.
- Average trip lengths will be reported for trip origins.
- VMT per capita will be reported by trip purpose for trip origins.

Existing Conditions

The network assumptions in the SCAG model used for the 2017 existing conditions scenario are consistent with the SCAG 2017 forecast year assumptions. The socio-economic data for the Palmdale SOI was updated with inputs from the City of Palmdale. The socio-economic data outside the Palmdale SOI is consistent with the SCAG assumptions for the region. The SCAG four-step model procedures were run with the updated land use covering the Palmdale SOI. Table 3 below lists the planning variable assumptions for the SCAG region.

Table 3: 2017 Existing Socio-Economic Data

2017 Existing	Population	Households	Employment
Palmdale sphere	188,488	53,626	49,501
Lancaster sphere	176,422	55,712	51,676
High Desert region	39,685	15,711	3,952
Ventura County	213,907	63,350	69,515
Los Angeles County remainder	9,759,145	3,275,180	4,411,709
Orange County	3,200,193	1,045,270	1,666,324
Riverside County	2,391,954	761,979	761,653
San Bernardino County	2,148,780	660,273	740,722
Imperial County	867,332	279,219	358,682
Externals	0	0	0
Seaport/airport	0	0	0
Total Region	**18,985,906**	**6,210,320**	**8,113,734**

Select zone traffic assignment procedures were performed on the zones within the Palmdale SOI to produce trips that were generated or attracted to the Palmdale SOI area only. All other trips were not counted as they were pass through trips. The daily average trip lengths for the Palmdale SOI only trips are shown in Table 4. The daily link-based VMT, vehicle hours traveled and the average speeds by facility types are shown in Table 5 for the Palmdale SOI only trips. The daily percent share of VMT for trips originating in the Palmdale SOI to all areas in the region, including Palmdale, is illustrated in Figure 4.

Table 4: 2017 Existing Average Trip Length for Palmdale SOI Trips

From/To	Trip Length (II and IX*) (miles)	Percent Share of Trips
Palmdale sphere	4.25	70.2%
Lancaster sphere	9.83	15.6%
High Desert region	15.46	2.9%
Imperial County	223.37	0.0%
Los Angeles County	55.62	7.8%
Orange County	105.28	0.4%
Riverside County	97.28	0.4%
San Bernardino County	62.41	1.2%
Ventura County	75.29	0.5%
Externals	60.99	0.9%
Seaport/airport	60.05	0.2%
Weighted Average	**11.87**	100.0%

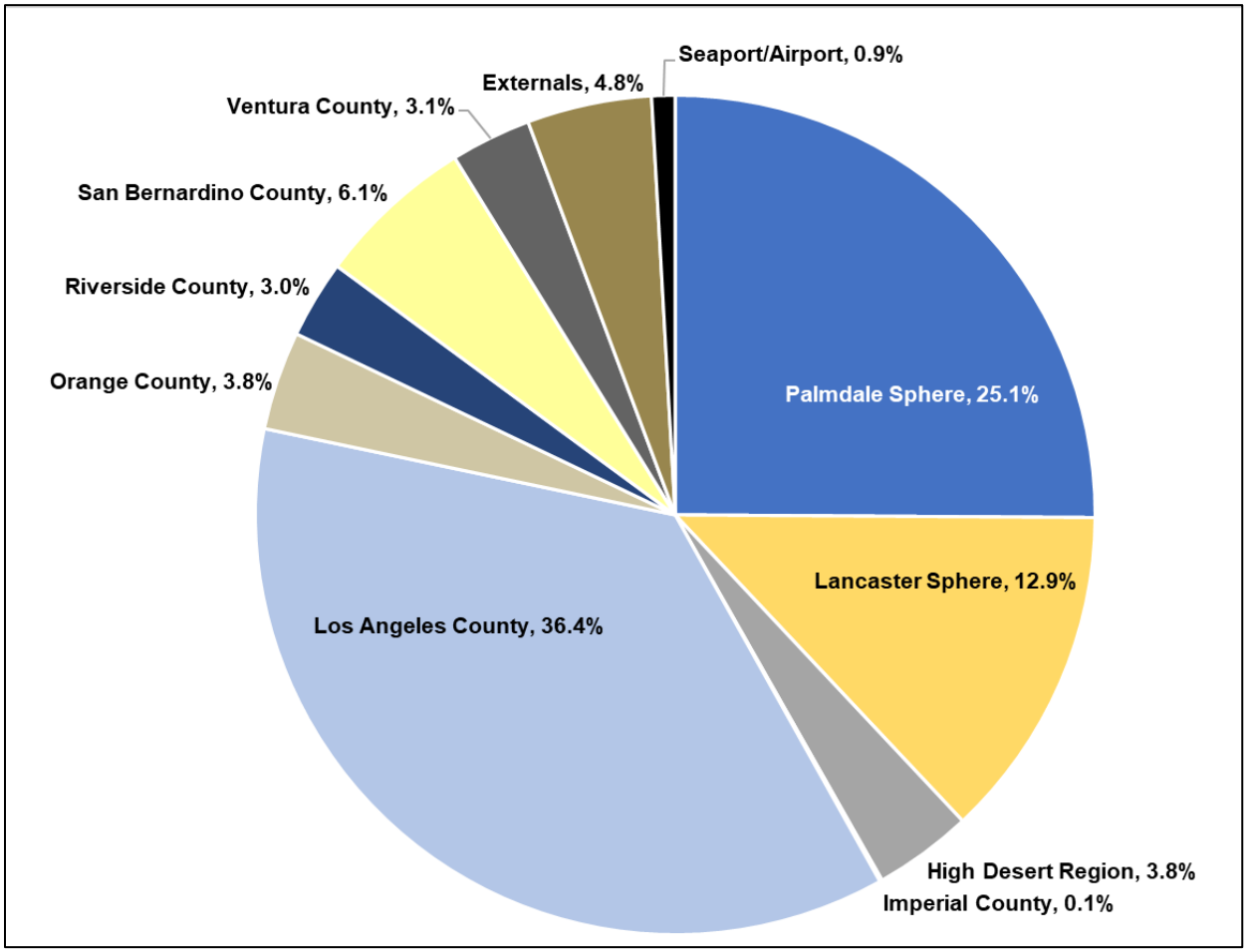
*II = Internal-to-internal trips, where both ends of the trips are within the Palmdale SOI
IX = Internal-to-external trips, where the origin of the trips is within the Palmdale SOI and the destination of the trips could be anywhere in the SCAG region.

Table 5: 2017 Existing Palmdale SOI (II, IX and XI*) Daily, VMT, VHT, Average Speed by Facility

Facility	VMT	VHT	Average Speed (mph)
Freeways	2,893,868	110,892	47.5
HOT facilities	11,431	364	54.4
HOV facilities	284,701	12,647	54.0
Expressways/parkways	4,381	145	53.9
Principal arterials	1,484,072	40,118	30.6
Minor arterials	1,631,560	42,584	31.7
Major collectors	1,067,379	29,211	25.1
Minor connectors	41,916	1,279	31.4
Freeway ramps	152,550	17,266	21.1
Truck lanes only	6,323	245	51.1
Centroid connectors	450,545	17,702	24.2
Total without centroid connectors	7,578,181	254,752	37.1
Total of All Links	**8,028,726**	**272,454**	**35.9**

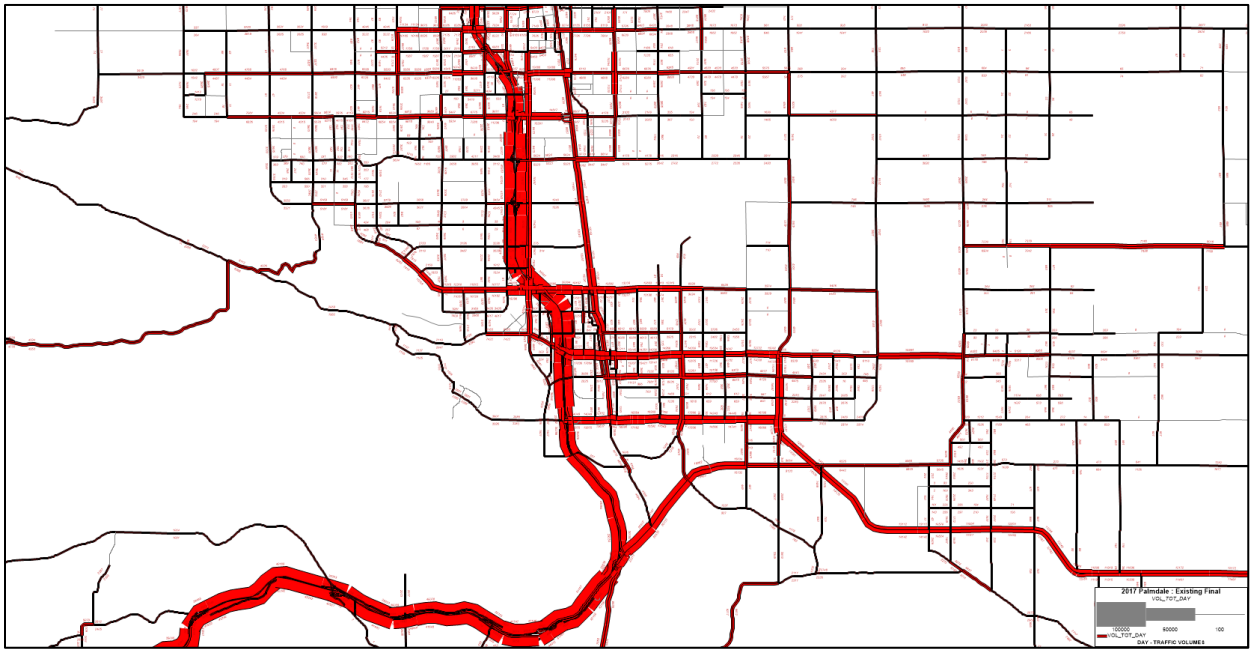
*II = Internal-to-internal trips, where both ends of the trips are within the Palmdale SOI
IX = Internal-to-external trips, where the origin of the trips is within the Palmdale SOI and the destination of the trips could be anywhere in the SCAG region
XI = External-to-internal trips, where the origin of the trips could be anywhere in the SCAG region and the destination of the trips is within the Palmdale SOI

Figure 4: 2017 Existing Daily VMT Share Originating in the Palmdale SOI

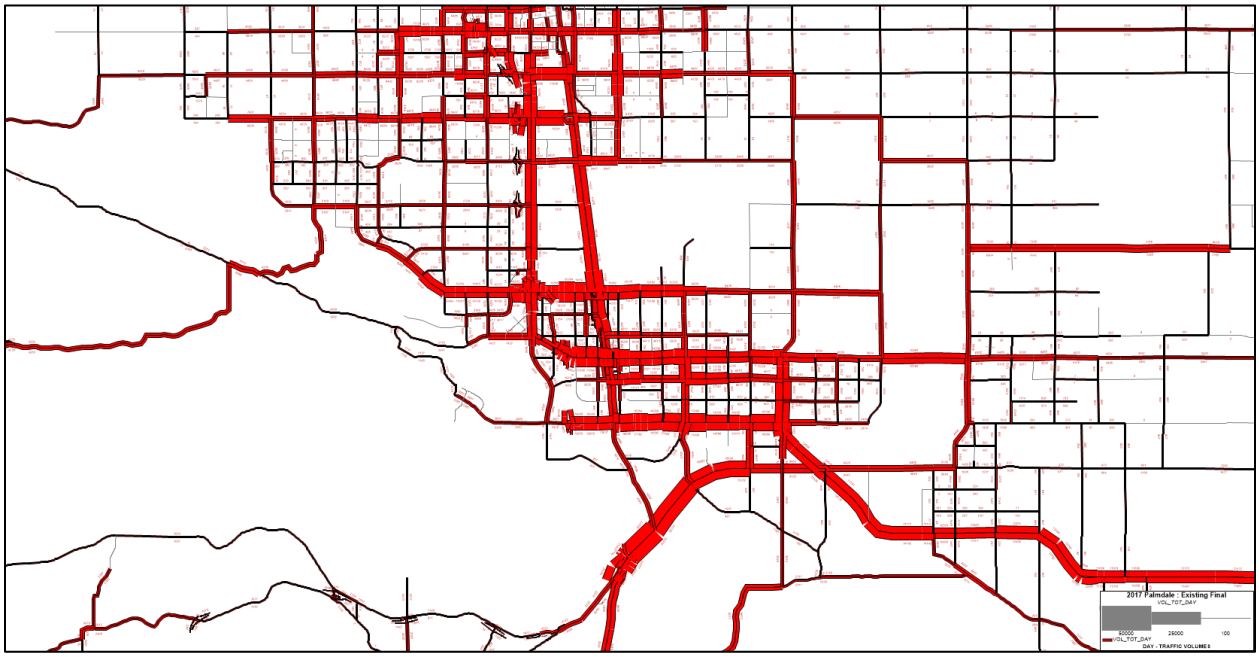


Traffic assignments were performed to produce traffic volumes on the facilities inside and outside the Palmdale SOI. Traffic assignments are available for AM peak period, mid-day period, PM peak period, evening period, night period and daily. The daily traffic assignment volumes (band widths) are illustrated in Figure 5 (Figure 5b excludes SR 14).

Figure 5: 2017 Existing Daily Assigned Traffic Volumes



a. 2017 Existing Daily Assigned Traffic Volumes with SR 14



b. 2017 Existing Daily Assigned Traffic Volumes without SR 14

LEVEL OF SERVICE DEFINITIONS AND STANDARDS

Assessment of the volume and level of operation of selected corridors in the region is conducted biennially through the County's Congestion Management Program (CMP) process. In addition, other traffic volume data is collected by local agencies during other planning exercises and traffic studies conducted for development projects.

By statute, each CMP must include a performance element containing measures that evaluate current and future multimodal system performance for the movement of goods and people. The level of service indicators for the highway and roadway system is based on the volume of traffic for designated sections of roadway during a typical day and the practical vehicular capacity of that segment. These two measures for each monitored segment of the roadway system are expressed as a ratio. The volume-to-capacity ratio (V/C) is then converted to an alpha descriptor identifying operating conditions and expressed as a level of service, LOS A through LOS F. Level of service A identifies the best operating conditions along a section of roadway and is characterized by free-flow traffic, low volumes, and little or no restrictions on maneuverability. Level of service F characterizes forced traffic flow with high traffic densities, slow travel speeds, and often stop-and-go conditions. Level of service standards in the county can be set no lower than LOS E or no lower than the current level of service and V/C ratio if the level of service is already below LOS E. City of Palmdale has established LOS D as its criterion for an acceptable level of service.

Table 6, Level of Service Criteria, defines and describes the level of service criteria for roadway segments. Table 7 reports the model daily assignment volumes compared to the existing counts and the level of service at various segments. Table 7 also identifies the level of service for arterial roadway segments based on these criteria. In some locations, differences in model results are to be expected. All future volumes are post-processed to reflect sensitivity to model/count differences.

Table 6: Level of Service Criteria

Level of Service	Interpretation	Volume-to-Capacity Ratio
A	Free-flow speeds prevail. Vehicles are almost unimpeded in their ability to maneuver within the traffic stream.	0.00–0.60
B	Reasonably free-flow speeds are maintained. The ability to maneuver within traffic is only slightly restricted.	0.61–0.70
C	Flow with speeds at or near free-flow speed of the roadway. Freedom to maneuver within the traffic stream is noticeably restricted and lane changes require more care and vigilance on the part of the driver.	0.71–0.80
D	Speeds begin to decline slightly with increasing flows. Inthis range, density begins to increase somewhat more quickly with increasing flow. Freedom to maneuver within the traffic stream is noticeably limited.	0.81–0.90
E	Operation at capacity with no usable gaps in the trafficstream. Any disruption to the traffic stream has little or no room to dissipate.	0.91–1.0
F	Breakdown of the traffic flow with long queues of traffic. Unacceptable conditions.	> 1.0

Source: Los Angeles County Metropolitan Transit Authority 2003 Congestion ManagementProgram.

Table 7: 2017 Existing Daily Segment Volumes

	Roadway Segments					2017 Existing Counts			2017 Existing Model		
LINKID	Roadway	From/To	Lanes	Type of Arterial	Capacity	2-Way Count	V/C	LOS	2017_Tot_Flow	V/C	LOS
1001	Columbia Way/Avenue M	10th Street W to Sierra Hwy	4	Regional arterial	36,000	23,348	0.65	B	10,947	0.30	A
1002	Columbia Way/Avenue M	Sierra Hwy to 10th Street E	4	Regional arterial	36,000	28,434	0.79	C	18,061	0.50	A
1003	Columbia Way/Avenue M	10th Street E to 20th Street E	4	Regional arterial	36,000	17,513	0.49	A	9,454	0.26	A
1004	Columbia Way/Avenue M	20th Street E to 30th Street E	4	Regional arterial	36,000	13,832	0.38	A	5,558	0.15	A
1005	Columbia Way/Avenue M	30th Street E to 40th Street E	4	Regional arterial	36,000	7,475	0.21	A	5,771	0.16	A
1006	Columbia Way/Avenue M	40th Street E to 50th Street	4	Regional arterial	36,000	10,559	0.29	A	5,304	0.15	A
1007	Rancho Vista Ave/Avenue P	50th Street W to Town Center Dr	4	Major arterial	36,000	16,758	0.47	A	15,225	0.42	A
1008	Rancho Vista Ave/Avenue P	Town Center Dr to 30th Street W	4	Major arterial	36,000	20,985	0.58	A	15,225	0.42	A
1009	Rancho Vista Ave/Avenue P	30th Street W to 25th Street W	4	Major arterial	36,000	22,457	0.62	B	22,382	0.62	B
1010	Rancho Vista Ave/Avenue P	25th Street W to 20th Street W	4	Major arterial	36,000	27,509	0.76	C	22,532	0.63	B
1011	Rancho Vista Ave/Avenue P	20th Street W to 15th Street W	4	Major arterial	36,000	26,453	0.73	C	20,958	0.58	A
1012	Rancho Vista Ave/Avenue P	15th Street to 10th Street W	6	Major arterial	54,000	41,536	0.77	C	36,131	0.67	B
1013	Rancho Vista Ave/Avenue P	10th Street W to SR 14	6	Major arterial	54,000	35,290	0.65	B	33,055	0.61	B
1014	Rancho Vista Ave/Avenue P	SR 14 to Country Club Dr	4	Major arterial	36,000	23,332	0.65	B	25,923	0.72	C
1015	Rancho Vista Ave/Avenue P	Country Club Dr to Division St	4	Major arterial	36,000	26,481	0.74	C	39,327	1.09	F
1016	Rancho Vista Ave/Avenue P	Division St to Sierra Hwy	4	Major arterial	36,000	22,334	0.62	B	36,838	1.02	F
1017	East Avenue P	Sierra Hwy to 8th Street E	4	Major arterial	36,000	33,863	0.94	E	27,833	0.77	C
1018	East Avenue P	8th Street E to 15th Street E	4	Major arterial	36,000	24,509	0.68	B	27,833	0.77	C
1019	East Avenue P	15th Street E to 20th Street E	4	Major arterial	36,000	24,973	0.69	B	25,851	0.72	C
1020	East Avenue P	20th Street E to 25th Street E	4	Major arterial	36,000	18,699	0.52	A	24,985	0.69	B
1021	East Avenue P	25th Street E to 30th Street E	4	Major arterial	36,000	14,695	0.41	A	18,093	0.50	A
1022	Avenue Q	Trade Center Dr to 5th Street W	4	Regional arterial	36,000	2,216	0.06	A	1,660	0.05	A
1023	Avenue Q	Division Street to 6th Street E	2	Major arterial	18,000	3,815	0.21	A	3,707	0.21	A
1024	Avenue Q	Sierra Hwy to 10th Street E	2	Major arterial	18,000	9,447	0.52	A	12,752	0.71	C
1025	Avenue Q	10th Street E to 20th Street E	2	Major arterial	18,000	8,323	0.46	A	10,201	0.57	A
1026	Avenue Q	20th Street E to 30th Street E	2	Major arterial	18,000	7,106	0.39	A	9,105	0.51	A
1027	Avenue Q	30th Street E to 40th Street E	2	Major arterial	18,000	4,960	0.28	A	6,277	0.35	A
1028	Elizabeth Lake Rd	25th Street W to 20th Street W	4	Major arterial	36,000	13,937	0.39	A	7,118	0.20	A
1029	Elizabeth Lake Rd	20th Street W to 15th Street W	4	Regional arterial	36,000	13,828	0.38	A	13,606	0.38	A
1030	Elizabeth Lake Rd	15th Street W to 10th Street W	4	Regional arterial	36,000	18,930	0.53	A	13,412	0.37	A

Table 7: 2017 Existing Daily Segment Volumes

	Roadway Segments					2017 Existing Counts			2017 Existing Model		
LINKID	Roadway	From/To	Lanes	Type of Arterial	Capacity	2-Way Count	V/C	LOS	2017_Tot_Flow	V/C	LOS
1031	Palmdale Blvd	10th Street W to Trade Center Dr	4	Regional arterial	36,000	17,408	0.48	A	19,413	0.54	A
1032	Palmdale Blvd	Trade Center Dr to 5th Street W	4	Regional arterial	36,000	16,548	0.46	A	14,374	0.40	A
1033	Palmdale Blvd	5th Street W to State Route 14	4	Regional arterial	36,000	27,366	0.76	C	24,034	0.67	B
1034	Palmdale Blvd	Division Street to 5th St E	6	Major arterial	54,000	25,175	0.47	A	40,613	0.75	C
1035	Palmdale Blvd	5th Street E to 10th Street E	4	Major arterial	36,000	25,257	0.70	C	34,556	0.96	E
1036	Palmdale Blvd	10th Street E to 15th Street E	4	Major arterial	36,000	25,869	0.72	C	31,975	0.89	D
1037	Palmdale Blvd	15th Street E to 20th Street E	4	Major arterial	36,000	19,223	0.53	A	27,772	0.77	C
1038	Palmdale Blvd	20th Street E to 25th Street E	4	Major arterial	36,000	23,470	0.65	B	28,412	0.79	C
1040	Palmdale Blvd	40th Street E to 47th Street E	4	Major arterial	36,000	18,458	0.51	A	29,731	0.83	D
1041	Palmdale Blvd	50th Street E to 60th Street E	4	Major arterial	36,000	14,147	0.39	A	16,795	0.47	A
1042	Palmdale Blvd	70th Street E to 80th Street E	2	Major arterial	18,000	16,681	0.93	E	21,759	1.21	F
1043	E Avenue R	Sierra Hwy to 10th Street E	4	Major arterial	36,000	19,490	0.54	A	20,337	0.56	A
1044	E Avenue R	10th Street E to 20th Street E	4	Major arterial	36,000	18,495	0.51	A	23,916	0.66	B
1045	E Avenue R	20th Street E to 30th Street E	4	Major arterial	36,000	18,408	0.51	A	16,169	0.45	A
1046	E Avenue R	30th Street E to 40th Street E	3	Major arterial	27,000	14,851	0.55	A	23,278	0.86	D
1047	E Avenue R	40th Street E to 47th Street E	4	Major arterial	36,000	16,231	0.45	A	13,706	0.38	A
1048	E Avenue R	47th Street E to 60th Street E	4	Major arterial	36,000	15,158	0.42	A	4,970	0.14	A
1049	E Avenue R	60th Street E to 70th Street E	4	Major arterial	36,000	5,811	0.16	A	1,285	0.04	A
1050	Avenue S	Tovey Avenue to Tierra Subida Ave	4	Major arterial	36,000	9,346	0.26	A	6,971	0.19	A
1051	Avenue S	Tierra Subida Ave to SR 14	4	Major arterial	36,000	14,027	0.39	A	7,099	0.20	A
1052	Avenue S	SR 14 to 5th Street E	4	Major arterial	36,000	13,190	0.37	A	27,924	0.78	C
1053	Avenue S	5th Street E to Sierra Hwy	4	Major arterial	36,000	25,828	0.72	C	27,339	0.76	C
1054	Avenue S	Sierra Hwy to 10th Street E	4	Major arterial	36,000	32,170	0.89	D	37,784	1.05	F
1055	Avenue S	10th Street E to 20th Street E	4	Major arterial	36,000	29,830	0.83	D	35,288	0.98	E
1056	Avenue S	20th Street E to 25th Street E	4	Major arterial	36,000	30,323	0.84	D	35,328	0.98	E
1057	Avenue S	25th Street E to 30th Street E	4	Major arterial	36,000	29,058	0.81	D	35,702	0.99	E
1058	Avenue S	30th Street E to 35th Street E	6	Major arterial	54,000	24,137	0.45	A	28,809	0.53	A
1059	Avenue S	35th Street E to 40th Street E	6	Major arterial	54,000	23,612	0.44	A	29,185	0.54	A
1060	Avenue S	40th Street E to 47th Street E	6	Major arterial	54,000	23,867	0.44	A	33,374	0.62	B
1061	Avenue S	47th Street E to 55th Street E	4	Major arterial	36,000	21,305	0.59	A	11,417	0.32	A

Table 7: 2017 Existing Daily Segment Volumes

	Roadway Segments					2017 Existing Counts			2017 Existing Model		
LINKID	Roadway	From/To	Lanes	Type of Arterial	Capacity	2-Way Count	V/C	LOS	2017_Tot_Flow	V/C	LOS
1062	Pearblossom Hwy/Avenue T	Sierra Hwy to 25th Street E	4	Regional arterial	36,000	48,960	1.36	F	40,919	1.14	F
1063	Pearblossom Hwy/Avenue T	25th Street E to 40th Street E	4	Regional arterial	36,000	40,419	1.12	F	32,686	0.91	E
1064	Pearblossom Hwy/Avenue T	40th Street E to 47th Street E	4	Regional arterial	36,000	22,788	0.63	B	18,197	0.51	A
1065	Pearblossom Hwy/Avenue T	47th Street E to Fort Tejon Road	4	Regional arterial	36,000	22,898	0.64	B	18,197	0.51	A
1066	Pearblossom Hwy/Avenue T	Fort Tejon Road to 70th Street E	4	Regional arterial	36,000	13,027	0.36	A	18,197	0.51	A
1067	10th Street W/Tierra Subida Ave	W Avenue M to W Avenue N	4	Regional arterial	36,000	15,186	0.42	A	21,879	0.61	B
1068	10th Street W/Tierra Subida Ave	W Avenue N to W Avenue O	4	Regional arterial	36,000	19,402	0.54	A	21,538	0.60	A
1069	10th Street W/Tierra Subida Ave	W Avenue O to SR 14	4	Regional arterial	36,000	17,627	0.49	A	20,532	0.57	A
1070	10th Street W/Tierra Subida Ave	SR 14 to Rancho Vista Blvd	6	Regional arterial	54,000	35,324	0.65	B	33,268	0.62	B
1071	10th Street W/Tierra Subida Ave	Rancho Vista Blvd to Technology Dr	6	Regional arterial	54,000	31,954	0.59	A	23,914	0.44	A
1072	10th Street W/Tierra Subida Ave	Technology Dr to W Palmdale Blvd	5	Regional arterial	45,000	39,039	0.87	D	20,004	0.44	A
1073	10th Street W/Tierra Subida Ave	W Palmdale Blvd to Rayburn Rd	4	Major arterial	36,000	16,569	0.46	A	12,169	0.34	A
1074	Sierra Hwy	Columbia Way to E Avenue N	4	Regional arterial	36,000	25,408	0.71	C	23,325	0.65	B
1075	Sierra Hwy	E Avenue N to E Avenue O	4	Regional arterial	36,000	27,037	0.75	C	24,702	0.69	B
1076	Sierra Hwy	E Avenue O to E Avenue P	4	Regional arterial	36,000	32,133	0.89	D	25,292	0.70	C
1077	Sierra Hwy	E Avenue P to E Avenue Q	4	Major arterial	36,000	14,366	0.40	A	27,740	0.77	C
1078	Sierra Hwy	E Avenue Q to Palmdale Blvd	4	Major arterial	36,000	15,176	0.42	A	15,554	0.43	A
1079	Sierra Hwy	Palmdale Blvd to E Avenue R	4	Major arterial	36,000	9,993	0.28	A	14,783	0.41	A
1080	Sierra Hwy	E Avenue R to E Avenue S	4	Major arterial	36,000	7,289	0.20	A	16,575	0.46	A
1081	Sierra Hwy	E Avenue S to Pearblossom Hwy	4	Major arterial	36,000	8,070	0.22	A	8,009	0.22	A
1082	10th Street E	E Avenue P to E Avenue Q	2	Major arterial	18,000	2,357	0.13	A	712	0.04	A
1083	10th Street E	E Avenue Q to E Palmdale Blvd	4	Major arterial	36,000	5,732	0.16	A	1,179	0.03	A
1084	10th Street E	E. Palmdale Blvd to Avenue R	2	Secondary arterial	18,000	5,756	0.32	A	9,545	0.53	A
1085	10th Street E	Avenue R to Avenue S1	2	Secondary arterial	18,000	3,898	0.22	A	2,907	0.16	A
1086	20th Street E	E Avenue P to E Avenue Q	2	Secondary arterial	18,000	4,738	0.26	A	868	0.05	A
1087	20th Street E	E Avenue Q to Palmdale Blvd	2	Secondary arterial	18,000	7,760	0.43	A	429	0.02	A
1088	20th Street E	Palmdale Blvd to E Avenue R	4	Secondary arterial	36,000	13,063	0.36	A	1,453	0.04	A
1089	20th Street E	E Avenue R to E Avenue S	4	Secondary arterial	36,000	12,215	0.34	A	1,724	0.05	A
1090	25th Street E	E Avenue P to E Avenue Q	2	Major arterial	18,000	4,102	0.23	A	9,277	0.52	A
1091	25th Street E	E Avenue Q to Palmdale Blvd	2	Major arterial	18,000	6,948	0.39	A	12,727	0.71	C

Table 7: 2017 Existing Daily Segment Volumes

	Roadway Segments					2017 Existing Counts			2017 Existing Model		
LINKID	Roadway	From/To	Lanes	Type of Arterial	Capacity	2-Way Count	V/C	LOS	2017_Tot_Flow	V/C	LOS
1092	25th Street E	Palmdale Blvd to E Avenue R	4	Major arterial	36,000	12,851	0.36	A	23,475	0.65	B
1093	25th Street E	E Avenue R to E Avenue S	4	Major arterial	36,000	16,629	0.46	A	15,749	0.44	A
1094	25th Street E	E Avenue S to Pearblossom Hwy	4	Major arterial	36,000	14,269	0.40	A	22,843	0.63	B
1095	30th Street E	E Avenue P to E Avenue Q	2	Major arterial	18,000	5,987	0.33	A	3,708	0.21	A
1096	30th Street E	E Avenue Q to Palmdale Blvd	2	Major arterial	18,000	6,083	0.34	A	2,743	0.15	A
1097	30th Street E	Palmdale Blvd to E Avenue R	4	Major arterial	36,000	7,721	0.21	A	1,295	0.04	A
1098	30th Street E	E Avenue R to E Avenue S	4	Major arterial	36,000	8,871	0.25	A	2,452	0.07	A
1099	40th Street E	E Avenue P to E Avenue Q	2	Major arterial	18,000	5,610	0.31	A	5,769	0.32	A
1100	40th Street E	E Avenue Q to E Palmdale Blvd	2	Major arterial	18,000	7,185	0.40	A	6,713	0.37	A
1101	40th Street E	E Palmdale Blvd to E Avenue R	3	Major arterial	27,000	9,892	0.37	A	5,754	0.21	A
1102	40th Street E	E Avenue R to E Avenue S	3	Major arterial	27,000	9,037	0.33	A	3,635	0.13	A
1103	40th Street E	E Avenue S to Sierra Hwy	2	Major arterial	18,000	10,505	0.58	A	13,530	0.75	C
1104	47th Street E/50th Street E/Ft Tejon Rd	E Avenue M to E Avenue N	2	Major arterial	18,000	18,016	1.00	F	10,381	0.58	A
1105	47th Street E/50th Street E/Ft Tejon Rd	E Avenue P to Palmdale Blvd	2	Major arterial	18,000	12,874	0.72	C	9,551	0.53	A
1106	47th Street E/50th Street E/Ft Tejon Rd	Palmdale Blvd to E Avenue R	4	Regional arterial	36,000	25,702	0.71	C	23,134	0.64	B
1107	47th Street E/50th Street E/Ft Tejon Rd	E Avenue R to E Avenue R-8	4	Regional arterial	36,000	26,908	0.75	C	32,008	0.89	D
1108	47th Street E/50th Street E/Ft Tejon Rd	E Avenue R-8 to E Avenue S	4	Regional arterial	36,000	19,854	0.55	A	28,501	0.79	C
1109	47th Street E/50th Street E/Ft Tejon Rd	E Avenue S to Essex Dr	5	Regional arterial	45,000	24,514	0.54	A	35,084	0.78	C
1110	47th Street E/50th Street E/Ft Tejon Rd	Essex Dr to Pearblossom Hwy	4	Regional arterial	36,000	24,367	0.68	B	25,270	0.70	C
1111	47th Street E/50th Street E/Ft Tejon Rd	Pearblossom Hwy to E Avenue T-8	4	Regional arterial	36,000	21,099	0.59	A	27,236	0.76	C
1120	Technology Dr	10th Street W to Trade Center Dr	4	Major arterial	36,000	7,205	0.20	A	3,852	0.11	A
1121	Technology Dr	5th Street W to Division St	4	Major arterial	36,000	7,574	0.21	A	5,113	0.14	A
1122	Technology Dr	Division St to Sierra Hwy	4	Major arterial	36,000	7,805	0.22	A	8,902	0.25	A
								Total LOS A through D	**108**		**103**
								Total LOS E	**2**		**5**
								Total LOS F	**3**		**5**
								Total LOS Reported	**113**		**113**

Table 8 reports the link-based VMT, VHT, VHD, and average speeds by facility in the Palmdale SOI for all trips regardless of trip origin or destination (including pass-through trips).

Table 8: 2017 Existing Palmdale Sphere of Influence VMT/VHT by Facility Type for All Trips

	AM Peak				PM Peak				Daily			
Facility	**VMT**	**VHT**	**Speed**	**Delay**	**VMT**	**VHT**	**Speed**	**Delay**	**VMT**	**VHT**	**Speed**	**Delay**
Freeways	250,250	4,517	55.4	942	290,275	4,600	63.1	453	1,084,421	17,015	63.7	1,523
HOT facilities	0	0	0.0	0	0	0	0.0	0	0	0	0.0	0
HOV facilities	50,301	786	64.0	68	55,530	821	67.6	28	118,683	1,791	66.3	95
Expressways/parkways	0	0	0.0	0	0	0	0.0	0	0	0	0.0	0
Principal arterials	183,392	4,673	39.2	624	286,587	7,374	38.9	1,021	1,023,896	24,923	41.1	2,281
Minor arterials	220,022	5,389	40.8	353	359,485	8,914	40.3	669	1,173,770	28,367	41.4	1,369
Major collectors	99,797	2,629	38.0	233	145,238	3,757	38.7	273	463,447	11,700	39.6	600
Minor collectors	1,845	51	36.3	1	3,196	92	34.8	4	9,393	270	34.8	8
Freeway ramps	11,323	630	18.0	288	16,345	830	19.7	345	57,372	2,626	21.9	907
Truck lanes only	0	0	0.0	0	0	0	0.0	0	0	0	0.0	0
Centroid connectors	64,106	2,479	25.9	0	103,593	4,022	25.8	0	344,572	13,394	25.7	0
Total—All Links	**881,037**	**21,155**	**41.6**	**2,509**	**1,260,249**	**30,411**	**41.4**	**2,792**	**4,275,553**	**100,085**	**42.7**	**6,783**

SUMMARY

Daily trips are defined as having an origin, destination or both within the Palmdale SOI and do not include pass-through trips. The Palmdale trips generate a VMT of 8,028,726 and a VHT of 272,454 on all the roadway way facilities within the SCAG region. The Palmdale SOI only accounts for 25.1 percent of the total VMT generated, Lancaster accounts for 12.9 percent, High Desert region accounts for 3.8 percent, rest of Los Angeles County accounts for 36.4 percent.

The average trip length for trips originating and staying within the Palmdale SOI is 4.25 miles. This constitutes 70.2 percent of all the Palmdale trips. The average trip length for trips originating in Palmdale SOI and having a destination anywhere in the SCAG region including itself is 11.87 miles.

Based on the 2017 existing counts, the daily segment-based LOS results show the number of segments operating at LOS E is two and LOS F is three and accounts for 1.8 percent and 2.7 percent, respectively, of all the segments analyzed. For the 2017 existing model, the daily segment-based LOS results show the number of segments operating at LOS E is five and LOS F is five and accounts for 4.4 percent and 4.4 percent, respectively, of all the segments analyzed.

The Palmdale transportation network as a "system," which includes all roadway facilities within the Palmdale SOI, generates 4,275,533 VMT, 100,085 VHT and 6,783 VHD daily. This accounts for all trips, including pass through trips, using the highway network within the Palmdale SOI.

Future Conditions

ROADWAY IMPROVEMENTS

The future highway network is consistent with the SCAG model assumptions for the forecast year 2040, which is the farthest out horizon year available with the SCAG regional model. The 2040 horizon year is the basis for the future year 2045 forecasts for the Palmdale General Plan scenarios, with several roadway improvements additionally assumed for the 2045 horizon year. These include (noting some of them may have already been upgraded):

- Avenue P/Rancho Vista Boulevard
    - Three lanes per direction between west of 30th Street West and Division Street
    - Two lanes per direction between Division Street and 20th Street East
    - One lane per direction between 20th Street East and 50th Street East.
- Technology Drive/East Avenue P8
    - Two lanes per direction between Sierra Highway and 20th Street East.
- East Avenue R
    - Two lanes per direction between Sierra Highway and 70th Street East.
- East Avenue S
    - Three lanes per direction between 30th Street and 47th Street East.
- East Avenue Q
    - Connection between 6th Street and Sierra Highway to facilitate better access to the proposed Palmdale High-Speed Rail Station

The 2045 Preferred Plan also included the Palmdale High-Speed Rail Station boardings, which are integrated into the traffic assignment procedures. Daily boarding for the 2045 scenarios are reported to be 5,600 riders one way, per the Transportation Technical Report published by the California High-Speed Rail Authority Palmdale to Burbank Project Section and dated March 2019.

Following a review by the City of Palmdale, the 2045 Preferred Plan scenario highway network was updated based on their recommendations.

Figure 6 illustrates the future roadway network in Palmdale, including a general alignment for the proposed High Desert Corridor freeway.

Figure 6. Future Roadway Network

Placeholder

2045 BASE

The 2045 Base scenario used the SCAG model forecast year 2040 dataset, and the network assumptions are consistent with the RTP assumptions. The 2045 socio-economic data for the Palmdale SOI was updated with inputs from the City of Palmdale. The socio-economic data outside the Palmdale SOI is consistent with the SCAG assumptions for the region for the year 2040. The SCAG four-step model procedures were run with the updated land use in the Palmdale SOI. The Table 9 lists the planning variable assumptions for the region.

Table 9: 2045 Base Socio-Economic Forecast

	Population	Households	Employment
Palmdale sphere	240,515	72,840	67,085
Lancaster sphere	218,843	69,963	59,678
High Desert region	40,845	14,409	5,030
Ventura County	282,025	92,482	101,050
Los Angeles County remainder	11,001,144	3,783,739	5,117,195
Orange County	3,460,381	1,152,340	1,898,952
Riverside County	3,183,378	1,054,557	1,174,500
San Bernardino County	2,731,308	854,360	1,028,132
Imperial County	965,566	312,223	419,808
Externals	0	0	0
Seaport/airport	0	0	0
Total Region	**22,124,005**	**7,406,913**	**9,871,430**

Select zone traffic assignment procedures were performed on the zones within the Palmdale SOI to account for trips that were generated or attracted to Palmdale SOI only. All other trips were not counted as they were pass through trips. The daily average trip lengths for the Palmdale only trips to different locations are shown in Table 10. The daily link-based VMT, VHT and the average speeds by facility types are shown in Table 11 for the Palmdale only trips. The daily percent share of VMT for trips originating in the Palmdale SOI to all areas in the region, including Palmdale, is illustrated in Figure 7.

Table 10: 2045 Base Average Trip Length for Palmdale Sphere of Influence Trips

From/To	Trip Length (II and IX*) (miles)	Percent Share of Trips
Palmdale sphere	4.43	71.7%
Lancaster sphere	9.46	15.4%
High Desert region	15.52	2.5%
Imperial County	228.35	0.0%
Los Angeles County	55.68	6.8%
Orange County	108.62	0.4%
Riverside County	110.91	0.3%
San Bernardino County	68.66	1.3%
Ventura County	75.65	0.4%
Externals	68.69	1.0%
Seaport/airport	38.89	0.3%
Weighted Average	**11.56**	100.0%

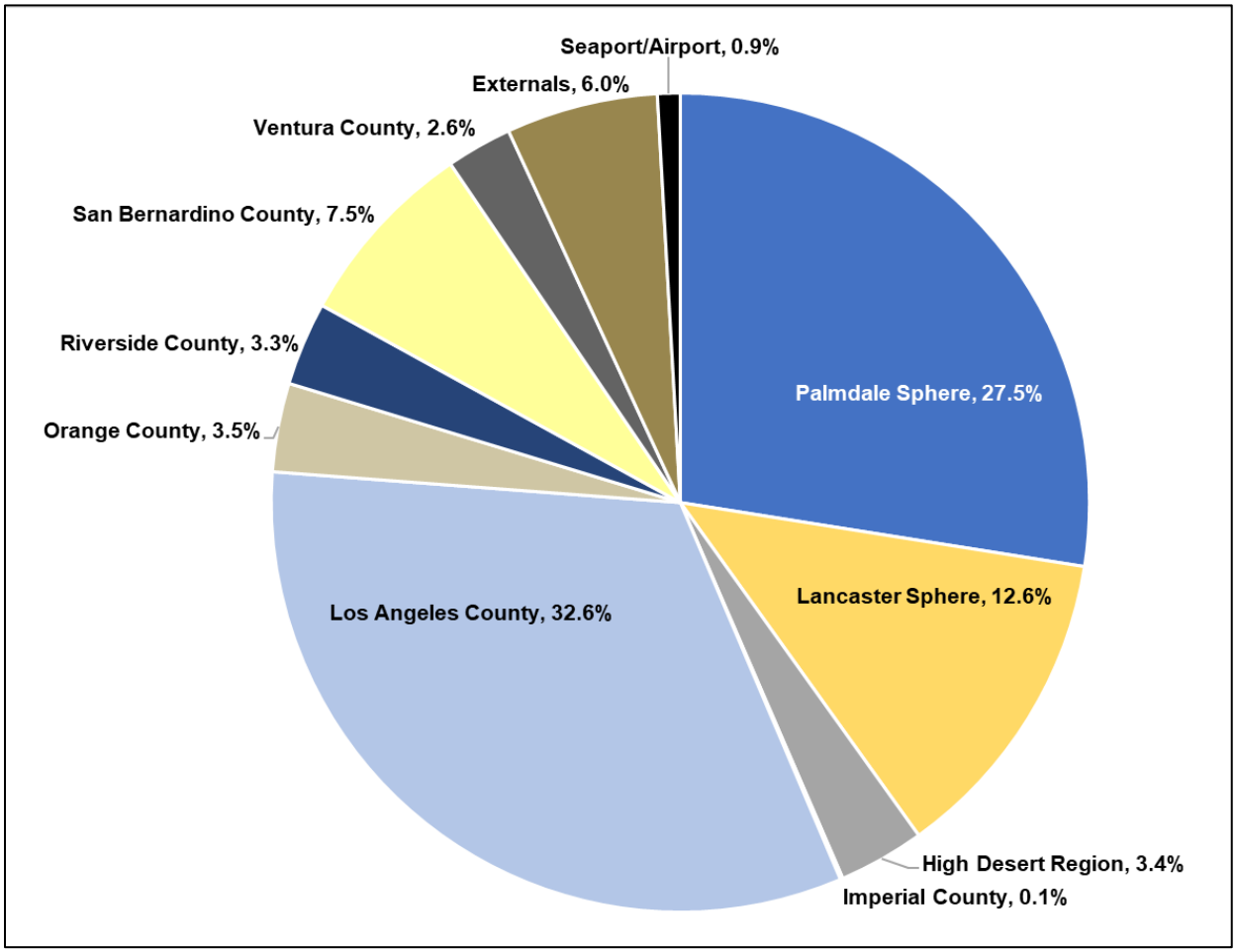
*II = Internal-to-internal trips, where both ends of the trips are within the Palmdale SOI
IX = Internal-to-external trips, where the origin of the trips is within the Palmdale SOI and the destination of the trips could be anywhere in the SCAG region.

Table 11: 2045 Base Palmdale Sphere of Influence (II, IX and XI*) Daily, VMT, VHT, Average Speed by Facility

Facility	VMT	VHT	Average Speed (mph)
Freeways	2,945,756	129,261	44.7
HOT facilities	9,285	271	63.3
HOV facilities	284,422	17,684	47.7
Expressways/parkways	5,650	213	51.2
Principal arterials	1,671,644	47,215	29.8
Minor arterials	1,897,218	58,807	30.3
Major collectors	1,321,027	39,778	23.6
Minor connectors	43,307	1,357	29.0
Freeway ramps	156,041	22,220	20.1
Truck lanes only	7,485	730	22.2
Centroid connectors	520,432	20,729	24.4
Total without centroid connectors	8,341,835	317,535	35.2
Total of All Links	**8,862,268**	**338,264**	**34.2**

*II = Internal-to-internal trips, where both ends of the trips are within the Palmdale SOI
IX = Internal-to-external trips, where the origin of the trips is within the Palmdale SOI and the destination of the trips could be anywhere in the SCAG region
XI = External-to-internal trips, where the origin of the trips could be anywhere in the SCAG region and the destination of the trips is within the Palmdale SOI

Figure 7: 2045 Base Daily VMT Share Originating in Palmdale Sphere of Influence



Traffic assignments were performed to produce traffic volumes on the facilities inside and outside the Palmdale SOI. Traffic assignments are available for AM peak period, mid-day period, PM peak period, evening period, night period and daily. The daily traffic assignment volumes (bandwidths) are shown in Figure 8. The post-processed daily assignment volumes and the LOS at various segments are shown in the Table 12.

Figure 8: 2045 Base Daily Traffic Volumes Forecast

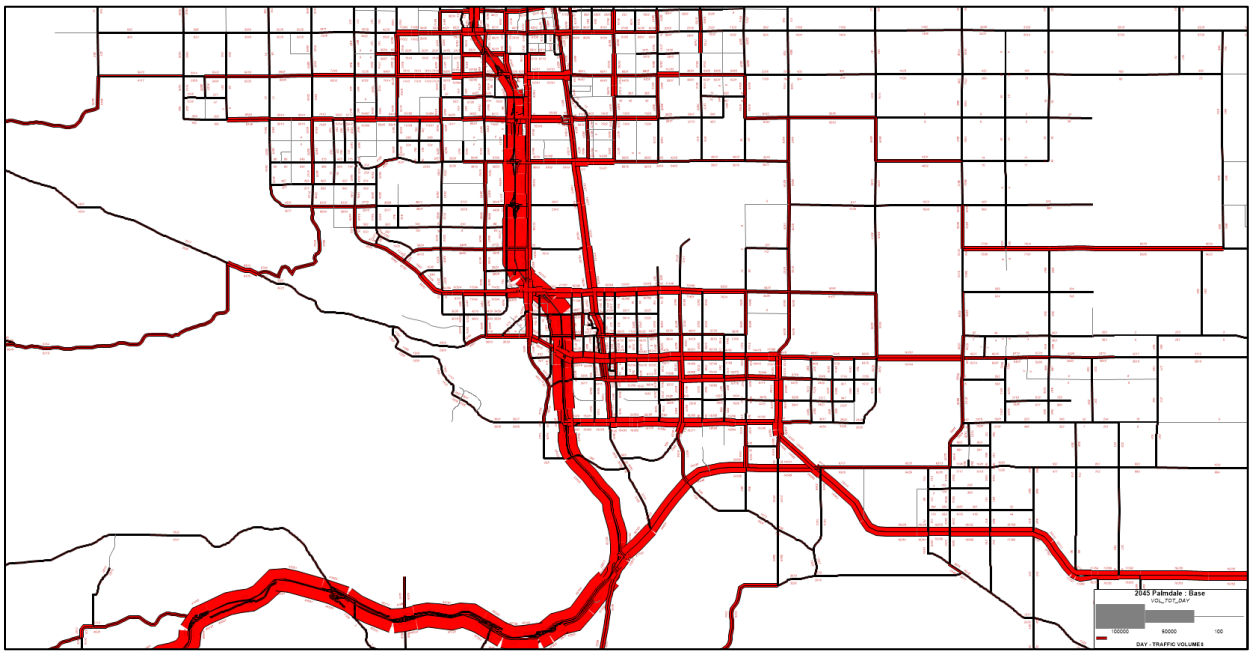


Table 12: 2045 Base Daily Volumes

	Roadway Segments			2045 Base			
LINKID	Roadway	From/To	Lanes	2045Base_Tot_Flow	Capacity	V/C	LOS
1001	Columbia Way/Avenue M	10th Street W to Sierra Hwy	4	31,993	36,000	0.89	D
1002	Columbia Way/Avenue M	Sierra Hwy to 10th Street E	4	33,414	36,000	0.93	E
1003	Columbia Way/Avenue M	10th Street E to 20th Street E	4	20,665	36,000	0.57	A
1004	Columbia Way/Avenue M	20th Street E to 30th Street E	4	15,610	36,000	0.43	A
1005	Columbia Way/Avenue M	30th Street E to 40th Street E	4	10,578	36,000	0.29	A
1006	Columbia Way/Avenue M	40th Street E to 50th Street	4	13,306	36,000	0.37	A
1007	Rancho Vista Ave/Avenue P	50th Street W to Town Center Dr	4	20,985	36,000	0.58	A
1008	Rancho Vista Ave/Avenue P	Town Center Dr to 30th Street W	4	20,985	36,000	0.58	A
1009	Rancho Vista Ave/Avenue P	30th Street W to 25th Street W	4	22,457	36,000	0.62	B
1010	Rancho Vista Ave/Avenue P	25th Street W to 20th Street W	4	27,517	36,000	0.76	C
1011	Rancho Vista Ave/Avenue P	20th Street W to 15th Street W	4	27,426	36,000	0.76	C
1012	Rancho Vista Ave/Avenue P	15th Street to 10th Street W	6	42,819	54,000	0.79	C
1013	Rancho Vista Ave/Avenue P	10th Street W to SR 14	6	37,114	54,000	0.69	B
1014	Rancho Vista Ave/Avenue P	SR 14 to Country Club Dr	4	23,823	54,000	0.44	A
1015	Rancho Vista Ave/Avenue P	Country Club Dr to Division St	4	28,050	45,000	0.62	B
1016	Rancho Vista Ave/Avenue P	Division St to Sierra Hwy	4	22,334	36,000	0.62	B
1017	East Avenue P	Sierra Hwy to 8th Street E	4	41,328	36,000	1.15	F
1018	East Avenue P	8th Street E to 15th Street E	4	41,328	36,000	0.89	D
1019	East Avenue P	15th Street E to 20th Street E	4	33,406	36,000	0.93	E
1020	East Avenue P	20th Street E to 25th Street E	4	26,501	36,000	0.74	C
1021	East Avenue P	25th Street E to 30th Street E	4	20,757	36,000	0.58	A
1022	Avenue Q	Trade Center Dr to 5th Street W	4	4,700	36,000	0.13	A
1023	Avenue Q	Division Street to 6th Street E	2	8,517	18,000	0.47	A
1024	Avenue Q	Sierra Hwy to 10th Street E	2	12,262	18,000	0.68	B
1025	Avenue Q	10th Street E to 20th Street E	2	8,323	18,000	0.46	A
1026	Avenue Q	20th Street E to 30th Street E	2	7,375	18,000	0.41	A
1027	Avenue Q	30th Street E to 40th Street E	2	8,100	18,000	0.45	A
1028	Elizabeth Lake Rd	25th Street W to 20th Street W	4	16,726	36,000	0.46	A
1029	Elizabeth Lake Rd	20th Street W to 15th Street W	4	17,906	36,000	0.50	A
1030	Elizabeth Lake Rd	15th Street W to 10th Street W	4	22,454	36,000	0.62	B
1031	Palmdale Blvd	10th Street W to Trade Center Dr	4	24,318	54,000	0.45	A

Table 12: 2045 Base Daily Volumes

LINKID	Roadway Segments		Lanes	2045 Base			
	Roadway	From/To		2045Base_Tot_Flow	Capacity	V/C	LOS
1032	Palmdale Blvd	Trade Center Dr to 5th Street W	4	20,913	54,000	0.39	A
1033	Palmdale Blvd	5th Street W to State Route 14	4	30,395	54,000	0.56	A
1034	Palmdale Blvd	Division Street to 5th St E	6	30,499	54,000	0.56	A
1035	Palmdale Blvd	5th Street E to 10th Street E	4	30,526	54,000	0.57	A
1036	Palmdale Blvd	10th Street E to 15th Street E	4	30,423	36,000	0.85	D
1037	Palmdale Blvd	15th Street E to 20th Street E	4	22,630	36,000	0.63	B
1038	Palmdale Blvd	20th Street E to 25th Street E	4	28,230	36,000	0.78	C
1040	Palmdale Blvd	40th Street E to 47th Street E	4	24,334	36,000	0.68	B
1041	Palmdale Blvd	50th Street E to 60th Street E	4	16,404	36,000	0.46	A
1042	Palmdale Blvd	70th Street E to 80th Street E	2	16,681	18,000	0.93	E
1043	E Avenue R	Sierra Hwy to 10th Street E	4	20,559	36,000	0.57	A
1044	E Avenue R	10th Street E to 20th Street E	4	20,289	36,000	0.56	A
1045	E Avenue R	20th Street E to 30th Street E	4	23,421	36,000	0.65	B
1046	E Avenue R	30th Street E to 40th Street E	3	20,743	36,000	0.58	A
1047	E Avenue R	40th Street E to 47th Street E	4	21,629	36,000	0.60	B
1048	E Avenue R	47th Street E to 60th Street E	4	16,355	36,000	0.45	A
1049	E Avenue R	60th Street E to 70th Street E	4	7,563	36,000	0.21	A
1050	Avenue S	Tovey Avenue to Tierra Subida Ave	4	9,505	36,000	0.26	A
1051	Avenue S	Tierra Subida Ave to SR 14	4	14,400	36,000	0.40	A
1052	Avenue S	SR 14 to 5th Street E	4	16,681	36,000	0.46	A
1053	Avenue S	5th Street E to Sierra Hwy	4	29,095	36,000	0.81	D
1054	Avenue S	Sierra Hwy to 10th Street E	4	36,424	36,000	1.01	F
1055	Avenue S	10th Street E to 20th Street E	4	33,024	36,000	0.92	E
1056	Avenue S	20th Street E to 25th Street E	4	32,796	36,000	0.91	E
1057	Avenue S	25th Street E to 30th Street E	4	29,920	36,000	0.83	D
1058	Avenue S	30th Street E to 35th Street E	6	24,137	54,000	0.45	A
1059	Avenue S	35th Street E to 40th Street E	6	23,612	54,000	0.44	A
1060	Avenue S	40th Street E to 47th Street E	6	23,867	54,000	0.44	A
1061	Avenue S	47th Street E to 55th Street E	4	23,819	36,000	0.66	B
1062	Pearblossom Hwy/Avenue T	Sierra Hwy to 25th Street E	4	56,434	36,000	1.57	F
1063	Pearblossom Hwy/Avenue T	25th Street E to 40th Street E	4	47,628	36,000	1.32	F

Table 12: 2045 Base Daily Volumes

LINKID	Roadway Segments		Lanes	2045 Base			
	Roadway	From/To		2045Base_Tot_Flow	Capacity	V/C	LOS
1064	Pearblossom Hwy/Avenue T	40th Street E to 47th Street E	4	33,627	36,000	0.93	E
1065	Pearblossom Hwy/Avenue T	47th Street E to Fort Tejon Road	4	33,627	36,000	0.93	E
1066	Pearblossom Hwy/Avenue T	Fort Tejon Road to 70th Street E	4	33,627	36,000	0.93	E
1067	10th Street W/Tierra Subida Ave	W Avenue M to W Avenue N	4	15,470	36,000	0.43	A
1068	10th Street W/Tierra Subida Ave	W Avenue N to W Avenue O	4	21,544	36,000	0.60	A
1069	10th Street W/Tierra Subida Ave	W Avenue O to SR 14	4	17,627	36,000	0.49	A
1070	10th Street W/Tierra Subida Ave	SR 14 to Rancho Vista Blvd	6	36,947	54,000	0.68	B
1071	10th Street W/Tierra Subida Ave	Rancho Vista Blvd to Technology Dr	6	43,093	54,000	0.80	C
1072	10th Street W/Tierra Subida Ave	Technology Dr to W Palmdale Blvd	5	46,068	45,000	1.02	F
1073	10th Street W/Tierra Subida Ave	W Palmdale Blvd to Rayburn Rd	4	20,129	36,000	0.56	A
1074	Sierra Hwy	Columbia Way to E Avenue N	4	32,154	36,000	0.89	D
1075	Sierra Hwy	E Avenue N to E Avenue O	4	33,741	36,000	0.94	E
1076	Sierra Hwy	E Avenue O to E Avenue P	4	46,043	36,000	1.28	F
1077	Sierra Hwy	E Avenue P to E Avenue Q	4	15,375	36,000	0.43	A
1078	Sierra Hwy	E Avenue Q to Palmdale Blvd	4	15,176	36,000	0.42	A
1079	Sierra Hwy	Palmdale Blvd to E Avenue R	4	11,555	36,000	0.32	A
1080	Sierra Hwy	E Avenue R to E Avenue S	4	7,289	36,000	0.20	A
1081	Sierra Hwy	E Avenue S to Pearblossom Hwy	4	8,070	36,000	0.22	A
1082	10th Street E	E Avenue P to E Avenue Q	2	2,357	18,000	0.13	A
1083	10th Street E	E Avenue Q to E Palmdale Blvd	4	5,966	36,000	0.17	A
1084	10th Street E	E. Palmdale Blvd to Avenue R	2	8,945	18,000	0.50	A
1085	10th Street E	Avenue R to Avenue S1	2	5,055	18,000	0.28	A
1086	20th Street E	E Avenue P to E Avenue Q	2	8,506	18,000	0.47	A
1087	20th Street E	E Avenue Q to Palmdale Blvd	2	8,996	18,000	0.50	A
1088	20th Street E	Palmdale Blvd to E Avenue R	4	14,236	36,000	0.40	A
1089	20th Street E	E Avenue R to E Avenue S	4	13,125	36,000	0.36	A
1090	25th Street E	E Avenue P to E Avenue Q	2	8,458	18,000	0.47	A
1091	25th Street E	E Avenue Q to Palmdale Blvd	2	8,663	18,000	0.48	A
1092	25th Street E	Palmdale Blvd to E Avenue R	4	15,584	36,000	0.43	A
1093	25th Street E	E Avenue R to E Avenue S	4	19,259	36,000	0.53	A
1094	25th Street E	E Avenue S to Pearblossom Hwy	4	17,793	36,000	0.49	A

Table 12: 2045 Base Daily Volumes

	Roadway Segments			2045 Base			
LINKID	Roadway	From/To	Lanes	2045Base_Tot_Flow	Capacity	V/C	LOS
1095	30th Street E	E Avenue P to E Avenue Q	2	8,526	18,000	0.47	A
1096	30th Street E	E Avenue Q to Palmdale Blvd	2	8,295	18,000	0.46	A
1097	30th Street E	Palmdale Blvd to E Avenue R	4	8,891	36,000	0.25	A
1098	30th Street E	E Avenue R to E Avenue S	4	8,871	36,000	0.25	A
1099	40th Street E	E Avenue P to E Avenue Q	2	9,856	18,000	0.55	A
1100	40th Street E	E Avenue Q to E Palmdale Blvd	2	7,185	18,000	0.40	A
1101	40th Street E	E Palmdale Blvd to E Avenue R	3	13,236	27,000	0.49	A
1102	40th Street E	E Avenue R to E Avenue S	3	13,439	27,000	0.50	A
1103	40th Street E	E Avenue S to Sierra Hwy	2	12,118	18,000	0.67	B
1104	47th Street E/50th Street E/Ft Tejon Rd	E Avenue M to E Avenue N	2	20,800	18,000	1.16	F
1105	47th Street E/50th Street E/Ft Tejon Rd	E Avenue P to Palmdale Blvd	2	14,713	18,000	0.82	D
1106	47th Street E/50th Street E/Ft Tejon Rd	Palmdale Blvd to E Avenue R	4	28,780	36,000	0.80	C
1107	47th Street E/50th Street E/Ft Tejon Rd	E Avenue R to E Avenue R-8	4	32,805	36,000	0.91	E
1108	47th Street E/50th Street E/Ft Tejon Rd	E Avenue R-8 to E Avenue S	4	25,499	36,000	0.71	C
1109	47th Street E/50th Street E/Ft Tejon Rd	E Avenue S to Essex Dr	5	29,940	45,000	0.67	B
1110	47th Street E/50th Street E/Ft Tejon Rd	Essex Dr to Pearblossom Hwy	4	15,334	36,000	0.43	A
1111	47th Street E/50th Street E/Ft Tejon Rd	Pearblossom Hwy to E Avenue T-8	4	33,448	36,000	0.93	E
1120	Technology Dr	10th Street W to Trade Center Dr	4	9,375	36,000	0.26	A
1121	Technology Dr	5th Street W to Division St	4	10,498	36,000	0.29	A
1122	Technology Dr	Division St to Sierra Hwy	4	9,096	36,000	0.25	A
						Total LOS A Through D	**95**
						Total LOS E	**11**
						Total LOS F	**7**
						Total LOS Reported	**113**

The Table 13 reports the link-based VMT, VHT, VHD, and average speeds by facility for the Palmdale SOI for all trips regardless of trip origin or destination.

Table 13: 2045 Base Palmdale Sphere of Influence VMT/VHT by Facility Type for All Trips

	AM Peak				PM Peak				Daily			
Facility	**VMT**	**VHT**	**Speed**	**Delay**	**VMT**	**VHT**	**Speed**	**Delay**	**VMT**	**VHT**	**Speed**	**Delay**
Freeways	270,601	5,517	49.1	1,651	305,078	5,068	60.2	710	1,181,686	19,501	60.6	2,620
HOT facilities	0	0	0.0	0	0	0	0.0	0	0	0	0.0	0
HOV facilities	69,103	1,239	55.8	252	68,108	1,040	65.5	67	145,399	2,395	60.7	318
Expressways/parkways	0	0	0.0	0	0	0	0.0	0	0	0	0.0	0
Principal arterials	226,065	6,363	35.5	1,382	338,346	9,459	35.8	1,972	1,257,146	32,740	38.4	5,022
Minor arterials	262,555	6,673	39.3	658	419,648	10,697	39.2	1,065	1,401,721	34,643	40.5	2,427
Major collectors	123,229	3,449	35.7	489	180,141	4,873	37.0	519	568,232	14,924	38.1	1,182
Minor collectors	2,741	73	37.7	2	3,415	113	30.2	19	11,491	349	32.9	32
Freeway ramps	11,492	582	19.8	232	17,115	871	19.6	363	61,651	2,836	21.7	990
Truck lanes only	0	0	0.0	0	0	0	0.0	0	0	0	0.0	0
Centroid connectors	73,459	2,881	25.5	0	121,957	4,786	25.5	0	402,448	15,803	25.5	0
Toral—All Links	1,039,246	26,775	38.8	4,666	1,453,807	36,907	39.4	4,714	5,029,773	123,190	40.8	12,590

Summary

Daily trips are defined as having an origin, destination or both within the Palmdale SOI and do not include pass-through trips. The Palmdale trips generate a VMT of 8,862,268 and a VHT of 338,264 on all the roadway way facilities within the SCAG region. The Palmdale SOI only accounts for 27.5 percent of the total VMT generated, Lancaster accounts for 12.6 percent, High Desert region accounts for 3.4 percent, while the rest of Los Angeles County accounts for 32.6 percent.

The average trip length for trips originating and staying within the Palmdale SOI is 4.43 miles and this constitutes 71.7 percent of all the Palmdale trips. The average trip length for trips originating in Palmdale SOI and having a destination anywhere in the SCAG region including itself is 11.56 miles.

Daily segment-based LOS results show the number of segments operating at LOS E is eleven and LOS F is seven and accounts for 9.7 percent and 6.2 percent, respectively, of all the segments analyzed.

The Palmdale transportation network as a system, which includes all roadway facilities within the Palmdale SOI, generates 5,029,773 VMT, 123,190 VHT and 12,590 VHD daily. This accounts for all trips, including pass through trips, using the highway network within the Palmdale SOI.

2045 BASE WITH HIGH DESERT CORRIDOR FREEWAY

The 2045 base with High Desert Corridor freeway used the 2045 Base year dataset and the network assumptions are consistent with the RTP except for the HDC facility. The 2045 socio-economic data for the Palmdale SOI was updated with inputs from the City of Palmdale. The socio-economic data outside the Palmdale SOI is consistent with the SCAG assumptions for the region for the year 2040. The High Desert Corridor Freeway was coded from SR 14 to SR 138. The 2045 Base scenario trip tables were used to perform traffic assignments only. Table 14 reports the land use assumptions for the region. This scenario was performed to illustrate the effects of the HDC on the Palmdale street system as the HDC would be major east–west freeway connecting Palmdale and Victorville. The HDC may not be built before 2050 or beyond as no funding sources are identified.

Select zone traffic assignment procedures were performed on the zones within the Palmdale SOI to account for trips that were generated or attracted to Palmdale SOI only. All other trips were not counted as they were pass through trips.

Table 14: 2045 Base with High Desert Corridor Freeway Socio-Economic Forecast

	Population	Households	Employment
Palmdale sphere	240,515	72,840	67,085
Lancaster Sphere	218,843	69,963	59,678
High Desert region	40,845	14,409	5,030
Ventura County	282,025	92,482	101,050
Los Angeles County remainder	11,001,144	3,783,739	5,117,195
Orange County	3,460,381	1,152,340	1,898,952
Riverside County	3,183,378	1,054,557	1,174,500
San Bernardino County	2,731,308	854,360	1,028,132
Imperial County	965,566	312,223	419,808
Externals	0	0	0
Seaport/airport	0	0	0
Total Region	**22,124,005**	**7,406,913**	**9,871,430**

The daily average trip lengths for the Palmdale only trips to different locations are reported in Table 15.

Table 15: 2045 Base with High Desert Corridor Average Trip Length for Palmdale SOI Trips

From/To	Trip Length (II and IX*) (miles)	Percent Share of Trips
Palmdale sphere	4.46	71.9%
Lancaster sphere	9.53	15.3%
High Desert region	15.49	2.5%
Imperial County	227.28	0.0%
Los Angeles County	55.83	6.6%
Orange County	108.82	0.4%
Riverside County	110.51	0.3%
San Bernardino County	69.10	1.3%
Ventura County	75.73	0.4%
Externals	68.89	1.0%
Seaport/airport	39.03	0.3%
Weighted Average	**11.62**	100.0%

*II = Internal-to-internal trips, where both ends of the trips are within the Palmdale SOI
IX = Internal-to-external trips, where the origin of the trips is within the Palmdale SOI and the destination of the trips could be anywhere in the SCAG region.

The daily link-based VMT, VHT and the average speeds by facility types are reported in Table 16 for Palmdale only trips.

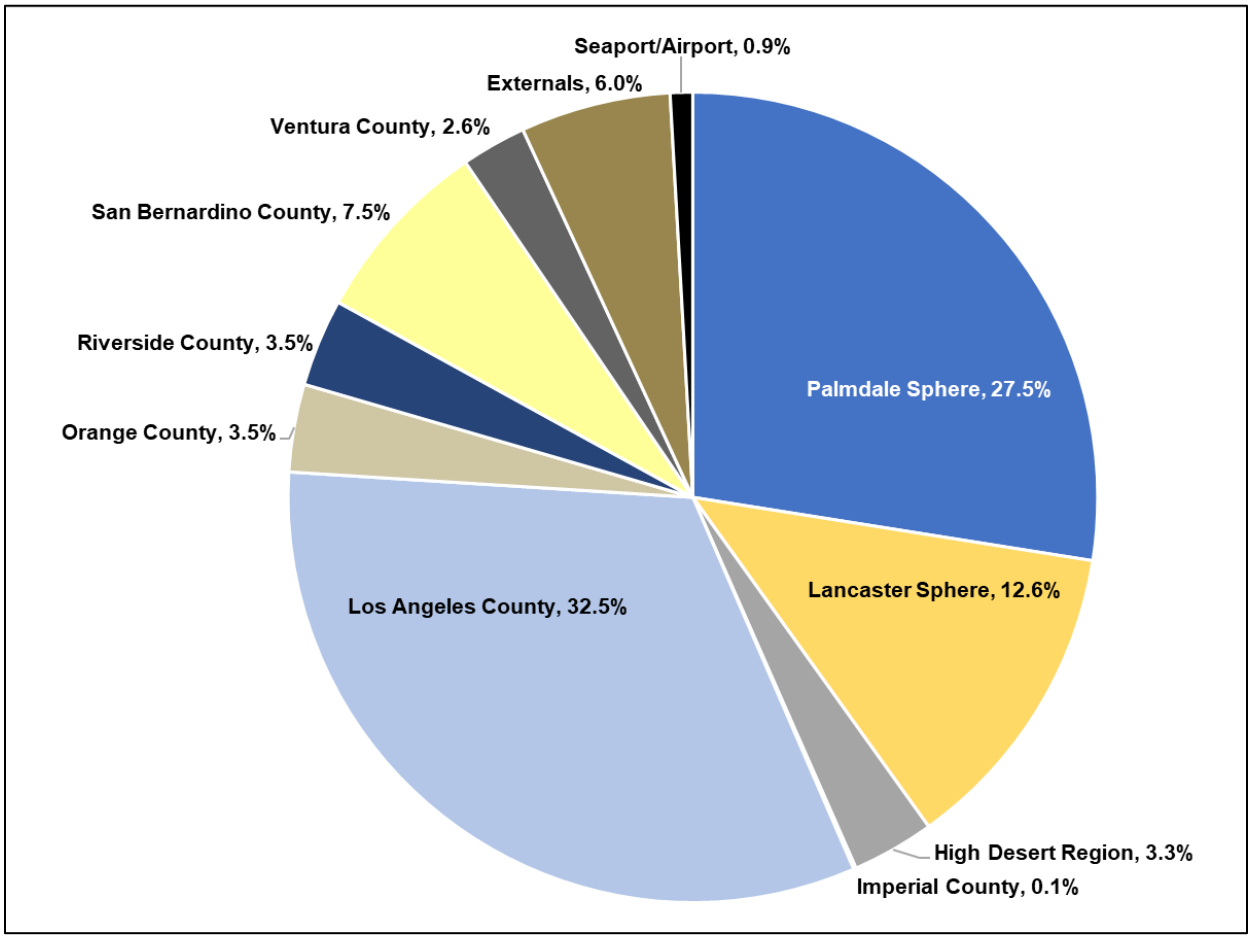
Table 16: 2045 Base with High Desert Corridor Palmdale Sphere of Influence (II, IX and XI*) Daily, VMT, VHT, Average Speed by Facility

Facility	VMT	VHT	Average Speed (mph)
Freeways	3,068,071	131,896	44.8
HOT facilities	10,024	292	63.2
HOV facilities	282,077	17,774	47.7
Expressways/parkways	192,155	3,645	51.7
Principal arterials	1,579,551	44,131	29.8
Minor arterials	1,696,186	53,626	30.2
Major collectors	1,301,285	39,251	23.6
Minor connectors	48,311	1,537	29.0
Freeway ramps	166,282	22,421	20.2
Truck lanes only	7,516	710	23.0
Centroid connectors	517,058	20,595	24.4
Total without centroid connectors	8,351,459	315,282	35.2
Total of All Links	**8,868,517**	**335,877**	**34.2**

*II = Internal-to-internal trips, where both ends of the trips are within the Palmdale SOI
IX = Internal-to-external trips, where the origin of the trips is within the Palmdale SOI and the destination of the trips could be anywhere in the SCAG region
XI = External-to-internal trips, where the origin of the trips could be anywhere in the SCAG region and the destination of the trips is within the Palmdale SOI

The daily percent share of the VMT for trips originating in the Palmdale SOI to all areas in the region, including Palmdale, is illustrated in Figure 9.

Figure 9: 2045 Base with High Desert Corridor Daily VMT Share Originating in the Palmdale Sphere of Influence



Traffic assignments are performed to produce traffic volumes on the various facilities, both within and outside the Palmdale SOI. Traffic assignments are available for AM peak period, mid-day period, PM peak period, evening period, night period and daily. The daily traffic assignment volumes (bandwidths) are shown in Figure 10. Figure 11 displays the difference in daily volumes with and without the High Desert Corridor Freeway, where green bandwidths display the volumes that the new facility is carrying, and red bandwidths display the decrease in volumes on all other facilities, thereby improving LOS conditions on these facilities.

Figure 10: 2045 Base with High Desert Corridor Daily Traffic Volumes Forecast

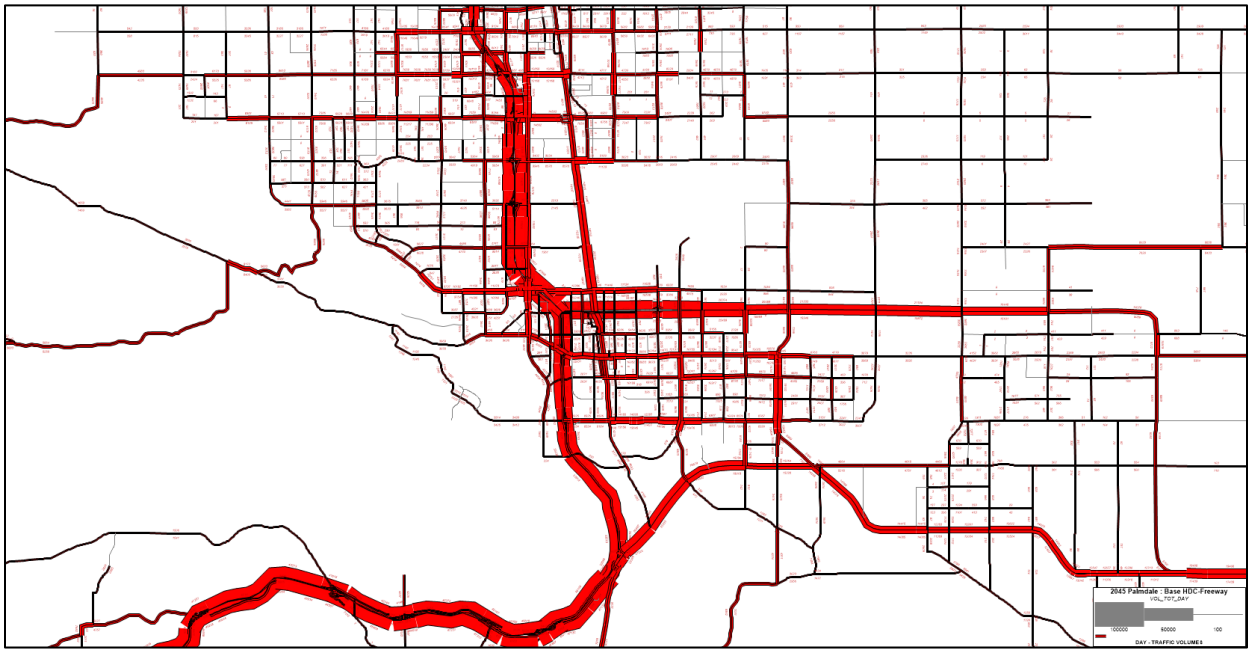
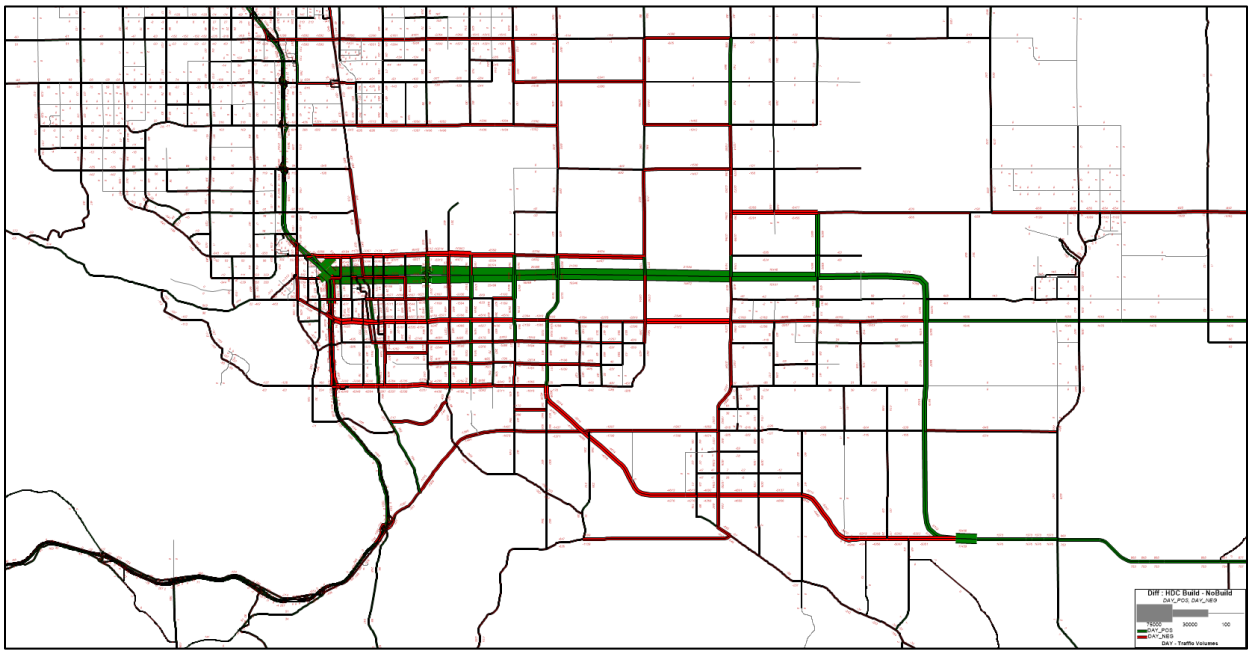


Figure 11: Comparison of 2045 Base to 2045 Base with High Desert Corridor Daily Traffic Volumes Forecasts



The post-processed daily assignment volumes and the LOS at various segments are reported in Table 17.

Table 17: 2045 Base with High Desert Corridor Daily Volumes

	Roadway Segments			2045 Base with High Desert Corridor			
LINKID	Roadway	From/To	Lanes	2045HDC_Tot_Flow_adj	Capacity	V/C	LOS
1001	Columbia Way/Avenue M	10th Street W to Sierra Hwy	4	30,032	36,000	0.83	D
1002	Columbia Way/Avenue M	Sierra Hwy to 10th Street E	4	30,598	36,000	0.85	D
1003	Columbia Way/Avenue M	10th Street E to 20th Street E	4	17,513	36,000	0.49	A
1004	Columbia Way/Avenue M	20th Street E to 30th Street E	4	13,382	36,000	0.37	A
1005	Columbia Way/Avenue M	30th Street E to 40th Street E	4	7,475	36,000	0.21	A
1006	Columbia Way/Avenue M	40th Street E to 50th Street	4	10,559	36,000	0.29	A
1007	Rancho Vista Ave/Avenue P	50th Street W to Town Center Dr	4	20,985	36,000	0.58	A
1008	Rancho Vista Ave/Avenue P	Town Center Dr to 30th Street W	4	20,985	36,000	0.58	A
1009	Rancho Vista Ave/Avenue P	30th Street W to 25th Street W	4	22,457	36,000	0.62	B
1010	Rancho Vista Ave/Avenue P	25th Street W to 20th Street W	4	27,509	36,000	0.76	C
1011	Rancho Vista Ave/Avenue P	20th Street W to 15th Street W	4	27,134	36,000	0.75	C
1012	Rancho Vista Ave/Avenue P	15th Street to 10th Street W	6	43,279	54,000	0.80	D
1013	Rancho Vista Ave/Avenue P	10th Street W to SR 14	6	38,223	54,000	0.71	C
1014	Rancho Vista Ave/Avenue P	SR 14 to Country Club Dr	4	23,332	54,000	0.43	A
1015	Rancho Vista Ave/Avenue P	Country Club Dr to Division St	4	26,481	54,000	0.49	A
1016	Rancho Vista Ave/Avenue P	Division St to Sierra Hwy	4	22,334	45,000	0.59	A
1017	East Avenue P	Sierra Hwy to 8th Street E	4	33,683	36,000	0.62	B
1018	East Avenue P	8th Street E to 15th Street E	4	33,683	36,000	0.94	E
1019	East Avenue P	15th Street E to 20th Street E	4	24,973	36,000	0.68	B
1020	East Avenue P	20th Street E to 25th Street E	4	18,699	36,000	0.69	B
1021	East Avenue P	25th Street E to 30th Street E	4	14,695	36,000	0.52	A
1022	Avenue Q	Trade Center Dr to 5th Street W	4	4,549	36,000	0.41	A
1023	Avenue Q	Division Street to 6th Street E	2	6,977	36,000	0.13	A
1024	Avenue Q	Sierra Hwy to 10th Street E	2	9,447	18,000	0.39	A
1025	Avenue Q	10th Street E to 20th Street E	2	8,323	18,000	0.52	A
1026	Avenue Q	20th Street E to 30th Street E	2	7,106	18,000	0.46	A
1027	Avenue Q	30th Street E to 40th Street E	2	7,085	18,000	0.39	A
1028	Elizabeth Lake Rd	25th Street W to 20th Street W	4	17,153	36,000	0.48	A
1029	Elizabeth Lake Rd	20th Street W to 15th Street W	4	17,781	36,000	0.49	A
1030	Elizabeth Lake Rd	15th Street W to 10th Street W	4	22,627	36,000	0.63	B
1031	Palmdale Blvd	10th Street W to Trade Center Dr	4	22,061	54,000	0.41	A
1032	Palmdale Blvd	Trade Center Dr to 5th Street W	4	18,772	54,000	0.35	A
1033	Palmdale Blvd	5th Street W to State Route 14	4	29,963	54,000	0.55	A
1034	Palmdale Blvd	Division Street to 5th St E	6	25,175	54,000	0.47	A

Table 17: 2045 Base with High Desert Corridor Daily Volumes

LINKID	Roadway Segments		Lanes	2045 Base with High Desert Corridor			
	Roadway	From/To		2045HDC_Tot_Flow_adj	Capacity	V/C	LOS
1035	Palmdale Blvd	5th Street E to 10th Street E	4	25,257	54,000	0.47	A
1036	Palmdale Blvd	10th Street E to 15th Street E	4	25,869	36,000	0.72	C
1037	Palmdale Blvd	15th Street E to 20th Street E	4	19,233	36,000	0.53	A
1038	Palmdale Blvd	20th Street E to 25th Street E	4	23,470	36,000	0.65	B
1040	Palmdale Blvd	40th Street E to 47th Street E	4	20,780	36,000	0.58	A
1041	Palmdale Blvd	50th Street E to 60th Street E	4	14,147	36,000	0.39	A
1042	Palmdale Blvd	70th Street E to 80th Street E	2	16,681	18,000	0.93	E
1043	E Avenue R	Sierra Hwy to 10th Street E	4	19,490	36,000	0.54	A
1044	E Avenue R	10th Street E to 20th Street E	4	18,495	36,000	0.51	A
1045	E Avenue R	20th Street E to 30th Street E	4	18,408	36,000	0.51	A
1046	E Avenue R	30th Street E to 40th Street E	3	14,851	36,000	0.41	A
1047	E Avenue R	40th Street E to 47th Street E	4	17,922	36,000	0.50	A
1048	E Avenue R	47th Street E to 60th Street E	4	15,158	36,000	0.42	A
1049	E Avenue R	60th Street E to 70th Street E	4	6,317	36,000	0.18	A
1050	Avenue S	Tovey Avenue to Tierra Subida Ave	4	9,346	36,000	0.26	A
1051	Avenue S	Tierra Subida Ave to SR 14	4	14,798	36,000	0.41	A
1052	Avenue S	SR 14 to 5th Street E	4	13,190	36,000	0.37	A
1053	Avenue S	5th Street E to Sierra Hwy	4	25,828	36,000	0.72	C
1054	Avenue S	Sierra Hwy to 10th Street E	4	32,170	36,000	0.89	D
1055	Avenue S	10th Street E to 20th Street E	4	29,830	36,000	0.83	D
1056	Avenue S	20th Street E to 25th Street E	4	30,323	36,000	0.84	D
1057	Avenue S	25th Street E to 30th Street E	4	29,058	36,000	0.81	D
1058	Avenue S	30th Street E to 35th Street E	6	24,137	54,000	0.45	A
1059	Avenue S	35th Street E to 40th Street E	6	23,612	54,000	0.44	A
1060	Avenue S	40th Street E to 47th Street E	6	23,867	54,000	0.44	A
1061	Avenue S	47th Street E to 55th Street E	4	23,500	36,000	0.65	B
1062	Pearblossom Hwy/Avenue T	Sierra Hwy to 25th Street E	4	53,902	36,000	1.50	F
1063	Pearblossom Hwy/Avenue T	25th Street E to 40th Street E	4	44,895	36,000	1.25	F
1064	Pearblossom Hwy/Avenue T	40th Street E to 47th Street E	4	30,912	36,000	0.86	D
1065	Pearblossom Hwy/Avenue T	47th Street E to Fort Tejon Road	4	30,912	36,000	0.86	D
1066	Pearblossom Hwy/Avenue T	Fort Tejon Road to 70th Street E	4	30,912	36,000	0.86	D
1067	10th Street W/Tierra Subida Ave	W Avenue M to W Avenue N	4	15,186	36,000	0.42	A
1068	10th Street W/Tierra Subida Ave	W Avenue N to W Avenue O	4	21,170	36,000	0.59	A
1069	10th Street W/Tierra Subida Ave	W Avenue O to SR 14	4	17,627	36,000	0.49	A

Table 17: 2045 Base with High Desert Corridor Daily Volumes

	Roadway Segments			2045 Base with High Desert Corridor			
LINKID	Roadway	From/To	Lanes	2045HDC_Tot_Flow_adj	Capacity	V/C	LOS
1070	10th Street W/Tierra Subida Ave	SR 14 to Rancho Vista Blvd	6	35,324	54,000	0.65	B
1071	10th Street W/Tierra Subida Ave	Rancho Vista Blvd to Technology Dr	6	38,620	54,000	0.72	C
1072	10th Street W/Tierra Subida Ave	Technology Dr to W Palmdale Blvd	5	43,093	45,000	0.96	E
1073	10th Street W/Tierra Subida Ave	W Palmdale Blvd to Rayburn Rd	4	19,634	36,000	0.55	A
1074	Sierra Hwy	Columbia Way to E Avenue N	4	30,922	36,000	0.86	D
1075	Sierra Hwy	E Avenue N to E Avenue O	4	32,221	36,000	0.90	D
1076	Sierra Hwy	E Avenue O to E Avenue P	4	44,357	36,000	1.23	F
1077	Sierra Hwy	E Avenue P to E Avenue Q	4	14,366	36,000	0.40	A
1078	Sierra Hwy	E Avenue Q to Palmdale Blvd	4	16,842	36,000	0.47	A
1079	Sierra Hwy	Palmdale Blvd to E Avenue R	4	10,222	36,000	0.28	A
1080	Sierra Hwy	E Avenue R to E Avenue S	4	9,588	36,000	0.27	A
1081	Sierra Hwy	E Avenue S to Pearblossom Hwy	4	8,070	36,000	0.22	A
1082	10th Street E	E Avenue P to E Avenue Q	2	2,357	18,000	0.13	A
1083	10th Street E	E Avenue Q to E Palmdale Blvd	4	5,732	36,000	0.16	A
1084	10th Street E	E. Palmdale Blvd to Avenue R	2	7,914	18,000	0.44	A
1085	10th Street E	Avenue R to Avenue S1	2	3,898	18,000	0.22	A
1086	20th Street E	E Avenue P to E Avenue Q	2	12,843	18,000	0.71	C
1087	20th Street E	E Avenue Q to Palmdale Blvd	2	11,632	18,000	0.65	B
1088	20th Street E	Palmdale Blvd to E Avenue R	4	15,425	36,000	0.43	A
1089	20th Street E	E Avenue R to E Avenue S	4	13,258	36,000	0.37	A
1090	25th Street E	E Avenue P to E Avenue Q	2	6,632	18,000	0.37	A
1091	25th Street E	E Avenue Q to Palmdale Blvd	2	7,356	18,000	0.41	A
1092	25th Street E	Palmdale Blvd to E Avenue R	4	13,824	36,000	0.38	A
1093	25th Street E	E Avenue R to E Avenue S	4	20,571	36,000	0.57	A
1094	25th Street E	E Avenue S to Pearblossom Hwy	4	18,408	36,000	0.51	A
1095	30th Street E	E Avenue P to E Avenue Q	2	16,388	18,000	0.91	E
1096	30th Street E	E Avenue Q to Palmdale Blvd	2	12,702	18,000	0.71	C
1097	30th Street E	Palmdale Blvd to E Avenue R	4	11,480	36,000	0.32	A
1098	30th Street E	E Avenue R to E Avenue S	4	10,654	36,000	0.30	A
1099	40th Street E	E Avenue P to E Avenue Q	2	19,798	18,000	1.10	F
1100	40th Street E	E Avenue Q to E Palmdale Blvd	2	10,909	18,000	0.61	B
1101	40th Street E	E Palmdale Blvd to E Avenue R	3	15,073	27,000	0.56	A
1102	40th Street E	E Avenue R to E Avenue S	3	11,906	27,000	0.44	A
1103	40th Street E	E Avenue S to Sierra Hwy	2	12,162	18,000	0.68	B

Table 17: 2045 Base with High Desert Corridor Daily Volumes

LINKID	Roadway Segments		Lanes	2045 Base with High Desert Corridor			
	Roadway	From/To		2045HDC_Tot_Flow_adj	Capacity	V/C	LOS
1104	47th Street E/50th Street E/Ft Tejon Rd	E Avenue M to E Avenue N	2	19,600	18,000	1.09	F
1105	47th Street E/50th Street E/Ft Tejon Rd	E Avenue P to Palmdale Blvd	2	17,449	18,000	0.97	E
1106	47th Street E/50th Street E/Ft Tejon Rd	Palmdale Blvd to E Avenue R	4	31,244	36,000	0.87	D
1107	47th Street E/50th Street E/Ft Tejon Rd	E Avenue R to E Avenue R-8	4	34,153	36,000	0.95	E
1108	47th Street E/50th Street E/Ft Tejon Rd	E Avenue R-8 to E Avenue S	4	29,287	36,000	0.81	D
1109	47th Street E/50th Street E/Ft Tejon Rd	E Avenue S to Essex Dr	5	24,514	45,000	0.54	A
1110	47th Street E/50th Street E/Ft Tejon Rd	Essex Dr to Pearblossom Hwy	4	15,334	36,000	0.43	A
1111	47th Street E/50th Street E/Ft Tejon Rd	Pearblossom Hwy to E Avenue T-8	4	24,541	36,000	0.68	B
1120	Technology Dr	10th Street W to Trade Center Dr	4	7,974	36,000	0.22	A
1121	Technology Dr	5th Street W to Division St	4	7,958	36,000	0.22	A
1122	Technology Dr	Division St to Sierra Hwy	4	7,805	36,000	0.22	A
2011	HDC Freeway - SR14 to 20th Street	SR14 to 20th Street	8	30,187	72,000	0.42	A
2012	HDC Freeway - SR14 to 20th Street	SR14 to 20th Street	8	34,756	72,000	0.48	A
2021	HDC Freeway - 20th Street to 30th Street	20th Street to 30th Street	8	29,318	72,000	0.41	A
2022	HDC Freeway - 20th Street to 30th Street	20th Street to 30th Street	8	37,066	72,000	0.51	A
2030	HDC Expressway	30th Street to 40th Street	4	53,779	60,000	0.90	D
2031	HDC Expressway	40th Street to 40th Street	4	39,413	60,000	0.66	B
2032	HDC Expressway	50th Street to 70th Street	4	41,244	60,000	0.69	B
2033	HDC Expressway	70th Street to 90th Street	4	41,070	60,000	0.68	B
2034	HDC Expressway	90th Street to 110th Street	4	31,559	60,000	0.53	A
2035	HDC Expressway	110th Street to Avenue Q	4	19,165	60,000	0.32	A
2036	HDC Principal Arterial	Avenue T to SR138	4	12,809	60,000	0.21	A
						Total LOS A through D	**113**
						Total LOS E	**6**
						Total LOS F	**5**
						Total LOS Reported	**124**

Table 18 reports the link-based VMT, VHT, VHD, and average speeds by facility for the Palmdale SOI for all trips regardless of the trip origin or destination.

Table 18: 2045 Base with High Desert Corridor Palmdale Sphere of Influence VMT/VHT by Facility Type for All Trips

	AM Peak				PM Peak				Daily			
Facility	**VMT**	**VHT**	**Speed**	**Delay**	**VMT**	**VHT**	**Speed**	**Delay**	**VMT**	**VHT**	**Speed**	**Delay**
Freeways	312,614	6,131	51.0	1,665	373,363	6,101	61.2	768	1,403,737	22,764	61.7	2,711
HOT facilities	0	0	0.0	0	0	0	0.0	0	0	0	0.0	0
HOV facilities	72,021	1,328	54.2	299	72,002	1,122	64.2	94	149,952	2,535	59.2	393
Expressways/ parkways	81,889	1,455	56.3	218	115,712	2,056	56.3	309	398,295	6,736	59.1	731
Principal arterials	205,935	5,348	38.5	922	306,588	7,915	38.7	1,282	1,144,438	27,929	41.0	3,315
Minor arterials	211,775	5,217	40.6	314	344,683	8,536	40.4	551	1,128,747	27,502	41.0	1,233
Major collectors	105,296	3,013	34.9	460	161,020	4,418	36.4	490	511,576	13,631	37.5	1,108
Minor collectors	2,094	58	36.0	2	3,219	109	29.5	19	10,866	335	32.4	32
Freeway ramps	15,259	592	25.8	194	22,687	930	24.4	331	77,100	2,927	26.3	865
Truck lanes only	0	0	0.0	0	0	0	0.0	0	0	0	0.0	0
Centroid connectors	72,075	2,827	25.5	0	119,703	4,696	25.5	0	399,047	15,663	25.5	0
Total—All Links	**1,078,958**	**25,970**	**41.5**	**4,074**	**1,518,977**	**35,883**	**42.3**	**3,843**	**5,223,759**	**120,023**	**43.5**	**10,388**

Summary

Daily trips are defined as having an origin, destination or both within the Palmdale SOI, and excludes pass-through trips. The Palmdale trips generate a VMT of 8,868,517 and a VHT of 335,887 on all the roadway way facilities within the SCAG region. The Palmdale SOI only accounts for 27.5 percent of the total VMT generated, Lancaster accounts for 12.6 percent, and the High Desert region accounts for 3.3 percent. The rest of Los Angeles County accounts for 32.5 percent.

The average trip length for trips originating and staying within the Palmdale SOI is 4.46 miles and this constitutes 71.9 percent of all the Palmdale trips. The average trip length for trips originating in the Palmdale SOI and having a destination anywhere in the SCAG region including itself is 11.62 miles.

Daily segment-based LOS results show the number of segments operating at LOS E is six and LOS F is five and accounts for 4.8 percent and 4.0 percent, respectively, of all the segments analyzed.

The Palmdale transportation network as a system, which includes all roadway facilities within the Palmdale SOI, generates 5,223,759 VMT, 120,023 VHT and 10,388 VHD daily. This accounts for all trips, including pass through trips, using the highway network within the Palmdale SOI.

2045 PREFERRED PLAN

The 2045 Base dataset was used for 2045 Preferred Plan scenario and the network assumptions are consistent with the RTP. The 2045 socio-economic data for the Palmdale SOI was updated based on the 2045 Preferred Plan used for the Palmdale General Plan update. The socio-economic data outside the Palmdale SOI is consistent with the SCAG assumptions for the region in the year 2040. The SCAG four-step model procedures were run with the updated planning variables in the Palmdale SOI. Table 19 reports the land use assumptions for the region.

The 2045 Base Highway network was reviewed by the City of Palmdale for the 2045 Preferred Plan and based on their recommendations, the highway network was updated. In addition, High-Speed Rail ridership at the Palmdale station was incorporated into the highway assignment procedures.

Table 19: 2045 Preferred Plan Socio-Economic Forecast

	Population	Households	Employment
Palmdale sphere	225,692	70,618	74,804
Lancaster sphere	218,843	69,963	59,678
High Desert region	40,845	14,409	5,030
Ventura County	282,025	92,482	101,050
Los Angeles County remainder	11,001,144	3,783,739	5,117,195
Orange County	3,460,381	1,152,340	1,898,952
Riverside County	3,183,378	1,054,557	1,174,500
San Bernardino County	2,731,308	854,360	1,028,132
Imperial County	965,566	312,223	419,808
Externals	0	0	0
Seaport/airport	0	0	0
Total Region	**22,109,182**	**7,404,691**	**9,879,149**

Select zone traffic assignment procedures were performed on the zones within the Palmdale SOI to produce trips that were generated or attracted to Palmdale SOI only. All other trips were not counted, as they were pass through trips. The daily average trip lengths for Palmdale only trips to different locations are shown in Table 20. The daily link-based VMT, VHT, and the average speeds by facility types are shown in Table 21 for Palmdale SOI only trips. The daily percent share of VMT for trips originating in the Palmdale SOI to all areas in the region, including Palmdale, is illustrated in Figure 12.

Table 20: 2045 Preferred Plan Palmdale Sphere of Influence (II and IX) Average Trip Length

From/To	Trip Length (II and IX*) (miles)	Percent Share of Trips
Palmdale sphere	4.44	70.8%
Lancaster sphere	8.99	17.2%
High Desert region	16.32	2.7%
Imperial County	224.68	0.0%
Los Angeles County	54.94	5.4%
Orange County	108.77	0.3%
Riverside County	106.06	0.3%
San Bernardino County	61.08	1.5%
Ventura County	76.42	0.4%
Externals	68.00	1.1%
Seaport/airport	38.84	0.3%
Weighted Average	**10.86**	100.0%

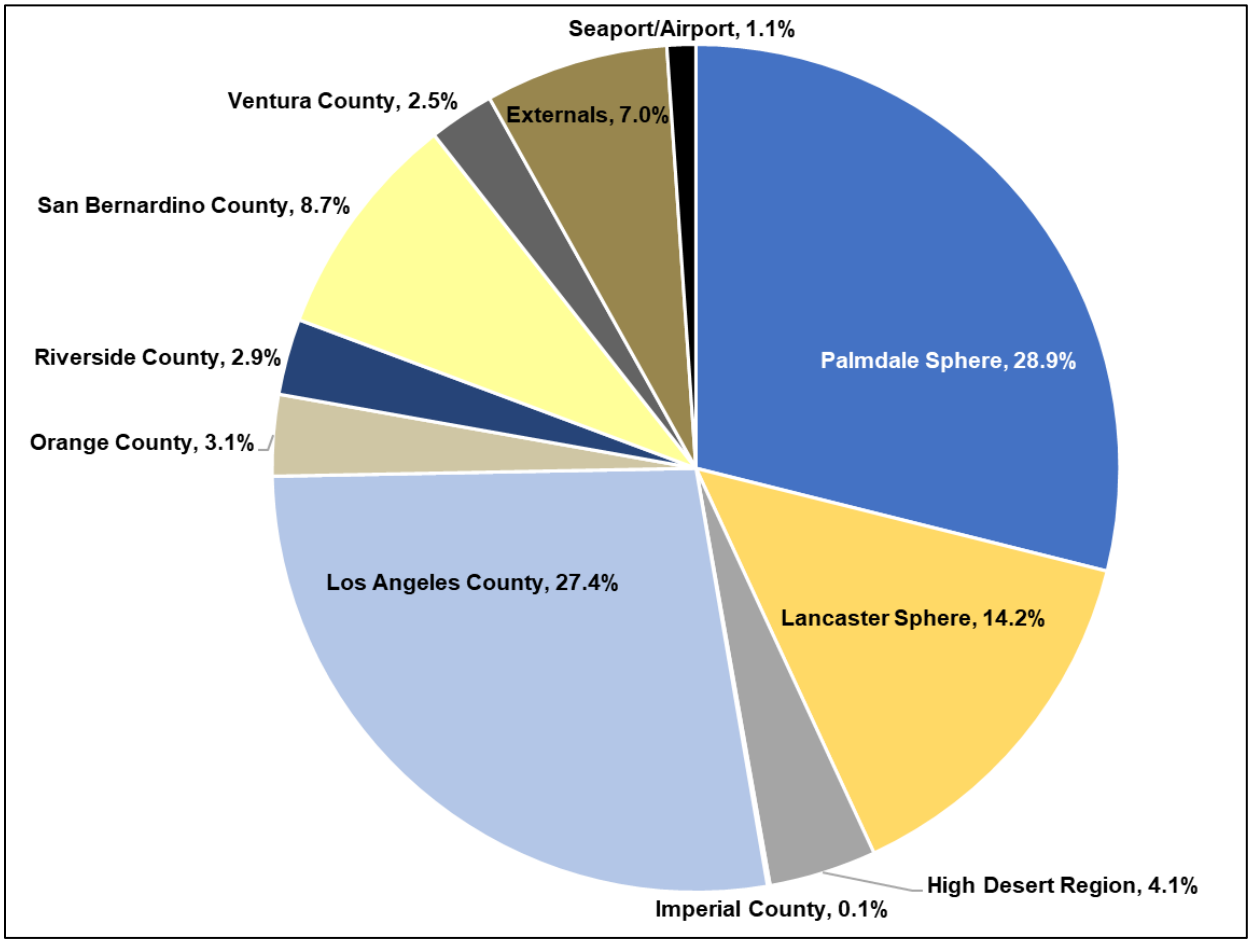
*II = Internal-to-internal trips, where both ends of the trips are within the Palmdale SOI
IX = Internal-to-external trips, where the origin of the trips is within the Palmdale SOI and the destination of the trips could be anywhere in the SCAG region.

Table 21: 2045 Preferred Plan Palmdale Sphere of Influence (II, IX and XI*) Daily, VMT, VHT, Average Speed by Facility

Facility	VMT	VHT	Average Speed (mph)
Freeways	2,395,390	92,084	45.2
HOT facilities	7,911	230	63.4
HOV facilities	184,453	9,425	49.0
Expressways/parkways	5,083	184	51.2
Principal arterials	1,571,929	42,699	29.9
Minor arterials	1,821,834	50,209	30.5
Major collectors	1,075,565	30,851	23.7
Minor connectors	53,726	1,575	29.1
Freeway ramps	122,764	14,415	20.4
Truck lanes only	8,130	646	24.9
Centroid connectors	480,325	19,048	24.4
Total without centroid connectors	7,246,785	242,319	35.5
Total of All Links	**7,727,110**	**261,367**	**34.5**

*II = Internal-to-internal trips, where both ends of the trips are within the Palmdale SOI
IX = Internal-to-external trips, where the origin of the trips is within the Palmdale SOI and the destination of the trips could be anywhere in the SCAG region
XI = External-to-internal trips, where the origin of the trips could be anywhere in the SCAG region and the destination of the trips is within the Palmdale SOI

Figure 12: 2045 Preferred Plan Daily VMT Share Originating in Palmdale Sphere of Influence



Traffic assignments were performed to produce traffic volumes on the various facilities inside and outside the Palmdale SOI. Traffic assignments are available for AM peak period, mid-day period, PM peak period, evening period, night period and daily. The daily traffic assignment volumes (bandwidths) are shown in Figure 13. The post-processed daily assignment volumes and the LOS at various segments are reported in the Table 22.

Figure 13: 2045 Preferred Plan Daily Traffic Volumes

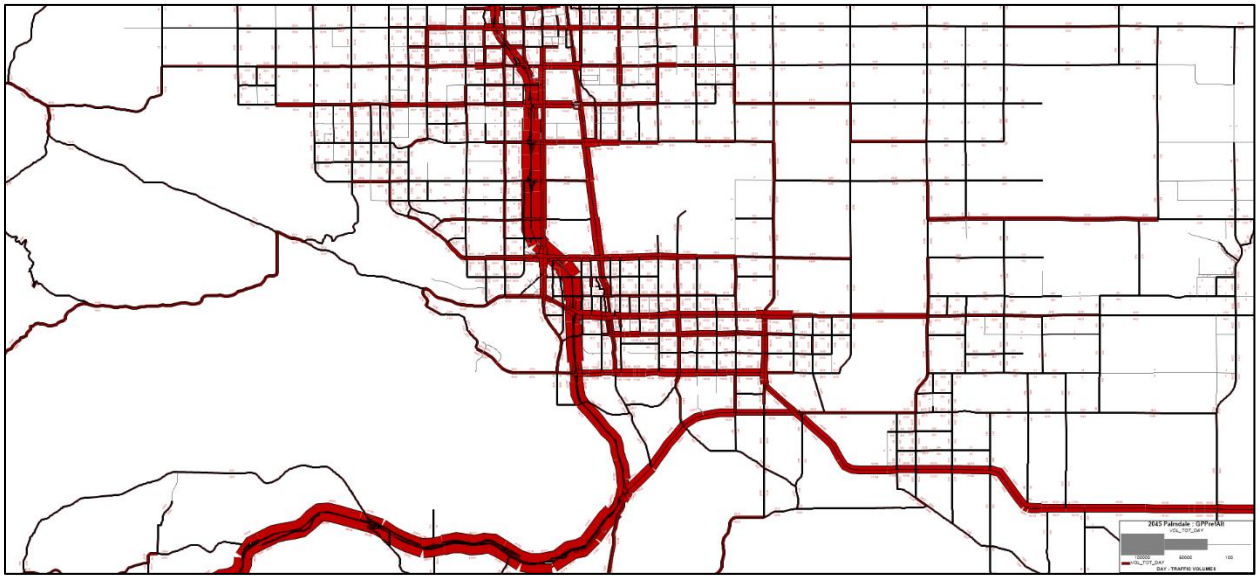


Table 22: 2045 Preferred Plan Daily Volumes							
	Roadway Segments			2045 Preferred Plan			
LINKID	Roadway	From/To	Lanes	2045PrefPlan_Tot_Flow_adj	Capacity	V/C	LOS
1001	Columbia Way/Avenue M	10th Street W to Sierra Hwy	4	32,760	36,000	0.91	E
1002	Columbia Way/Avenue M	Sierra Hwy to 10th Street E	4	35,733	36,000	0.99	E
1003	Columbia Way/Avenue M	10th Street E to 20th Street E	4	23,321	36,000	0.65	B
1004	Columbia Way/Avenue M	20th Street E to 30th Street E	4	17,482	36,000	0.49	A
1005	Columbia Way/Avenue M	30th Street E to 40th Street E	4	12,192	36,000	0.34	A
1006	Columbia Way/Avenue M	40th Street E to 50th Street	4	14,334	36,000	0.40	A
1007	Rancho Vista Ave/Avenue P	50th Street W to Town Center Dr	4	16,758	36,000	0.47	A
1008	Rancho Vista Ave/Avenue P	Town Center Dr to 30th Street W	4	20,985	36,000	0.58	A
1009	Rancho Vista Ave/Avenue P	30th Street W to 25th Street W	4	22,457	54,000	0.42	A
1010	Rancho Vista Ave/Avenue P	25th Street W to 20th Street W	4	27,509	54,000	0.51	A
1011	Rancho Vista Ave/Avenue P	20th Street W to 15th Street W	4	27,276	54,000	0.51	A
1012	Rancho Vista Ave/Avenue P	15th Street to 10th Street W	6	41,536	54,000	0.77	C
1013	Rancho Vista Ave/Avenue P	10th Street W to SR 14	6	35,290	54,000	0.65	B
1014	Rancho Vista Ave/Avenue P	SR 14 to Country Club Dr	4	23,332	54,000	0.43	A
1015	Rancho Vista Ave/Avenue P	Country Club Dr to Division St	4	26,481	45,000	0.59	A
1016	Rancho Vista Ave/Avenue P	Division St to Sierra Hwy	4	22,334	36,000	0.62	B
1017	East Avenue P	Sierra Hwy to 8th Street E	4	37,052	36,000	1.03	F
1018	East Avenue P	8th Street E to 15th Street E	4	27,698	36,000	0.77	C
1019	East Avenue P	15th Street E to 20th Street E	4	30,657	36,000	0.85	D
1020	East Avenue P	20th Street E to 25th Street E	4	23,798	36,000	0.66	B
1021	East Avenue P	25th Street E to 30th Street E	4	18,896	36,000	0.52	A
1022	Avenue Q	Trade Center Dr to 5th Street W	4	4,805	36,000	0.13	A
1023	Avenue Q	Division Street to 6th Street E	2	8,053	18,000	0.45	A
1024	Avenue Q	Sierra Hwy to 10th Street E	2	10,165	18,000	0.56	A
1025	Avenue Q	10th Street E to 20th Street E	2	8,349	18,000	0.46	A
1026	Avenue Q	20th Street E to 30th Street E	2	7,293	18,000	0.41	A
1027	Avenue Q	30th Street E to 40th Street E	2	7,814	18,000	0.43	A
1028	Elizabeth Lake Rd	25th Street W to 20th Street W	4	20,874	36,000	0.58	A
1029	Elizabeth Lake Rd	20th Street W to 15th Street W	4	16,038	36,000	0.45	A
1030	Elizabeth Lake Rd	15th Street W to 10th Street W	4	19,583	36,000	0.54	A
1031	Palmdale Blvd	10th Street W to Trade Center Dr	4	22,179	36,000	0.62	B

Table 22: 2045 Preferred Plan Daily Volumes

	Roadway Segments			2045 Preferred Plan			
LINKID	Roadway	From/To	Lanes	2045PrefPlan_Tot_Flow_adj	Capacity	V/C	LOS
1032	Palmdale Blvd	Trade Center Dr to 5th Street W	4	17,785	36,000	0.49	A
1033	Palmdale Blvd	5th Street W to State Route 14	4	27,366	36,000	0.76	C
1034	Palmdale Blvd	Division Street to 5th St E	6	25,510	54,000	0.47	A
1035	Palmdale Blvd	5th Street E to 10th Street E	4	25,257	36,000	0.70	C
1036	Palmdale Blvd	10th Street E to 15th Street E	4	25,869	36,000	0.72	C
1037	Palmdale Blvd	15th Street E to 20th Street E	4	19,233	36,000	0.53	A
1038	Palmdale Blvd	20th Street E to 25th Street E	4	24,649	36,000	0.68	B
1040	Palmdale Blvd	40th Street E to 47th Street E	4	28,011	36,000	0.78	C
1041	Palmdale Blvd	50th Street E to 60th Street E	4	23,700	36,000	0.66	B
1042	Palmdale Blvd	70th Street E to 80th Street E	2	16,681	18,000	0.93	E
1043	E Avenue R	Sierra Hwy to 10th Street E	4	19,490	36,000	0.54	A
1044	E Avenue R	10th Street E to 20th Street E	4	18,495	36,000	0.51	A
1045	E Avenue R	20th Street E to 30th Street E	4	18,408	36,000	0.51	A
1046	E Avenue R	30th Street E to 40th Street E	3	18,843	36,000	0.52	A
1047	E Avenue R	40th Street E to 47th Street E	4	22,831	36,000	0.63	B
1048	E Avenue R	47th Street E to 60th Street E	4	17,279	36,000	0.48	A
1049	E Avenue R	60th Street E to 70th Street E	4	6,564	36,000	0.18	A
1050	Avenue S	Tovey Avenue to Tierra Subida Ave	4	10,895	36,000	0.30	A
1051	Avenue S	Tierra Subida Ave to SR 14	4	17,336	36,000	0.48	A
1052	Avenue S	SR 14 to 5th Street E	4	13,190	36,000	0.37	A
1053	Avenue S	5th Street E to Sierra Hwy	4	25,828	36,000	0.72	C
1054	Avenue S	Sierra Hwy to 10th Street E	4	32,170	36,000	0.89	D
1055	Avenue S	10th Street E to 20th Street E	4	29,830	36,000	0.83	D
1056	Avenue S	20th Street E to 25th Street E	4	30,323	36,000	0.84	D
1057	Avenue S	25th Street E to 30th Street E	4	29,058	36,000	0.81	D
1058	Avenue S	30th Street E to 35th Street E	6	24,137	54,000	0.45	A
1059	Avenue S	35th Street E to 40th Street E	6	23,612	54,000	0.44	A
1060	Avenue S	40th Street E to 47th Street E	6	23,867	54,000	0.44	A
1061	Avenue S	47th Street E to 55th Street E	4	21,305	36,000	0.59	A
1062	Pearblossom Hwy/Avenue T	Sierra Hwy to 25th Street E	4	52,520	36,000	1.46	F
1063	Pearblossom Hwy/Avenue T	25th Street E to 40th Street E	4	45,045	36,000	1.25	F

Table 22: 2045 Preferred Plan Daily Volumes							
	Roadway Segments			2045 Preferred Plan			
LINKID	Roadway	From/To	Lanes	2045PrefPlan_Tot_Flow_adj	Capacity	V/C	LOS
1064	Pearblossom Hwy/Avenue T	40th Street E to 47th Street E	4	31,951	36,000	0.89	D
1065	Pearblossom Hwy/Avenue T	47th Street E to Fort Tejon Road	4	32,061	36,000	0.89	D
1066	Pearblossom Hwy/Avenue T	Fort Tejon Road to 70th Street E	4	22,190	36,000	0.62	B
1067	10th Street W/Tierra Subida Ave	W Avenue M to W Avenue N	4	15,186	36,000	0.42	A
1068	10th Street W/Tierra Subida Ave	W Avenue N to W Avenue O	4	22,897	36,000	0.64	B
1069	10th Street W/Tierra Subida Ave	W Avenue O to SR 14	4	17,627	36,000	0.49	A
1070	10th Street W/Tierra Subida Ave	SR 14 to Rancho Vista Blvd	6	35,324	54,000	0.65	B
1071	10th Street W/Tierra Subida Ave	Rancho Vista Blvd to Technology Dr	6	37,661	54,000	0.70	B
1072	10th Street W/Tierra Subida Ave	Technology Dr to W Palmdale Blvd	5	47,477	45,000	1.06	F
1073	10th Street W/Tierra Subida Ave	W Palmdale Blvd to Rayburn Rd	4	18,512	36,000	0.51	A
1074	Sierra Hwy	Columbia Way to E Avenue N	4	37,932	36,000	1.05	F
1075	Sierra Hwy	E Avenue N to E Avenue O	4	36,183	36,000	1.01	F
1076	Sierra Hwy	E Avenue O to E Avenue P	4	53,660	36,000	1.49	F
1077	Sierra Hwy	E Avenue P to E Avenue Q	4	14,366	36,000	0.40	A
1078	Sierra Hwy	E Avenue Q to Palmdale Blvd	4	15,253	36,000	0.42	A
1079	Sierra Hwy	Palmdale Blvd to E Avenue R	4	9,993	36,000	0.28	A
1080	Sierra Hwy	E Avenue R to E Avenue S	4	7,289	36,000	0.20	A
1081	Sierra Hwy	E Avenue S to Pearblossom Hwy	4	8,070	36,000	0.22	A
1082	10th Street E	E Avenue P to E Avenue Q	2	2,357	18,000	0.13	A
1083	10th Street E	E Avenue Q to E Palmdale Blvd	4	5,732	36,000	0.16	A
1084	10th Street E	E. Palmdale Blvd to Avenue R	2	5,756	18,000	0.32	A
1085	10th Street E	Avenue R to Avenue S1	2	3,898	18,000	0.22	A
1086	20th Street E	E Avenue P to E Avenue Q	2	6,362	18,000	0.35	A
1087	20th Street E	E Avenue Q to Palmdale Blvd	2	9,746	18,000	0.54	A
1088	20th Street E	Palmdale Blvd to E Avenue R	4	13,063	36,000	0.36	A
1089	20th Street E	E Avenue R to E Avenue S	4	12,938	36,000	0.36	A
1090	25th Street E	E Avenue P to E Avenue Q	2	8,624	18,000	0.48	A
1091	25th Street E	E Avenue Q to Palmdale Blvd	2	8,947	18,000	0.50	A
1092	25th Street E	Palmdale Blvd to E Avenue R	4	13,007	36,000	0.36	A
1093	25th Street E	E Avenue R to E Avenue S	4	16,629	36,000	0.46	A
1094	25th Street E	E Avenue S to Pearblossom Hwy	4	14,269	36,000	0.40	A

Table 22: 2045 Preferred Plan Daily Volumes							
	Roadway Segments			2045 Preferred Plan			
LINKID	Roadway	From/To	Lanes	2045PrefPlan_Tot_Flow_adj	Capacity	V/C	LOS
1095	30th Street E	E Avenue P to E Avenue Q	2	7,961	18,000	0.44	A
1096	30th Street E	E Avenue Q to Palmdale Blvd	2	7,821	18,000	0.43	A
1097	30th Street E	Palmdale Blvd to E Avenue R	4	8,354	36,000	0.23	A
1098	30th Street E	E Avenue R to E Avenue S	4	8,871	36,000	0.25	A
1099	40th Street E	E Avenue P to E Avenue Q	2	11,891	18,000	0.66	B
1100	40th Street E	E Avenue Q to E Palmdale Blvd	2	7,185	18,000	0.40	A
1101	40th Street E	E Palmdale Blvd to E Avenue R	3	14,092	27,000	0.52	A
1102	40th Street E	E Avenue R to E Avenue S	3	12,432	27,000	0.46	A
1103	40th Street E	E Avenue S to Sierra Hwy	2	10,612	18,000	0.59	A
1104	47th Street E/50th Street E/Ft Tejon Rd	E Avenue M to E Avenue N	2	22,987	18,000	1.28	F
1105	47th Street E/50th Street E/Ft Tejon Rd	E Avenue P to Palmdale Blvd	2	16,180	18,000	0.90	D
1106	47th Street E/50th Street E/Ft Tejon Rd	Palmdale Blvd to E Avenue R	4	26,588	36,000	0.74	C
1107	47th Street E/50th Street E/Ft Tejon Rd	E Avenue R to E Avenue R-8	4	26,908	36,000	0.75	C
1108	47th Street E/50th Street E/Ft Tejon Rd	E Avenue R-8 to E Avenue S	4	19,854	36,000	0.55	A
1109	47th Street E/50th Street E/Ft Tejon Rd	E Avenue S to Essex Dr	5	28,816	45,000	0.64	B
1110	47th Street E/50th Street E/Ft Tejon Rd	Essex Dr to Pearblossom Hwy	4	24,367	36,000	0.68	B
1111	47th Street E/50th Street E/Ft Tejon Rd	Pearblossom Hwy to E Avenue T-8	4	30,811	36,000	0.86	D
1120	Technology Dr	10th Street W to Trade Center Dr	4	7,277	36,000	0.20	A
1121	Technology Dr	5th Street W to Division St	4	7,574	36,000	0.21	A
1122	Technology Dr	Division St to Sierra Hwy	4	7,805	36,000	0.22	A
						Total LOS A through D	**102**
						Total LOS E	**3**
						Total LOS F	**8**
						Total LOS Reported	**113**

Table 23 reports the link-based VMT, VHT, VHD, and average speeds by facility for the Palmdale SOI for all trips regardless of trip origin or destination.

Table 23: 2045 Preferred Plan Palmdale Sphere of Influence VMT/VHT by Facility Type for All Trips

	AM Peak				PM Peak				Daily			
Facility	**VMT**	**VHT**	**Speed**	**Delay**	**VMT**	**VHT**	**Speed**	**Delay**	**VMT**	**VHT**	**Speed**	**Delay**
Freeways	243,132	4,149	58.6	675	294,514	4,620	63.7	413	1,063,365	16,410	64.8	1,219
HOT facilities	0	0	0.0	0	0	0	0.0	0	0	0	0.0	0
HOV facilities	50,509	776	65.1	55	41,547	598	69.5	4	99,507	1,480	67.2	59
Expressways/ parkways	0	0	0.0	0	0	0	0.0	0	0	0	0.0	0
Principal arterials	225,647	6,006	37.6	1,038	330,852	8,917	37.1	1,601	1,208,274	30,538	39.6	3,914
Minor arterials	262,849	6,443	40.8	449	420,218	10,415	40.3	824	1,382,559	33,333	41.5	1,738
Major collectors	110,627	2,819	39.2	212	157,278	3,986	39.5	250	492,059	12,273	40.1	563
Minor collectors	5,977	144	41.5	2	7,070	178	39.6	6	19,576	497	39.4	12
Freeway ramps	11,299	537	21.1	197	15,858	759	20.9	286	55,388	2,412	23.0	754
Truck lanes only	0	0	0.0	0	0	0	0.0	0	0	0	0.0	0
Centroid connectors	67,697	2,650	25.5	0	109,639	4,293	25.5	0	364,492	14,297	25.5	0
Total—All Links	977,736	23,524	41.6	2,628	1,376,977	33,764	40.8	3,384	4,685,219	111,241	42.1	8,259

Summary

Daily trips are defined as having an origin, destination or both within the Palmdale SOI and do not include pass-through trips. The Palmdale trips generate a VMT of 7,727,110 and a VHT of 261,367 on all the roadway facilities within the SCAG region. The Palmdale SOI only accounts for 28.9 percent of the total VMT generated, Lancaster accounts for 14.2 percent, and the High Desert region accounts for 4.1 percent. The rest of Los Angeles County accounts for 27.4 percent.

The average trip length for trips originating and staying within the Palmdale SOI is 4.44 miles, constituting 70.8 percent of all Palmdale trips. The average trip length for trips originating in the Palmdale SOI and having a destination anywhere in the SCAG region including itself is 10.86 miles.

Daily segment-based LOS results show the number of segments operating at LOS E is three and LOS F is eight and accounts for 2.7 percent and 7.1 percent, respectively, of all the segments analyzed.

The Palmdale transportation network as a system, which includes all roadway facilities within the Palmdale SOI, generates 4,685,219 VMT, 111,241 VHT and 8,259 VHD daily. This accounts for all trips, including pass through trips, using the highway network within the Palmdale SOI.

Measures of Effectiveness

Measures of effectiveness (MOE) metrics can be used for scenarios to predict the effects of a project on the transportation network in Palmdale as a "system." Some of the more important metrics include the change in VMT, VHT, and VHD between the project and no-project scenarios. Delay represents the amount of time lost for vehicles from the free-flow condition. If delay decreases, then the transportation network as a system will have improved performance with better operations and travel speeds. This is also in line with VMT as a metric that is being used for project-related impacts. Level of service metrics can still be used for intersection operations analysis and segment levels of service for an area defined around the project.

Measures of effectiveness were computed for all scenarios for the Palmdale General Plan.

Table 24 shows the various statistics for the home-based and all trip purposes for the Palmdale SOI under all scenarios. The average trip lengths for home-based work, home-based trips and all trip purposes decrease in the future Palmdale GP scenarios, which in turn reduces the VMT generated. The VMT per capita and the VMT per employee also decrease. In addition, the average trip lengths for the 2045 Preferred Plan scenario decreases. All these reductions effectively contribute toward the overall reduction in VMT and thereby improve the air quality by reducing the emissions of greenhouse gases and CO_2.

Table 25 presents the percent share of VMT generated by trips between the Palmdale SOI and other areas of the SCAG region. The intra-Palmdale VMT increased in the 2045 Preferred Plan scenario, reducing VMT to other areas as designed using smart growth assumptions (e.g., a good mixture of households and employment and transit-oriented developments). Palmdale, an exporter of workers, now finds itself being less of an exporter with smart growth initiatives and striving toward being self-contained as evident by the reduction in the VMT to other regions and the increase in VMT to the Palmdale sphere of influence and neighboring areas (e.g., Lancaster and the High Desert Region). The VMT to other parts of Los Angeles and Orange counties dropped from 46 to 36 percent, a decrease of 10 percent, primarily due to the reduced number of longer trips.

Table 26 displays the link-based daily VMT generated by the SCAG model for the different facility types having an origin or destination in the Palmdale sphere of influence. Trips which are pass-through in nature, where they do not have an origin or destination in the Palmdale SOI are not counted. The future year Palmdale Preferred Plan has the lowest VMT among all the scenarios, reflecting shorter trip lengths to and from the Palmdale sphere of influence.

Table 24: Trip Purpose Statistics

Palmdale Sphere—Statistics	2017 Existing	2045 Base	2045 Preferred Plan
Home-based work trips—VMT per capita	16.43	14.54	8.85
Home-based work trips—average trip length	31.57	31.10	21.59
Home-based all trips—VMT per capita	26.19	23.20	16.57
Home-based all trips—average trip length	16.49	15.63	12.62
All trips—VMT per service population	34.30	30.60	27.00
All trips—average trip length	11.87	11.56	10.86

Table 25: VMT between Palmdale Sphere and Areas within the SCAG Region

Percent VMT	2017 Existing	2045 Base	2045 Preferred Plan
Within Palmdale sphere	14.4%	15.9%	16.9%
Within Palmdale/Lancaster/High Desert region	33.4%	34.4%	38.3%
Between Palmdale and LA County/Orange County	45.9%	41.9%	35.6%
Between Palmdale and remainder of SCAG region and external trips from outside the region	20.7%	23.8%	26.1%
Total	**100.0%**	**100.0%**	**100.0%**

Table 26: VMT to/from Palmdale Sphere to Areas within the SCAG Region by Facility Type

Facility Type	2017 Existing	2045 Base	2045 Preferred Plan
Freeways	2,893,868	2,945,756	2,395,390
HOT facilities	11,431	9,285	7,911
HOV facilities	284,701	284,422	184,453
Expressway/parkway	4,381	5,650	5,083
Principal arterials	1,484,072	1,671,644	1,571,929
Minor arterials	1,631,560	1,897,218	1,821,834
Major collectors	1,067,379	1,321,027	1,075,565
Minor collectors	41,916	43,307	53,726
Freeway ramps	152,550	156,041	122,764
Truck lanes only	6,323	7,485	8,130
Centroid connectors	450,545	520,432	480,325
Total	**8,028,726**	**8,862,268**	**7,727,110**

Table 27 displays the link-based daily VMT, VHT, VHD, and average speeds for the Palmdale transportation network as a system that includes all roadway facilities within the Palmdale SOI. The summary statistics include all trips generated by the SCAG model regardless of whether the trip begins or ends within the Palmdale SOI. All trips using the highway network within the Palmdale SOI are counted.

Table 27: VMT for All Links within the Palmdale Sphere of Influence

All Trips Generated within or Passing through Palmdale Sphere (II, IX-XI and XX)*	2017 Existing	2045 Base	2045 Preferred Plan
Daily VMT (miles)	4,275,553	5,029,773	4,685,219
Daily VHT (hours)	100,085	123,190	111,241
Daily delay (hours)	6,783	12,590	8,259
Average speed (mph)	42.7	40.8	42.1

*II = Internal-to-internal trips, where both ends of the trips are within the Palmdale SOI
IX = Internal-to-external trips, where the origin of the trips is within the Palmdale SOI and the destination of the trips could be anywhere in the SCAG region.
XI = External-to-internal trips, where the origin of the trips could be anywhere in the SCAG region and the destination of the trips is within the Palmdale SOI
XX = External-to-external trips, where both the origin and destination of the trips could be anywhere in the SCAG region

The link-based performance statistics for the roadway facilities within the Palmdale SOI are shown in Table 28. The VMT, VHT, and VHD are reported for daily and AM and PM peak periods for all the scenarios. These metrics are lower in the 2045 Preferred Plan than in the 2045 base scenario. The VHD decreases by more than 30 percent, suggesting that the Palmdale transportation network as a system is performing exceptionally well. The delay represents the degradation of the system from free-flow conditions where there is minimal or no delay. The congested speeds on the system have also improved.

Table 28: Performance Statistics by Facility Type within the Palmdale Sphere of Influence

Performance Measurement	Facility Type	Palmdale Sphere of Influence Analysis		
		2017 Existing	2045 Base	2045 Preferred Plan
Daily VMT (thousands)	Freeways	1,203.1	1,327.1	1,162.9
	Arterials	2,197.7	2,658.9	2,590.8
	Other	874.8	1,043.8	931.5
	All Facilities	**4,275.6**	**5,029.8**	**4,685.2**
AM and PM peak period VMT (thousands)	Freeways	646.4	712.9	629.7
	Arterials	1,049.5	1,246.6	1,239.6
	Other	445.4	533.5	485.4
	All Facilities	**2,141.3**	**2,493.1**	**2,354.7**
Daily VHT (thousands)	Freeways	18.8	21.9	17.9
	Arterials	53.3	67.4	63.9
	Other	28.0	33.9	29.5
	All Facilities	**100.1**	**123.2**	**111.2**
AM and PM peak period VHT (thousands)	Freeways	10.7	12.9	10.1
	Arterials	26.4	33.2	31.8
	Other	14.5	17.6	15.4
	All Facilities	**51.6**	**63.7**	**57.3**
Daily VHD (thousands)	Freeways	1.6	2.9	1.3
	Arterials	3.6	7.4	5.7
	Other	1.5	2.2	1.3
	All Facilities	**6.8**	**12.6**	**8.3**
AM and PM peak period VHD (thousands)	Freeways	1.5	2.7	1.1
	Arterials	2.7	5.1	3.9
	Other	1.1	1.6	1.0
	All Facilities	**5.3**	**9.4**	**6.0**

Table 29 summarizes the level of service for all the scenarios showing segments with LOS E and LOS F. There are eleven segments with LOS E or LOS F in the 2045 Preferred Plan scenario, of which five have similar level of service in the 2017 Existing Counts scenario.

Table 29. Summary of Roadway Segments at Level of Service E or F

LINKID	Roadway Segments		Level of Service				
	Roadway	From/To	2017 Existing Counts	2017 Existing Model	2045 Base	2045 Base with HDC	2045 Preferred Plan
1001	Columbia Way/Avenue M	10th Street W to Sierra Hwy	B	A	D	D	E
1002	Columbia Way/Avenue M	Sierra Hwy to 10th Street E	C	A	E	D	E
1015	Rancho Vista Ave/Avenue P	Country Club Dr to Division St	C	F	B	A	A
1016	Rancho Vista Ave/Avenue P	Division St to Sierra Hwy	B	F	B	B	B
1017	East Avenue P	Sierra Hwy to 8th Street E	E	C	F	E	F
1019	East Avenue P	15th Street E to 20th Street E	B	B	E	B	D
1035	Palmdale Blvd	5th Street E to 10th Street E	C	E	A	A	C
1042	Palmdale Blvd	70th Street E to 80th Street E	E	F	E	E	E
1054	Avenue S	Sierra Hwy to 10th Street E	D	F	F	D	D
1055	Avenue S	10th Street E to 20th Street E	D	E	E	D	D
1056	Avenue S	20th Street E to 25th Street E	D	E	E	D	D
1057	Avenue S	25th Street E to 30th Street E	D	E	D	D	D
1062	Pearblossom Hwy/Avenue T	Sierra Hwy to 25th Street E	F	F	F	F	F
1063	Pearblossom Hwy/Avenue T	25th Street E to 40th Street E	F	E	F	F	F
1064	Pearblossom Hwy/Avenue T	40th Street E to 47th Street E	B	A	E	D	D
1065	Pearblossom Hwy/Avenue T	47th Street E to Fort Tejon Road	B	A	E	D	D
1066	Pearblossom Hwy/Avenue T	Fort Tejon Road to 70th Street E	A	A	E	D	B
1072	10th Street W/Tierra Subida Ave	Technology Dr to W Palmdale Blvd	D	A	F	E	F
1074	Sierra Hwy	Columbia Way to E Avenue N	C	B	D	D	F
1075	Sierra Hwy	E Avenue N to E Avenue O	C	B	E	D	F
1076	Sierra Hwy	E Avenue O to E Avenue P	D	C	F	F	F
1095	30th Street E	E Avenue P to E Avenue Q	A	A	A	E	A
1099	40th Street E	E Avenue P to E Avenue Q	A	A	A	F	B
1104	47th Street E/50th Street E/Ft Tejon Rd	E Avenue M to E Avenue N	F	A	F	F	F
1105	47th Street E/50th Street E/Ft Tejon Rd	E Avenue P to Palmdale Blvd	C	A	D	E	D
1107	47th Street E/50th Street E/Ft Tejon Rd	E Avenue R to E Avenue R-8	C	D	E	E	C
1111	47th Street E/50th Street E/Ft Tejon Rd	Pearblossom Hwy to E Avenue T-8	A	C	E	B	D
		Total LOS E	**2**	**5**	**11**	**6**	**3**
		Total LOS F	**3**	**5**	**7**	**5**	**8**
		Total LOS E and F	**5**	**10**	**18**	**11**	**11**

Figures 14 through 16 illustrate the comparison of scenarios by facility types. The figures clearly show the 2045 Preferred Plan scenario performs very well compared to the 2045 Base scenario.

Figure 14: Daily VMT by Facility Type within the Palmdale Sphere of Influence for All Scenarios

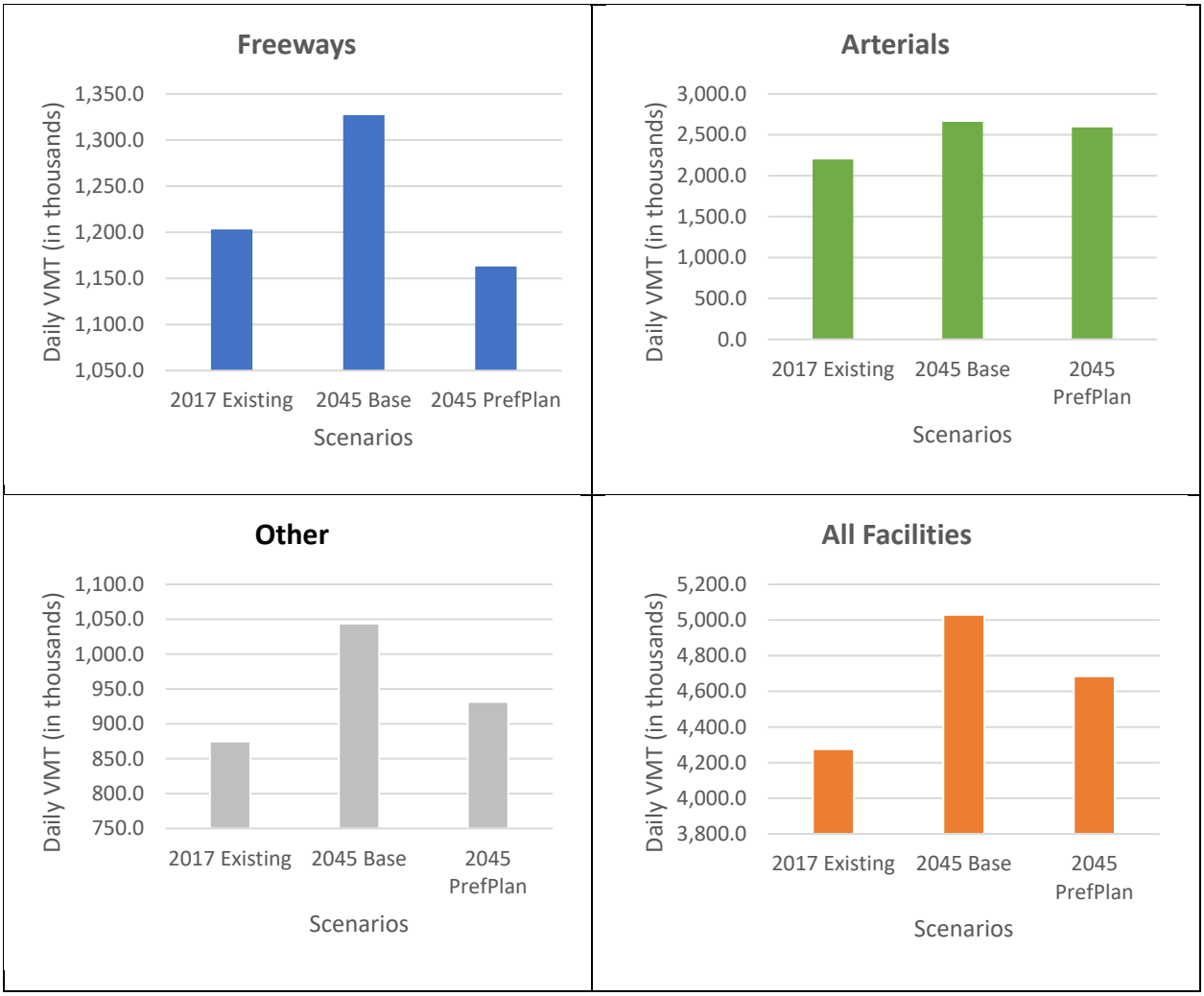


Figure 15: Daily VHT by Facility Type within the Palmdale Sphere of Influence for All Scenarios

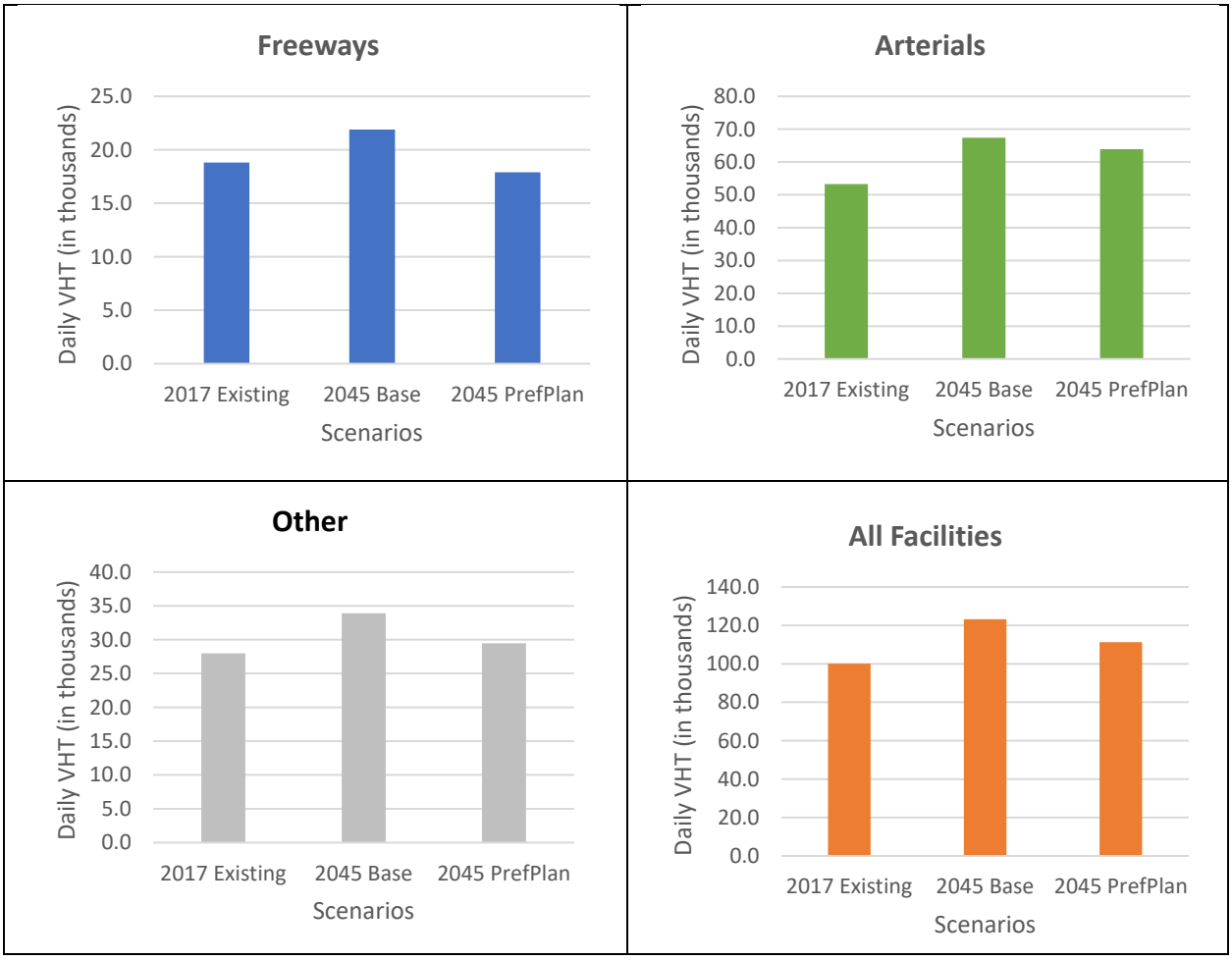
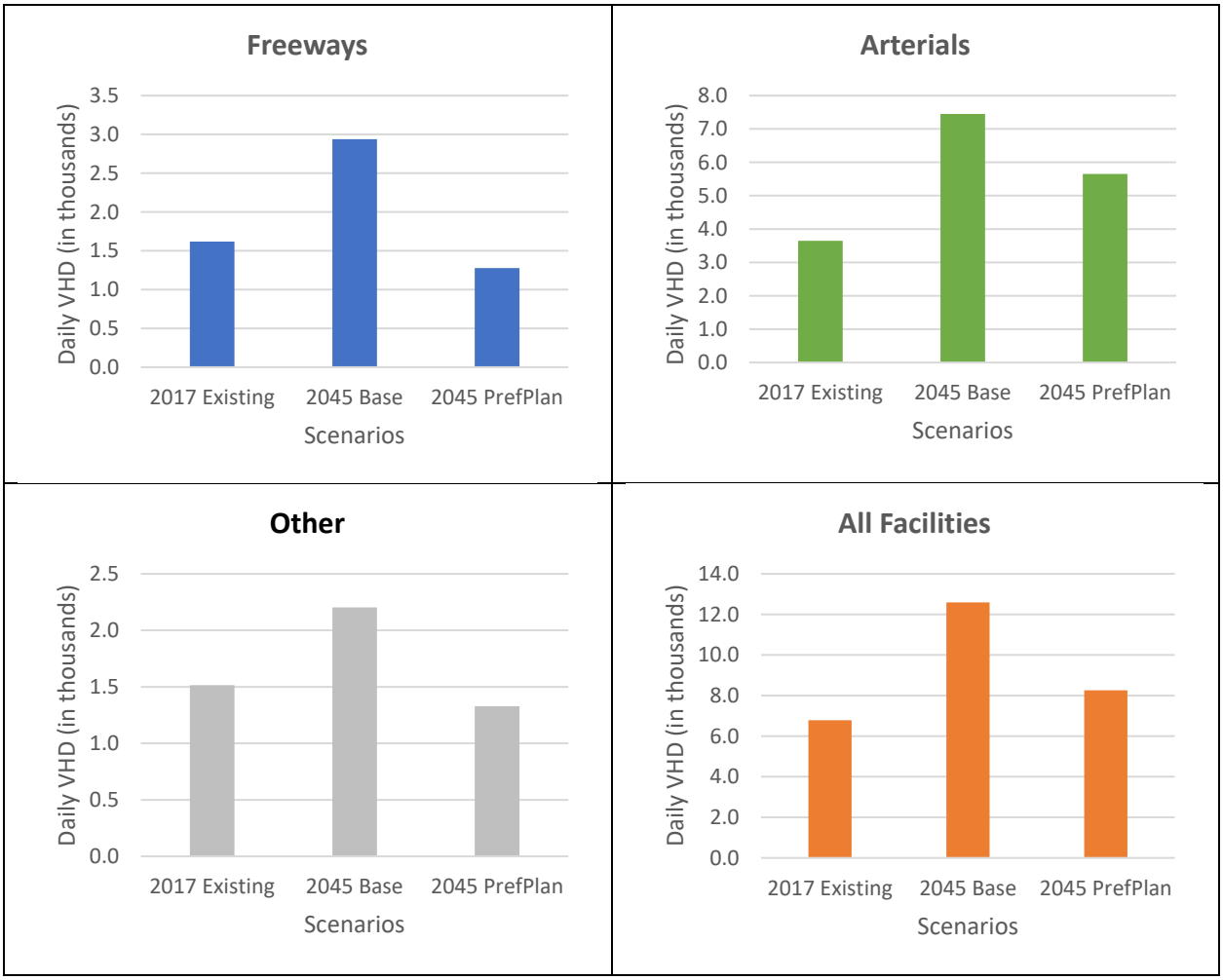


Figure 16: Daily VHD by Facility Type within the Palmdale Sphere of Influence for All Scenarios



Summary

The 2045 Preferred Plan scenario significantly reduces home-based work VMT per capita compared to the 2017 Existing scenario. This is validated by average trip lengths that are more than 30 percent shorter. The average trip length for all home-based trips in the 2045 Preferred Plan scenario decreases by 23 percent from the 2017 Existing scenario. The VMT per service population also decreases by more than 22 percent, and the average trips length for all trips decreases by 8 percent. The VMT generated by the 2045 Preferred Plan scenario from the Palmdale sphere of influence to the entire SCAG region also reduces by about four percent. The significant decrease in VMT as seen above contributes to the reduction in greenhouse gases and effectively contributes to SB 743 compliance.

The VMT for all trips (II, IX, XI and XX) using the Palmdale Transportation Network, regardless of their origin or destination also decreases by seven percent when comparing the 2045 Preferred Plan to the 2045 Base scenario. The VHT also decreases by 10 percent. Most importantly, the VHD (which reflects the performance of the system) reduces by 34 percent. This reduction in delay makes the Palmdale transportation network as a system operate exceptionally well when compared to the 2045 Base scenario. Better operating conditions result in higher speeds and lower greenhouse gas emissions.

Vehicle Miles Traveled Impact Criteria Analysis

SB 743 OVERVIEW

> ***CEQA refers to the California Environmental Quality Act. This statute requires identification of any significant environmental impacts of state or local action including approval of new development or infrastructure projects. The process of identifying these impacts is typically referred to as the environmental review process.***

On September 27, 2013, Governor Jerry Brown signed SB 743 into law to start a process intended to fundamentally change transportation impact analysis as part of CEQA compliance. In response to SB 743, the Office of Planning and Research (OPR) selected vehicle miles of travel (VMT) as the new transportation impact metric. The OPR then submitted updates to the CEQA Guidelines and these updates were certified by the Natural Resources Agency in December 2018. Lead agencies have been granted a grace period until July 1, 2020 to opt-in to implementing a VMT analysis as part of the environmental review process.

Accordingly, SB 743 eliminates level of service (LOS) as the basis for determining significant transportation impacts under CEQA and provides a new performance metric – VMT. With this change, the State is shifting the focus from measuring a project's impact to drivers (LOS) to measuring the impact of driving (VMT) to achieve the goals of reducing greenhouse gas (GHG) emissions, encouraging infill development, and improving public health through active transportation.

The OPR produced a Technical Advisory to assist lead agencies with the implementation of SB 743 by steering lead agencies toward the variety of implementation questions they face with respect to shifting to a VMT metric. However, lead agencies must continue to make specific decisions regarding VMT methodology, thresholds, and mitigation that are consistent with the county's goals as expressed in their relevant plans and policies.

PROJECTS AFFECTED BY SB 743

Two types of projects, land use development projects and transportation infrastructure projects, are affected by SB 743.

- **Land Use:** Development projects and plans (e.g., Community Plan or Specific Plan) will continue to require a transportation impact analysis. However, transportation impact studies conducted as part of the CEQA process will now be required to base project impacts on VMT. In addition, some projects, such as those located adjacent to transit, may be screened from requiring a detailed VMT analysis.
- **Transportation Infrastructure:** Prior to SB 743, transportation projects that had the potential to worsen vehicle delay, such as narrowing a roadway to enhance travel for bicyclists and pedestrians, may result in an environmental impact under CEQA. With SB 743 in place, transportation projects that promote travel by non-auto modes are no longer considered to result in an environmental impact. Roadway widening projects will now need to consider the potential to induce vehicle travel demand due to increased capacities, which may make driving a more attractive travel option.

SB 743 does not prevent a jurisdiction from continuing to analyze LOS as part of the development review process to determine if transportation improvements are needed to accommodate the proposed land uses, but LOS will no longer constitute the basis for CEQA impacts.

LOS ANGELES COUNTY VMT IMPLEMENTATION

Los Angeles County updated its *Transportation Impact Report Guidelines* in July 2020 to lay forth the requirements for CEQA and non-CEQA sections of transportation studies.

The updated CEQA guidelines contains a new section to determine the significance of transportation impacts (Section 15064.3). While OPR's Technical Advisory helped lead agencies regarding the variety of implementation questions to consider when adopting the new CEQA guidance, lead agencies must still make their own specific decisions about VMT methodology, thresholds, and mitigation.

The Los Angeles County guidance states that the Public Works Department will (generally) require the preparation and submission of a transportation impact analysis for projects that meet the following criteria.

- **Development Projects**
  - Estimated to generate a net increase of 110 or more daily vehicle trips.
- **Transportation Projects**
  - Likely to induce additional vehicle miles traveled (VMT) by increasing vehicle capacity.
  - Projects for which a transportation impact analysis is required by County ordinance, regulation, resolution, court order, or directive from the Board of Supervisors, Regional Planning Commission.

The transportation impact analysis will require the analyses and forecasting of impacts or deficiencies to the circulation system generated by the project. The transportation impact analysis will also identify feasible measures or corrective conditions to offset any impacts or deficiencies.

The county's process includes defining its Baseline VMT, developing VMT screening criteria, defining its impact thresholds, and determining potential mitigation strategies.

Defining the county's Baseline VMT is an important initial step in the implementation process because a VMT of the project will be compared to the county Baseline VMT to determine if the project exceeds the county's thresholds for VMT impacts. To determine the appropriate Baseline VMT for Los Angeles County, the VMT trends throughout the county and region were considered.

The regional Southern California Association of Governments (SCAG) model was determined to be the best available tool to estimate VMT in Los Angeles County. The most current version of the SCAG model, with a base year of 2012 and future year of 2040, was developed for the *2016 SCAG Regional Transportation Plan/ Sustainable Communities Strategy,* April 2016. The model utilizes traffic analysis zones (TAZs) that contain socio-economic data reflecting the population, employment, and land use development characteristics throughout the region.

BASELINE VMT

Given the differences in VMT trends between the northern and southern planning areas in Los Angeles County, the County has adopted separate North County and South County Baseline VMT benchmarks. As shown in Figure 17, the North County Baseline VMT contains the Antelope Valley, Santa Clarita Valley, and Santa Monica Mountains planning areas in the more rural portion of the County and the South County Baseline VMT contains the remaining planning areas in the more urban portion of the County.

By establishing a North County and South County Baseline VMT, the County is acknowledging the differences in travel behavior in these areas given the land use context and transportation network to represent a more realistic and reasonable picture of VMT activity levels, and thus a more appropriate and feasible baseline for VMT analysis.

Figure 17: Baseline VMT Benchmark Coverage Area for Los Angeles County

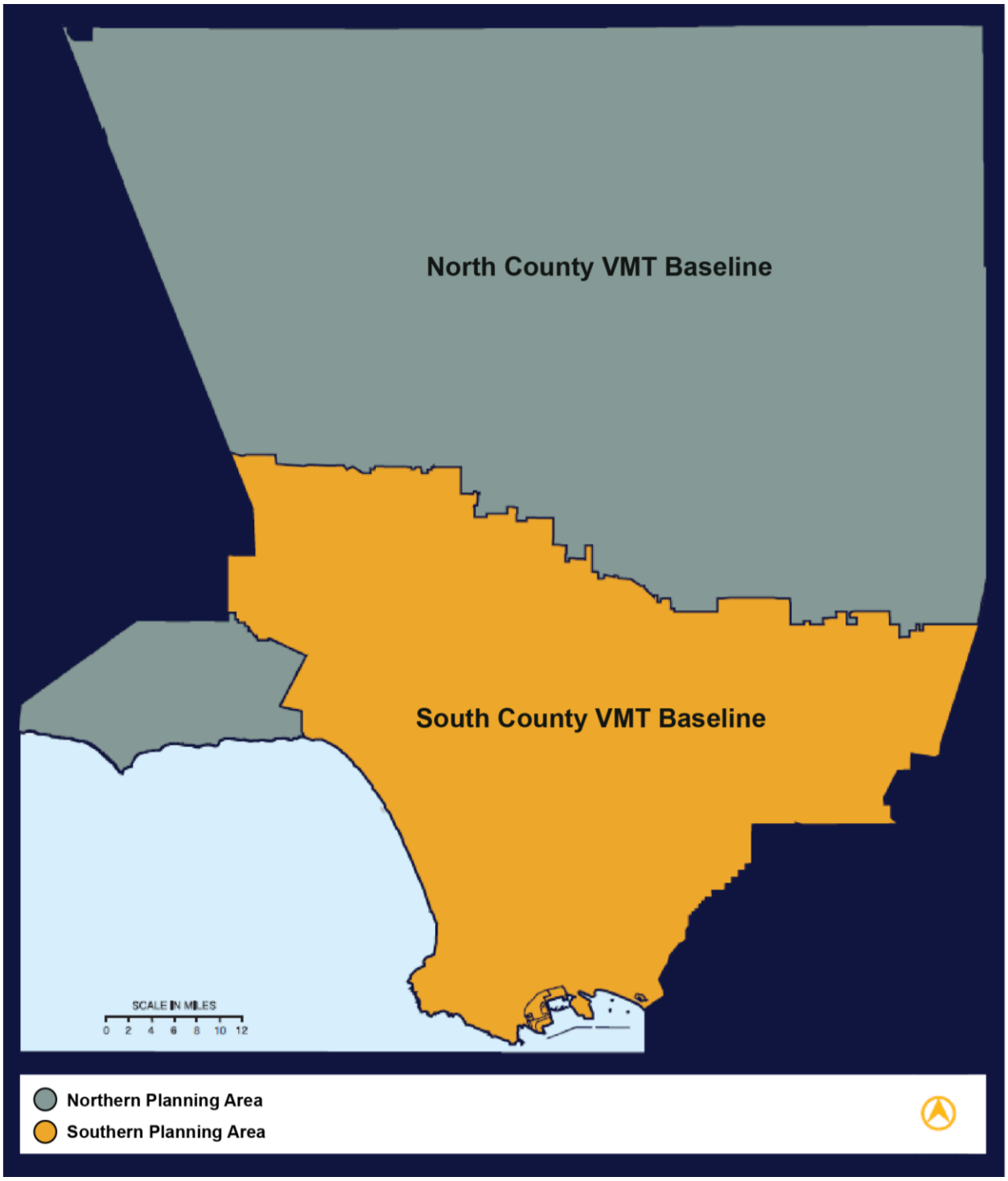


Table 30 reports the North County and South County Baseline VMT metrics for the county as reported in the *Transportation Impact Analysis Guidelines* document published by the Los Angeles County Public Works updated September 2, 2020. Future development projects and plans in each of these areas will be compared to the applicable Baseline VMT metrics to determine if they meet the County's thresholds for a VMT impact. The higher North County Baseline VMT acknowledges that projects and plans in the northern portion of the county will generate higher levels of VMT and should be compared to current VMT trends when determining the significant findings for VMT impacts. The lower South County Baseline VMT holds projects and plans in the southern portion of the county to a more conservative standard than if it was compared to the average VMT for the overall county. However, projects and plans should be compared to current VMT trends in the southern portion of the county with similar land use context when determining if VMT impacts may occur.

Table 30: Baseline VMT Thresholds for North and South County

Baseline Area	Total VMT per Service Population	Residential VMT per Capita	Employment VMT per Employee
North County	43.1	22.3	19.0
South County	31.1	12.7	18.4

Source: *Transportation Impact Analysis Guidelines,* Los Angeles County Public Works, July 23, 2020

While the baseline VMT trends included in this table reflect the base year of the SCAG model, baseline conditions for CEQA purposes will be specific to the release date of a project's notice of preparation. The Total VMT per Service Population threshold is independent of (and not necessarily a total of) Residential VMT per Capita and Employment per Employee.

The VMT methodology for land use projects and plans is based on the origin-destination (OD) VMT method. The OD VMT method estimates VMT generated by land uses in a specific geographic area such as the entire county, or a smaller area such as a regional planning area (e.g., Palmdale) or project site. All vehicles traveling to and from the defined geographic area are tracked within the SCAG model and the number of trips and length of trips are used to calculate the OD VMT. The OD VMT method requires two major data inputs. The first data input is the set of vehicle trip tables (including all vehicle trips by vehicle mode and by time of day) that contain the number of trips between each zone in the model. The second data input is the set of highway distance skims (by vehicle mode and by time of day) that allows the trip distances for each OD pair to be based on congested travel time, speed, and cost from the final highway assignment. The total VMT matrices are then generated by multiplying the final OD trip tables with the corresponding highway distance skims. This method of computing VMT is also referred to as zone-based.

For land use projects and plans, the OD VMT methodology is the most appropriate method because it tracks all trips by trip purpose and the full length of those trips generated by the proposed land uses. The methodology can be used to report the following VMT metric.

- **Total VMT per Service Population** (all vehicles and all trip purposes): The total VMT to and from all zones in the geographic area are divided by the total service population to establish the efficiency metric of VMT per service population. The total service population is the sum of the number residents and the number of employees.

VMT THRESHOLDS FOR LAND USE PLANS

The Los Angeles County Transportation Impact Analysis Guidelines call for land use plans to promote outcomes whereby total VMT per service population (residents and employees) should be 16.8 percent below the existing VMT per service population for the Baseline Area in which the plan is located (see Table 30). Doing so will align the county with the latest state climate goals and help achieve its own targets. A 16.8 percent VMT reduction threshold also sets a higher bar than the suggested OPR threshold of 15 percent based on the latest research available. **At the time of the preparation of this document**, t**he City of Palmdale is utilizing the LA County Guidelines for North County as the most appropriate VMT thresholds and analysis methodology.**

VMT ANALYSIS

The Palmdale General Plan envisions a growth in population, households and employment to work toward a goal of being a self-contained community in the northern part of Los Angeles County, also known as Antelope Valley. The socio-economic data for the Palmdale sphere of influence, which includes the City of Palmdale and the surrounding areas, is reported in Table 31. The socio-economic data reported include population, households, employment and service population (which represents the sum of population and employment). A map of the area is displayed in Figure 18.

Table 31: Palmdale Sphere of Influence Socio-economic Data

	2017 SCAG*	2017 Existing**	2040 SCAG†	2045 Base‡	2045 Preferred Plan§
Population	195,574	188,488	248,031	240,515	225,692
Households	56,863	53,626	75,925	72,840	70,618
Employment	35,575	49,501	39,821	67,085	74,804
Service Population	231,149	237,989	287,852	307,600	300,496

*Based on the 2017 existing SCAG land use scenario and the 2016-2040 Regional Transportation Plan/Sustainable Communities Strategies (RTP/SCS).

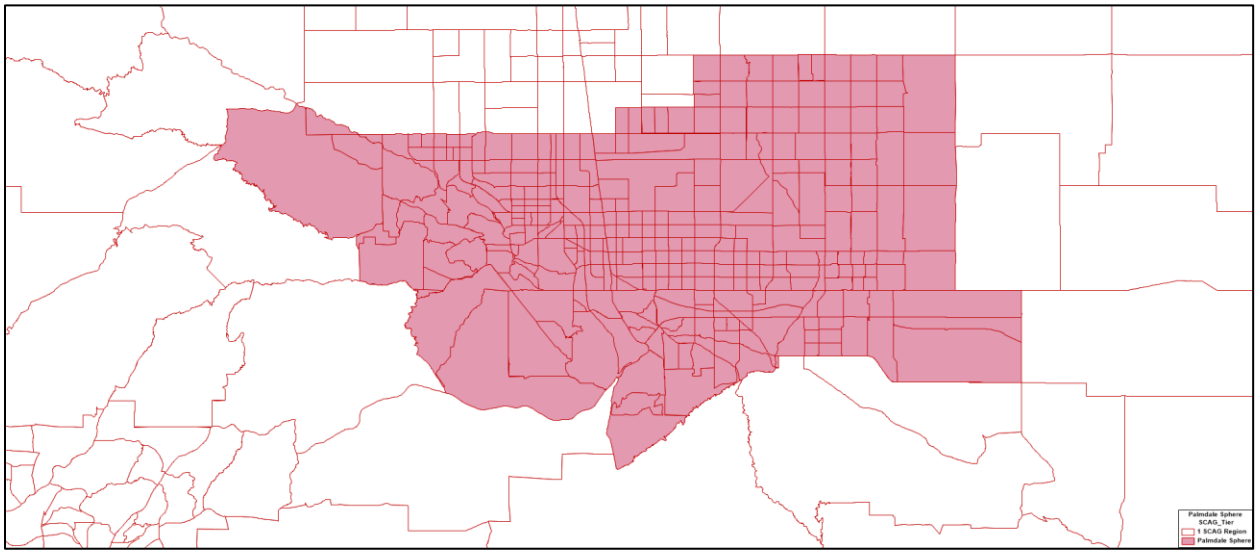
**Based on the 2017 SCAG with the City of Palmdale assumptions for households, population and employment and the SCAG 2016-2040 RTP/SCS. In addition, Plant 42 employment was added. The land use was updated for the Palmdale SOI zones only, all other zones contained the SCAG 2016-2040 RTP/SCS.

†Based on the 2040 SCAG land use scenario and the SCAG 2016-2040 RTP/SCS.

‡Based on the 2040 SCAG with the City of Palmdale assumptions for households, population and employment and the SCAG 2016-2040 RTP/SCS. In addition, Plant 42 employment was added. The land use was updated for the Palmdale SOI zones only, all other zones contained the SCAG 2016-2040 RTP/SCS.

§Based on the2040 SCAG with the GP Preferred Plan assumptions for households, population and employment and SCAG 2016-2040. The land use was updated for the Palmdale SOI zones only, all other zones contained the SCAG 2016-2040 RTP/SCS.

Figure 18: Palmdale Sphere of Influence



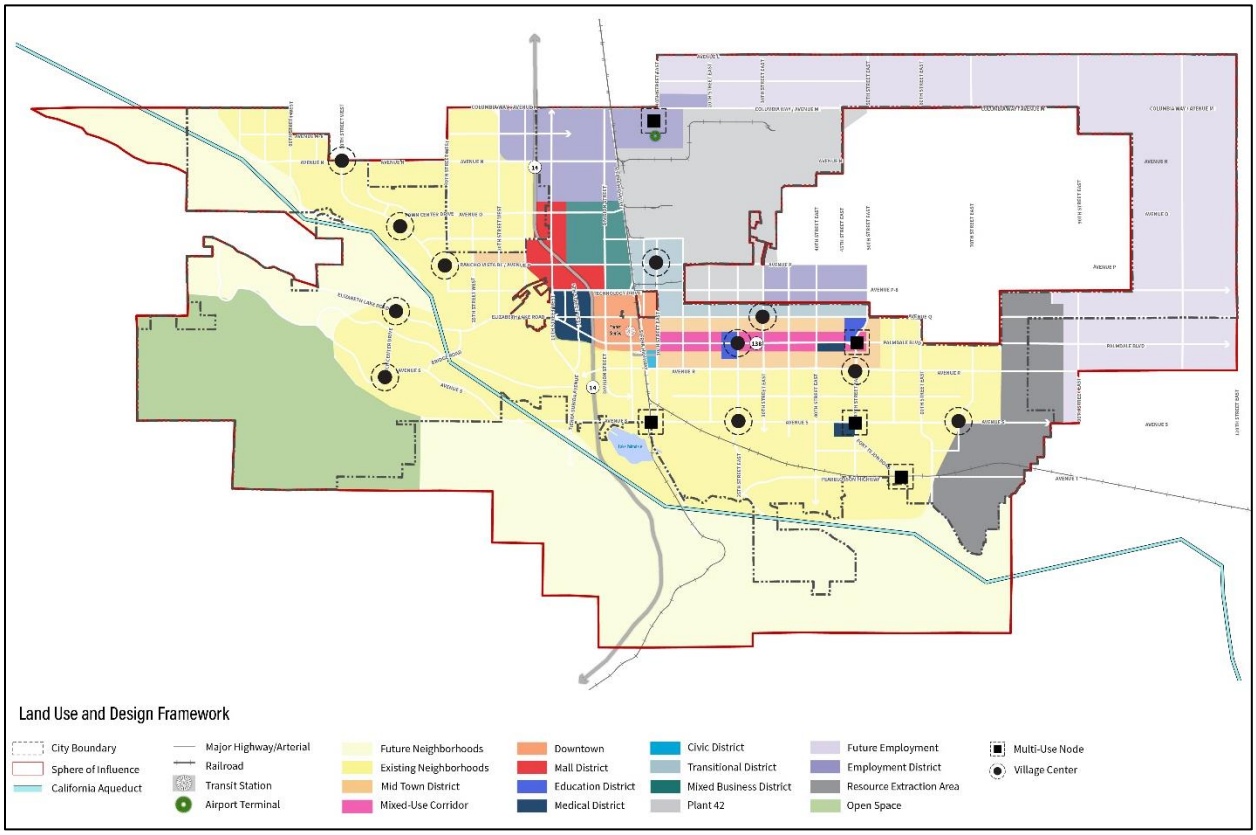
The project impacts criterion, as defined by the Los Angeles SB 743 implementation guideline, states that all land use plans in the Los Angeles County area have certain VMT thresholds that must be met.

Palmdale is located in the North County region and as such the North County VMT criteria apply. The Baseline VMT threshold guidelines were presented previously in Table 30. The VMT screening procedure of the Palmdale General Plan Update (Palmdale GP) suggests that there are impacts because more than 110 trips are generated; therefore, a VMT impact criteria assessment is required for the Palmdale GP. The procedure compares the "Total VMT per Service Population" against the North County Baseline VMT scenario (see Table 30) for any impacts generated by the Palmdale GP.

The Palmdale General Plan preferred scenario (2045 Preferred Plan) is the future land use forecasting developed for future growth within the Palmdale city limits and its sphere of influence. The 2045 Preferred Plan was selected based on extensive review and feedback received of the scenarios by the Planning Commission, City Council, General Plan Advisory Committee, the community, and stakeholders. The major elements of the 2045 Preferred Plan, as shown in Figure 19, include:

- Two education districts
- Three health and wellness districts
- Regional commercial uses around the Antelope Valley Mall and a regional commercial area to the west of the intersection of Avenue Q/45th Street East
- A mix of employment uses around Plant 42
- Mixed uses along the Palmdale Boulevard corridor
- Medium density housing north and south of Palmdale Boulevard
- Village Centers with a mix of neighborhood retail or commercial uses along with residential uses in mixed-use format in various locations throughout the city.

Figure 19. 2045 Preferred Plan Land Use and Design Framework



The SCAG RTP/SCS Travel Demand Model (SCAG model) was run through all four steps of the SCAG model for the following scenarios:

- **2017 SCAG:** This model run is based on the 2017 model forecast year assumptions using the 2016 RTP/SCS model directly without any modifications.
- **2017 Existing:** The 2017 SCAG model forecast year is used and the land use in the Palmdale SOI is modified with land use obtained from the City of Palmdale. The employment is updated for several zones to account for Plant 42, which is not in the employment forecasts.
- **2040 SCAG:** This model run is based on the 2040 model forecast year assumptions using the 2016 RTP/SCS model directly without any modifications.
- **2045 Base:** The 2040 SCAG model forecast year is used and the land use in the Palmdale City limits were modified to reflect updated assumptions. The 2045 Base scenario is developed by updating the 2040 SCAG land use within the Palmdale SOI with land use obtained from the City of Palmdale. The employment is updated for a few zones to account for Plant 42, which was not in the employment forecasts. The land use updates are made to all the zones within the Palmdale SOI to reflect updated socioeconomic data forecasts.
- **2045 Preferred Plan:** The 2040 SCAG model forecast year is used and the land use in the Palmdale City limits are modified to reflect the final 2045 Preferred Plan scenario assumptions. The 2045 Preferred Plan scenario are updated with revised socioeconomic data forecasts which are conservative in nature. Land use updates are made to all the zones within the Palmdale SOI to reflect updated socioeconomic data forecasts.

The SCAG zone system is refined for the Palmdale sphere of influence only to perform traffic assignments after the original SCAG model is run through the complete SCAG model (four steps) for each of the scenarios. The expanded zone system in the Palmdale sphere of influence is used for traffic assignment purposes to better reflect the ground conditions in the study area as the original SCAG zones are too large.

The VMT generated by the Palmdale sphere of Influence encompasses the city of Palmdale for which the land use plan is being developed. The geographic area covered by the Palmdale sphere of influence includes the city of Palmdale and the surrounding areas as shown previously in Figure 2. The VMT generated by trips between the Palmdale sphere of influence and other areas of the SCAG region is computed for all trips from and to the Palmdale SOI. The VMT threshold results of the various scenarios are shown in Table 32, which compares the Baseline VMT threshold criteria for the North County region. The Palmdale GP scenarios are well below the North County targets of 35.9, which is a 16.8 percent reduction from the baseline VMT. The Palmdale GP scenarios effectively reduce the total VMT per service population by more than double the required reduction needed. VMT per service population is the only metric or impact criteria required for a land use plan such as the Palmdale General Plan, as reported in Section 3.1.3—Impact Criteria of the *Transportation Impact Analysis Guidelines* document published by the Los Angeles County Public Works (July 23, 2020). The 2045 Preferred Plan has the least significant impact of all the scenarios, where the socio-economic data were evaluated and placed in the optimum locations for smart growth considerations. Therefore, there is no VMT impact from the 2045 Preferred Plan and as such, no mitigations are necessary.

Table 32: Baseline VMT Thresholds—Total VMT per Service Population

	2017 SCAG	2017 Existing	2040 SCAG	2045 Base	2045 Preferred Plan
Total VMT for service population from the model scenarios *	35.4	34.3	32.5	30.6	27.0
VMT impact criteria threshold result	Pass	Pass	Pass	Pass	Pass

Note: North County baseline VMT for total service population is 43.1 as shown in Table 31.
*A 16.8% decrease from the baseline VMT amounts to 35.9 as recommended by the Los Angeles County Public Works *Transportation Impact Analysis Guidelines*.

In addition, other metrics are reported against the Baseline North County targets as shown in Table 32 below for home-based work and all home-based trips. All home-based trips are trips that originate at home; home-based work trips originate at home and end at a workplace. These metrics are not required for land use plans such as the Palmdale General Plan as they are primarily required for project specific VMT impacts. Table 33 shows the home-based VMT comparisons, where the employment VMT per employee is very similar to the North County Baseline target for the 2045 Preferred Plan scenario. The residential VMT per capita is, however, significantly lower than the baseline target and effectively reduces the overall VMT for home-based trips that includes all residents, which in turn reduces emissions.

Table 33: Baseline VMT Thresholds—Home-based Trips

North County Target	Target	2017 Existing	2045 Base	2045 Preferred Plan
Employment VMT per employee*	19.00	13.37	11.48	19.65
Residential VMT per capita**	22.30	26.19	23.20	16.57

*Employment VMT is the VMT generated by home-based work trip attractions

**Residential VMT is the VMT generated by home-based work and home-based other trip productions.

Note: These metrics are not required for land use plans such as the Palmdale General Plan and are presented for information purposes only.

Table 34 presents the various statistics for the resident home-based trips with origins (productions) in the Palmdale SOI for all the scenarios. The average trip lengths for home-based work and all home-based trips decrease in the 2045 scenarios, which in turn reduces the VMT generated. The resident VMT per capita and the resident VMT per employee also decrease. All these reductions effectively contribute to the overall reduction in VMT and thereby improve the air quality by reducing the emissions of greenhouse gases and CO_2.

Table 34: Home-based Trips and VMT Statistics

	2017 Existing	2045 Base	2045 Preferred Plan
Palmdale sphere - population	188,488	240,515	225,692
Palmdale sphere - households	53,626	72,840	70,618
Palmdale sphere - employment	49,501	67,085	74,804
Home-based work trips - productions	98,084	112,477	92,503
Home-based work VMT - productions	3,096,569	3,497,945	1,997,333
Home-based work trips - attractions	59,460	76,521	108,228
Home-based work VMT - attractions	661,869	770,230	1,469,886
Home-based work trips per capita	0.52	0.47	0.41
Home-based work trips per employee*	1.20	1.14	1.45
Home-based work VMT per capita	16.43	14.54	8.85
Home-based work VMT per employee*	13.37	11.48	19.65
Home-based work - trip length	31.57	31.10	21.59
Home-based all trips - productions	299,413	357,163	296,393
Home-based all VMT - productions	4,936,083	5,580,844	3,740,763
Home-based all trips - attractions	247,409	320,037	308,625
Home-based all VMT - attractions	2,040,790	2,543,397	2,874,992
Home-based all trips per capita	1.59	1.48	1.31
Home-based all trips per employee*	5.00	4.77	4.13
Home-based all VMT per capita	26.19	23.20	16.57
Home-based all VMT per employee*	41.23	37.91	38.43
Home-based all trips – trip length	16.49	15.63	12.62

*This computation uses attractions

Table 35 shows that the average trip length for all trip purposes also decreases, thereby reducing VMT and contributing to the reduction of greenhouse gases. The zone-based VMT computations are computed by using a highway skim matrix for travel-time and travel-distances along with the trip table matrices. This procedure involves matrix computations, where the skim matrices are derived from a valid traffic assignment. The results of these computations are summarized only for the zones in the Palmdale SOI. Note that the VMT generated by this process (skim-based) will be slightly different from the VMT generated by a link-based process. The VMT reported in Table 35 is used for computing the total VMT per service population.

Table 35: All Trips and VMT Statistics

All Trip Purposes—Palmdale Sphere	2017 Existing	2045 Base	2045 Preferred Plan
Total service population	237,989	307,600	300,496
VMT (zone-based)	8,153,876	9,424,251	8,111,684
Total trips per capita	2.70	2.52	2.50
Total trips per employee	10.30	9.04	7.54
Total VMT per service population	34.30	30.60	27.00
All trips—average trip length	**11.87**	**11.56**	**10.86**

VMT MITIGATION OPPORTUNITIES

Although no mitigations are required for the 2045 Preferred Plan, it is useful to understand the mitigation strategies that may be applied in the future, if needed, to reduce the VMT through mitigation measures. The types of mitigation that affect VMT are those that reduce the number of single-occupant vehicles generated. This can be accomplished by modifying the proposed land uses or by implementing transportation demand management (TDM) strategies. Transportation demand management strategies are reductions to trip generation based on certain types of project site modifications, programming, and operational changes (see Table 36 for examples of TDM strategies).

Research documented in the 2010 California Air Pollution Control Officers Association (CAPCOA) publication, Quantifying Greenhouse Gas Mitigation Measures, offers TDM methodologies based on preferred literature, along with methodology based on alternative literature, to estimate the effectiveness of each strategy[2].

As part of the environmental process, specific mitigation strategies must be tailored to the characteristics of the project area followed by analysis and documentation of the effectiveness of the mitigation strategies to determine if those strategies will adequately mitigate impacts or if impacts will remain significant and unavoidable. Given that research on TDM strategies is on-going, feasible mitigation measures must be considered based on the best data available at the time.

The strategies described below in Table 36 are examples of the mitigation options that are most effective in areas comparable to Palmdale. Many of these strategies have already been implemented.

[2] California Air Pollution Control Officers Association, Quantifying Greenhouse Gas Mitigation Measures, August 2010 http://www.capcoa.org/wp-content/uploads/downloads/2010/09/CAPCOA-Quantification-Report-9-14-Final.pdf.

Table 36: VMT Reduction Strategies

Strategy	Description	VMT Benefit	Range of CAPCOA VMT Reductions
Increase diversity of developments (mixed use)	Includes mixed uses within Projects or in consideration of surrounding area.	Minimizes number and length of vehicle trips.	9 to 30%
Provide pedestrian network improvements	Creates pedestrian network within projects and connects to nearby destinations. Could also occur through impact fee program for active transportation improvements.	Encourages people to walk within and to project.	0 to 2%
Provide traffic calming measures and low-stress bicycle network improvements	Creates networks with low vehicle speeds and volumes that support walking and bicycling. Could also occur through impact fee program for active transportation improvements.	Encourages people to bicycle, especially for shorter trips.	0.25 to 1%
Implement car-sharing and ride-sharing programs	Shared fleet of vehicles accessible on-site for residents or employees. Can serve as a first/last- mile solution to connect with transit.	Reduces the need to own a vehicle or the number of household vehicles.	Car-Sharing: 0.4 to 0.7% Ride-Sharing: 1 to 15%
Encourage telecommuting and alternative work schedules	Encouraging telecommuting and alternative work schedules reduces the number of commute trips and therefore VMT traveled by employees. Alternative work schedules could take the form of staggered start times, flexible schedules, or compressed work weeks.	Reduces the number of days employees need to work and/or shifts commute time outside of peak periods to avoid adding to congestion.	0.07 to 5.5%
Commute Trip Reduction Programs	Projects can implement a voluntary Commute Trip Reduction program with employers to discourage single-occupancy vehicle trips and encourage alternative modes of transportation. Alternatively, a jurisdiction can implement a Commute Trip Reduction Ordinance with the intent of reducing drive-alone travel mode share.	Encourages alternatives to commuting in single-occupancy vehicles.	Varies based on selected programs
Limited Parking Supply	Projects can change parking requirements and types of supply within the Project site to encourage “smart growth” development and alternative transportation choices by project residents and employees.	Encourages alternatives to the use of single-occupancy vehicles.	5% - 12.5%
Unbundle Parking Costs from Property Cost	Unbundling separates parking from property costs, requiring those who wish to purchase parking spaces to do so at an additional cost from the property cost.	Encourages alternatives to the use of single-occupancy vehicles.	2.6% - 13%

Table 37 presents the percent share of VMT generated by trips between the Palmdale sphere of influence and other areas of the SCAG region. The intra-Palmdale VMT increased in the 2045 Preferred Plan scenario, reducing VMT to other areas using smart growth assumptions (e.g., a good mixture of households and employment and transit-oriented developments). Palmdale has been an exporter of workers, but now finds itself being less of an exporter with smart growth initiatives and striving toward being self-contained as evident by the reduction to VMT to other regions and the increase in VMT to the Palmdale sphere of influence and neighboring areas (e.g., Lancaster and the High Desert Region). The VMT to other parts of Los Angeles and Orange counties dropped from 49 to 36 percent, a decrease of 13 percent, primarily due to the reduced number of longer trips.

Table 37: VMT between Palmdale Sphere and Areas within the SCAG Region

Percent Share of VMT	2017 SCAG	2017 Existing	2040 SCAG	2045 Base	2045 Preferred Plan
Within Palmdale sphere	12.7%	14.4%	12.7%	15.9%	16.9%
Within Palmdale/Lancaster/High Desert region	30.9%	33.4%	29.8%	34.4%	38.3%
Between Palmdale and LA County/Orange County	48.9%	45.9%	46.4%	41.9%	35.6%
Between Palmdale and remainder of SCAG region and external trips from outside the region	20.2%	20.7%	23.8%	23.8%	26.1%
Total	**100%**	**100%**	**100%**	**100%**	**100%**

Table 38 displays the link-based daily VMT generated by the SCAG model for the different facility types having an origin or destination in the Palmdale sphere of influence. Trips which are pass-through in nature, where they do not have an origin or destination in the Palmdale SOI are not counted. The link-based VMT computations are computed by selecting all the zones in the Palmdale SOI and performing a "Select Zones" traffic assignment procedure.

Table 38: VMT to/from Palmdale Sphere to Areas within the SCAG Region by Facility Type

Facility Type	2017 SCAG	2017 Existing	2040 SCAG	2045 Base	2045 Preferred Plan
Freeways	2,991,484	2,893,868	3,069,614	2,945,756	2,395,390
HOT facilities	11,995	11,431	10,255	9,285	7,911
HOV facilities	310,128	284,701	330,265	284,422	184,453
Expressway/parkway	3,940	4,381	4,855	5,650	5,083
Principal arterials	1,436,595	1,484,072	1,539,496	1,671,644	1,571,929
Minor arterials	1,566,404	1,631,560	1,744,660	1,897,218	1,821,834
Major collectors	1,101,524	1,067,379	1,343,539	1,321,027	1,075,565
Minor collectors	40,011	41,916	38,246	43,307	53,726
Freeway ramps	156,721	152,550	162,438	156,041	122,764
Truck lanes only	4,456	6,323	4,427	7,485	8,130
Centroid connectors	423,875	450,545	453,483	520,432	480,325
Total	***8,047,133***	***8,028,726***	***8,701,278***	***8,862,268***	***7,727,110***

Table 39 shows the link-based daily VMT including all trips generated by the SCAG model regardless of whether the trip begins or ends within the Palmdale sphere of influence. The 2045 Preferred Plan scenario is lower than the adopted 2040 SCAG RTP/SCS forecasts for both the SCAG region and the Palmdale sphere of influence. All trips using the highway network within the Palmdale SOI are counted.

Table 39: VMT for All Links within the Geographic Area

All Trips Generated within or Passing through Palmdale Sphere (II, IX-XI and XX)*	2017 SCAG	2017 Existing	2040 SCAG	2045 Base	2045 Preferred Plan
SCAG region-daily VMT	467,745,693	467,270,822	537,732,813	537,063,042	535,079,227
Palmdale sphere-daily VMT	4,196,206	4,275,553	4,798,099	5,029,773	4,685,219

*II = Internal-to-internal trips, where both ends of the trips are within the Palmdale SOI
IX = Internal-to-external trips, where the origin of the trips is within the Palmdale SOI and the destination of the trips could be anywhere in the SCAG region.
XI = External-to-internal trips, where the origin of the trips could be anywhere in the SCAG region and the destination of the trips is within the Palmdale SOI
XX = External-to-external trips, where both the origin and destination of the trips is anywhere in the SCAG region

Conclusion

It can be seen from Table 32 that the Palmdale General Plan scenarios are well within the acceptable VMT thresholds for land use plans in the North County region as the decrease in total VMT per service population is more than double the required reduction needed. The 2045 Preferred Plan has the lowest total VMT per service population among the scenarios with a reduction of more than 37 percent compared to the Baseline VMT for North County. As such, the 2045 Preferred Plan does not require mitigations.

The average overall trip length for all trip purposes decreases in the 2045 Preferred Plan scenario, in turn reducing the VMT generated. The home-based work VMT per capita and the home-based all VMT per capita also decreases. In addition, the average trip length for home-based work and home-based all trip purposes decreases in the 2045 Preferred Plan scenario, which in turn reduces the total amount of VMT generated. All these reductions in the amount of VMT generated effectively contribute toward improved air quality and thereby reduce the emissions of greenhouse gases and CO_2.

APPENDIX

Socioeconomic Data Summary for the Palmdale Sphere of Influence

	2017 Existing			2045 Base			2045 Preferred Plan		
TAZ	Population	Households	Employment	Population	Households	Employment	Population	Households	Employment
288	1273.0	582.0	82.5	1866.4	874.7	86.9	0.0	0.0	0.0
325	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	40.7
331	3.7	1.3	6.5	4.3	1.4	7.5	4.3	1.4	7.5
333	8.6	2.8	8.7	9.9	3.0	10.9	9.9	3.0	10.9
335	43.5	27.6	0.0	25.6	11.7	0.0	25.6	11.7	0.0
350	10.0	7.0	5.0	9.4	7.0	5.0	2035.0	740.0	137.0
352	1377.0	775.0	210.0	1627.7	976.0	358.0	2575.6	783.7	215.0
353	1210.8	418.6	140.9	1558.0	576.7	141.8	1558.0	576.7	141.8
354	0.0	0.0	0.0	0.0	0.0	0.0	8.2	2.8	0.0
355	1564.0	428.0	49.0	2051.1	598.0	71.0	2101.7	620.6	33.5
356	973.0	273.2	27.5	1226.6	354.1	29.3	1226.6	354.1	29.3
357	3602.0	1348.0	685.0	4424.0	1627.0	703.0	22.4	6.5	0.0
358	0.0	0.0	18.6	0.0	0.0	22.1	0.0	0.0	0.0
359	365.0	126.1	15.4	424.8	151.6	16.7	424.8	151.6	16.7
360	727.0	248.9	57.8	959.5	341.0	59.7	755.2	220.2	92.0
361	0.0	0.0	3174.2	0.0	0.0	4472.4	1735.3	684.5	2303.0
362	2355.0	703.0	489.0	3660.0	1164.0	569.0	2873.1	830.5	472.3
363	507.3	188.5	53.8	537.5	178.9	62.6	328.2	95.3	0.0
364	0.0	0.0	242.4	0.0	0.0	1159.2	0.0	0.0	2461.5
365	1577.0	659.0	2851.0	2165.3	964.0	3145.0	2496.0	721.5	2949.0
366	2.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	628.6
367	0.0	0.0	181.0	0.0	0.0	202.0	27.5	8.0	203.2
368	1498.0	360.0	30.0	2191.1	561.0	32.0	1309.7	380.1	4.2
369	939.0	325.0	816.0	1423.7	525.0	931.0	1174.7	446.5	766.0
370	49.9	13.7	188.2	49.9	14.5	205.8	799.4	293.7	188.0
371	1321.0	417.0	1135.0	2242.0	754.0	1270.0	1608.2	528.4	1069.1
372	1877.0	1084.0	126.0	3258.7	2005.0	126.0	3775.7	1194.5	76.5
374	2399.0	683.0	29.0	2891.3	877.0	328.0	2194.5	685.1	9.0
375	0.0	0.0	142.8	0.0	0.0	229.0	0.0	0.0	4743.7
376	521.7	207.4	580.4	729.9	309.1	655.0	545.3	205.9	491.9
377	1551.0	371.0	394.0	2354.4	600.0	459.0	1533.2	456.4	346.1
378	216.5	101.2	8.9	220.9	94.9	9.9	0.0	0.0	0.0
379	6707.0	1774.0	265.0	7611.9	2145.0	394.0	6222.8	1839.8	259.4
380	3008.0	705.0	67.0	3023.6	755.0	106.0	2339.6	713.5	53.0

Socioeconomic Data Summary for the Palmdale Sphere of Influence

	2017 Existing			2045 Base			2045 Preferred Plan		
TAZ	Population	Households	Employment	Population	Households	Employment	Population	Households	Employment
381	800.4	173.3	241.3	963.1	222.1	286.4	2019.4	686.6	360.0
382	1367.8	333.0	200.2	2738.5	710.4	305.5	1236.5	362.3	383.9
383	0.0	0.0	7.0	0.0	0.0	19.0	0.0	0.0	0.0
384	0.0	0.0	2.1	0.0	0.0	2.6	0.0	0.0	2.6
385	1831.0	420.0	488.0	2614.7	639.0	509.0	4160.9	1540.1	929.0
386	1138.5	230.0	28.5	1639.1	352.8	32.5	1073.5	310.3	20.0
387	1.0	1.0	30.2	1.3	1.3	31.3	9.6	2.8	30.0
388	259.7	78.6	30.7	312.3	98.8	30.6	312.3	98.8	30.6
389	303.5	59.8	34.1	361.6	74.3	33.6	361.6	74.3	33.6
390	307.5	101.1	22.1	316.8	83.2	99.4	316.8	83.2	99.4
393	57.8	29.7	5.7	64.5	29.8	6.4	64.5	29.8	6.4
4193	0.0	0.0	4.4	0.0	0.0	4.6	0.0	0.0	4.6
4194	0.0	0.0	0.9	0.0	0.0	0.9	0.0	0.0	0.0
4195	0.0	0.0	7.2	0.0	0.0	7.6	0.0	0.0	0.0
4196	583.0	172.0	105.0	1409.4	443.0	107.0	1061.0	307.1	106.2
4197	845.4	245.8	21.0	1160.7	359.5	26.5	1120.0	323.8	20.0
4198	515.6	156.2	21.0	707.8	228.5	26.5	544.0	157.3	64.9
4199	625.0	198.0	26.0	1149.6	388.0	63.0	730.4	211.1	19.0
4200	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4201	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	247.6
4202	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4203	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4204	38.0	11.0	0.0	61.6	19.0	0.0	38.4	11.1	0.0
4205	22.0	2.6	3.2	25.6	2.9	3.7	25.6	2.9	3.7
4206	18.3	5.1	3.2	21.3	5.8	3.7	21.3	5.8	3.7
4207	11.0	7.0	0.0	10.3	7.0	0.0	25.6	7.4	0.0
4208	7.4	1.4	7.8	8.5	1.5	9.7	8.5	1.5	9.7
4209	3.7	1.4	8.2	4.2	1.5	10.1	4.2	1.5	10.1
4210	70.1	30.4	8.3	80.7	32.8	10.4	80.7	32.8	10.4
4211	1.2	1.4	8.1	1.4	1.5	10.1	1.4	1.5	10.1
4212	12.3	2.8	8.3	14.2	3.0	10.3	14.2	3.0	10.3
4213	9.8	2.8	8.2	11.3	3.0	10.2	11.3	3.0	10.2
4214	4.9	1.4	4.3	5.7	1.5	5.3	5.7	1.5	5.3
4215	52.9	24.8	4.1	60.9	26.8	5.0	60.9	26.8	5.0

Socioeconomic Data Summary for the Palmdale Sphere of Influence

	2017 Existing			2045 Base			2045 Preferred Plan		
TAZ	Population	Households	Employment	Population	Households	Employment	Population	Households	Employment
4216	14.0	3.0	0.0	13.1	3.0	0.0	12.8	3.7	0.0
4217	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4218	6.0	2.0	0.0	5.6	2.0	0.0	6.4	1.9	0.0
4219	1.0	1.0	0.0	0.9	1.0	0.0	3.2	0.9	0.0
4220	61.8	19.7	0.0	36.4	8.4	0.0	36.4	8.4	0.0
4221	45.8	23.7	0.0	27.0	10.1	0.0	27.0	10.1	0.0
4222	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4223	1.5	0.5	0.0	2.8	1.0	0.0	0.9	0.2	0.0
4224	1.5	0.5	0.0	2.8	1.0	0.0	0.0	0.0	0.0
4225	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4226	2.0	1.0	0.0	1.9	1.0	0.0	3.2	0.9	0.0
4227	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4228	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4229	1.0	1.0	0.0	0.9	1.0	0.0	2901.5	925.0	0.0
4230	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4231	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4232	0.0	0.0	1.8	0.0	0.0	1.8	0.0	0.0	0.0
4233	0.0	0.0	2.2	0.0	0.0	2.2	0.0	0.0	0.0
4234	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4235	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4236	77.0	26.0	3.0	98.9	35.2	4.5	3.2	0.9	0.0
4237	2097.0	592.0	323.0	2181.1	656.0	328.0	1848.0	592.0	360.0
4238	1410.0	608.0	32.0	1549.8	712.0	44.0	1583.0	608.7	33.0
4239	683.5	258.4	141.2	879.5	355.9	142.1	879.5	355.9	142.1
4240	874.7	332.0	140.9	1125.5	457.3	141.8	1125.5	457.3	141.8
4241	99.3	27.2	5.1	126.7	37.0	5.1	127.7	37.4	5.1
4242	128.8	43.9	10.4	164.3	59.7	10.4	165.7	60.4	10.5
4243	60.0	17.9	5.5	76.5	24.4	5.5	331.4	95.8	44.0
4244	1107.0	346.0	26.0	1147.2	382.0	26.0	1184.1	346.0	12.0
4245	6.0	2.0	0.0	5.6	2.0	0.0	3.6	1.1	0.0
4246	5.0	3.0	0.0	4.7	3.0	0.0	1385.2	408.0	52.3
4247	843.0	209.0	9.0	829.1	219.0	10.0	720.0	208.1	22.0
4248	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4249	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Socioeconomic Data Summary for the Palmdale Sphere of Influence

	2017 Existing			2045 Base			2045 Preferred Plan		
TAZ	Population	Households	Employment	Population	Households	Employment	Population	Households	Employment
4250	1993.0	550.0	111.2	2027.1	596.0	114.0	2265.6	654.9	88.0
4251	0.0	0.0	48.8	0.0	0.0	50.0	0.0	0.0	50.0
4252	0.0	0.0	0.0	0.0	0.0	0.0	6400.0	1850.0	120.0
4253	1375.0	349.0	13.0	1368.3	370.0	15.0	1920.0	555.0	0.0
4254	3501.2	940.7	300.4	3456.4	989.4	430.0	3264.0	943.5	303.0
4255	4541.8	1300.3	297.6	4483.7	1367.6	426.0	4437.4	1300.3	342.0
4256	1160.0	359.0	497.0	1116.1	368.0	545.0	1237.7	358.8	515.0
4257	1819.0	511.0	34.0	2245.3	672.0	51.0	1856.0	536.5	31.0
4258	892.4	250.5	13.7	1125.1	324.7	14.6	1125.1	324.7	14.6
4259	186.5	57.2	6.6	235.2	74.2	7.0	144.0	41.6	0.0
4260	319.0	108.0	13.3	402.2	140.0	14.2	307.6	89.7	16.0
4261	0.0	0.0	0.0	0.0	0.0	0.0	16.0	4.6	0.0
4262	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4263	0.0	0.0	18.4	0.0	0.0	21.9	165.3	59.7	43.3
4264	897.0	243.0	30.0	928.6	268.0	31.0	905.6	261.8	30.0
4265	1306.0	308.0	33.0	1329.3	334.0	35.0	1129.6	326.5	16.0
4266	845.0	195.0	7.0	1448.0	356.0	7.0	1052.8	304.3	33.0
4267	794.2	190.7	38.2	959.8	245.6	38.7	656.0	189.6	30.0
4268	921.8	261.3	35.8	1114.1	336.4	36.3	1001.6	289.5	30.0
4269	350.0	98.0	323.0	600.0	179.0	325.0	342.4	99.0	327.0
4270	1084.0	308.0	27.0	1542.7	467.0	28.0	1057.8	309.9	0.0
4271	248.0	90.7	7.6	288.6	109.0	8.3	288.6	109.0	8.3
4272	115.9	45.4	2.9	134.9	54.5	3.2	134.9	54.5	3.2
4273	1.0	1.1	200.1	3.8	4.3	257.2	105.8	30.6	907.3
4274	1.0	0.9	97.9	3.7	3.7	125.8	75.6	22.3	99.2
4275	405.8	122.8	15.3	472.3	147.6	16.6	346.0	100.8	32.0
4276	178.2	71.9	7.6	207.4	86.4	8.2	193.8	56.4	5.0
4277	163.2	58.6	7.6	189.9	70.5	8.3	166.4	48.1	25.0
4278	182.5	52.0	7.7	212.4	62.5	8.3	147.2	42.6	1.0
4279	201.8	68.6	7.5	234.9	82.4	8.2	187.4	54.6	1.0
4280	96.6	33.2	3.7	112.4	39.9	4.1	102.4	29.6	0.0
4281	36.5	14.4	2.9	42.5	17.3	3.1	62.6	18.5	0.0
4282	76.2	28.8	3.1	88.7	34.6	3.4	81.8	24.1	0.0
4283	87.0	25.4	3.8	101.2	30.6	4.1	70.4	20.4	0.0

Socioeconomic Data Summary for the Palmdale Sphere of Influence

	2017 Existing			2045 Base			2045 Preferred Plan		
TAZ	Population	Households	Employment	Population	Households	Employment	Population	Households	Employment
4284	76.2	22.1	3.8	88.7	26.6	4.1	78.6	23.1	1.0
4285	0.0	0.0	29.2	0.0	0.0	30.2	0.0	0.0	0.0
4286	6.0	2.1	10.9	7.9	2.8	11.3	0.0	0.0	0.0
4287	8.0	3.0	1339.0	7.5	3.0	2909.0	16.0	4.6	1460.5
4288	0.0	0.0	419.8	0.0	0.0	591.6	0.0	0.0	400.0
4289	248.0	73.0	2.0	363.5	114.0	6.0	2261.0	845.1	209.6
4290	2072.6	527.1	271.2	2283.0	618.5	278.6	1824.0	527.3	269.0
4291	301.4	77.9	91.8	332.0	91.5	94.4	479.9	141.9	64.0
4292	944.0	260.0	506.0	1076.9	316.0	666.0	1331.5	395.3	500.0
4293	1274.0	318.0	22.0	1564.3	416.0	126.0	1349.9	390.2	86.7
4294	236.0	137.0	20.0	313.7	194.0	28.0	1833.7	555.5	208.0
4295	163.0	85.0	998.0	162.0	90.0	1032.0	226.0	85.1	998.4
4296	0.0	0.0	131.0	0.0	0.0	204.0	0.0	0.0	247.3
4297	23.0	9.0	175.0	21.6	9.0	241.0	218.1	86.0	193.1
4298	27.0	6.0	118.0	25.3	6.0	174.0	22.4	6.5	93.7
4299	1479.9	647.2	30.5	1603.4	747.1	77.8	2341.4	793.5	1.0
4300	1379.1	480.8	25.5	1494.1	554.9	65.2	1545.1	481.9	19.2
4301	108.0	33.0	9.5	184.3	60.0	18.3	1751.4	531.0	2.0
4302	0.0	0.0	3.5	0.0	0.0	6.7	126.5	44.3	103.2
4303	148.3	66.9	11.3	157.1	63.5	13.1	0.0	0.0	0.0
4304	709.5	245.3	22.9	751.8	232.8	26.6	200.0	58.3	0.0
4305	348.9	166.2	33.1	369.6	157.8	38.6	1705.6	493.0	21.0
4306	0.0	0.0	0.8	0.0	0.0	0.8	124.8	36.1	0.0
4307	0.0	0.0	1.4	0.0	0.0	1.4	19.2	5.6	0.0
4308	0.0	0.0	4.8	0.0	0.0	4.8	230.4	66.6	20.0
4309	0.0	0.0	207.6	0.0	0.0	992.8	0.0	0.0	1812.1
4310	0.0	0.0	17.0	0.0	0.0	279.4	0.0	0.0	1892.1
4311	107.0	42.0	9.0	145.9	61.0	147.6	112.4	41.6	82.1
4312	0.0	0.0	260.0	0.0	0.0	269.0	0.0	0.0	258.2
4313	0.0	0.0	1645.0	0.0	0.0	1819.0	0.0	0.0	1645.0
4314	4.0	2.0	373.8	3.8	2.0	463.1	6.4	1.9	977.0
4315	0.0	0.0	187.2	0.0	0.0	231.9	0.0	0.0	226.5
4316	687.0	161.0	248.0	644.8	161.0	484.0	579.2	167.4	262.9
4317	0.0	0.0	834.0	0.0	0.0	1047.0	0.0	0.0	833.8

Socioeconomic Data Summary for the Palmdale Sphere of Influence

	2017 Existing			2045 Base			2045 Preferred Plan		
TAZ	Population	Households	Employment	Population	Households	Employment	Population	Households	Employment
4318	0.0	0.0	350.0	0.0	0.0	559.0	0.0	0.0	361.4
4319	811.0	185.0	345.0	1584.2	385.0	425.0	1508.0	527.3	338.3
4320	74.3	36.7	113.7	103.9	54.7	127.2	187.1	57.6	187.8
4321	316.7	137.3	96.3	442.4	204.3	107.8	398.4	138.8	172.3
4322	3501.0	848.0	314.0	3410.1	880.0	424.0	2572.3	853.0	307.9
4323	379.0	112.0	323.0	527.3	166.0	383.0	422.5	161.8	345.6
4324	741.0	179.0	457.0	913.1	235.0	594.0	1467.3	467.4	546.9
4325	1614.0	410.0	645.0	2926.4	792.0	716.0	1595.7	621.4	575.2
4326	1471.0	490.0	109.0	2169.7	770.0	122.0	1879.2	599.8	59.0
4327	600.0	133.0	220.0	1384.6	327.0	286.0	1201.8	393.7	223.3
4328	2592.0	693.0	352.0	3486.1	993.0	396.0	1824.9	694.9	339.5
4329	646.0	384.0	677.0	1378.5	873.0	1180.0	1250.9	486.5	726.4
4330	2177.0	590.0	435.0	2736.0	790.0	488.0	1612.6	619.2	433.7
4331	5394.1	1236.3	947.8	5387.0	1315.5	1036.2	4214.0	1259.2	952.0
4332	2615.0	623.0	66.0	3147.9	799.0	73.0	2147.5	637.9	36.0
4333	1.9	0.9	126.6	4.0	1.9	225.0	44.7	16.5	51.7
4334	797.1	186.1	231.4	1700.5	423.1	411.0	1100.2	331.3	196.3
4335	2753.0	678.0	263.0	3346.3	878.0	338.0	2247.9	692.9	218.5
4336	596.0	193.0	5.0	1371.0	473.0	5.0	810.4	292.2	0.0
4337	0.0	0.0	77.0	0.0	0.0	92.2	0.0	0.0	0.0
4338	100.0	36.0	0.0	628.4	241.0	0.0	128.0	37.0	8.0
4339	1520.3	531.1	171.3	2361.6	878.9	194.6	1715.5	531.2	126.0
4340	985.7	320.9	182.7	1531.1	531.1	207.4	1104.0	320.2	110.5
4341	2096.0	499.0	316.0	2523.3	640.0	354.0	1713.1	500.3	301.3
4342	0.0	0.0	85.5	0.0	0.0	137.1	0.0	0.0	1877.6
4343	0.0	0.0	4200.7	0.0	0.0	6734.0	0.0	0.0	8115.3
4344	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4345	1171.3	379.6	577.6	1638.8	565.9	652.0	1070.6	378.4	538.0
4346	1795.0	817.0	212.0	2233.4	1083.0	296.0	2313.6	817.0	202.7
4347	639.0	159.0	112.0	1067.5	283.0	203.0	559.2	165.9	28.7
4348	2491.0	557.0	348.0	2669.7	636.0	372.0	1904.5	557.2	298.5
4349	2476.0	554.0	48.0	2449.9	584.0	60.0	2042.0	626.7	43.4
4350	17.0	8.9	1.8	17.4	8.3	2.0	9.6	2.8	0.0
4351	85.0	40.8	6.9	86.8	38.3	7.7	69.0	20.4	0.0

Socioeconomic Data Summary for the Palmdale Sphere of Influence

	2017 Existing			2045 Base			2045 Preferred Plan		
TAZ	Population	Households	Employment	Population	Households	Employment	Population	Households	Employment
4352	227.3	95.9	5.8	232.0	89.9	6.5	136.2	39.8	0.0
4353	74.2	37.3	2.7	75.7	35.0	3.0	0.0	0.0	0.0
4354	0.0	0.0	0.0	0.0	0.0	0.0	49.8	14.8	0.0
4355	10.0	5.0	0.0	336.0	179.0	0.0	19.2	5.6	0.0
4356	0.0	0.0	0.0	0.0	0.0	0.0	6.4	1.9	0.0
4357	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4358	6883.0	1712.0	378.0	8343.6	2211.0	410.0	5926.4	1713.1	349.0
4359	1106.0	525.0	54.0	1566.1	792.0	59.0	1824.0	527.3	2.0
4360	464.0	109.0	81.0	1002.9	251.0	99.0	381.1	112.6	2.0
4361	2967.0	692.0	347.0	3127.0	777.0	352.0	2400.0	693.8	329.0
4362	1323.6	358.7	358.7	1592.6	459.9	425.6	2204.2	732.5	1042.8
4363	2819.0	923.0	243.0	3804.1	1327.0	266.0	2801.9	920.3	177.2
4364	2970.0	868.0	217.0	4027.4	1254.0	295.0	2781.3	867.3	173.0
4365	964.0	218.1	75.0	1930.1	465.2	114.5	750.7	217.2	10.0
4366	598.3	124.9	102.8	1197.8	266.4	157.0	488.2	141.1	100.0
4367	0.0	0.0	6.8	0.0	0.0	8.0	0.0	0.0	0.0
4368	0.0	0.0	8.6	0.0	0.0	10.1	0.0	0.0	0.0
4369	0.0	0.0	3.8	0.0	0.0	4.5	0.0	0.0	0.0
4370	0.0	0.0	15.0	0.0	0.0	17.7	0.0	0.0	0.0
4371	0.0	0.0	4.0	0.0	0.0	4.8	0.0	0.0	0.0
4372	0.0	0.0	5.8	0.0	0.0	6.9	0.0	0.0	0.0
4373	0.0	0.0	3.9	0.0	0.0	4.6	0.0	0.0	0.0
4374	0.0	0.0	3700.9	0.0	0.0	5069.0	0.0	0.0	4239.8
4375	0.0	0.0	44.7	0.0	0.0	61.2	0.0	0.0	44.4
4376	0.0	0.0	41.4	0.0	0.0	56.7	0.0	0.0	108.5
4377	0.0	0.0	28.3	0.0	0.0	28.3	0.0	0.0	0.0
4378	0.0	0.0	1370.2	0.0	0.0	1370.2	0.0	0.0	1535.2
4379	0.0	0.0	15.5	0.0	0.0	15.5	0.0	0.0	0.0
4380	2.4	1.2	121.9	2.2	1.2	488.4	10.7	3.7	103.1
4381	40.3	10.5	129.2	37.8	10.5	517.7	150.4	43.5	58.5
4382	154.3	43.1	105.0	144.8	43.1	421.1	857.3	312.3	57.2
4383	5.0	1.2	129.9	4.7	1.2	520.8	1802.3	677.5	533.7
4384	0.0	0.0	100.7	0.0	0.0	106.4	0.0	0.0	140.9
4385	0.0	0.0	102.0	0.0	0.0	107.7	0.0	0.0	2.1

Socioeconomic Data Summary for the Palmdale Sphere of Influence

	2017 Existing			2045 Base			2045 Preferred Plan		
TAZ	Population	Households	Employment	Population	Households	Employment	Population	Households	Employment
4386	0.0	0.0	101.0	0.0	0.0	106.8	0.0	0.0	386.8
4387	0.0	0.0	98.4	0.0	0.0	103.9	197.5	65.1	99.0
4388	2.3	1.3	99.3	2.2	1.3	104.9	57.6	21.4	244.6
4389	11.7	3.8	98.7	11.0	3.8	104.3	114.9	41.9	538.3
4390	0.0	0.0	7.4	0.0	0.0	13.2	0.0	0.0	360.7
4391	0.0	0.0	7.4	0.0	0.0	13.1	0.0	0.0	394.1
4392	2.3	1.1	7.5	3.5	1.8	13.3	13.7	5.1	362.8
4393	0.0	0.0	7.4	0.0	0.0	13.1	0.0	0.0	836.5
4394	729.7	161.9	6.3	1130.4	267.2	11.3	2434.8	857.8	1254.1
4395	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	239.2
4396	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4397	0.0	0.0	0.0	0.0	0.0	0.0	53.7	15.7	0.0
4398	0.0	0.0	0.0	0.0	0.0	0.0	5253.9	1916.6	1070.7
4399	0.0	0.0	0.0	0.0	0.0	0.0	1453.2	479.1	745.8
4400	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4401	0.0	0.0	7.6	0.0	0.0	8.9	0.0	0.0	0.0
4402	0.0	0.0	3.8	0.0	0.0	4.5	0.0	0.0	0.0
4403	0.0	0.0	20.4	0.0	0.0	24.1	0.0	0.0	0.0
4404	0.0	0.0	10.3	0.0	0.0	12.1	0.0	0.0	0.0
4405	0.0	0.0	7.5	0.0	0.0	8.9	0.0	0.0	0.0
4406	0.0	0.0	9.7	0.0	0.0	11.5	0.0	0.0	0.0
4407	40.5	18.4	57.2	51.6	23.6	70.9	28.8	8.3	0.0
4408	9.6	4.1	35.0	12.3	5.2	43.3	3.2	0.9	0.0
4409	843.9	243.5	22.9	1076.2	311.8	28.4	422.4	122.1	0.0
4410	0.0	0.0	32.8	0.0	0.0	40.7	0.0	0.0	0.0
4411	0.0	0.0	0.0	0.0	0.0	0.0	3.2	0.9	0.0
4412	0.0	0.0	0.0	0.0	0.0	0.0	73.6	21.3	0.0
4413	87.2	30.2	2.9	147.6	54.4	15.3	98.8	29.8	0.0
4414	258.8	96.8	5.1	438.0	174.6	26.7	326.7	97.5	26.0
4415	471.0	159.0	20.0	589.5	212.0	20.0	559.7	162.0	229.0
4416	1.2	0.3	2.6	1.1	0.3	26.6	19.2	5.6	0.0
4417	4.8	1.8	2.4	4.5	1.8	25.4	121.6	35.2	4.1
4418	52.0	20.0	81.0	73.2	30.0	84.0	70.4	20.4	0.0
4419	4043.0	917.0	198.0	4159.0	1005.0	281.0	3171.2	916.7	194.1

Socioeconomic Data Summary for the Palmdale Sphere of Influence

	2017 Existing			2045 Base			2045 Preferred Plan		
TAZ	Population	Households	Employment	Population	Households	Employment	Population	Households	Employment
4420	3952.0	874.0	434.0	4265.4	1005.0	507.0	3040.0	878.8	483.9
4421	1887.5	435.0	28.5	2717.4	667.2	32.5	1543.8	446.2	13.0
4422	1836.4	395.3	82.8	2669.1	612.2	94.9	1374.5	397.3	83.2
4423	1185.6	295.7	81.2	1723.2	457.8	93.1	1024.0	296.0	70.0
4424	1622.3	381.2	26.3	2272.8	568.9	32.3	1344.0	388.5	2.0
4425	1385.7	292.8	25.7	1941.3	437.1	31.7	1280.0	370.0	22.0
4426	1998.0	443.0	333.0	2696.6	637.0	341.0	1646.0	475.8	314.0
4427	1983.0	457.0	42.0	2659.6	653.0	42.0	1600.0	462.5	32.0
4428	0.0	0.0	475.0	0.0	0.0	475.0	321.2	113.8	542.5
4429	5.0	2.0	28.3	6.3	2.7	29.4	0.0	0.0	30.0
4430	0.0	0.0	23.5	0.0	0.0	24.3	0.0	0.0	0.0
4431	5243.0	1186.0	870.0	7995.9	1927.0	955.0	5106.4	1476.1	886.1
4432	0.0	0.0	0.0	0.0	0.0	0.0	455.0	157.6	105.9
4433	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4434	7.0	3.0	0.0	359.2	164.0	0.0	64.3	18.6	2.3
4435	930.0	191.0	9.0	1247.7	273.0	45.0	673.0	194.6	27.4
4436	298.0	96.0	4.5	422.5	145.0	7.2	332.9	96.2	1.8
4437	0.0	0.0	38.5	0.0	0.0	60.8	0.0	0.0	0.0
4438	1.0	1.0	8.0	1.9	2.0	73.0	6.4	1.9	76.7
4439	0.0	0.0	21.0	0.0	0.0	24.0	0.0	0.0	0.0
4440	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4441	0.0	0.0	0.0	0.0	0.0	0.0	273.4	85.6	14.5
4442	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4443	100.4	34.8	30.4	120.8	43.7	30.4	120.8	43.7	30.4
4444	304.2	84.6	30.0	365.7	106.4	29.9	365.7	106.4	29.9
4445	1388.8	414.0	48.3	1670.0	520.8	48.2	1670.0	520.8	48.2
4446	1344.3	420.1	49.8	1616.5	528.4	49.8	1616.5	528.4	49.8
4447	229.6	75.6	48.2	276.0	95.0	48.1	276.0	95.0	48.1
4448	23.0	7.6	161.9	27.6	9.5	161.7	27.6	9.5	161.7
4449	119.1	40.8	220.7	143.2	51.3	220.3	143.2	51.3	220.3
4450	0.0	0.0	0.0	0.0	0.0	0.0	584.0	169.3	6.0
4451	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	1.0
4452	25.4	6.4	30.5	30.2	8.0	30.0	30.2	8.0	30.0
4453	519.7	128.1	30.5	619.1	159.2	30.0	619.1	159.2	30.0

Socioeconomic Data Summary for the Palmdale Sphere of Influence

	2017 Existing			2045 Base			2045 Preferred Plan		
TAZ	**Population**	**Households**	**Employment**	**Population**	**Households**	**Employment**	**Population**	**Households**	**Employment**
4454	520.7	129.1	26.9	620.4	160.5	26.5	620.4	160.5	26.5
4455	508.5	123.8	26.7	605.8	153.9	26.3	605.8	153.9	26.3
4456	528.8	133.4	30.7	630.0	165.9	30.2	630.0	165.9	30.2
4457	789.6	234.8	62.9	940.8	291.9	62.0	940.8	291.9	62.0
4458	2154.7	576.4	121.5	2567.3	716.5	119.6	2567.3	716.5	119.6
4459	43.6	13.9	118.1	52.0	17.2	116.3	52.0	17.2	116.3
4460	880.0	254.0	114.3	1048.4	315.8	112.5	1048.4	315.8	112.5
4461	74.1	20.3	33.8	88.3	25.2	33.3	3.2	0.9	0.0
4462	26.4	7.5	16.4	31.4	9.3	16.1	3.2	0.9	0.0
4463	343.1	85.4	29.8	408.7	106.1	29.3	134.4	38.9	0.0
4464	333.9	90.7	30.4	397.8	112.8	29.9	144.0	41.6	31.0
4465	417.1	102.5	31.0	497.0	127.4	30.5	281.6	81.4	1.0
4466	0.0	0.0	30.5	0.0	0.0	30.0	0.0	0.0	45.0
4467	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4468	373.5	122.9	26.9	384.8	101.1	120.8	384.8	101.1	120.8
4469	2.0	1.5	0.0	1.9	1.5	0.0	6.4	1.9	0.0
4470	2.0	1.5	0.0	1.9	1.5	0.0	6.4	1.9	0.0
4471	6.0	2.0	6.0	7.0	2.5	9.5	16.0	4.6	12.0
4472	6.0	2.0	6.0	7.0	2.5	9.5	32.0	9.3	0.0
4473	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4474	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4475	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4476	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
4477	0.0	0.0	2.0	0.0	0.0	2.0	114.5	33.3	17.0
4478	0.0	0.0	0.0	0.0	0.0	0.0	16.0	4.6	0.0
4479	22.9	4.5	1.0	25.5	4.5	1.1	16.0	4.6	0.0
4480	109.7	43.1	9.9	122.2	43.2	11.1	122.2	43.2	11.1
4481	135.0	71.4	18.8	150.4	71.5	21.0	150.4	71.5	21.0
4482	3.6	1.5	4.6	4.0	1.5	5.1	4.0	1.5	5.1
4483	964.0	289.9	2.1	1074.4	290.5	2.3	1074.4	290.5	2.3
	188,488.0	**53,626.0**	**49,501.2**	**240,515.4**	**72,840.2**	**67,084.6**	**225,692.0**	**70,618.1**	**74,804.4**

Appendix E

Traffic Noise Prediction Model

FHWA 77-108 Traffic Noise Prediction Model **Project: Palmdale GP (18-06038) Existing**

	Output						Inputs													Auto Inputs	
	dBA at 50 feet			Distance to CNEL Contour																	
ID	$L_{eq\text{-}24hr}$	L_{dn}	CNEL	70 dBA	65 dBA	60 dBA	Roadway	Segment	ADT	Posted Speed Limit	Grade	% Autos	% Med Trucks	% Heavy Trucks	% Daytime	% Evening	% Night	Number of Lanes	Site Condition	Distance to Reciever	Ground Absorption	Lane Distance
1	71.1	74.8	75.2	112	240	518	Columbia Way/Avenue M	10th Street W to Sierra Hwy	23,348	48	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	72.0	75.7	76.1	127	274	591	Columbia Way/Avenue M	Sierra Hwy to 10th Street E	28,434	48	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	69.9	73.6	74.0	92	199	428	Columbia Way/Avenue M	10th Street E to 20th Street E	17,513	48	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	68.9	72.6	73.0	79	170	365	Columbia Way/Avenue M	20th Street E to 30th Street E	13,832	48	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	66.2	69.9	70.3	52	113	242	Columbia Way/Avenue M	30th Street E to 40th Street E	7,475	48	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	67.7	71.4	71.8	66	142	305	Columbia Way/Avenue M	40th Street E to 50th Street	10,559	48	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
2	68.5	72.2	72.6	74	160	345	Rancho Vista Ave/Avenue P	50th Street W to Town Center Dr	16,758	40	0	92%	3%	5%	75%	10%	15%	6	Soft	50	0.5	68
	69.2	72.9	73.3	83	179	386	Rancho Vista Ave/Avenue P	Town Center Dr to 30th Street W	20,985	40	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	69.5	73.2	73.6	87	188	404	Rancho Vista Ave/Avenue P	30th Street W to 25th Street W	22,457	40	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	70.4	74.1	74.5	100	215	463	Rancho Vista Ave/Avenue P	25th Street W to 20th Street W	27,509	40	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	70.2	73.9	74.3	97	209	451	Rancho Vista Ave/Avenue P	20th Street W to 15th Street W	26,453	40	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	72.4	76.1	76.5	136	293	632	Rancho Vista Ave/Avenue P	15th Street to 10th Street W	41,536	40	0	92%	3%	5%	75%	10%	15%	6	Soft	50	0.5	68
	71.7	75.4	75.8	122	263	567	Rancho Vista Ave/Avenue P	10th Street W to SR 14	35,290	40	0	92%	3%	5%	75%	10%	15%	6	Soft	50	0.5	68
	69.7	73.4	73.8	89	192	415	Rancho Vista Ave/Avenue P	SR 14 to Country Club Dr	23,332	40	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	70.2	73.9	74.3	97	209	451	Rancho Vista Ave/Avenue P	Country Club Dr to Division St	26,481	40	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	69.5	73.2	73.6	87	187	403	Rancho Vista Ave/Avenue P	Division St to Sierra Hwy	22,334	40	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
3	71.3	75.0	75.4	115	247	532	East Avenue P	Sierra Hwy to 8th Street E	33,863	40	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	69.9	73.6	74.0	92	199	428	East Avenue P	8th Street E to 15th Street E	24,509	40	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	70.0	73.7	74.1	93	201	434	East Avenue P	15th Street E to 20th Street E	24,973	40	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	68.7	72.4	72.8	77	166	358	East Avenue P	20th Street E to 25th Street E	18,699	40	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	67.7	71.4	71.8	66	141	305	East Avenue P	25th Street E to 30th Street E	14,695	40	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
4	59.3	63.0	63.4	18	39	84	Avenue Q	Trade Center Dr to 5th Street W	2,216	39	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	61.6	65.3	65.7	26	56	120	Avenue Q	Division Street to 6th Street E	3,815	39	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	65.4	69.2	69.5	47	100	216	Avenue Q	Sierra Hwy to 10th Street E	9,447	39	0	92%	3%	5%	75%	10%	15%	2	Soft	50	0.5	20
	64.9	68.6	69.0	43	92	199	Avenue Q	10th Street E to 20th Street E	8,323	39	0	92%	3%	5%	75%	10%	15%	2	Soft	50	0.5	20
	64.2	67.9	68.3	38	83	179	Avenue Q	20th Street E to 30th Street E	7,106	39	0	92%	3%	5%	75%	10%	15%	2	Soft	50	0.5	20
	62.6	66.4	66.7	30	65	141	Avenue Q	30th Street E to 40th Street E	4,960	39	0	92%	3%	5%	75%	10%	15%	2	Soft	50	0.5	20
5	68.4	72.1	72.5	73	157	339	Elizabeth Lake Rd	25th Street W to 20th Street W	13,937	45	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	68.3	72.0	72.4	73	156	337	Elizabeth Lake Rd	20th Street W to 15th Street W	13,828	45	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	69.7	73.4	73.8	90	193	415	Elizabeth Lake Rd	15th Street W to 10th Street W	18,930	45	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
6	70.2	73.9	74.3	97	208	449	Palmdale Blvd	10th Street W to Trade Center Dr	17,408	50	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	70.0	73.7	74.1	94	201	434	Palmdale Blvd	Trade Center Dr to 5th Street W	16,548	50	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	72.2	75.9	76.3	131	282	607	Palmdale Blvd	5th Street W to State Route 14	27,366	50	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	72.0	75.8	76.1	128	276	595	Palmdale Blvd	Division Street to 5th St E	25,175	50	0	92%	3%	5%	75%	10%	15%	6	Soft	50	0.5	68
	71.8	75.5	75.9	124	267	575	Palmdale Blvd	5th Street E to 10th Street E	25,257	50	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	71.9	75.6	76.0	126	271	585	Palmdale Blvd	10th Street E to 15th Street E	25,869	50	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	70.6	74.3	74.7	103	223	480	Palmdale Blvd	15th Street E to 20th Street E	19,223	50	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	71.5	75.2	75.6	118	254	548	Palmdale Blvd	20th Street E to 25th Street E	23,470	50	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	70.5	74.2	74.6	101	217	467	Palmdale Blvd	40th Street E to 47th Street E	18,458	50	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	69.3	73.0	73.4	84	181	391	Palmdale Blvd	50th Street E to 60th Street E	14,147	50	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	70.0	73.7	74.1	94	203	436	Palmdale Blvd	70th Street E to 80th Street E	16,681	50	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
7	68.1	71.8	72.2	70	151	326	E Avenue R	Sierra Hwy to 10th Street E	19,490	36	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	67.9	71.6	72.0	68	146	315	E Avenue R	10th Street E to 20th Street E	18,495	36	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	67.9	71.6	72.0	68	146	314	E Avenue R	20th Street E to 30th Street E	18,408	36	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	66.9	70.6	71.0	58	125	269	E Avenue R	30th Street E to 40th Street E	14,851	36	0	92%	3%	5%	75%	10%	15%	3	Soft	50	0.5	32
	67.3	71.0	71.4	62	134	289	E Avenue R	40th Street E to 47th Street E	16,231	36	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	67.0	70.7	71.1	59	128	276	E Avenue R	47th Street E to 60th Street E	15,158	36	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	62.9	66.6	67.0	31	68	146	E Avenue R	60th Street E to 70th Street E	5,811	36	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
8	65.2	68.9	69.3	45	96	207	Avenue S	Tovey Avenue to Tierra Subida Ave	9,346	36	0	92%	3%	5%	75%	10%	15%	6	Soft	50	0.5	68
	66.7	70.4	70.8	56	122	262	Avenue S	Tierra Subida Ave to SR 14	14,027	36	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	66.4	70.1	70.5	54	117	251	Avenue S	SR 14 to 5th Street E	13,190	36	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	69.3	73.1	73.4	85	183	394	Avenue S	5th Street E to Sierra Hwy	25,828	36	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	70.3	74.0	74.4	98	211	456	Avenue S	Sierra Hwy to 10th Street E	32,170	36	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	70.0	73.7	74.1	93	201	433	Avenue S	10th Street E to 20th Street E	29,830	36	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	70.0	73.8	74.1	94	203	438	Avenue S	20th Street E to 25th Street E	30,323	36	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	69.9	73.6	74.0	92	198	426	Avenue S	25th Street E to 30th Street E	29,058	36	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	69.3	73.0	73.4	84	181	390	Avenue S	30th Street E to 35th Street E	24,137	36	0	92%	3%	5%	75%	10%	15%	6	Soft	50	0.5	68
	69.2	72.9	73.3	83	179	385	Avenue S	35th Street E to 40th Street E	23,612	36	0	92%	3%	5%	75%	10%	15%	6	Soft	50	0.5	68
	69.2	73.0	73.3	83	180	387	Avenue S	40th Street E to 47th Street E	23,867	36	0	92%	3%	5%	75%	10%	15%	6	Soft	50	0.5	68
	68.5	72.2	72.6	75	161	346	Avenue S	47th Street E to 55th Street E	21,305	36	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
9	74.4	78.1	78.4	183	394	849	Pearblossom Hwy/Avenue T	Sierra Hwy to 25th Street E	48,960	48	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	73.5	77.2	77.6	161	347	747	Pearblossom Hwy/Avenue T	25th Street E to 40th Street E	40,419	48	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	71.0	74.7	75.1	110	237	510	Pearblossom Hwy/Avenue T	40th Street E to 47th Street E	22,788	48	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	71.1	74.8	75.1	110	237	511	Pearblossom Hwy/Avenue T	47th Street E to Fort Tejon Road	22,898	48	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	68.6	72.3	72.7	76	163	351	Pearblossom Hwy/Avenue T	Fort Tejon Road to 70th Street E	13,027	48	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
10	68.7	72.5	72.8	77	166	359	10th Street W/Tierra Subida Ave	W Avenue M to W Avenue N	15,186	45	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	69.8	73.5	73.9	91	196	422	10th Street W/Tierra Subida Ave	W Avenue N to W Avenue O	19,402	45	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	69.4	73.1	73.5	85	184	396	10th Street W/Tierra Subida Ave	W Avenue O to SR 14	17,627	45	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	72.6	76.4	76.7	141	303	653	10th Street W/Tierra Subida Ave	SR 14 to Rancho Vista Blvd	35,324	45	0	92%	3%	5%	75%	10%	15%	6	Soft	50	0.5	68
	72.2	75.9	76.3	132	284	611	10th Street W/Tierra Subida Ave	Rancho Vista Blvd to Technology Dr	31,954	45	0	92%	3%	5%	75%	10%	15%	6	Soft	50	0.5	68
	72.9	76.7	77.0	147	317	684	10th Street W/Tierra Subida Ave	Technology Dr to W Palmdale Blvd	39,039	45	0	92%	3%	5%	75%	10%	15%	5	Soft	50	0.5	56

	69.1	72.8	73.2	82	176	380	10th Street W/Tierra Subida Ave	W Palmdale Blvd to Rayburn Rd	16,569	45	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
11	72.8	76.5	76.9	145	312	672	Sierra Hwy	Columbia Way to E Avenue N	25,408	56	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	73.1	76.8	77.2	151	325	700	Sierra Hwy	E Avenue N to E Avenue O	27,037	56	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	73.8	77.6	77.9	169	365	785	Sierra Hwy	E Avenue O to E Avenue P	32,133	56	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	70.4	74.1	74.4	99	213	459	Sierra Hwy	E Avenue P to E Avenue Q	14,366	56	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	70.6	74.3	74.7	103	221	476	Sierra Hwy	E Avenue Q to Palmdale Blvd	15,176	56	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	68.8	72.5	72.9	78	167	360	Sierra Hwy	Palmdale Blvd to E Avenue R	9,993	56	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	67.4	71.1	71.5	63	136	292	Sierra Hwy	E Avenue R to E Avenue S	7,289	56	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	67.8	71.6	71.9	67	145	313	Sierra Hwy	E Avenue S to Pearblossom Hwy	8,070	56	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
12	59.0	62.7	63.1	17	37	81	10th Street E	E Avenue P to E Avenue Q	2,357	37	0	92%	3%	5%	75%	10%	15%	2	Soft	50	0.5	20
	63.0	66.7	67.1	32	69	149	10th Street E	E Avenue Q to E Palmdale Blvd	5,732	37	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	62.9	66.6	67.0	32	68	146	10th Street E	E. Palmdale Blvd to Avenue R	5,756	37	0	92%	3%	5%	75%	10%	15%	2	Soft	50	0.5	20
	61.2	64.9	65.3	24	52	113	10th Street E	Avenue R to Avenue S1	3,898	37	0	92%	3%	5%	75%	10%	15%	2	Soft	50	0.5	20
13	59.2	62.9	63.3	18	39	83	20th Street E	E Avenue P to E Avenue Q	4,738	37	0	97%	2%	1%	75%	10%	15%	2	Soft	50	0.5	20
	61.4	65.1	65.4	25	54	115	20th Street E	E Avenue Q to Palmdale Blvd	7,760	37	0	97%	2%	1%	75%	10%	15%	2	Soft	50	0.5	20
	63.7	67.5	67.8	36	77	167	20th Street E	Palmdale Blvd to E Avenue R	13,063	37	0	97%	2%	1%	75%	10%	15%	4	Soft	50	0.5	44
	63.5	67.2	67.5	34	74	159	20th Street E	E Avenue R to E Avenue S	12,215	37	0	97%	2%	1%	75%	10%	15%	4	Soft	50	0.5	44
14	63.3	67.0	67.4	33	72	155	25th Street E	E Avenue P to E Avenue Q	4,102	47	0	92%	3%	5%	75%	10%	15%	2	Soft	50	0.5	20
	65.6	69.3	69.7	47	102	220	25th Street E	E Avenue Q to Palmdale Blvd	6,948	47	0	92%	3%	5%	75%	10%	15%	2	Soft	50	0.5	20
	68.4	72.1	72.5	73	157	339	25th Street E	Palmdale Blvd to E Avenue R	12,851	47	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	69.5	73.2	73.6	87	187	402	25th Street E	E Avenue R to E Avenue S	16,629	47	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	68.8	72.5	72.9	78	169	363	25th Street E	E Avenue S to Pearblossom Hwy	14,269	47	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
15	62.3	66.0	66.3	29	62	133	30th Street E	E Avenue P to E Avenue Q	5,987	33	0	92%	3%	5%	75%	10%	15%	2	Soft	50	0.5	20
	62.3	66.0	66.4	29	62	134	30th Street E	E Avenue Q to Palmdale Blvd	6,083	33	0	92%	3%	5%	75%	10%	15%	2	Soft	50	0.5	20
	63.5	67.2	67.6	34	74	160	30th Street E	Palmdale Blvd to E Avenue R	7,721	33	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	64.1	67.8	68.2	38	82	176	30th Street E	E Avenue R to E Avenue S	8,871	33	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
16	63.2	66.9	67.3	33	71	153	40th Street E	E Avenue P to E Avenue Q	5,610	39	0	92%	3%	5%	75%	10%	15%	2	Soft	50	0.5	20
	64.3	68.0	68.3	39	84	180	40th Street E	E Avenue Q to E Palmdale Blvd	7,185	39	0	92%	3%	5%	75%	10%	15%	2	Soft	50	0.5	20
	65.7	69.4	69.8	48	104	225	40th Street E	E Palmdale Blvd to E Avenue R	9,892	39	0	92%	3%	5%	75%	10%	15%	3	Soft	50	0.5	32
	65.3	69.0	69.4	46	98	211	40th Street E	E Avenue R to E Avenue S	9,037	39	0	92%	3%	5%	75%	10%	15%	3	Soft	50	0.5	32
	65.9	69.6	70.0	50	108	232	40th Street E	E Avenue S to Sierra Hwy	10,505	39	0	92%	3%	5%	75%	10%	15%	2	Soft	50	0.5	20
17	69.5	73.2	73.6	87	188	405	47th Street E/50th Street E/Ft Tejon Rd	E Avenue M to E Avenue N	18,016	46	0	92%	3%	5%	75%	10%	15%	2	Soft	50	0.5	20
	68.1	71.8	72.2	70	150	324	47th Street E/50th Street E/Ft Tejon Rd	E Avenue P to Palmdale Blvd	12,874	46	0	92%	3%	5%	75%	10%	15%	2	Soft	50	0.5	20
	71.2	74.9	75.3	113	243	523	47th Street E/50th Street E/Ft Tejon Rd	Palmdale Blvd to E Avenue R	25,702	46	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	71.4	75.1	75.5	116	251	540	47th Street E/50th Street E/Ft Tejon Rd	E Avenue R to E Avenue R-8	26,908	46	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	70.1	73.8	74.2	95	205	441	47th Street E/50th Street E/Ft Tejon Rd	E Avenue R-8 to E Avenue S	19,854	46	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	71.1	74.8	75.2	111	239	515	47th Street E/50th Street E/Ft Tejon Rd	E Avenue S to Essex Dr	24,514	46	0	92%	3%	5%	75%	10%	15%	5	Soft	50	0.5	56
	71.0	74.7	75.1	109	234	505	47th Street E/50th Street E/Ft Tejon Rd	Essex Dr to Pearblossom Hwy	24,367	46	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	70.3	74.1	74.4	99	213	459	47th Street E/50th Street E/Ft Tejon Rd	Pearblossom Hwy to E Avenue T-8	21,099	46	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
18	64.4	68.1	68.5	40	85	184	Technology Dr	10th Street W to Trade Center Dr	7,205	39	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	64.6	68.3	68.7	41	88	190	Technology Dr	5th Street W to Division St	7,574	39	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	64.7	68.5	68.8	42	90	194	Technology Dr	Division St to Sierra Hwy	7,805	39	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44

FHWA 77-108 Traffic Noise Prediction Model **Project: Palmdale GP (18-06038) 2045 Preffered Plan**

	Output						Inputs													Auto Inputs	
	dBA at 50 feet			Distance to CNEL Contour																	
ID	$L_{eq\text{-}24hr}$	L_{dn}	CNEL	70 dBA	65 dBA	60 dBA	Roadway	Segment	ADT	Posted Speed Limit	Grade	% Autos	% Med Trucks	% Heavy Trucks	% Daytime	% Evening	% Night	Number of Lanes	Site Condition	Distance to Reciever	Ground Absorption	Lane Distance
1	72.6	76.3	76.7	140	301	649	Columbia Way/Avenue M	10th Street W to Sierra Hwy	32,760	48	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	73.0	76.7	77.1	148	319	688	Columbia Way/Avenue M	Sierra Hwy to 10th Street E	35,733	48	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	71.1	74.8	75.2	112	240	518	Columbia Way/Avenue M	10th Street E to 20th Street E	23,321	48	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	69.9	73.6	74.0	92	198	427	Columbia Way/Avenue M	20th Street E to 30th Street E	17,482	48	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	68.3	72.0	72.4	72	156	336	Columbia Way/Avenue M	30th Street E to 40th Street E	12,192	48	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	69.0	72.7	73.1	81	174	374	Columbia Way/Avenue M	40th Street E to 50th Street	14,334	48	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
2	68.3	72.0	72.3	72	154	333	Rancho Vista Ave/Avenue P	50th Street W to Town Center Dr	16,758	40	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	69.2	72.9	73.3	83	179	386	Rancho Vista Ave/Avenue P	Town Center Dr to 30th Street W	20,985	40	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	69.5	73.2	73.6	87	188	404	Rancho Vista Ave/Avenue P	30th Street W to 25th Street W	22,457	40	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	70.4	74.1	74.5	100	215	463	Rancho Vista Ave/Avenue P	25th Street W to 20th Street W	27,509	40	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	70.4	74.1	74.5	99	214	460	Rancho Vista Ave/Avenue P	20th Street W to 15th Street W	27,276	40	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	72.4	76.1	76.5	136	293	632	Rancho Vista Ave/Avenue P	15th Street to 10th Street W	41,536	40	0	92%	3%	5%	75%	10%	15%	6	Soft	50	0.5	68
	71.7	75.4	75.8	122	263	567	Rancho Vista Ave/Avenue P	10th Street W to SR 14	35,290	40	0	92%	3%	5%	75%	10%	15%	6	Soft	50	0.5	68
	69.7	73.4	73.8	89	192	415	Rancho Vista Ave/Avenue P	SR 14 to Country Club Dr	23,332	40	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	70.2	73.9	74.3	97	209	451	Rancho Vista Ave/Avenue P	Country Club Dr to Division St	26,481	40	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	69.5	73.2	73.6	87	187	403	Rancho Vista Ave/Avenue P	Division St to Sierra Hwy	22,334	40	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
3	71.7	75.4	75.8	122	262	564	East Avenue P	Sierra Hwy to 8th Street E	37,052	40	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	70.4	74.1	74.5	100	216	465	East Avenue P	8th Street E to 15th Street E	27,698	40	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	70.9	74.6	75.0	107	231	497	East Avenue P	15th Street E to 20th Street E	30,657	40	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	69.8	73.5	73.9	91	195	420	East Avenue P	20th Street E to 25th Street E	23,798	40	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	68.8	72.5	72.9	78	167	360	East Avenue P	25th Street E to 30th Street E	18,896	40	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
4	62.6	66.3	66.7	30	65	140	Avenue Q	Trade Center Dr to 5th Street W	4,805	39	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	64.7	68.5	68.8	42	90	194	Avenue Q	Division Street to 6th Street E	8,053	39	0	92%	3%	5%	75%	10%	15%	2	Soft	50	0.5	20
	65.8	69.5	69.9	49	105	227	Avenue Q	Sierra Hwy to 10th Street E	10,165	39	0	92%	3%	5%	75%	10%	15%	2	Soft	50	0.5	20
	64.9	68.6	69.0	43	92	199	Avenue Q	10th Street E to 20th Street E	8,349	39	0	92%	3%	5%	75%	10%	15%	2	Soft	50	0.5	20
	64.3	68.0	68.4	39	84	182	Avenue Q	20th Street E to 30th Street E	7,293	39	0	92%	3%	5%	75%	10%	15%	2	Soft	50	0.5	20
	64.6	68.3	68.7	41	88	190	Avenue Q	30th Street E to 40th Street E	7,814	39	0	92%	3%	5%	75%	10%	15%	2	Soft	50	0.5	20
5	70.1	73.8	74.2	96	206	443	Elizabeth Lake Rd	25th Street W to 20th Street W	20,874	45	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	69.0	72.7	73.1	80	173	372	Elizabeth Lake Rd	20th Street W to 15th Street W	16,038	45	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	69.8	73.6	73.9	92	197	425	Elizabeth Lake Rd	15th Street W to 10th Street W	19,583	45	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
6	71.3	75.0	75.3	114	245	528	Palmdale Blvd	10th Street W to Trade Center Dr	22,179	50	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	70.3	74.0	74.4	98	211	455	Palmdale Blvd	Trade Center Dr to 5th Street W	17,785	50	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	72.2	75.9	76.3	131	282	607	Palmdale Blvd	5th Street W to State Route 14	27,366	50	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	72.1	75.8	76.2	129	279	601	Palmdale Blvd	Division Street to 5th St E	25,510	50	0	92%	3%	5%	75%	10%	15%	6	Soft	50	0.5	68
	71.8	75.5	75.9	124	267	575	Palmdale Blvd	5th Street E to 10th Street E	25,257	50	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	71.9	75.6	76.0	126	271	585	Palmdale Blvd	10th Street E to 15th Street E	25,869	50	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	70.6	74.3	74.7	103	223	480	Palmdale Blvd	15th Street E to 20th Street E	19,233	50	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	71.7	75.4	75.8	122	263	566	Palmdale Blvd	20th Street E to 25th Street E	24,649	50	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	72.3	76.0	76.4	133	286	616	Palmdale Blvd	40th Street E to 47th Street E	28,011	50	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	71.5	75.3	75.6	119	256	551	Palmdale Blvd	50th Street E to 60th Street E	23,700	50	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	69.9	73.6	74.0	92	199	428	Palmdale Blvd	70th Street E to 80th Street E	16,681	50	0	92%	3%	5%	75%	10%	15%	2	Soft	50	0.5	20
7	68.1	71.8	72.2	70	151	326	E Avenue R	Sierra Hwy to 10th Street E	19,490	36	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	67.9	71.6	72.0	68	146	315	E Avenue R	10th Street E to 20th Street E	18,495	36	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	67.9	71.6	72.0	68	146	314	E Avenue R	20th Street E to 30th Street E	18,408	36	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	67.9	71.6	72.0	68	146	315	E Avenue R	30th Street E to 40th Street E	18,843	36	0	92%	3%	5%	75%	10%	15%	3	Soft	50	0.5	32
	68.8	72.5	72.9	78	168	363	E Avenue R	40th Street E to 47th Street E	22,831	36	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	67.6	71.3	71.7	65	140	301	E Avenue R	47th Street E to 60th Street E	17,279	36	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	63.4	67.1	67.5	34	73	158	E Avenue R	60th Street E to 70th Street E	6,564	36	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
8	65.6	69.3	69.7	48	103	221	Avenue S	Tovey Avenue to Tierra Subida Ave	10,895	36	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	67.6	71.3	71.7	65	140	302	Avenue S	Tierra Subida Ave to SR 14	17,336	36	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	66.4	70.1	70.5	54	117	251	Avenue S	SR 14 to 5th Street E	13,190	36	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	69.3	73.1	73.4	85	183	394	Avenue S	5th Street E to Sierra Hwy	25,828	36	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	70.3	74.0	74.4	98	211	456	Avenue S	Sierra Hwy to 10th Street E	32,170	36	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	70.0	73.7	74.1	93	201	433	Avenue S	10th Street E to 20th Street E	29,830	36	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	70.0	73.8	74.1	94	203	438	Avenue S	20th Street E to 25th Street E	30,323	36	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	69.9	73.6	74.0	92	198	426	Avenue S	25th Street E to 30th Street E	29,058	36	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	69.3	73.0	73.4	84	181	390	Avenue S	30th Street E to 35th Street E	24,137	36	0	92%	3%	5%	75%	10%	15%	6	Soft	50	0.5	68
	69.2	72.9	73.3	83	179	385	Avenue S	35th Street E to 40th Street E	23,612	36	0	92%	3%	5%	75%	10%	15%	6	Soft	50	0.5	68
	69.2	73.0	73.3	83	180	387	Avenue S	40th Street E to 47th Street E	23,867	36	0	92%	3%	5%	75%	10%	15%	6	Soft	50	0.5	68
	68.5	72.2	72.6	75	161	346	Avenue S	47th Street E to 55th Street E	21,305	36	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
9	74.7	78.4	78.8	192	413	889	Pearblossom Hwy/Avenue T	Sierra Hwy to 25th Street E	52,520	48	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	74.0	77.7	78.1	173	373	803	Pearblossom Hwy/Avenue T	25th Street E to 40th Street E	45,045	48	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	72.5	76.2	76.6	138	296	639	Pearblossom Hwy/Avenue T	40th Street E to 47th Street E	31,951	48	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	72.5	76.2	76.6	138	297	640	Pearblossom Hwy/Avenue T	47th Street E to Fort Tejon Road	32,061	48	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	70.9	74.6	75.0	108	232	501	Pearblossom Hwy/Avenue T	Fort Tejon Road to 70th Street E	22,190	48	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
10	68.7	72.5	72.8	77	166	359	10th Street W/Tierra Subida Ave	W Avenue M to W Avenue N	15,186	45	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	70.5	74.2	74.6	102	219	472	10th Street W/Tierra Subida Ave	W Avenue N to W Avenue O	22,897	45	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	69.4	73.1	73.5	85	184	396	10th Street W/Tierra Subida Ave	W Avenue O to SR 14	17,627	45	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	72.6	76.4	76.7	141	303	653	10th Street W/Tierra Subida Ave	SR 14 to Rancho Vista Blvd	35,324	45	0	92%	3%	5%	75%	10%	15%	6	Soft	50	0.5	68
	72.9	76.6	77.0	147	316	682	10th Street W/Tierra Subida Ave	Rancho Vista Blvd to Technology Dr	37,661	45	0	92%	3%	5%	75%	10%	15%	6	Soft	50	0.5	68
	73.8	77.5	77.9	168	362	779	10th Street W/Tierra Subida Ave	Technology Dr to W Palmdale Blvd	47,477	45	0	92%	3%	5%	75%	10%	15%	5	Soft	50	0.5	56

	69.6	73.3	73.7	88	190	409	10th Street W/Tierra Subida Ave	W Palmdale Blvd to Rayburn Rd	18,512	45	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
11	74.6	78.3	78.7	189	407	877	Sierra Hwy	Columbia Way to E Avenue N	37,932	56	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	74.4	78.1	78.5	183	395	850	Sierra Hwy	E Avenue N to E Avenue O	36,183	56	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	76.1	79.8	80.2	238	513	1105	Sierra Hwy	E Avenue O to E Avenue P	53,660	56	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	70.4	74.1	74.4	99	213	459	Sierra Hwy	E Avenue P to E Avenue Q	14,366	56	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	70.6	74.3	74.7	103	222	478	Sierra Hwy	E Avenue Q to Palmdale Blvd	15,253	56	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	68.8	72.5	72.9	78	167	360	Sierra Hwy	Palmdale Blvd to E Avenue R	9,993	56	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	67.4	71.1	71.5	63	136	292	Sierra Hwy	E Avenue R to E Avenue S	7,289	56	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	67.8	71.6	71.9	67	145	313	Sierra Hwy	E Avenue S to Pearblossom Hwy	8,070	56	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
12	59.0	62.7	63.1	17	37	81	10th Street E	E Avenue P to E Avenue Q	2,357	37	0	92%	3%	5%	75%	10%	15%	2	Soft	50	0.5	20
	63.0	66.7	67.1	32	69	149	10th Street E	E Avenue Q to E Palmdale Blvd	5,732	37	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	62.9	66.6	67.0	32	68	146	10th Street E	E. Palmdale Blvd to Avenue R	5,756	37	0	92%	3%	5%	75%	10%	15%	2	Soft	50	0.5	20
	61.2	64.9	65.3	24	52	113	10th Street E	Avenue R to Avenue S1	3,898	37	0	92%	3%	5%	75%	10%	15%	2	Soft	50	0.5	20
13	60.5	64.2	64.6	22	47	101	20th Street E	E Avenue P to E Avenue Q	6,362	37	0	97%	2%	1%	75%	10%	15%	2	Soft	50	0.5	20
	62.3	66.1	66.4	29	62	134	20th Street E	E Avenue Q to Palmdale Blvd	9,746	37	0	97%	2%	1%	75%	10%	15%	2	Soft	50	0.5	20
	63.7	67.5	67.8	36	77	167	20th Street E	Palmdale Blvd to E Avenue R	13,063	37	0	97%	2%	1%	75%	10%	15%	4	Soft	50	0.5	44
	63.7	67.4	67.8	36	77	166	20th Street E	E Avenue R to E Avenue S	12,938	37	0	97%	2%	1%	75%	10%	15%	4	Soft	50	0.5	44
14	66.5	70.2	70.6	55	118	255	25th Street E	E Avenue P to E Avenue Q	8,624	47	0	92%	3%	5%	75%	10%	15%	2	Soft	50	0.5	20
	66.7	70.4	70.8	56	121	261	25th Street E	E Avenue Q to Palmdale Blvd	8,947	47	0	92%	3%	5%	75%	10%	15%	2	Soft	50	0.5	20
	68.4	72.1	72.5	74	159	342	25th Street E	Palmdale Blvd to E Avenue R	13,007	47	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	69.5	73.2	73.6	87	187	402	25th Street E	E Avenue R to E Avenue S	16,629	47	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	68.8	72.5	72.9	78	169	363	25th Street E	E Avenue S to Pearblossom Hwy	14,269	47	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
15	63.5	67.2	67.6	35	74	160	30th Street E	E Avenue P to E Avenue Q	7,961	33	0	92%	3%	5%	75%	10%	15%	2	Soft	50	0.5	20
	63.4	67.1	67.5	34	73	158	30th Street E	E Avenue Q to Palmdale Blvd	7,821	33	0	92%	3%	5%	75%	10%	15%	2	Soft	50	0.5	20
	63.8	67.5	67.9	36	78	169	30th Street E	Palmdale Blvd to E Avenue R	8,354	33	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	64.1	67.8	68.2	38	82	176	30th Street E	E Avenue R to E Avenue S	8,871	33	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
16	66.4	70.2	70.5	54	117	252	40th Street E	E Avenue P to E Avenue Q	11,891	39	0	92%	3%	5%	75%	10%	15%	2	Soft	50	0.5	20
	64.3	68.0	68.3	39	84	180	40th Street E	E Avenue Q to E Palmdale Blvd	7,185	39	0	92%	3%	5%	75%	10%	15%	2	Soft	50	0.5	20
	67.2	70.9	71.3	61	132	284	40th Street E	E Palmdale Blvd to E Avenue R	14,092	39	0	92%	3%	5%	75%	10%	15%	3	Soft	50	0.5	32
	66.7	70.4	70.8	56	121	262	40th Street E	E Avenue R to E Avenue S	12,432	39	0	92%	3%	5%	75%	10%	15%	3	Soft	50	0.5	32
	65.9	69.7	70.0	50	108	233	40th Street E	E Avenue S to Sierra Hwy	10,612	39	0	92%	3%	5%	75%	10%	15%	2	Soft	50	0.5	20
17	70.6	74.3	74.7	103	221	476	47th Street E/50th Street E/Ft Tejon Rd	E Avenue M to E Avenue N	22,987	46	0	92%	3%	5%	75%	10%	15%	2	Soft	50	0.5	20
	69.1	72.8	73.2	81	175	377	47th Street E/50th Street E/Ft Tejon Rd	E Avenue P to Palmdale Blvd	16,180	46	0	92%	3%	5%	75%	10%	15%	2	Soft	50	0.5	20
	71.4	75.1	75.4	115	249	535	47th Street E/50th Street E/Ft Tejon Rd	Palmdale Blvd to E Avenue R	26,588	46	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	71.4	75.1	75.5	116	251	540	47th Street E/50th Street E/Ft Tejon Rd	E Avenue R to E Avenue R-8	26,908	46	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	70.1	73.8	74.2	95	205	441	47th Street E/50th Street E/Ft Tejon Rd	E Avenue R-8 to E Avenue S	19,854	46	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	71.8	75.5	75.9	124	266	574	47th Street E/50th Street E/Ft Tejon Rd	E Avenue S to Essex Dr	28,816	46	0	92%	3%	5%	75%	10%	15%	5	Soft	50	0.5	56
	71.0	74.7	75.1	109	234	505	47th Street E/50th Street E/Ft Tejon Rd	Essex Dr to Pearblossom Hwy	24,367	46	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	72.0	75.7	76.1	127	274	591	47th Street E/50th Street E/Ft Tejon Rd	Pearblossom Hwy to E Avenue T-8	30,811	46	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
18	64.4	68.1	68.5	40	86	185	Technology Dr	10th Street W to Trade Center Dr	7,277	39	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	64.6	68.3	68.7	41	88	190	Technology Dr	5th Street W to Division St	7,574	39	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44
	64.7	68.5	68.8	42	90	194	Technology Dr	Division St to Sierra Hwy	7,805	39	0	92%	3%	5%	75%	10%	15%	4	Soft	50	0.5	44

Roadway	Segment	Existing ADT	2045 Preferred Plan ADT	Existing CNEL at 50 feet	2045 CNEL at 50 feet	Traffic Noise Increase
Columbia Way/Avenue M	10th Street W to Sierra Hwy	23,348	32,760	75.2	76.7	1.5
Columbia Way/Avenue M	Sierra Hwy to 10th Street E	28,434	35,733	76.1	77.1	1.0
Columbia Way/Avenue M	10th Street E to 20th Street E	17,513	23,321	74.0	75.2	1.2
Columbia Way/Avenue M	20th Street E to 30th Street E	13,832	17,482	73.0	74.0	1.0
Columbia Way/Avenue M	30th Street E to 40th Street E	7,475	12,192	70.3	72.4	2.1
Columbia Way/Avenue M	40th Street E to 50th Street	10,559	14,334	71.8	73.1	1.3
Rancho Vista Ave/Avenue P	50th Street W to Town Center Dr	16,758	16,758	72.6	72.3	-0.2
Rancho Vista Ave/Avenue P	Town Center Dr to 30th Street W	20,985	20,985	73.3	73.3	0.0
Rancho Vista Ave/Avenue P	30th Street W to 25th Street W	22,457	22,457	73.6	73.6	0.0
Rancho Vista Ave/Avenue P	25th Street W to 20th Street W	27,509	27,509	74.5	74.5	0.0
Rancho Vista Ave/Avenue P	20th Street W to 15th Street W	26,453	27,276	74.3	74.5	0.1
Rancho Vista Ave/Avenue P	15th Street to 10th Street W	41,536	41,536	76.5	76.5	0.0
Rancho Vista Ave/Avenue P	10th Street W to SR 14	35,290	35,290	75.8	75.8	0.0
Rancho Vista Ave/Avenue P	SR 14 to Country Club Dr	23,332	23,332	73.8	73.8	0.0
Rancho Vista Ave/Avenue P	Country Club Dr to Division St	26,481	26,481	74.3	74.3	0.0
Rancho Vista Ave/Avenue P	Division St to Sierra Hwy	22,334	22,334	73.6	73.6	0.0
East Avenue P	Sierra Hwy to 8th Street E	33,863	37,052	75.4	75.8	0.4
East Avenue P	8th Street E to 15th Street E	24,509	27,698	74.0	74.5	0.5
East Avenue P	15th Street E to 20th Street E	24,973	30,657	74.1	75.0	0.9
East Avenue P	20th Street E to 25th Street E	18,699	23,798	72.8	73.9	1.0
East Avenue P	25th Street E to 30th Street E	14,695	18,896	71.8	72.9	1.1
Avenue Q	Trade Center Dr to 5th Street W	2,216	4,805	63.4	66.7	3.4
Avenue Q	Division Street to 6th Street E	3,815	8,053	65.7	68.8	3.1
Avenue Q	Sierra Hwy to 10th Street E	9,447	10,165	69.5	69.9	0.3
Avenue Q	10th Street E to 20th Street E	8,323	8,349	69.0	69.0	0.0
Avenue Q	20th Street E to 30th Street E	7,106	7,293	68.3	68.4	0.1
Avenue Q	30th Street E to 40th Street E	4,960	7,814	66.7	68.7	2.0
Elizabeth Lake Rd	25th Street W to 20th Street W	13,937	20,874	72.5	74.2	1.8
Elizabeth Lake Rd	20th Street W to 15th Street W	13,828	16,038	72.4	73.1	0.6
Elizabeth Lake Rd	15th Street W to 10th Street W	18,930	19,583	73.8	73.9	0.1
Palmdale Blvd	10th Street W to Trade Center Dr	17,408	22,179	74.3	75.3	1.1
Palmdale Blvd	Trade Center Dr to 5th Street W	16,548	17,785	74.1	74.4	0.3
Palmdale Blvd	5th Street W to State Route 14	27,366	27,366	76.3	76.3	0.0
Palmdale Blvd	Division Street to 5th St E	25,175	25,510	76.1	76.2	0.1
Palmdale Blvd	5th Street E to 10th Street E	25,257	25,257	75.9	75.9	0.0
Palmdale Blvd	10th Street E to 15th Street E	25,869	25,869	76.0	76.0	0.0
Palmdale Blvd	15th Street E to 20th Street E	19,223	19,233	74.7	74.7	0.0
Palmdale Blvd	20th Street E to 25th Street E	23,470	24,649	75.6	75.8	0.2
Palmdale Blvd	40th Street E to 47th Street E	18,458	28,011	74.6	76.4	1.8
Palmdale Blvd	50th Street E to 60th Street E	14,147	23,700	73.4	75.6	2.2
Palmdale Blvd	70th Street E to 80th Street E	16,681	16,681	74.1	74.0	-0.1
E Avenue R	Sierra Hwy to 10th Street E	19,490	19,490	72.2	72.2	0.0
E Avenue R	10th Street E to 20th Street E	18,495	18,495	72.0	72.0	0.0
E Avenue R	20th Street E to 30th Street E	18,408	18,408	72.0	72.0	0.0
E Avenue R	30th Street E to 40th Street E	14,851	18,843	71.0	72.0	1.0

E Avenue R	40th Street E to 47th Street E	16,231	22,831	71.4	72.9	1.5
E Avenue R	47th Street E to 60th Street E	15,158	17,279	71.1	71.7	0.6
E Avenue R	60th Street E to 70th Street E	5,811	6,564	67.0	67.5	0.5
Avenue S	Tovey Avenue to Tierra Subida Ave	9,346	10,895	69.3	69.7	0.4
Avenue S	Tierra Subida Ave to SR 14	14,027	17,336	70.8	71.7	0.9
Avenue S	SR 14 to 5th Street E	13,190	13,190	70.5	70.5	0.0
Avenue S	5th Street E to Sierra Hwy	25,828	25,828	73.4	73.4	0.0
Avenue S	Sierra Hwy to 10th Street E	32,170	32,170	74.4	74.4	0.0
Avenue S	10th Street E to 20th Street E	29,830	29,830	74.1	74.1	0.0
Avenue S	20th Street E to 25th Street E	30,323	30,323	74.1	74.1	0.0
Avenue S	25th Street E to 30th Street E	29,058	29,058	74.0	74.0	0.0
Avenue S	30th Street E to 35th Street E	24,137	24,137	73.4	73.4	0.0
Avenue S	35th Street E to 40th Street E	23,612	23,612	73.3	73.3	0.0
Avenue S	40th Street E to 47th Street E	23,867	23,867	73.3	73.3	0.0
Avenue S	47th Street E to 55th Street E	21,305	21,305	72.6	72.6	0.0
Pearblossom Hwy/Avenue T	Sierra Hwy to 25th Street E	48,960	52,520	78.4	78.8	0.3
Pearblossom Hwy/Avenue T	25th Street E to 40th Street E	40,419	45,045	77.6	78.1	0.5
Pearblossom Hwy/Avenue T	40th Street E to 47th Street E	22,788	31,951	75.1	76.6	1.5
Pearblossom Hwy/Avenue T	47th Street E to Fort Tejon Road	22,898	32,061	75.1	76.6	1.5
Pearblossom Hwy/Avenue T	Fort Tejon Road to 70th Street E	13,027	22,190	72.7	75.0	2.3
10th Street W/Tierra Subida Ave	W Avenue M to W Avenue N	15,186	15,186	72.8	72.8	0.0
10th Street W/Tierra Subida Ave	W Avenue N to W Avenue O	19,402	22,897	73.9	74.6	0.7
10th Street W/Tierra Subida Ave	W Avenue O to SR 14	17,627	17,627	73.5	73.5	0.0
10th Street W/Tierra Subida Ave	SR 14 to Rancho Vista Blvd	35,324	35,324	76.7	76.7	0.0
10th Street W/Tierra Subida Ave	Rancho Vista Blvd to Technology D	31,954	37,661	76.3	77.0	0.7
10th Street W/Tierra Subida Ave	Technology Dr to W Palmdale Blvd	39,039	47,477	77.0	77.9	0.8
10th Street W/Tierra Subida Ave	W Palmdale Blvd to Rayburn Rd	16,569	18,512	73.2	73.7	0.5
Sierra Hwy	Columbia Way to E Avenue N	25,408	37,932	76.9	78.7	1.7
Sierra Hwy	E Avenue N to E Avenue O	27,037	36,183	77.2	78.5	1.3
Sierra Hwy	E Avenue O to E Avenue P	32,133	53,660	77.9	80.2	2.2
Sierra Hwy	E Avenue P to E Avenue Q	14,366	14,366	74.4	74.4	0.0
Sierra Hwy	E Avenue Q to Palmdale Blvd	15,176	15,253	74.7	74.7	0.0
Sierra Hwy	Palmdale Blvd to E Avenue R	9,993	9,993	72.9	72.9	0.0
Sierra Hwy	E Avenue R to E Avenue S	7,289	7,289	71.5	71.5	0.0
Sierra Hwy	E Avenue S to Pearblossom Hwy	8,070	8,070	71.9	71.9	0.0
10th Street E	E Avenue P to E Avenue Q	2,357	2,357	63.1	63.1	0.0
10th Street E	E Avenue Q to E Palmdale Blvd	5,732	5,732	67.1	67.1	0.0
10th Street E	E. Palmdale Blvd to Avenue R	5,756	5,756	67.0	67.0	0.0
10th Street E	Avenue R to Avenue S1	3,898	3,898	65.3	65.3	0.0
20th Street E	E Avenue P to E Avenue Q	4,738	6,362	63.3	64.6	1.3
20th Street E	E Avenue Q to Palmdale Blvd	7,760	9,746	65.4	66.4	1.0
20th Street E	Palmdale Blvd to E Avenue R	13,063	13,063	67.8	67.8	0.0
20th Street E	E Avenue R to E Avenue S	12,215	12,938	67.5	67.8	0.2
25th Street E	E Avenue P to E Avenue Q	4,102	8,624	67.4	70.6	3.2
25th Street E	E Avenue Q to Palmdale Blvd	6,948	8,947	69.7	70.8	1.1
25th Street E	Palmdale Blvd to E Avenue R	12,851	13,007	72.5	72.5	0.1

25th Street E	E Avenue R to E Avenue S	16,629	16,629	73.6	73.6	0.0
25th Street E	E Avenue S to Pearblossom Hwy	14,269	14,269	72.9	72.9	0.0
30th Street E	E Avenue P to E Avenue Q	5,987	7,961	66.3	67.6	1.2
30th Street E	E Avenue Q to Palmdale Blvd	6,083	7,821	66.4	67.5	1.1
30th Street E	Palmdale Blvd to E Avenue R	7,721	8,354	67.6	67.9	0.3
30th Street E	E Avenue R to E Avenue S	8,871	8,871	68.2	68.2	0.0
40th Street E	E Avenue P to E Avenue Q	5,610	11,891	67.3	70.5	3.3
40th Street E	E Avenue Q to E Palmdale Blvd	7,185	7,185	68.3	68.3	0.0
40th Street E	E Palmdale Blvd to E Avenue R	9,892	14,092	69.8	71.3	1.5
40th Street E	E Avenue R to E Avenue S	9,037	12,432	69.4	70.8	1.4
40th Street E	E Avenue S to Sierra Hwy	10,505	10,612	70.0	70.0	0.0
47th Street E/50th Street E/Ft Tejon Rd	E Avenue M to E Avenue N	18,016	22,987	73.6	74.7	1.1
47th Street E/50th Street E/Ft Tejon Rd	E Avenue P to Palmdale Blvd	12,874	16,180	72.2	73.2	1.0
47th Street E/50th Street E/Ft Tejon Rd	Palmdale Blvd to E Avenue R	25,702	26,588	75.3	75.4	0.1
47th Street E/50th Street E/Ft Tejon Rd	E Avenue R to E Avenue R-8	26,908	26,908	75.5	75.5	0.0
47th Street E/50th Street E/Ft Tejon Rd	E Avenue R-8 to E Avenue S	19,854	19,854	74.2	74.2	0.0
47th Street E/50th Street E/Ft Tejon Rd	E Avenue S to Essex Dr	24,514	28,816	75.2	75.9	0.7
47th Street E/50th Street E/Ft Tejon Rd	Essex Dr to Pearblossom Hwy	24,367	24,367	75.1	75.1	0.0
47th Street E/50th Street E/Ft Tejon Rd	Pearblossom Hwy to E Avenue T-8	21,099	30,811	74.4	76.1	1.6
Technology Dr	10th Street W to Trade Center Dr	7,205	7,277	68.5	68.5	0.0
Technology Dr	5th Street W to Division St	7,574	7,574	68.7	68.7	0.0
Technology Dr	Division St to Sierra Hwy	7,805	7,805	68.8	68.8	0.0

Appendix F

Mitigation Monitoring and Reporting Program

Mitigation Monitoring and Reporting Program

CEQA requires that a reporting or monitoring program be adopted for the conditions of project approval that are necessary to mitigate or avoid significant effects on the environment (Public Resources Code 21081.6). This mitigation monitoring and reporting program is intended to track and ensure compliance with adopted mitigation measures during the project implementation phase. For each mitigation measure recommended in the Final Environmental Impact Report (Final EIR), specifications are made herein that identify the action required, the monitoring that must occur, and the agency or department responsible for oversight.

Mitigation Measure/ Condition of Approval	Action Required	Monitoring Timing	Monitoring Frequency	Responsible Agency	Compliance Verification		
					Initial	Date	Comments
Air Quality							
MM-AQ-1- Architectural Coating							
If a development project facilitated by the Plan would generate construction and operational emissions and such emissions may result in adverse impacts to local air quality, then these recommendations shall be implemented and incorporated in the project. The City shall require that the following measures be implemented for all projects where unmitigated ROG impacts exceed regulatory thresholds. Implementation of these measures shall ensure that ROG emissions are reduced to below 137 lbs/day during construction activities. ▪ Project contractors shall use architectural coating materials that are zero-emission or have a low-ROG content (below 10 grams per liter). Where such ROG coatings are not available or feasible, the coating with the lowest ROG rating available shall be used. These measures shall be noted on all construction plans, and the City shall perform periodic site inspections during construction to verify compliance; and/or, ▪ All architectural coating phases shall be extended such that ROG emissions are reduced to below 137 lbs/day.	Confirm that the actions required under this mitigation measure are implemented for individual projects under the Plan where unmitigated ROG impacts exceed regulatory thresholds.	During construction	Periodically	City of Palmdale Planning Department			

Mitigation Measure/ Condition of Approval	Action Required	Monitoring Timing	Monitoring Frequency	Responsible Agency	Compliance Verification		
					Initial	Date	Comments
MM-AQ-2: Operational Emissions Reductions							
If a development project facilitated by the Plan would generate construction and operational emissions and such emissions may result in adverse impacts to local air quality, then these recommendations shall be implemented and incorporated in the project. The City shall require that some or all of the following measures be implemented for individual projects under the Plan where unmitigated criteria pollutant impacts exceed regulatory thresholds. Applicable measures shall be incorporated such that emissions are fully reduced to below regulatory thresholds or the greatest extent feasible. The reduction measures include, but are not limited to, the following: ▪ Architectural coating materials that are zero-emission or have a low-ROG content (below 10 grams per liter). Where such ROG coatings are not available, the coating with the lowest ROG rating available shall be used ▪ Require new development to exceed the applicable Title 24 energy-efficiency requirements ▪ Projects shall incorporate outdoor electrical outlets such that 10 percent of outdoor landscaping equipment can be electrically powered ▪ All dock doors shall be equipped with electric plugs for electric TRUs ▪ Installation of electric vehicle charging stations at three percent beyond those required by State and local codes ▪ Provide infrastructure to allow for future electric vehicle charging stations for a minimum of 10 percent of the parking spaces beyond those already required to	1. Confirm that some or all of the actions required under this mitigation measures are included in the design of, and made conditions approval of, individual projects under the Plan where unmitigated criteria pollutant impacts exceed regulatory thresholds. 2. Confirm that the actions required as conditions of approval for individual projects under the Plan are carried out during construction and incorporated into the design and operation of those projects where unmitigated criteria pollutant impacts exceed regulatory thresholds.	1. Prior to project approval. 2. During construction and at least once before operation (for post-construction actions)	1. Once 2. Periodically	City of Palmdale Planning Department			

Mitigation Measure/ Condition of Approval	Action Required	Monitoring Timing	Monitoring Frequency	Responsible Agency	Compliance Verification		
					Initial	Date	Comments
accommodate electric vehicle charging stations ▪ Require new development to implement circulation design elements in parking lots for non-residential uses to reduce vehicle queuing and improve the pedestrian environment ▪ Utilization of electric vehicles and/or alternatively fueled vehicles in company fleet ▪ Provision of dedicated parking for carpools, vanpool, and clean air vehicles ▪ Provision of vanpool and/or shuttle service for employees ▪ Implementation of reduced parking minimum requirements ▪ Implementation of maximum parking limits ▪ Provision of bicycle parking facilities beyond those required by State and local codes ▪ Provision of a bicycle-share program ▪ Expansion of bicycle routes/lanes along the project site frontage ▪ Provision of new or improved transit amenities (e.g., covered turnouts, bicycle racks, covered benches, signage, lighting) if the project site is located along an existing transit route ▪ Expansion of sidewalk infrastructure along the project site frontage ▪ Provision of safe, pedestrian-friendly, and interconnected sidewalks and streetscapes ▪ Provision of employee lockers and showers ▪ Provision of on-site services that reduce the need for off-site travel (e.g., childcare facilities, automatic teller machines, postal machines, food services) ▪ Provision of alternative work schedule options, such as telework or reduced							

Mitigation Measure/ Condition of Approval	Action Required	Monitoring Timing	Monitoring Frequency	Responsible Agency	Compliance Verification		
					Initial	Date	Comments
working days per week (e.g., 9/80 or 10/40 schedules), for employees ▪ Implementation of transportation demand management programs to educate and incentivize residents and/or employees to use transit, smart commute, and alternative transportation options ▪ As applicable all industrial uses shall be required to enroll in U.S. EPA's SmartWay program and shall use carriers that are SmartWay carriers							
Biological Resources							
MM-BIO-1 Pre-Construction Nesting Bird Surveys							
If a development project carried out under the Plan would have the potential to adversely affect special-status species, including nesting birds, or their habitat, then these recommendations shall be implemented and incorporated in the project. To avoid disturbance of nesting and special-status birds, including raptorial species protected by the MBTA and CFGC, activities related to construction projects carried out under the Plan, including, but not limited to, vegetation removal, ground disturbance, and construction and demolition shall occur outside of the bird breeding season, February 15 through September 15 (as early as January 1 for some raptors). If construction must begin during the breeding season, then a pre-construction nesting bird survey shall be conducted no more than 3 days prior to initiation of ground disturbance and vegetation removal activities. The nesting bird pre-construction survey shall be conducted on foot inside the area of proposed development, including a 300-foot buffer (500-foot for raptors), and in inaccessible areas (e.g., private lands) from afar using binoculars to the extent practical. The survey shall be conducted by a	Confirm that the actions required under this mitigation measures are implemented for individual projects under the Plan where special-status species have the potential to be adversely affected.	Prior to construction activities	Periodically	City of Palmdale Planning Department			

Mitigation Measure/ Condition of Approval	Action Required	Monitoring Timing	Monitoring Frequency	Responsible Agency	Compliance Verification		
					Initial	Date	Comments
biologist familiar with the identification of avian species known to occur in southern California desert communities. If nests are found, an avoidance buffer (dependent upon the species, the proposed work activity, and existing disturbances associated with land uses outside of the site) shall be determined and demarcated by the biologist with bright orange construction fencing, flagging, construction lathe, or other means to mark the boundary. All construction personnel shall be notified as to the existence of the buffer zone and to avoid entering the buffer zone during the nesting season. No ground disturbing activities shall occur within this buffer until the avian biologist has confirmed that breeding/nesting is completed and the young have fledged the nest. Encroachment into the buffer shall occur only at the discretion of the qualified biologist							
Cultural Resources							
MM-CUL-1 Historical Resources							
A historical resources evaluation shall be prepared for all discretionary projects carried out under the Plan involving a property which includes buildings, structures, objects, sites, landscape/site plans, or other features that are 45 years of age or older. The evaluation shall be prepared by a qualified architectural historian or historian who meets the Secretary of the Interior's Professional Qualifications Standards (PQS) in architectural history or history. The qualified architectural historian or historian shall conduct an intensive-level evaluation in accordance with the guidelines and best practices promulgated by the State Office of Historic Preservation to identify any potential historical resources within the proposed development site. All structures 45 years of	1. Confirm that a historic resources evaluation has been prepared by a qualified architectural historian or historian who meets the Secretary of the Interior's Professional Qualifications Standards (PQS) in architectural history or history, consistent with the requirements of this mitigation measure. 2. If historical resources are identified within the project area of a proposed development, confirm that efforts are made, to the extent feasible, to ensure that impacts are mitigated, consistent with the requirements of this mitigation measure.	1. Prior to construction and grading activities 2. Prior to construction and grading activities	1. Once 2. Once	City of Palmdale Planning Department			

Mitigation Measure/ Condition of Approval	Action Required	Monitoring Timing	Monitoring Frequency	Responsible Agency	Compliance Verification		
					Initial	Date	Comments
age or older shall be evaluated within their historic context and documented in a report meeting the State Office of Historic Preservation guidelines. All evaluated properties shall be documented on Department of Parks and Recreation Series 523 Forms. The report shall be submitted to the City for review and concurrence. If the property is already listed in the NRHP, CRHR, or as a Landmark in Palmdale, the historical resources evaluation described above shall not be required.	3. If historical resources are identified within the project area of a proposed development, confirm that efforts have been made to the greatest extent possible to ensure that the relocation, rehabilitation, or alteration of the resource is consistent with the Secretary of the Interior's Standards for the Treatments of Historic Properties (Standards) and the requirements of this mitigation measure.	3. Prior to construction and grading activities	3. Once				
If historical resources are identified within the project area of a proposed development, efforts shall be made to the extent feasible to ensure that impacts are mitigated. Application of mitigation shall generally be overseen by a qualified architectural historian or historic architect meeting the PQS, unless unnecessary in the circumstances (e.g., preservation in place). In conjunction with any development application that may affect the historical resource, the historical resources evaluation report shall also identify and specify the treatment of character-defining features and construction activities.	4. If significant historical resources are identified on a development site and compliance with the Standards and or avoidance is not possible, confirm that appropriate site-specific mitigation measures are established and undertaken, consistent with the requirements of this mitigation measure.	4. Prior to construction and grading activities	4. Once				
Efforts shall be made to the greatest extent possible to ensure that the relocation, rehabilitation, or alteration of the resource is consistent with the Secretary of the Interior's Standards for the Treatments of Historic Properties (Standards). In accordance with CEQA, a project that has been determined to conform with the Standards generally would not cause a significant adverse direct or indirect impact to historical resources (14 CCR § 15126.4(b)(1)). Application of the Standards shall be overseen by a qualified architectural historian or historic architect meeting the PQS. In conjunction with any development application that may affect the historical							

Mitigation Measure/ Condition of Approval	Action Required	Monitoring Timing	Monitoring Frequency	Responsible Agency	Compliance Verification		
					Initial	Date	Comments
resource, a report identifying and specifying the treatment of character-defining features and construction activities shall be provided to the City for review and concurrence. As applicable, the report shall demonstrate how the project complies with the Standards and be submitted to the City for review and approval prior to the issuance of any permits. If significant historical resources are identified on a development site and compliance with the Standards and or avoidance is not possible, appropriate site-specific mitigation measures shall be established and undertaken. Mitigation measures may include documentation of the historical resource in the form of a Historic American Building Survey (HABS)-Like report. The report shall comply with the Secretary of the Interior's Standards for Architectural and Engineering Documentation and shall generally follow the HABS Level III requirements, including digital photographic recordation, detailed historic narrative report, and compilation of historic research. The documentation shall be completed by a qualified architectural historian or historian who meets the PQS and be submitted to the City prior to issuance of any permits for demolition or alteration of the historical resource.							
MM-CUL-2 Phase 1 Archaeological Resources Study							
For any project carried out under the General Plan Update, the City and/or project applicant shall investigate the potential to disturb archaeological resources. If the project will involve any ground disturbance (unless the project site is within soils that can be reliably demonstrated as being non-native or artificial fill) a Phase I cultural resources study shall be performed by a qualified professional meeting the Secretary of the Interior's (SOI's) Professional Qualification	1. If any project carried out under the General Plan Update will involve any ground disturbance (unless the project site is within soils that can be reliably demonstrated as being non-native or artificial fill) confirm that a Phase I cultural resources study consistent with the requirements of this mitigation measure has been performed by	1. Prior to issuance of construction and grading permits	1. Once	City of Palmdale Planning Department			

Mitigation Measure/ Condition of Approval	Action Required	Monitoring Timing	Monitoring Frequency	Responsible Agency	Compliance Verification		
					Initial	Date	Comments
Standards (PQS) for archaeology (National Park Service 1983). If a project would solely involve the refurbishment of an existing building and no ground disturbance would occur, this measure would not be required. The Phase I cultural resources study shall include a pedestrian survey of the project site and sufficient background research and field sampling to determine whether archaeological resources may be present. Archival research shall include a records search of the South Central Coastal Information Center no more than two years old and a Sacred Lands File search with the NAHC. The Phase I technical report documenting the study shall include recommendations that must be implemented prior to and/or during construction to avoid or reduce impacts on archaeological resources. The report shall be submitted to the City of Palmdale for review and approval prior to the issuance of any grading or construction permits. Recommendations in the Phase I technical report shall be made Conditions of Approval and shall be implemented throughout all ground disturbance activities.	a qualified professional meeting the Secretary of the Interior's (SOI's) Professional Qualification Standards (PQS) for archaeology (National Park Service 1983), and review and approve this study. 2. Make all recommendations of the Phase I technical report Conditions of Approval of the project. 3. Confirm that all Conditions of Approval are carried out throughout all ground disturbance activities.	2. Prior to issuance of construction and grading permits 3. During ground disturbance activities	2. Once 3. Periodically				
MM-CUL-3 Extended Phase 1 Testing							
For any projects proposed within 100 feet of a known archaeological site and/or in areas identified as sensitive by a Phase I study [Mitigation Measure CUL-2], the project applicant shall retain a qualified archaeologist to conduct an Extended Phase I (XPI) study to determine the presence/absence and extent of archaeological resources on the project site. XPI testing should comprise a series of shovel test pits and/or hand augured units and/or mechanical trenching to establish the boundaries of archaeological site(s) on the	1. Confirm that an XPI study has been done by a qualified archaeologist retained by the project applicant if required under this mitigation measure, and review and approve the XPI. 2. Confirm that all recommendations of the XPI are carried out throughout all ground disturbance activities.	1. Prior to issuance of construction and grading permits 2. During ground disturbance activities	1. Once 2. Periodically	City of Palmdale Planning Department			

Mitigation Measure/ Condition of Approval	Action Required	Monitoring Timing	Monitoring Frequency	Responsible Agency	Compliance Verification		
					Initial	Date	Comments
project site. If the boundaries of the archaeological site are already well understood from previous archaeological work, an XPI will not be required. If the archaeological resource(s) of concern are Native American in origin, the qualified archaeologist shall confer with local California Native American tribe(s). All archaeological excavation shall be conducted by a qualified archaeologist(s) under the direction of a principal investigator meeting the SOI's PQS for archaeology (National Park Service 1983). If an XPI report is prepared, it shall be submitted to the City of Palmdale for review and approval prior to the issuance of any grading or construction permits. Recommendations contained therein shall be implemented for all ground disturbance activities.							
MM-CUL-4 Archaeological Site Avoidance							
Any identified archaeological sites (determined after implementing mitigation measures CUL-2 and/or CUL-3) shall be avoided by project-related construction activities, where feasible. A barrier (temporary fencing) and flagging shall be placed between the work location and any resources within 60 feet of a work location to minimize the potential for inadvertent impacts.	Confirm that the avoidance measures described in this mitigation measure are being carried out during project-related construction activities.	During construction and grading activities	Periodically	City of Palmdale Planning Department			
MM-CUL-5 Phase II Site Evaluation							
If the results of any Phase I and/or XPI (mitigation measures CUL-2 and/or CUL-3) indicate the presence of archaeological resources that cannot be avoided by the project (Mitigation Measure CUL-4) and that have not been adequately evaluated for the NRHP or CRHR listing at the project site, the qualified archaeologist shall conduct a Phase II investigation to determine if intact deposits remain and if they may be eligible for the CRHR or qualify as unique archaeological resources. If the archaeological resource(s) of concern are	1. If the results of any Phase I and/or XPI (mitigation measures CUL-2 and/or CUL-3) indicate the presence of archaeological resources that cannot be avoided by the project (Mitigation Measure CUL-4) and that have not been adequately evaluated for the NRHP or CRHR listing at the project site, confirm that a Phase II cultural resources study consistent with the requirements of this mitigation measure has been performed by a qualified professional meeting the Secretary of the Interior's (SOI's)	1. Prior to issuance of construction and grading permits	1. Once	City of Palmdale Planning Department			

Mitigation Measure/ Condition of Approval	Action Required	Monitoring Timing	Monitoring Frequency	Responsible Agency	Compliance Verification		
					Initial	Date	Comments
Native American in origin, the qualified archaeologist shall confer with local California Native American tribe(s). A Phase II evaluation shall include any necessary archival research to identify significant historical associations and mapping of surface artifacts, collection of functionally or temporally diagnostic tools and debris, and excavation of a sample of the cultural deposit. The sample excavation will characterize the nature of the sites, define the artifact and feature contents, determine horizontal and vertical boundaries, and retrieve representative samples of artifacts and other remains. If the archeologist and, if applicable, a Native American monitor (see Mitigation Measure TCR-2) or other interested tribal representative determine it is appropriate, cultural materials collected from the site shall be processed and analyzed in a laboratory according to standard archaeological procedures. The age of the materials shall be determined using radiocarbon dating and/or other appropriate procedures; lithic artifacts, faunal remains, and other cultural materials shall be identified and analyzed according to current professional standards. The significance of the sites shall be evaluated according to the criteria of the CRHR. The results of the investigations shall be presented in a technical report following the standards of the California Office of Historic Preservation publication "Archaeological Resource Management Reports: Recommended Content and Format (1990 or latest edition)." The report shall be submitted to the City of Palmdale for review and approval prior to the issuance of any grading or construction permits. Recommendations in the Phase II report shall be implemented for all ground disturbance activities	Professional Qualification Standards (PQS) for archaeology (National Park Service 1983), and review and approve this study. 2. Make all recommendations of the Phase II technical report Conditions of Approval of the project. 3. Confirm that all Conditions of Approval are carried out throughout all ground disturbance activities.	2. Prior to issuance of construction and grading permits 3. During ground disturbance activities	2. Once 3. Periodically				

Mitigation Measure/ Condition of Approval	Action Required	Monitoring Timing	Monitoring Frequency	Responsible Agency	Compliance Verification		
					Initial	Date	Comments
MM-CUL-6 Phase III Data Recovery							
Should the results of the Phase II site evaluation (Mitigation Measure CUL-5) yield resources that meet CRHR significance standards and if the resource cannot be avoided by project construction in accordance with CUL-4, the project applicant shall ensure that all feasible recommendations for mitigation of archaeological impacts are incorporated into the final design and approved by the City of Palmdale prior to construction. Any necessary Phase III data recovery excavation, conducted to exhaust the data potential of significant archaeological sites, shall be carried out by a qualified archaeologist meeting the SOI PQS for archaeology according to a research design reviewed and approved by the City of Palmdale prepared in advance of fieldwork and using appropriate archaeological field and laboratory methods consistent with the California Office of Historic Preservation Planning Bulletin 5 (1991), Guidelines for Archaeological Research Design, or the latest edition thereof. If the archaeological resource(s) of concern are Native American in origin, the qualified archaeologist shall confer with local California Native American tribe(s). If applicable, a Native American monitor shall be present. As applicable, the final Phase III Data Recovery reports shall be submitted to the City of Palmdale prior to issuance of any grading or construction permit. Recommendations contained therein shall be implemented throughout all ground disturbance activities.	1. Confirm that any reports found to be necessary under the requirements of this mitigation measure have been submitted to, and reviewed and approved by, the City of Palmdale prior to issuance of any grading or construction permit. 2. Confirm that all feasible recommendations of the reports required under this mitigation measure have been incorporated into the final design of the project and approved by the City of Palmdale 3. Confirm that all feasible recommendations of the reports required under this mitigation measure are carried out as described in this mitigation measure.	1. Prior to issuance of construction and grading permits 2. Prior to issuance of construction and grading permits 3. During construction	1. Once 2. Once 3. Periodically	City of Palmdale Planning Department			

Mitigation Measure/ Condition of Approval	Action Required	Monitoring Timing	Monitoring Frequency	Responsible Agency	Compliance Verification		
					Initial	Date	Comments
MM-CUL-7 Cultural Resources Monitoring							
If recommended by Phase I, XPI, Phase II, or Phase III studies [mitigation measures CUL-2, CUL-3, CUL-5, and/or CUL-6], the project applicant shall retain a qualified archaeologist to monitor project-related, ground-disturbing activities. If archaeological resources are encountered during ground-disturbing activities, mitigation measures CUL-4 through CUL-6 shall be implemented, as appropriate.	Confirm that the appropriate mitigation measures have been implemented during ground-disturbing activities.	During construction and grading activities	Periodically throughout construction activities	City of Palmdale Planning Department			
MM-CUL-8 Unanticipated Discovery of Archaeological Resource							
If archaeological resources are encountered during ground-disturbing activities, work within 60 feet shall be halted and the project archaeologist meeting the SOI's Professional Qualification Standards for archaeology (National Park Service 1983) shall immediately evaluate the find. If necessary, the evaluation may require preparation of a treatment plan and archaeological testing for CRHR eligibility. If the discovery proves to be significant under CEQA and cannot be avoided by the project, additional work may be warranted, such as data recovery excavation, to mitigate any significant impacts to historical resources. Any reports required to document and/or evaluate unanticipated discoveries shall be submitted to the City of Palmdale for review and approval. Recommendations contained therein shall be implemented throughout the remainder of ground disturbance activities.	1. Confirm that any reports required to document and/or evaluate unanticipated discoveries have been submitted to the City of Palmdale for review and approval. 2. Confirm that recommendations contained therein shall be implemented throughout the remainder of ground disturbance activities.	1. Prior to issuance of construction and grading permits 2. During construction and grading activities	1. Once 2. Periodically	City of Palmdale Planning Department			

Mitigation Measure/ Condition of Approval	Action Required	Monitoring Timing	Monitoring Frequency	Responsible Agency	Compliance Verification		
					Initial	Date	Comments
Geology and Soils							
MM-GEO-1 Unanticipated Discovery of Paleontological Resources							
If paleontological resources are encountered during ground-disturbing activities, work within 60 feet shall be halted and the project paleontologist shall immediately evaluate the find. If necessary, the evaluation may require preparation of a treatment plan and paleontological testing. If the discovery proves to be significant under CEQA and cannot be avoided by the project, additional work may be warranted, such as data recovery excavation, to mitigate any significant impacts to historical resources. Any reports required to document and/or evaluate unanticipated discoveries shall be submitted to the City of Palmdale for review and approval. Recommendations contained therein shall be implemented throughout the remainder of ground disturbance activities.	1. Confirm that any reports required to document and/or evaluate unanticipated discoveries have been submitted to the City of Palmdale for review and approval. 2. Confirm that recommendations contained therein are implemented throughout the remainder of ground disturbance activities.	1. Prior to issuance of construction and grading permits 2. During construction and grading activities	1. Once 2. Periodically	City of Palmdale Planning Department			
Noise							
MM-NOI-1 Construction Vibration Control Measures							
The following measures to minimize exposure to construction vibration shall be included as standard conditions of approval, as applicable, for construction projects carried out under the Plan within 50 feet of fragile buildings as defined in this mitigation measure. 1. Avoid the use of vibratory rollers within 50 feet of fragile buildings, which are buildings that are susceptible to damage from vibration as determined by the Palmdale Planning Department. 2. Schedule construction activities with the highest potential to produce vibration to hours with the least potential to affect nearby institutional, educational, and office	Confirm that the appropriate mitigation measures have been implemented.	Throughout construction and grading activities	Periodically	City of Palmdale Planning Department			

Mitigation Measure/ Condition of Approval	Action Required	Monitoring Timing	Monitoring Frequency	Responsible Agency	Compliance Verification		
					Initial	Date	Comments
uses that the Federal Transit Administration identifies as sensitive to daytime vibration (FTA 2006). 3. Notify neighbors of scheduled construction activities that would generate vibration.							
Tribal Cultural Resources							
MM-TCR-1 Native American Monitoring							
Prior to the issuance of a grading permit for a project under the Plan, the City of Palmdale (City) shall ensure that the project applicant seeks the services of a tribal monitor(s) approved by the relevant tribes to provide Native American monitoring during ground-disturbing activities. This provision shall be included on the proposed project contractor's plans and specifications. Ground-disturbing activities are defined by the relevant tribes as activities that may include but are not limited to pavement removal, pot-holing or using an auger, grubbing, tree removals, borings, grading, excavation, drilling, and/or trenching within the project area. The project site shall be made accessible to the monitor(s), provided adequate notice is given to the construction contractor and that a construction safety hazard does not occur. The monitor(s) shall possess Hazardous Waste Operations and Emergency Response (HAZWOPER) certification. In addition, the monitor(s) shall be required to provide insurance certificates, including liability insurance. If evidence of tribal cultural resources is found during ground-disturbing activities, the monitor(s) shall have the capacity to halt construction in the immediate vicinity of the find to recover and/or determine the appropriate plan of recovery for the resource in consultation with a qualified archaeologist. The recovery process shall not unreasonably delay	Confirm that a tribal monitor has been approved by the relevant tribes to provide Native American monitoring during ground-disturbing activities, consistent with the requirements of this mitigation measure	Prior to issuance of a grading permit for a project under the Plan	Once	City of Palmdale Planning Department			

Mitigation Measure/ Condition of Approval	Action Required	Monitoring Timing	Monitoring Frequency	Responsible Agency	Compliance Verification		
					Initial	Date	Comments
the construction process and must be carried out consistent with CEQA and local regulations. Construction activity shall not be contingent on the presence or availability of a monitor, and construction may proceed regardless of whether or not a monitor is present on site. The monitor shall complete daily monitoring logs that will provide descriptions of the day's activities and general observations and whether the Native American monitor believes they observed a TCR and what action they took. The on-site monitoring shall end when the project site grading and excavation activities are completed or prior to the completion if the monitor has indicated that the site has a low potential for tribal cultural resources.							
MM-TCR-2 Unanticipated Discovery of Tribal Cultural Resources							
Upon discovery of any tribal cultural resources, the Native American monitor has the ability to halt construction activities in the immediate vicinity (within 50 feet) of the find until the find can be assessed. All tribal cultural resources unearthed during project construction activities shall be evaluated by the Native American monitor approved by the relevant tribes and a qualified archaeologist. Construction work shall be permitted to continue on other parts of the project site while evaluation and, if necessary, additional investigations and/or preservation measures take place (CEQA Guidelines Section15064.5(f)). If the resources are Native American in origin, the relevant tribes tribe shall coordinate with the landowner regarding treatment and curation of these resources. If a resource is determined by the qualified archaeologist to constitute a "historical resource" or "unique	1. Upon the discovery of any tribal cultural resources, confirm construction has been halted per the Native American monitor's assessment. 2. Confirm that the avoidance measures described in this mitigation measure have been implemented	1. Upon the discovery of any tribal cultural resources 2. Throughout construction and grading activities after the discovery of any tribal cultural resource	1. Once for each occurrence 2. Periodically	City of Palmdale Planning Department			

Mitigation Measure/ Condition of Approval	Action Required	Monitoring Timing	Monitoring Frequency	Responsible Agency	Compliance Verification		
					Initial	Date	Comments
archaeological resource," time allotment and funding sufficient to allow for implementation of avoidance measures shall be made available through coordination between the relevant tribes and the project applicant. The treatment plan established for the resources shall be in accordance with California Environmental Quality Act (CEQA) Guidelines Section 15064.5(f) for historical resources and Public Resources Code (PRC) Sections 21083.2(b) for unique archaeological resources. Preservation in place (i.e., avoidance) shall be the preferred manner of treatment. If preservation in place is not feasible, treatment may include implementation of archaeological data recovery excavations to remove the resource along with subsequent laboratory processing and analysis.							

This page intentionally left blank.

EXHIBIT III



City of Palmdale 2045 General Plan Update Final Environmental Impact Report

Findings of Fact and Statement of Overriding Considerations

prepared by

City of Palmdale

Department of Economic and Community Development

38250 Sierra Highway

Palmdale, California 93550

Contact: Megan Taggart, Planning Manager

prepared with the assistance of

Rincon Consultants, Inc.

180 North Ashwood Avenue

Ventura, California 93003

August 2022

RINCON CONSULTANTS, INC.

Environmental Scientists | Planners | Engineers

rinconconsultants.com

This page intentionally left blank.

1 Introduction

A Draft Environmental Impact Report (DEIR) was prepared for the 2045 General Plan (project), was made available for public review on July 14, 2022, and was distributed to local and State agencies. Copies of the Notice of Availability of the Draft EIR were mailed to a list of interested parties, groups and public agencies. The Draft EIR and an announcement of its availability were posted electronically on the project website at (https://www.palmdale2045.org/) and at the following locations:

- City of Palmdale Planning Division, 38250 Sierra Highway, Palmdale, CA 93550
- City Hall Counter, 38300 Sierra Highway, Palmdale, CA 93550
- Palmdale City Library, 700 East Palmdale Boulevard, Palmdale, CA 93550
- City of Palmdale Department of Parks and Recreation, 827 East Avenue Q-9 Palmdale, CA 93550

The public review period for the Draft EIR ran from Thursday July 14, 2022, to Monday August 29, 2022. The public was encouraged to submit written comments to Megan Taggart, Planning Manager, City of Palmdale Planning Division, 38250 Sierra Highway, Palmdale, CA 93550 no later than 5:00 p.m. on August 29, 2022.

After close of the Draft EIR public review and comment period, a Final EIR consisting of responses to comments and changes to the Draft EIR was prepared for the City of Palmdale Planning Commission's September 8, 2022, public hearing at which the Planning Commission is expected to prepare a recommendation to the Palmdale City Council regarding certification of the Final EIR and action on the project. On September 21, 2022, the City Council, at a public hearing, is expected to decide on the certification of the Final EIR and to approval of the requested project entitlements. Both public hearings will be simultaneously held virtually and in person.

The Findings of Fact (Findings) and Statement of Overriding Considerations (SOC) presented herein address the environmental effects associated with the project that are described and analyzed within the Final EIR, reflect the Council's determinations about feasible mitigation measures, and the adequacy of the Final EIR. These Findings have been made pursuant to the California Environmental Quality Act (CEQA; California Public Resources Code Section 21000 et seq.), specifically Public Resources code Section 21081 and 21081.6, as well as the CEQA Guidelines (14 CCR 15000 et seq.) Sections 15091 and 15093.

Public Resources Code Section 21081 and CEQA Guidelines Section 15091 require that the City of Palmdale (City), as the Lead Agency for this project, prepare written findings for any identified significant environmental effects along with a brief explanation of the rationale for each finding. Specific findings under CEQA Guidelines Section 15091(a) are:

(1) Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effects as identified in the Final EIR.

(2) Such changes or alterations are within the responsibility and jurisdiction of another public agency and not the agency making the finding. Such changes have been adopted by such other agency or can and should be adopted by such other agency.

(3) Specific economic, legal, social, technological, or other considerations, including provision of employment opportunities for highly trained workers, make infeasible the mitigation measures or project alternatives identified in the Final EIR.

Further, in accordance with Public Resources Code Section 21081 and CEQA Guidelines Section 15093, whenever significant effects cannot be mitigated to below a level of significance, the City as the decision-making agency is required to balance, as applicable, the benefits of the project against its unavoidable environmental risks when determining whether to approve the project. If the benefits of a project outweigh the unavoidable adverse environmental effects, the adverse effects may be considered "acceptable," in which case the lead agency must adopt a formal statement of overriding considerations.

The Final EIR identified potentially significant environmental effects that could result from the project but could be reduced to a less-than-significant level through implementation of mitigation measures. Those effects were related to biological resources (impacts related to special status species, particularly nesting birds and their habitat), cultural resources (impacts on historical resources and archaeological resources), geology and soils (paleontological impacts), and noise (impacts related to project construction vibration). Significant and unavoidable (unmitigable) cumulative impacts associated with air quality (impacts related to construction and operational emissions) and utilities and service systems (potential for impacts on water supply and wastewater) were identified due to lack of feasible mitigation measures, and thus a statement of overriding considerations is required.

2 Project Description

The project is an update of the City of Palmdale General Plan entitled Palmdale 2045– A Complete Community (Palmdale 2045, the Plan, or proposed Plan). The actions that make up the proposed Plan are described below.

The proposed Plan is a comprehensive update of the City's General Plan, the guiding document for the future of Palmdale over 23 years (2022-2045). The General Plan serves as the City's primary guide for land use and development decisions and is a key tool for influencing and improving the quality of life for residents and businesses. As such, it serves as the "blueprint" for future development and conservation of the community. The Plan will help the City plan for important community issues such as new growth, housing and infrastructure needs, and environmental protection. It also sets the stage for future social, physical, and economic development of the City. It addresses issues that impact the entire community, such as how land is used, where buildings are constructed, and the location of infrastructure. The Planning Area for the proposed project includes the land within Palmdale's City Limits, Sphere of Influence (SOI), and several unincorporated Los Angeles County 'islands,' as further described in Section 2.2, Project Location of the EIR.

3 Project Objectives

Palmdale 2045 is intended to function as a policy document to guide land use decisions in the City's Planning Area over 23 years (2022-2045). According to State law, General Plans are required to cover nine topics: land use, circulation, housing, conservation, open space, noise, air quality, safety, and environmental justice. Jurisdictions may address these topics across different chapters, or elements, of their general plan, and include any other topic that is relevant to planning its future. Palmdale 2045 includes the State required topics and also addresses the following additional topics either as stand-alone elements or incorporated in other elements: community design, economic development, military compatibility, parks, natural and cultural resources, infrastructure and community facilities, sustainability and climate action.

Palmdale 2045's vision for the City was developed with extensive community input and in recognition of the State's planning priorities. Palmdale 2045 focuses on enhancing community identity, building on planned infrastructure investments, improving multi-modal active transportation and connectivity, integrating health and equity, and capitalizing on the City's unique location in the region. Palmdale 2045's vision for the future includes the following vision themes.

- **Unified and welcoming community.** The Palmdale community values opportunity, diversity, and unity, and seeks to promote Palmdale's positive reputation while boosting community beautification
- **Active and vibrant downtown.** Palmdale residents desire a future downtown that fosters a sense of place, promotes local businesses, provides gathering spaces, and events, and improves the overall appearance of Palmdale
- **Diverse and high-quality job options**. Palmdale seeks to retain and expand its employment base through training for key industries, connecting residents to local jobs, and promoting telecommuting within the City
- **Diverse and resilient local economy.** Palmdale values its existing aerospace presence and aims to leverage and diversify new economic opportunities from expanded transportation connections
- **Safe, healthy place to live and work.** Palmdale residents want to address crime and safety, increase access to parks and open space, and support marginalized communities like foster youth and those experiencing homelessness
- **High quality medical and mental healthcare.** As a medical provider shortage area, Palmdale seeks to improve access to quality medical and mental healthcare services and facilities by attracting physicians, maintaining the Palmdale Regional Medical Center, and expanding services
- **Housing options for residents at different stages of life and ability**. The residents of Palmdale desire to preserve and expand affordable housing and diversify housing types across the City that support residents of all abilities through different stages of life
- **High quality and accessible educational opportunities.** Citizens of Palmdale seek to promote and expand educational opportunities in the City including higher education, trade school, and formal and informal training programs
- **Beautiful natural setting**. The Palmdale community values its natural setting and seeks to improve connectivity to trails and open space, maintain mountain views, healthy air quality, and dark night sky
- **Forefront of transportation innovations.** On the cusp of major regional transportation improvements, Palmdale seeks to leverage planned investments and improve local transit opportunities
- **General Plan implementation.** Residents of Palmdale value the long-term vision of the General Plan Update and desire regular review and update of the Plan including metrics for tracking implementation

Palmdale 2045 identifies major strategies and physical improvements for the City over the next 23 years. These strategies include creating a vibrant downtown near the future multimodal transit station, establishing three health and wellness districts and two education districts, transforming Palmdale Boulevard into a mixed-use corridor, promoting a diversity of housing types in the City, forming village centers that offer a mix of residential choices and daily goods and services near existing neighborhoods, and building off existing industrial and aerospace business opportunities. These strategies will support existing and future employees, businesses, and residents by improving quality of life in Palmdale.

The following actions will also be taken by the City in connection with the General Plan Update, are considered part of the proposed project, and were analyzed in the EIR:

- Adoption and implementation of the General Plan Update (Palmdale 2045 Plan)
- Adoption and implementation of the Climate Action Plan
- Adoption and implementation of the Comprehensive Zoning Ordinance Amendment
- A slight expansion of the boundary of the Palmdale Transit Area Specific Plan. Currently, many of the parcels along the external boundary of this Specific Plan area have split zoning because they are partly inside and partly outside the Specific Plan area. This proposed expansion would fully include these parcels within the Specific Plan area. Because the Specific Plan area is in the core of the City, this action would not affect the Planning Area of the proposed General Plan Update or require annexations.

Palmdale 2045 also includes an update of the City's Housing Element, in compliance with the requirements of State Housing Element law, which required the City to adopt an updated Housing Element by October 2021. A description of City actions taken to date in connection with the Housing Element Update is included in Section 2.3.2 of the EIR. While an Addendum was prepared for the Housing Element Update, the Housing Element Update is also analyzed in this EIR, as necessary, in the context of the overall Plan. The Housing Element Update will be readopted as part of the Plan after certification by the California Department of Housing and Community Development (HCD).

4 Findings of Fact

Having received, reviewed, and considered the information in the Final EIR for this project, as well as the supporting administrative record, the City of Palmdale makes findings pursuant to, and in accordance with, Sections 21081, 21081.5, and 21081.6 of the Public Resources Code.

4.1 Environmental Effects Found Not to be Significant

Through project scoping and the environmental analysis contained within the Final EIR, it was determined that the project would not result in potentially significant effects on the environment with respect to aesthetics, agricultural and forestry resources, energy, greenhouse gas emissions, hazards and hazardous materials, hydrology and water quality, land use and planning, mineral resources, population and housing, public services, recreation, transportation, and wildfire. No further findings are required for these subject areas.

4.2 Findings for Significant but Mitigated Effects

The following findings are hereby made by the City of Palmdale Council for the significant but mitigable environmental effects identified in the EIR related to biological resources (impacts related to special status species, particularly nesting birds and their habitat), cultural resources (impacts on historical resources and archaeological resources), geology and soils (paleontological impacts), and noise (impacts related to project construction vibration).

Biological Resources

Impact BIO-1: Development carried out under the Plan would have the potential to adversely affect special-status species, including nesting birds, or their habitat. Impacts would be less than significant with mitigation.

Finding:

Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effects as identified in the Final EIR. (*Section 15091(a)(1)*). Implementation of Mitigation Measure BIO-1 would reduce potential impacts to nesting birds and associated habitat to a less than significant level by requiring pre-construction surveys and avoidance measures.

Explanation:

Implementation of the Plans' goals and policies would ensure that projects carried out under the Plan would be completed in accordance with protecting and preserving Significant Ecological Areas. While these goals and policies generally aim at protecting special-status species, if vegetation and trees are to be trimmed or removed during project construction or if construction would occur near trees and vegetation, nesting birds could be impacted. Mitigation Measure BIO-1 would be required for projects where mature trees and other habitat are present and construction activities are scheduled from early spring to late summer. With implementation of Plan goals and policies and Mitigation Measure BIO-1, potential impacts to special-status species and sensitive habitat would be reduced to a less than significant level.

Mitigation Measures:

Pursuant to CEQA Guidelines Section 15091, the following mitigation measures have been included in a mitigation monitoring and reporting program (MMRP) that is to be adopted concurrently with these findings.

BIO-1 **Pre-Construction Nesting Bird Surveys.** To avoid disturbance of nesting and special-status birds, including raptorial species protected by the MBTA and CFGC, activities related to construction projects carried out under the Plan, including, but not limited to, vegetation removal, ground disturbance, and construction and demolition shall occur outside of the bird breeding season, February 15 through September 15 (as early as January 1 for some raptors). If construction must begin during the breeding season, then a pre-construction nesting bird survey shall be conducted no more than 3 days prior to initiation of ground disturbance and vegetation removal activities. The nesting bird pre-construction survey shall be conducted on foot inside the area of proposed development, including a 300-foot buffer (500-foot for raptors), and in inaccessible areas (e.g., private lands) from afar using binoculars to the extent practical. The survey shall be conducted by a biologist familiar with the identification of avian species known to occur in southern California desert communities.

If nests are found, an avoidance buffer (dependent upon the species, the proposed work activity, and existing disturbances associated with land uses outside of the site) shall be determined and demarcated by the biologist with bright orange construction fencing, flagging, construction lathe, or other means to mark the boundary. All construction personnel shall be notified as to the existence of the buffer zone and to avoid entering the buffer zone during the nesting season. No ground disturbing activities shall occur within this buffer until the avian biologist has confirmed that breeding/nesting is completed and the young have fledged the nest. Encroachment into the buffer shall occur only at the discretion of the qualified biologist.

Impact BIO-3: Development carried out under the Plan would avoid impacts to wildlife movement corridors by conserving natural areas in the Planning Area, as directed by policies in the Plan. Impacts would be less than significant.

Finding:

Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effects as identified in the Final EIR. (*Section 15091(a)(1)*). With implementation of Mitigation Measure BIO-1, impacts to wildlife corridors and species would be less than significant.

Explanation:

Development carried out under the Plan would not impact any established wildlife corridors, and with implementation of Mitigation Measure BIO-1 to prevent impacts to migrating and nesting birds, the Plan would not interfere substantially with the movement of wildlife species. Impacts would be less than significant with mitigation.

Mitigation Measures:

Pursuant to CEQA Guidelines Section 15091, the following mitigation measures have been included in a mitigation monitoring and reporting program (MMRP) that is to be adopted concurrently with these findings.

BIO-1 See Mitigation Measure BIO-1 above.

Cultural Resources

Impact CUL-1: The Plan may cause a significant impact to historical resources because site preparation, demolition, and construction associated with development carried out under the plan may cause substantial adverse changes in the significance of a historical resource. However, implementation of Plan policies and implementation actions included in the Conservation Element and Mitigation Measure CUL-1 would reduce this impact less than significant.

Finding:

Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effects as identified in the Final EIR. (*Section 15091(a)(1)*). Implementation of Mitigation Measure CUL-1 would reduce impacts to historical resources by identifying and evaluating significant historical resources and managing relocation, rehabilitation, or alteration in compliance with the Standards as applicable. HABS documentation would also reduce these impacts to the greatest extent feasible in cases where compliance with the Standards or avoidance is not possible. Therefore, impacts would be less than significant with implementation of Plan policies and Mitigation Measure CUL-1.

Explanation:

Implementation of Mitigation Measure CUL-1 would reduce impacts to historical resources by identifying and evaluating significant historical resources and managing relocation, rehabilitation, or alteration in compliance with the Standards as applicable HABS documentation would also reduce these impacts to the greatest extent feasible in cases where compliance with the Standards or avoidance is not possible. Therefore, impacts would be less than significant with implementation of Plan policies and Mitigation Measure CUL-1.

Mitigation Measures:

Pursuant to CEQA Guidelines Section 15091, the following mitigation measures have been included in a mitigation monitoring and reporting program (MMRP) that is to be adopted concurrently with these findings.

CUL-1 **Historical Resources.** A historical resources evaluation shall be prepared for all discretionary projects carried out under the Plan involving a property which includes buildings, structures, objects, sites, landscape/site plans, or other features that are 45 years of age or older. The evaluation shall be prepared by a qualified architectural historian or historian who meets the Secretary of the Interior's Professional Qualifications Standards (PQS) in architectural history or history. The qualified architectural historian or historian shall conduct an intensive-level evaluation in accordance with the guidelines and best practices promulgated by the State Office of Historic Preservation to identify any potential historical resources within the proposed development site. All structures 45 years of age or older shall be evaluated within their historic context and documented in a report meeting the State Office of Historic Preservation guidelines. All evaluated properties shall be documented on Department of Parks and Recreation Series 523 Forms. The report shall be submitted to the City for review and concurrence. If the property is already listed in the NRHP, CRHR, or as a Landmark in Palmdale, the historical resources evaluation described above shall not be required.

If historical resources are identified within the project area of a proposed development, efforts shall be made to the extent feasible to ensure that impacts are mitigated. Application of mitigation shall generally be overseen by a qualified architectural historian or historic architect meeting the PQS, unless unnecessary in the circumstances (e.g., preservation in place). In conjunction with any development application that may affect the historical resource, the historical resources evaluation report shall also identify and specify the treatment of character-defining features and construction activities.

Efforts shall be made to the greatest extent possible to ensure that the relocation, rehabilitation, or alteration of the resource is consistent with the Secretary of the Interior's Standards for the Treatments of Historic Properties (Standards). In accordance with CEQA, a project that has been determined to conform with the Standards generally would not cause a significant adverse direct or indirect impact to historical resources (14 CCR § 15126.4(b)(1)). Application of the Standards shall be overseen by a qualified architectural historian or historic architect meeting the PQS. In conjunction with any development application that may affect the historical resource, a report identifying and specifying the treatment of character-defining features and construction activities shall be provided to the City for review and concurrence. As applicable, the report shall demonstrate how the project complies with the Standards and be submitted to the City for review and approval prior to the issuance of any permits.

If significant historical resources are identified on a development site and compliance with the Standards and or avoidance is not possible, appropriate site-specific mitigation measures shall be established and undertaken. Mitigation measures may include documentation of the historical resource in the form of a Historic American Building Survey (HABS)-Like report. The report shall comply with the Secretary of the Interior's Standards for Architectural and Engineering Documentation and shall generally follow the HABS Level III requirements, including digital photographic recordation, detailed historic narrative report, and compilation of historic research. The documentation shall be completed by a qualified architectural historian or historian who meets the PQS and be submitted to the City prior to issuance of any permits for demolition or alteration of the historical resource.

Impact CUL-2: The Plan may cause a significant impact if ground disturbance associated with development carried out under the Plan would cause a substantial adverse change in

the significance of an archaeological resource, including those that qualify as historical resources. This impact would be significant but mitigable.

Finding:

Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effects as identified in the Final EIR. (*Section 15091(a)(1)*). Implementation of mitigation measures CUL-2 through CUL-8 would reduce impacts to archaeological resources to less than significant levels by ensuring the avoidance of archeological resources to the extent feasible, or by identifying, evaluating, and conducting data recovery of archaeological resources that may be impacted by future projects in a timely manner.

Explanation:

Implementation of Mitigation Measures CUL-2 through CUL-8 would reduce impacts to archaeological resources to less than significant levels by ensuring the avoidance of archeological resources to the extent feasible, or by identifying, evaluating, and conducting data recovery archaeological resources that may be impacted by future projects in a timely manner.

Mitigation Measures:

Pursuant to CEQA Guidelines Section 15091, the following mitigation measures have been included in a mitigation monitoring and reporting program (MMRP) that is to be adopted concurrently with these findings.

CUL-2 **Phase I Archaeological Resources Study.** For any project carried out under the General Plan Update, the City and/or project applicant shall investigate the potential to disturb archaeological resources. If the project will involve any ground disturbance (unless the project site is within soils that can be reliably demonstrated as being non-native or artificial fill) a Phase I cultural resources study shall be performed by a qualified professional meeting the Secretary of the Interior's (SOI's) Professional Qualification Standards (PQS) for archaeology (National Park Service 1983). If a project would solely involve the refurbishment of an existing building and no ground disturbance would occur, this measure would not be required. The Phase I cultural resources study shall include a pedestrian survey of the project site and sufficient background research and field sampling to determine whether archaeological resources may be present. Archival research shall include a records search of the South Central Coastal Information Center no more than two years old and a Sacred Lands File search with the NAHC. The Phase I technical report documenting the study shall include recommendations that must be implemented prior to and/or during construction to avoid or reduce impacts on archaeological resources. The report shall be submitted to the City of Palmdale for review and approval prior to the issuance of any grading or construction permits. Recommendations in the Phase I technical report shall be made Conditions of Approval and shall be implemented throughout all ground disturbance activities.

CUL-3 **Extended Phase 1 Testing.** For any projects proposed within 100 feet of a known archaeological site and/or in areas identified as sensitive by a Phase I study [Mitigation Measure CUL-2], the project applicant shall retain a qualified archaeologist to conduct an Extended Phase I (XPI) study to determine the presence/absence and extent of archaeological resources on the project site. XPI testing should comprise a series of shovel test pits and/or hand augured units and/or mechanical trenching to establish the boundaries of archaeological site(s) on the project site. If the boundaries of the archaeological site are already well understood from previous archaeological work, an XPI

will not be required. If the archaeological resource(s) of concern are Native American in origin, the qualified archaeologist shall confer with local California Native American tribe(s).

All archaeological excavation shall be conducted by a qualified archaeologist(s) under the direction of a principal investigator meeting the SOI's PQS for archaeology (National Park Service 1983). If an XPI report is prepared, it shall be submitted to the City of Palmdale for review and approval prior to the issuance of any grading or construction permits. Recommendations contained therein shall be implemented for all ground disturbance activities**.**

CUL-4 **Archaeological Site Avoidance.** Any identified archaeological sites (determined after implementing mitigation measures CUL-2 and/or CUL-3) shall be avoided by project-related construction activities, where feasible. A barrier (temporary fencing) and flagging shall be placed between the work location and any resources within 60 feet of a work location to minimize the potential for inadvertent impacts**.**

CUL-5 **Phase II Site Evaluation.** If the results of any Phase I and/or XPI (mitigation measures CUL-2 and/or CUL-3) indicate the presence of archaeological resources that cannot be avoided by the project (Mitigation Measure CUL-4) and that have not been adequately evaluated for the NRHP or CRHR listing at the project site, the qualified archaeologist shall conduct a Phase II investigation to determine if intact deposits remain and if they may be eligible for the CRHR or qualify as unique archaeological resources. If the archaeological resource(s) of concern are Native American in origin, the qualified archaeologist shall confer with local California Native American tribe(s).

A Phase II evaluation shall include any necessary archival research to identify significant historical associations and mapping of surface artifacts, collection of functionally or temporally diagnostic tools and debris, and excavation of a sample of the cultural deposit. The sample excavation will characterize the nature of the sites, define the artifact and feature contents, determine horizontal and vertical boundaries, and retrieve representative samples of artifacts and other remains.

If the archeologist and, if applicable, a Native American monitor (see Mitigation Measure TCR-2) or other interested tribal representative determine it is appropriate, cultural materials collected from the site shall be processed and analyzed in a laboratory according to standard archaeological procedures. The age of the materials shall be determined using radiocarbon dating and/or other appropriate procedures; lithic artifacts, faunal remains, and other cultural materials shall be identified and analyzed according to current professional standards. The significance of the sites shall be evaluated according to the criteria of the CRHR. The results of the investigations shall be presented in a technical report following the standards of the California Office of Historic Preservation publication "Archaeological Resource Management Reports: Recommended Content and Format (1990 or latest edition)." The report shall be submitted to the City of Palmdale for review and approval prior to the issuance of any grading or construction permits. Recommendations in the Phase II report shall be implemented for all ground disturbance activities

CUL-6 **Phase III Data Recovery.** Should the results of the Phase II site evaluation (Mitigation Measure CUL-5) yield resources that meet CRHR significance standards and if the resource cannot be avoided by project construction in accordance with CUL-4, the project applicant shall ensure that all feasible recommendations for mitigation of archaeological impacts are incorporated into the final design and approved by the City of Palmdale prior to construction. Any necessary Phase III data recovery excavation, conducted to exhaust the

data potential of significant archaeological sites, shall be carried out by a qualified archaeologist meeting the SOI PQS for archaeology according to a research design reviewed and approved by the City of Palmdale prepared in advance of fieldwork and using appropriate archaeological field and laboratory methods consistent with the California Office of Historic Preservation Planning Bulletin 5 (1991), Guidelines for Archaeological Research Design, or the latest edition thereof. If the archaeological resource(s) of concern are Native American in origin, the qualified archaeologist shall confer with local California Native American tribe(s). If applicable, a Native American monitor shall be present.

As applicable, the final Phase III Data Recovery reports shall be submitted to the City of Palmdale prior to issuance of any grading or construction permit. Recommendations contained therein shall be implemented throughout all ground disturbance activities**.**

CUL-7 **Cultural Resources Monitoring.** If recommended by Phase I, XPI, Phase II, or Phase III studies [mitigation measures CUL-2, CUL-3, CUL-5, and/or CUL-6], the project applicant shall retain a qualified archaeologist to monitor project-related, ground-disturbing activities. If archaeological resources are encountered during ground-disturbing activities, mitigation measures CUL-4 through CUL-6 shall be implemented, as appropriate**.**

CUL-8 **Unanticipated Discovery of Archaeological Resources.** If archaeological resources are encountered during ground-disturbing activities, work within 60 feet shall be halted and the project archaeologist meeting the SOI's Professional Qualification Standards for archaeology (National Park Service 1983) shall immediately evaluate the find. If necessary, the evaluation may require preparation of a treatment plan and archaeological testing for CRHR eligibility. If the discovery proves to be significant under CEQA and cannot be avoided by the project, additional work may be warranted, such as data recovery excavation, to mitigate any significant impacts to historical resources. Any reports required to document and/or evaluate unanticipated discoveries shall be submitted to the City of Palmdale for review and approval. Recommendations contained therein shall be implemented throughout the remainder of ground disturbance activities

Geology and Soils

Impact GEO-6: Impacts to unique paleontological resources or unique geological features would be less than significant with mitigation.

Finding:

Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effects as identified in the Final EIR. (*Section 15091(a)(1)*). Implementation of Mitigation Measure GEO-1 would reduce impacts to paleontological resources to less than significant levels by ensuring the avoidance of paleontological resources to the extent feasible, or by identifying, evaluating, and conducting data recovery paleontological resources that may be impacted by future projects in a timely manner.

Explanation:

Implementation of Mitigation Measure GEO-1 would reduce impacts to paleontological resources to less than significant levels by ensuring the avoidance of paleontological resources to the extent feasible, or by identifying, evaluating, and conducting data recovery paleontological resources that may be impacted by future projects in a timely manner.

Mitigation Measures:

Pursuant to CEQA Guidelines Section 15091, the following mitigation measure has been included in a mitigation monitoring and reporting program (MMRP) that is to be adopted concurrently with these findings.

GEO-1 **Unanticipated Discovery of Paleontological Resources.** If paleontological resources are encountered during ground-disturbing activities, work within 60 feet shall be halted and the project paleontologist shall immediately evaluate the find. If necessary, the evaluation may require preparation of a treatment plan and paleontological testing. If the discovery proves to be significant under CEQA and cannot be avoided by the project, additional work may be warranted, such as data recovery excavation, to mitigate any significant impacts to historical resources. Any reports required to document and/or evaluate unanticipated discoveries shall be submitted to the City of Palmdale for review and approval. Recommendations contained therein shall be implemented throughout the remainder of ground disturbance activities.

Noise

Impact N-2: Construction of individual projects carried out under the Plan could temporarily generate groundborne vibration, potentially affecting adjacent sensitive land uses. This impact would be less than significant with mitigation.

Finding:

Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effects as identified in the Final EIR. (*Section 15091(a)(1)*). Avoiding the use of vibratory rollers within 50 feet of fragile buildings would prevent potential structural damage from vibration. In addition, appropriate scheduling of construction activities and notification of neighbors would minimize disturbance of people from use of vibration-generating equipment. Compliance with the vibration control and notification measures in Mitigation Measure N-1 would reduce impacts to a less than significant level.

Explanation:

Avoiding the use of vibratory rollers within 50 feet of fragile buildings would prevent potential structural damage from vibration. In addition, appropriate scheduling of construction activities and notification of neighbors would minimize disturbance of people from use of vibration-generating equipment. Compliance with the vibration control and notification measures in Mitigation Measure N-1 would reduce impacts to a less than significant level.

Mitigation Measures:

Pursuant to CEQA Guidelines Section 15091, the following mitigation measures have been included in a mitigation monitoring and reporting program (MMRP) that is to be adopted concurrently with these findings.

NOI-1 **Construction Vibration Control Measures.** The following measures to minimize exposure to construction vibration shall be included as standard conditions of approval, as applicable, for construction projects carried out under the Plan within 50 feet of fragile buildings as defined in this mitigation measure:

1. Avoid the use of vibratory rollers within 50 feet of fragile buildings, which are buildings that are susceptible to damage from vibration as determined by the Palmdale Planning Department.

2. Schedule construction activities with the highest potential to produce vibration to hours with the least potential to affect nearby institutional, educational, and office uses that the Federal Transit Administration identifies as sensitive to daytime vibration (FTA 2006).

3. Notify neighbors of scheduled construction activities that would generate vibration.

Tribal Cultural Resources

Impact TCR-1: Development carried out under the Plan may impact unidentified tribal cultural resources, but these impacts would be reduced to a less than significant level with incorporation of mitigation measures MM-TCR-1 and MM- TCR-2.

Finding:

Changes or alterations have been required in, or incorporated into, the project which avoid or substantially lessen the significant environmental effects as identified in the Final EIR. (*Section 15091(a)(1)*). Implementation of mitigation measures CUL-2 through CUL-8 in Section 4.5 Cultural Resources, and TCR-1 and TCR-2 would reduce impacts to archaeological and tribal cultural resources to less than significant levels by ensuring the avoidance of archeological and tribal cultural resources to the extent feasible, or by identifying, evaluating, and conducting data recovery of archaeological and tribal cultural resources that may be impacted by future projects in a timely manner.

Explanation:

Implementation of mitigation measures CUL-2 through CUL-8 in Section 4.5 *Cultural Resources*, and TCR-1 and TCR-2 would reduce impacts to archaeological resources to less than significant levels by ensuring the avoidance of archeological resources to the extent feasible, or by identifying, evaluating, and conducting data recovery archaeological resources that may be impacted by future projects in a timely manner.

Mitigation Measures:

Pursuant to CEQA Guidelines Section 15091, the following mitigation measures have been included in a mitigation monitoring and reporting program (MMRP) that is to be adopted concurrently with these findings.

TCR-1 **Native American Monitoring.** Prior to the issuance of a grading permit for a project under the Plan, the City of Palmdale (City) shall ensure that the project applicant seeks the services of a tribal monitor(s) approved by the relevant tribes to provide Native American monitoring during ground-disturbing activities. This provision shall be included on the proposed project contractor's plans and specifications. Ground-disturbing activities are defined by the relevant tribes as activities that may include but are not limited to pavement removal, pot-holing or using an auger, grubbing, tree removals, borings, grading, excavation, drilling, and/or trenching within the project area. The project site shall be made accessible to the monitor(s), provided adequate notice is given to the construction contractor and that a construction safety hazard does not occur. The monitor(s) shall possess Hazardous Waste Operations and Emergency Response (HAZWOPER) certification. In addition, the monitor(s) shall be required to provide insurance certificates, including liability insurance.

If evidence of tribal cultural resources is found during ground-disturbing activities, the monitor(s) shall have the capacity to halt construction in the immediate vicinity of the find to recover and/or determine the appropriate plan of recovery for the resource in consultation with a qualified archaeologist. The recovery process shall not unreasonably

delay the construction process and must be carried out consistent with CEQA and local regulations.

Construction activity shall not be contingent on the presence or availability of a monitor, and construction may proceed regardless of whether or not a monitor is present on site. The monitor shall complete daily monitoring logs that will provide descriptions of the day's activities and general observations and whether the Native American monitor believes they observed a TCR and what action they took. The on-site monitoring shall end when the project site grading and excavation activities are completed or prior to the completion if the monitor has indicated that the site has a low potential for tribal cultural resources.

TCR-2 **Unanticipated Discovery of Tribal Cultural Resources.** Upon discovery of any tribal cultural resources, the Native American monitor has the ability to halt construction activities in the immediate vicinity (within 50 feet) of the find until the find can be assessed. All tribal cultural resources unearthed during project construction activities shall be evaluated by the Native American monitor approved by the relevant tribes and a qualified archaeologist. Construction work shall be permitted to continue on other parts of the project site while evaluation and, if necessary, additional investigations and/or preservation measures take place (CEQA Guidelines Section15064.5(f)). If the resources are Native American in origin, the relevant tribes tribe shall coordinate with the landowner regarding treatment and curation of these resources. If a resource is determined by the qualified archaeologist to constitute a "historical resource" or "unique archaeological resource," time allotment and funding sufficient to allow for implementation of avoidance measures shall be made available through coordination between the relevant tribes and the project applicant. The treatment plan established for the resources shall be in accordance with California Environmental Quality Act (CEQA) Guidelines Section 15064.5(f) for historical resources and Public Resources Code (PRC) Sections 21083.2(b) for unique archaeological resources. Preservation in place (i.e., avoidance) shall be the preferred manner of treatment. If preservation in place is not feasible, treatment may include implementation of archaeological data recovery excavations to remove the resource along with subsequent laboratory processing and analysis.

4.3 Findings for Significant and Unavoidable Effects

Public Resources Code 21081and 21081.5, and CEQA Guidelines Section 15093, require that the City of Palmdale balance the economic, legal, social, technological, or other benefits of a proposed project against its unavoidable environmental effects when determining to approve a project. And if specific economic, legal, social, technological, or other benefits outweigh the unavoidable adverse environmental effects, the adverse effects may be considered "acceptable."

A project's environmental impacts are "cumulatively considerable" if the "incremental effects of an individual project are significant when viewed in connection with the effects of past projects, the effects of other current projects, and the effects of probable future projects" (CEQA Guidelines Section 15065[a][3]). Significant and unavoidable impacts associated with air quality (impacts related to construction and operational emissions) and utilities and service systems (potential for impacts on water supply and wastewater) were identified for the project. The following findings and statement of overriding considerations outlines the specific reasons to support the City of Palmdale Planning Division recommendation for approval.

Air Quality

Significant and Unavoidable Cumulative Impact AQ-1: Individual development projects carried out under the Plan would generate construction and operational-related emissions. Such emissions may conflict with or obstruct the implementation of the AVAQMD's Ozone Attainment Plan. Implementation of Plan policies, compliance with existing regulations, and implementation of mitigation would reduce construction and operational emissions, but not below applicable emissions thresholds. Impacts would be significant and unavoidable.

Mitigation Measures:

There are no feasible mitigation measures that can be implemented to reduce growth under the Plan and maintain the nature of the Plan. However, the Plan itself would not obstruct the implementation of air quality plans.

Finding:

Individual development projects carried out under the Plan would generate construction and operational-related emissions. Such emissions may conflict with or obstruct the implementation of the AVAQMD's Ozone Attainment Plan because population growth associated with the Plan would exceed SCAG population growth forecasts, and the project would therefore be inconsistent with the underlying assumptions of the emissions forecasts contained in the Ozone Attainment Plan. Implementation of Plan policies, compliance with existing regulations, and implementation of mitigation would reduce construction and operational emissions, but not below applicable emissions thresholds because growth associated with the Plan would still exceed SCAG population growth forecasts. There are no feasible mitigation measures that can be implemented to reduce growth under the Plan and maintain the nature of the Plan, even though the Plan itself would not obstruct the implementation of the air quality plan.

Facts in Support of Finding

Population growth associated with the Plan would exceed SCAG population growth forecasts, and the project would therefore be inconsistent with the underlying assumptions of the emissions forecasts contained in the Ozone Attainment Plan. There are no feasible mitigation measures that can be implemented to reduce growth under the Plan and maintain the nature of the Plan.

Significance after Mitigation

There are no feasible mitigation measures that can be implemented to reduce growth under the Plan and maintain the nature of the Plan, even though the Plan itself would not obstruct the implementation of the air quality plan. Therefore, impacts remain significant and unavoidable.

Significant and Unavoidable Cumulative Impact AQ-2: Individual development projects facilitated by the Plan would generate construction and operational emissions. Such emissions may result in adverse impacts to local air quality. Implementation of Plan policies and compliance with existing regulations would reduce emissions, but not below applicable levels of significance. Impacts would be significant and unavoidable.

Mitigation Measures:

AQ-1 **Architectural Coating.** The City shall require that the following measures be implemented for all projects where unmitigated ROG impacts exceed regulatory thresholds. Implementation of these measures shall ensure that ROG emissions are reduced to below 137 lbs/day during construction activities.

- Project contractors shall use architectural coating materials that are zero-emission or has a low-ROG content (below 10 grams per liter). Where such ROG coatings are not available or feasible, the coating with the lowest ROG rating available shall be used. These measures shall be noted on all construction plans, and the City shall perform periodic site inspections during construction to verify compliance; and/or,
- All architectural coating phases shall be extended such that ROG emissions are reduced to below 137 lbs/day.

AQ-2 **Operational Emissions Reductions.** The City shall require that some or all of the following measures be implemented for individual projects under the Plan where unmitigated criteria pollutant impacts exceed regulatory thresholds. Applicable measures shall be incorporated such that emissions are fully reduced to below regulatory thresholds or the greatest extent feasible. The reduction measures include, but are not limited to, the following:

- Architectural coating materials that are zero-emission or have a low-ROG content (below 10 grams per liter). Where such ROG coatings are not available, the coating with the lowest ROG rating available shall be used
- Require new development to exceed the applicable Title 24 energy-efficiency requirements
- Projects shall incorporate outdoor electrical outlets such that 10 percent of outdoor landscaping equipment can be electrically powered
- All dock doors shall be equipped with electric plugs for electric TRUs
- Installation of electric vehicle charging stations at three percent beyond those required by State and local codes
- Provide infrastructure to allow for future electric vehicle charging stations for a minimum of 10 percent of the parking spaces beyond those already required to accommodate electric vehicle charging stations
- Require new development to implement circulation design elements in parking lots for non-residential uses to reduce vehicle queuing and improve the pedestrian environment
- Utilization of electric vehicles and/or alternatively fueled vehicles in company fleet
- Provision of dedicated parking for carpools, vanpool, and clean air vehicles
- Provision of vanpool and/or shuttle service for employees
- Implementation of reduced parking minimum requirements
- Implementation of maximum parking limits
- Provision of bicycle parking facilities beyond those required by State and local codes
- Provision of a bicycle-share program
- Expansion of bicycle routes/lanes along the project site frontage
- Provision of new or improved transit amenities (e.g., covered turnouts, bicycle racks, covered benches, signage, lighting) if the project site is located along an existing transit route
- Expansion of sidewalk infrastructure along the project site frontage

- Provision of safe, pedestrian-friendly, and interconnected sidewalks and streetscapes
- Provision of employee lockers and showers
- Provision of on-site services that reduce the need for off-site travel (e.g., childcare facilities, automatic teller machines, postal machines, food services)
- Provision of alternative work schedule options, such as telework or reduced working days per week (e.g., 9/80 or 10/40 schedules), for employees
- Implementation of transportation demand management programs to educate and incentivize residents and/or employees to use transit, smart commute, and alternative transportation options
- As applicable all industrial uses shall be required to enroll in U.S. EPA's SmartWay program and shall use carriers that are SmartWay carriers

Finding:

Mitigation measures identified in EIR would reduce operational and construction emissions, but not below applicable levels of significance.

Facts in Support of Finding

With incorporation of Mitigation Measure AQ-1, emissions from construction activities could be reduced to less than significant levels for the sample multi-family and industrial projects implemented under the Plan. As part of Mitigation Measure AQ-1, individual project architectural coating phases were extended as follows: Multi-family Residential from 35 days to 88 days; and industrial from 20 to 30 days. Adherence to applicable Plan policies, AVAQMD rules, and Mitigation Measure AQ-1 would reduce potential construction-related impacts to the greatest extent possible.

Incorporation of Mitigation Measure AQ-2 would reduce operational emissions. However, given the unknown nature of future development under the Plan and the extent to which the measures identified in Mitigation Measure AQ-2 would be incorporated by each project is unknown, therefore reductions from these measures cannot be quantified. Due to the level of exceedance and the uncertainty of implementation under future Plan development, even with this mitigation it is anticipated the emissions would continue to exceed regulatory thresholds. Therefore, operational impacts would remain significant and unavoidable.

Significance after Mitigation

Given the unknown specifics of each individual project, there is the potential that even with these mitigation measures, impacts from emissions from operational and construction activities would remain significant. Therefore, impacts would be significant and unavoidable.

Utilities and Service Systems

Significant and Unavoidable Cumulative Impact U-1: Development facilitated by the Plan would create additional demand for water supply and wastewater facilities, which would require the construction or relocation of new or expanded water and wastewater facilities. Sufficient water supplied by Palmdale Water District and Los Angeles County Waterworks District 40 would not be available to serve the Plan and reasonably foreseeable future development. The Plan would also exceed capacity of local wastewater treatment facilities. Impacts would be significant and unavoidable.

Mitigation Measures:

At this time, it cannot be determined with certainty whether sufficient water supply sources may be available and sufficient to accommodate the demands of anticipated growth. There are no known mitigation measures that would reduce this impact to less than significant.

Finding:

Sufficient water supplied by PWD and LACWD 40 would not be available to serve the Plan and reasonably foreseeable future development. The Plan would also exceed capacity of local wastewater treatment facilities.

Facts in Support of Finding

While development within the Planning Area would adhere to the Plan policies and water reduction requirements described above, the substantial increase in the Planning Area's population associated with this development would result in water demand that exceeds projected supply. Adherence to Plan policies would address the potential need for additional wastewater treatment facilities, but the substantial increase in the Planning Area's population would result in wastewater generation that could exceed capacity of existing treatment facilities.

5 Project Alternatives

Section 15126.6 of the CEQA Guidelines states the following:

> "An EIR shall describe a reasonable range of alternatives to the project, or to the location of the project, which would feasibly attain most of the basic objectives of the project but would avoid or substantially lessen any of the significant effects of the project, and evaluate the comparative merits of the alternatives. An EIR need not consider every conceivable alternative to a project. Rather it must consider a reasonable range of potentially feasible alternatives that will foster informed decision making and public participation. An EIR is not required to consider alternatives which are infeasible. The lead agency is responsible for selecting a range of project alternatives for examination and must publicly disclose its reasoning for selecting those alternatives. There is no ironclad rule governing the nature or scope of the alternatives to be discussed other than the rule of reason."

Specific economic, legal, social, technological, mobility, or other considerations, make infeasible the mitigation measures or project alternatives identified in the Final EIR.

Where the City of Palmdale has determined that, even after the adoption of all feasible mitigation measures the project would still cause one or more significant environmental impacts that cannot be avoided or lessened to below a level of significance, the City of Palmdale must determine if there is a project alternative that is both environmentally superior and feasible. An alternative may be "infeasible" if it fails to achieve the most basic project objectives identified within the EIR. Further, "feasibility" under CEQA encompasses the desirability of the project "based on a reasonable balancing of the relevant economic, environmental, social, and technological factors" of a project (*City of Del Mar, supra,* 133 Cal.App.3d at p. 417; see also *Sequoyah Hills, supra,* 23 Cal.Ap.4th at p. 715).

The Final EIR determined that the project would have significant and unavoidable impacts associated with air quality (impacts related to construction and operational emissions) and utilities and service systems

(potential for impacts on water supply and wastewater). The alternatives analyzed in the Final EIR and described below are therefore discussed below in terms of their potential ability to avoid or reduce these impacts.

Alternative 1: No Project

The "No Project" Alternative involves continued implementation of the City's current General Plan, the last comprehensive update of which was adopted in 1993. The No Project Alternative assumes that the proposed Plan would not be adopted and therefore future development would be carried out under the City's existing General Plan policies and land use designations. The overall amount of growth anticipated to occur under the City's current General Plan is less than anticipated to occur under the proposed Plan. The proposed Plan includes additional land use designations for mixed housing densities focused around the future downtown area and across Palmdale Boulevard with education and medical districts strategically distributed within the City. Therefore, it also increases the City's total potential population and amount of commercial development compared to the current General Plan. The Plan identifies major strategies and physical improvements for the City over the next 23 years. These strategies include creating a vibrant downtown near the future multimodal transit station, establishing three health and wellness districts and two education districts, transforming Palmdale Boulevard into a mixed-use corridor, promoting a diversity of housing types in the City, forming village centers that offer a mix of residential choices and daily goods and services near existing neighborhoods, and building off existing industrial and aerospace business opportunities. In contrast, the No Project Alternative would continue to facilitate development in the same pattern as currently seen in the Planning Area which is predominately sprawled suburban development. Implementation of the No Project Alternative would result in less new, market-driven development that would likely be spread more widely across the Planning Area and would involve less overall development and associated growth than would occur under Plan. Because development would be more dispersed under this alternative and not concentrated in identified focus areas, it would result in greater per capita VMT than the Plan.

As with the Plan, impacts to Air Quality under the No Project alternative would be significant and unavoidable. As discussed in Impact AQ-1, AQ-2, and AQ-3 in Chapter 4.3, Air Quality of the Final EIR, individual development projects carried out under the Plan would generate construction and operational-related emissions. Even with implementation of Plan policies, compliance with existing regulations, and implementation of mitigation measures, construction and operational emissions would exceed applicable emissions thresholds. The Plan would result in a cumulatively considerable net increase of criteria pollutants; however, impacts related to exposing sensitive receptors to substantial pollutant concentrations and other emissions such as odors would be less than significant. The same would be true with the No Project Alternative. Under this alternative, individual projects would be constructed and operated under the City's current General Plan, and as such would be subject to existing General Plan policies intended to mitigate air quality impacts; however, buildout would result in significant impacts as emissions would exceed applicable thresholds. Further, buildout under the existing General Plan would result in a cumulative net increase of criteria pollutants. As with development under the Plan, development under the No Project Alternative would be subject to applicable Antelope Valley Air Quality Management District (AVAQMD) policies, and the reduced amount of construction under the No Project Alternative would result in reduced construction emissions and slightly reduced impacts to air quality under this alternative. However, impacts would remain significant and unavoidable.

The No Project Alternative would result in less development and less population increase than the Plan, which would tend to decrease demand on existing utilities and service systems, but it would not include policies from the Plan that address water supply, wastewater, and solid waste. Still, development under the No Project Alternative would tend to be more consistent with the existing demand projections of utility

service providers, and could therefore potentially reduce utilities impacts under this alternative to a level that was not significant and unavoidable.

Alternative 2: Reduced Growth

The Reduced Growth Alternative (Alternative 2) is included in the EIR to address potential growth-related impacts associated with the Plan. Although this alternative would result in less overall development than the Plan, development is assumed to occur in the same general locations as under the Plan, and be subject to the same goals, policies, and development standards as under the Plan. Implementation of the Reduced Growth Alternative would result in development within the Planning Area that would generally meet the project objectives established for the Plan, although in some cases to a lesser degree than the Plan. Further, this alternative would result in lower housing density than the Plan and thus would, overall, result in less housing and population growth.

While the Reduced Growth Alternative would result in less development overall, it would still include the same goals and policies as the Plan and could therefore still focus growth in the identified infill focus areas. Per capita Vehicle Miles Traveled (VMT) could therefore be similarly reduced compared to the Plan, at least for new development. Overall, because of its reduced total amount of development and potentially similar per capita VMT, this alternative's air quality impacts would be less than those of the Plan, but still significant and unavoidable.

The Reduced Growth Alternative would result in reduced development potential and reduced population increase and thus a decrease in demand on existing utilities and service systems. This alternative would also include Plan goals and policies related to water, wastewater, storm water drainage, electricity, and natural gas. Because of its reduced overall amount of development and continued applicability of Plan policies, this alternative would result in less demand on utilities and service systems than the Plan, although impacts on water supply and wastewater capacity may still remain significant and unavoidable because development under this alternative may still exceed the existing demand projections of utility service providers.

Environmentally Superior Alternative

When the two alternatives (No Project and Reduced Growth) are compared to each other and the Plan, the Reduced Growth Alternative would be environmentally superior because apart from greater impacts to Land Use and Planning and Transportation, it would have reduced or similar environmental impacts to the Plan, while the No Project Alternative would result in greater impacts to Biological Resources, Cultural Resources, Energy, Geology and Soils, Hazards and Hazardous Materials, Land Use and Planning, Mineral Resources, Noise, Transportation and Traffic, Tribal Cultural Resources and Wildfire, with reduced impacts in Air Quality, Hydrology and Water Quality, Population and Housing, Public Services, Recreation, Utilities and Service Systems, and Wildfire.

Ability to Meet Objectives/Guiding Principles of the Plan

Even though the Reduced Growth Alternative was found to be the environmentally superior alternative, it would not fully meet the objectives/guiding principles of the 2045 General Plan. Implementation of the Reduced Growth Alternative would result in development within the Planning Area that would generally meet the project objectives established for the Plan, although in some cases to a lesser degree than the Plan. This alternative would result in lower housing density than the Plan and thus would, overall, result in less housing and population growth. However, this alternative would result in more growth in the aerospace industrial sector, similar moderate growth in other industrial sectors, and a marginally greater amount of growth in employment flex sectors (mixed use development of lighter industrial uses and more intensive service, retail, and wholesale commercial uses including R&D, small warehouses, office, and medical uses in a walkable and/or auto-accessible environment). Under this alternative, village centers would also have exclusively commercial uses as opposed to the higher density mixed use retail and residential uses

envisioned under the Plan. According to a Future Conditions report prepared by Parsons, overall employment under this alternative would be similar to the Plan while population and household growth would decrease by 2 and 4 percent respectively (Parsons 2021). As discussed in Chapter 4.14, Population and Housing of the EIR, the Plan would help the City meet its Regional Housing Needs Assessment (RHNA) allocation. The Reduced Growth Alternative would do this to a lesser degree than the Plan. The decrease in population would also result in producing fewer work-related trips within the Palmdale city limits. This would contribute to Palmdale being a net importer of commuters, thereby increasing longer commutes. Longer commutes would result in increased VMT, which would be contrary to the proposed Plan's goal of "striving to become a self-contained community."

Conclusion

For these reasons, none of the alternatives are more desirable than the 2045 General Plan in terms of meeting the City's guiding principles and objectives for the project, as outlined above under the Chapter 2, *Project Description*, of the Draft EIR. For this reason and because none of the proposed alternatives would completely avoid the project's significant impacts, none of the proposed alternatives are considered feasible.

6 Statement of Overriding Considerations

Where there are significant and unavoidable impacts from a project, pursuant to Section 15093 of the California Code of Regulations, the City of Palmdale must "balance, as applicable, the economic, legal, social, technological, or other benefits, including region-wide or statewide environmental benefits, of a proposed project against its unavoidable environmental risks, when determining whether to approve the project." The record of those considerations shall include a written statement of overriding considerations that is supported by substantial evidence within the administrative record. A finding consistent with Section 15091(a)(3), that specific economic, legal, social, technological, or other consideration, make infeasible any other mitigation measures or project alternatives that would avoid or lessen this impact to below a level of significance.

The City finds and determines that, as proposed, the majority of the significant impacts of the project will be reduced to acceptable levels by implementation of mitigation measures recommended in these findings. However, the City further finds that cumulative impacts to air quality (impacts related to construction and operational emissions) and utilities and service systems (potential for impacts on water supply and wastewater) from the project are significant and unavoidable even with the implementation of mitigation (Section 4.3, *Air Quality*, and Section 4.19, *Utilities and Service Systems*, of the Final EIR). Collectively, reasonably foreseeable future development and growth in the City of Palmdale would increase ozone and criteria air pollutant emissions beyond local and state thresholds and there would be insufficient water supplies and wastewater capacity available to serve the Planning Area and reasonably foreseeable future development under the Plan. The City further finds that there are no other feasible mitigation measures or feasible project alternatives that will further mitigate, avoid, or reduce to a less-than-significant level these environmental effects.

After due consideration, and in light of the environmental, social, economic, and other considerations identified in the findings, the 2045 General Plan Update, and the record as a whole related to this project, the City chooses to approve the project because, in its independent judgement, the benefits to the project as outlined below substantially outweigh the project's significant and unavoidable adverse environmental impacts.

Benefits of the Project: The City finds that the project, as approved, will have the following economic, social, technological and environmental benefits:

- The project updates outdated policies in a manner that meets current legal requirements for General Plans.
- The project provides a more user-friendly document that will make use of the General Plan easier for decision makers, staff, and the public.
- The project reflects current community goals and preferences as identified during the public outreach process.
- The project would emphasize infill and reuse development within the City limits with a focus on increasing opportunities for housing development in key areas of the City through increased density and mixed-use projects where appropriate.
- The project would provide a well-connected transportation system that enables safe access for all transportation modes, including pedestrians, bicyclists, motorists, and transit riders of all ages and abilities.
- The project would protect the natural resources and scenic assets that define Palmdale including connectivity to trails and open space, maintain mountain views, healthy air quality, and dark night sky.
- The project would manage, conserve, and preserve Palmdale's natural environment for present and future generations and promotes sustainable uses of its resources.
- The project would recognize the importance of and promote ethnic, cultural, and socio-economic diversity and equity to enhance the quality of life in Palmdale.
- The project would invigorate downtown Palmdale as a future downtown that fosters a sense of place, promotes local businesses, provides gathering spaces, and events, and improves the overall appearance of Palmdale
- The project would address crime and safety, increase access to parks and open space, and support marginalized communities like foster youth and those experiencing homelessness.
- The project meets the objectives of the State of California in promoting affordable housing.
- The project sets forth Palmdale community values of opportunity, diversity, and unity, and seeks to promote Palmdale's positive reputation while boosting community beautification.

In order to achieve these objectives, the 2045 General Plan Update focuses on improving how residents get around, meeting community needs with available services, providing a greater sense of identity, adding housing options by promoting higher-density development and infill, and preserving the existing supply of affordable housing. For most of the City, the 2045 General Plan Update preserves the pattern of arterial highways and established communities. Generally, new development in accordance with the 2045 General Plan Update would result in re-use of properties, conversion of properties to different uses in response to market demand, and more intense use of land in defined areas. The Plan's vision specifically includes goals that facilitate the development of complete neighborhoods, promote high quality mixed use development that includes office employment, affordable housing and improved transit and pedestrian linkages near existing transit. New development would occur primarily where existing roads, water, and sewer are in place and in a manner that minimizes the impact of development on existing infrastructure and services.

Findings:

For each and all of these reasons, the City of Palmdale finds that the benefits of the project outweigh the significant and unavoidable environmental effect related to air quality and utilities and service systems.

Therefore, the adverse significant and unavoidable effect is considered to be acceptable by the City of Palmdale City Council, which is the decision-making body for the project, given the importance of this project to the City of Palmdale.

7 Statement of Location and Custodian of Documents

Public Resources Code Section 21081.6(a)(2) and Section 15091(e) of the California Code of Regulation requires that the City of Palmdale, as the Lead Agency, specify the location and custodian of the documents of other materials that constitute the record of proceedings upon which the decision has been based. The following location is where review of the record may be performed:

City of Palmdale
Department of Economic and Community Development- Planning Division
38250 Sierra Highway
Palmdale, California 93550

The City of Palmdale has relied on all of the documents contained within the record of proceedings in reaching its decision on the project.

8 Mitigation Monitoring and Reporting Program

As referenced above in the Findings, a MMRP has been prepared for the project and is to be adopted concurrently with these findings and statement of overriding considerations pursuant to Public Resources Code Section 21081(a)(1). The MMRP is provided as Appendix F to the Final EIR that will be used by the City of Palmdale to track compliance with the project mitigation measures, and is also shown below. The MMRP will remain available for public review during the compliance period, which includes pre-construction coordination, construction, and post-construction documentation.

Mitigation Measure/ Condition of Approval	Action Required	Monitoring Timing	Monitoring Frequency	Responsible Agency	Compliance Verification		
					Initial	Date	Comments
Air Quality							
MM-AQ-1- Architectural Coating							
If a development project facilitated by the Plan would generate construction and operational emissions and such emissions may result in adverse impacts to local air quality, then these recommendations shall be implemented and incorporated in the project. The City shall require that the following measures be implemented for all projects where unmitigated ROG impacts exceed regulatory thresholds. Implementation of these measures shall ensure that ROG emissions are reduced to below 137 lbs/day during construction activities. ▪ Project contractors shall use architectural coating materials that are zero-emission or have a low-ROG content (below 10 grams per liter). Where such ROG coatings are not available or feasible, the coating with the lowest ROG rating available shall be used. These measures shall be noted on all construction plans, and the City shall perform periodic site inspections during construction to verify compliance; and/or, ▪ All architectural coating phases shall be extended such that ROG emissions are reduced to below 137 lbs/day.	Confirm that the actions required under this mitigation measure are implemented for individual projects under the Plan where unmitigated ROG impacts exceed regulatory thresholds.	During construction	Periodically	City of Palmdale Planning Department			
MM-AQ-2: Operational Emissions Reductions							
If a development project facilitated by the Plan would generate construction and operational emissions and such emissions may result in adverse impacts to local air quality, then these recommendations shall be implemented and incorporated in the project. The City shall require that some or all of the following measures be implemented for individual projects under the Plan where unmitigated criteria pollutant impacts exceed regulatory thresholds. Applicable measures shall be incorporated such that emissions are fully reduced to below regulatory thresholds or the greatest extent feasible. The reduction	1. Confirm that some or all of the actions required under this mitigation measures are included in the design of, and made conditions approval of, individual projects under the Plan where unmitigated criteria pollutant impacts exceed regulatory thresholds. 2. Confirm that the actions required as conditions of approval for individual projects under the Plan are carried out during construction and incorporated into the design and operation of those projects where unmitigated criteria	1. Prior to project approval. 2. During construction and at least once before operation (for post-construction actions)	1. Once 2. Periodically	City of Palmdale Planning Department			

Mitigation Measure/ Condition of Approval	Action Required	Monitoring Timing	Monitoring Frequency	Responsible Agency	Compliance Verification		
					Initial	Date	Comments
measures include, but are not limited to, the following: ▪ Architectural coating materials that are zero-emission or have a low-ROG content (below 10 grams per liter). Where such ROG coatings are not available, the coating with the lowest ROG rating available shall be used ▪ Require new development to exceed the applicable Title 24 energy-efficiency requirements ▪ Projects shall incorporate outdoor electrical outlets such that 10 percent of outdoor landscaping equipment can be electrically powered ▪ All dock doors shall be equipped with electric plugs for electric TRUs ▪ Installation of electric vehicle charging stations at three percent beyond those required by State and local codes ▪ Provide infrastructure to allow for future electric vehicle charging stations for a minimum of 10 percent of the parking spaces beyond those already required to accommodate electric vehicle charging stations ▪ Require new development to implement circulation design elements in parking lots for non-residential uses to reduce vehicle queuing and improve the pedestrian environment ▪ Utilization of electric vehicles and/or alternatively fueled vehicles in company fleet ▪ Provision of dedicated parking for carpools, vanpool, and clean air vehicles ▪ Provision of vanpool and/or shuttle service for employees ▪ Implementation of reduced parking minimum requirements ▪ Implementation of maximum parking limits ▪ Provision of bicycle parking facilities beyond those required by State and local codes	pollutant impacts exceed regulatory thresholds.						

Mitigation Measure/ Condition of Approval	Action Required	Monitoring Timing	Monitoring Frequency	Responsible Agency	Compliance Verification		
					Initial	Date	Comments
▪ Provision of a bicycle-share program ▪ Expansion of bicycle routes/lanes along the project site frontage ▪ Provision of new or improved transit amenities (e.g., covered turnouts, bicycle racks, covered benches, signage, lighting) if the project site is located along an existing transit route ▪ Expansion of sidewalk infrastructure along the project site frontage ▪ Provision of safe, pedestrian-friendly, and interconnected sidewalks and streetscapes ▪ Provision of employee lockers and showers ▪ Provision of on-site services that reduce the need for off-site travel (e.g., childcare facilities, automatic teller machines, postal machines, food services) ▪ Provision of alternative work schedule options, such as telework or reduced working days per week (e.g., 9/80 or 10/40 schedules), for employees ▪ Implementation of transportation demand management programs to educate and incentivize residents and/or employees to use transit, smart commute, and alternative transportation options ▪ As applicable all industrial uses shall be required to enroll in U.S. EPA's SmartWay program and shall use carriers that are SmartWay carriers							
Biological Resources							
MM-BIO-1 Pre-Construction Nesting Bird Surveys							
If a development project carried out under the Plan would have the potential to adversely affect special-status species, including nesting birds, or their habitat, then these recommendations shall be implemented and incorporated in the project. To avoid disturbance of nesting and special-status birds, including raptorial species protected by the MBTA and CFGC, activities related to construction projects carried out	Confirm that the actions required under this mitigation measures are implemented for individual projects under the Plan where special-status species have the potential to be adversely affected.	Prior to construction activities	Periodically	City of Palmdale Planning Department			

Mitigation Measure/ Condition of Approval	Action Required	Monitoring Timing	Monitoring Frequency	Responsible Agency	Compliance Verification		
					Initial	Date	Comments
under the Plan, including, but not limited to, vegetation removal, ground disturbance, and construction and demolition shall occur outside of the bird breeding season, February 15 through September 15 (as early as January 1 for some raptors). If construction must begin during the breeding season, then a pre-construction nesting bird survey shall be conducted no more than 3 days prior to initiation of ground disturbance and vegetation removal activities. The nesting bird pre-construction survey shall be conducted on foot inside the area of proposed development, including a 300-foot buffer (500-foot for raptors), and in inaccessible areas (e.g., private lands) from afar using binoculars to the extent practical. The survey shall be conducted by a biologist familiar with the identification of avian species known to occur in southern California desert communities. If nests are found, an avoidance buffer (dependent upon the species, the proposed work activity, and existing disturbances associated with land uses outside of the site) shall be determined and demarcated by the biologist with bright orange construction fencing, flagging, construction lathe, or other means to mark the boundary. All construction personnel shall be notified as to the existence of the buffer zone and to avoid entering the buffer zone during the nesting season. No ground disturbing activities shall occur within this buffer until the avian biologist has confirmed that breeding/nesting is completed and the young have fledged the nest. Encroachment into the buffer shall occur only at the discretion of the qualified biologist							
Cultural Resources							
MM-CUL-1 Historical Resources							
A historical resources evaluation shall be prepared for all discretionary projects carried out under the Plan involving a property which includes buildings, structures, objects, sites, landscape/site plans, or other features that are	1. Confirm that a historic resources evaluation has been prepared by a qualified architectural historian or historian who meets the Secretary of the Interior's Professional Qualifications	1. Prior to construction and grading activities	1. Once	City of Palmdale Planning Department			

Mitigation Measure/ Condition of Approval	Action Required	Monitoring Timing	Monitoring Frequency	Responsible Agency	Compliance Verification		
					Initial	Date	Comments
45 years of age or older. The evaluation shall be prepared by a qualified architectural historian or historian who meets the Secretary of the Interior's Professional Qualifications Standards (PQS) in architectural history or history. The qualified architectural historian or historian shall conduct an intensive-level evaluation in accordance with the guidelines and best practices promulgated by the State Office of Historic Preservation to identify any potential historical resources within the proposed development site. All structures 45 years of age or older shall be evaluated within their historic context and documented in a report meeting the State Office of Historic Preservation guidelines. All evaluated properties shall be documented on Department of Parks and Recreation Series 523 Forms. The report shall be submitted to the City for review and concurrence. If the property is already listed in the NRHP, CRHR, or as a Landmark in Palmdale, the historical resources evaluation described above shall not be required. If historical resources are identified within the project area of a proposed development, efforts shall be made to the extent feasible to ensure that impacts are mitigated. Application of mitigation shall generally be overseen by a qualified architectural historian or historic architect meeting the PQS, unless unnecessary in the circumstances (e.g., preservation in place). In conjunction with any development application that may affect the historical resource, the historical resources evaluation report shall also identify and specify the treatment of character-defining features and construction activities. Efforts shall be made to the greatest extent possible to ensure that the relocation, rehabilitation, or alteration of the resource is consistent with the Secretary of the Interior's Standards for the Treatments of Historic Properties (Standards). In accordance with CEQA, a project that has been determined to conform with the Standards generally would	Standards (PQS) in architectural history or history, consistent with the requirements of this mitigation measure. 2. If historical resources are identified within the project area of a proposed development, confirm that efforts are made, to the extent feasible, to ensure that impacts are mitigated, consistent with the requirements of this mitigation measure. 3. If historical resources are identified within the project area of a proposed development, confirm that efforts have been made to the greatest extent possible to ensure that the relocation, rehabilitation, or alteration of the resource is consistent with the Secretary of the Interior's Standards for the Treatments of Historic Properties (Standards) and the requirements of this mitigation measure. 4. If significant historical resources are identified on a development site and compliance with the Standards and or avoidance is not possible, confirm that appropriate site-specific mitigation measures are established and undertaken, consistent with the requirements of this mitigation measure.	2. Prior to construction and grading activities 3. Prior to construction and grading activities 4. Prior to construction and grading activities	2. Once 3. Once 4. Once				

Mitigation Measure/ Condition of Approval	Action Required	Monitoring Timing	Monitoring Frequency	Responsible Agency	Compliance Verification		
					Initial	Date	Comments
not cause a significant adverse direct or indirect impact to historical resources (14 CCR § 15126.4(b)(1)). Application of the Standards shall be overseen by a qualified architectural historian or historic architect meeting the PQS. In conjunction with any development application that may affect the historical resource, a report identifying and specifying the treatment of character-defining features and construction activities shall be provided to the City for review and concurrence. As applicable, the report shall demonstrate how the project complies with the Standards and be submitted to the City for review and approval prior to the issuance of any permits. If significant historical resources are identified on a development site and compliance with the Standards and or avoidance is not possible, appropriate site-specific mitigation measures shall be established and undertaken. Mitigation measures may include documentation of the historical resource in the form of a Historic American Building Survey (HABS)-Like report. The report shall comply with the Secretary of the Interior's Standards for Architectural and Engineering Documentation and shall generally follow the HABS Level III requirements, including digital photographic recordation, detailed historic narrative report, and compilation of historic research. The documentation shall be completed by a qualified architectural historian or historian who meets the PQS and be submitted to the City prior to issuance of any permits for demolition or alteration of the historical resource.							
MM-CUL-2 Phase 1 Archaeological Resources Study							
For any project carried out under the General Plan Update, the City and/or project applicant shall investigate the potential to disturb archaeological resources. If the project will involve any ground disturbance (unless the project site is within soils that can be reliably demonstrated as being non-native or artificial	1. If any project carried out under the General Plan Update will involve any ground disturbance (unless the project site is within soils that can be reliably demonstrated as being non-native or artificial fill) confirm that a Phase I cultural resources study consistent with	1. Prior to issuance of construction and grading permits	1. Once	City of Palmdale Planning Department			

Mitigation Measure/ Condition of Approval	Action Required	Monitoring Timing	Monitoring Frequency	Responsible Agency	Compliance Verification		
					Initial	Date	Comments
fill) a Phase I cultural resources study shall be performed by a qualified professional meeting the Secretary of the Interior's (SOI's) Professional Qualification Standards (PQS) for archaeology (National Park Service 1983). If a project would solely involve the refurbishment of an existing building and no ground disturbance would occur, this measure would not be required. The Phase I cultural resources study shall include a pedestrian survey of the project site and sufficient background research and field sampling to determine whether archaeological resources may be present. Archival research shall include a records search of the South Central Coastal Information Center no more than two years old and a Sacred Lands File search with the NAHC. The Phase I technical report documenting the study shall include recommendations that must be implemented prior to and/or during construction to avoid or reduce impacts on archaeological resources. The report shall be submitted to the City of Palmdale for review and approval prior to the issuance of any grading or construction permits. Recommendations in the Phase I technical report shall be made Conditions of Approval and shall be implemented throughout all ground disturbance activities.	the requirements of this mitigation measure has been performed by a qualified professional meeting the Secretary of the Interior's (SOI's) Professional Qualification Standards (PQS) for archaeology (National Park Service 1983), and review and approve this study. 2. Make all recommendations of the Phase I technical report Conditions of Approval of the project. 3. Confirm that all Conditions of Approval are carried out throughout all ground disturbance activities.	2. Prior to issuance of construction and grading permits 3. During ground disturbance activities	2. Once 3. Periodically				
MM-CUL-3 Extended Phase 1 Testing							
For any projects proposed within 100 feet of a known archaeological site and/or in areas identified as sensitive by a Phase I study [Mitigation Measure CUL-2], the project applicant shall retain a qualified archaeologist to conduct an Extended Phase I (XPI) study to determine the presence/absence and extent of archaeological resources on the project site. XPI testing should comprise a series of shovel test pits and/or hand augured units and/or mechanical trenching to establish the boundaries of archaeological site(s) on the project site. If the boundaries of the archaeological site are already well understood from previous archaeological work, an XPI will	1. Confirm that an XPI study has been done by a qualified archaeologist retained by the project applicant if required under this mitigation measure, and review and approve the XPI. 2. Confirm that all recommendations of the XPI are carried out throughout all ground disturbance activities.	1. Prior to issuance of construction and grading permits 2. During ground disturbance activities	1. Once 2. Periodically	City of Palmdale Planning Department			

Mitigation Measure/ Condition of Approval	Action Required	Monitoring Timing	Monitoring Frequency	Responsible Agency	Compliance Verification		
					Initial	Date	Comments
not be required. If the archaeological resource(s) of concern are Native American in origin, the qualified archaeologist shall confer with local California Native American tribe(s).							
All archaeological excavation shall be conducted by a qualified archaeologist(s) under the direction of a principal investigator meeting the SOI's PQS for archaeology (National Park Service 1983). If an XPI report is prepared, it shall be submitted to the City of Palmdale for review and approval prior to the issuance of any grading or construction permits. Recommendations contained therein shall be implemented for all ground disturbance activities.							
MM-CUL-4 Archaeological Site Avoidance							
Any identified archaeological sites (determined after implementing mitigation measures CUL-2 and/or CUL-3) shall be avoided by project-related construction activities, where feasible. A barrier (temporary fencing) and flagging shall be placed between the work location and any resources within 60 feet of a work location to minimize the potential for inadvertent impacts.	Confirm that the avoidance measures described in this mitigation measure are being carried out during project-related construction activities.	During construction and grading activities	Periodically	City of Palmdale Planning Department			
MM-CUL-5 Phase II Site Evaluation							
If the results of any Phase I and/or XPI (mitigation measures CUL-2 and/or CUL-3) indicate the presence of archaeological resources that cannot be avoided by the project (Mitigation Measure CUL-4) and that have not been adequately evaluated for the NRHP or CRHR listing at the project site, the qualified archaeologist shall conduct a Phase II investigation to determine if intact deposits remain and if they may be eligible for the CRHR or qualify as unique archaeological resources. If the archaeological resource(s) of concern are Native American in origin, the qualified archaeologist shall confer with local California Native American tribe(s).	1. If the results of any Phase I and/or XPI (mitigation measures CUL-2 and/or CUL-3) indicate the presence of archaeological resources that cannot be avoided by the project (Mitigation Measure CUL-4) and that have not been adequately evaluated for the NRHP or CRHR listing at the project site, confirm that a Phase II cultural resources study consistent with the requirements of this mitigation measure has been performed by a qualified professional meeting the Secretary of the Interior's (SOI's) Professional Qualification Standards (PQS) for archaeology (National Park Service 1983), and review and approve this study.	1. Prior to issuance of construction and grading permits	1. Once	City of Palmdale Planning Department			
A Phase II evaluation shall include any necessary archival research to identify significant historical associations and mapping of surface artifacts,	2. Make all recommendations of the Phase II technical report Conditions of Approval of the project.	2. Prior to issuance of construction and grading permits	2. Once				

Mitigation Measure/ Condition of Approval	Action Required	Monitoring Timing	Monitoring Frequency	Responsible Agency	Compliance Verification		
					Initial	Date	Comments
collection of functionally or temporally diagnostic tools and debris, and excavation of a sample of the cultural deposit. The sample excavation will characterize the nature of the sites, define the artifact and feature contents, determine horizontal and vertical boundaries, and retrieve representative samples of artifacts and other remains. If the archeologist and, if applicable, a Native American monitor (see Mitigation Measure TCR-2) or other interested tribal representative determine it is appropriate, cultural materials collected from the site shall be processed and analyzed in a laboratory according to standard archaeological procedures. The age of the materials shall be determined using radiocarbon dating and/or other appropriate procedures; lithic artifacts, faunal remains, and other cultural materials shall be identified and analyzed according to current professional standards. The significance of the sites shall be evaluated according to the criteria of the CRHR. The results of the investigations shall be presented in a technical report following the standards of the California Office of Historic Preservation publication "Archaeological Resource Management Reports: Recommended Content and Format (1990 or latest edition)." The report shall be submitted to the City of Palmdale for review and approval prior to the issuance of any grading or construction permits. Recommendations in the Phase II report shall be implemented for all ground disturbance activities	3. Confirm that all Conditions of Approval are carried out throughout all ground disturbance activities.	3. During ground disturbance activities	3. Periodically				
MM-CUL-6 Phase III Data Recovery							
Should the results of the Phase II site evaluation (Mitigation Measure CUL-5) yield resources that meet CRHR significance standards and if the resource cannot be avoided by project construction in accordance with CUL-4, the project applicant shall ensure that all feasible recommendations for mitigation of archaeological impacts are incorporated into the final design and approved by the City of	1. Confirm that any reports found to be necessary under the requirements of this mitigation measure have been submitted to, and reviewed and approved by, the City of Palmdale prior to issuance of any grading or construction permit. 2. Confirm that all feasible recommendations of the reports required under this mitigation measure have been	1. Prior to issuance of construction and grading permits 2. Prior to issuance of construction and	1. Once 2. Once	City of Palmdale Planning Department			

Mitigation Measure/ Condition of Approval	Action Required	Monitoring Timing	Monitoring Frequency	Responsible Agency	Compliance Verification		
					Initial	Date	Comments
Palmdale prior to construction. Any necessary Phase III data recovery excavation, conducted to exhaust the data potential of significant archaeological sites, shall be carried out by a qualified archaeologist meeting the SOI PQS for archaeology according to a research design reviewed and approved by the City of Palmdale prepared in advance of fieldwork and using appropriate archaeological field and laboratory methods consistent with the California Office of Historic Preservation Planning Bulletin 5 (1991), Guidelines for Archaeological Research Design, or the latest edition thereof. If the archaeological resource(s) of concern are Native American in origin, the qualified archaeologist shall confer with local California Native American tribe(s). If applicable, a Native American monitor shall be present. As applicable, the final Phase III Data Recovery reports shall be submitted to the City of Palmdale prior to issuance of any grading or construction permit. Recommendations contained therein shall be implemented throughout all ground disturbance activities.	incorporated into the final design of the project and approved by the City of Palmdale 3. Confirm that all feasible recommendations of the reports required under this mitigation measure are carried out as described in this mitigation measure.	grading permits 3. During construction	3. Periodically				
MM-CUL-7 Cultural Resources Monitoring							
If recommended by Phase I, XPI, Phase II, or Phase III studies [mitigation measures CUL-2, CUL-3, CUL-5, and/or CUL-6], the project applicant shall retain a qualified archaeologist to monitor project-related, ground-disturbing activities. If archaeological resources are encountered during ground-disturbing activities, mitigation measures CUL-4 through CUL-6 shall be implemented, as appropriate.	Confirm that the appropriate mitigation measures have been implemented during ground-disturbing activities.	During construction and grading activities	Periodically throughout construction activities	City of Palmdale Planning Department			
MM-CUL-8 Unanticipated Discovery of Archaeological Resource							
If archaeological resources are encountered during ground-disturbing activities, work within 60 feet shall be halted and the project archaeologist meeting the SOI's Professional Qualification Standards for archaeology (National Park Service 1983) shall immediately evaluate the find. If necessary, the evaluation may require preparation of a treatment plan	1. Confirm that any reports required to document and/or evaluate unanticipated discoveries have been submitted to the City of Palmdale for review and approval. 2. Confirm that recommendations contained therein shall be implemented throughout the remainder of ground disturbance activities.	1. Prior to issuance of construction and grading permits 2. During construction and grading activities	1. Once 2. Periodically	City of Palmdale Planning Department			

Mitigation Measure/ Condition of Approval	Action Required	Monitoring Timing	Monitoring Frequency	Responsible Agency	Compliance Verification		
					Initial	Date	Comments
and archaeological testing for CRHR eligibility. If the discovery proves to be significant under CEQA and cannot be avoided by the project, additional work may be warranted, such as data recovery excavation, to mitigate any significant impacts to historical resources. Any reports required to document and/or evaluate unanticipated discoveries shall be submitted to the City of Palmdale for review and approval. Recommendations contained therein shall be implemented throughout the remainder of ground disturbance activities.							
Geology and Soils							
MM-GEO-1 Unanticipated Discovery of Paleontological Resources							
If paleontological resources are encountered during ground-disturbing activities, work within 60 feet shall be halted and the project paleontologist shall immediately evaluate the find. If necessary, the evaluation may require preparation of a treatment plan and paleontological testing. If the discovery proves to be significant under CEQA and cannot be avoided by the project, additional work may be warranted, such as data recovery excavation, to mitigate any significant impacts to historical resources. Any reports required to document and/or evaluate unanticipated discoveries shall be submitted to the City of Palmdale for review and approval. Recommendations contained therein shall be implemented throughout the remainder of ground disturbance activities.	1. Confirm that any reports required to document and/or evaluate unanticipated discoveries have been submitted to the City of Palmdale for review and approval. 2. Confirm that recommendations contained therein are implemented throughout the remainder of ground disturbance activities.	1. Prior to issuance of construction and grading permits 2. During construction and grading activities	1. Once 2. Periodically	City of Palmdale Planning Department			
Noise							
MM-NOI-1 Construction Vibration Control Measures							
The following measures to minimize exposure to construction vibration shall be included as standard conditions of approval, as applicable, for construction projects carried out under the Plan within 50 feet of fragile buildings as defined in this mitigation measure. 1. Avoid the use of vibratory rollers within 50 feet of fragile buildings, which are buildings that are susceptible to damage from	Confirm that the appropriate mitigation measures have been implemented.	Throughout construction and grading activities	Periodically	City of Palmdale Planning Department			

Mitigation Measure/ Condition of Approval	Action Required	Monitoring Timing	Monitoring Frequency	Responsible Agency	Compliance Verification		
					Initial	Date	Comments
vibration as determined by the Palmdale Planning Department. 2. Schedule construction activities with the highest potential to produce vibration to hours with the least potential to affect nearby institutional, educational, and office uses that the Federal Transit Administration identifies as sensitive to daytime vibration (FTA 2006). 3. Notify neighbors of scheduled construction activities that would generate vibration.							
Tribal Cultural Resources							
MM-TCR-1 Native American Monitoring							
Prior to the issuance of a grading permit for a project under the Plan, the City of Palmdale (City) shall ensure that the project applicant seeks the services of a tribal monitor(s) approved by the relevant tribes to provide Native American monitoring during ground-disturbing activities. This provision shall be included on the proposed project contractor's plans and specifications. Ground-disturbing activities are defined by the relevant tribes as activities that may include but are not limited to pavement removal, pot-holing or using an auger, grubbing, tree removals, borings, grading, excavation, drilling, and/or trenching within the project area. The project site shall be made accessible to the monitor(s), provided adequate notice is given to the construction contractor and that a construction safety hazard does not occur. The monitor(s) shall possess Hazardous Waste Operations and Emergency Response (HAZWOPER) certification. In addition, the monitor(s) shall be required to provide insurance certificates, including liability insurance. If evidence of tribal cultural resources is found during ground-disturbing activities, the monitor(s) shall have the capacity to halt construction in the immediate vicinity of the find to recover and/or determine the appropriate plan of recovery for the resource in consultation with a qualified archaeologist. The	Confirm that a tribal monitor has been approved by the relevant tribes to provide Native American monitoring during ground-disturbing activities, consistent with the requirements of this mitigation measure	Prior to issuance of a grading permit for a project under the Plan	Once	City of Palmdale Planning Department			

Mitigation Measure/ Condition of Approval	Action Required	Monitoring Timing	Monitoring Frequency	Responsible Agency	Compliance Verification		
					Initial	Date	Comments
recovery process shall not unreasonably delay the construction process and must be carried out consistent with CEQA and local regulations. Construction activity shall not be contingent on the presence or availability of a monitor, and construction may proceed regardless of whether or not a monitor is present on site. The monitor shall complete daily monitoring logs that will provide descriptions of the day's activities and general observations and whether the Native American monitor believes they observed a TCR and what action they took. The on-site monitoring shall end when the project site grading and excavation activities are completed or prior to the completion if the monitor has indicated that the site has a low potential for tribal cultural resources.							
MM-TCR-2 Unanticipated Discovery of Tribal Cultural Resources							
Upon discovery of any tribal cultural resources, the Native American monitor has the ability to halt construction activities in the immediate vicinity (within 50 feet) of the find until the find can be assessed. All tribal cultural resources unearthed during project construction activities shall be evaluated by the Native American monitor approved by the relevant tribes and a qualified archaeologist. Construction work shall be permitted to continue on other parts of the project site while evaluation and, if necessary, additional investigations and/or preservation measures take place (CEQA Guidelines Section15064.5(f)). If the resources are Native American in origin, the relevant tribes tribe shall coordinate with the landowner regarding treatment and curation of these resources. If a resource is determined by the qualified archaeologist to constitute a "historical resource" or "unique archaeological resource," time allotment and funding sufficient to allow for implementation of avoidance measures shall be made available through coordination between the relevant tribes and the project applicant. The treatment plan established for the resources shall be in accordance with	1. Upon the discovery of any tribal cultural resources, confirm construction has been halted per the Native American monitor's assessment. 2. Confirm that the avoidance measures described in this mitigation measure have been implemented	1. Upon the discovery of any tribal cultural resources 2. Throughout construction and grading activities after the discovery of any tribal cultural resource	1. Once for each occurrence 2. Periodically	City of Palmdale Planning Department			

Mitigation Measure/ Condition of Approval	Action Required	Monitoring Timing	Monitoring Frequency	Responsible Agency	Compliance Verification		
					Initial	Date	Comments
California Environmental Quality Act (CEQA) Guidelines Section 15064.5(f) for historical resources and Public Resources Code (PRC) Sections 21083.2(b) for unique archaeological resources. Preservation in place (i.e., avoidance) shall be the preferred manner of treatment. If preservation in place is not feasible, treatment may include implementation of archaeological data recovery excavations to remove the resource along with subsequent laboratory processing and analysis.							

EXHIBIT IV

Envision PALMDALE 2045

a **complete** community



City of Palmdale
Public Draft General Plan
July 2022

CITY OF PALMDALE
a place to call home

Envision PALMDALE 2045

a **complete** community

City of Palmdale, California
Public Draft General Plan

Envision PALMDALE 2045
a complete community

Acknowledgements

City Council

Steven D. Hofbauer, Mayor
Richard J. Loa, Mayor Pro Tem
Austin Bishop, Councilmember
Laura Bettencourt, Councilmember
Juan Carrillo, Councilmember

Planning Commission

Stacia Nemeth, Chair
Bart Avery, Vice Chair
Christina Fraga-Saenz, Commissioner
Dean Henderson, Commissioner
V. Jesse Smith, Commissioner

General Plan Advisory Committee

Juan Blanco
Colby Estes
Lourdes T. Everett
Laura Gordon
Theresa Hambro
Matthew Harris
Aurora Hernandez
Pat Hunt
Sheri Kaneshiro
Teresa Lamping
Deborah Rutkowski-Hines
Jason Zink
Tony Avila*
Joe Parisio*

City Staff

City Manager's Office
Ronda Perez, Interim City Manager
~~Michael Behen, Deputy City Manager~~

Economic and Community Development
Luis Garibay, Director Economic and Community Development
Megan Taggart, Planning Manager
Brenda Magaña, Senior Planner

Neighborhood Services
Sophia Reyes, Housing Manager

Parks and Recreation
Keri Smith, Director of Parks and Recreation
Eric Dombrowski, Deputy Director of Parks and Recreation

Public Works
Chuck Heffernan, Director of Public Works
Jay Nelson, Traffic Engineer
Bill Padilla, City Engineer

**Denotes former GPAC members*

Imagina
PALMDALE 2045
una comunidad completa

Acknowledgements

Consultant Team

Raimi + Associates
Planning, Urban Design, Sustainability, and Community Engagement
Simran Malhotra, Principal
Melissa Stark, Senior Planner
Troy Reinhalter, Associate

Rincon Consultants—Environmental Assessment, Technical Elements
Matt Maddox, Principal
Greg Martin, Project Manager
Lexi Journey, Senior Planner

Nelson\Nygaard—Mobility
Meghan Weir, Principal
Zachary Zabel, Senior Associate II
Monique Ho, Associate

HR&A Advisors—Economic Development
Amitabh Barthakur, Partner
Garrett Rapsilber, Senior Analyst
Jena Fitzpatrick, Senior Analyst

Veronica Tam and Associates—Housing
Veronica Tam, Principal
Holly Safran, Planner

Arellano Associates—Community Engagement
Chester Britt, Executive Vice President
Celeste Milam, Senior Project Coordinator
Jennifer Valezquez, Project Coordinator

Parsons—Traffic Modelling
Sathya Thygaraj, Traffic Modeler



Contents



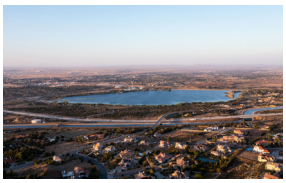
Chapter 1. Vision and Guiding Principles 9



Chapter 2. History and Profile 15



Chapter 3. Process and Community Engagement 27



Chapter 4. Plan Overview 37



Chapter 5. Land Use and Community Design 49



Chapter 6. Circulation and Mobility 139



Chapter 7. Economic Development 179



Chapter 8. Military Compatibility 201



Chapter 9. Equitable and Healthy Communities 221



Chapter 10. Parks, Recreation, and Open Space 251



Chapter 11. Conservation 275



Chapter 12. Public Facilities, Services, and Infrastructure 297





Chapter 13. Safety 327



Chapter 14. Sustainability, Climate Action, and Resilience 355



Chapter 15. Air Quality 389



Chapter 16. Noise 403

Appendices

Appendix A: Community Engagement A.1
Appendix B: SB 1000 Environmental Justice Analysis B.1
Appendix C: Evacuation Scenario Analysis C.1
Appendix D: GHG Inventory and Forecast Methodology D.1

What is this symbol?

The "Wings" serve a metaphorical and functional purpose within the General Plan Update document. They represent a future of prosperity and freedom of forward mobility for our city. The functional aspect of this icon is detailed below.

This icon indicates more information is available on the web. By selecting this icon you will be directed to the indicated item's respective website or query.



Sunset View Overlooking Palmdale

Envision
PALMDALE 2045
a complete community



Chapter 1

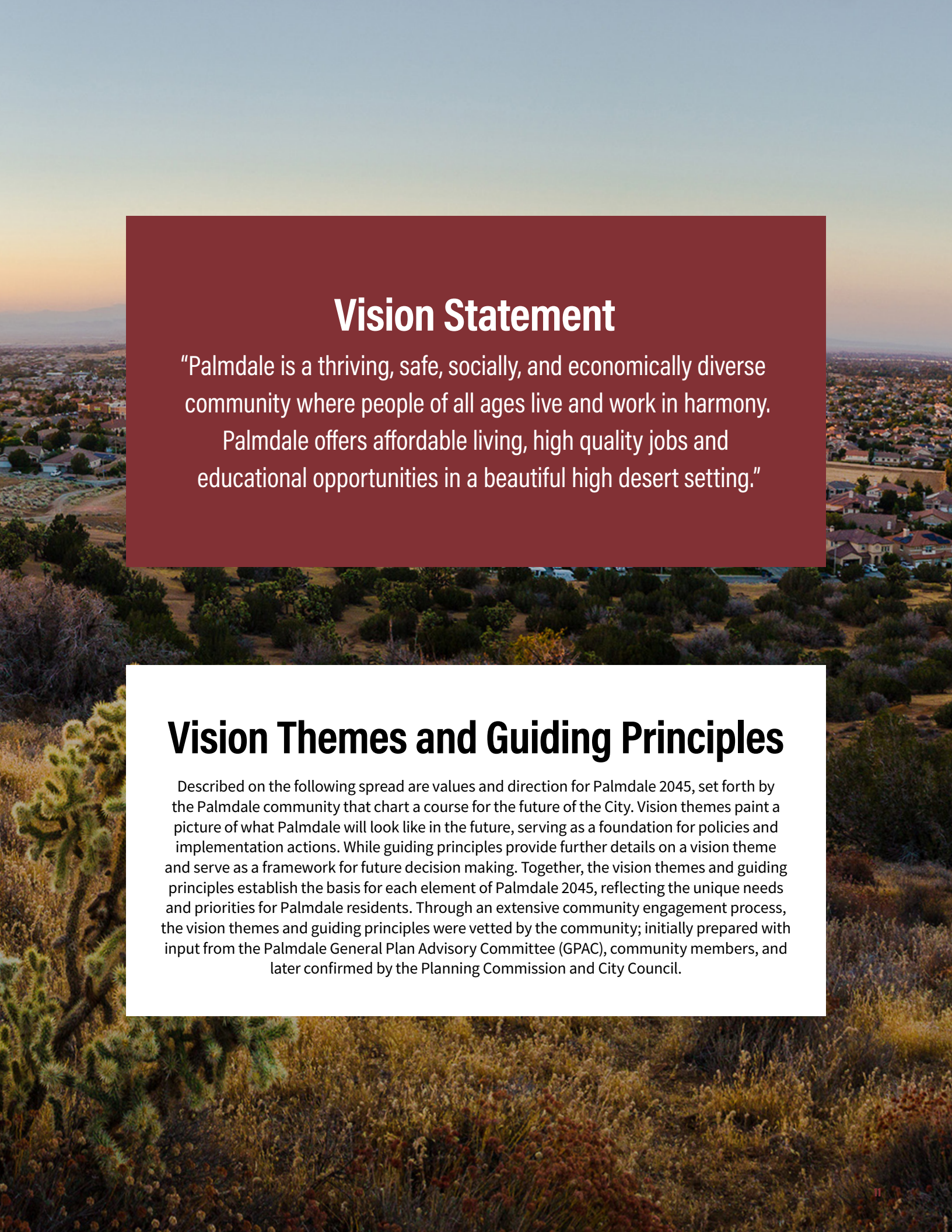
Vision and Guiding Principles

Envision Palmdale 2045 presents the community's vision for Palmdale for the next two decades. This chapter provides an overview of the community's values and guiding principles for the future, which are woven throughout the General Plan and create the framework for Palmdale 2045.

Introduction

Through stakeholder focus groups, community workshops, pop-up events, online community surveys, and meetings with the General Plan Advisory Committee (GPAC), the community explored how individuals envision the future of Palmdale, what makes it unique and special, and what things residents and businesses would like to change. Building on nearly four years of community input, this chapter summarizes a series of high-level visioning themes and a list of guiding principles or community values organized under each of those themes.





Vision Statement

"Palmdale is a thriving, safe, socially, and economically diverse community where people of all ages live and work in harmony. Palmdale offers affordable living, high quality jobs and educational opportunities in a beautiful high desert setting."

Vision Themes and Guiding Principles

Described on the following spread are values and direction for Palmdale 2045, set forth by the Palmdale community that chart a course for the future of the City. Vision themes paint a picture of what Palmdale will look like in the future, serving as a foundation for policies and implementation actions. While guiding principles provide further details on a vision theme and serve as a framework for future decision making. Together, the vision themes and guiding principles establish the basis for each element of Palmdale 2045, reflecting the unique needs and priorities for Palmdale residents. Through an extensive community engagement process, the vision themes and guiding principles were vetted by the community; initially prepared with input from the Palmdale General Plan Advisory Committee (GPAC), community members, and later confirmed by the Planning Commission and City Council.

Vision Themes and Guiding Principles



A UNIFIED AND WELCOMING COMMUNITY THAT WE'RE PROUD TO LIVE IN

- Respect and promote diversity within Palmdale
- Promote Palmdale's positive reputation in the region
- Boost community beautification
- Offer opportunities for youth to stay in Palmdale – jobs, housing, education
- Enhance partnerships with surrounding communities in the Antelope Valley



ACTIVE AND VIBRANT DOWNTOWN

- Create a vibrant and active downtown environment
- Improve the appearance of Palmdale Boulevard
- Encourage and foster local businesses
- Provide space for community gathering and events
- Increase opportunities for entertainment and/or shopping
- Address displacement issues



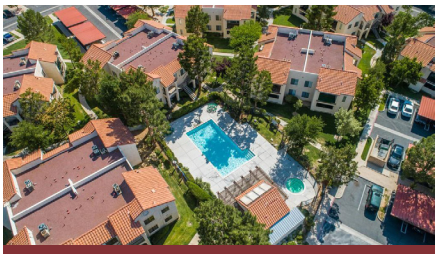
DIVERSE AND HIGH-QUALITY JOB OPTIONS

- Provide job training for Palmdale residents in key industries
- Connect residents with job opportunities in aerospace and other emerging sectors
- Encourage telecommuting within Palmdale
- Promote diverse entry-level and mid-level jobs in Palmdale



DIVERSE AND RESILIENT LOCAL ECONOMY

- Retain and support aerospace industry presence in Palmdale
- Leverage economic opportunities from an expanded transportation center and potential passenger air service at Palmdale Regional Airport
- Attract new sustainable employers and industries to Palmdale
- Maintain and enhance smart city technology in Palmdale to support local businesses and telecommuting
- Support local small businesses



SAFE, HEALTHY PLACE TO LIVE AND WORK

- Improve neighborhood safety
- Address crime and safety concerns
- Improve access to parks and open space
- Support local foster youth and those experiencing homelessness
- Foster active living with improvements to the pedestrian environment
- Prioritize walking, biking, and access to local and regional transit
- Promote living and working in Palmdale and reducing commute times



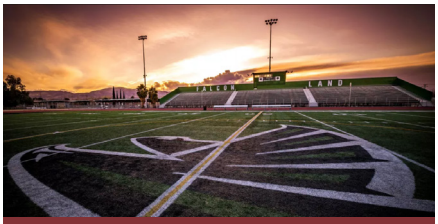
HIGH QUALITY MEDICAL AND MENTAL HEALTHCARE

- Improve access to and promote quality healthcare services and facilities in Palmdale
- Attract physicians to Palmdale
- Maintain Palmdale Regional Hospital and encourage continued expansion of services and facilities



HOUSING OPTIONS FOR RESIDENTS AT DIFFERENT STAGES OF LIFE AND ABILITY

- Create and preserve affordable housing for residents of Palmdale
- Increase supply and diversity of housing to support different types of households including seniors, young adults, families, empty nesters, individuals or families with special needs, and multigenerational families
- Maintain the City's quiet and safe neighborhoods
- Maintain rural and semi-rural neighborhoods in Palmdale
- Connect new development to public transit and open space or public parks



HIGH QUALITY AND ACCESSIBLE EDUCATIONAL OPPORTUNITIES

- Promote and expand higher educational opportunities in Palmdale
- Develop additional trade school training and apprentice programs
- Promote opportunities for high-quality childcare and early education
- Expand partnerships and programs with public schools, local government, and major employers within Palmdale



PALMDALE'S BEAUTIFUL NATURAL SETTING

- Maintain safe and convenient access to open space and trails
- Improve connectivity, beautify trails, and open space
- Expand and improve public parks to meet the needs of current and future residents
- Preserve existing mountain views
- Preserve access to a dark night sky
- Maintain high air quality



FOREFRONT OF TRANSPORTATION INNOVATIONS

- Leverage transportation investments in Palmdale
- Build on High-Speed Rail opportunities
- Bring air service to Palmdale Regional Airport
- Improve local transit



GENERAL PLAN IMPLEMENTATION

- Establish metrics for tracking General Plan implementation
- Regular review and update of General Plan goals and policies



View of San Gabriel Mountains from Palmdale



Chapter 2

History and Profile

Palmdale's history, regional setting, and demographic makeup play a key role in understanding key issues, opportunities, and the community's vision. This chapter provides a brief overview of Palmdale's history and community profile.

City of Palmdale Profile

Location and Planning Boundaries

Palmdale is located in northern Los Angeles County situated in the Antelope Valley region of Southern California, approximately 60-miles driving distance from downtown Los Angeles, as shown in Figure 2.1. The Planning Area for the 2045 General Plan includes land within Palmdale City Limits, Sphere of Influence (SOI), and several unincorporated Los Angeles County areas. Together, these areas measure a total of 129,032 acres (or 201.6 square miles) as shown in Figure 2.2.

Palmdale City Limits covers 68,019 acres (or 106.3 square miles), making it one of the largest cities (in terms of land area) in the United States. The Sphere of Influence (SOI), or area outside the City's limits but within its legal planning area, adds another 44,241 acres (or 69.1 square miles). Included in the SOI, City of Palmdale has four distinct unincorporated County Islands[1] within the Planning area which total 16,772 acres (or 26.2 square miles).

Sphere of Influence

The Sphere of Influence (SOI) is the "probable physical boundaries and service area" of a city, as defined by the State General Plan Guidelines. Within these areas the City of Palmdale has power to affect developments, though formal authority is limited. Palmdale's Sphere of Influence spans 69 square miles and includes the County Islands mentioned in the previous section as well as land to the south near the Little Rock Creek Wash and San Gabriel Mountain range, as well as a small area to the west near Leona Valley.



Aerial View of Palmdale/Antelope Valley

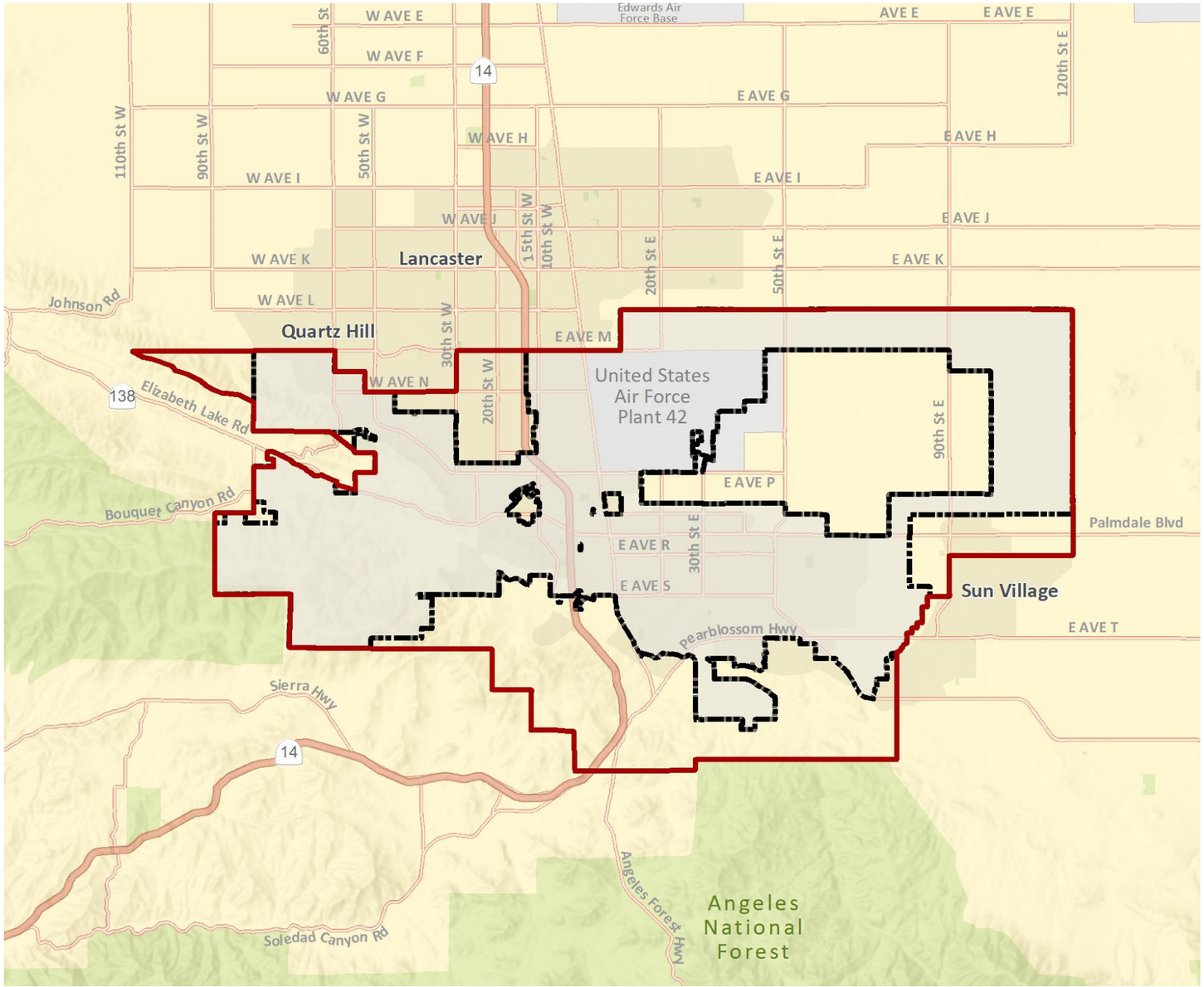
Unincorporated County Islands

The four incorporated County Islands areas including the area located east of Plant 42, currently owned by Los Angeles World Airports (LAWA) measuring 16,381 acres (or 25.6 square miles); Desert View Highlands which is recognized as a census-designated place, entirely developed with residential homes, commercial uses, and two elementary schools, spanning 273 acres; a small area north of Avenue Q and east of 3rd Street East that encompasses a mobile home park and vacant land; and 118 acres of duplexes, light industrial, and vacant parcels in an area bounded by East Avenue Q, Sierra Highway, 10th Street East, and East Avenue P-8. .

1. City land surrounding a pocket of County land is commonly referred to as a County Island.



Aerial View of Palmdale



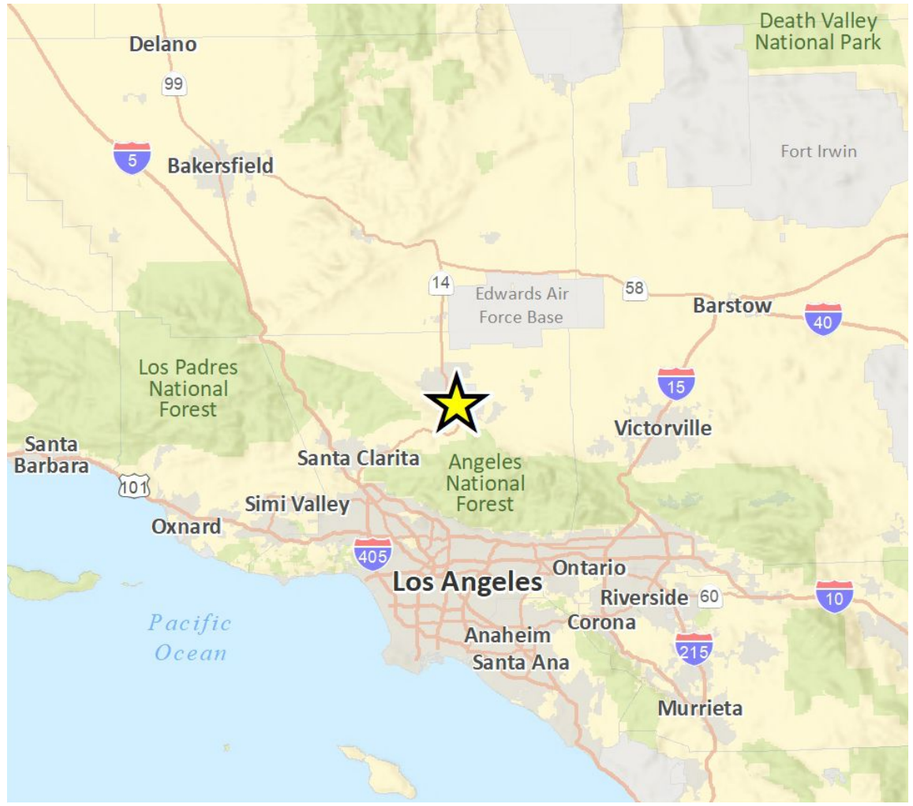


Figure 2.1 Regional Location

- California Aqueduct
- City Boundary
- Sphere of Influence

Source: ESRI and its Licensors © 2021. Additonal data provided by Los Angeles County LAFCO, 2014.

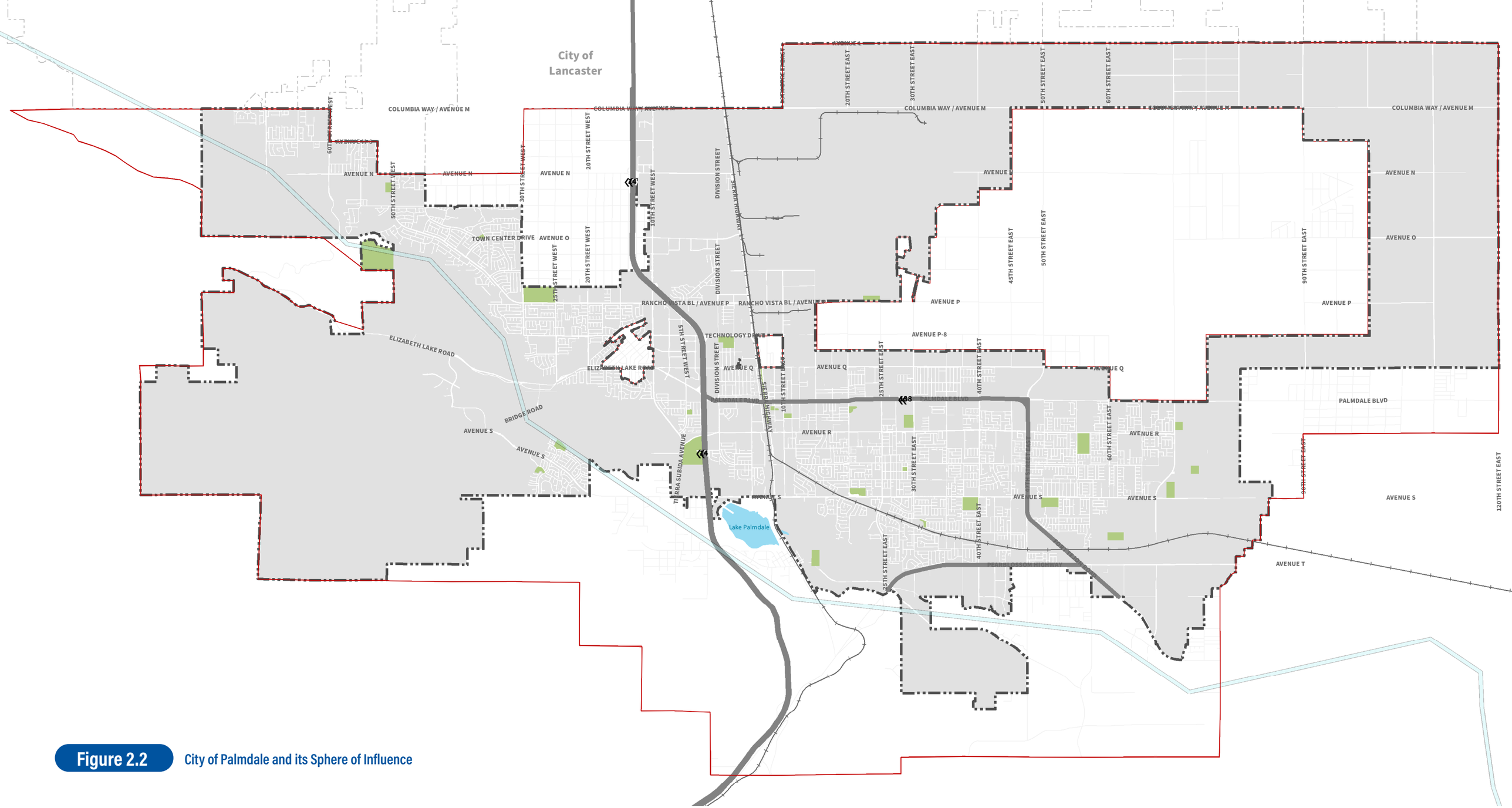


Figure 2.2 City of Palmdale and its Sphere of Influence

Data Sources: City of Palmdale GIS data; World Terrain Base, 2015 ESRI, USGS, NOAA.

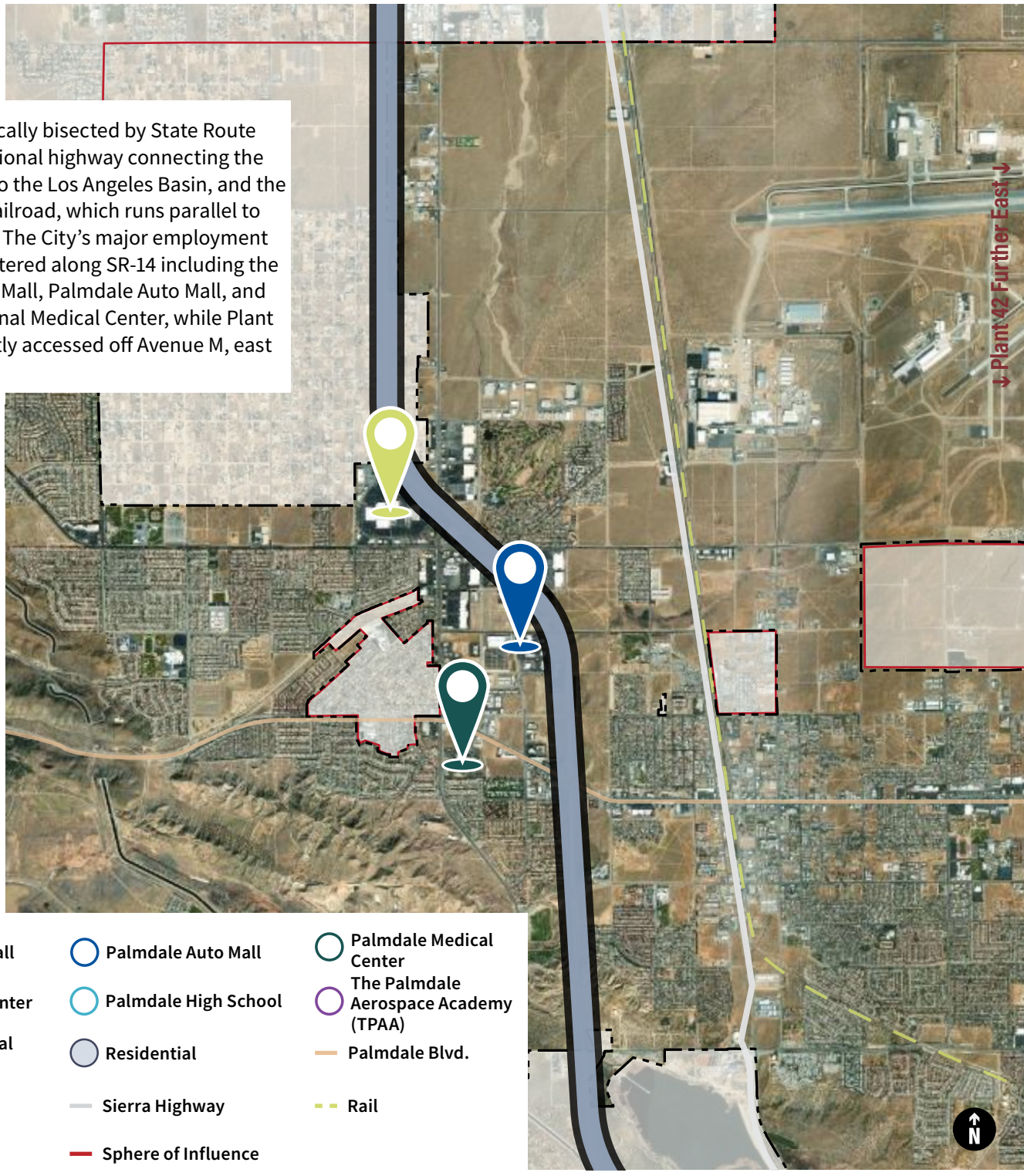
Produced by Raimi + Associates
March 2019

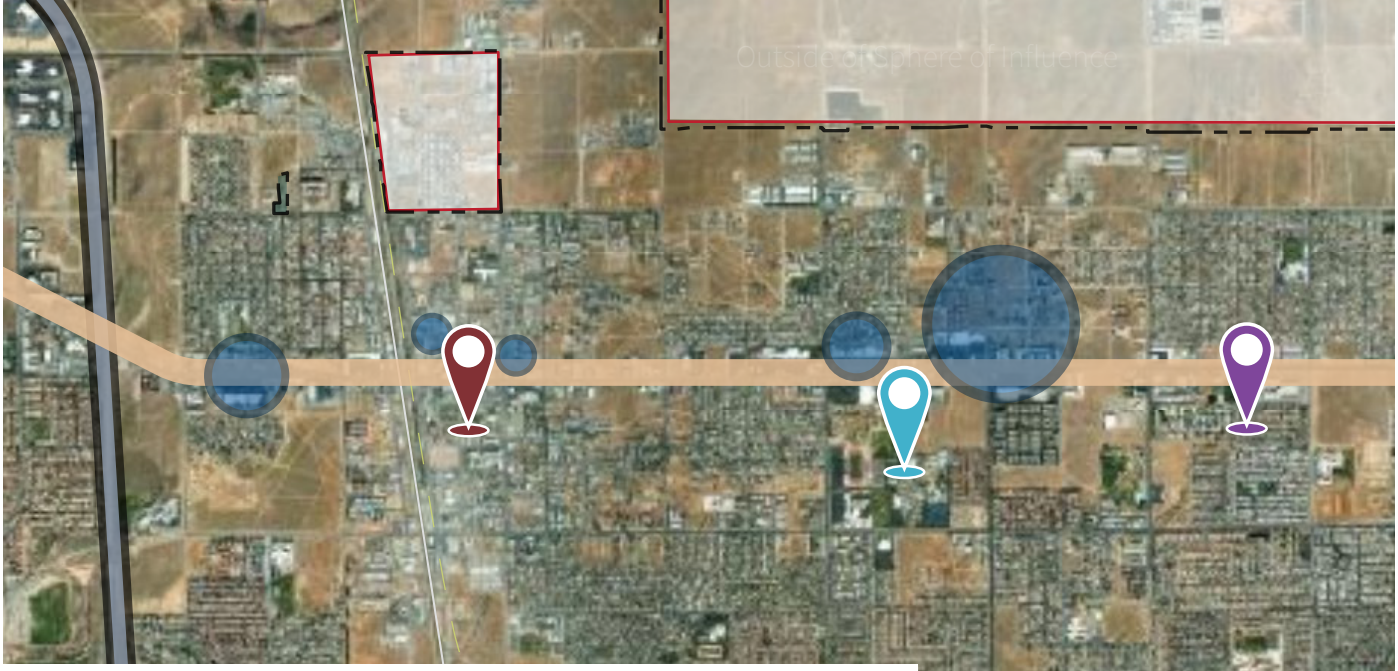
This page intentionally left blank.

City Structure

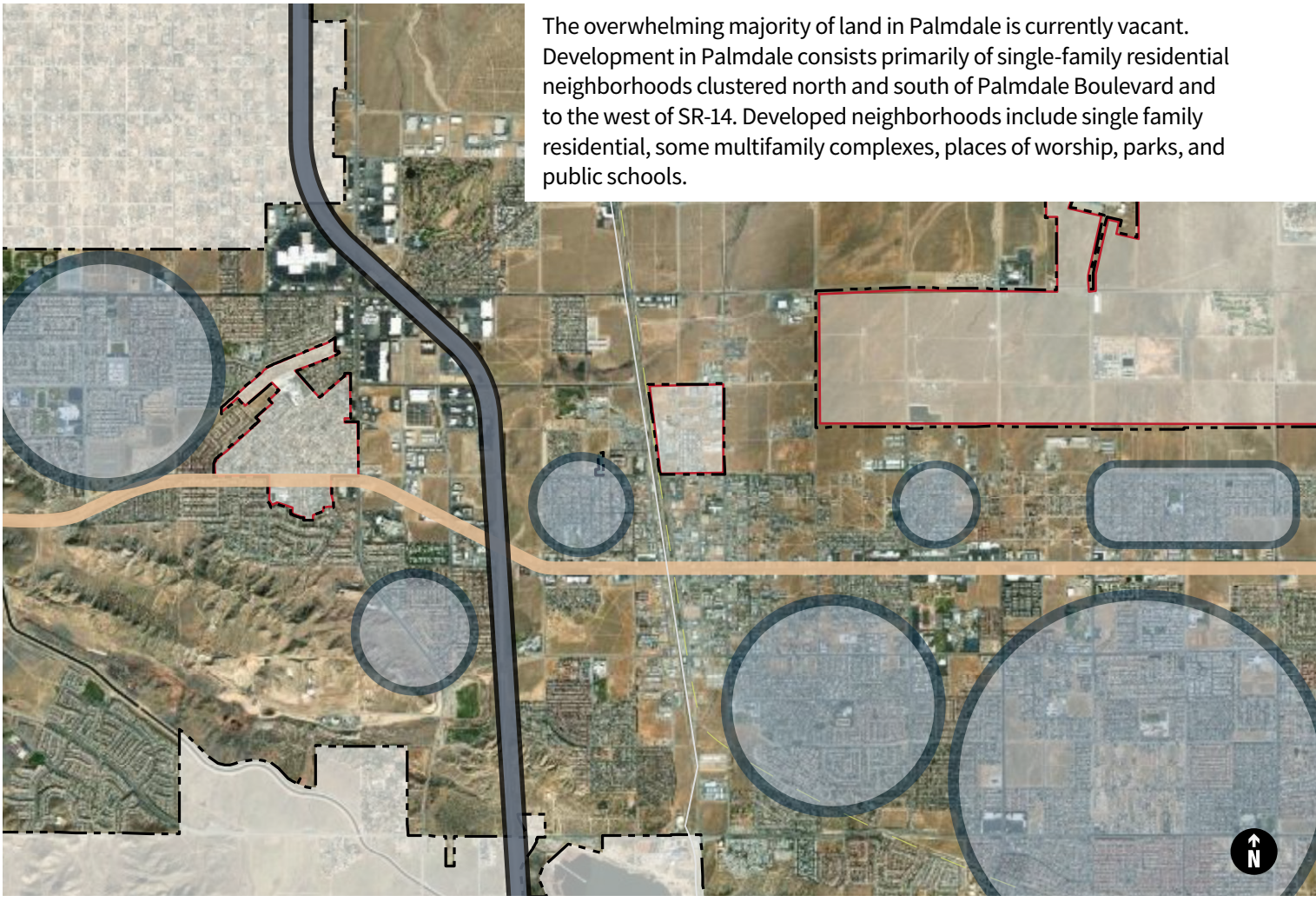
Palmdale is an auto-oriented city, where many of the key destinations are located near major thoroughfares and highways.

The City is vertically bisected by State Route 14 (SR-14), a regional highway connecting the Mojave Desert to the Los Angeles Basin, and the Union Pacific Railroad, which runs parallel to Sierra Highway. The City's major employment centers are clustered along SR-14 including the Antelope Valley Mall, Palmdale Auto Mall, and Palmdale Regional Medical Center, while Plant 42 is conveniently accessed off Avenue M, east of SR-14.





The City's namesake thoroughfare, Palmdale Boulevard, is home to much of the City's local retail, office, service-related businesses, and City government offices. Palmdale Boulevard is designated as State Route 138



The overwhelming majority of land in Palmdale is currently vacant. Development in Palmdale consists primarily of single-family residential neighborhoods clustered north and south of Palmdale Boulevard and to the west of SR-14. Developed neighborhoods include single family residential, some multifamily complexes, places of worship, parks, and public schools.

A Brief History of Palmdale

Distant Past

Thousands of years ago, the Antelope Valley was a major trade route for Native Americans traveling from Arizona and New Mexico to California's coast.





1800's–Early 1900's

Modern settlement of Palmdale began in the mid-1800s fueled by the gold rush, cattle ranching, arrival of stagecoaches, and completion of the Southern Pacific Railroad line in 1876. Serious population growth did not occur until the California aqueduct was completed in 1913, which attracted a substantial number of farmers.

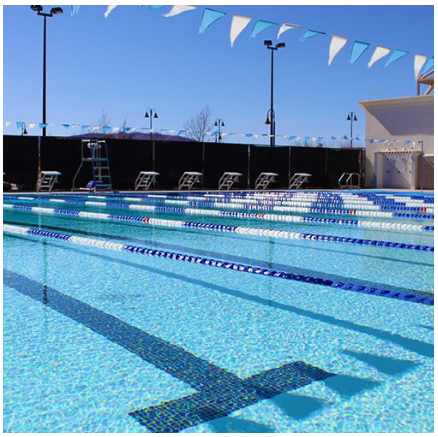


1960's

Palmdale became the first community in the Antelope Valley to incorporate, in 1962, with the incorporation of 1,300 acres of land around the present-day civic center.

By 1965 the new city had annexed 20 square miles of land and industry was thriving. Many investors purchased large quantities of land, including the 17,750 acres purchased by the Los Angeles Airports Division.





2000's

Since 2000, a voter-approved tax has funded major park and recreation expansions, including the Palmdale Amphitheater, two new pools, other recreation buildings, satellite library and DryTown Water Park. Downtown revitalization efforts included hundreds of new senior housing units, a new senior center, and expanded open space. A third high school was established in 2003, Knight High School. A Los Angeles County sheriff station opened in July 2006, the largest in Los Angeles County. Two additional fire stations have been built, one on the east side and one on the west side of town.

1980's–1990's

The 1980s and 1990s were the decades that really started to define Palmdale's transformation. Newly constructed affordable, single-family housing caused a dramatic spike in population. The City, like its northern neighbor Lancaster, became a bedroom community for those employed in the Los Angeles basin. In 1980, Palmdale's population was 12,227. By 1990, it had grown to 68,842. In 1991, the Palmdale Auto Center (today known as the Palmdale Auto Mall) and the Antelope Valley Mall opened, which drew regional visitors and employed hundreds of local workers.

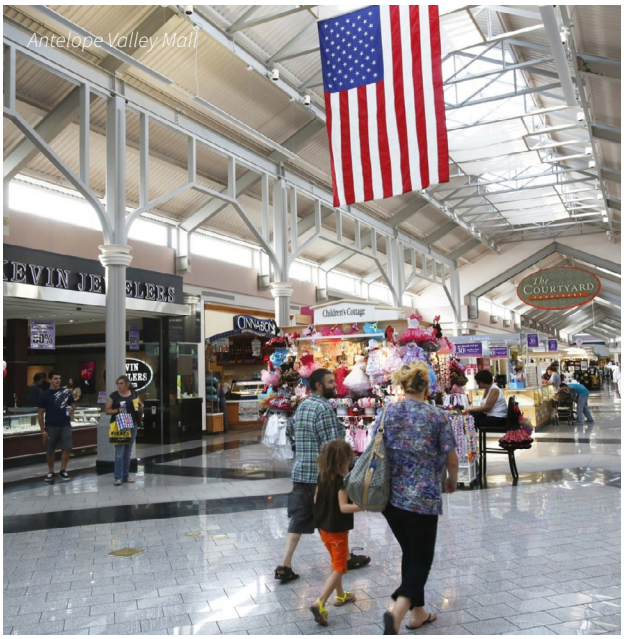
In the 1990s a dramatic increase in families moving to Palmdale from the Los Angeles basin had unanticipated consequences as crime notably worsened. In response, the multifamily zoning code explicitly discouraged middle density housing (to discourage lower-income residents), in lieu of large single-family dwellings. Due to the lack of affordable middle housing options (townhomes, apartments, duplexes, etc.), many large single-family homes are rented on a by-room basis.



Palmdale Today

The City's growth pattern over the last twenty years has brought together expanding residential communities, a large-scale aerospace industry, warehouse and logistics related businesses, and manufacturing companies. Despite growth and denser development in some areas of the City, the landscape also includes urban sprawl and rural communities. The City's recent shift to district elections has signaled the importance of recognizing the unique needs and priorities of each of the five voting districts across Palmdale.

While Palmdale retains some elements of its early agricultural past, its economic base is primarily supported by aerospace and defense industries. The City is at a critical juncture in its history; having been hard hit by the Great Recession of 2007-2009, the City has begun to recover and has the potential to capitalize upon certain opportunities that could change its economic trajectory. Major transformative projects anticipated to occur over the next two decades include the planned California High Speed Rail connecting Palmdale to the rest of the State, the Brightline West train from Las Vegas to Palmdale, and the potential start of commercial air service to the new Palmdale Airport. At a time when land elsewhere in Southern California is becoming increasingly scarce, Palmdale may also be well-positioned to capture an increasing share of regional growth.



Antelope Valley Mall


Single Family Home in Palmdale


Rendering of California High Speed Rail

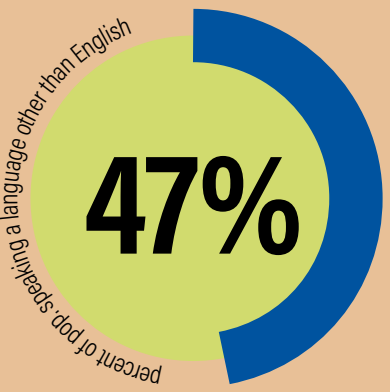
Community Snapshot

The 2020 Census estimated a population of 169,450 for the City of Palmdale. Collectively, the population of Antelope Valley (including the City of Lancaster and surrounding unincorporated communities) exceeds half a million residents.

The residents of Palmdale make-up a culturally rich and diverse population. While English is the most common language spoken, more than 47% of residents speak a language other than English at home[2]. Spanish is a widely used first or second language.

To capture the local social fabric of the City, the following community profile was developed with data from the 2020 American Community Survey. The data below provides a snapshot of the City today and identifies key considerations for the General Plan goals and policies.

169,450
total pop. of the City of Palmdale



Community Profile



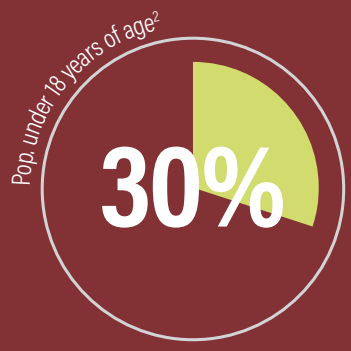
42,687
Households[2]

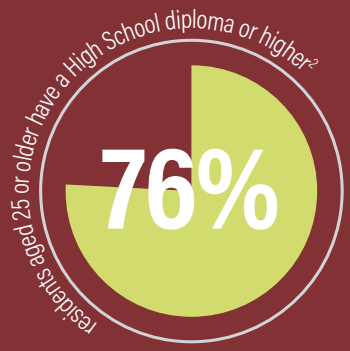


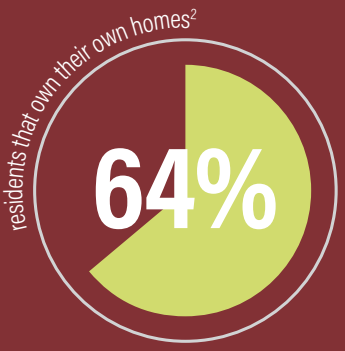
3.58 Persons
Per Household[2]



Mean travel time for workers aged 16 or older to work[2]







2. 2016-2020 American Community Survey: Quick Facts for Palmdale, California



Members of the Public at Visioning Workshop



Chapter 3

Process and Community Engagement

This chapter provides an overview of the Palmdale 2045 General Plan Update process and descriptions of the extensive community engagement that took place between 2019 and 2022.

General Plan Update Process

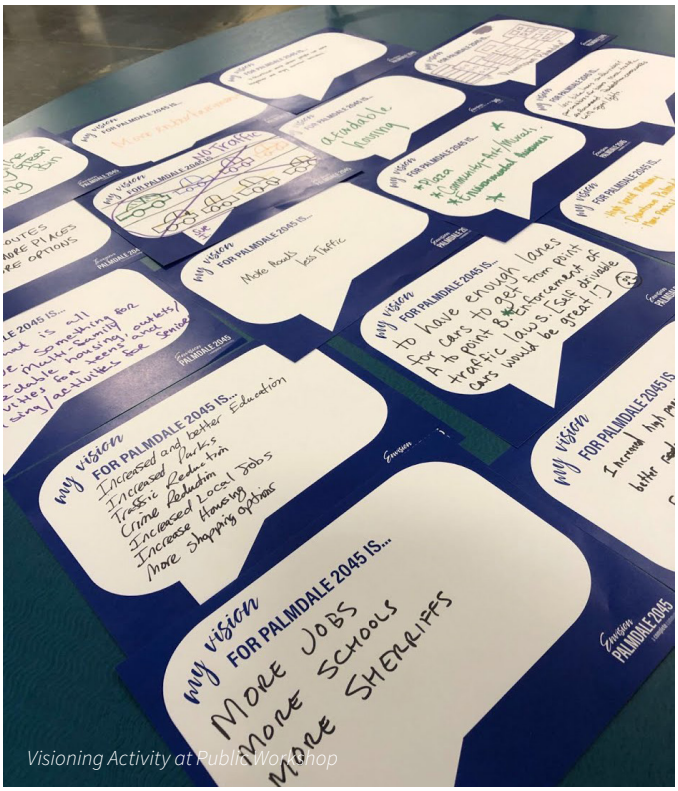
The General Plan update occurred over a four-year effort between early 2019 and late 2022. The General Plan update process included six major phases, as illustrated in Figure 3.1: 1) Discovery; 2) Visioning; 3) Alternatives; 4) Preferred Alternative and Policy Development; 5) Plan Development; and 6) Review and Adoption. Each phase of the process included community engagement activities, which are described below.

The following is a summary of the phases:

1. **Discovery.** During this phase, the General Plan Team conducted extensive analysis of existing conditions in the City. This resulted in a series of technical background reports on various topics including land use and urban form, housing conditions and needs, public health and equity, transportation and mobility, natural and manmade hazards, and military readiness and aviation, among others.

2. **Visioning.** This phase of the project involved extensive community engagement. The purpose was to confirm the issues and opportunities facing the City now and, in the future, and to identify opportunities for positive change. The result was a concise list of "vision themes" and guiding principles to achieve the vision for the future.

3. **Alternatives.** This phase began the process of comprehensively updating the City's land use map, which identifies future intended land uses for every parcel of land across the City. Since the land use map had not been comprehensively examined in several years, and the City spans just over 106 square miles, this phase took a significant amount of time. It began with an iterative design charrette among the General Plan Team and led to three alternatives--or options--for the community to review and provide feedback.



Visioning Activity at Public Workshop

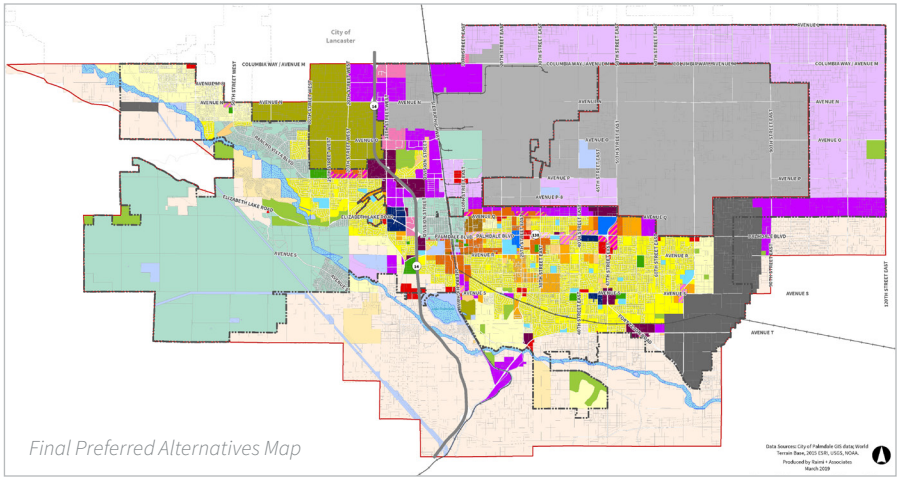
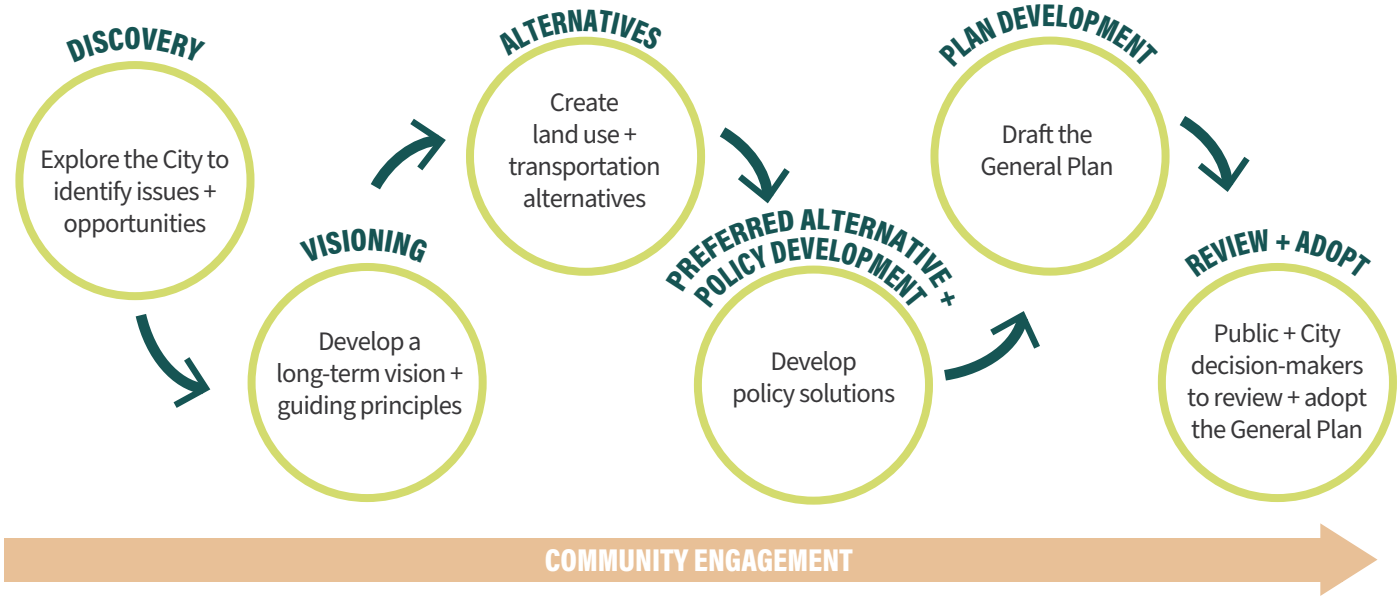

Final Preferred Alternatives Map

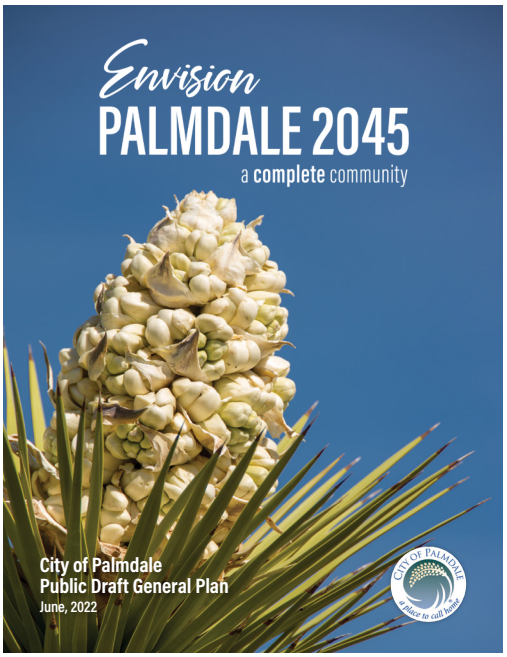
Figure 3.1 General Plan Process



4. **Preferred Alternative and Policy Development.** This critical phase involved two separate components. The first was to create a preferred land use map depicting the future of Palmdale based on community and decisionmaker feedback in phase three. The second part of this phase was the development of the General Plan policies. This phase included six topic-specific meetings with the General Plan Advisory Committee (GPAC; see information on the following pages) and the public on important General Plan topics. The result of this effort was a preferred land use designation map and policy frameworks that were used to help craft the updated General Plan.

5. **Plan Development.** During this phase, the General Plan Team prepared the various chapters of the General Plan. This phase involved many meetings between various City departments and the consultant team. The final product was the Draft General Plan for public review. This phase also involved the preparation of the Public Draft Program Environmental Impact Report (PEIR), completed pursuant to the California Environmental Quality Act (CEQA). Both documents–the Draft General Plan and the Draft PEIR–were released for public review and comment.

6. **Review and Adoption.** The final phase of work was the review and adoption of the General Plan. This phase involved community workshops on the Draft General Plan and Draft PEIR, and public hearings. The final product is the Final General Plan and the Final PEIR.



Community Engagement

Central to the updated Palmdale General Plan (Palmdale 2045) was an extensive community engagement process. The sections below outline the engagement process and activities that took place between 2019 and 2022. A detailed report is included in Appendix A

Engagement Objectives

At the beginning of the General Plan update process, the General Plan Team developed a Public Participation Plan, which outlined the types and timing of engagement activities. The Plan also identified the overall objective of the engagement program. These objectives are listed adjacently.

- INFORM AND EDUCATE THE COMMUNITY ABOUT THE GENERAL PLAN PROCESS.
- ACHIEVE HIGH LEVELS OF PARTICIPATION FROM THE PALMDALE COMMUNITY.
- ENGAGE RESIDENTS AND BUSINESSES FOR THE LONG TERM.
- ENGAGE A DIVERSE CROSS SECTION OF THE COMMUNITY.

Summary of Engagement Activities

Palmdale 2045's vision was developed through community engagement. In-person interactions at traditional and pop-up workshop events, newsletters, and a variety of online activities, took place over the course of the four-year Plan update process. The diversity of activities was based on the recognition that each person might want to participate in the process in a different way.

It is important to note that the COVID-19 Pandemic occurred during the update process. From 2019 through March 2020, all General Plan activities were held both in-person and online. In response to State and local public health guidance regarding the COVID-19 virus, all engagement activities were held virtually from March 2020 through the end of the update process.

These activities are described on the following page. A detailed overview of all engagement activities can be found in Appendix A.

Engaging with the Spanish-Speaking Community
An important component of the engagement process was to seek participation from Spanish-speaking populations in Palmdale and those under-represented in local government. As detailed in Appendix A, all meetings welcomed translation requests (made in advance to the City), all surveys were provided in hard copy format and in Spanish, and separate discussions with Spanish speakers, seniors, and others without internet access took place throughout the Plan update process. Additionally, all surveys and meeting outreach materials were available in both English and Spanish



Palmdale 2045 Visioning Workshop

Outreach Activities

At the onset of the process, the City spent considerable time and effort informing residents in Palmdale about the General Plan Update. As the list below indicates, every resident received notification about the General Plan, and information about the project was distributed widely through multiple channels throughout the entire process. Announcements were publicized in bilingual (Spanish/ English) format.

A summary of the methods used to inform the public about the process is below:

- A project website (www.Palmdale2045.org) that was updated regularly to provide information on the project throughout the process.
- Beginning March 2020, virtual meetings recorded and available for viewing on Palmdale 2045 YouTube channel.
- An email database created for the Plan update that had over 1,500 subscribers. Email blasts were sent regularly during the process to inform the community about upcoming engagement activities. These emails were also sent to many other distribution lists through homeowners' associations (HOAs), religious organizations, and school district offices, among others.
- Posting on the City's existing social media platforms.
- Palmdale Minute weekly video segments in English and Spanish.
- Announcements and interviews on Spanish radio.
- Digital Press releases in the Antelope Valley Press, Antelope Valley Times, and the Antelope Valley Daily News.
- Auto Mall electronic billboards.
- Print advertisements in Palmdale Connections Magazine (multiple times throughout the General Plan Update process)
- Flyers were posted at City Hall and banners were displayed throughout town.
- Paper copies of all surveys were circulated at public facilities and provided at key locations like SAVES and the Palmdale Transportation Center, among others.

Project Website

The project website (www.palmdale2045.org) was the primary forum to provide project updates, links to online meetings and surveys, meeting results, and documents to the public. The website also included a sign-up for a community database. The database was used to inform interested residents, businesses, and other stakeholders, providing information about General Plan Update activities, including upcoming meetings, availability of materials for review, and other information.



Palmdale2045.org

Community Workshops

Community workshops were held at four key points in the process. These are described below:



Palmdale 2045 Visioning Workshop

Workshop #1.
On Saturday, August 24, 2019, and Tuesday, August 27, 2019, the City of Palmdale hosted the first series of community workshops for the General Plan Update. This workshop focused on identifying what makes Palmdale unique, developing a shared vision for the General Plan Update, and reviewing issues and opportunities. The same materials were presented at both in-person meetings and available in Spanish with live simultaneous translation.



Palmdale 2045 Virtual Workshop

Workshop #2.
On Saturday, August 8, 2020, from 9:30-11:30 am the General Plan Team presented a detailed overview of the three land use alternatives put forth in the virtual workshop + survey. The presentation included live polls and discussion between members of the community and the General Plan Team. The virtual workshop + survey was available between July 15 - August 23, 2020, 24-hours a day, 7 days a week and featured similar resources as those offered at an in-person meeting. The online platform invited feedback on three proposed concepts for future land use regulations in the City. Public comments received helped establish the location of land uses in the future of Palmdale. In addition, a YouTube recording of the virtual workshop was available for public view on the Palmdale 2045 YouTube channel following the live meeting on August 8, 2020.

Workshop #3.
On Thursday, February 4, 2021, from 5:00-7:00 pm the General Plan Team presented a detailed overview of the preferred land use alternative described in the online Briefing Book and survey. The presentation included live polls and discussions between the General Plan Team and community. Between January 13-February 17, 2021, an online survey with an accompanying Briefing Book that detailed the preferred land use alternative for the City's General Plan update was available for public review and completion. The online platform invited feedback on the preferred land use alternative which ultimately became the City's updated General Plan Land Use Map. The survey and briefing book were available 24-hours a day, 7-days a week. Paper copies were also distributed throughout the City. In addition, a YouTube recording of the virtual workshop was available for public view on the Palmdale 2045 YouTube channel following the live meeting on February 4, 2021.

Environmental Impact Report (EIR) Scoping Meeting.
The City of Palmdale held an EIR Scoping Meeting on June 30, 2021, from 5:30 to 6:30pm to provide an additional opportunity for input on the scope and content of the EIR. The EIR Notice of Preparation (NOP) was open for public comment through July 23, 2021, on the project website and on CEQAnet. In addition, a YouTube recording of the virtual scoping meeting was available for public view on the Palmdale 2045 YouTube channel following the live meeting.

Workshop #4.
To be provided after completion.

Pop-up workshops

Pop-up workshops are held at popular events, utilizing similar materials to those from Community Workshops, and provided an opportunity to spread awareness for the General Plan update and engage even more residents in the General Plan Update.



Palmdale 2045 Pop-up Workshop 1


Palmdale 2045 Pop-up Workshop 1



Palmdale 2045 Pop-up Workshop 1

Pop-up Workshop Series #1:
Between September and November 2019, the City of Palmdale held five pop-up workshops that included activities to identify what makes Palmdale unique, develop a shared vision for the General Plan Update, and review issues and opportunities. Across all events, approximately 500 people visited the City's General Plan booth.



Palmdale 2045 Pop-up Workshop 2



Palmdale 2045 Pop-up Workshop 2


Palmdale 2045 Pop-up Workshop 2

Pop-up Workshop Series #2:
Between July and August 2020, City of Palmdale Staff conducted nine pop-up workshops at popular destinations around the City to spread awareness of the General Plan Update and to receive feedback on the land use alternatives. Due to the ongoing COVID-19 pandemic and health crisis, the pop-up workshops did not include an interactive activity, and were focused on spreading awareness for the virtual engagement activities.

Community Surveys

Community Survey (Survey #1).
The City of Palmdale hosted an online "icebreaker" survey to inform residents of the ongoing General Plan Update, collect feedback related to daily life in Palmdale, and demographics information. The survey was available in English and Spanish on the Palmdale General Plan Update website (www.Palmdale2045.org) from April 2019 to August 2019. The survey had a total of 762 responses (nearly all in English).

Land Use Alternatives Survey (Survey #2).
Survey #2 was in conjunction with the second workshop, which described three land use alternatives and sought direction from the community. The survey was developed using StoryMap, an online survey software. The survey was available 24 hours a day, 7 days a week from July 15 – August 13, 2020, in both English and Spanish. A total of 418 surveys were collected (409 English and 9 Spanish), an average of 76 surveys submitted per week.

Preferred Land Use Alternative Survey (Survey #3).
Between January 13 and February 17, 2021, the City of Palmdale hosted a third online survey with an accompanying Briefing Book that detailed the preferred land use alternative for the City's General Plan update. The online survey invited feedback on the preferred land use alternative, which ultimately became the City's updated General Plan Land Use Map. The survey and accompanying briefing book were available 24-hours a day, 7-days a week. A total of 207 surveys were collected (201 English and 6 Spanish), with an average of approximately 41 surveys submitted per week.


Palmdale 2045 GPAC Meeting

General Plan Advisory Committee (GPAC)

Throughout the General Plan Update process, the team met with a 13-member advisory committee appointed by Palmdale City Council. The committee was comprised of residents who met to collaborate and provide community insight throughout the General Plan Update process. Virtual GPAC Meetings were live streamed to YouTube and included links to provide feedback and public comment.

- GPAC #1: June 5, 2019 | Introduction
- GPAC #2: September 11, 2019 | Existing conditions and community priorities
- GPAC #3: November 13, 2019 | Planning overview and guiding principles
- GPAC #4: December 11, 2019 | Housing existing conditions
- GPAC #5: January 15, 2020 | Land use alternatives existing conditions
- GPAC #5 Part 2: February 19, 2020 | Prepare draft land use alternatives
- GPAC #6: May 20, 2020 | Economic development existing conditions
- GPAC #7: July 29, 2020 | Three land use alternatives review
- GPAC #8: September 23, 2020 | Parks, open space, and conservation existing conditions
- GPAC #9: October 28, 2020 | Health and equity existing conditions
- GPAC #10: January 13, 2021 | Preferred land use alternative review
- GPAC #11: February 24, 2021 | Transportation existing conditions
- GPAC #12 Joint Workshop: June 17, 2021 | Safety policy framework review
- GPAC #13 Joint Workshop: June 30, 2021| Climate, sustainability, and resilience policy framework review
- GPAC #14: Joint Workshop: July 15, 2021 | Land use and housing policy framework review
- GPAC #15 Joint Workshop: July 28, 2021 | Mobility policy framework review
- GPAC #16 Joint Workshop: August 5, 2021 | Military readiness and economic development policy framework review
- GPAC #17 Joint Workshop: August 11, 2021 | Health, equity, parks, and open space policy framework review
- GPAC #18 Public Draft General Plan: Date TBD

Small Group Input

Throughout the General Plan Update process, the team met with small groups of stakeholders including business owners, local employees and residents, non-profit organization representatives, and religious organization representatives, among others. Below are brief descriptions of the input sough at these meetings.

Stakeholder Focus Group Series #1.
On March 6th and 7th 2019, the General Plan Team conducted five stakeholder group meetings with Palmdale industry leaders, educational entities, faith-based organizations, and community-based organizations about issues and opportunities for the Palmdale General Plan Update. The General Plan Team also separately met with elected officials.

Economic Development Focus Group.
The General Plan Team conducted a similar focus group meeting on March 6, 2019, regarding economic development in Palmdale.

Stakeholder Focus Group Series #2.
In July 2020, the General Plan Team conducted nine stakeholder group meetings with Palmdale industry leaders, educational entities, faith-based organizations, and community-based organizations to receive input on the three Palmdale General Plan Update land use alternatives.

Stakeholder Focus Group Series #3.
On February 8, 2021, the General Plan Team conducted three stakeholder focus group meetings with Palmdale industry leaders, educational entities, faith-based organizations, and community-based organizations to receive input on the Palmdale General Plan Update preferred land use alternative.

Decision Maker Updates

Throughout the General Plan Update process several meetings took place to update decision makers and receive input and direction. Separate meetings were held for review and consideration of the Housing Element, which are detailed in the Housing Element.

Phase One | December 2019.
The phase one briefing to City Council and Planning Commission included an overview of the project status, existing conditions, community engagement, and the draft vision and guiding principles.

- **Planning Commission presentation:** December 12, 2019
- **City Council presentation:** December 17, 2019

Phase Two | September 2020.
The results from a series of community engagement events on three land use alternatives was presented to City Council and Planning Commission in September 2020. Following direction from both decision-making bodies, the General Plan Team revised the three concepts into one preferred map, referred to as the "preferred land use alternative."

- **Planning Commission presentation:** September 10, 2020
- **City Council presentation:** September 15, 2020

Phase Three | March 2021.
The preferred alternative received community feedback and direction, which was presented to City Council and Planning Commission in March 2021. Decision-makers provided additional direction and endorsed the preferred land use map.

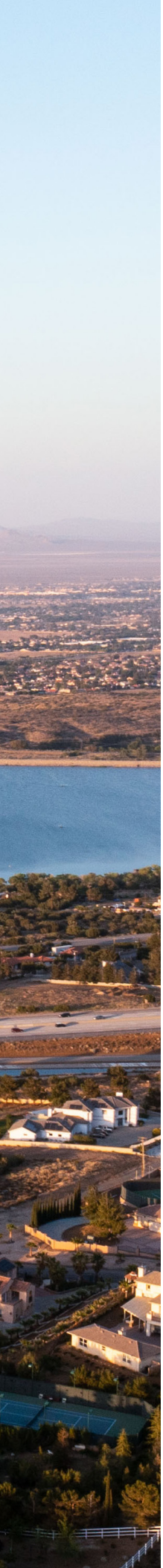
- **Planning Commission presentation:** March 11, 2021
- **City Council presentation:** March 16, 2021

Phase Four | August 2021.
The phase four briefing to decision makers included an overview of the draft General Plan policy direction and a progress report since the last update.

- **Planning Commission presentation:** August 12, 2021
- **City Council presentation:** August 17, 2021



Aerial View of Lake Palmdale



Chapter 4

Plan Overview

This chapter provides an overview of the Palmdale 2045 General Plan, including the General Plan Update process, provides information on statutory requirements of the General Plan and how the document can be used.

Overview

In late 2018, the City of Palmdale initiated a multi-year effort to update their General Plan (Palmdale 2045) and conduct the environmental review in accordance with the California Environmental Quality Act (CEQA).

The goal of Palmdale 2045 is to provide decision-makers, City staff, and the community with a General Plan that aligns with community values and is responsive to market opportunities. The General Plan update is an opportunity for the City to position itself for success over the next 20-plus years by responding to anticipated changes, capitalizing on regional infrastructure investments, and recent State legislation. This General Plan offers the City a roadmap to identify strategies for enhancing community character and quality of life, expanding economic development opportunities, managing growth, addressing impacts of climate change, and improving outcomes for public health and sustainability.

This chapter sets the stage for the General Plan by outlining the regulatory requirements of General Plans, describing the organization of the General Plan, and providing information on how to use the General Plan.

What is a General Plan?

A General Plan is a city policy document required by state law (Government Code Section 65300-65303.4) that provides a "long term, comprehensive, integrated, internally consistent and compatible statement" of goals and policies that reflect local conditions and community vision. The law requires that a General Plan address the following nine mandatory subject areas, or "elements:"

Land use.
The land use element identifies the location and intensity of land uses throughout the City.

Circulation.
This element plans for the transportation system including roadways, transit, bicycle, and pedestrian facilities; it can also address sewer, gas, water, and other infrastructure conveyance systems.

Conservation.
This element guides the use and conservation of natural resources such as soils, wildlife, water, energy, and historic resources.

Open Space.
The open space element identifies parks and open space throughout the City.

Housing.
The housing element seeks to accommodate housing needs for all incomes, groups with disabilities, and unhoused populations.

Noise.
This element seeks to limit the community's exposure to excessive noise.

Air Quality.
This element addresses topics related to regional and local air quality.

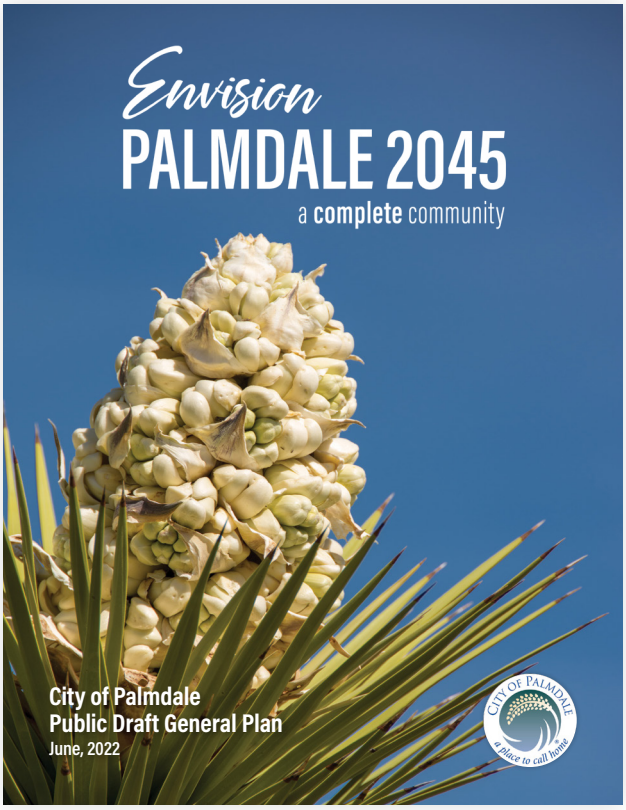
Safety.
The safety element seeks to reduce the risk of death, injuries, property damage, and economic and social dislocation from natural and human-made hazards.

Environmental Justice.
This element identifies disadvantaged communities within the City and seeks to promote resident engagement in the process, mitigate unique or compounded health risks, and identify priority improvements and needs.

General Plan elements may be combined in any way a jurisdiction deems appropriate and additional topics may be added to help guide a city into the future. This General Plan addresses the following optional topics either as stand-alone elements or incorporated in other elements: community design; economic development; military compatibility; parks; natural and cultural resources; infrastructure and community facilities; sustainability and climate action and implementation.

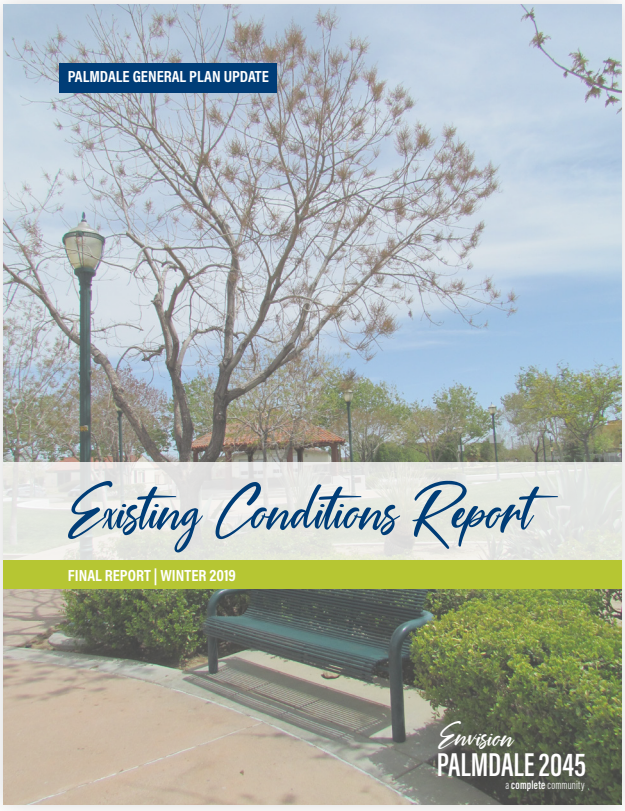
Role of the General Plan

Palmdale 2045 meets the legal requirements and introduces additional discretionary elements that the City has deemed appropriate. These discretionary topics are integrated within the body of the General Plan and/or as stand-alone chapters. Topics addressed include community design and land use; arts and culture; parks; infrastructure and community facilities; and economic development. To start the General Plan planning process, an Existing Conditions Report was prepared to collect and analyze data on current planning issues in the City and should be referenced for additional background. This report is available under separate cover.



Purpose

The purpose of Palmdale 2045 is to serve as the blueprint for the City's vision. The General Plan is the primary legal document that identifies and guides long-term growth, development, and decision-making in the City. The process is strongly anchored in community input and articulates specific steps to guide future land use and planning. The information contained in the individual sections or Elements that comprise this General Plan will shape the physical development of the City. As such, Palmdale 2045 will serve to inform residents, developers, decision-makers, and other cities of the ground rules for development within the City.



General Plan Structure

The General Plan document is organized in 16 chapters as described below:

Chapter 1: Vision and Guiding Principles
This chapter sets the Vision and Guiding Principles for what the City of Palmdale is striving to become and provides a framework for how it will get there. The vision is intended to be realized over the course of the next 20 years and is intended to be guided, well-planned, phased growth and development. It is expected that the Vision will help guide decisions relating to new development and updates of the City's various plans and ordinances.

Chapter 2: History and Profile
This chapter provides a brief history of Palmdale, its regional setting, and demographic makeup. These factors play an important part in understanding the key issues and opportunities, and the community's vision for the future.

Chapter 3: Process and Community Engagement
Community engagement was a critical component of preparing Palmdale 2045. As such, this chapter provides an overview of the General Plan process and engagement activities that took place over the course of the General Plan Update.

Chapter 4: Plan Overview
This chapter provides an overview of the General Plan including General Plan organization and structure, statutory requirements, and how to use the document.

Chapter 5: Land Use and Community Design
This chapter presents the approach to land use and community design providing clear parameters for future development and change in the City. It includes an overview of existing land use, development patterns, and urban form in Palmdale. This element contains the General Plan land use designations, the land use designations map, and goals and policies describing the community's preferences and priorities for the character and appearance of the City.

Chapter 6: Circulation and Mobility
This chapter summarizes existing transportation in Palmdale and goals and policies addressing future transportation, considering the local roadway system, transit system, bicycle facilities, goods and movement infrastructure, and parking, and air transit facilities.

Chapter 7: Economic Development
This chapter presents a summary of existing economic and market conditions, including goals and policies related to fiscal health, business attraction and retention, and jobs and workforce development. It also addresses opportunities for the City to achieve a jobs-housing balance, economic growth, and fiscal stability.

Chapter 8: Military Compatibility
This chapter provides an overview of Palmdale's military and aviation facilities creating goals and policies to guide military readiness activities, community safety, and economic development.

Chapter 9: Equitable and Healthy Communities
This chapter provides an overview of health challenges and opportunities in Palmdale including identification of disadvantaged communities, access to healthy goods, disease prevention, safe and healthy housing, and physical activity opportunities. It includes goals and policies that address equity, access and creating healthy communities.

Chapter 10: Parks, Recreation, and Open Space
This chapter provides an overview of Palmdale's parks, trails, open spaces, and other recreation areas. It plans for future open space needs, access, funding, and maintenance.

Chapter 11: Conservation
This chapter provides an overview of natural and cultural resources in Palmdale including protected plant and animal species, significant ecological resources and ecosystems, and water resources, among others.

Chapter 12: Public Facilities, Services, and Infrastructure
This chapter identifies existing public utilities including water, wastewater, stormwater, electrical, telecommunication, and natural gas conveyance facilities.

Chapter 13: Safety
This chapter presents the vision for reducing the potential risks resulting from natural and environmental hazards such as earthquakes, floods, fire, and extreme weather. In addition to natural hazards, this element also addresses police and fire services and emergency evacuation. The element contains goals and policies that will help guide the City's decisions related to new development and the risks to the health, safety, and welfare of its residents.

Chapter 14: Sustainability, Climate Action, and Resilience
This chapter discusses sustainability challenges and opportunities in Palmdale. It provides greenhouse gas reduction strategies and climate actions that the City should be taking to ensure the City remains resilient. This chapter also serves as the City's Climate Action Plan.

Chapter 15: Air Quality
This chapter provides an overview of protecting, maintaining, and enhancing air quality within Palmdale.

Chapter 16: Noise
This chapter addresses the community's approach for minimizing noise levels in the City and contributing to a higher quality of life. The element analyzes and quantifies existing and future noise levels. It includes maps summarizing the results and presents goals and policies for managing exposure to excessive noise, including enforcement of noise standards, land use planning, site design, and innovative building technology.

Housing (under a separate cover)
The 6th Cycle Housing Element (2021-29) assesses current and projected housing needs and establishes policies and programs for improving housing and providing adequate housing for all income levels. The housing element is required to be updated every eight years.



Appendices
In addition to the required and optional General Plan elements listed above, Palmdale 2045 includes three appendices that cover the following topics.

Appendix A: Community Engagement.
Community engagement is a cornerstone of Palmdale 2045; therefore, a separate appendix is provided with an overview of the activities, direction, and input from community members. A brief description of community engagement is also provided in Chapter 3.

Appendix B: SB 1000 Environmental Justice Analysis.
Palmdale is home to census tracts that are subject to additional environmental justice analysis, per California Senate Bill 1000 (SB 1000). This analysis is detailed in a separate appendix and covered in the Equitable and Healthy Communities Element (Chapter 9).

Appendix C: Evacuation Scenario Analysis.
Recent legislation—Senate Bill 99 and Assembly Bill 747—requires cities to identify residential developments in hazard areas that do not have at least two emergency evacuation routes and 2) evaluate evacuation route safety under a range of emergency scenarios. This appendix provides the detailed methodology and analysis pertaining the SB 99 and AB 747 requirements. A brief summary of these results are provided in Chapter 13.

Appendix D: GHG Inventory and Forecast Methodology.
This appendix contains the 2017 baseline inventory for greenhouse gases and the methodology for the 2045 forecast. It also contains detailed greenhouse gas reductions that the City can achieve by implementing the mitigation strategies and actions in the CAP (Chapter 14).

How to Use the General Plan

Each element of the General Plan is organized with the following sections:

Statutory Requirements

A short explanation of the mandatory state requirements for each element – what must be addressed in the section to be certified as a legally binding document



Ch. 15 Air Quality

Statuatory Requirements

Federal Clean Air Act

The Federal Clean Air Act (FCAA) is the comprehensive federal law that regulates air emissions at the national level. The goal of the Act is to protect public health by ensureng that air quality across the United States meets the recommended guidance to protect human wellbeing. The law grants the United States Environmental Protection Agency (USEPA) the authority to establish National Ambient Air Quality Standards (NAAQS). Through the FCAA, the USEPA requires states to develop state implement plans (SIPs) that outline strategies to meet the established national standards. Federal and state standards have been established for ozone, CO, NO2, SO2, PM10, PM2.5, and Pb. The national and state ambient air quality standards have been set at levels whose concentrations could be generally harmful to human health and welfare, and to protect the most sensitive persons from illness or discomfort with a margin of safety.

California Air Resource Board

The California Air Resource Board (CARB) is a regulatory body that establishes standards and procedures for adequate air quality across the state. The state air quality standards regulated by CARB are known as the California Ambient Air Quality Standards (CAAQS). Local control in air quality management is provided by CARB through multi-county and county-level Air Pollution Control Districts (APCD). CARB establishes statewide air quality standards and is responsible for the control of mobile emission sources, while the local APCDs are responsible for enforcing standards and regulating stationary sources. Palmdale is under the jurisdiction of the Antelope Valley Air Quality Management District (AVAQMD), with monitoring contracted to the Mojave Desert Air Quality Management District.

Relevant Plans & Documents

AVAQMD Air Quality Management Plan

Under state law, the AVAQMD is required to prepare a plan for air quality improvement for pollutants for which the district is in non-compliance. The AVAQMD updates the plan every three years. Each iteration is an update of the previous plan and has a 20-year horizon. AVAQMD released the final 2016 Air Quality Management Plan (AQMP) in March 2017. It provides a comprehensive and integrated plan primarily focused on addressing ozone standards. The plan is a regional and multi-agency effort involving AVAQMD, CARB, the Southern California Association of Governments (SCAG), and the USEPA.

Rules & Plans

Rules and Regulations

Plans

AVAQMD Attainment Planning Documents

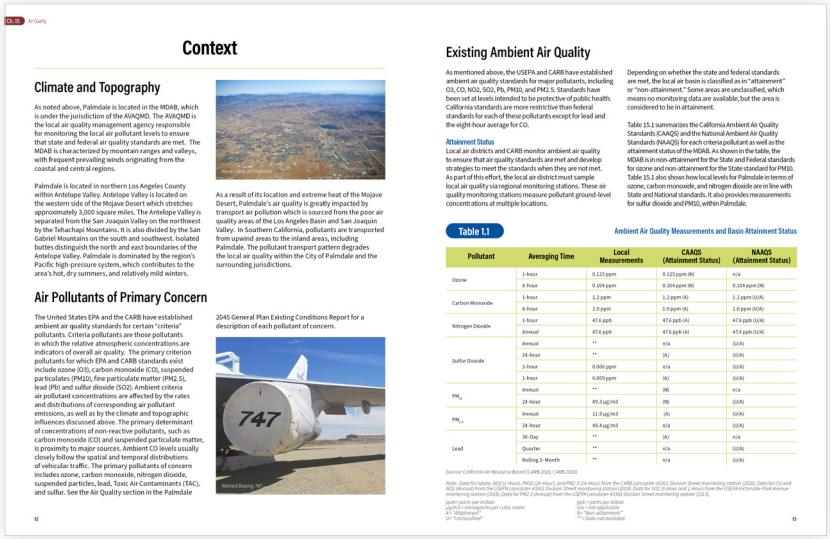
AVAQMD Attainment Planning Documents

The AVAQMD has several additional planning documents that are prepared to facilitate regional compliance with air quality standards. In the Los Angeles County portion of the Mojave Desert Air Basin (MDAB), the AVAQMD is required to prepare a plan for improvement for the air pollutants for which the MDAB is in non-attainment. The AVAQMD has developed the following federal and State attainment planning documents:

- 8-hour Reasonably Available Control Technology State Implementation Plan (SIP) (2015)
- 8-hour Ozone Standards State Implementation Plan: Coachella Valley and Western Mojave Desert 8-hour Ozone Nonattainment Areas (2014)
- 2008 Ozone Early Progress Plans
- 2007 Mojave Desert Ozone Attainment Plan
- 2004 Antelope Valley Ozone Attainment Plan

Relevant Plans and Documents

A list of applicable and relevant City and regional documents and plans.



Ch. 15 Air Quality

Context

Climate and Topography

As noted above, Palmdale is located in the MDAB, which is under the jurisdiction of the AVAQMD. The AVAQMD is the local air quality management agency responsible for monitoring the local air pollutant levels to ensure that state and federal air quality standards are met. The MDAB is characterized by mountain ranges and valleys, with frequent prevailing winds originating from the coastal and central regions.

Palmdale is located in northern Los Angeles County within Antelope Valley. Antelope Valley is located on the western side of the Mojave Desert which stretches approximately 3,000 square miles. The Antelope Valley is separated from the San Joaquin Valley on the northwest by the Tehachapi Mountains. It is also divided by the San Gabriel Mountains on the south and southwest. Isolated buttes distinguish the north and east boundaries of the Antelope Valley. Palmdale is dominated by the region's Pacific high-pressure system, which contributes to the area's hot, dry summers, and relatively mild winters.

As a result of its location and extreme heat of the Mojave Desert, Palmdale's air quality is greatly impacted by transport air pollution which is sourced from the poor air quality areas of the Los Angeles Basin and San Joaquin Valley. In Southern California, pollutants are transported from upwind areas to the inland areas, including Palmdale. The pollutant transport pattern degrades the local air quality within the City of Palmdale and the surrounding jurisdictions.

Air Pollutants of Primary Concern

The United States EPA and the CARB have established ambient air quality standards for certain "criteria" pollutants. Criteria pollutants are those pollutants in which the relative atmospheric concentrations are indicators of overall air quality. The primary criterion pollutants for which EPA and CARB standards exist include ozone (O3), carbon monoxide (CO), suspended particulates (PM10), fine particulate matter (PM2.5), lead (Pb) and sulfur dioxide (SO2). Ambient criteria air pollutant concentrations are affected by the rates and distributions of corresponding air pollutant emissions, as well as by the climate and topographic influences discussed above. The primary determinant of concentrations of non-reactive pollutants, such as carbon monoxide (CO) and suspended particulate matter, is proximity to major sources. Ambient CO levels usually closely follow the spatial and temporal distributions of vehicular traffic. The primary pollutants of concern includes ozone, carbon monoxide, nitrogen dioxide, suspended particles, lead, Toxic Air Contaminants (TAC), and sulfur. See the Air Quality section in the Palmdale 2045 General Plan Existing Conditions Report for a description of each pollutant of concern.

Existing Ambient Air Quality

As mentioned above, the USEPA and CARB have established ambient air quality standards for major pollutants, including O3, CO, NO2, SO2, Pb, PM10, and PM2.5. Standards have been set at levels intended to be protective of public health. California standards are more restrictive than federal standards for each of these pollutants except for lead and the eight-hour average for CO.

Attainment Status

Local air districts and CARB monitor ambient air quality to ensure that air quality standards are met and develop strategies to meet the standards when they are not met. As part of this effort, the local air district must sample local air quality via regional monitoring stations. These air quality monitoring stations measure pollutant ground-level concentrations at multiple locations.

Depending on whether the state and federal standards are met, the local air basin is classified as in "attainment" or "non-attainment." Some areas are unclassified, which means no monitoring data are available, but the area is considered to be in attainment.

Table 15.1 summarizes the California Ambient Air Quality Standards (CAAQS) and the National Ambient Air Quality Standards (NAAQS) for each criteria pollutant as well as the attainment status of the MDAB. As shown in the table, the MDAB is in non-attainment for the State and Federal standards for ozone and non-attainment for the State standard for PM10. Table 15.1 also shows how local levels for Palmdale in terms of ozone, carbon monoxide, and nitrogen dioxide are in line with State and National standards. It also provides measurements for sulfur dioxide and PM10, within Palmdale.

Table 1.1 Ambient Air Quality Measurements and Basin Attainment Status

Pollutant	Averaging Time	Local Measurements	CAAQS (Attainment Status)	NAAQS (Attainment Status)
Ozone	1-hour	0.125 ppm	0.125 ppm (N)	n/a
	8-hour	0.104 ppm	0.104 ppm (N)	0.104 ppm (N)
Carbon Monoxide	1-hour	1.2 ppm	1.2 ppm (A)	1.2 ppm (U/A)
	8-hour	1.0 ppm	1.0 ppm (A)	1.0 ppm (U/A)
Nitrogen Dioxide	1-hour	47.6 ppb	47.6 ppb (A)	47.6 ppb (U/A)
	Annual	47.6 ppb	47.6 ppb (A)	47.6 ppb (U/A)
Sulfur Dioxide	Annual	**	n/a	(U/A)
	24-hour	**	(A)	(U/A)
	3-hour	0.006 ppm	n/a	(U/A)
	1-hour	0.009 ppm	(A)	(U/A)
PM_{10}	Annual	**	(N)	n/a
	24-hour	89.3 µg/m3	(N)	(U/A)
$PM_{2.5}$	Annual	11.9 µg/m3	(A)	(U/A)
	24-hour	40.4 µg/m3	n/a	(U/A)
Lead	30-Day	**	(A)	n/a
	Quarter	**	n/a	(U/A)
	Rolling 3- Month	**	n/a	(U/A)

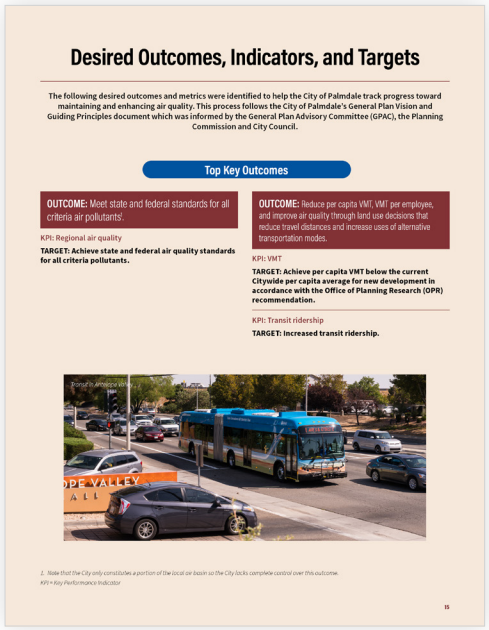
Source: California Air Resource Board (CARB 2016, CARB 2020).

Note: Data for ozone, NO2 (1-Hour), PM10 (24-Hour), and PM2.5 (24-Hour) from the CARB Lancaster-43301 Division Street monitoring station (2018). Data for CO and NO2 (1-Hour) from the CARB Lancaster-43301 Division Street monitoring station (2018). Data for SO2 (3-Hour and 1-Hour) from the USEPA Victorville-Park Avenue monitoring station (2018). Data for PM2.5 (Annual) from the USEPA Lancaster-43301 Division Street monitoring station (2013).

ppm= parts per million
µg/m3 = microgram per cubic meter
A= "Attainment"
U= "Unclassified"
ppb = parts per billion
n/a = not applicable
N= "Non-attainment"
"" = Data not available*

Context

A summary of the issues facing the community. The issues serve as background for the goals and policies and are derived from the Existing Conditions Report prepared as part of this General Plan update.



Desired Outcomes, Indicators, and Targets

The following desired outcomes and metrics were identified to help the City of Palmdale track progress toward maintaining and enhancing air quality. This process follows the City of Palmdale's General Plan Vision and Guiding Principles document which was informed by the General Plan Advisory Committee (GPAC), the Planning Commission and City Council.

Top Key Outcomes

OUTCOME: Meet state and federal standards for all criteria air pollutants[1].

KPI: Regional air quality

TARGET: Achieve state and federal air quality standards for all criteria pollutants.

OUTCOME: Reduce per capita VMT, VMT per employee, and improve air quality through land use decisions that reduce travel distances and increase uses of alternative transportation modes.

KPI: VMT

TARGET: Achieve per capita VMT below the current Citywide per capita average for new development in accordance with the Office of Planning Research (OPR) recommendation.

KPI: Transit ridership

TARGET: Increased transit ridership.

1. Note that the City only constitutes a portion of the local air basin so the City lacks complete control over this outcome.

KPI = Key Performance Indicator

15

Desired Outcomes, Indicators, and Targets

Outcomes, indicators, and targets are provided to track progress of the General Plan implementation over time.



Ch. 10 Parks, Recreation, and Open Space

Goals and Policies

The following section includes goals and policies for the Parks, Recreation, and Open Space Element. Goals and policies are followed by implementation actions.

PARKS AND RECREATION

Goal PR-1
Provision of adequate park and recreation facilities to meet the needs of all existing and future residents.

PR-1.1 Parks and Recreation Master Plan. Prepare a Parks and Recreation Master Plan to address park conditions and needs, recreation programming, facilities, and funding opportunities. As a part of a Parks Master Plan, evaluate adopted park standards, including designations for type of parks and guidelines for the facilities to be developed in future parks.

PR-1.2 Park location. Ensure that park sites are located equitably, throughout the city, to maximize access to parks for residents within a 20-minute walking distance.

PR-1.4 Parks accessibility. Provide a variety of parks and recreational facilities accessible to all residents throughout the city, including community and neighborhood parks, to meet the needs of youth, adults, and senior citizens.

PR-1.5 Future parks priority areas. As feasible, work with the private development community to facilitate creation of parks in the future parks priority areas as indicated in Figure 1.3.

PR-1.6 Prioritize underserved areas. Prioritize development of new parks and recreation facilities in underserved areas of the city, encouraging access to free or low-cost recreation for all Palmdale residents.

PR-1.7 Expand park amenities. Encourage expansion of amenities at existing public parks.

PR-1.8 ADA Design. Incorporate all design features, required by the Americans with Disabilities Act, which improve access to parks and park facilities for citizens with different abilities and needs.

PR-1.9 School and park synergy. Co-locate schools and parks and partner with non-profit organizations to provide recreational opportunities that benefit both students and the public.

PR-1.10 Parkland incentives. Work with the private development community to incentivize creation of publicly accessible parkland either on-or-off-site.

Goal PR-2
Promote bicycling as an important mode of transportation and recreation in the city of Palmdale.

PR-2.1 Bikeway network. Encourage bicycle use by developing a comprehensive bikeway network for the city that meets access needs of all bicyclists.

PR-2.2 Bicycle safety. Increase the level of public safety for all bicyclists.

PR-2.3 Transportation modes to parks, schools, and recreation. Promote biking, walking, or taking public transit to public parks and recreation facilities.

PR-2.4 Sidewalks. Ensure connecting sidewalks are well maintained throughout the city.

Goal PR-3
Provide a broad range of recreational programs for all ages and activity levels to enrich the lives of residents.

PR-3.1 Recreation education. Collaborate with community partners to expand healthy, and educational recreation programs and services for youth and families.

PR-3.2 Culturally sensitive programming. Provide culturally sensitive programming at various recreation facilities to serve the city's diverse population.

PR-3.3 Shared school amenities. Work with local school districts to make campus recreation amenities (such as open grassy areas, basketball courts, baseball fields, gymnasiums, among others) available to surrounding neighborhoods and local sports leagues or organizations during off-school hours.

PR-3.4 Arts and culture programming. Work with local schools, non-profits, local organizations, and artists to increase arts and culture programming (such as such as performing arts and theater, visual arts, youth, and senior programs) throughout Palmdale.

24 25

Goals and Policies

Each element contains goals and policies responding to the key issues associated with achieving the community's vision and are intended to provide clear direction in how the City will implement the overall vision of this plan. In addition, General Plan policies are supported by complementary policies across elements. As such, policy implementation should be considered a package that is interwoven throughout the General Plan. Together, the General Plan language creates a hierarchy of goals and policies that will be mandated, encouraged, or allowed by the City over the next 20 years.

Goals: Overall statement describing the envisioned end state for the community. Goals are broad in both purpose and aim but are designed specifically to establish directions and outcomes.

The following is an example of a goal:

Goal LUD-1
Complete Neighborhoods where residents can reach daily amenities, local retail, services, parks, and public facilities within a short 20-minute walk.

CITYWIDE FRAMEWORK

Goal LUD-1
Complete Neighborhoods where residents can reach daily amenities, local retail, services, parks, and public facilities within a short 20-minute walk.

Policies: Specific position statements that support the achievement of goals and serve as guides to the City Council, Planning Commission, other City commissions and boards. City staff also use the policies when reviewing development proposals and making other decisions. Policies seek to achieve the goals by mandating, encouraging, or permitting certain actions. Certain policies are critical and must be implemented. Thus, compliance with the policy or action is mandatory. Language used to describe this intent includes will, must, require, prohibit, conduct, maintain, and implement. Other policies are strongly encouraged by the City, but total implementation may not be possible; thus, compliance is not mandatory. Language used to describe this intent includes should, may, encourage, consider, explore, allow, discourage, and promote.

The following are examples of policies in the Palmdale General Plan Land Use and Community Design Element:

LUD-1.1 Balanced Land Uses. Maintain a balanced land use pattern to support a broad range of housing choices, retail businesses, employment opportunities, educational and cultural institutions, entertainment spaces, and other supportive uses and within long-established Indio neighborhoods and new growth areas.

LUD-1.2 New Complete Neighborhoods. Facilitate the construction of new mixed-use neighborhoods that are well connected to services, transit, amenities, public buildings, and parks and recreational facilities.

LUD-1.1 Balanced Land Uses. Maintain a balanced land use pattern to support a broad range of housing choices, retail businesses, employment opportunities, educational and cultural institutions, entertainment spaces, and other supportive uses within long-established Palmdale neighborhoods and new growth areas.

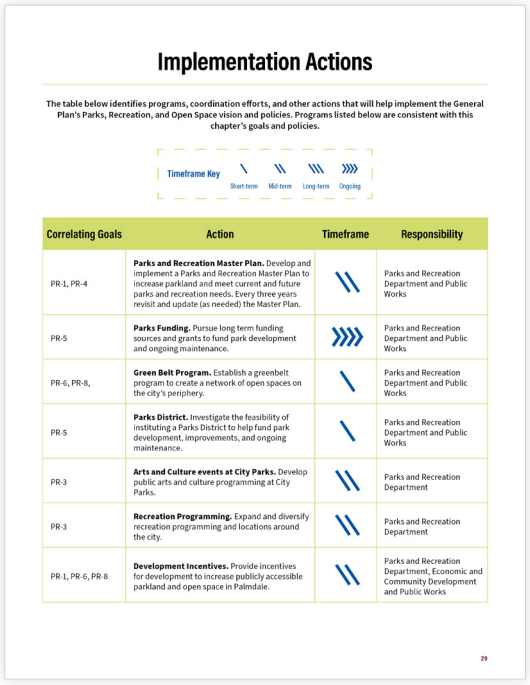
LUD-1.2 New Complete Neighborhoods. Facilitate the construction of new mixed-use neighborhoods that are well connected to services, transit, amenities, public buildings, and parks and recreational facilities.

LUD-1.3 Access to Amenities. Strive to create development patterns such that the majority of residents are within twenty minutes or less walking distance of a variety of neighborhood-serving uses in Village Centers, such as parks, grocery stores, restaurants, places of worship, cafes, dry cleaners, laundromats, banks, hair care, pharmacies, civic uses, and similar uses.

LUD-1.4 Specific Plan Facilities. Ensure Specific Plans are implemented with timely construction of supportive commercial uses and parks to support new residential uses.

LUD-1.5 Multimodal Connectivity. Promote walking to services, biking and transit use by requiring a high level of connectivity for pedestrians, bicycles, and vehicles in major developments (except where existing development or natural features prohibit connectivity). Seek to improve walk, bike, and transit travel within existing complete neighborhoods.

LUD-1.6 Walkable Blocks. Create communities that address the needs of multiple age groups and physical abilities through short, walkable block lengths. Use grid-like or a modified grid street networks in newly developed areas (except where topography necessitates another street network layout).



Implementation Actions

The table below identifies programs, coordination efforts, and other actions that will help implement the General Plan's Parks, Recreation, and Open Space vision and policies. Programs listed below are consistent with this chapter's goals and policies.

Timeframe Key: Short-term, Mid-term, Long-term, Ongoing

Correlating Goals	Action	Timeframe	Responsibility
PR-1, PR-4	**Parks and Recreation Master Plan.** Develop and implement a Parks and Recreation Master Plan to increase parkland and meet current and future parks and recreation needs. Every three years revisit and update (as needed) the Master Plan.	Mid-term	Parks and Recreation Department and Public Works
PR-5	**Parks Funding.** Pursue long term funding sources and grants to fund park development and ongoing maintenance.	Ongoing	Parks and Recreation Department and Public Works
PR-6, PR-8,	**Green Belt Program.** Establish a greenbelt program to create a network of open spaces on the city's periphery.	Short-term	Parks and Recreation Department and Public Works
PR-5	**Parks District.** Investigate the feasibility of instituting a Parks District to help fund park development, improvements, and ongoing maintenance.	Short-term	Parks and Recreation Department and Public Works
PR-3	**Arts and Culture events at City Parks.** Develop public arts and culture programming at City Parks.	Mid-term	Parks and Recreation Department
PR-3	**Recreation Programming.** Expand and diversify recreation programming and locations around the city.	Mid-term	Parks and Recreation Department
PR-1, PR-6, PR-8	**Development Incentives.** Provide incentives for development to increase publicly accessible parkland and open space in Palmdale.	Mid-term	Parks and Recreation Department, Economic and Community Development and Public Works

29

Implementation Actions

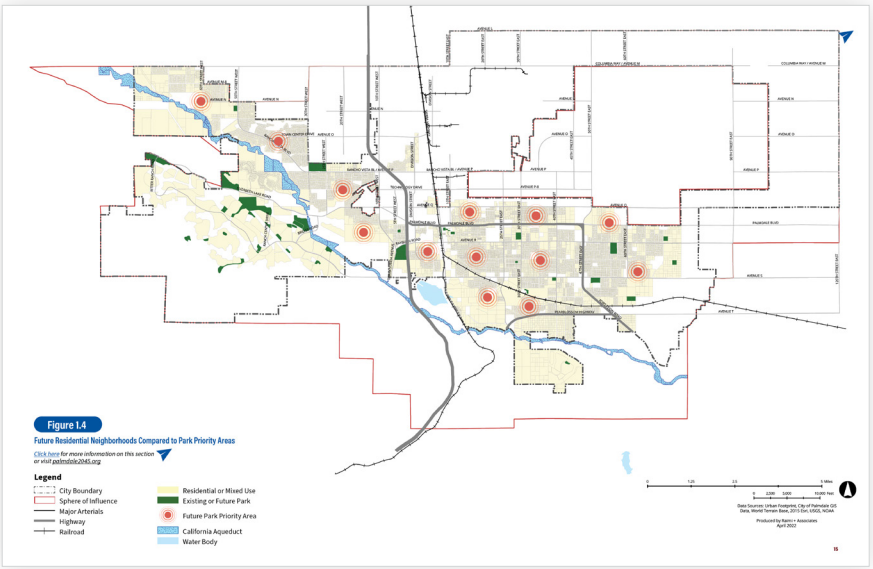
Each element contains actions necessary to implement the adopted goals and policies and the time frame for their completion. Responsible entities are also noted.

Updated Subdivision Design Guidelines. Review and update regulations applicable to subdivision projects as needed, including connectivity standards, sidewalk standards, green infrastructure standards, etc.

Correlating Goals	Action	Timeframe	Responsibility
LUD-20, 23, 24	**Updated Subdivision Design Guidelines.** Review and update as needed regulations applicable to subdivision projects, including connectivity standards, sidewalk standards, green infrastructure standards, etc., as needed.	Mid-term	Economic and Community Development Department

Maps, Diagrams & Graphics

The General Plan is supported by a variety of maps, diagrams, and illustrations, which supplement the text in each element. Graphics are incorporated into the General Plan to delineate land use and circulation patterns, community focal points, open space and recreation facilities, biological and cultural resources, and areas requiring special consideration or study. Important or significant environmental resource and hazard areas are also mapped, as well as public and quasi-public facilities. These official maps carry equal authority to the goals and policies of the General Plan



Plan Implementation & Maintenance

The Palmdale 2045 General Plan will be implemented over an extended period (20+ years, with a time horizon of 2045). During this time, the long-range planning efforts for Palmdale will continue using the goals and policies as a guide. However, a General Plan is a living document, and presents the outcomes desired by the community based on current goals and local conditions. As the City grows and changes, it may become necessary to amend specific policies and implementation actions as economic and demographic conditions change and while new ideas about growth and conservation are formed.

California Government Code requires that the planning agency "render an annual report to the legislative body (City Council) on the status of the Plan and the progress in its implementation" (Section 65400(b)). State law further requires that the Housing Element be reviewed and updated at least once every eight years.

As part of this annual review, the City will consider progress in the context of the indicators presented within this General Plan. Similarly, each year, the Planning Commission must review the Capital Improvements Program to ensure the planned infrastructure investments are consistent with this General Plan. State Law also encourages annual reviews of implementation actions and recommends that the entire General Plan be thoroughly reviewed every five years to ensure it is still consistent with the community's goals.



Development Services Building



Aerial View of Courson Arts

Any part of a General Plan may be amended to accommodate changing conditions. Property owners, developers, the Planning Commission, the City Council, or City staff may propose amendments. The Planning Commission and the City Council must review any proposed changes at public hearings and the potential of environmental impacts must be evaluated in accordance with the California Environmental Quality Act. The City is considering a prohibition ~~moratorium~~ on General Plan amendments for the first 18 months from adoption. This will coincide with approval of the Fiscal Year 2024-2025 Budget and approval of the updated Zoning Ordinance. General Plan amendment prohibition ~~moratoriums~~ may not apply for Planned Developments and Specific Plans larger than 20-acres.

Community members, neighborhood groups and local organizations are encouraged to get involved in the on-going planning efforts of the City and to participate in the implementation of the General Plan. By active, thoughtful involvement, residents can be part of the process of shaping and growing Palmdale to make it an active, prosperous, and welcoming City place to live, work, and raise a family.



Visioning Activity from Community Workshop



Chapter 5

Land Use and Community Design

This Element provides a long-term vision, goals, and policies for Palmdale over the next 20 to 30 years. The overall focus is on how to accommodate change and growth in the city, while preserving and enhancing the features and attributes that make it such a desirable place to live. The future of Palmdale is dependent on the mix of residential, commercial, employment, and industrial uses which provide the foundation for a fiscally healthy community; as well as the design and quality of buildings, streets, and public spaces, which make Palmdale an attractive and highly livable place for its residents.

Statutory Requirements

This Element has been prepared to meet State General Plan law (Government Code Section 65302(a)) which requires that a city's General Plan include:

". . . a land use element which designates the proposed general distribution and general location and extent of uses of the land for housing, business, industry, and open space, including agriculture, natural resources, recreation, and enjoyment of scenic beauty, public buildings and grounds, solid waste disposal facilities and other categories of public and private uses of land. The land use element shall include a statement of the standards of population density and building intensity recommended for the various districts and other territory covered by the plan."

This required land use element has the broadest scope of all the required elements of a general plan, regulating how land in the city is to be used in the future. Topics covered include land use designations, goals and policies that address preservation and enhancement of existing neighborhoods, development of new neighborhoods with varied housing opportunities, and new areas for employment, shopping, and mixed-use development.

In addition to addressing statutory requirements for land use, this Element addresses community design, introducing community character and built environment as critical components of Palmdale's urban form. While not required by statute, community design is one of the fundamental components of this General Plan, since understanding the built environment and its characteristics – the location and design of our homes, stores, parks, offices, and the way that we interact with these various places in the public realm – is vital to strengthening quality of life. Setting the appropriate design parameters for future change and redevelopment is critical to realizing the community's vision.



Palmdale Transportation Center

Relevant Plans & Documents

Multi-Family and Mixed-Use Design Standards (2022)

Palmdale's Multi-Family and Mixed-Use Design Standards present guidelines for a wide range of housing opportunities that will help facilitate housing for people of all ages, incomes, and backgrounds while enhancing Palmdale's high desert setting.

East Avenue Q Complete Streets Project (2022)

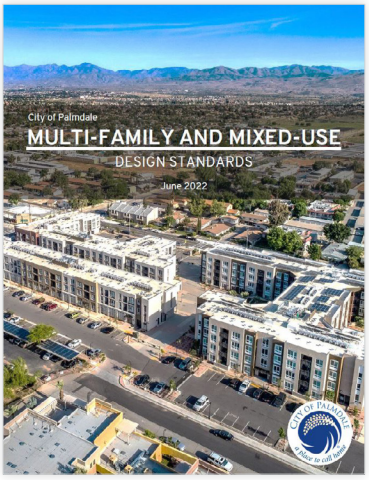
The Palmdale East Avenue Q Complete Streets Project is a multimodal corridor study that provides transportation and land use recommendations for a 1.4-mile segment of East Avenue Q from Sierra Highway to 20th Street East. Recommendations are aligned with the City's General Plan Update and are geared toward improving walking and biking conditions for people of all ages and abilities, as well as improving the comfort and safety of active transportation in high desert weather.

Palmdale Freeway and Roadway Landscape Design Guidelines (2021)

The document ensures that the design and appearance of City's major landscape plantings, hardscape materials, signage and artwork are cohesive throughout the city and related to the local geography, unique features of the Mojave Desert, and the City's cultural history and future.

Public Art Master Plan (2020)

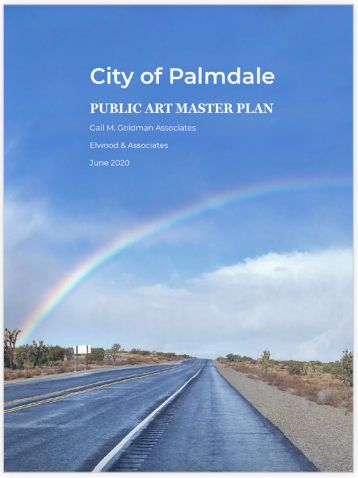
Finalized in 2020, the Palmdale Public Art Master Plan sets forth a vision and key goals to expand artwork on City property and within the public realm throughout Palmdale. The Plan includes a summary of key recommendations and a strategic approach to funding, managing, and reviewing local public art projects that will celebrate Palmdale's identity, expand economic opportunities, and encourage multidisciplinary collaboration.



Multi-Family and Mixed-Use Design Standards



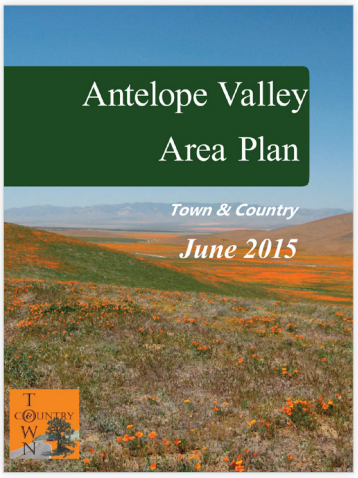
East Avenue Q Complete Streets Project



Palmdale Public Art Master Plan

Antelope Valley Area Plan (2015)

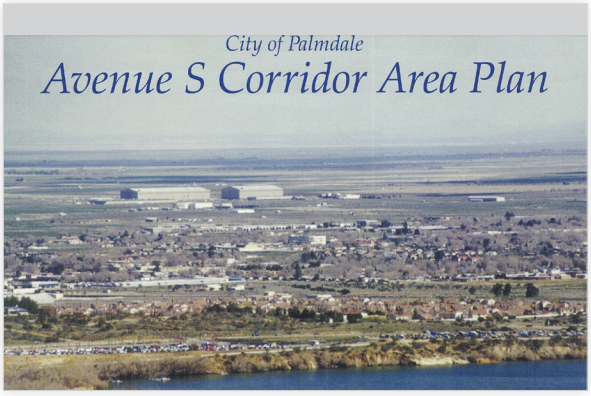
This area plan covers nearly all of the unincorporated lands in Los Angeles County, north of the City of Los Angeles itself. It is a vision for developing the Antelope Valley, specifying countywide goals to the region, and aligning the planning process. Primary objectives include preserving rural character, reducing greenhouse gases, managing growth, developing multimodal circulation networks, conservation of open spaces and other ecological resources, developing away from natural hazards, and enhancing public services.



Antelope Valley Area Plan

Avenue S Corridor Plan (2010)

The Avenue S Corridor Plan was prepared to respond to its prominent location as a gateway to the city, the presence of high volumes of traffic, and the historical significance of the route taken by the first settlers of Palmdale. The Plan's objectives are to create a cohesive neighborhood with orderly development, provide for adequate circulation and infrastructure, protect the public from seismic and other hazards, and enhance the streetscape through landscaping and design standards.



Avenue S Corridor Plan

Downtown Revitalization Plan (1995-2005)

Begun in 1995, the Revitalization Plan outlines challenges in planning, circulation, parking, rehabilitation and upgrading of buildings and their facades, public safety, preserving historic buildings, and attracting the proper mix of business to make downtown a desirable place for residents and visitors to patronize. The Plan supported the overall economic health of the City but has been absorbed into updated zoning and this Chapter's goals and policies.

Specific Plans

Seven adopted Specific Plans are currently guiding the future development of many thousands of acres within Palmdale, including the Palmdale Transit Area Specific Plan. Several of these Plans have been essentially completed (and thus dissolved), some are in preliminary stages, and others have seen virtually no development. Currently active Specific Plans are further described in the following section and in Table 5.2 and mapped in Figure 5.1.



Specific Plans

Context

Existing Land Use

The City of Palmdale is situated in northern Los Angeles County, in the Antelope Valley region of Southern California, nestled against the San Gabriel Mountains. It is roughly 60 miles (or just over one hour) driving distance from downtown Los Angeles. This proximity has attracted many families looking for affordable ownership housing within commute distance of major employment centers in Los Angeles.

The Planning Area for this 2045 General Plan Update includes the land within the City Limits, the Sphere of Influence (SOI), and several unincorporated Los Angeles County 'islands.' Originally a modest community concentrated around the confluence of Sierra Highway, Palmdale Boulevard, and the railroad, the City has expanded dramatically through multiple annexations, presently stretching over 21 miles from east to west and 10 miles from north to south. Today the Planning Area measures 106,634 acres total (166.6 square miles). Approximately two-thirds of the Planning Area is undeveloped (62% vacant and 5% natural/conservation).

Table 5.1 Land Use in the Planning Area

Use Type	Acres	Area %	Acres	Area %	Acres	Area %
	Planning Area		City Limits		SOI/County	
RESIDENTIAL						
Single-Family Attached	201	0.2%	112	0.2%	89	0.2%
Single-Family Detached	13,133	12.3%	8135	12.7%	4998	11.7%
Mobile Home	649	0.6%	286	0.4%	363	0.8%
Multifamily	332	0.3%	319	0.5%	13	0.0%
COMMERCIAL						
Accommodation	36	0.0%	35	0.1%	1	0.0%
Retail/Commercial/Mixed-Use	1,158	1.1%	1070	1.6%	87	0.2%
Office	543	0.5%	506	0.8%	37	0.1%
INDUSTRIAL/AGRICULTURE/EXTRACTION						
Extraction	1,234	1.2%	1234	1.9%	0	0%
Agriculture	4,898	4.6%	1539	2.4%	3359	7.9%
Wholesale/Warehousing	183	0.2%	165	0.3%	19	0.0%
Industrial	6,043	5.7%	5925	9.3%	117	0.3%
PUBLIC/INSTITUTIONAL						
Civic Facilities	765	0.7%	216	0.3%	548	1.3%
Private Institutions	182	0.2%	144	0.2%	37	0.1%
Public Education	628	0.6%	540	0.8%	88	0.2%

Use Type	Acres	Area %	Acres	Area %	Acres	Area %
	Planning Area		City Limits		SOI/County	
PARKS AND OPEN SPACE						
Natural/Conservation	5,208	4.8%	4739	7.4%	469	1.1%
Flood Drainage/Golf Course	440	0.4%	357	0.6%	83	0.2%
Parks and Recreation	369	0.3%	369	0.3%	0	0.0%
INFRASTRUCTURE						
Utilities/Transportation	3,666	3.1%	1753	2.8%	1909	4.4%
OTHER						
Unknown / Vacant	66,587	62.4%	36409	57.0%	30178	70.6%
Water	381	0.4%	3	0.0%	378	0.9%
TOTAL	**106,636**	**100%**	**63859**	**100.0%**	**42773**	**100.0%**

Source: City of Palmdale GIS Data, L.A. County Assessor's Data 2019



Single Family Home in Palmdale

Residential Uses

Residential uses occupy just under 1/7th of the Planning Area (13.4%, or 14,315 acres), with the vast majority of this being single-family detached housing, which represents 98% of the total number of residential parcels. Residential uses are mostly clustered in a wide band traversing the city from upper northwest down to the south and east. Historically, residential land uses were concentrated in the core area bounded by East Avenue Q, East Avenue S, 47th Street East, and SR-14 (Antelope Valley Freeway). This area continues to contain the highest diversity of residential development types, including apartments, townhomes, mobile home parks, and medium-lot single family detached homes. Since the 1980s, residential development grew outward from the core, migrating eastward, southward, and northwestward. Today, the most common zoning is R-1-7,000 which results in residential parcels that measure 7,000 square feet arranged in generally curvilinear street patterns at an average density of one to five units per acre.

There are 10 mobile home parks currently within the Planning Area, occupying 650 acres and accounting for an estimated 1,350 units. Most of these are located along the eastern extent of East Avenue R.

Commercial Uses

Commercial, office, and other retail uses account for a limited amount of the land in the City at approximately 1.5% percent of land area. Commercial uses are generally concentrated along Palmdale Boulevard, Rancho Vista Boulevard, and in other isolated clusters. Most commercial uses in the city are retail and services, office/medical office, and auto sales/services. The oldest commercial activity is developed along Palmdale Boulevard and Sierra Highway and is defined by more community and local-serving businesses. Subsequent residential growth generated a need for more shopping areas, which led to the establishment of centers at 47th Street East and Avenue S, 25th Street East and Avenue S, 5th Street West and Palmdale Boulevard, 47th Street East and Avenue R, and others. Most of these are 10 to 20 acres in size, characterized by large surface parking lots. The most significant single commercial area is the 127-acre Antelope Valley (AV) Mall, located at 10th Street West and Rancho Vista Boulevard. The AV Mall contains over 1.5 million square feet of enclosed commercial mall space, plus additional outbuildings.



Local Retail and Services in Palmdale.

Industrial, Extraction and Agricultural Uses

Intensive job-producing uses such as industrial, extraction, and manufacturing account for 11.6% of the total Planning Area, due largely in part to Plant 42, which covers nearly 5,000 acres by itself. Palmdale's largest industries in terms of both land and jobs are manufacturing, defense, and aerospace. Industrial, extraction, and agriculture uses occupy over 12,000 acres within the Planning Area. Another major use in the city is mineral extraction, with half a dozen sand and gravel mining operations present along the Little Rock Wash. There are also concrete and asphalt batching operations nearby. Agricultural uses are present to the east of Plant 42, sprawling across the County Island owned by Los Angeles World Airports, covering just under 5,000 acres. Other large-format employment uses are found west and south of Plant 42.

Public/Institutional Uses

Civic and governmental uses, public facilities such as schools and libraries, and private institutions such as places of worship and private clubs account for about 1.5% of the Planning Area, or almost 300 total parcels. These public-serving and institutional uses are focused in the heart of the city and distributed throughout the residential neighborhoods, with over 50 places of worship, one hospital, over 40 public schools, a dozen private schools, and more than a hundred governmental facilities (such as libraries, maintenance yards, City offices, fire/sheriff stations, flood control facilities, landfill, and other similar uses). The City of Palmdale has 19 community parks totaling around 360 acres, fewer than the City's target parks ratio of 5 acres per 1,000 residents.

Development History

In August 1962, the township of Palmdale officially became the City of Palmdale with the incorporation of 1,300 acres of land around the present-day civic center. By 1965 the new City had annexed 20 square miles of land and industry was thriving. Many investors purchased large quantities of land, including the 17,750 acres purchased by the Los Angeles Airports Division. The 1980s and 1990s were the decades that really started to define Palmdale's transformation. Newly constructed affordable, single-family housing caused a dramatic spike in the population. The city, like its northern neighbor Lancaster, became a bedroom community for those employed in Los Angeles. In 1980, Palmdale's population was 12,227. By 1990, it had grown to 68,842. In 1991, the Palmdale Auto Mall and the Antelope Valley Mall opened. In the 1990s, the City of Palmdale annexed the Ritter Ranch and City Ranch areas, but in 1997 the Ritter Ranch developer filed for a Chapter 11 Bankruptcy.

As of the 2020 census, the population was 169,450, the sixth most populous in Los Angeles County. Palmdale is one of the largest cities in the United States that is not currently served by either an Interstate Freeway or a U.S. Highway. A lot of families moved to the City of Palmdale from Los Angeles in the 1990s, and this growth had consequences as crime worsened notably. In response, the multifamily zoning code explicitly discouraged middle density housing (to discourage lower-income residents), in lieu of large single-family dwellings. Now many of these big homes with 4 to 6-bedrooms are shared group homes.

The recession of the late 2000's caused the housing bubble to burst and several of these fast-moving, residentially focused Specific Plan projects were abandoned. Currently, some of these entitled projects are picking up steam again. Today, abundant undeveloped land and relatively inexpensive housing have made the Antelope Valley one of the fastest-growing areas in Southern California.

In the past decades, a voter-approved tax has funded major park and recreation expansions, including the Palmdale Amphitheater, two new pools, other recreation buildings, and DryTown Water Park. Downtown revitalization efforts included hundreds of new senior housing units, a new senior center, and expanded open space. A third high school was established in 2003, Pete Knight High School. A Los Angeles County sheriff station opened in July 2006, the largest in Los Angeles County. Two additional fire stations have been built, one to the east of SR-14 and one on the west side of town.

Further growth is anticipated as a multimodal rail station for the California High-Speed Rail and the Brightline West high-speed rail service to Las Vegas is planned in the heart of the City of Palmdale. Additionally, employment at Plant 42 is expected to expand in the coming decades, further adding demand for housing and services.

The city has had varying degrees of success with the predicted development patterns as stated in the 1993 General Plan:

1. Considerable numbers of entry-level single-family housing units were built east of 47th Street during the past two decades. However, many vacant parcels remain, and most of these new subdivisions were not built with a coherent or connected pattern, resulting in walled-off neighborhoods at great distance from retail and services.

2. The Barrel Springs area was mostly developed with single-family subdivisions, though the area south of Pearblossom Hwy remains rural residential. Five hundred acres were entitled under the Foothill Ranch Specific Plan but remains unbuilt at present.

3. After a delay of many years, the Avenue S extension/ bridge has been completed. Infrastructure provision by private developers in this area has been inconsistent.

4. Approximately 1,500 units have been developed under the City Ranch Specific Plan, in addition to an elementary school and two parks. Another 1,400 acres is unbuilt, with only several hundred acres entitled.

5. The City has annexed small portions of unincorporated Los Angeles County land, primarily because of the City Ranch and Foothill Ranch Specific Plans, and a small area around Avenue P-8 and 10th Street East. Yet 0.6 square miles of unincorporated County Islands remain (in addition to 25.6 square miles of LAWA owned property).

6. Infill has been a challenge, as most of the new development has 'leap-frogged' outwards.



Palmdale Single Family Residential Neighborhood



Barrel Springs Elementary School

"County Islands" (SB 244)

The General Plan land use element is required to:

1) identify unincorporated disadvantaged communities; a 'disadvantaged community' is defined as a place that meets the following criteria: 1) contains 10 or more dwelling units in close proximity to one another; 2) is either within a city SOI, is an island within a city boundary, or is geographically isolated and has existed for more than 50 years; and 3) has a median household income that is 80 percent or less than the statewide median household income.
2) analyze the water, wastewater, stormwater, and fire protection infrastructure needs; and,
3) identify funding alternatives for extension of these services.

The City of Palmdale contains three potential County Islands; each is discussed below, and relevant SB 244 requirements are reviewed:

Los Angeles World Airports Property

This massive County Island measures a total of 16,381 acres. Located east of Plant 42, the land is owned by Los Angeles World Airports (LAWA), originally intended as an airport expansion.

- Not a disadvantaged community; contains 0 dwelling units

Desert View Highlands

This County Island contains 768 parcels, 225 parcel acres, and 273 total acres. It is a recognized census-designated place, with an estimated population of 2,514 as of 2017.

- Not a disadvantaged community; median household income is $72,776 (94% of Statewide median of $77,358)

Telstar Mobile Home Park

This miniature island contains just two parcels and 2.3 acres and is home to 30 mobile home units.

- Qualifies as a disadvantaged community; median household income is 41% of Statewide median
- No service deficiencies:
  - Water: Palmdale Water District
  - Wastewater: Los Angeles County owned and operated sewer
  - Stormwater: Los Angeles County Flood Control District
  - Fire: Los Angeles County Fire Department

Area bounded by East Avenue Q/Sierra Highway/10th Street East/ East Avenue P-8

This small island contains 148 parcels and 118 total acres, with a mix of residential, light industrial, and vacant parcels.

- Qualifies as a disadvantaged community; median household income is 71% of Statewide median
- Infrastructure is fully provisioned – no further action required.
  - Water: Palmdale Water District
  - Wastewater: LACSD District 20
  - Stormwater: Los Angeles County Flood Control District
  - Fire: Los Angeles County Fire Department

Community Design

Community design refers to what somebody sees and experiences when spending time on Palmdale's streets, or in its commercial districts and public spaces. Community design is impacted by a number of factors, including landscaping and greenery; public art; the location, scale, and architectural character of homes, stores, parks, offices, and other spaces; and how easily one can travel between destinations. Quality community design can enhance one's quality of life. Beautiful, well-designed, pedestrian-scale buildings, streets, and public spaces can increase one's civic pride, improve community safety, strengthen connections to local arts and culture, and make Palmdale a more attractive place to live, visit, and work.

Community design is impacted by the character and age of buildings, as well as their interaction with the surrounding environment. Key components of quality building design include using sustainable, long-lasting building materials, orienting buildings toward streets to create inviting spaces, and designing buildings to reflect local history. The General Plan seeks to facilitate building design that creates walkable and inviting spaces, such as locating parking behind buildings, allowing for outdoor plazas, and dining, and locating building frontages near the sidewalk edge, where appropriate.

Accessibility, connectivity, and the quality of the pedestrian environment are important characteristics of community design. Walkable neighborhoods with sidewalks and street trees often enjoy economic benefits, including higher property values, increased private investment, and tourism. Residents in walkable neighborhoods typically engage in more physical activity than residents in neighborhoods with low walkability, which leads to improved public health outcomes. The General Plan seeks to improve pedestrian connections throughout the community, as well as bicycle and public transit connections, to ensure Palmdale is an accessible, connected community for all.



Example of Walkable Downtown

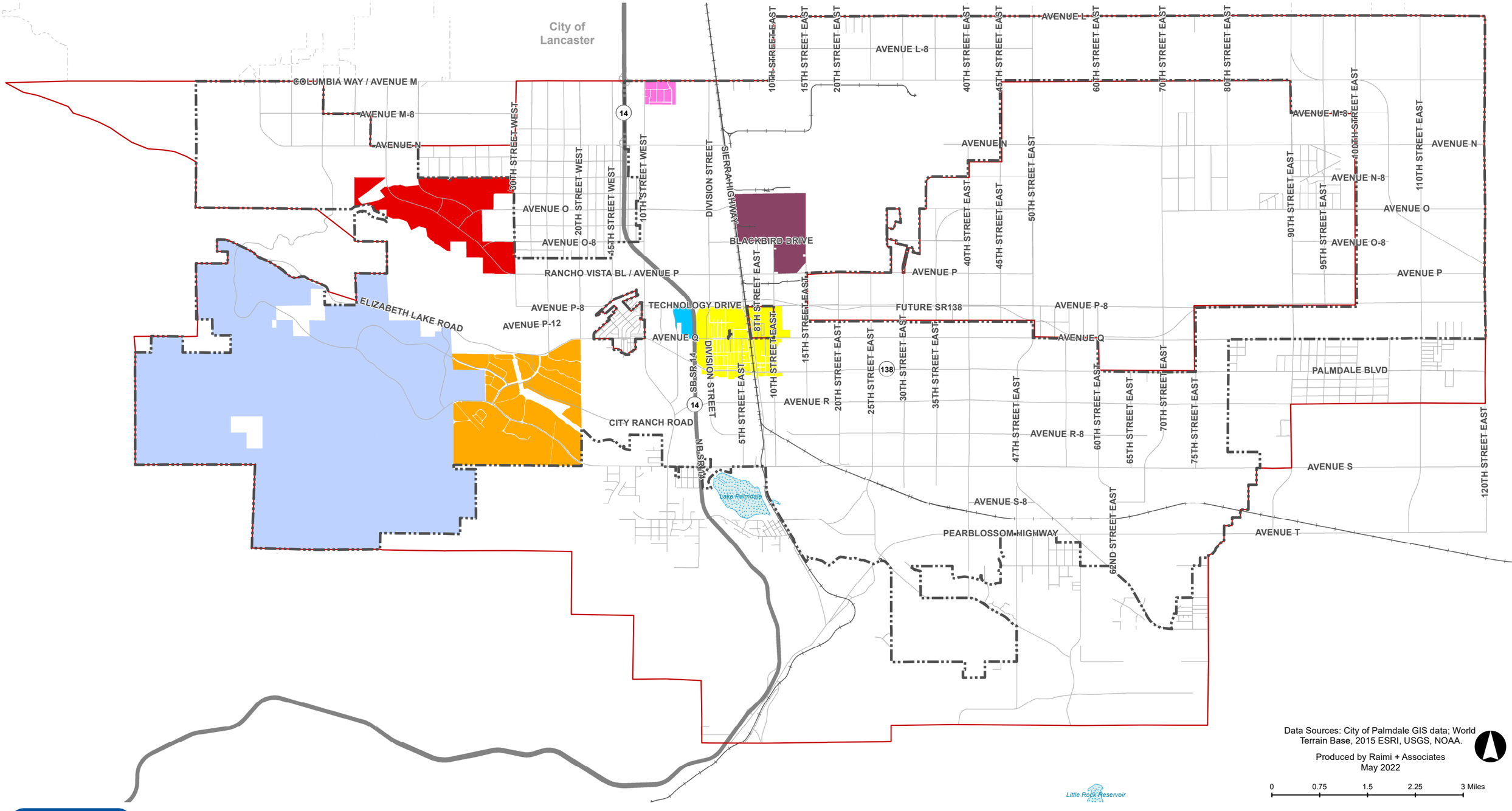
Existing Specific Plans

About one-quarter of the land within the City limits is designated "Specific Plan" by the General Plan, (about 15% of the land within the Planning Area overall). The following table describes the size and development program of each of the seven active Specific Plans. Four Specific Plans are being rescinded as a part of this General Plan; two that are fully built out, Joshua Hills Specific Plan and Hillside Residential Specific Plan; and two others that are not fully built out, Palmdale Trade and Commerce Center Specific Plan and Foothill Ranch Specific Plan. In addition, the Palmdale Business Park Center Specific Plan is no longer considered economically viable. A new specific plan is being proposed in its place, though it will not cover the entire Palmdale Business Park Center area.

Of all the entitled Specific Plan growth, roughly 8,000 units and 2.5 million square feet have been built. Much of the entitled growth from Specific Plans has not been constructed - over 12,500 units and 9 million square feet of non-residential remain unbuilt.

Table 5.2 Current Specific Plans

Plan Name	Description
Antelope Valley Business Park	120 acres of industrial, business park, and commercial uses.
Antelope Valley Auto Center	78 acres of regional auto sales and leasing centers.
Anaverde Nuevo (formerly known as City Ranch)	1,985 acres of residential (5,200 units), commercial (42 acres), recreational/ park, conserved natural open space, and community uses.
Lockheed Plant 10	674 acres allowing a total of 2,180,000 square feet of industrial, manufacturing, warehouse, and office uses
Palmdale Transit Area Specific Plan	Mix of single/multifamily residential (2,000 dwelling units), neighborhood commercial, office, and park.
Ritter Ranch	Over 10,000 acres with 7,200 units (842 multifamily), 73 acres commercial, 95 acres parks, school/public facilities, open space.
Rancho Vista	1,379 acres of residential, commercial, and recreational uses.



Data Sources: City of Palmdale GIS data; World Terrain Base, 2015 ESRI, USGS, NOAA.

Produced by Raimi + Associates
May 2022

0 0.75 1.5 2.25 3 Miles

Figure 5.1

Specific Plans

- City Boundary
- Sphere of Influence
- Major Highway/Arterial
- Railroad
- Waterbody/Aqueduct
- Antelope Valley Auto Center Specific Plan (SP-16)
- Antelope Valley Business Park Specific Plan (SP-9)
- Anaverde Nuevo Specific Plan (SP-2)
- Lockheed Specific Plan (SP-11)
- Rancho Vista Specific Plan
- Ritter Ranch Specific Plan (SP-3)
- Palmdale Transit Area Specific Plan (PTASP)

This page intentionally left blank.

Key Issues and Opportunities



Rendering of Brightline Train to Palmdale

Transit-oriented opportunities.

Palmdale is experiencing a unique point in its history; several long-range major transportation improvements including the multimodal transit station are planned, which will make travel to Palmdale faster and more efficient. This provides the opportunity for new jobs, housing, and regular visitors to Palmdale. The City has begun leveraging these improvements through the planned development of downtown Palmdale. These improvements coupled with the City's proximity to both the Los Angeles basin and the High Desert provide tremendous opportunities for an infusion into the local economy.


Example of a Vibrant Educational District Environment

Educational Opportunities

Another challenge is the mismatch between available jobs and residents, leading to a daily exodus down to the Los Angeles basin for work. Palmdale today does not have a four-year college. Higher education opportunities are provided by Antelope Valley College Palmdale Center campus, as well as several extension centers for private higher education and vocational institutions.

Growth and the vast scale of the city

Large swaths of the city do not have existing infrastructure leading to development constraints. Isolated suburban communities and topography have led to a discontinuous circulation pattern that creates challenges for pedestrians and non-motorized forms of travel. The scattered pattern of development creates difficulties for the City in terms of efficient provision of municipal services, parks, and capital facilities. This dispersed pattern also makes it more challenging to create a sense of community cohesion, and the viability of commercial retail uses is affected by the presence of large vacant tracts of land and a lack of compact residential neighborhoods.


Example Gathering Place in Phoenix, AZ

Neighborhood centers and gathering places

Palmdale has a tremendous opportunity to improve its neighborhoods by expanding or diversifying existing commercial centers so that they are cohesive, functional, and create a sense of community. The City will encourage and facilitate the evolution of its commercial areas toward greater pedestrian-oriented shopping environments. In these areas, there are opportunities to provide greater interest and immediate access by pedestrians, while parking can be minimized visually and physically. These gathering places could also be better integrated into their surroundings.


Example of Higher-Density Housing

Housing options

Single-family housing is abundant, but other housing types are lacking due to limiting development regulations. Over 80 percent of existing residential units in the city are single-family.

Where We Want to Be in the Future

Land Use Desired Outcomes and Targets

The following desired outcomes and metrics were identified to help the City of Palmdale track progress toward creating a place that builds on its best qualities and continues to improve and grow over time. This follows the Plan's Vision and Guiding Principles.

OUTCOME: Attract more jobs to promote Palmdale as a complete city.

KPI:
- Jobs/housing balance.

TARGET:
- **Reach a 1 to 1 balance. The GPU 2045 projections call for 22,000 new homes and 26,750 new jobs to move the city closer to a 1 to 1 ratio.**

OUTCOME: Continue to expand Palmdale's aerospace industry to attract skilled employment and achieve the associated fiscal benefits.

KPI:
- Square footage of airport/military industrial uses.

TARGET:
- **Continued expansion of aerospace industrial and supportive industrial uses (per the 2045 Growth Projections)**

OUTCOME: Attract new types of economic activity to buttress Palmdale against a downturn in any particular industry or sector.

KPI:
- Diversity of employment use.

TARGET:
- **Increased diversity in the types of jobs and employers.**

OUTCOME: Leverage the predicted strong market demand for medical office, remote work, educational space, aerospace support, start-up space, etc.

KPI:
- Square footage of office uses.

TARGET:
- **Substantial growth of office uses, especially medical offices (per the 2045 Growth Projections).**

OUTCOME: To diversify the City's housing stock, provide more housing options, and specifically address the previous gap in allowed housing densities (between 16.1 and 30 dwelling units per acre), which functionally limit development of rental housing/apartments.

KPI:
- Increase the number of multifamily housing units.

TARGET:
- **Increasing multifamily housing units as a share of all residential development by 2045.**

OUTCOME: Take advantage of new transit investments by locating enough new residential units at moderate densities in and around the area, and to generate vibrancy and a sense of place.

KPI:
- New housing units in the Palmdale Transit Area Specific Plan.

TARGET:
- **Achieve the residential growth projections for the PTASP by 2045.**

OUTCOME: Establish new and strengthen existing Village Centers at the heart of 20-minute neighborhoods to increase availability of daily services, provide convenient multimodal access to amenities and offer the potential to reduce Vehicle Miles Traveled.

Rationale:
- Walkability/proximity to services in Village Centers. A Complete Neighborhood is one where residents can reach community amenities (e.g., grocery stores and retail), public facilities (e.g., parks and community centers) and services (e.g., health care and childcare) within a 20-minute walk

TARGET:
- **Increase the number of existing homes that are located in a "20-minute neighborhood."**

KPI = Key Performance Indicator

Growth Projections

Growth projections refer to the amount of development likely to have occurred by the end of the General Plan horizon in 2045. Growth projections account for both the existing development that will remain as well as new development expected to occur between the date of General Plan adoption (2022) and 2045. These growth projections are based on an understanding of historic, current, and projected demographic and economic conditions in the city. Actual growth of the city through the year 2045 will be dependent on a variety of factors, including economic and demographic trends, developer interest, and potential hazards.

New development between now and 2045 will be consistent with regulations in the updated Zoning Ordinance, which shall follow adoption of Palmdale 2045 to ensure consistency between both regulatory documents. In addition, many of the future land uses in the city are already determined by the various Specific Plans that are in place.

How Does Our Plan Get Us There?

The Land Use and Design Element establishes the citywide pattern, scale, and character of residential, office, industrial, retail and services, recreation, public, and all other land uses throughout the City of Palmdale through the 2045 General Plan horizon. It anticipates and aims to preserve and grow a range of housing types for different income levels throughout the city, to ensure that all residents, present and future, have opportunities to live in Palmdale. The Land Use and Design Element simultaneously supports existing commercial and industrial land uses and provides opportunities for new industries in a manner that is compatible with city character and minimizes impacts on residents. Finally, the Land Use and Design Element provides guidance to create a pedestrian-friendly public realm – including sidewalks, streets, and other public spaces – that simultaneously beautify the community and help improve pedestrian, bicycle, and transit connectivity throughout the city. The strategies below articulate how this Plan will achieve desired land use outcomes.

Table 5.3 2045 Growth Projections

	Housing Units	Households	Population	Jobs
2022	47,358	46,150	167,398	46,008
2045	69,360	66,500	219,298	72,724
Increase	+22,003	+20,350	+51,900	+26,716



Courson Arts Housing Development in Palmdale

A Complete City with Complete Neighborhoods

The key concept underlying future land use and development in Palmdale is the achievement of a "Complete City" with a series of "Complete Neighborhoods" within. A Complete City contains a mix of places and connected uses that support and foster community, economic sustainability, and healthy living at all stages of life.

A Complete City is formed by combining these basic elements:

- Complete neighborhoods with diverse housing options at various price points
- Village Centers that provide everyday amenities and services and at frequent intervals
- Vibrant Downtown and entertainment district(s)
- Access to quality local jobs
- Access to affordable healthy food and health services
- Artistic, spiritual, and cultural amenities
- Quality public/private education options
- Access and connections to recreation/parks
- Affordable and reliable public transportation choices and access to adequate parking
- Multimodal streets that allow for safe and comfortable walking, biking, and driving

The critical components of a complete neighborhood are housing options, convenient access to amenities, access to parks and recreation, and a mix of transportation options. Any new major developments should be designed as neighborhoods containing an appropriate mix of all these uses, and existing neighborhoods should be retrofitted with these uses and options as redevelopment occurs over time.

Example of a Complete Neighborhood



Figure 5.2 Areas to Focus Investment and Infill Growth



This page intentionally left blank.

Focused Land Use and Design Strategies

In addition to the central concept articulated on the following page, this Plan articulates several other key strategies to help balance future growth and development with the preservation and enhancement of the City's best existing features:

Strategic, long-term land use vision

This Plan sets forth an overall intentional and pro-active vision for where to grow and how, based on a long dialogue with the community. This vision includes purposefully expanding the supply of housing types affordable to different income levels and household compositions that promote a high quality of life for all residents by introducing several new middle-density residential land use designations.

Focusing development in areas with existing infrastructure

Due to the rapid pace of development and annexations in the past, certain areas of the city lack adequate infrastructure. Therefore, this Plan strives to attract infill development over leapfrog or sprawl development. Building inward will help strengthen existing gathering places and reduce the distance needed to travel for work or shopping. Forming assessment districts to finance public improvements may be appropriate for commercial/industrial developments in areas lacking utilities.


Village Center Example

Creating many centers of activity ("Village Centers")

This General Plan supports active, mixed-use neighborhood places of gathering and community identity (which are characterized as Village Centers in this Plan) and promotes walkable mixed-use corridors and centers that serve adjacent residential areas. New development must prioritize interaction within and between neighborhoods and provide additional links between community facilities and the neighborhoods they serve. Existing neighborhood access to the retail, services, schools, and employment that support the daily life of residents will be enhanced. To accomplish this goal of cohesive and functional neighborhoods, planning and design will extend beyond the boundaries of each individual subdivision. Changes to the zoning code will help enable mixed-use infill and redevelopment of underutilized properties.


Palmdale Transportation Center

Improving connectivity and focusing on access for all modes of transportation.

In many subdivisions, streets start and stop in a disjointed fashion, blocking through-access between neighborhoods. Houses are cut off from adjacent neighborhoods, adjacent subdivisions, schools, and parks by block walls. Public safety vehicles have limited visibility of residential streets. In response, this plan establishes a hierarchy of where/how particular modes should be prioritized. Not every street will serve every mode; but every mode should have a way of making connections. Many suburban neighborhoods may benefit from design features to reduce speeding and improve connections to a local park. Finally, the Plan identifies capital improvement projects that support the vision of walkable mixed-use environments, improving mobility within neighborhoods and access to open spaces and institutions.


Palmdale Regional Medical Center

Supporting amenities on both sides of State Route-14.

The lack of particular services, amenities, or businesses across the city is a concern that must be addressed. This General Plan supports creating Village Centers in neighborhoods across the city, as well as additional amenities (parks, medical districts, etc.). Residents, employees, and visitors will enjoy quality amenities and have convenient access to services, jobs, civic facilities, and transit throughout Palmdale.

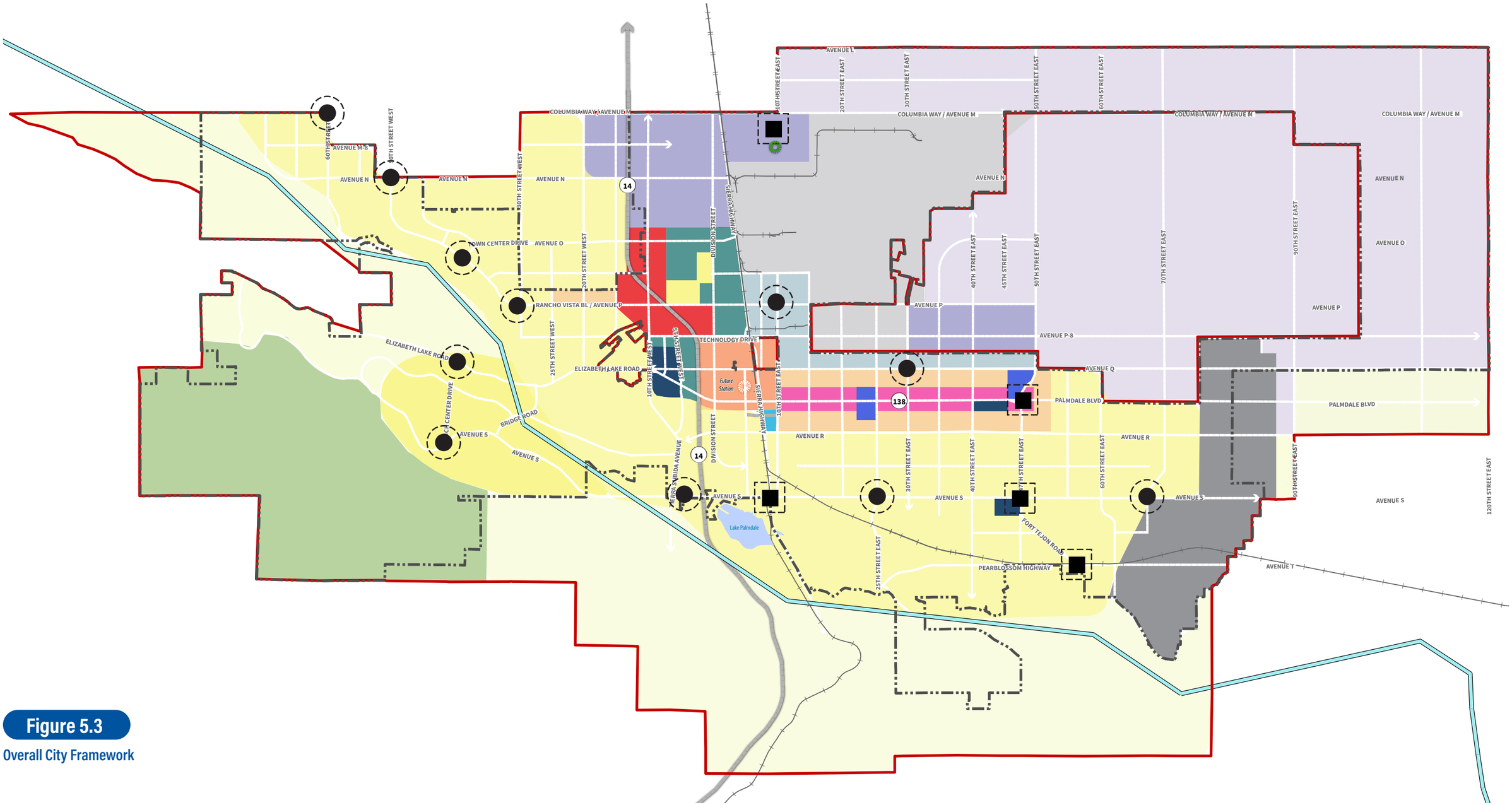


Figure 5.3
Overall City Framework

- City Boundary
- Sphere of influence
- California Aqueduct
- Major Highway/Arterial
- Railroad
- Transportation Station
- Proposed Airport Terminal
- Future Neighborhoods
- Existing Neighborhoods
- Mid Town District
- Mixed-Use Corridor
- Downtown
- Mall District
- Education District
- Medical District
- Civic District
- Transitional District
- Mixed Business District
- Plant 42
- Future Employment
- Employment District
- Resource Extraction Area
- Open Space
- Multi-Use Node
- Village Center

67

Desired City Structure and Development Pattern

City Framework

Neighborhoods, districts, and corridors are the fundamental components of all cities. Mapping these components of a city help to provide an understanding of how people live, shop, work, play, and get around in their communities.

Neighborhoods are the basic building block of great cities. At their core, neighborhoods are the places where we live and are typically mostly residential. A neighborhood should mix a variety of residential types within a walkable network of green streets and parks, well-connected to parks, schools, and neighborhood centers to serve daily shopping needs.

Districts are areas of the city that are functionally specialized with supportive uses without being rigorously regulated to a single use, such as a shopping center. One of the best examples of a district are downtowns in which retail specialization has occurred in concert with supporting residential, office, and institutional uses. Districts play an important role in a city since they are typically the primary retail and entertainment areas and provide jobs and economic development opportunities.

Corridors are both the separators of neighborhoods and districts and the viaducts by which people move throughout town. Corridors take many shapes and forms and, as a primary component of the public realm, also serve different transportation and placemaking purposes. In some cases, such as Palmdale Boulevard, corridors have more permeable edges and are readily accessed from the adjacent neighborhoods and districts. In cases where corridors have very high connectivity to surrounding areas, corridors function as "to" places in which people gather and congregate, which is the vision for the East Avenue Q corridor, as a prototypical Main Street. In other cases, such as along the edges of the newer master planned communities or with conventional arterials, corridors have limited connectivity to the adjacent areas and serve primarily to move cars. In these limited-access cases, corridors serve primarily as "through" places and a great emphasis is put on efficient automobile operations.

These components of cities can be further defined to convey the type of place or use as is shown in Figure 5.3, Overall City Framework. The design of districts, neighborhoods, and corridors can actively shape the creation of a town with great accessibility and connectivity.

The City of Palmdale is organized around a long central corridor with a vision for future transit-oriented development anchoring the Downtown, a series of major commercial nodes distributed across town, Village Centers, and one dominant industrial employment district that is buffered from sensitive uses by light industrial employment areas.

The major physical elements of the City's structure are as follows:

- A centrally located historic Downtown with entertainment uses, a civic center, and public parks.
- An emerging midrise mixed-use residential and employment district near the high-speed rail station.
- A healthy mix of large and small commercial and (eventually) mixed-use developments stretching along the Palmdale Boulevard corridor, with greater activity at key nodes.
- Moderate and mixed-density housing (such as low-rise walkups, townhouses, and courtyard apartments) focused near transit in the Downtown, and on both sides of Palmdale Boulevard.
- Two Education Districts meant to foster a mix of educational type-uses in a campus-like setting, building building off the Palmdale Antelope Valley College campus and Palmdale High School.
- Three Health and Wellness Districts (one existing and two new) designed to attract hospital / medical office / medical research uses in tandem with supporting retail and housing or lodging.
- Gradually evolving regional Antelope Valley Mall, and an emerging regional commercial area around the intersection of Palmdale Boulevard and 47th Street East.
- Band of light industrial, film-related, or similar transitional employment uses around Plant 42 that buffer the military uses from residential neighborhoods.
- Over a dozen "Village Centers" and Multi-Use Nodes dispersed in various locations across the city with a mix of neighborhood retail or commercial uses along with residential uses.

Land Use Designations

Land use designations indicate the intended use of each parcel of land in the city. They are developed to provide both a vision of the organization of uses in the city and a flexible structure to allow for changes in economic conditions and community vision. The General Plan includes 27 land use designations, described below, mapped in Figure 5.5, and summarized in Table 5.4.

The uses allowed and standards for development intensity (dwelling units per acre for residential development and floor area ratio for nonresidential development) are specified for each designation. Permitted residential density could be less than the stated minimum on a case-by-case basis if certain findings are made as outlined in the zoning code.

Designations Overview

There are several broad categories of land use designations. Residential designations define the predominantly residential areas of the city and range from single family homes to multifamily housing. Nonresidential designations provide locations for retail, office, and industrial uses. Mixed use designations provide areas for a range of residential or commercial uses in a vertical or horizontal pattern. Public designations identify a range of public facilities such as schools, parks, and City and publicly owned uses. Finally, special designations include unique districts that serve a particular objective or that fall under the direction of an adopted Specific Plan.

Residential

There are nine residential designations that cover the range of housing types expected in Palmdale. Two designations specifically address the "missing middle" density ranges in the city (housing types that include townhomes, 2-3 story walkups, courtyard style multiple-family residential buildings, etc.).

Commercial and Industrial

Seven commercial, employment and industrial designations allow a range of commercial and industrial uses at a variety of scales. The Neighborhood Commercial and Regional Commercial designations support commercial uses at the neighborhood and regional scale, respectively. The Visitor Commercial designation supports retail, entertainment, and hotels to serve the needs of visitors and highway traffic. The Employment Flex designation covers job-producing uses including offices, medical, research and development and light industrial uses. The Mineral Resource Extraction designation is limited to specific areas where heavy mining activities occur.

Mixed-Use Designations

Three mixed-use designations allow for a mix of commercial and residential uses, integrated either in a building (vertical mixed-use) or on the same parcel (horizontal mixed-use). These mixed-use designations cover a range of densities.

Public Designations

Five designations cover parks, schools, public/government facilities, utility facilities, the aqueduct, and open space/natural uses.

Special Areas

- **Medical Flex Designation:** This designation allows uses that are supportive of health and wellness of the Palmdale community. Allowed uses include medical facilities and offices, supportive research and development uses, and ancillary retail/services.
- **Educational Flex Designation:** This designation is intended to support development of educational uses including higher education, vocational training, and satellite campuses. Supportive retail, office and limited housing is also allowed.
- **Specific Plan Designation:** This designation covers the existing adopted Specific Plans in the City. Each Specific Plan document provides more detail about allowed uses, densities, and other development regulations.

Relationship with the Zoning Ordinance

These land use designations are compatible with the Zoning Ordinance. While the guidance in General Plan land use designations is broad, the zoning districts include specific allowances, prohibitions of uses (including conditional uses), and dimensional requirements, such as building setbacks, parking standards, and building heights. Land use designations and zoning districts must be compatible but need not be the same. Where the documents differ, the General Plan takes precedence. Note that the maximum density of any land use designation may be in accordance with the density bonus provisions of the California Government Code.

Figure 5.4 Understanding Density and Floor Area Ratio

Understanding Density

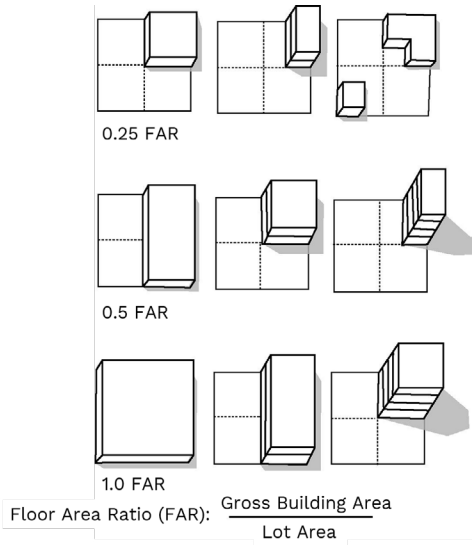
State law requires that General Plan land use designations provide a measurement of the maximum development intensity allowed within each designation. The three generally accepted metrics are dwelling units per acre, floor area ratio, and persons per square mile.

Dwelling Units per Acre- DU/AC

The term density is used for residential uses and refers to the population and development capacity of residential land. Density within the General Plan is described in terms of dwelling units per net acre of land (du/ac), exclusive of existing and proposed streets and rights-of-way.

Floor Area Ratio- FAR

Development intensity, which applies to nonresidential and mixed uses, refers to the extent of development on a parcel of land or lot. Floor area ratio is used in the General Plan as a measure of non-residential or mixed-use development intensity.



Floor area ratio (FAR) expresses the intensity of use on the lot. The FAR represents the ratio between the total gross floor area of all buildings on a lot and the total land area of that lot. For example, a 20,000 square foot building on a 40,000 square foot lot yields a FAR of 0.5. A 0.5 FAR describes a single-story building that covers half of the lot, a two-story building covering approximately one-quarter of the lot, or a four-story building covering one-eighth of the lot.

These FAR calculations and gross floor area do not consider the square footage of any parking facilities (including but not limited to parking structures, surface parking, or underground parking) or other structures not designed for human occupation. Additionally, "Lot," as used here, may encompass multiple legal parcels which are planned as a cohesive development (e.g. mixed-use with townhomes and commercial development which may require subdivisions into separate legal parcels for financing and separate ownership).

Population per Square Mile- Persons/sq mi

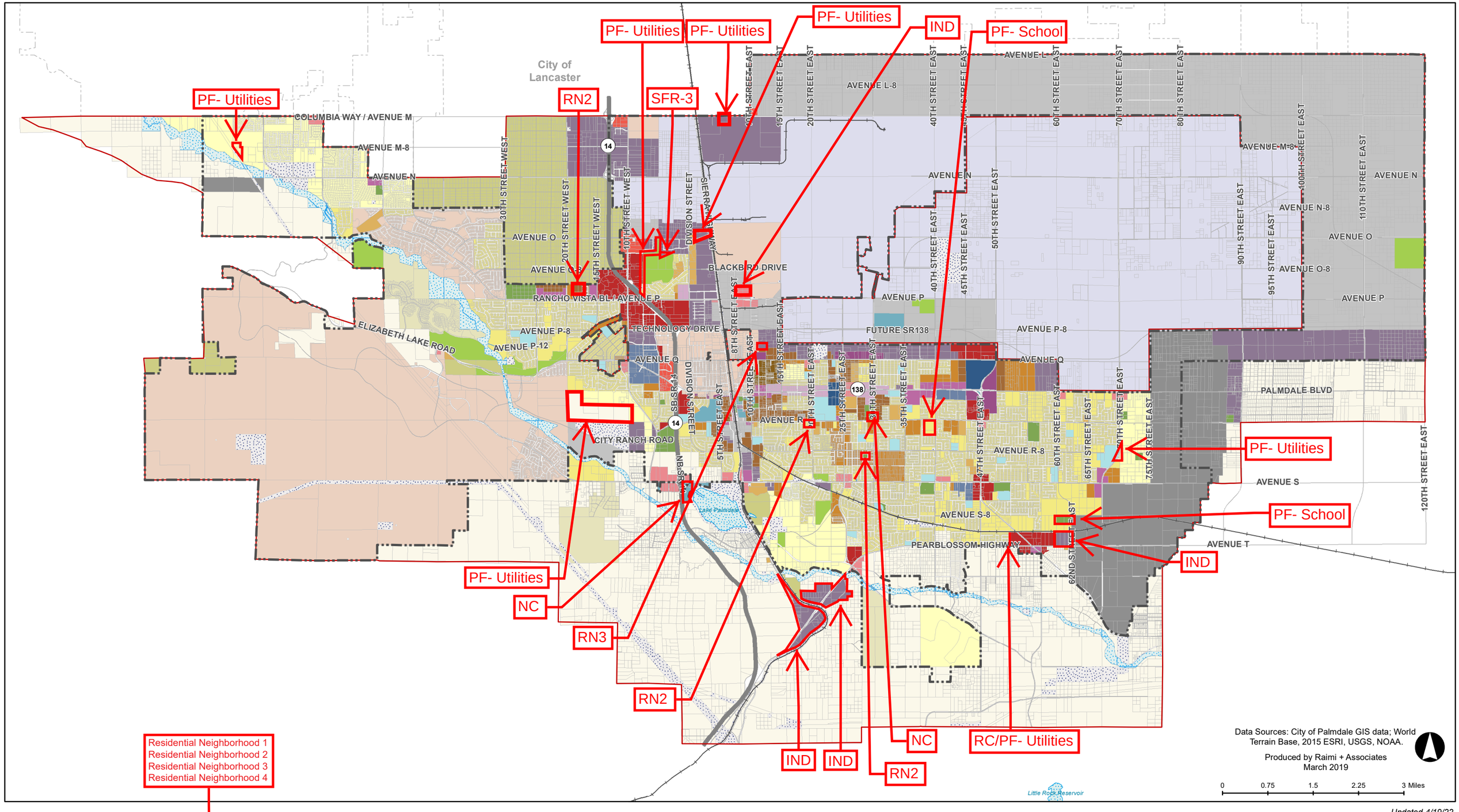
A simplistic estimate of the number of total inhabitants in a square mile of a given land use designation, derived from known averages of building type occupancies. These provisions are intended to be descriptive and not inflexible limits.

This page intentionally left blank.

Table 5.4 General Plan Land Use Designations

Land Use Designation	Description and Uses Allowed	Density/Intensity
RESIDENTIAL		
Equestrian Residential (ER)	Rural single-family dwellings with parcels at least 2.5 acres or larger. Animal keeping allowed.	Up to 0.4 units per acre
Low Density Residential (LDR)	Detached single-family dwellings. Appropriate as a transition between rural and suburban areas.	Up to 1 unit per acre
Single Family Residential 1 (SFR1)	Detached single-family dwellings in a semi-rural environment. Animal keeping allowed.	Up to 2 units per acre
Single Family Residential 2 (SFR2)	Single-family dwellings located generally between the valley floor and steeper hillside areas.	Up to 4.4 units per acre
Single Family Residential 3 (SFR3)	Detached single-family dwellings on standard 7,000 square foot minimum lot size are typical.	Up to 6 units per acre
Residential Neighborhood 1 (RN1)	Intended for a low-density mix of attached and detached residential dwelling units.	Up to 10 units per acre
Residential Neighborhood 2 (RN2)	Intended for grouped housing such as townhouses, condominiums, apartments with on-site recreation and open space.	10 to 20 units per acre
Residential Neighborhood 3 (RN3)	Intended for "missing middle" or middle-density housing such as walkups, garden apartments, and rowhouses.	20 to 30 units per acre
Residential Neighborhood 4 (RN4)	Intended as a high-intensity, walkable neighborhood with a variety of types of housing, predominantly multifamily.	30 to 50 units per acre
MIXED-USE		
Mixed-Use 1 (MU1)	Intended to create a low-intensity concentration of commercial businesses and civic amenities mixed with single and multifamily housing.	Up to 20 du/ac Max Commercial FAR: 0.35
Mixed-Use 2 (MU2)	Intended to create a low/medium-intensity concentration of commercial businesses and civic amenities mixed with multifamily housing.	20 to 30 du/ac Max Commercial FAR: 2.0
Mixed-Use 3 (MU3)	Intended to create a medium-intensity concentration of businesses and amenities mixed with multifamily housing along major corridors.	30 to 50 du/ac Max Commercial FAR: 3.0
NON-RESIDENTIAL		
Regional Commercial (RC)	Accommodates retail and service uses attracting consumers from a regional market area, and film uses within the LA County secondary zone.	Up to 1.0 FAR (up to 30 du/acre at A.V. Mall)
Neighborhood Commercial (NC)	Convenience-type retail and services designed to serve daily needs of the immediate neighborhood.	Up to 0.5 FAR
Visitor Commercial (VC)	Intended to accommodate a diverse mix of businesses that primarily serve visitors or that provide niche/specialty goods and services.	Up to 1.5 (2.0 for lodging)
Aerospace Industrial (AI)	Intended to support the current and future operations of USAF Plant 42 and the proposed Palmdale Regional Airport.	Up to 0.5 FAR
Industrial (IND)	Permits a variety of industrial uses, including manufacturing and assembly of products and goods, warehousing, distribution, and similar uses.	Up to 0.5 FAR
Employment Flex (EMPFX)	Transition zone intended to permit mixed development of lighter industrial uses and more intensive service, retail, and commercial uses.	Up to 1.0 FAR
Health and Wellness (HW)	Intended to accommodate a medical-oriented campus, supported by appropriate commercial and lodging uses.	Up to 2.0 FAR
Educational Flex (EDFX)	Intended to primarily attract a mix of educational type uses like trade schools, public and private higher education facilities, and satellite campuses	10 to 30 du/acre Maximum FAR: 2.0
Mineral Resource Extraction (MRE)	Permits extraction and processing of mineral resources, including sand, gravel, and granite.	Up to 0.25 FAR
SPECIAL/PUBLIC		
Open Space (OS)	Reserved land for both natural and active open space uses.	Up to 0.01
Public Facilities (PF) • Civic (C) • School (S) • Park (P) • Utilities (U)	Land utilized for various types of public facilities, including schools, parks, libraries, hospitals, public safety and governmental facilities, sewer and water treatment plants, aqueduct, and landfills.	Up to ~~0.4 FAR~~ 1.0 FAR
Specific Plans (SP)	For areas with adopted specific plans.	Varies
Public and quasi-public uses may also be located within other land use designations as established by the underlying zoning.		

See pages 107–137 for detailed design and character guidance for all land use designations.



Updated 4/19/22

Legend

- Equestrian Residential
- Low Density Residential
- Single Family Residential
- Single Family Residential 2
- Single Family Residential 3
- ~~Neighborhood Residential 1~~
- ~~Neighborhood Residential 2~~
- ~~Neighborhood Residential 3~~
- ~~Neighborhood Residential 4~~
- Mixed Use 1
- Mixed Use 2
- Mixed Use 3
- Employment Flex
- Neighborhood Commercial
- Visitor Commercial
- Regional Commercial
- Health and Wellness
- Educational Flex
- Industrial
- Aerospace Industrial
- Mineral Resource Extraction
- Specific Plan
- Open Space
- Public Facility-Park
- Public Facility-School
- Public Facility-Civic
- Utilities
- California Aqueduct
- City Boundary
- Sphere of Influence
- Major Highway/Arterial
- Railroad
- Water Body/Aqueduct

This page intentionally left blank.

Goals and Policies

The following section includes goals and policies for the Land Use and Design Element. Goals and policies are followed by implementation actions. Land use-related policies are also woven throughout the General Plan, including in the Circulation and Mobility, Public Facilities, Services, and Infrastructure, and Equitable and Healthy Communities chapters, among others.

CITYWIDE FRAMEWORK

Goal LUD-1

Complete Neighborhoods where residents can reach daily amenities, local retail, services, parks, and public facilities within a short 20-minute walk.

LUD-1.1 Balanced Land Uses. Maintain a balanced land use pattern to support a broad range of housing choices, retail businesses, employment opportunities, educational and cultural institutions, entertainment spaces, and other supportive uses within long-established Palmdale neighborhoods and new growth areas.

LUD-1.2 New Complete Neighborhoods. Facilitate the construction of new mixed-use neighborhoods that are well connected to services, transit, amenities, public buildings, and parks and recreational facilities.

LUD-1.3 Access to Amenities. Strive to create development patterns such that the majority of residents are within twenty minutes or less walking distance of a variety of neighborhood-serving uses in Village Centers, such as parks, grocery stores, restaurants, places of worship, cafes, dry cleaners, laundromats, banks, hair care, pharmacies, civic uses, and similar uses.

LUD-1.4 Specific Plan Facilities. Ensure Specific Plans are implemented with timely construction of supportive commercial uses and parks to support new residential uses.

LUD-1.5 Multimodal Connectivity. Promote walking to services, biking and transit use by requiring a high level of connectivity for pedestrians, bicycles, and vehicles in major developments (except where existing development or natural features prohibit connectivity). Seek to improve walk, bike, and transit travel within existing complete neighborhoods.

LUD-1.6 Walkable Blocks. Create communities that address the needs of multiple age groups and physical abilities through short, walkable block lengths. Use grid-like or a modified grid street networks in newly developed areas (except where topography necessitates another street network layout).

Goal LUD-2

A City that supports and encourages new growth in the developed urban core.

LUD-2.1 Focused Growth. Direct future growth to areas closer to the center of town, which can accommodate development based upon topography, environmental factors, and availability of existing infrastructure.

LUD-2.2 Preferred Development Patterns. In considering requests to amend the Land Use Map, encourage proposals for development in those areas which are functionally connected to developed portions of the city, have available infrastructure, and do not have significant topographic or jurisdictional barriers, or other similar constraints.

LUD-2.3 Discouraged Development Patterns. In considering requests to amend the Land Use Map, discourage proposals for development in those areas which are functionally separated from developed portions of the city by lack of infrastructure, expanses of vacant land, significant topographic or jurisdictional barriers, or other similar constraints.

Goal LUD-3

A City with high-quality services and facilities in all neighborhoods.

LUD-3.1 Planned Future Uses. Develop multiple educational districts, multiple medical districts, a new passenger airport, a new high-speed rail facility, and abundant new parks and trails.

LUD-3.2 Accessible Mix of Commercial Uses. Strive to provide goods and services within a short walking distance (twenty minutes or less) of all residents through mixed-use Village Centers and Neighborhood/Regional Commercial uses. Establish neighborhood services by requiring new Village Centers when developing Specific Plan areas.

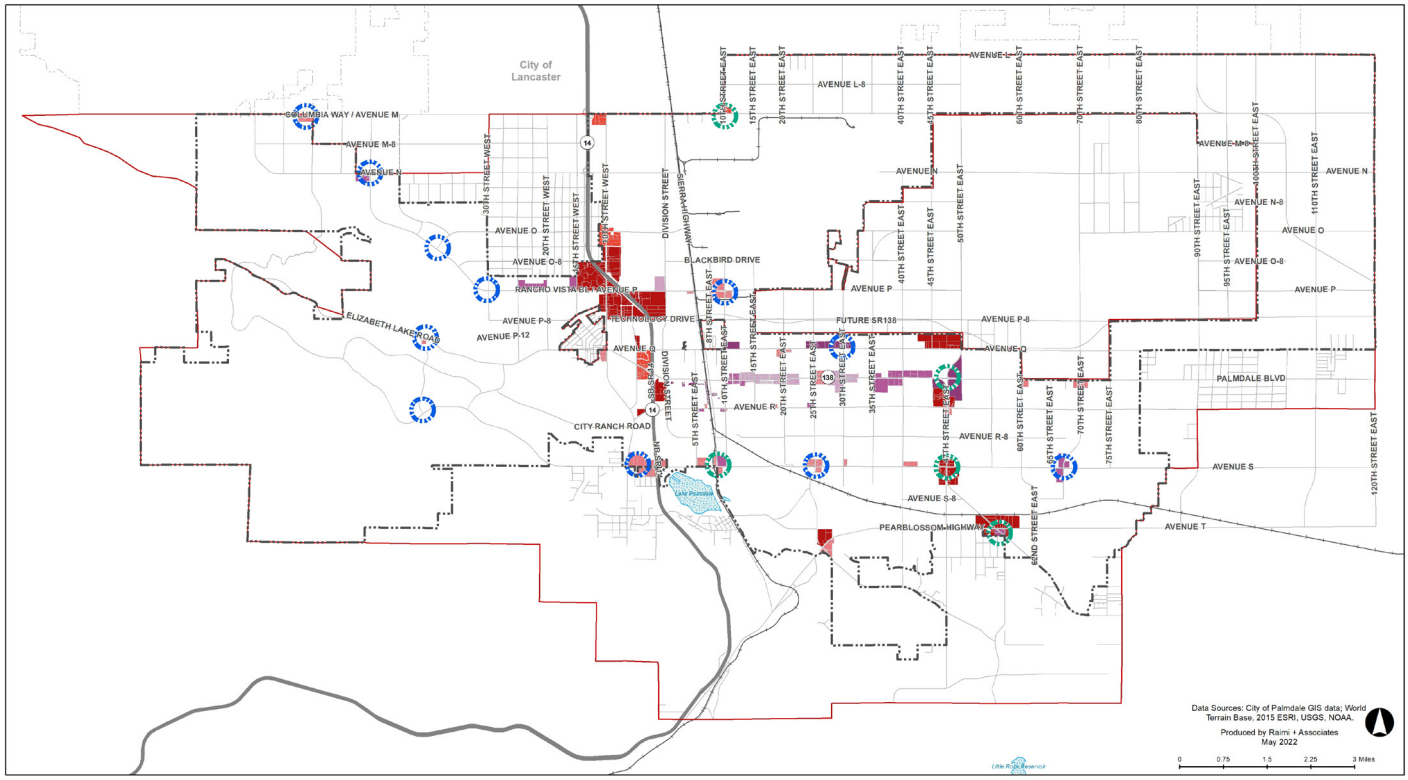
LUD-3.3 Services and Amenities for Families. Promote opportunities for new childcare and pre-Kindergarten facilities in Village Centers and encourage these supporting uses through the Educational Flex designation.

LUD-3.4 Expansion of Public Facilities. Maintain and expand public facilities and services to better support the community, including schools, libraries, utilities, and recreational spaces.

LUD-3.5 Infrastructure Capacity and Service. Ensure that there will be adequate water and wastewater system capacity to meet projected demand by continuing to oversee the development of adequate and dependable public services and facilities to support both existing and future development.

LUD-3.6 Infrastructure Funding and Programs. Continue to implement comprehensive water and wastewater management programs and ensure that future developments pay their fair share for any infrastructure improvements demand necessary.

Figure 5.6 Commercial and Mixed-Use Areas within Village Centers



Updated 5/9/22

Legend

- Mixed Use 1
- Mixed Use 2
- Mixed Use 3
- Neighborhood Commercial
- Visitor Commercial
- Regional Commercial
- Multi-Use Node
- Village Center
- City Boundary
- Sphere of Influence
- Major Highway/Arterial
- Railroad
- Water Body/Aqueduct

DESIGN AND CHARACTER

Goal LUD-4

High-quality architecture and site design in the renovation and construction of all buildings.

LUD-4.1 Quality Construction. Use simple, urban building forms made with permanent materials with high-quality detailing that stands the test of time.

LUD-4.2 Massing Techniques. Use building organization and massing to derive scale and articulation rather than surface ornamentation.

LUD-4.3 Long-Lasting Building Materials. Convey façade articulation through the strength, depth, and permanence of building materials. Thinner cladding materials, such as stucco, masonry veneers, and wood or simulated wood, may be used when finished to appear as durable and authentic as the materials they simulate.

LUD-4.4 Façade Increments. Articulate residential building façades with smaller-scale increments than office and industrial building facades.

LUD-4.5 Attractive Building Entrances. Use visual and physical design cues within the design of a building and within building entries to emphasize the building entrance and connections to public spaces and public pathways/networks.

LUD-4.6 Urban Design in the Core. Require four-sided architecture - all facades of a building are designed with quality, care, and visual interest - in the urban core (primarily RN3, RN4 and MU3). Encourage four-sided architecture in other areas.

LUD-4.7 Iconic Architecture. Allow iconic and memorable building designs, particularly on larger non-residential properties.

LUD-4.8 Environmental Design. Design sites and buildings adjacent to natural areas with transparent design elements. Employ bird-safe design near habitat areas or migratory routes.

LUD-4.9 Public Streetscapes. Create pedestrian-oriented streetscapes by establishing unified street tree planting, sidewalk dimensions and maintenance, pedestrian amenities, and high-quality building frontages in all new development.

Goal LUD-5

All new major development in the city is designed to support high-quality neighborhoods.

LUD-5.1 New Complete Neighborhoods. Require new development to provide multiple amenities, a beautiful public realm, and be consistent with the City's vision for complete neighborhoods.

LUD-5.2 Walkability of New Neighborhoods. Require all new neighborhoods to be pedestrian friendly by including features, such as short blocks, wide sidewalks, shaded streets, buildings that define and are oriented to streets or public spaces, traffic-calming features, convenient pedestrian street crossings, and safe streets designed for pedestrians, cyclists, and vehicles.

LUD-5.3 Public Services in New Neighborhoods. Require new developments to be designed for and provided with adequate public services and infrastructure. Require that these public facilities and services be provided concurrently with development to ensure a high quality of life for residents.

LUD-5.4 Access to Retail/Services. Strive for a high level of connectivity of residents to neighborhood services through site design, open space linkages, and bicycle facilities. Plan for 90 percent of residents (except for in rural residential designations) to be within a twenty minute walking distance of retail and neighborhood services.

LUD-5.5 Trail Networks. Provide new trails systems that connect to the regional system.

LUD-5.6 Character of New Housing. Provide a diversity of architectural styles; avoid entire blocks or neighborhoods with identical housing styles.

LUD-5.7 Natural Topography. To the greatest extent feasible, preserve natural topographic features during the planning and development process. Utilize physical advantages of the site to minimize visual impacts.

LUD-5.8 Transfer of Development. Require clustered single family and multifamily development in less constrained areas, transferring density from areas constrained by seismic, drainage, rights-of-way, or other conditions based on technical studies.

Goal LUD-6

Pedestrian-oriented, human-scale and well-landscaped streets and civic spaces.

LUD-6.1 Diversity of Housing Styles. Strongly encourage new subdivisions and master planned projects to include a diversity of housing types and architecture styles, where possible.

LUD-6.2 Primary Entries. Require new homes to provide a primary entryway and windows facing the street.

LUD-6.3 Integrated Pedestrian Circulation. For construction of new small-scale housing and minor subdivision projects, design site plans that provide amenities and integrated networks for walking and bicycling.

LUD-6.4 Recreational Spaces. Improve existing parks and public spaces throughout the city to provide beautiful, comfortable, and inviting gathering spaces.

LUD-6.5 Amenities and Gathering Spaces. Encourage new development to incorporate public plazas, seating, drinking fountains, and gathering places, especially in prominent locations and areas of pedestrian activity.

LUD-6.6 Ongoing Maintenance. Require project developers to establish mechanisms, such as a Community Facilities District, to adequately maintain new parks, recreational facilities, and infrastructure.

Goal LUD-7

Neighborhoods and streets that are safe and welcoming.

LUD-7.1 Safety Programs. Promote Business and Neighborhood Watch programs, in addition to collaborations between residents and law enforcement, to help maintain a clean and safe environment.

LUD-7.2 Crime Prevention. Use Crime Prevention through Environmental Design strategies (CPTED) in new and existing development to improve public safety, including the following:

- Active public space
- Building design to promote "eyes on the street"
- Clear delineation between private and public space
- Natural access control between public and private space
- Maintenance of public places
- Removal or repair of vandalism or broken property

LUD-7.3 Partnerships. Encourage regional partnerships that support the coordination of public safety awareness and crime prevention.

LUD-7.4 Lighting Improvements. Improve lighting and nighttime security across all City neighborhoods to prevent crime and increase safety.

LUD-7.5 Graffiti Removal. Encourage the creation of a graffiti prevention team to remove graffiti from public property (including parks, street signs, sidewalks, etc.) or property adjacent to public rights-of-way.

LUD-7.6. Illegal Dumping. Support systematic removal of unsightly trash/debris and prevention of future illegal dumping. Consider increasing surveillance of known dumping sites, lowering disposal fees at Waste Management sites and raising fines for illegal dumping, and encouraging/facilitating more recycling locally.

Goal LUD-8

A place that encourages and supports its local arts and community culture.

LUD-8.1 Arts and Cultural Programming. Expand arts and cultural programming in public spaces, building off the existing Public Art Master Plan.

LUD-8.2 Arts and Gathering Spaces. Encourage new development, especially along Palmdale Boulevard and Avenue Q to incorporate public art in public plazas, seating, and gathering spaces along or near these corridors.

LUD-8.3 Art Priorities. Prioritize art funds from CIP projects to major public gathering spaces, such as parks, public plazas, and along major corridors such as East Avenue Q and Palmdale Boulevard.

LUD-8.4 Art Spaces. Actively encourage affordable arts spaces through use classifications in the zoning code and streamlined permitting in the Light Industrial and Employment Flex zones.

Key Districts and Centers

The City of Palmdale is comprised of numerous key sub-areas/districts, including:

- Village Centers + Multi-Use Nodes
- Downtown/PTASP District
- Palmdale Boulevard Corridor
- Medical Centers/Districts
- Education Districts
- Air Force Plant 42
- Antelope Valley Mall

Relevant design guidelines, goals, and policies for each area are described below.



Antelope Valley Mall

Village Centers and Multi-Use Nodes

An activity center is a place with easy, convenient access to everyday amenities (e.g., grocery stores, restaurants, coffee shops, hair salons, banks, healthcare, pharmacy), that is focused on community meeting spaces and parks/plazas and is well served by a mix of transportation options (walk, bike, bus, bike share).

Palmdale features two main types of activity centers: Village Centers, which are intended to offer a mix of residential uses and daily goods and services within residential neighborhoods in a mixed-use setting, and Multi-Use Nodes. As illustrated in Figure 5.7, Village Centers allow for the creation of "complete neighborhoods" where residents can access the commercial and public uses through multiple modes of travel and are connected to the larger pedestrian and bicycle network, publicly accessible plazas or courtyards. These smaller centers consist of a variety of land use designations including Mixed-Use 1 (MU1), Mixed-Use 2 (MU2), and Neighborhood Commercial (NC). Village Centers are identified at locations:

- Columbia Way (Avenue M) and 60th Street West
- R. Lee Emery (Avenue N) and 50th Street West
- Rancho Vista Boulevard and Town Center Drive
- Rancho Vista Boulevard and 30th Street West
- Ranch Center Drive and Elizabeth Lake Road
- Avenue S and Tierra Subida Ave
- Avenue P and 10th Street East
- Avenue Q and 30th Street East
- Avenue S and 25th Street East
- Avenue S and 70th Street East
- Avenue S and Ranch Center Drive
- ~~Fort Tejon (SR-138)~~

Multi-Use Nodes are made up primarily of commercial uses at higher intensities than the Village Centers and offer a mix of uses that attract patrons from across the City and the region, and serve varying needs based on location. Multi-Use Nodes are implemented through a variety of land use designations including Mixed-Use 2 (MU2), Mixed-Use 3 (MU3), Regional Commercial (RC), Neighborhood Commercial (NC), and Visitor Commercial (VC) and are found at the following five locations:

- Avenue M and Challenger Way
- Sierra Highway and Avenue S
- Palmdale Boulevard and 47th Street East
- Avenue S and 47th Street East
- Fort Tejon Road and Pearblossom Highway

Goal LUD-9

Thriving, active Village Centers and Multi-Use Centers at regular intervals outside of the city core.

LUD-9.1 Activity Centers. Support a network of vibrant Village Centers that are mixed-use activity centers located throughout the City's residential areas to create 20-minute neighborhoods, implemented through new mixed-use land use designations, which provide a mix of residential uses and daily goods/services.

LUD-9.2 Distinct Character. Encourage design strategies that enhance a unique identity for each of the Village Centers.

LUD-9.3 Gathering Places. Require the introduction of new public gathering places in Village Centers such as publicly accessible plazas or courtyards.

LUD-9.4 Contextual Transitions. Ensure that developments create appropriate transitions to existing residential neighborhoods by placing two-to-three story residential over ground floor retail/services toward arterial streets and lower scaled housing abutting existing residences.

LUD-9.5 Mobility Connections. Seek to improve walk, bike, and transit access to Village Centers by connecting to the larger/regional pedestrian and bicycle networks.



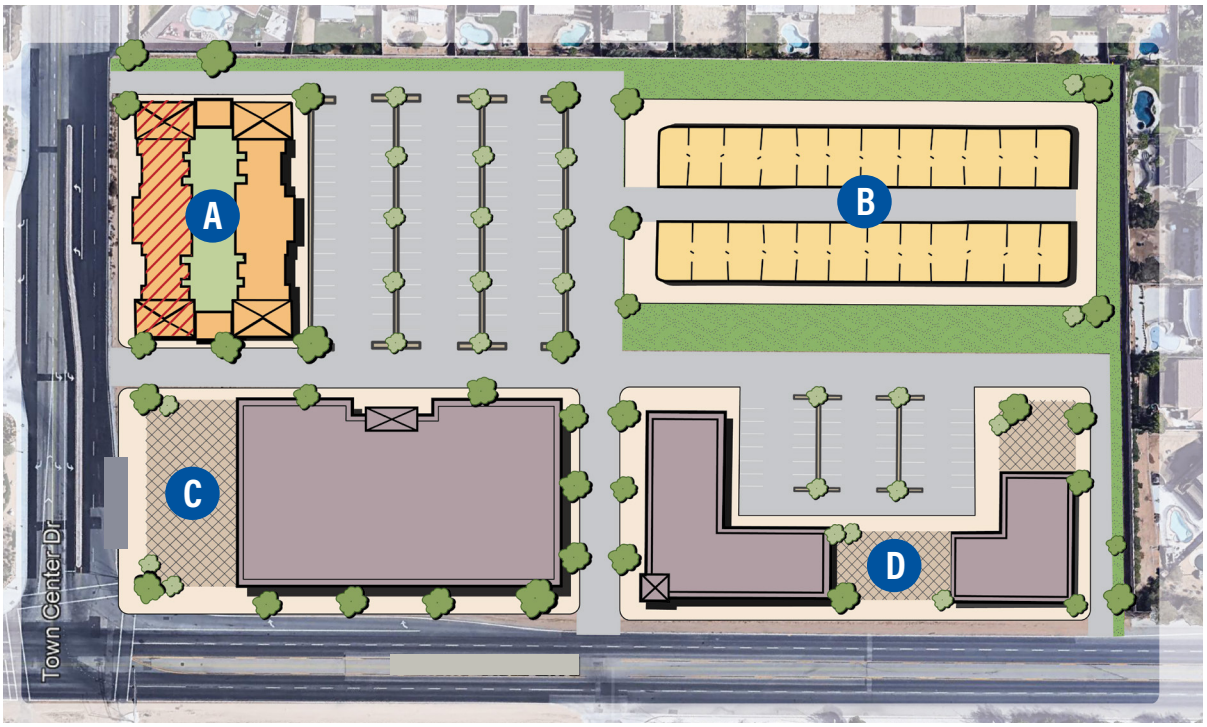






Examples of a "Village Center;" low-scale gathering places with ground-floor businesses, frequent entrances, and pedestrian amenities

Figure 5.7 Illustrative Example of Village Center Development

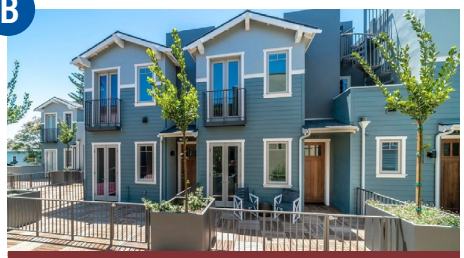


A



Two-to-three story residential over ground floor retail or services.

B



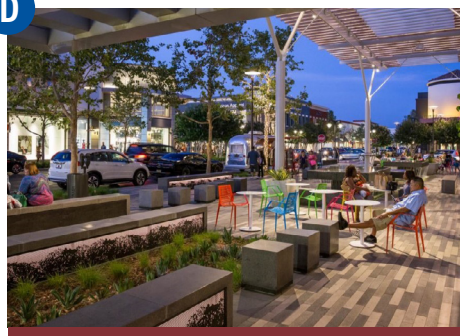
Alley-loaded townhouses (two-to-three stories) abutting existing residential neighborhoods.

C



New public plazas and gathering spaces.

D



New public gathering places.

Downtown/PTASP District

The Palmdale Multimodal High-Speed Rail Station will be a key piece of infrastructure that will help to create a cohesive community. The area around the future station is governed by the Palmdale Transit Area Specific Plan (PTASP). The overarching goal for the PTASP is the creation of a new transit-oriented district around the future Palmdale Station that will function as a gateway to the Downtown core, be integrated with the rest of the City's fabric, and catalyze future growth. The goals for the PTASP are aligned with the Citywide vision of enhancing the quality of life for the community.

Goal LUD-10

Growth of a transit-oriented community near high-speed rail that combines high-quality mixed-use development, a Downtown 'feel', office employment, affordable housing, and improved mobility.

LUD-10.1 Mix of Destinations. Develop mixed-use retail, residential and office buildings in the vicinity of the future multimodal high speed rail station to establish the area as a regional and local destination.

LUD-10.2 Places for the Community. Develop community gathering spaces including plazas and neighborhood parks near the future multimodal transit station, in order to evolve the relocated Palmdale Transportation Center into an attractive and unique transit gateway.

LUD-10.3 Transit-Supportive Densities. Support minimum development densities/intensities in the PTASP area to promote sufficient development that allows active placemaking.

LUD-10.4 Station Access. Enhance transit and pedestrian linkages to surrounding areas to create a multi-modal transit and pedestrian-oriented center.

LUD-10.5 Avenue Q Revitalization. Reinforce Avenue Q with development patterns that create a "Main Street" environment. Design the buildings facing Avenue Q (and to a lesser extent 6th Street East and 3rd Street East) to reflect the vision for a new "Main Street" – active uses, street-oriented entrances, tall floor-to-ceiling heights, reduced setbacks (unless adjacent to a plaza or park).

LUD-10.6 Pedestrian-Oriented Design. Implement urban design guidelines and features that encourage pedestrian activity and reduce automobile use.

LUD-10.7 Local Employers within PTASP. Continue to provide assistance to support small locally owned businesses and develop a mechanism to support building upkeep and maintenance, signage, and façade improvements for businesses in the PTASP area.

Palmdale Boulevard Corridor

Most of the commercial development in Palmdale occurred in the 90s and early 2000s along the City's namesake corridor. Both large and smaller-scale projects have been constructed to serve regional and neighborhood commercial needs along Palmdale Boulevard. These rapidly built commercial developments with abundant surface parking offer opportunities for low-scale residential infill and retail renovations over time.

Goal LUD-11

An activated and attractive Palmdale Boulevard.

LUD-11.1 Street Ownership Reclamation. Consider pursuing a long-term take-over of the public right-of-way (ROW) from Caltrans.

LUD-11.2 Critical Place-making Intersections. Strengthen and enliven existing portions of the corridor as pedestrian-oriented community anchors with a mix of civic, commercial, and residential uses, particularly at the intersections with 10th, 20th, and 25th Streets.

LUD-11.3 New Nodes. Create new places for recreation and gathering along Palmdale Boulevard by supporting new nodes of neighborhood-serving mixed-use activity at 40th and 47th Streets East.

LUD-11.4 Corridor Mixed-Use. Revitalize and activate existing commercial shopping centers along the corridor by allowing residential uses in the Mixed-Use 1 and Mixed-Use 2 designations, and by adopting development standards that promote reduced setbacks, stronger pedestrian orientation, high transparency, and architectural detail, and "park-once" behavior.

LUD-11.5 Urban Canopy. Require new development or major additions to existing development to provide street trees at regular intervals (average spacing of no less than 40 feet, not counting driveways) along the property frontage facing Palmdale Boulevard and cross-streets (if on a corner).

LUD-11.6 No Truck Route. Develop an alternative route for trucks to use in place of Palmdale Boulevard between East 50th Street and SR-14, in order to eventually remove the truck route designation currently in place, which would eliminate heavy thru truck traffic along the Boulevard.

LUD-11.7 Palmdale Boulevard Design Guidelines. Design for active, park-once mixed-use and shopping environments by encouraging adherence to the following guidance:

- Locate attached middle-density housing near existing residential uses and seek to integrate it into this context.
- Buildings should be placed at the edge of the primary sidewalk in order to provide interest and immediate access by pedestrians.
- Parking should be located behind the buildings.
- Where appropriate, building setbacks should be flexible to accommodate the need for pedestrian-oriented commercial uses.
- Facades should be activated with frequent building entrances for residential and commercial spaces.
- Mid-block paseos should be added where feasible to provide pedestrian connections from sidewalks along the edge or exterior of a site to parking within the interior of the block

Figure 5.8 Example Mixed-Use Redevelopment of Commercial Uses Fronting Palmdale Boulevard



Health and Wellness District

Palmdale currently features a key regional medical facility that serves residents and others in the Antelope Valley, and market assessments identified health care and related services/research as a key economic opportunity for the city moving forward. Therefore, this General Plan explicitly demarcates certain areas preferentially for hospital and health-oriented uses. Found in three distinct locations across the city as shown in Figure 5.9, the Medical Flex designation supports a mix of public and private medical, health, and wellness uses in a mix with smaller amounts of lodging, offices, and retail.

Goal LUD-12

A total of three Health and Wellness-oriented Districts.

LUD-12.1 Flexible Medical-Oriented Vision. Allow and encourage a mix of public and private medical, health, and wellness uses including emergency medical facilities, medical supportive offices, healthcare clinics and pharmacies, and ancillary retail and services.

LUD-12.2 Regional Hospital. Support the expansion of the existing Palmdale Regional Medical Center (Palmdale Boulevard and 10th Street West) through City investments/improvements and regulatory changes.

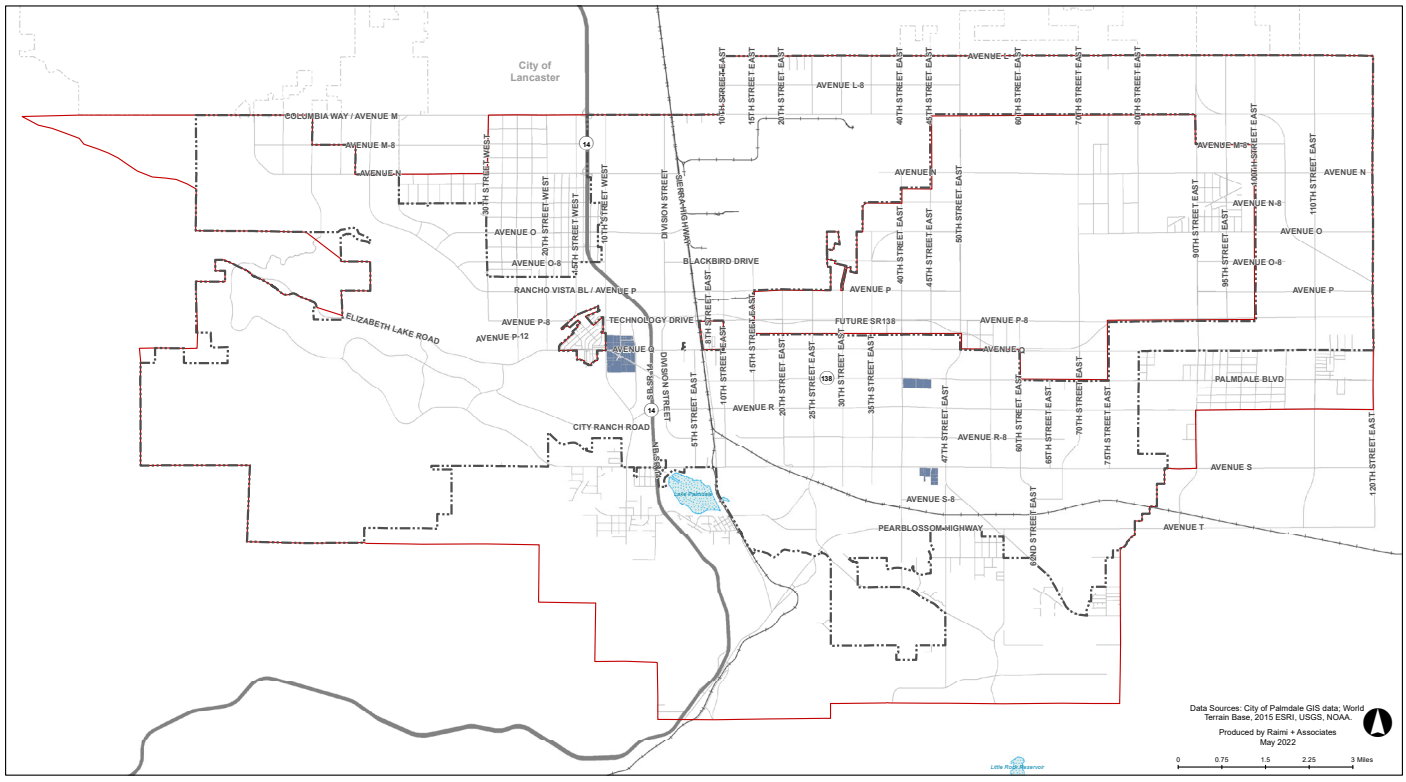
LUD-12.3 New Districts. Facilitate the creation of two new health and wellness districts:

- Along Palmdale Boulevard and 40th/45th Streets East
- Adjacent to Kaiser Permanente (East Avenue S and 45th Street East)

LUD-12.4 Health and Wellness District Guidelines. Enable creation of comprehensive medical districts by encouraging adherence to the following guidance:

- Buildings should be located near or at the sidewalk to shape the district's edges and streetscapes.
- Developments must include open space areas for congregating and socializing, ideally framed by buildings with storefronts or lobbies.
- Joining several blocks together as a campus environment with pedestrian-only spaces and pathways connecting buildings to one another and to surrounding streets is encouraged.
- Buildings should be arranged to form a street wall when surrounding internal parking, with liner uses/buildings that activate the edges of the district. The pedestrian experience should still be supported in the interior of larger blocks.
- Building entrances should always be accessed directly from the sidewalk, via shopfronts or forecourts/lobbies.

Figure 5.9 Areas designated as Health and Wellness District



Updated 5/19/22

Figure 5.10 Illustrative Example of Health and Wellness District Development

Palmdale Boulevard & 10th Street West



A



Mix of uses including medical, office, R&D/laboratory, retail and housing.

B



Public gathering spaces and plazas.

C



New medical research facility to support Palmdale Regional Medical Center.

D



Outdoor gathering space.

Education Districts

The city has an opportunity to strengthen its educational sector by designating key locations as preferred destinations for higher-education facilities along with uses that complement this primary objective. Palmdale desires to build upon existing major educational facilities as well as attract a significant new private facility. Additional two- and four-year secondary institutions would promote youth and offer greater job opportunities locally. In addition, an area for potential jobs growth in the city is around schools, academies, and universities. To that end, the Education District designation supports a mix of education uses such as trade schools, public and private higher education facilities, and satellite campuses, along with supportive retail, office, and housing in a campus-like setting. There are two education districts identified, one near the The Antelope ~~Valley Community~~ College ~~Satellite Campus~~ Palmdale Center and Palmdale High School, the other near Palmdale Boulevard and 47th Street.

Goal LUD-13

Emergence of new education-focused districts along Palmdale Boulevard.

LUD-13.1 Educational Focus. Attract a mix of educational uses like trade schools, public and private higher education facilities, and satellite campuses in the Educational Flex land use designation.

LUD-13.2 Appropriate Secondary Uses. Allow and encourage supportive retail, offices, and housing. This may include student or teacher housing, group housing, administrative or research offices, restaurants/cafes, boutiques, banks, personal services, and similar uses. ~~or etc.~~

LUD-13.3 New Institution. Seek to attract a new major higher education institution (such as a nursing school or technical/vocational academy).

LUD-13.4 Locations. Encourage the formation of two education districts:

- Near The Antelope ~~Valley Community~~ College ~~Satellite Campus~~ Palmdale Center and Palmdale High School (Palmdale Boulevard and 25th Street East); and,
- In the vacant area on the northwest corner of Palmdale Boulevard and 47th Street East

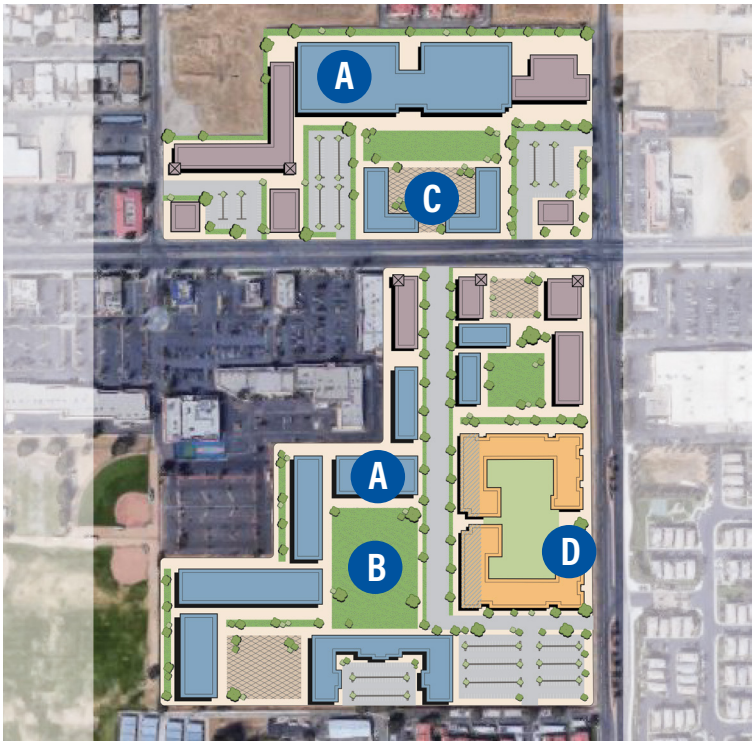
LUD-13.5 District Design. Develop an attractive campus-like setting, prioritizing pedestrian and bicycle mobility and providing public open spaces at regular intervals.

LUD-13.6 Educational District Design Guidelines. Enable the creation of uniquely walkable and active educational centers by encouraging adherence to the following guidance:

- Prioritize how educational and supportive uses integrate with the surrounding neighborhood.
- Education Districts should be anchored with major academic institutions to create vibrant, mixed-use destinations.
- The district should be configured in an urban format of walkable blocks, attractive streetscapes, and buildings close the sidewalk edge, though there may be a row of surface parking and landscaping between the buildings and the sidewalk.
- District streets should be connected to neighborhood streets to provide convenient access for nearby residents as well as motorists dropping off students.
- Parks and athletic facilities should be accessible and usable by the public.

Figure 5.11 Illustrative Example of Educational Flex District Development

Palmdale Boulevard & 25th Street East



A



Mix of educational uses in a campus environment.

B



Outdoor collaboration space and flexible plaza space.

C



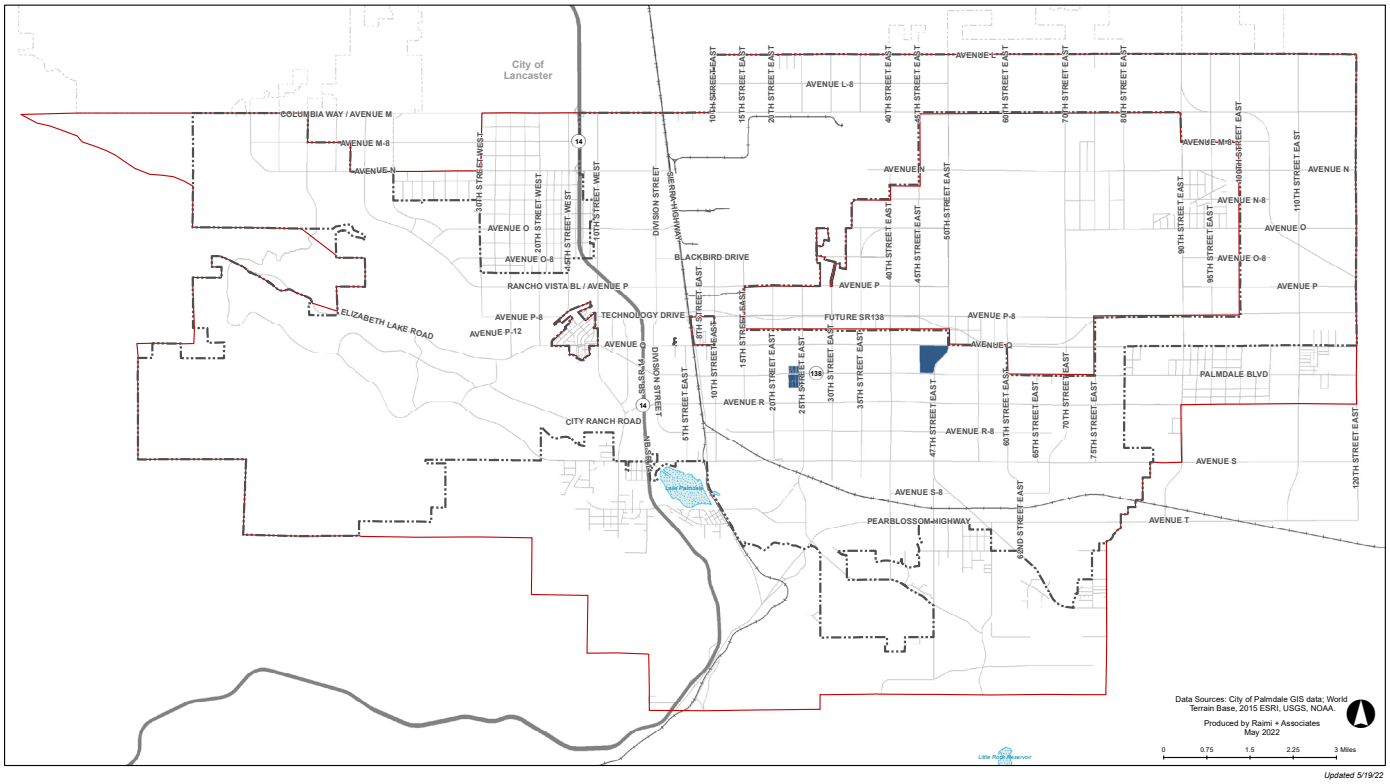
Public plazas or gathering spaces.

D



Podium residential with educational or office uses on the ground floor.

Figure 5.12 Areas designated as Educational Flex



USAF Plant 42 (Aerospace)

Palmdale is home to U.S. Air Force Plant 42, one of the premier aeronautical development and production installation in the nation. Plant 42 is used primarily as a production flight test installation by the United States Air Force (USAF). Edwards Air Force Base (EAFB), located approximately 30 miles north of Plant 42, is a supporting unit to the Supported Command, Air Force Life Cycle Management Center, Wright-Patterson AFB, Ohio, to provide operating support to the Common Area portion of Air Force Plant 42. The presence of these military installations offers benefits for the City by providing high-tech jobs and community investment opportunities. However, it is important to monitor for potential land use conflicts that could have negative impacts on military readiness activities, community safety, and economic development. *See Military Compatibility Element for additional detail and policies.*

Goal LUD-14

Facilitate employment growth through expanded operations onsite and by preserving the buffer between Air Force Plant 42 and the rest of the city.

LUD-14.1 Safeguarding Plant Operations. Support continued growth of Plant 42 operations in the Aerospace Industrial land use district. Maintain sufficient land to accommodate a wide variety of industrial uses to meet military and community needs.

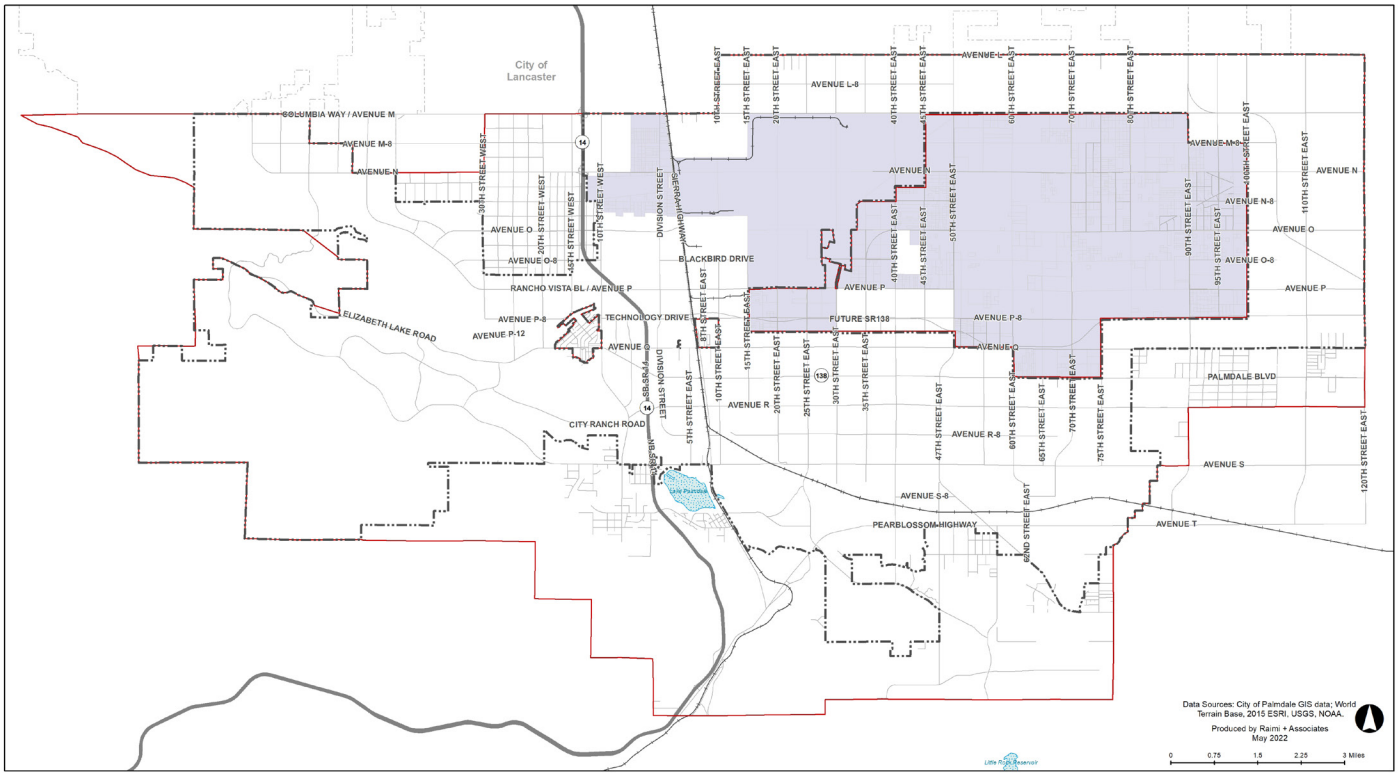
LUD-14.2 Adjacent Use Compatibility. Continue to buffer this area from adjacent, non-compatible residential and commercial uses.

LUD-14.3 Limited Non-Industrial Uses. Prevent non-industrial uses from locating in the ~~Airport~~ Aerospace Industrial area (aside from uses that directly support Plant 42 or airport operations).

LUD-14.4 Accident Prevention. Avoid residential uses greater than one dwelling unit per acre in the Accident Prevention Zones (APZs).

LUD-14.5 Circulation and Access. Maintain vehicular infrastructure and improve circulation to accommodate the unique demands of aerospace workplaces.

Figure 5.13 Areas designated as Aerospace Industrial



Legend

- Aerospace Industrial
- City Boundary
- Sphere of Influence
- Major Highway/Arterial
- Railroad
- Water Body/Aqueduct

Antelope Valley ~~Regional~~ Mall

The Antelope Valley Mall was opened in 1990, built in an era of more abundant and less expensive land, and less traffic congestion. At over 1.5 million square feet in size, it was and still remains the primary regional mall in the valley. However, the concept of retrofitting single-use (retail) malls has been gaining traction in recent years. Larger malls at certain points in their lifespans will likely diversify uses to include more full-service dining, grocery and other daily retail, entertainment uses, or residential apartments. This evolution into a place of more mixed-use character will also support enhanced pedestrian friendliness, more compact buildings, and attractive public spaces serving residents, workers, and visitors.

Goal LUD-15

Allow for Antelope Valley Mall to gradually evolve from a single-use center into a mixed-use community gathering place.

LUD-15.1 Destination Land Uses. Allow a diverse range of retail, dining, and entertainment establishments of any size that help create a destination for Antelope Valley residents and visitors.

LUD-15.2 Residential Land Uses. Allow a broad range of low to medium-density residential at the Antelope Valley Mall as a part of a comprehensive development plan prepared for the mall property. Proposed residential uses on this site are subject to the following standards:

- Any proposal to introduce housing in the Mall site must be accompanied by a comprehensive development plan that provides details on phasing, connectivity, mobility, wayfinding, and other key programmatic and urban design components.
- Avoid locating new residential uses within 500 feet of SR-14 right-of-way.

LUD-15.3 Coordinated Evolution. Work with the Mall operator and property owners to effectuate long-term redevelopment of existing retail into new, higher-density developments such as multistory retail or mixed-use retail with office or residential above. Actively solicit new employment uses, with a focus on office, medical, film, and related uses.

LUD-15.4 Regional Mall Design Guidelines. Guide the redevelopment of big-box retail into more urban, mixed-use formats by encouraging adherence to the following guidance:

- Arrange mixed-use buildings, liner-type buildings, and other active frontages to form an occasional street wall when surrounding an internal parking lot or structure.
- Ensure active frontages and pedestrian-oriented design for any redevelopment of commercial uses at the mall, to eliminate unsightly blank walls and facades.
- Setbacks to internal streets should be less than setbacks to external/arterial streets.
- Major internal drives should include sidewalks on both sides, detailed and landscaped as small streets.
- Building entrances should be accessed directly from the sidewalk, and sidewalks in front of major shops should be as wide as possible. Awnings should be utilized to provide shade for pedestrians.

Employment Areas

The City has made significant strides in increasing and diversifying its local employment base since its early days as an exclusively residential community. Growth in employment is strongly desired to balance out the jobs/housing ratio, and to offer economic advancement to residents of Palmdale. These areas are identified below in Figure 5.14. The City currently hosts a broad range of job-producing activities, and the goals and policies in this section seek to continue to support these activities while minimizing incompatibilities and allowing for new, innovative job types and professions to flourish.

Goal LUD-16

Increased job opportunities in Palmdale through expanded flex, light industrial, production/distribution/repair (PDR), and creative/flex land uses.

LUD-16.1 Healthy Balance of Jobs. Strive for a ratio of at least 1 job per employed resident (which effectively means growing jobs faster than housing during the Plan timeframe).

LUD-16.2 Employment Diversity. Support a diverse mix of light industrial, information, film, makerspace, boutique food/wine/beer processing, local food, and technology uses to provide jobs and tax revenues for the community by allowing emerging economic uses and industries within the Mixed-Use and Employment designations.

LUD-16.3 Flexible Designation. Diversify the City's economic base by expanding the number of facilities on land designated as Employment Flex to accommodate film, technology, food/light manufacturing, and service tenants.

LUD-16.4 Makerspaces. Encourage collaborative workspaces with tools for the design, prototyping, and creation of manufactured products for sale.

LUD-16.5 Home Businesses. Support home businesses that meet City planning and permitting requirements and create jobs and opportunities for entrepreneurship.

LUD-16.6 Increased Employment. Recruit employment uses between Avenue Q and Avenue P/Rancho Vista Boulevard.

LUD-16.7 Industrial Incentives. Promote establishment of incentives for new light industrial development in Palmdale including the use of local, state, and federal programs.

LUD-16.8 Emerging Technology. Support new technologies that may increase business opportunities in the city, such as autonomous vehicles.

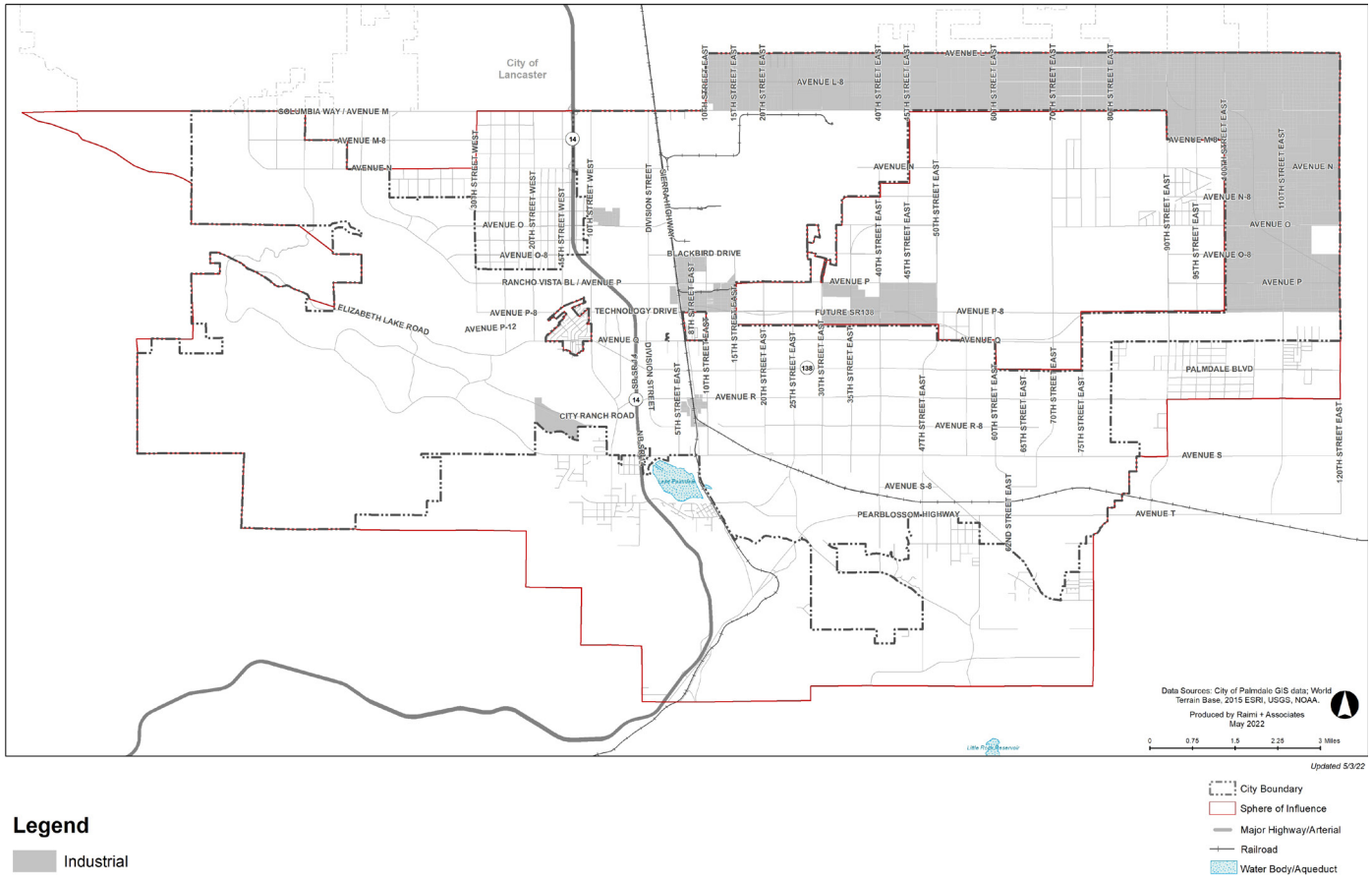
Goal LUD-17
Facilitation of industrial areas that support and buffer Plant 42 while maintaining compatibility with adjacent non-industrial uses.

LUD-17.1 Retention of Businesses. Minimize land use compatibility conflicts that discourage attraction and retention of production, distribution, and service and repair businesses in areas zoned for industrial use.

LUD-17.2 Infrastructure Master Planning. Encourage master planning and infrastructure funding districts within industrial areas to ensure adequate and comprehensive provision of infrastructure and efficient, attractive designs, through cohesive planning of larger development projects.

LUD-17.3 Industrial Development Standards. Adopt development standards for industrial uses near residential uses, to ensure compatibility and aesthetically pleasing views from adjacent rights of way, including but not limited to standards for screening of outdoor storage, locations of loading and refuse disposal areas, height, bulk, impervious surface area, architectural enhancement, landscaping, and other measures as deemed appropriate.

Figure 5.14 Areas designated as Industrial



Goal LUD-18
Attraction and stimulation of new employment uses through flexible land use regulations and supportive policies/actions.

LUD-18.1 Flexible Standards. Establish flexible development standards in the Employment Flex designation that allow industrial uses to make building improvements and change with market conditions. Incentivize growth of office and commercial spaces suitable and affordable for local businesses through development requirements.

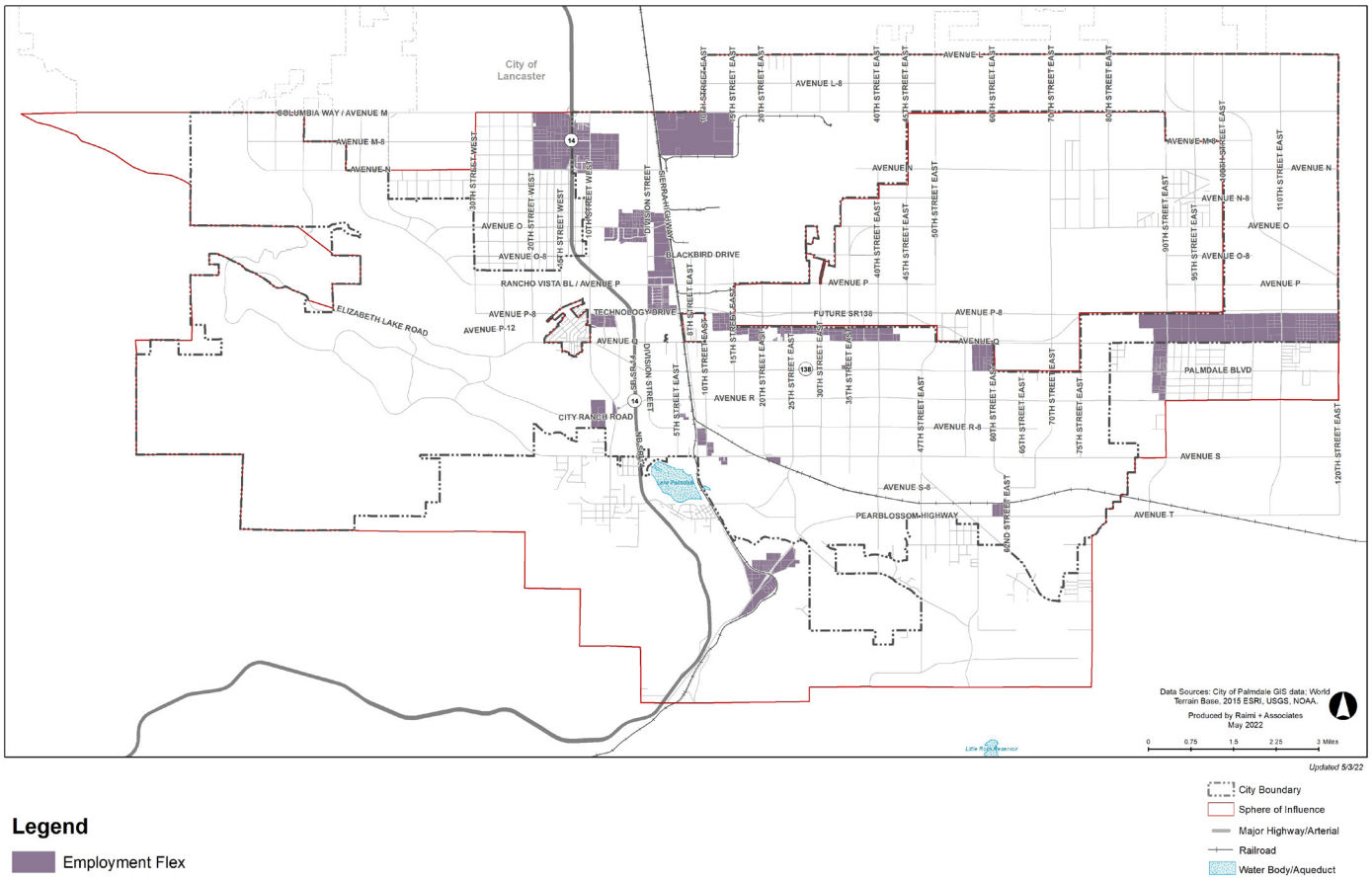
LUD-18.2 Middle-Income Employment. Expand a core area of light industrial and service uses that provide middle-income jobs for Palmdale residents.

LUD-18.3 Residential Adjacencies. Buffer heavy industrial uses and light industrial uses, such as general services, light manufacturing, and storage uses from residential neighborhoods.

LUD-18.4 Parking Requirements. Adjust zoning and parking requirements as necessary to ensure reinvestment can occur in buildings while maintaining industrial uses.

LUD-18.5 Parcel Aggregation. Encourage lot assembly to allow businesses to grow and expand.

Figure 5.15 Areas designated as Employment Flex



Goal LUD-19
Mineral resource extraction constrained to its present location while maintaining compatibility with neighboring uses.

LUD-19.1 On-Site Processing. The use of imported raw materials should be avoided and only materials available on-site should be processed.

LUD-19.2 Focused Land Use District. Ancillary uses should be only those typically associated with extraction and/or processing of on-site materials, including uses such as paver and precast ~~cost~~ concrete facilities.

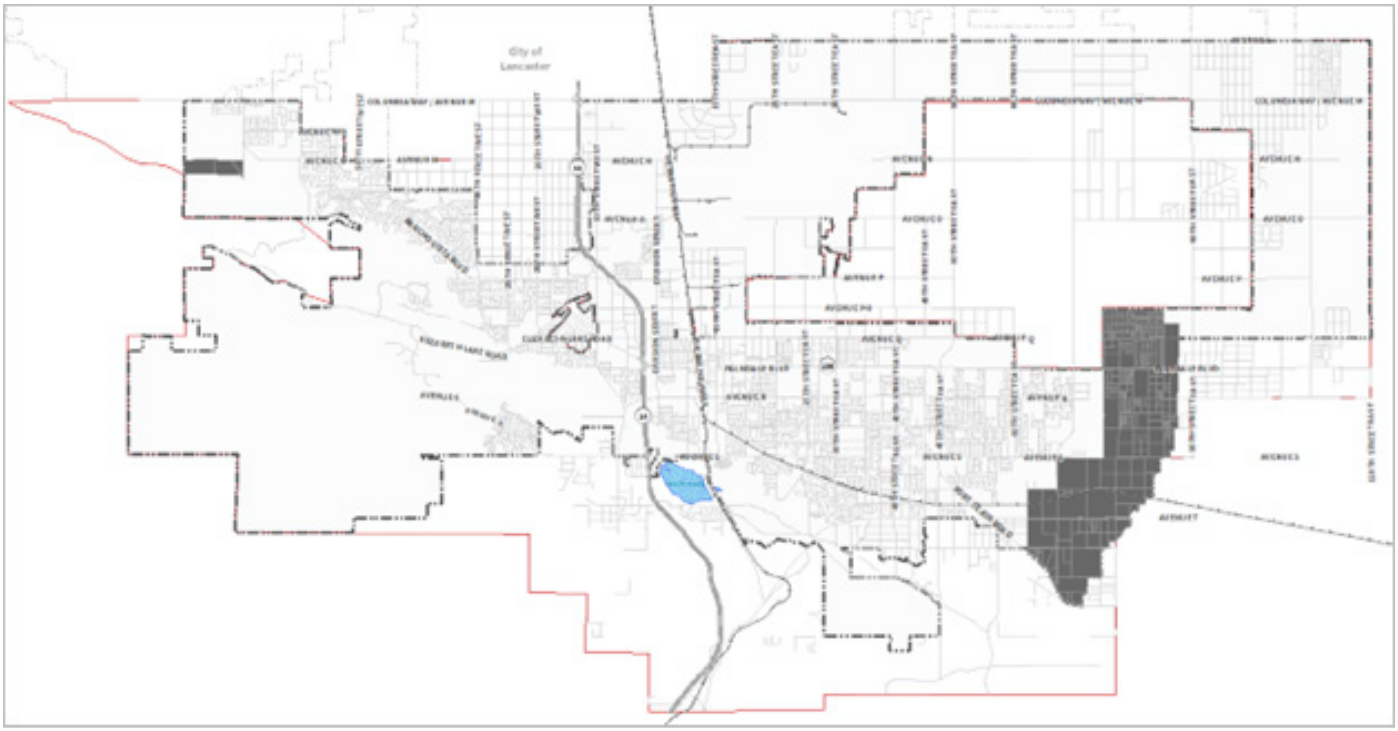
LUD-19.3 Nuisance Control. Ensure that measures to control noise, dust and erosion/sedimentation are applied to on-going mining activities.

LUD-19.4 Screening. To the extent feasible, require screening of equipment, stockpiles, or waste piles from public view.

LUD-19.5 Mining Site Access. Evaluate truck access to and from the site in order to reduce impacts generated by truck traffic, such as road deterioration, noise, and safety concerns, which affect nearby residents.

LUD-19.6 Reclamation Fund. Establish a use-based mechanism for mining operators to begin contributing to a reclamation fund annually to be used after operations cease.

Figure 5.16 Areas designated as Mineral Resource Extraction



New Residential Neighborhoods

The City of Palmdale stretches across thousands of acres, and significant portions of the undeveloped areas are covered by adopted Specific Plans. Therefore, it is critical to ensure that as new neighborhoods and master planned communities are developed, the desired approaches to placemaking, community design, and mobility are followed. These include policies for creating regular Village Centers or other activity centers, strong connections to parks and open space, and implementation of public facilities in a timely manner.

Goal LUD-20
Modified and existing Specific Plans strive to relate to and integrate with adjacent existing and future land uses.

LUD-20.1 Revised Specific Plans. When modifications to an adopted Specific Plan are proposed, require the plans to adhere to the following:

- Provide connections to regional trails and natural open spaces for all residential units.
- Create protections for western Joshua trees and other critical desert species.
- Review compliance with the City's Hillside Ordinance for viewshed protection.

LUD-20.2 New Village Centers. Ensure the creation of new Village Centers organized around a central focal point such as a park, school, civic building, or neighborhood retail as development occurs in Specific Plan areas, including:

- Anaverde Nuevo Specific Plan
- Ritter Ranch Specific Plan
- Rancho Vista Specific Plan

LUD-20.3 Planned Developments. Encourage the creation of new Village Centers in Planned Development (PD) areas, including Quail Valley PD, Joshua Ranch PD, Aero PD, and The Strata PD.

Goal LUD-21
New Specific Plans are implemented through development of new neighborhoods that are connected, sustainable, diverse, and clustered.

LUD-21.1 Timing of Community/ Retail Uses. Require development of commercial uses and amenities during key phases of buildout of residential portions of a Specific Plan.

LUD-21.2 Clustered Development. Require rural neighborhoods and clustered development in steeper and topographically constrained areas and use these development types to preserve significant natural amenities.

LUD-21.3 Respecting Natural Ridges. Avoid grading or siting of dwelling units on the north facing side of Ritter Ridge or other major ridgelines.

LUD-21.4 Greenbelt Concept. Strive to create an undeveloped or natural greenbelt around the city comprised of natural areas, parks, open space, and agricultural/utility lands.

EXISTING NEIGHBORHOOD IMPROVEMENTS

Goal LUD-22

Neighborhoods with a range of housing opportunities that allow people of all ages, abilities, socio-economic status, and family size to live in Palmdale.

LUD-22.1 Mixed-Density Residential. Promote residential infill development, where appropriate, as indicated by the mixed-density Residential Neighborhood land use designations (RN1, RN2, RN3, RN4).

LUD-22.2 Infill Priority. Maximize opportunities for residential development through infill and redevelopment of vacant parcels by facilitating parcel aggregation and streamlining permit processing for infill applications.

LUD-22.3 Distributed Higher Density. Permit a range of residential densities and housing types throughout the city rather than concentrating higher densities in limited areas.

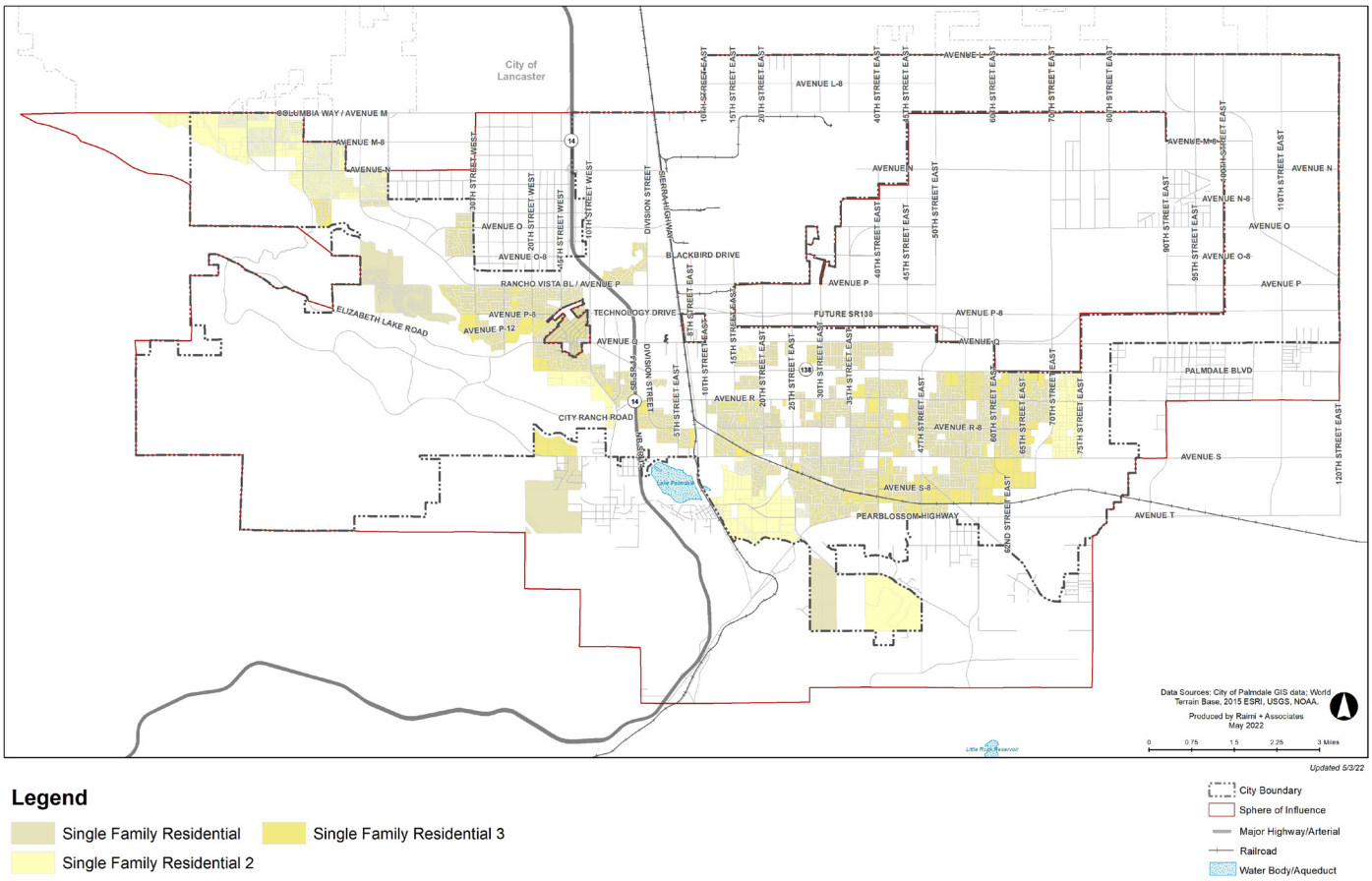
LUD-22.4 Transit-Oriented Density. Direct the location of senior and multifamily housing to areas accessible to public transportation, supportive commercial uses, and community facilities.

LUD-22.5 Varying Housing Types. Encourage and allow a variety of housing types developed at a range of densities to serve varying household types, including, but not limited to, single-family attached and detached, accessory dwelling units, multifamily apartments, townhomes, duplexes, triplexes, quadplexes, and condominiums.

LUD-22.6 Special Needs Housing. Facilitate housing for special needs groups, including the developmentally disabled, and non-traditional family groups by allowing a diverse range of housing configurations that are Americans with Disabilities Act (ADA) compliant and flexible.

LUD-22.7 Senior Housing. Promote development of housing types that support multi-generational households, senior housing, and opportunities for seniors to age in place.

Figure 5.17 Areas Designated as Single-Family Residential and Neighborhood Residential



Goal LUD-23

Improve walkability and connectivity in existing neighborhoods, through increased permeability and access through large blocks.

LUD-23.1 Connections to Existing Neighborhoods. Provide pedestrian/bicycle connections to trails and open space where appropriate and indicated in past planning efforts.

LUD-23.2 Multimodal Streets. According to the General Plan street hierarchy, require key boulevards and neighborhood connectors to be (re)designed, constructed, and operated as multimodal streets, not wide, high-speed streets.

LUD-23.3 Connectivity Enhancements. Introduce new public trail systems that connect to the regional system through Capital Improvement Projects, private development projects and city/regional parks improvements.

LUD-23.4 Quarter-Mile Radius. Work toward a goal of having 90 percent of residents living within twenty minutes walking distance of a dedicated park, school, or multi-use trail.

Goal LUD-24

Maintain the character of rural areas.

LUD-24.1 Appropriate Densities. Avoid designating land for higher density uses where prevailing existing development patterns are rural residential with lot sizes of one acre or more.

LUD-24.2 Commercial Developments. Permit neighborhood commercial development within rural areas to serve the needs of these areas, provided that such projects include safe, logical, and functional access from the adjacent neighborhoods for pedestrian and equestrian users.

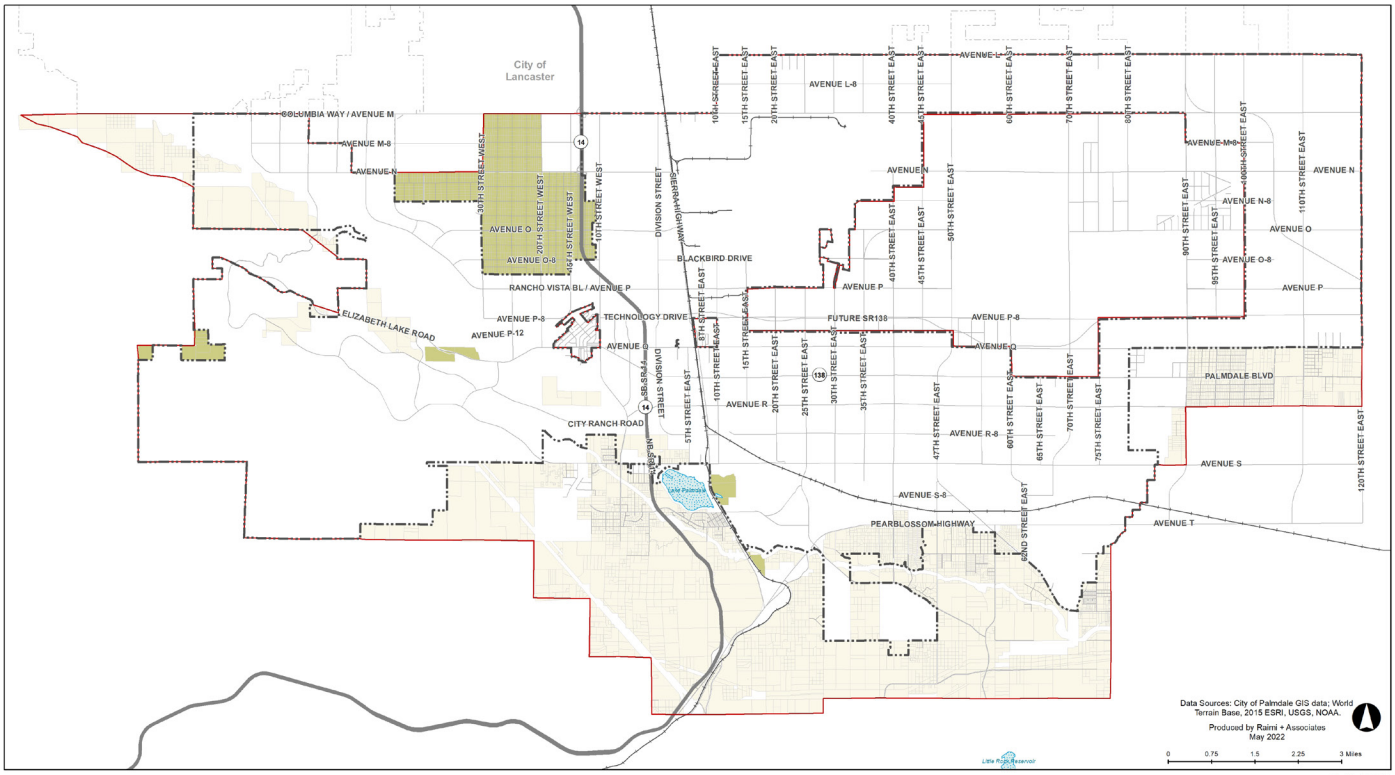
LUD-24.3 Septic Requirements. Enforce Los Angeles County standards and requirements regarding septic systems.

LUD-24.4 Avenue S and SR-14. Require that development near the intersection of Avenue S and SR-14 is complementary to Lake Palmdale, surrounding hillside, and mountain views by minimizing building heights and viewshed impacts; and is consistent with sound water quality management practices by providing a minimum 100-foot setback from the historical high-water mark of Lake Palmdale and meeting other relevant environmental standards.

LUD-24.5 Landfill Buffer. Provide a 1,000-foot buffer between Antelope Valley Landfill operations and residential developments.

LUD-24.6 Potential Annexation. Consider annexation as a last resort option and only as a logical extension of the City boundaries as neighboring properties are annexed and adjacent properties are developed. Before initiating annexation, evaluate the fiscal, infrastructural and land use impacts of proposed annexations to the City, as well as the desires of inhabitants within the areas to be annexed.

Figure 5.18 Areas designated as Rural/Equestrian Residential and Low Density Residential



Legend

- Equestrian Residential
- Low Density Residential
- City Boundary
- Sphere of Influence
- Major Highway/Arterial
- Railroad
- Water Body/Aqueduct

Implementation Actions

The table below identifies programs, policy updates, planning efforts, coordination efforts, and other actions that will help implement the General Plan's land use vision and policies. Programs are consistent with this chapter's goals and policies.

The table provides a description of each Implementation Action and lists the correlating policies. Each action also identifies a timeframe for implementation with Short-term representing a 1–3-year timeframe, Medium-term is 4-7 years, Long-term is 8+ years and Ongoing represents an action that the City should continue. Additionally, the table includes the City department that should function as the lead for implementing the actions.



Corresponding Goals	Description	Timeframe	Responsible Department
All Goals	**Zoning Code Updates.** Complete a comprehensive update to the citywide zoning code.	**IN PROCESS**	Economic and Community Development
LUD-22, 23	**Dissolved Specific Plans.** Council will formally dissolve five Specific Plans that are being eliminated through updated GPLU designations (Joshua Hills, Hillside Residential, Palmdale Trade and Commerce Center, Foothill Ranch, and Palmdale Business Park).	\	Economic and Community Development
LUD-20, 23, 24	**Updated Subdivision Design Guidelines.** Review and update as needed regulations applicable to subdivision projects, including connectivity standards, sidewalk standards, green infrastructure standards, etc., as needed.	\\	Economic and Community Development and Public Works
LUD-1, 2, 5, 10	**Infill Incentives.** Develop incentives for development that is close to existing residents and municipal services/utilities.	\\	Economic and Community Development and Public Works

Corresponding Goals	Description	Timeframe	Responsible Department
LUD-2, 4	**Development Fact Sheets.** Create and promote a series of one-page fact sheets about permitting, zoning, building, and development requirements and questions (such as ~~around~~ ADUs or other new regulations).		Economic and Community Development
LUD-1, 5	**Identify/Fund Green Zones.** Seek support and funding from regional agencies (e.g. SCAG) to accelerate development in identified infill zones. See SJVCOG program 'Green Means Go.'		Economic and Community Development
LUD-1, 3, 5, 10	**Key Corridor Infrastructure.** Pursue funding for sewer, water, drainage, streets, and other infrastructure upgrades to support higher density development especially along key commercial/ mixed-use corridors.		Public Works
LUD-2, 21	**Greenfield Plan Checklist.** Prepare a checklist that new development in non-infill areas must conduct, including an evacuation analysis and fire prevention standards.		Economic and Community Development
LUD-6, 9, 10	**Avenue Q.** Redesign Avenue Q to create a "Main Street" and to complement the adjacent high-speed rail station.		Economic and Community Development
LUD-6, 10	**Active Ground Floors.** Enforce active frontage requirements for any new or renovated public-facing building facades in the PTASP. Consider similar requirements for other avenues/corridors to improve eyes on the street and ground-floor interest.		All Departments
LUD-2, 3, 5	**Future Area Plans.** Identify future corridors or districts that require area/specific planning efforts.		Economic and Community Development

Corresponding Goals	Description	Timeframe	Responsible Department
LUD-8	**Assess Public Art Fund Implementation.** Review on an annual basis the funds collected, and public art produced through the Public Art Fund program. Assess the outcomes and make recommendations for changes to City Council as necessary and update the five-year Public Art Work Plan when relevant.		Economic and Community Development, Parks and Recreation, and Public Art Commission
LUD-4, 5, 6, 7	**Placemaking Program.** Implement recommended street improvements including sidewalk widening, street trees, street furniture and lighting installations in Downtown and along Palmdale Boulevard.		Economic and Community Development and Public Works
LUD-22, 23, 24	**Light Pollution Guidelines.** Adopt guidelines for outdoor lighting located in proximity to wildlife and natural areas in order to minimize light pollution.		Economic and Community Development
LUD-20, 23	**Trail Signage Program.** Undertake a comprehensive project to provide wayfinding/ signage leading from neighborhood streets, commercial centers, and community parks to wilderness areas and mountain/hillside trails.		Parks and Recreation
LUD-1, 2, 3	**Core Service Areas.** Prioritize capital spending in neighborhoods that promote active transportation, mixed-use support improvements to core service areas.		Economic and Community Development
All Goals	**General Plan Review.** Review the General Plan on a five-year cycle, including a review of individual elements and community programs.		Economic and Community Development
All Goals	**Development Fees.** Continuously update citywide development impact fees for infrastructure, affordable housing, other community benefits, and long-range planning, as economic conditions dictate.		All City Departments
LUD-3, 24	**Rural Mobility Improvements.** Improve the condition of unpaved streets in rural areas.		Public Works

Detailed Land Use Designations

Rural Single Family Residential (LDRER, ~~LDRER~~)

Both the Low Density Residential~~Equestrian~~ and Equestrian~~Low Density Residential~~ designations allow for the same character (look and feel) for the public realm, building character, connectivity, and parking. The features that apply to the two lowest density single family residential designations include:

Character







Building Character

Buildings are set back from the road on all sides. Homes in these designations have large yards, with notable setbacks, ample landscaping, and predominantly natural ground cover. Development is characterized by a naturalistic, landscaped setting. Clustering to preserve significant natural landforms is allowed though may not be desirable in areas already developed with a regular/grid street network.

Public Realm

- Light pollution should be kept to a minimum.
- Fencing standards apply when visible from the public ROW. Landscaping/ green screening is strongly encouraged in addition to or in lieu of fences.
- Few public parks are currently located in these areas. Existing parks in the vicinity should be connected to the surrounding parts of the community through multi-use trails and greenways.
- Sidewalk and curb and gutter improvements are generally required for new development (unless the remainder of the street/block is already developed but unpaved). Streets and lighting of a more rural character may be appropriate to some projects.

Connectivity

"Blocks" defined by paved public roads through this environment are large, up to one mile in length, though they are usually transected by other roads regularly at every quarter- or eighth-mile (these are typically unpaved). Some dead-end roads may be warranted to preserve natural features, but where possible, a more connected and grid-like street pattern is preferred.

Parking

Parking occurs in driveways, side yards, or garages that are set back considerably from the street.

Other Characteristics
Detailed on the following pages are descriptions, intended physical character, and key features that are distinct for the Low Density~~Equestrian~~Residential and Equestrian~~Low Density~~ Residential designations in Palmdale.

Equestrian Residential (ER)





Description and Intended Physical Character

This place type is intended for detached single-family dwellings in a suburban/semi-rural environment, at approximately 2 dwelling units per acre. The SFR-1 designation is appropriate to outlying valley areas where large lot subdivisions are desired. Parcel sizes are around 20,000 square feet. These areas are mostly along the edges of developed suburban residential areas, often in lower hillside areas where inclines are present but topography is lacking significant slope constraints.

Key Features

Primary Land Uses

- Single-Family Residential
- Equestrian and animal-keeping activities per Zoning Code

Secondary Land Uses

- Community assembly uses such as places of worship, schools, and public facilities, which are determined to be compatible with and oriented toward serving the needs of these neighborhoods.
- Equestrian and animal keeping, as a conditional use per Zoning Code

Allowed Height

- 35 feet

Allowed Density and Intensity

- Up to 2 du/ac
- FAR: n/a

Appropriate Building Types

- Ranch-style, detached houses

Low Density Residential (LDR)





Description and Intended Physical Character

This place type is intended for mixed rural/suburban single-family residential uses, at 1 dwelling unit per acre. The Low Density Residential designation is appropriate for hillside areas and as a transition between rural and suburban areas and in keeping with the County of Los Angeles land use designations within the Sphere of Influence. Parcel sizes are commonly 1 acre (or larger), and unpaved roads may be occasionally present. These areas are mostly outside of the City Limits (but within the Sphere of Influence) and are intended to serve as the edge of the urbanized city.

Key Features

Primary Land Uses

- Single-Family Residential
- Equestrian and animal-keeping activities per Zoning Code

Secondary Land Uses

- Community assembly uses such as places of worship, schools, and public facilities, day care centers, and agricultural uses, which are determined to be compatible with and oriented toward serving the needs of these neighborhoods.

Allowed Height

- 35 feet

Allowed Density and Intensity

- Up to 1 du/ac
- FAR: n/a

Appropriate Building Types

- Rural ranch housing
- Large lot detached houses

Single Family Residential (SFR1, SFR2, SFR3)

The three Single Family Residential designations allow for the same character (look and feel) for the public realm, building character, connectivity, and parking. The features that apply to the three Single Family Residential designations include:

Character







Building Character

Buildings are set back at regular, consistent distances from the street. Properties have small to large yards (depending on lot size) with predominantly xeriscape ground cover. Clustering to preserve significant natural landforms (or steep slopes) is allowed and encouraged. The main residential entrance should be located within the front façade and accessed directly from the street.

Public Realm

- Sidewalks (minimum of six feet) should be provided on both sides of the street.
- Residential streets should encourage slow, safe driving speeds, with traffic calming elements, bicycle lanes and/or curbside parking, as per the Neighborhood Street classification outlined within the Mobility Element.
- Street trees and streetlights should be provided at semi-frequent intervals (though light pollution should be minimized).
- Landscaping/green screening is strongly encouraged in addition to or in lieu of fences, though fencing standards apply when visible from the public right-of-way.
- Existing parks in the vicinity should be connected to the surrounding parts of the community through multi-use trails and greenways.
- New developments should provide neighborhood or community parks, per requirements outlined in the Parks and Recreation Element. Residences should be connected to existing parks, nearby natural areas, and recreational trails through multi-use greenways.

Connectivity

The street network should be reasonably well connected with block lengths varying between 400 and 800 feet in most cases. Larger blocks or dead-end streets may be permitted where natural elements such as waterways, hills, or sensitive habitats warrant compromise. Emphasis is on pedestrian and bicycle circulation with appropriate traffic calming features. Where feasible, dead-end roads and cul-de-sacs should be connected via bicycle/pedestrian pathways.

Parking

In addition to garages and driveways, parking is also allowed within interior side yards of larger properties.

Other Characteristics
Detailed on the following pages are descriptions, intended physical character, and key features that are distinct for the Single-Family Residential designations in Palmdale.

Single-Family Residential 1 (SFR1)





Description and Intended Physical Character

This place type is intended for detached single-family dwellings in a suburban/semi-rural environment, at approximately 2 dwelling units per acre. The SFR-1 designation is appropriate to outlying valley areas where large lot subdivisions are desired. Parcel sizes are around 20,000 square feet. These areas are mostly along the edges of developed suburban residential areas, often in lower hillside areas where inclines are present but topography is lacking significant slope constraints.

Key Features

Primary Land Uses

- Single-family residential
- Parks and recreation use

Secondary Land Uses

- Community assembly uses such as places of worship, schools, and public facilities, which are determined to be compatible with and oriented toward serving the needs of these neighborhoods.
- Equestrian and animal keeping, as a conditional use per Zoning Code

Allowed Height

- 35 feet

Allowed Density and Intensity

- Up to 2 du/ac
- FAR: n/a

Appropriate Building Types

- Ranch-style, detached houses

Single-Family Residential 2 (SFR2)





Description and Intended Physical Character

This place type is intended for detached single-family dwellings in a suburban environment, at up to 4.5 dwelling units per acre. The SFR-2 designation is intended for the areas between the valley floor and steeper hillside areas (having less than 10 percent slope). Parcel sizes range from 10,000 to 15,000 square feet. These areas are mostly along the edges of developed suburban residential areas.

Key Features

Primary Land Uses

- Single-family residential
- Parks and recreation

Secondary Land Uses

- Community assembly uses such as places of worship, schools, and public facilities, which are determined to be compatible with and oriented toward serving the needs of these neighborhoods.
- Equestrian and animal keeping, as a conditional use per Zoning Code

Allowed Height

- 35 feet

Allowed Density and Intensity

- Up to 4.4 du/ac
- FAR: n/a

Appropriate Building Types

- Detached houses

Single-Family Residential 3 (SFR3)





Description and Intended Physical Character

This place type is intended for detached single-family subdivisions containing the City's standard 7,000 square foot minimum lot size (approximately 6 dwelling units per acre). The SFR-3 designation is appropriate in areas with minimal topography, and these places serve as a lower intensity, family-living environment but are still well connected to surrounding neighborhoods and retail areas. These areas constitute most of the City's developed residential neighborhoods.

Key Features

Primary Land Uses

- Single-family residential
- Parks and recreation use

Secondary Land Uses

- Community assembly uses such as places of worship, schools, and public facilities, which are determined to be compatible with and oriented toward serving the needs of these neighborhoods.

Allowed Height

- 35 feet

Allowed Density and Intensity

- Up to 6 du/ac
- FAR: n/a

Appropriate Building Types

- Ranch-style, detached houses

Residential Neighborhood (RN1, RN2, RN3, RN4)

The four Residential Neighborhood designations have many similarities. They allow for the same character (look and feel) for the public realm, building character, connectivity, and parking. The features that apply to the four Residential Neighborhood designations include:

Character







Building Character

Single-family residential buildings should be set back at regular distances from the street, while multifamily residential buildings should be located at or near the front property line. Attached properties tend to have small lots, with small individual or larger shared/common yards, and a mix of landscaping and hardscape. The main entrance to the building should be located within the front façade, accessed directly from the street. High-quality private frontages, such as porches, dooryards, and forecourts create a comfortable living environment for neighborhood residents.

Public Realm

- Sidewalks and curb and gutter improvements are required on both sides of the street. Residential streets should encourage slow, safe driving speeds, with traffic calming elements, bicycle lanes and/or curbside parking, as per the Neighborhood Street classification outlined within the Mobility Element.
- Street trees and streetlights should be provided at frequent intervals.
- Sidewalks (minimum of six feet) should be on both sides of the street in all areas.
- Mini parks and neighborhood parks should be integrated into new neighborhoods, within a twenty-minute walk distance of at least 90 percent of the dwelling units. When possible, these areas should be connected to nearby natural areas and recreational trails through multi-use greenways.

Connectivity

- The street network should be well connected with block lengths varying between 250 and 500 feet in most cases. Residential streets should be as narrow as practical to encourage slow, safe driving speeds, with curb adjacent parking on both sides.
- Within neighborhoods, automobiles are balanced with safety of walking and bicycling residents. Dead-end roads or cul-de-sacs are generally not permitted (unless necessitated by natural barriers or with city approval). Pedestrian and bicycles must be permitted to pass-through any vehicular dead ends.

Parking

Parking is curb adjacent, in garages integrated into front facades, at the rear of the building accessed through a driveway or preferably in alley-loaded garages. When possible, individual garages face alleys and secondary streets rather than primary streets.

Other Characteristics
Detailed on the following pages are descriptions, intended physical character, and key features that are distinct for the Residential Neighborhood designations in Palmdale.

Residential Neighborhood 1 (RN1)





Description and Intended Physical Character

This place type is intended for a low-density mix of attached and detached residential dwelling units allowing up to 10 dwelling units per acre. The RN1 designation is appropriate in residential areas within a short distance of employment and retail areas. Parcel sizes are approximately 4,500 square feet for detached single-family units with a minimum parcel size of 10,000 square feet for attached single-family or multifamily developments, unless otherwise specified in a planned development project that contains a variety of lot sizes, housing types, and public amenities. The RN1 designation is reserved for areas which are or will be served by adequate infrastructure and services needed to support this level of development.

Key Features

Primary Land Uses

- Single-family residential (attached and detached)
- Rowhouses
- Multifamily residential
- Manufactured housing (as permitted by zoning)

Secondary Land Uses

- Community assembly uses such as places of worship, schools, and public facilities, which are determined to be compatible with and oriented toward serving the needs of these neighborhoods.

Allowed Height

- 35 feet

Allowed Density and Intensity

- Up to 10 du/ac
- FAR: n/a

Appropriate Building Types

- Small lot detached houses
- Duplexes and low-rise attached houses
- Multiplexes (triplex/fourplex)
- Mobile home/manufactured housing (as permitted by zoning)

Residential Neighborhood 2 (RN2)





Description and Intended Physical Character

This place type is intended for grouped housing such as small-lot single-family residential, townhouses, condominiums, apartments with on-site recreation and open space with established minimum densities. The RN2 designation is appropriate in existing residential neighborhood areas or planned developments within a short distance of Village Centers. The RN2 designation is reserved for areas which are or will be served by adequate infrastructure and services needed to support this level of development.

Key Features

Primary Land Uses

- Single-family residential (detached and attached)
- Multifamily residential
- Manufactured housing, as permitted by zoning

Secondary Land Uses

- Community assembly uses such as places of worship, schools, and public facilities, which are determined to be compatible with and oriented toward serving the needs of these neighborhoods.

Allowed Height

- 40 feet

Allowed Density and Intensity

- 10 (minimum) to 20 du/ac (maximum)

Appropriate Building Types

- Small lot detached houses
- Duplexes and multiplexes (triplex/fourplex)
- Rowhouses
- Courtyard apartments and low-rise walkups
- Mobile home/manufactured housing (as permitted by zoning)

Residential Neighborhood 3 (RN3)





Description and Intended Physical Character

This place type is intended for "missing middle" or middle-density housing such as walkups, garden apartments, and rowhouses up to 30 dwelling units per acre. The RN3 designation is appropriate in existing residential neighborhoods or planned developments within a short distance of Village Centers. The RN3 designation is reserved for areas which are or will be served by adequate infrastructure and services needed to support this level of development. These neighborhoods provide a transition in scale and intensity between lower-intensity residential neighborhoods and more dense neighborhoods or mixed-use areas.

Key Features

Primary Land Uses

- Attached single-family residential
- Multifamily residential

Secondary Land Uses

- Community assembly uses such as places of worship, schools, and public facilities, which are determined to be compatible with and oriented toward serving the needs of these neighborhoods.

Allowed Height

- 50 feet

Allowed Density and Intensity

- 20 (minimum) to 30 (maximum) du/ac
- FAR: n/a

Appropriate Building Types

- Multiplexes (triplex/fourplex)
- Rowhouses
- Garden and courtyard housing
- Low-rise walkups

Residential Neighborhood 4 (RN4)





Description and Intended Physical Character

This place type is intended as a high-intensity, walkable neighborhood with multifamily residential uses up to 50 dwelling units per acre. RN4 areas are near commercial, civic and recreational uses in Downtown Palmdale, near Avenue Q, and the future multimodal transit station. These areas are compact and therefore allow a larger number of residents to live near one another, within easy walking distance of parks, schools, shops, transit, and employment. These neighborhoods also act as a buffer between lower-intensity residential neighborhoods and intense mixed-use areas.

Key Features

Primary Land Uses

- Multifamily residential

Secondary Land Uses

- Community assembly uses such as places of worship, schools, and public facilities, which are determined to be compatible with and oriented toward serving the needs of these neighborhoods.

Allowed Height

- 60 feet

Allowed Density and Intensity

- 30 (minimum) to 50 (maximum) du/ac
- FAR: n/a

Appropriate Building Types

- Garden and courtyard apartments
- Rowhouses
- Mid-rise apartments

Mixed-Use (MU1, MU2, MU3)

The three mixed-use designations allow for the same character (look and feel) for the public realm, building character, connectivity, and parking. The features that apply to the three mixed-use designations include:

Character







Building Character

Buildings are located at or near the front property line, set back at a minimal distance from the street (except publicly accessible open spaces). Side and rear setbacks are minimal with increased setbacks from single family residential designations. Properties have common yards and a mix of landscaping and hardscape. Block faces have primarily continuous frontage. Buildings should face public streets (either the primary roadway or new internal streets) with attractive and transparent shopfronts designed to display merchandise, dining rooms, patios, and signage to passers-by. Building entrances are direct from the sidewalk, via shopfronts, arcades, galleries and forecourts for shops and restaurants, and via stoops, dooryards, or porches for residences.

Public Realm

- Internal streets should be designed for both pedestrians and vehicles with comfortable sidewalks and vehicle lanes. Sidewalks (recommended 15 feet wide, including landscaping) are required in all Mixed-Use areas.
- Facades should be activated with frequent building entrances for residential lobbies and ground-floor commercial spaces.
- Street trees, streetlights, seating, and other amenities should be provided at frequent intervals.
- Open spaces take the form of plazas and greens, and/or greenway connections to nearby parks.

Connectivity

- Blocks are subdivided into smaller human-scaled blocks around 250 to 400 feet long by internal streets that include sidewalks on at least one side. In existing commercial centers, blocks may be larger, up to 800 feet long, but any redevelopment should seek to decrease overall block sizes.
- Mid-block paseos are recommended in both new and existing developments to provide pedestrian connections from the streets to parking facilities within the blocks.

Parking

New buildings with parking fronting the primary street are not allowed. Parking is provided to the rear or sides of buildings, or in some cases, no parking is required (if provided through a shared garage or on-street). Vehicles should access parking by alleys or driveways on side streets.

Other Characteristics
Detailed on the following pages are descriptions, intended physical character, and key features that are distinct for the mixed-use designations in Palmdale.

Mixed-Use 1 (MU1)





Description and Intended Physical Character

MU1 is intended to create a low-intensity concentration of commercial businesses and civic amenities mixed with single and multifamily housing. This place type is located along Palmdale Boulevard between 10th Street East and 35th Street East and is intended to foster a pedestrian friendly environment in a walkable, Main Street format. This character encourages people to shop, dine, and socialize in downtown Palmdale. The pedestrian environment in this area should be attractive and visually interesting to encourage visitors to explore and circulate in and around the retail venues. Ground floors are primarily retail and service-oriented to provide a comfortable, walkable environment for shoppers and diners. This designation permits both horizontal and vertical mixed-use developments. This designation also carries forward the intent of the City's Downtown Revitalization Plan.

Key Features

Primary Land Uses

- Single-family residential (attached)
- Multifamily residential
- Retail/services
- Professional/medical office

Secondary Land Uses

- Civic uses
- Community assembly

Allowed Height

- 45 feet

Allowed Density and Intensity

- Up to 20 du/ac
- Maximum Commercial FAR: 0.35 (no limit for certain zero-lot line developments)

Appropriate Building Types

- Rowhouses
- Low-rise walkups
- Stand-alone commercial
- Block-form low-rise mixed-use buildings

Mixed-Use 2 (MU2)





Description and Intended Physical Character

This place type is focused on key nodes of moderate mixed-use activity along the City's major corridors, primarily Palmdale Boulevard, Avenue R, Avenue S, and Rancho Vista Boulevard. The built environment is composed of horizontal and vertical mixed-use developments at low/medium-intensities. MU2 encompasses many existing commercial centers that are envisioned to evolve into concentrations of commercial businesses and civic amenities mixed with multifamily housing located within convenient walking or biking distance of nearby neighborhoods. The ground floor in this place type is primarily retail, medical office, and service-oriented to provide a comfortable, walkable environment. Gathering places such as small parks and shaded plazas activate the public realm in this place type.

Key Features

Primary Land Uses

- Single-family residential (attached)
- Multifamily residential
- Retail/services
- Bars/restaurants
- Professional/medical offices

Secondary Land Uses

- Civic uses
- Community assembly

Allowed Height

- 55 feet

Allowed Density and Intensity

- 20 (minimum) to 30 (maximum) du/ac
- Maximum Commercial FAR: 2.0

Appropriate Building Types

- Rowhouses
- Multiplex (triplex/fourplex)
- Garden/courtyard apartments, low-rise walkups
- Stand-alone commercial
- Block-form low-rise mixed-use buildings

Mixed-Use 3 (MU3)





Description and Intended Physical Character

Outside of the Palmdale Transit Area Specific Plan area, this is the densest place type. This place type is intended to create a high-intensity concentration of commercial businesses and civic amenities mixed with multifamily housing along major corridors and/or near major transit. MU3 areas provide employment, shopping, and living in a horizontal or vertical mixed-use format. Ground floors are primarily office, light research and development, and retail with housing above or behind. This place type provides a space where residents can meet and greet one another while enjoying the life of their town. This designation permits both horizontal and vertical mixed-use developments. This place type is located at key nodes including near the future Education District on Palmdale Boulevard and 47th Street East, along East Avenue Q, and Rancho Vista Boulevard.

Key Features

Primary Land Uses

- Multifamily residential
- Retail/services
- Bars/restaurants
- Professional/medical offices

Secondary Land Uses

- Research and development
- Civic uses
- Community assembly

Allowed Height

- 65 feet

Allowed Density and Intensity

- 30 (minimum) to 50 (maximum) du/ac
- Maximum Commercial FAR: 3.0

Appropriate Building Types

- Rowhouses
- Low-rise walkups
- Stand-alone commercial
- Block-form low-rise mixed-use buildings

Commercial (RC, NC, VC)

The three commercial land use designations allow for the same character (look and feel) for the public realm, building character, connectivity, and parking. The features that apply to the three commercial designations include:

Character







Look and Feel

Depending on context, retail is either in a walkable, neighborhood-serving format, or a more regional, auto-oriented retail format. Buildings are set back varied distances from the street. Buildings may also have minimal side setbacks. Site design should be sensitive to adjacent residential uses; side and rear setbacks may be minimal when adjacent to other commercial/industrial uses but should be larger when adjacent to residential uses. Buildings should be arranged to form a reasonable street wall when surrounding an internal parking lot. Buildings should face public streets (the primary roadway and/or new internal streets) with attractive and transparent shopfronts designed to display merchandise, dining rooms, patios, and signage to passers-by. Building entrances are direct from the sidewalk, via shopfronts, arcades, galleries, and forecourts. Buildings define their frontages with lobbies or active spaces and offer awnings that provide shade for pedestrians.

Public Realm

- New internal streets should be designed for pedestrians and vehicles with very wide sidewalks on both sides of internal streets and along internal building frontages and vehicle lanes that are 10 feet wide in most cases.
- Streets along major roadways may be wider but should be designed to be comfortable and safe for pedestrians and cyclists while also accommodating the needs of vehicles.
- Street trees, street lights, seating, and other amenities should be provided along sidewalks and building fronts.
- Open spaces take the form of plazas/greens and should be flanked by active ground floor retail or restaurant uses.

Connectivity

- Block length will depend on context and type of commercial center. Regional Commercial and Visitor Commercial blocks may be large (1600' long) but the site design of regional centers should consider pedestrian needs and provide safe, comfortable internal circulation for non-auto users.
- Neighborhood Commercial blocks may be moderately large (800' long) but any longer blocks should be subdivided by sidewalks, pathways, greenways, or mid-block paseos to provide pedestrian connections from the street to parking facilities and businesses within.

Parking

Parking occurs in surface lots, structures, or to the side of buildings where possible, and is screened from public view. Vehicular access is provided to parking lots via private streets.

Other Characteristics
Detailed on the following pages are descriptions, intended physical character, and key features that are distinct for the commercial designations in Palmdale.

Regional Commercial (RC)





Description and Intended Physical Character

This place type is intended to accommodate commercial/retail and service uses attracting consumers from a regional market area. RC areas provide access to long-term goods and services (in contrast to convenience goods) such as big box retail, regional mall, and auto sales. The uses allowed in this designation will provide a unique amenity to all residents of Palmdale and an important revenue source for the city. Areas with the RC designation are situated near SR-14 and Rancho Vista Boulevard, at Pearblossom Highway and Fort Tejon, at Avenue Q and 50th Street East, and others. RC developments typically occupy many acres, although individual businesses may be on smaller parcels.

Key Features

Primary Land Uses

- Regional ~~R~~retail/services
- Entertainment
- Food retail/bars
- Professional/medical offices

Secondary Land Uses

- Auto sales
- Lodging
- Film production/studio (permitted only within secondary L.A. County zone)
- Small/light distribution, “last mile” services
- Multifamily residential (permitted only on the Antelope Valley Mall site with a comprehensive development plan)

Allowed Height

- 55 feet

Allowed Density and Intensity

- FAR: up to 1.0
- Du/ac: up to 30 (permitted only on the Antelope Valley Mall site with a comprehensive development plan)

Appropriate Building Types

- Standalone commercial
- Big box retail
- Block-form low-rise buildings

Neighborhood Commercial (NC)





Description and Intended Physical Character

This place type is intended to foster convenience-type retail, neighborhood offices and service activities that serve the daily needs of the immediate neighborhood. NC areas are located in Village Centers, near residential neighborhoods to serve the short-term needs of residents. Neighborhood Commercial development is occasionally found on small corner parcels (a few acres) but more often in slightly larger configurations (five to ten acres in size). This designation includes supermarkets, restaurants, apparel stores, small hardware stores, banks, offices, and similar uses. This designation also provides gathering places for the residents of surrounding neighborhoods and are ideal locations for local transit stops (such as bus stations, carsharing pods, or park and ride lots).

Key Features

Primary Land Uses

- Neighborhood-serving retail/ services/office
- Entertainment

Secondary Land Uses

- Civic uses
- Minor auto service uses
- Community assembly

Allowed Height

- 35 feet

Allowed Density and Intensity

- FAR: up to 0.5
- Du/ac: n/a

Appropriate Building Types

- Standalone commercial
- Attached low-rise commercial buildings in walkable ‘main street’ format
- Block form low-rise buildings

Visitor Commercial (VC)





Description and Intended Physical Character

This place type is intended to accommodate a diverse mix of businesses that primarily serve visitors to Palmdale or that provide niche/specialty goods and services. Typical VC uses include hotels, long-term stay hotels, convenience retail, professional and medical offices, service uses, brewpubs, microbreweries and wineries with incidental food services, and similar uses that are aimed largely at commuting workers and other highway traffic. Uses may be more intense than in NC or RC areas.

Key Features

Primary Land Uses

- Lodging
- Food retail/entertainment
- Regional-serving retail
- Brewpub/microbrewery/winery with incidental food service

Secondary Land Uses

- Neighborhood-serving retail/services
- Commercial uses
- Professional/medical offices
- Film production/studio

Allowed Height

- 65 feet (85 feet for hotels/lodging)

Allowed Density and Intensity

- Du/ac: n/a
- FAR: up to 1.5 (2.0 for hotels/lodging)

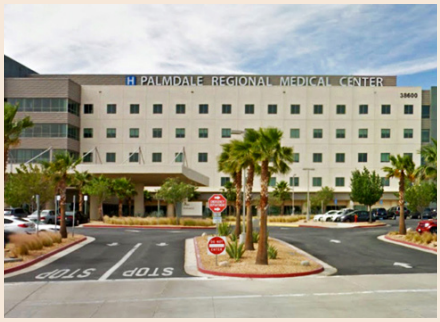
Appropriate Building Types

- Stand-alone commercial
- Big box retail
- Block form low-rise buildings
- Midrise and high-rise hotel block buildings

Health and Wellness (HW)

Character







Building Character

Buildings are located near or at the sidewalk to shape the streetscapes and to frame public open space. Several blocks should be designed as a campus environment with pedestrian-only spaces and pathways connecting buildings to one another and to surrounding streets. Generally, the Medical Flex designation is expressed as individual or block form buildings that are configured in a semi-urban office environment with modest setbacks. Buildings should be arranged to form a reasonable street wall when surrounding an internal parking lot or structure, with liner uses/buildings that activate the edges of the district. There may be large parking lots within internal blocks, but the pedestrian experience should still be supported in the interior of a larger block. Building entrances are direct from the sidewalk, via shopfronts or forecourts. Buildings define their frontages with lobbies or transparent, active spaces.

Public Realm

- Major internal drives should include sidewalks (minimum of eight feet including landscaping) on both sides, detailed as small streets.
- Streets/sidewalks should be connected to primary building entrances for lodging and commercial spaces.
- Street trees, street lights, seating, and other amenities should be provided along sidewalks and building fronts.
- Open spaces take the form of mini-parks, linear greenways, or plazas/greens.

Connectivity

Medical Flex blocks may be large (1200’ long) but the internal site design should consider pedestrian needs and provide safe, comfortable internal circulation for non-auto users. These larger blocks should be subdivided by sidewalks, pathways, greenways, or mid-block paseos to provide pedestrian connections from the streets to parking facilities and businesses within the blocks. Streets flanking the blocks and the drives that transect them should connect to neighborhood streets to provide convenient access for nearby residents as well as motorists. Connecting residential streets (for vehicles) to other types of development should be avoided. This tends to increase vehicle trips in front of houses and increases citizens concerns for safety.

Parking

Parking occurs in surface lots or structures, where possible screened from public view.

Health and Wellness (HW)



Description and Intended Physical Character

This place type is intended to accommodate a medical-oriented campus with a focus on medical/hospital uses, supported by appropriate commercial and lodging uses and open space areas for congregating and socializing. The envisioned mix of uses is a large hospital or medical office as the anchor, enlivened by part-time residents and access to a limited set of daily goods and services. The Health and Wellness designation is applied to the Palmdale Regional Medical Center environs, around the Kaiser Permanente facility on Avenue S, and a future medical district on Palmdale Boulevard and 40th Street.



Key Features

Primary Land Uses

- Hospital
- Medical/professional offices
- Assisted living/congregate care

Secondary Land Uses

- Supportive retail/services
- Educational uses
- Food retail
- Lodging

Allowed Height

- 85 feet

Allowed Density and Intensity

- FAR: up to 2.0
- Du/ac: n/a

Appropriate Building Types

- Standalone commercial
- Low-rise and high-rise medical buildings
- Block form mixed-use buildings

Educational Flex (EDFX)

Character







Building Character

Buildings should support the vision for a campus-like setting, providing regular public open spaces in between, and orient active facades toward public areas and pathways. Buildings are configured in an urban format of walkable blocks, attractive streetscapes, and buildings close the sidewalk edge (it may be advised to hold a corner or a key portion of a street frontages while setting back significantly on other sides/frontages). There may be a row of surface parking and landscaping between the buildings and the sidewalk, typical of office or business parks. Rear setbacks depend on adjacent uses and context but may not need to be overly large. Buildings should be arranged to form a reasonable street wall when surrounding an internal parking lot or structure. Building entrances are direct from the sidewalk. Buildings define their frontages with lobbies or active spaces and offer awnings that provide shade for pedestrians.

Public Realm

- New internal streets should be designed for pedestrians and vehicles with comfortable sidewalks and vehicle lanes that are 10 feet wide in most cases.
- To attract a large educational institution to this designation, it may be appropriate for several blocks to be joined together as a campus environment with pedestrian-only paths that connect to the streets of the surrounding development and adjacent neighborhoods.
- Street trees, street lights, seating, and other amenities should be provided along sidewalks and building fronts.
- Open spaces take the form of fields, community parks, and plazas/greens.

Connectivity

Blocks should be about 400 to 600 feet in length. Internal pedestrian and bicycle mobility (and transit access) should be prioritized equally to automobile access. Mid-block paseos are recommended to provide pedestrian connections from the streets to parking facilities within the blocks. Conversion to slow or shared streets within campuses is strongly encouraged. Major district streets should connect to nearby neighborhood streets to provide convenient access for residents as well as motorists.

Parking

Parking occurs in surface lots or structures. Parking may be used as a buffer between high-traffic arterials and educational buildings.

Educational Flex (EDFX)





Description and Intended Physical Character

This place type is intended to primarily attract a mix of educational type uses like trade schools, public and private higher education facilities, and satellite campuses, while permitting supporting uses such as services and housing. This designation is targeted in two key locations along Palmdale Boulevard, with a vision of major academic institutions anchoring vibrant, walkable, mixed-use destinations, creating an attractive campus setting.

Key Features

Primary Land Uses

- Education-related uses

Secondary Land Uses

- Supportive Retail/Services
- Support Offices
- Multifamily Residential (conditional)

Allowed Height

- 75 feet

Allowed Density and Intensity

- FAR: up to 2.0
- Du/ac: up to 30

Appropriate Building Types

- Block form low-rise educational and mixed-use buildings
- Rowhouses
- Garden/courtyard apartments and low-rise walkups

Industrial and Employment (AI, IND, EMPFX)

The three industrial land use designations allow for the same character (look and feel) for the public realm, building character, connectivity, and parking. The features that apply to the three industrial designations include:

Character







Buildings may be set back from the street with appropriate landscaping to provide an attractive visual buffer (front setbacks may vary). Buildings may have minimal side setbacks. Rear setbacks depend upon adjacent uses and context, and buffering should be provided for any intense industrial use.

Aerospace Industrial building character and placement is subordinate to the function of aerospace research and development. Comfortable and direct pedestrian access should be provided between parking lots and primary building entrances. Amenities for employees such as gathering spaces, outdoor plazas, or patios, should be provided. While in some areas, particularly in order to attract a large employer, it may be appropriate for several blocks to be joined together as a campus environment with pedestrian-only spaces and pathways connecting buildings to one another and to surrounding streets.

Public Realm

- Major internal drives should include sidewalks (minimum of eight feet including landscaping) on at least one side.
- Street widths may vary, with some wider streets to accommodate truck traffic and high traffic volumes, where applicable.
- Open spaces take the form of linear greenways, or plazas.
- Within multi-building complexes or campuses – whether designed for large users or as a multi-tenant industrial development – the major drives should be designed as narrow streets, defined by rows of “street trees” to project the image of high-quality business addresses. .

Connectivity

Industrial areas are often characterized by larger blocks, at a scale that would not be appropriate for commercial and residential uses. Blocks – as defined by public streets – may be exceptionally large, up to 1,600 feet long to accommodate the large buildings, truck loading and outdoor storage functions required for such industrial districts. Pedestrian paseos are recommended to help facilitate walking and biking to work when appropriate. Any future development of the Regional Airport should be designed with regular access to/from a major City street.

Parking

Parking occurs in surface lots or structures. Where possible, employee parking lots should also be located beside or behind buildings rather than in front. To support large office uses, some blocks may be devoted entirely to parking. Loading areas should be screened from view from public rights-of-way

Other Characteristics
Detailed on the following pages are descriptions, intended physical character, and key features that are distinct for the industrial designations in Palmdale.

Aerospace Industrial (AI)



Description and Intended Physical Character

This place type is intended to support the current and future operations of USAF Plant 42. It permits public and private airfields and support facilities, aerospace-related industries, transportation-related industries, and commercial facilities necessary to serve military/commercial air traffic. The AI designation areas allows many uses (such as intensive manufacturing, production, repair, and distribution) that are not suitable adjacent to other sensitive uses. This area is not intended for low-employment uses such as warehousing and logistics - the aerospace-oriented uses allowed in this designation comprise a unique and valuable source of employment for the City and therefore certain standards (such as Airport Protection Zones) apply to adjacent development to ensure that the viability of the aerospace industry is maintained – see Military Compatibility Element for additional details.

Key Features

Primary Land Uses

- Aerospace-related heavy manufacturing/processing and research and development
- Airfields and airports

Secondary Land Uses

- Light/Medium Industrial/PDR
- Supportive retail/services/office

Allowed Height

- 75 feet

Allowed Density and Intensity

- FAR: up to 0.5
- Du/ac: n/a

Appropriate Building Types

- Any building necessary to support aerospace operations

Industrial (IND)





Description and Intended Physical Character

This place type is intended to permit a variety of industrial uses that provide employment and services for residents and businesses. Within this designation, while a range of industrial intensities and uses are permitted, some may not be suitable adjacent to other sensitive uses or housing (such as heavy manufacturing or production), and others may be located adjacent without any issue (such as distribution, storage, research and development), etc.). In general, this designation is oriented toward lower intensity industrial operations with a mix of uses and building scales that are compatible with the surrounding area. Where possible, more intense industrial uses should be physically separated from residential areas by natural or manufactured barriers.

Key Features

Primary Land Uses

- Medium and heavy intensity industrial activities (as allowed per Zoning)
- Light industrial
- Production, distribution and repair uses
- Film production/sound stage studio

Secondary Land Uses

- Research and development
- Ancillary commercial
- Auto service
- Flex/makerspace
- Self-storage (all types)

Allowed Height

- 50 feet

Allowed Density and Intensity

- FAR: up to 0.5
- Du/ac: n/a

Appropriate Building Types

- Standalone commercial/industrial
- Low-rise industrial/flex
- Block form warehouse/studio buildings

Employment Flex (EMPFX)





Description and Intended Physical Character

This place type is intended to permit mixed-use development of lighter industrial uses and more intensive service, retail, and commercial uses. It is a transition zone that allows a mix of businesses that provide a wide variety of employment-generating activity, including office, industrial and light manufacturing, research and development, and supportive commercial. EMPFX areas are typically situated close to major arterials or freeways. The uses allowed in this designation will support job generation, focusing on fabrication, research, distribution, and similar operations conducted primarily indoors.

Key Features

Primary Land Uses

- Research and development
- Flex/makerspace
- Light industrial
- Professional/medical offices
- Film production/sound stage studio

Secondary Land Uses

- Production, Distribution and Repair uses
- Supportive Retail/Services
- Auto Service
- Breweries/distilleries/wineries
- Self-storage (indoor only)

Allowed Height

- 50 feet

Allowed Density and Intensity

- Du/ac: n/a
- FAR: up to 1.0

Appropriate Building Types

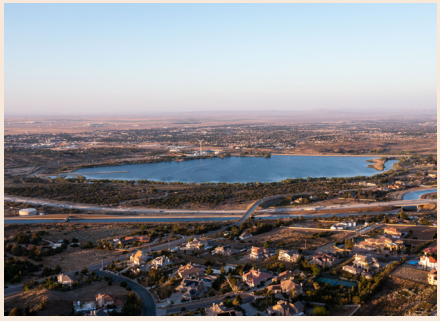
- Standalone industrial warehouses
- Block form low-rise buildings

Public and Special Uses (MRE, PF, OS, UT, SP)

Character







Special and public land uses include fewer building, character, public realm and parking features as compared to other land use designation categories. In many cases these uses have few buildings, little to no public access or are regulated by other planning documents (i.e., Specific Plan). In many instances, these features are considered on a case by case basis.

Building Character
N/A

Public Realm
N/A

Connectivity
N/A

Parking
N/A

Other Characteristics
The following sections include descriptions and intended physical character for land uses that are specialized and or public.

Mineral Resource Extraction (MRE)



Description and Intended Physical Character

This place type is intended to permit extraction and processing of mineral resources, including sand, gravel, and decomposed granite. This designation is limited to areas designated by the State Division of Mines and Geology as Mineral Resource Zone 2 areas, or where significant mineral resources occur and the extraction of which is determined to be beneficial. Operations within this place type are subject to all applicable policies, ordinances, and laws regulating traffic impacts, air and water quality, and land use compatibility.

Key Features

Primary Land Uses

- Mineral Extraction and Processing
- Concrete Batching

Secondary Land Uses

- Ancillary uses allowed on the site should be only those uses normally associated with extraction and/or processing of on-site materials.

Allowed Height

- 100 feet

Allowed Density and Intensity

- Du/ac: n/a
- FAR: up to 0.25

Appropriate Building Types

- Low-rise industrial buildings

Public Facility (PF-Parks, PF-School, PF-Civic)





Description

This designation includes the City's public and private schools, higher learning and other institutional uses, parks, recreation uses, amphitheaters, community centers, and other similar uses.

Key Features

Primary Land Uses

- Public or private schools
- Civic building or offices including community centers
- Public or private parks
- Recreation buildings including public pools

Secondary Land Uses

- n/a

Allowed Density and Intensity

- 0.4 FAR

Open Space (OS)



Description

This designation includes the City's public and private open space and golf courses and support structures.

Key Features

Primary Land Uses

- Open space
- Golf courses
- Cemeteries

Secondary Land Uses

- n/a

Allowed Density and Intensity

- 0.01 FAR

Utilities (UT)



Description

This place type is intended to permit above ground utilities and utility rights-of-way. Utilities may include electrical substations, transmission lines, water storage tanks, and supportive buildings and structures.

Key Features

Primary Land Uses

- Utility station
- Utility rights-of -way

Secondary Land Uses

- Supportive structures
- Utility administration buildings

Specific Plan (SP)

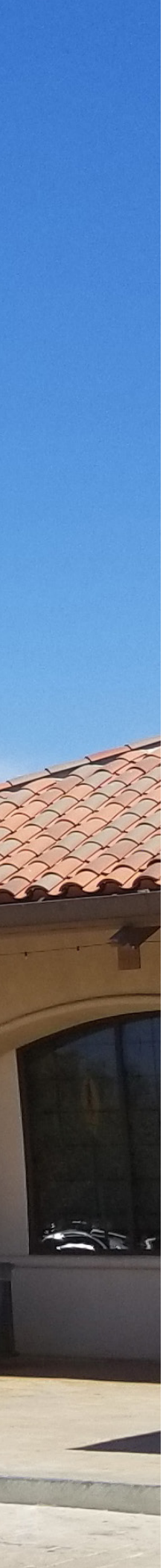


Description

This designation applies to areas that have existing adopted Specific Plans. Each Specific Plan regulates the intended physical character, key features, and look and feel within those areas. These plans also indicate allowed density and intensity, height, and building types. Reference the applicable Specific Plan for more details.



Palmdale Transportation Center



Chapter 6

Circulation and Mobility

The Circulation and Mobility Element presents the approach to transportation, addressing access and mobility within the city. The chapter provides a roadway classification system, corresponding cross-sections, and recommended future networks for motor vehicles, walking, biking, riding transit, and the movement of freight. Goals, policies, and actions provide a framework for advancing health and safety, access to services and opportunities, sustainability, and economic vitality through transportation.

Statutory Requirements

Circulation and mobility are required General Plan topics per Government Code Section 65302(b) which requires:

"A circulation element consisting of the general location and extent of existing and proposed major thoroughfares, transportation routes… to plan for a balanced, multimodal transportation network that meets the needs of all users of streets, roads, and highways for safe and convenient travel in a manner that is suitable to the rural, suburban, or urban context of the general plan…"

In addition to the requirements above, this Circulation and Mobility Element also addresses the following statutory requirements which affect the goals and policies outlined in this Element.

Complete Streets Act

The California Complete Streets Act of 2008 (AB 1358) was signed into law on September 30, 2008. Beginning January 1, 2011, AB 1358 required circulation elements to address the transportation system from a multimodal perspective. The Complete Streets Act also requires circulation elements to consider the multiple users of the transportation system, including children, adults, seniors, and people with disabilities.

Global Warming Solutions Act

The Global Warming Solutions Act (AB 32) was signed into law on September 27, 2006. AB 32 established a comprehensive program to reduce greenhouse gas emissions to combat climate change. This bill required the California Air Resources Board (CARB) to develop regulations to reduce greenhouse gas emissions to 1990 levels by 2020. On January 1, 2012, the greenhouse gas rules and market mechanisms, adopted by CARB, took effect, and became legally enforceable.

Sustainable Communities and Climate Protection Act

The Sustainable Communities and Climate Protection Act, or Senate Bill (SB) 375, provides incentives for cities and developers to bring housing and jobs closer together and to improve public transit. The goal is to reduce the number and length of automobile commuting trips, which will help to meet the statewide targets for reducing greenhouse gas emissions set by AB 32. SB 375 requires each Metropolitan Planning Organization to add a broader vision for growth, called a Sustainable Communities Strategy (SCS), to its transportation plan. The SCS must lay out a plan to meet the region's transportation, housing, economic, and environmental needs in a way that enables the area to lower greenhouse gas emissions. The SCS should integrate transportation, land-use, and housing policies to plan for achieving the emissions target for their region. The Southern California Association of Governments (SCAG) Regional Transportation Plan (RTP) and SCS were adopted in 2016.

- The City of Palmdale will incorporate components to comply with SB 375 by incorporating components into the General Plan. Applicable components of the SCS include:
- Support transit-oriented development.
- Support infill housing development and redevelopment.
- Support mixed-use development that improves community walkability.
- Promote land use patterns that encourage the use of alternatives to single-occupant automobile use.
- Apply Transportation System Management (TSM) and complete streets practices to arterials to maximize efficiency.
- Improve modes through enhanced service, frequency, convenience, and choices.
- Expand and enhance Transportation Demand Management (TDM) practices to reduce barriers to alternative travel modes and attract commuters away from single occupant vehicle travel.

Senate Bill 743 – California Environmental Quality Act (CEQA) Changes

On September 27, 2013, SB 743 was signed into State law. A key element of this law is the potential elimination or deemphasizing of auto delay, level of service (LOS), and other similar measures of vehicular capacity or traffic congestion as a basis for determining significant impacts. According to the legislative intent contained in SB 743, these changes to current practice were necessary to, "More appropriately balance the needs of congestion management with statewide goals related to infill development, promotion of public health through active transportation, and reduction of greenhouse gas emissions."

SB 743 requires impacts to transportation network performance to be viewed through a filter that promotes the reduction of greenhouse gas emissions, the development of multimodal transportation networks, and the diversification of land uses. Some alternative metrics were identified in the law, including vehicle miles traveled (VMT) or automobile trip generation rates. SB 743 does not prevent a city or county from continuing to analyze delay or LOS as part of other plans (i.e., the general plan), studies, or ongoing network monitoring, but these metrics may no longer constitute the sole basis for determining CEQA impacts once SB 743 is ratified into CEQA guidelines.

Assembly Bill 43 – Traffic Safety

On October 8, 2021, Assembly Bill (AB) 43 was signed into State law. The bill allows traffic engineers to consider people walking and biking when establishing speed limits. Previously, engineers were required to use the 85th-percentile speed to set speed limits. AB 43 removes this requirement for most roadways, although engineers can still use it as one criterion to consider. AB 43 also allows cities in California to lower speed limits in 5 mile per hour (mph) increments and reduces the need to conduct as many traffic surveys as previously required.

AVTA Bus

Relevant Plans & Documents

Active Transportation

The City of Palmdale was awarded grant funding in 2015 to initiate a citywide Active Transportation Plan covering specific recommendations for Complete Streets, Bicycle Transportation, and Safe Routes to School (SRTS). The opportunities identified for each of the topics in the plans which were finalized in 2018, but were not formerly adopted, are summarized below:

Complete Streets

- Focus on design to improve community health, safety, and economic vitality
- Provide safe and convenient access for a variety of mobility types
- Develop a circulation network that enables travel to and from destinations in a safe and efficient manner
- Provide mobility for multiple modes of transportation,
- Reduce vehicle emissions from increased use of alternative transportation modes

Bicycle Transportation

- Develop a comprehensive bikeway network, that services the full spectrum of bicycle rider types
- Plan bikeways that will complement the SRTS access for schools located within the City of Palmdale
- Facilitate the provision of quality bicycle support facilities at public and private sites/buildings throughout the community
- Apply new technologies and innovative treatments on appropriate roads and bikeways
- Provide secure bicycle storage facilities where bicyclists connect with other forms of transportation
- Develop and enhance multimodal opportunities for bicyclists to connect with other forms of transportation
- Encourage and support comprehensive bicycle safety and education awareness programs for bicyclists and motorists
- Ensure that ongoing maintenance keeps bicycle facilities in good repair

Safe Routes to School

- Make it easier and safer for students to walk and bicycle to school
- Increase the active mode share for student travel

Parking Policies

Off-street parking policies ensure that facilities are properly designed and maintained to facilitate safety and efficiency. The City's guidelines for off-street parking facilities identify the number of spaces required, applicable use of parking spaces, design and loading standards, sharing between uses, parking for bicycles, and exceptions based on City approval.

The City's existing parking policies are intended to achieve the following:

- Facilitate the intended use of properties
- Reduce traffic congestion and safety concerns
- Protect neighborhoods from the effects of vehicular noise and traffic
- Assure maneuverability of emergency vehicles
- Provide a positive visual experience

Street Maintenance

Street maintenance policies and procedures were written for the Public Works Maintenance Division to make sure that City rights-of-way are maintained properly and provide safe walking areas for the public.

The City's existing street maintenance policies are intended to achieve the following:

- Conduct a detailed inspection twice per year, in the spring and fall, to ensure proper maintenance of public improvements.
- Maintain an accurate record of inspections and document how the inspections took place
- Note any conditions needing correction and any citizen complaints
- Monitor any conditions that may be hazardous to pedestrians

Key Projects

California High Speed Rail

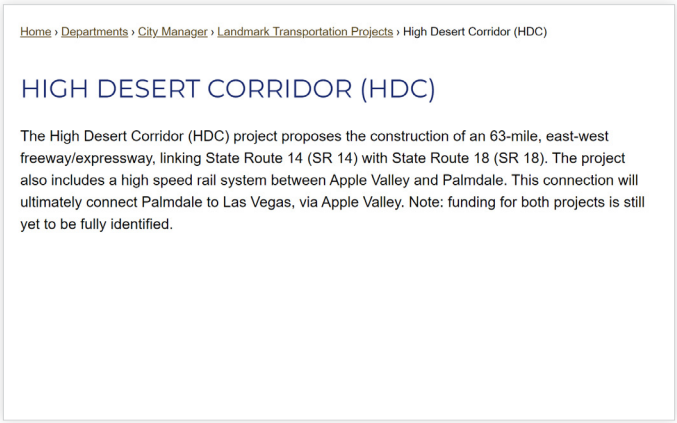
The California High-Speed Rail Authority (CHSRA) is responsible for planning, designing, building and operation of a high-speed rail system that will connect the mega-regions of the state. The CHSRA is also committed to completing the environmental review for all project segments (Merced/San Francisco—Los Angeles/Anaheim) by 2022. No schedule has been established for completing construction of the high-speed rail line sections between Bakersfield and Palmdale or between Palmdale and Los Angeles Union Station. Due to Palmdale's location along the corridor, linking the Central Valley and Los Angeles basin, accommodation of future high-speed rail is a consideration of this element. To accommodate the HSR station, the Palmdale Transportation Center would be relocated south of the existing location to between Avenue Q and Palmdale Boulevard.



California High Speed Rail

High Desert Corridor

The High Desert Corridor (HDC) is a proposed project to create a high-capacity connection between SR-14 in Palmdale and I-15 in Victorville, ~~continuing as an expressway to join with SR-18 in Apple Valley~~, which would be implemented after the General Plan horizon year. The HDC project would also include bicycle facilities, extending 36 miles along the corridor from US 395 in Adelanto to 20th Street East, providing a bike route connection to the Palmdale Transportation Center. Some of the right-of-way required for the project may also accommodate an HOV lane in each direction, plus a high-speed passenger rail line.



Home › Departments › City Manager › Landmark Transportation Projects › High Desert Corridor (HDC)

HIGH DESERT CORRIDOR (HDC)

The High Desert Corridor (HDC) project proposes the construction of an 63-mile, east-west freeway/expressway, linking State Route 14 (SR 14) with State Route 18 (SR 18). The project also includes a high speed rail system between Apple Valley and Palmdale. This connection will ultimately connect Palmdale to Las Vegas, via Apple Valley. Note: funding for both projects is still yet to be fully identified.

High Desert Corridor (HDC)

Brightline West Connection to Las Vegas

The proposed high-speed rail feeder service would be modeled on the Brightline service currently operating in Florida between Fort Lauderdale and Miami. The high-speed rail feeder may be built within the HDC right-of-way, primarily within the highway median. The stop serving Brightline West would be at the Palmdale Multimodal Rail Station to be located south of the existing Palmdale Transportation Center between Avenue Q and Palmdale Boulevard. The initial Southern California station is proposed to be in Victorville and intends to add stations and provide connections to Metrolink and future California High-Speed Rail.

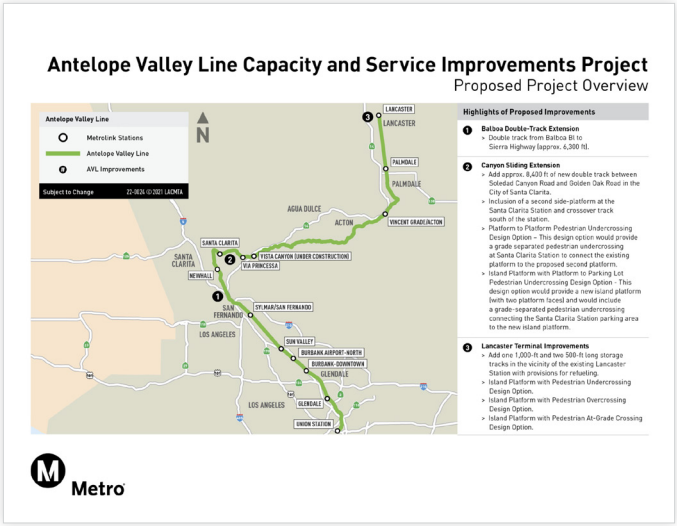


Brightline West

Antelope Valley Line Study

The Los Angeles County Metropolitan Transportation Authority (Metro) is a member agency of the Southern California Regional Rail Authority (SCRRA). Metro, in collaboration with SCRRA, is studying potential opportunities to add more rail service from Lancaster and Palmdale to Los Angeles. The Antelope Valley Line Study has two objectives: to look at increasing the frequency of the Metrolink service; and to develop a phased and prioritized approach for capital improvements based on benefits, costs and impacts in Los Angeles County. The average speed for this line is approximately 40 miles per hour, and passenger rail travel time between Palmdale and Los Angeles Union Station is approximately two hours. The Antelope Valley Line is currently Metrolink's third busiest line with approximately 7,000 passengers per weekday. The line is facing a variety of service challenges due to its aging infrastructure, which was constructed through mountainous terrain with single track in many areas.

The final report identifies rail infrastructure projects needed to deliver the track capacity necessary for increased service levels, including potential double-tracking of portions of the line that are currently single track, extension of passing sidings, additional platforms at stations, and improved signaling systems. Adding late night train service, more frequent service and bidirectional service are some of the recommendations likely to move forward toward implementation.



Antelop Valley Line Study

Context

Roadway Conditions

Palmdale relies heavily on arterial roadways to move travelers throughout the community. The network has primarily been developed around a suburban grid system in which arterials are spaced approximately every mile and secondary arterials are spaced every half-mile between major arterials. This arterial network separating neighborhood streets limits connectivity for intracity multimodal travel and contributes to a high vehicle speed environment. Many residential areas are designed as suburban subdivisions with cul-de-sacs, circuitous streets, and lack of porous access. This contributes to long, inefficient travel distances between residential neighborhoods to access collector and arterial streets, making it especially challenging and time consuming for people walking, biking, and taking transit to connect to destinations like school, stores, and work.



Palmdale Streetscape

Pedestrian Conditions

Existing pedestrian network conditions and environmental factors can make walking in the city uncomfortable. Much of the City's 106 square miles consist of vacant land, making it unfeasible to reach destinations by foot across most of the city outside of the central core. Sidewalk coverage is inconsistent across neighborhoods. Many sidewalks lack tree cover and shade, detracting from the comfort of walking in inclement weather. Signalized intersections along arterials are often spaced far apart, presenting pedestrians with limited opportunities for safe crossing.



Pedestrians Walking and Rolling in Palmdale

Bicycle Conditions

The City of Palmdale bicycle network is anchored by a 4.7-mile Class I bicycle path along Sierra Highway from Technology Drive, continuing north into Lancaster. While it provides a regional link, this facility is disconnected from communities outside of central Palmdale. Other facilities are largely absent across the city, though dedicated bicycle lanes are present along 5th Street East and along east-west arterials including but not exclusive to segments of East Avenue R, East Avenue Q, and East Avenue S. Arterials in Palmdale are a necessary component of a connected, citywide bicycle network, but because these roads are currently designed to support high speed vehicle traffic, bicycle facilities must be carefully designed to create a safer environment and distance people on bikes from fast moving vehicles.

Transit Conditions

Public transit within Palmdale is designed to serve intra-county and local travel needs. AVTA systemwide ridership is relatively low compared to other transit systems in the region.[3] The low ridership is partly attributed to infrequent service—headways for most routes operating within Palmdale are between 30 to 60 minutes, making transit unviable for most trips. The existing transit system also mostly caters to limited regional commute patterns rather than supporting travel within the city. Though key activity centers are served by bus transit, it is difficult to get to and from these locations, and to connect to other destinations in Palmdale.

The City is undergoing a station area planning process in partnership with the CHSRA around the high-speed rail multimodal station near downtown Palmdale. Targeted transit investments will still need to address local connectivity to expand access and provide a practical mode choice for more people. Much of the city's transit service is on 10th Street West, Palmdale Boulevard, Avenue R, and Avenue S, and investments in more frequent and convenient transit services on these existing corridors should be prioritized.

3. In 2018, AVTA saw 51,3000 boardings on weekdays and 8,240 boardings on weekends systemwide.

Commute Patterns

Most residents drive to work, and many have long commutes. A vast majority of Palmdale residents (91.4%) commute to work by motor vehicle, of which 76% drive alone. Approximately one third of commuters have a travel time to work of more than one hour, with many traveling several hours to the Los Angeles basin daily. Less than five percent of these long-distance commuters travel to work by public transit.



SR-14 through Palmdale



Multi-car Accident on Freeway[4]

Safety Trends

Considering historical crash trends throughout the city and the primary factors that contribute to collisions are critical for understanding behaviors on the current roadway network, and for guiding recommendations to promote safe facilities for all modes of travel. More than three-fourths of vehicle-involved collisions that occurred in Palmdale in recent years took place on the Local Roadway Network (LRN). The LRN is made up of principal and minor arterials, collectors, and local roads, as opposed to regional roads like SR-14 and SR-138. Unsafe speed and failure to yield properly are the most common crash factors in vehicle-involved collisions on both the local and regional roadway network. Active transportation-involved crashes involve a pedestrian or a person riding a bicycle. About two-thirds of active transportation-involved collisions in the city involve pedestrians walking or crossing a street. The primary casual factors of collisions involving pedestrians or people riding bicycles include a pedestrian outside of a marked crosswalk or sidewalk, or a vehicle operating on the wrong side of the road.

4. "Multi-Car Accident" by Steven Depolo, licensed under CC BY 2.0

Goods Movement

Goods within, and passing through, Palmdale move via truck and the Union Pacific Railroad. Designated truck routes prioritize automobile and heavy vehicle usage. Commercial vehicles with a manufacturer's gross vehicle weight rating of 10,000 or more must use designated truck routes within city limits, as designated in the Palmdale Municipal Code, unless they are making pickups or deliveries of goods, wares, or merchandise to or from a building, or for delivering materials to support construction.



Cargo Truck in Palmdale

Aviation

Palmdale Regional Airport

Palmdale Regional Airport (PMD) began civilian operations in 1971. During the 1990s, commercial airlines operated out of the airport, but in late 2008, passenger service was suspended at the facility due to low volume.

SR-14, about three miles west of the airport, provides regional access. As PMD has no scheduled commercial air service, there are no rental car facilities at the airport, and no private operators provide ground transportation services to the airport. The Palmdale Transportation Center (PTC), the proposed site of a future California High-Speed Rail station, is located approximately two miles southwest of the airport. The PTC provides connections with the local public transit provider, AVTA, but no AVTA routes currently serve the airport. Several transportation improvements near the airport are currently in the planning phase, study phase or are under construction.

The City owns approximately 600 acres of land north and west of the Plant 42 perimeter, a portion of which is proposed to be developed into an air terminal facility. The property extends between Sierra Highway to the west and 15th Street East to the east, and between East Avenue M (Columbia Way) to the north and Avenue M-12 to the south. If the City and the United States Air Force reach an agreement for access to the runways on Plant 42, the City has the opportunity to develop access routes from the new air terminal facility to the runways.



Aerial view of Plant 42

Context

Status quo roadway classification frameworks do not meet Palmdale's evolving needs for a more multimodal network. The following sections provide a new approach with street typologies and modal networks that are more responsive to local transportation needs and context.

Street Typologies

State of California General Plan Guidelines and federal funding eligibility both require the City to maintain functional street classification systems and are summarized below. However, these external classification systems are oriented toward vehicle operations and do not address local circulation and street design needs, so a local system is recommended to establish local multimodal network priorities.

Federal and State Functional Classification System

The Federal Highway Administration (FHWA) identifies functional classification as a key item in transportation data. Streets and highways are grouped into classes according to the service they provide. The California Road System (CRS) maps[5] display functional classification which is used in determining Federal funding to maintain the roads.

The federal classifications included in the CRS maps are:

- Interstate
- Other Freeway or Expressway
- Other Principal Arterial
- Minor Arterial
- Major Collector
- Minor Collector
- Local

Functional classification is required by the FHWA for projects receiving federal funds. This system is primarily auto centric and does not take into consideration local context, land use, or built form. This does not preclude cities from further defining their roadway classification systems for management purposes. However, it is recommended that a direct correlation be made to the CRS classification in a City's functional classification system.

Roadway Classifications

This section of the Mobility Element describes the classifications of Palmdale's roadways, including designated corridors that support active transportation. It also specifies truck routes and transit priority corridors.

The Palmdale Roadway Classification presents an enhancement to the functional FHWA and CRS classification that is more focused on the scale and connective role of each street within Palmdale's roadway network, organized into the following street types: Regional, Crosstown, Connector and Neighborhood streets. These street types are described in detail below and this approach to local roadway classifications will inform future roadway improvements by defining typical characteristics, design elements and multimodal network functions for each category. These should be applied to new and reconfigured streets to balance the needs of all travel modes more effectively. Definitions of street types consider surrounding land uses and anticipated traffic levels, and designate priority levels for different travel modes. In sum, they represent a hierarchical network linked to typical design standards.

Table 6.1 on the following page presents an overview of each street type category with additional details and example cross sections that illustrate the potential variety within each category. To ensure that Palmdale remains eligible for federal transportation funds, applicable FHWA terminology is included. Additional information about transit and active transportation priority corridors follows in the Priority Corridors section, and details about bicycle facilities and design considerations are presented in the Modal Networks section.

Table 6.2 presents a more detailed summary of specific Roadway Link Right-of-Way Dedication Requirements with corresponding mid-block street cross-sections.

5. https://caltrans.maps.arcgis.com/apps/webappviewer/index.html?id=026e830c914c495797c969a3e5668538

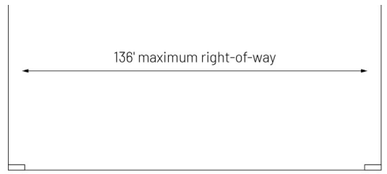
Table 6.1 Palmdale Roadway Classification Summary Table

	Palmdale Street Type			
	Regional	**Crosstown**	**Connector**	**Neighborhood**
CHARACTERISTICS	• Principal network for regional travel connecting Palmdale to other communities • Limited commercial frontages • May overlap with existing or planned designated truck routes	• Principal network for cross city travel by all modes • Provides direct access to commercial land uses and Village Centers	• Connects all modes of travel between residential neighborhoods and activity centers • Provides direct access to commercial/ industrial land uses and Village Centers	• Found mostly in residential neighborhoods • Provides access to residential land uses
DESIGN ELEMENTS	**Vehicles:** focus on through traffic and vehicle capacity, high volume/high speed traffic **Bikes and pedestrians:** physically separated lanes and paths, connections to complete multimodal network links **ROW configuration:** • Typical total ROW of 100-feet (minimum) to 136-feet (maximum) (may include sidewalks on one side) • Two or more through vehicle lanes in each direction, 11- to 12-feet through lane widths • Dedicated turn pockets • Separated Class I bike facilities, paths, and landscape buffers where possible; 6-foot minimum bike lane with 5-foot buffer and physical separation where on-street facilities are present • Sidewalks adjacent to developed land to minimize need for pedestrian crossings, 8-foot minimum sidewalk; sidewalks to be separated from curb with a landscape buffer if no parking is present • Marked and signalized crosswalks at intersections • Reduce excessively wide outside lane widths to reallocate space for buffers and off-street paths	**Vehicles:** focus on through traffic Bikes and pedestrians: enhancements for walking and bicycling including wide sidewalks, landscaped buffers, and dedicated bike lanes **Transit:** flexible transit priority lanes to support frequent transit service **ROW configuration:** • Typical ROW of 90-feet (minimum) to 114-feet (maximum) including sidewalks and medians where present • One or two through vehicle lanes in each direction, 11- to 12-feet through lane widths • Center-turn lane or raised median as applicable; one through lane in each direction may be acceptable if full center turn lane is provided • Separated bike lanes, sidewalks, and landscape buffers where possible, 6-foot minimum bike lane with buffer required • Wide sidewalks adjacent to commercial land use, 8-feet minimum sidewalk; additional width to accommodate furniture zone on commercial corridors • Reduce excessively wide outside lane widths to reallocate space for buffered bicycle facilities or flexible transit lanes	**Vehicles:** focus on intracity traffic **Bikes and pedestrians:** enhancements for walking and bicycling including wide sidewalks, landscaped or parking-protected buffers, and dedicated bike lanes **ROW configuration:** • Typical ROW of 66-feet (minimum) to 94-feet (maximum) including sidewalks (many existing streets have 80- to 100-foot right-of-way due to Los Angeles County Standards prior to City of Palmdale annexation) • One or two through vehicle lanes in each direction, 11- to 12-feet lane widths • Center turn lane or medians as applicable • Reduce excessively wide outside lane widths to support separated bike lanes, sidewalks, and landscape buffers where possible, 6-foot minimum bike lane, with a buffer as applicable • Wide sidewalks adjacent to commercial land use, 8- to 10-foot minimum sidewalk • Low density of connecting driveways • More signalized intersections than neighborhood streets • May support on-street vehicle parking	**Vehicles:** accommodates automobiles at lower speeds **Bikes and pedestrians:** traffic calming elements to support walking and bicycling **ROW configuration:** • Typical ROW of 30-feet (minimum) to 64-feet (maximum), including sidewalks where present • One through vehicle lane in each direction • Reduce lanes in excess of standard widths to support traffic calming measures such as chicanes, bulb-outs, and landscaping where possible, 6-foot minimum bulb outs at intersections, 8-foot on-street parking lanes where applicable
ACTIVE TRANSPORTATION NETWORKS	• Primarily serves vehicles • Includes Bicycle and/or Transit facilities on certain segments, which should be designed with separated facilities (see Design Elements information in this table)	• Primarily serves intracity travel • Includes segments of Transit Priority Corridors • Includes Bicycle and/or Transit facilities on certain segments, which should be designed with separated facilities (see Design Elements information in this table)	• Primarily services intracity travel • Includes segments of Bicycle and/or Transit facilities on certain segments, which should be designed with separated facilities	• Prioritizes pedestrian travel and slow automobile travel • Includes Bicycle facilities on certain segments, which may include shared travel lanes with the appropriate traffic calming measures
LOCAL STREET SEGMENT EXAMPLES	• Columbia Way/ Avenue M • 10th Street West • Sierra Highway • Pearblossom Highway	• Avenue Q • Palmdale Boulevard • Avenue R	• Avenue M-8 • Avenue R-8 • 5th Street West	• Lakewood Court • Tackstem Street • Evergem Avenue
APPLICABLE FHWA DESIGNATIONS	Expressway and Principal Arterial	Principal Arterial and Minor Arterial	Minor Collector and Major Collector	Local and Minor Collector

Figure 6.1 Typical Street Right-of-Way Dimensions

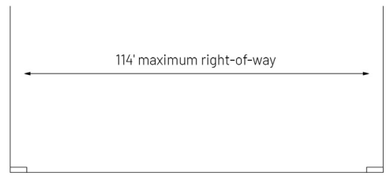
REGIONAL

Section A.



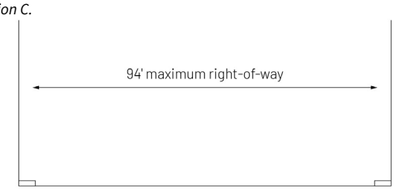
CROSSTOWN

Section B.



CONNECTOR

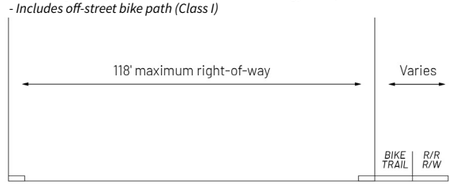
Section C.



REGIONAL - SPECIFIC

Section D.

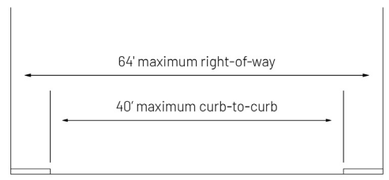
- Sierra Highway (between Avenue M and Technology Drive)
- Includes off-street bike path (Class I)



R/R - Railroad
R/W - Right-of-way

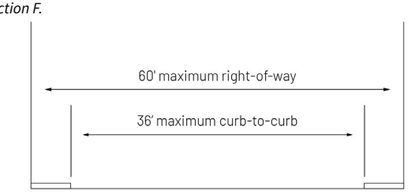
NEIGHBORHOOD

Section E.



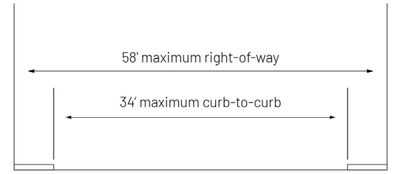
NEIGHBORHOOD

Section F.



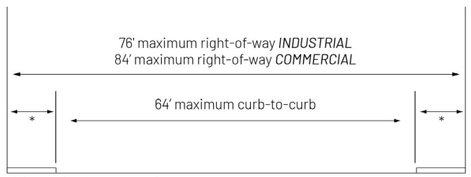
NEIGHBORHOOD

Section G.



CONNECTOR

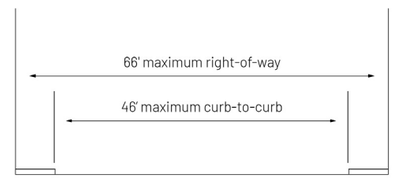
Section H.



** 6' industrial, 10' commercial*

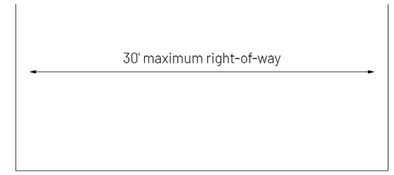
CONNECTOR

Section I.



NEIGHBORHOOD

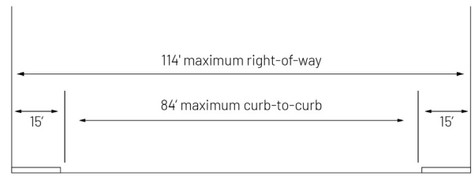
Section J



CROSSTOWN - SPECIFIC

Section K

- Avenue S between SR-14 and the Anaverde development
- Includes off-street bike path (Class I)



General Notes:

- This table only shows cross-sections at mid-block locations. Additional right-of-way may be required at intersections to accommodate turn lanes.
- Not to scale.
- Raised medians may be required as determined by the City Engineer/City Traffic Engineer.
- Installation of speed humps shall be in accordance with PMC 10.04.100 Chapter 15.107.
- Bike lanes, buffers, paths, etc. may be updated through a master plan of bike and trails.

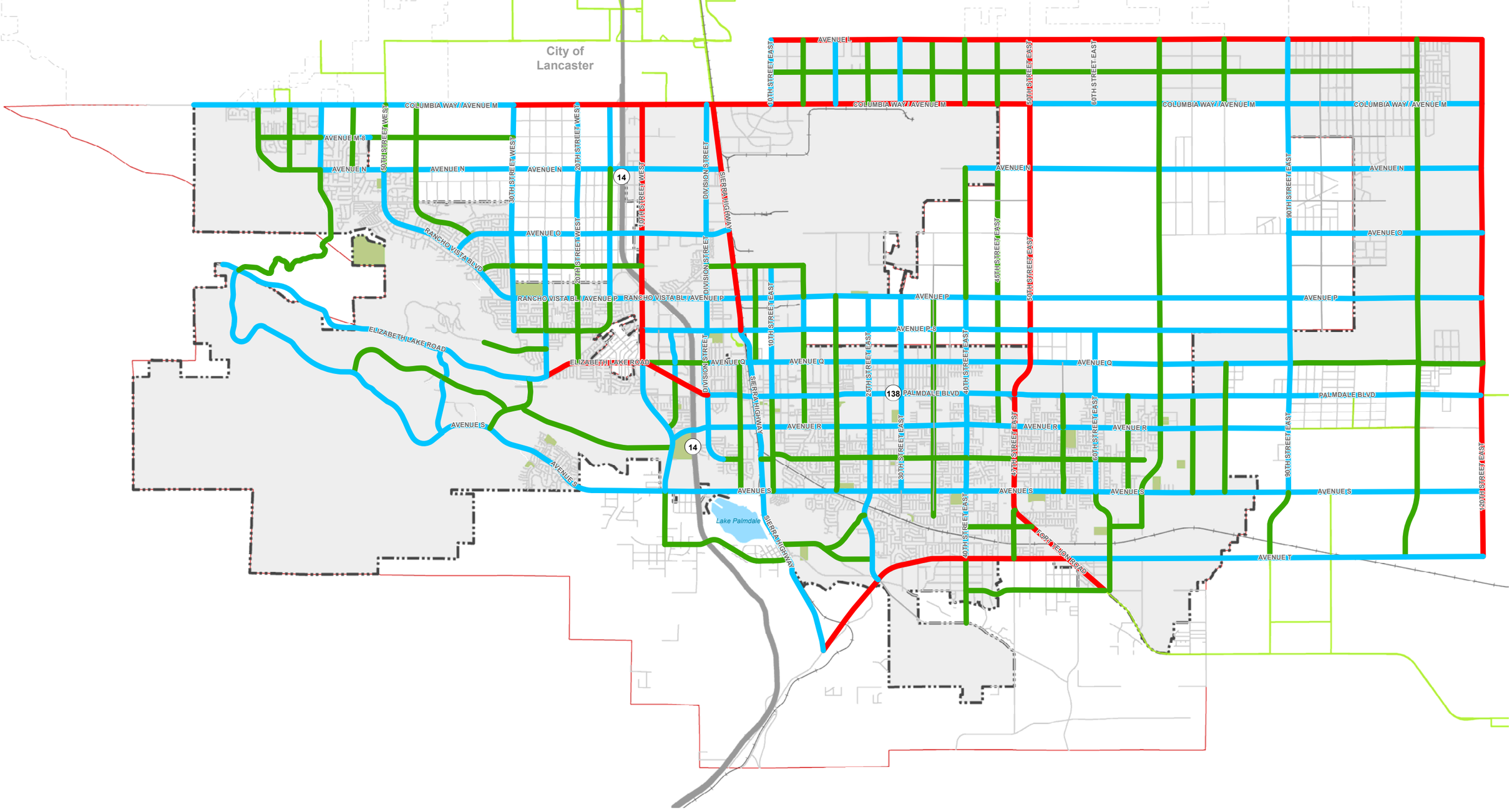


Figure 6.2

Palmdale Roadway Classification Map

- City Boundary
- Sphere of Influence
- Major Arterials
- Major Highway/Arterial
- Railroad
- Transit Center
- California Aqueduct
- Water Body
- Park
- Regional
- Crosstown
- Connector
- Neighborhood

0 0.75 1.5 2.25 3 Miles

0 3,000 6,000 Feet

Data Sources: City of Palmdale GIS data; World Terrain Base, 2015 ESRI, USGS, NOAA.

Produced by Nelson\Nygaard
March 2019

Table 6.2

Palmdale Roadway Classification Summary Table

Roadway Link	From/To	Cross-Section ID-See Figure 6.1
NORTH-SOUTH ROADWAYS		
70th St West	Columbia Way (Ave M)/R. Lee Ermey Ave (Ave N)	C
65th St West	Columbia Way (Ave M)/R. Lee Ermey Ave (Ave N)	C
60th St West	Columbia Way (Ave M)/R. Lee Ermey Ave (Ave N)	B
Godde Hill Road	R. Lee Ermey Ave (Ave N)/Elizabeth Lake Rd	C
55th St West	Columbia Way (Ave M)/R. Lee Ermey Ave (Ave N)	C
45th St West	Columbia Way (Ave M)/Ave N-8	C
Bolz Ranch Road	Ave N-8/Towncenter Drive	C
Ranch Center Dr	Elizabeth Lake Rd/Ritter Ranch Rd	B
30th St West	Columbia Way (Ave M)/Bulldog Ave (Ave P-8)	B
25th St West	Ave O/Rancho Vista Bl (Ave P)	B
Highland Street (25th St W)	Rancho Vista Bl (Ave P)/Ave P-8	C
	Ave P-8/Elizabeth Lake Rd	B
20th St West	Columbia Way (Ave M)/Ave O-8	B
	Ave O-8/Elizabeth Lake Rd	C
15th St West	Columbia Way (Ave M)/R. Lee Ermey Ave (Ave N)	B
	R. Lee Ermey Ave (Ave N)/Ave O	C
	Ave O/Rancho Vista Bl (Ave P)	B
Summerwind Drive	Rancho Vista Bl (Ave P)/Ave P-8	C
10th St West	Columbia Way (Ave M)/Palmdale Blvd	A
Tierra Subida Ave	Palmdale Blvd/Ave S	B
	Ave S/Barrel Springs Rd	C
5th St West	Technology Drive/Palmdale Blvd	B
	Palmdale Blvd/Tierra Subida Ave	C
Division St	Columbia Way (Ave M)/Ave R-8	B
5th St East	Ave Q/Palmdale Blvd	C
	Palmdale Blvd/Ave S	C
Sierra Hwy	Columbia Way (Ave M)/Technology Drive	D
	Technology Drive/Pearblossom Hwy	B
Lockheed Way (8th St East)	Blackbird Dr/Rancho Vista Bl (Ave P)	C
8th St East	Rancho Vista Bl (Ave P)/Ave Q	C
Challenger Way	Ave L/Columbia Way (Ave M)	B
10th St East	Blackbird Dr/Palmdale Blvd	B
	Palmdale Blvd/Ave S	C

Roadway Link	From/To	Cross-Section ID-See Figure 6.1
15th St East	Ave L/Columbia Way (Ave M)	C
	Blackbird Dr/Rancho Vista Bl (Ave P)	C
	Rancho Vista Bl (Ave P)/Ave P-8	B
	Ave P-8/Ave R	C
20th St East	Ave L/Columbia Way (Ave M)	B
	Ave P/Ave S	C
25th St East	Ave L/Columbia Way (Ave M)	C
	Ave P/Pearblossom Hwy	B
30th St East	Ave L/Columbia Way (Ave M)	B
	Ave P/Ave S	B
35th St East	Ave L/Columbia Way (Ave M)	C
	Ave P/1600' S of Ave S	C
40th St East	Ave L/Columbia Way (Ave M)	C
	R. Lee Ermey Ave (Ave N)/Ave P	C
	Ave P/Pearblossom Hwy	B
	Pearblossom Hwy/Barrel Springs Rd	C
45th St East	Ave L/Columbia Way (Ave M)	C
	R. Lee Ermey Ave (Ave N)/Ave R	C
47th St East (State Route 138)	Palmdale Blvd/Ave S	A
47th St East	Fort Tejon Rd (State Route 138)/Pearblossom Hwy	C
Fort Tejon Rd (State Route 138)	Pearblossom Hwy/Mt Emma Rd	A
50th St East	Ave L/Palmdale Blvd	A
55th St East	Palmdale Blvd/Ave S	C
60th St East	Ave P-8/Ave S	B
62nd St East	Ave S/Pearblossom Hwy (State Route 138)	C
65th St East	Palmdale Blvd/Ave S	C
70th St East	Ave L/Ave S-8	C
75th St East	Palmdale Blvd/Ave S	C
80th St East	Ave L/R. Lee Ermey Ave (Ave N)	C
	Ave Q/Ave S	C
90th St East	Ave L/Ave S	B
	Ave S/Ave T	C
110th St East	Ave L/Ave T	C
120th St East	Ave L/Pearblossom Hwy (State Route 138)	A
State Route 14 (SR-14)	Ave L/Crown Valley Rd	Caltrans
EAST-WEST ROADWAYS		
Avenue L	Challenger Way/120th St E	A
Avenue L-8	Challenger Way/110th St E	C

Roadway Link	From/To	Cross-Section ID-See Figure 6.1
Columbia Way (Avenue M)	90th St W/30th St W	B
	30th St W/50th St E	A
	50th St E/120th St E	B
Avenue M-8	70th St W/60th St W	C
	60th St W/53rd St W	B
	53rd St W/30th St W	C
Avenue N	70th St W/60th St W	C
	60th St W/Sierra Hwy	
	B	
	40th St E/120th St E	B
Towncenter Drive	Rancho Vista Bl/30th St W	B
Avenue O	30th St W/Sierra Hwy	B
	90th St E/120th St E	B
Avenue O-8	Rancho Vista Blvd/10th St W	C
	Division St/Sierra Hwy	C
Blackbird Drive	Sierra Hwy/15th St E	C
Rancho Vista Blvd	50th St W/30th St W	B
Rancho Vista Bl (Avenue P)	30th St W/15th St E	B
Avenue P	15th St E/120th St E	B
Bulldog Way (Avenue P-8)	30th St W/Highland St (25th St W)	C
Avenue P-8	Highland St (25th St W)/Summerwind Dr (15th St W)	C
	Sierra Hwy/90th St E	B
Technology Drive	10th St W/Sierra Hwy	B
Avenue Q	Palmdale Blvd/Division St	C
	Division St/90th St E	B
	90th St E/120th St E	C
Avenue P-12	CA Aqueduct/Highland St (25th St W)	C
Elizabeth Lake Rd	Godde Hill Rd/Highland St (25th St W)	B
	Highland St (25th St W)/10th St W	A
Palmdale Blvd	10th St W/Division St	A
	Division St/120th St E	B
City Ranch Rd	Ritter Ranch Rd/Bridge Rd	C
	Bridge Rd/Tierra Subida Ave	C
Rayburn Road	Tierra Subida Ave/Division St	B
Avenue R	Division St/90th St E	B
Avenue R-8	Division St/5th St E	C
	Sierra Hwy/67th St E	C
Ritter Ranch Rd	Elizabeth Lake Rd/Bridge Rd	B

Roadway Link	From/To	Cross-Section ID-See Figure 6.1
Avenue S	Bridge Rd/State Route 14 (SR-14)	K
	State Route 14 (SR-14)/120th St E	B
Avenue S-8	40th St E/Fort Tejon Rd (State Route 138)	C
	62nd St E/70th St E	C
Pearblossom Hwy	Sierra Hwy/Fort Tejon Rd (State Route 138)	A
Avenue T	Fort Tejon Rd (State Route 138)/120th St E	B
Avenue T-8	40th St E/Pearblossom Hwy (State Route 138)	C
Barrel Springs Rd	Tierra Subida Ave/25th St E	C
	Pearblossom Hwy/Cheseboro Rd	C
Old Harold Rd	Barrel Springs Rd/25th St E	C
Pearblossom Hwy (State Route 138)	Ave T/120th St E	A

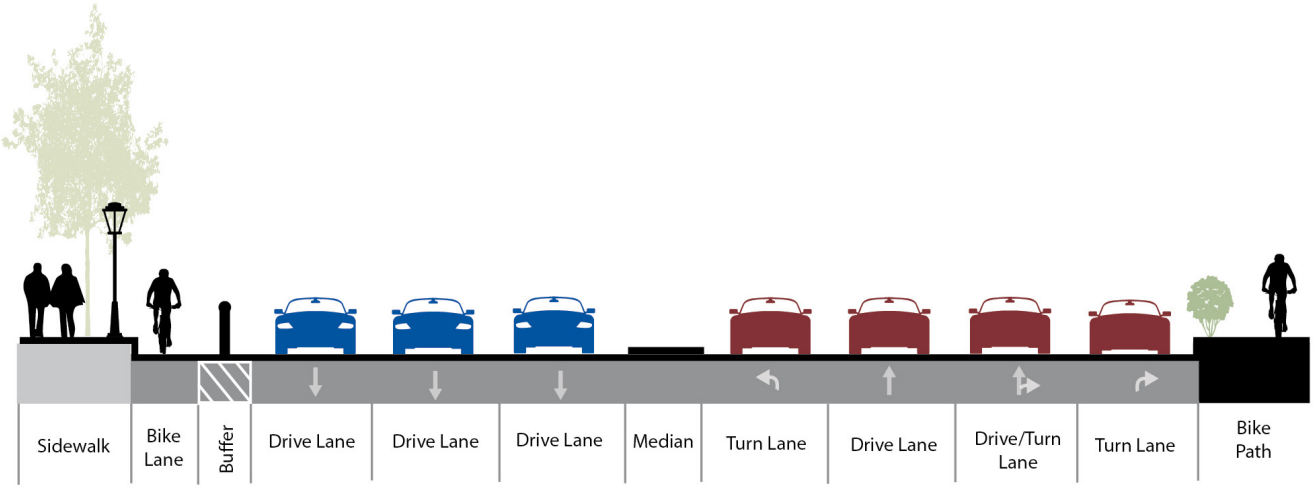
**Where applicable, size, type and location of medians may be determined at the time of development based upon existing and approved development, access control, and circulation needs.*

Regional

Regional streets provide the principal network for regional travel connecting Palmdale to other communities. They have limited commercial frontages and may overlap with existing or planned designated truck routes. These include portions of Sierra Highway, 10th Street West and Pearblossom Highway.

A typical Regional street is 100-136 feet wide, with 95-120 feet curb to curb, which may include a median or center lane as applicable. Some may have sidewalks on one side of the street where there is commercial or industrial frontage, and vacant land on the other. Most existing Regional streets have several wide vehicle lanes in each direction, and several also currently support bicycle facilities, such as Sierra Highway and 10th Street West Bikeways on Regional streets should be designed with maximum separation from vehicles, whether by a physical buffer or grade separation. Intersections with separate or multiple right turn lanes should incorporate dedicated bike phasing, as opposed to reverting to a floating bike lane in between vehicular travel lanes. Wide outside travel lanes can be reconfigured to provide dedicated space for protected bicycle facilities (Class IV) and adjacent vacant land can be used to build Class I bicycle paths to add further separation between people who bike and high-speed, high-volume vehicular and truck traffic. An example cross section for a Regional street is illustrated in Figure 6.3.

Figure 6.3 Typical Cross Section of Regional Street with Bicycle Treatments



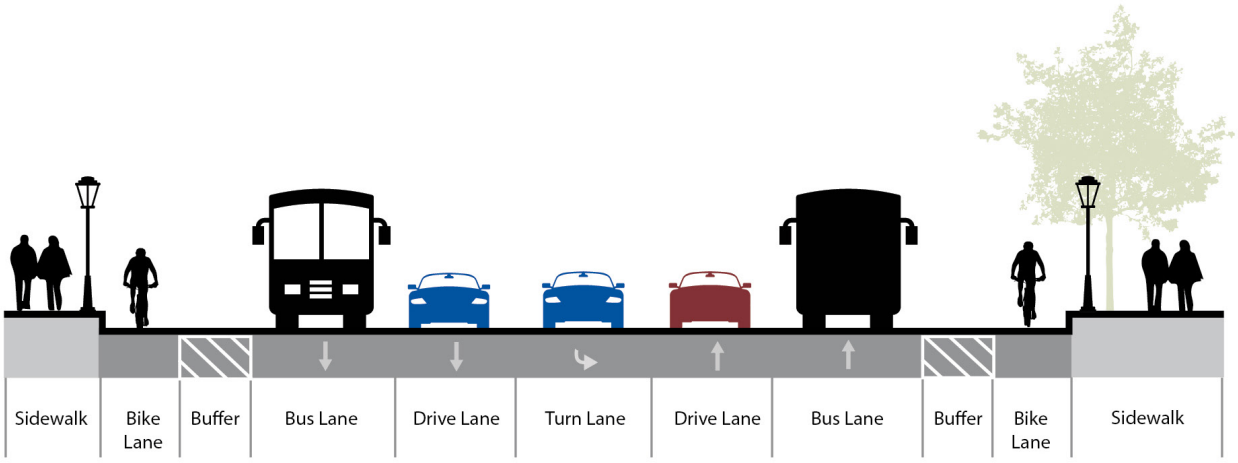
Crosstown

Crosstown streets provide the principal network for citywide travel by all modes, including walking, bicycling, transit, and automobiles. Most commercial land uses in Palmdale are accessed directly via Crosstown streets. Crosstown streets should have a minimum of 8-foot sidewalks to accommodate pedestrian travel and other activities. Additional width is necessary to accommodate the sidewalk furniture zone on commercial corridors to support vibrant commercial use with minimal setback on commercial lots. Bicycle facilities on Crosstown streets should be dedicated bicycle lanes with a buffer. Crosstown streets also make up most of the transit priority corridor network.

A typical Crosstown street is 90~~104~~ to 114 feet wide, with 88 to 98 feet curb to curb, which may include a median or center lane as applicable and a minimum of 8-foot sidewalks on both sides.

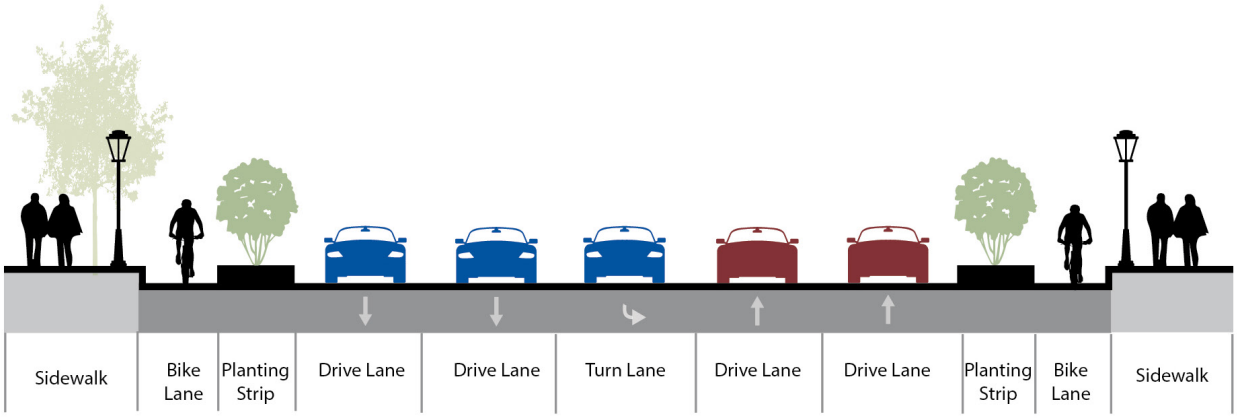
Most existing Crosstown streets have several wide vehicle lanes in each direction and sidewalks on both sides of the street. For Crosstown streets that carry high frequency transit lines and are part of the bicycle network, the existing vehicle lanes should be reallocated to provide dedicated space for other modes. Travel lanes adjacent to bicycle facilities may serve as flexible transit priority lanes, which can accommodate mixed traffic in the near-term, and include treatments like a dedicated transit lane, queue jumps, or updated signal timing to accommodate higher frequency transit and reduce travel time for buses in the future. Bus bulbs with boarding islands can be installed between the bike lane and transit priority/mixed traffic lane on corridors with bicycle facilities. An example cross section for a Crosstown street is illustrated in Figure 6.4.

Figure 6.4 Typical Cross Section of Crosstown Street with Flexible Transit Priority Treatments



Some Crosstown streets, such as 40th Street East, do not carry high-frequency transit and have a different existing lane configuration. For these streets that are part of the bicycle network and do not require dedicated transit lanes, the existing right-of-way should be reallocated to include protected bicycle lanes, wider sidewalks, and landscaped buffers to improve the pedestrian environment. An example cross section for a Crosstown street without transit is illustrated Figure 6.5.

Figure 6.5 Typical Cross Section of Crosstown Street without Transit with Bicycle Treatments



Palmdale Boulevard is a unique Crosstown street because it functions as the primary commercial corridor through Palmdale and carries all modes and is currently part of Caltrans right-of-way. Its curb-to-curb dimensions are similar to other Crosstown streets with transit service as illustrated in Figure 6.4, and the same multimodal facilities and street geometry should be part of the Palmdale Boulevard cross section. Compared to other Crosstown streets, Palmdale Boulevard already features wider sidewalks, which are essential to the pedestrian activity and spatial needs on a vibrant commercial corridor, and foster walkability and comfortable transit access. Pedestrian and bicycle modes should be accommodated along with additional pedestrian improvements at intersections and flexible transit lanes to promote a vibrant main street environment while continuing to accommodate vehicle traffic operations within Palmdale's commercial core. The width of Palmdale Boulevard varies, and design details will need to be customized at specific locations.

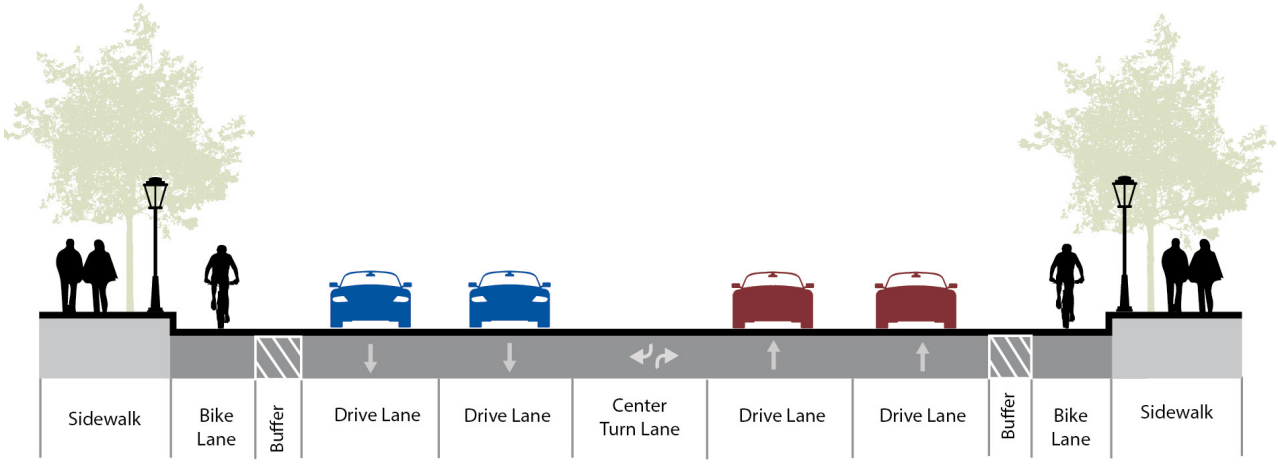
The recommended cross sections and widths illustrated above appropriately address multimodal needs on Crosstown streets and can be adjusted to fit within the range of total right-of-way on the existing built out roadway network. Future Crosstown streets that are built with previously identified maximum right-of-way widths should allocate the additional space to sidewalks, landscaped buffers, and protected bicycle facilities.

Connector

Connector streets provide connections for all modes of travel between neighborhoods and activity centers and provide direct access to land uses while linking Crosstown and Neighborhood streets. Connector streets tend to have fewer driveways, higher speed limits, and more signalized intersections than Neighborhood streets. Connector streets are also an essential component of the citywide bicycle network.

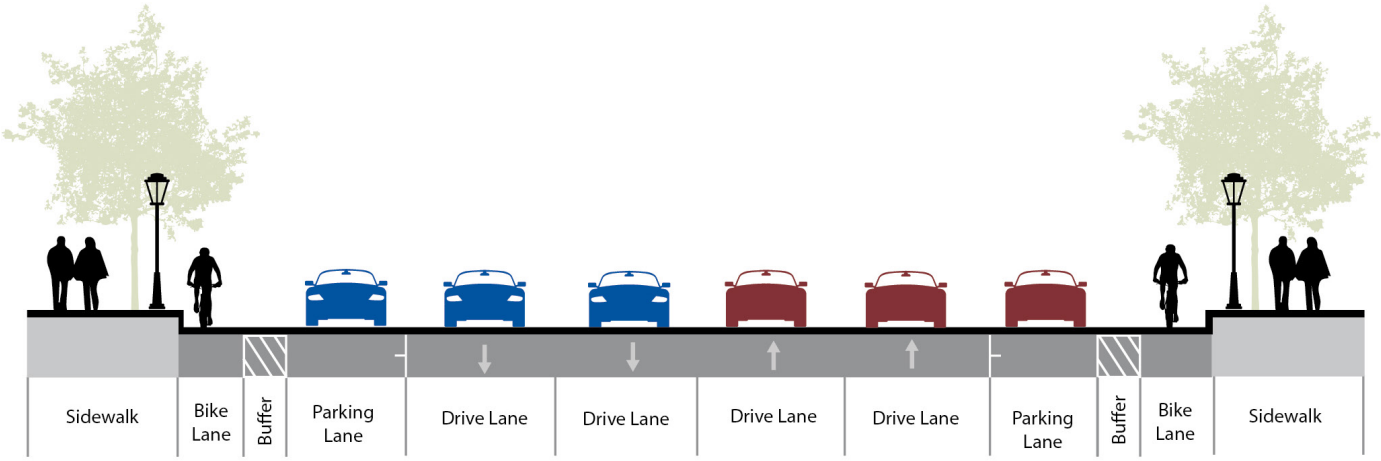
A typical Connector street in Palmdale is 66 to 94 feet, with 46 to 76 feet curb to curb, median or center lane as applicable and sidewalks on both sides of the street. All Connector streets should include buffered bike lanes on both sides of the street, and the existing outside vehicle lanes should be reallocated to provide dedicated bicycle lanes. An example recommended cross section for a Connector street is illustrated in Figure 6.6.

Figure 6.6 Typical Cross Section of Connector Street with Bicycle Treatments



The recommended cross sections and widths illustrated above appropriately address multimodal needs on Connector streets and can be adjusted to fit within the range of total right-of-way on the existing built out roadway network. Future Connector streets that are built with previously identified maximum right-of-way widths should keep the total width of vehicle travel lanes consistent with the illustration above and allocate the additional space to sidewalks, landscaped buffers, and protected bicycle facilities. These maximum width streets may accommodate on-street parking and parking-buffered bicycle lanes on both sides of the street. An example maximum width cross section with these elements is illustrated in Figure 6.7.

Figure 6.7 Typical Maximum Width Cross Section of Connector Street with Parking-Buffered Bicycle Lanes

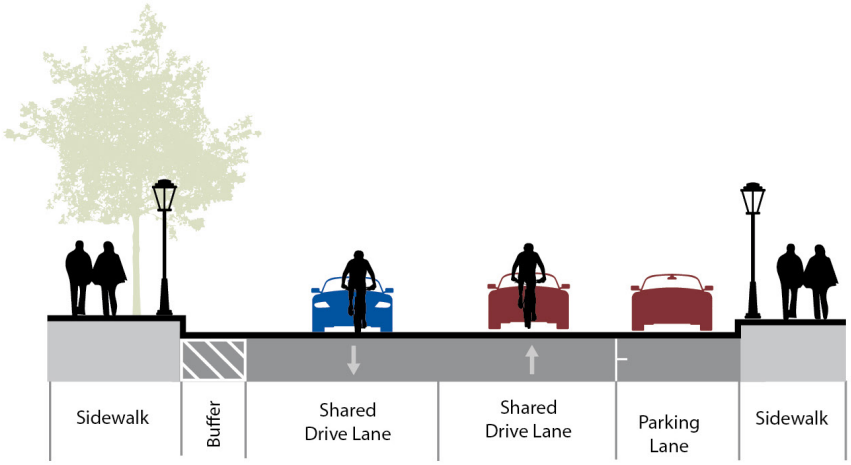


Neighborhood

Neighborhood streets are found mostly in residential neighborhoods and provide access to adjacent land uses, typically housing. Neighborhood streets should be designed to accommodate automobiles traveling at lower speeds. Traffic calming elements such as bulb outs, alternating chicanes, landscaping, and on-street residential parking should be incorporated. These streets prioritize pedestrians traveling on sidewalks. Bicycle facilities on neighborhood streets may include shared travel lanes, which are described in more detail in the Modal Networks section below.

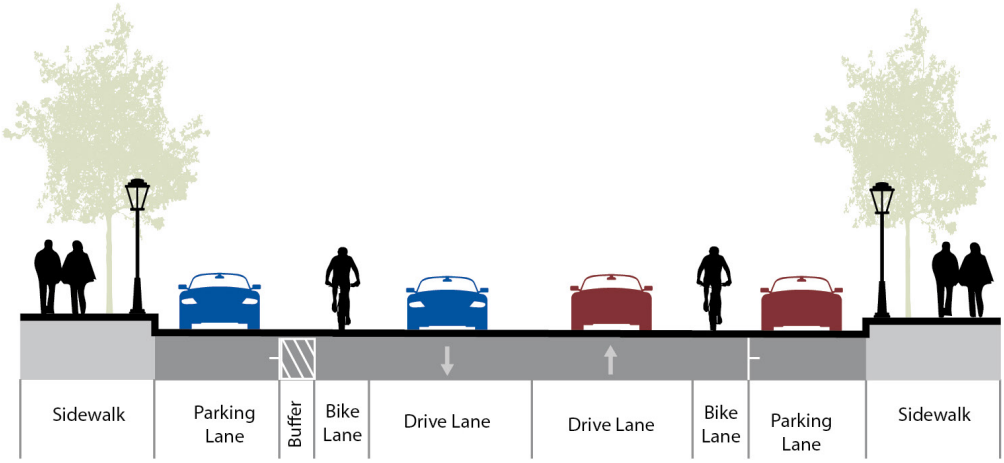
A typical Neighborhood street is 30 to 64 feet wide, with 30 to 460 feet curb to curb and a 12 foot strip that includes a sidewalk and landscaping on both sides, with the exception of alleys. Most Neighborhood streets have two wide vehicle lanes that can accommodate informal on-street parking lanes. Existing Neighborhood streets present an opportunity to expand the citywide bicycle network with bicycle boulevards that include traffic calming elements, such as a chicane on one side and on-street parking on the other side. An example cross section for a short residential Neighborhood street is illustrated in Figure 6.8. This configuration accommodates residential parking, and traffic calming elements to mitigate high speed cut through traffic.

Figure 6.8 Typical Cross Section of Neighborhood Street with Traffic Calming Elements



The recommended cross sections and widths illustrated above appropriately address multimodal needs on Neighborhood streets and can be adjusted to fit within the range of total right-of-way on the existing built out roadway network. Future Neighborhood streets that are built with previously identified maximum right-of-way widths should keep the total width of vehicle travel lanes consistent with the illustrations above and allocate the additional space to wider sidewalks, landscaping, and buffered bicycle facilities to support active modes. These maximum street widths may accommodate on-street parking and dedicated bicycle lanes on both sides of the street. An example maximum width cross section with these elements is illustrated in Figure 6.9.

Figure 6.9 Maximum Width Cross Section of Typical Neighborhood Street with On-Street Parking and Dedicated Bicycle Lanes



Modal Networks

Pedestrian Facilities

A well-connected and comfortable pedestrian network enhances access for all travelers. When designed to accommodate all ages and abilities, it can help to increase walking as a means of transportation. Though no spatial data is available to provide a comprehensive assessment of pedestrian facilities, spatial imagery of existing conditions shows sidewalk coverage varies between neighborhoods. Complete sidewalk networks are more commonly found in residential neighborhoods south of the city's central core and northeast of the California Aqueduct compared to residential areas north of Palmdale Boulevard. These variations were likely the result of independent guidelines applied by housing developers. Along major thoroughfares, gaps in the sidewalk network are primarily adjacent to undeveloped land, suggesting the need to prioritize infill development.

Expansion of the sidewalk network will coincide with future development and changes in land use. In addition to closing gaps, adding more signalized intersections and midblock crossings along major thoroughfares can help to create more crossing opportunities, reduce the distance between crossings, and improve pedestrian circulation. Planting street trees to calm traffic and provide shade and protection from the Antelope Valley's hot weather also creates a more comfortable experience for the most vulnerable pedestrians, namely seniors, youth, and people with disabilities.

Bicycle Facilities

A comprehensive, safe, and well-connected bicycle network can help to encourage more local trips by bike and reduce the mode share of vehicle trips. When well designed, it can also encourage people to use active modes to get to where they need to go, contribute to healthier ways of living, reduce traffic, and reduce the need for more costly roadway improvement projects. The sections below describe the different classifications of bicycle facilities that make up a complete bicycle network, each of which provide a different level of separation and protection from vehicle traffic. Figure 6.10 describes and illustrates the four facility classifications, presented in order from most protected and separated from vehicles to least protected.


Pedestrian-Friendly Sidewalk with Street Trees

Figure 6.10 Bicycle Facility Classifications



California Highway Design Manual 2015
Source: Nelson\Nygaard

Additional detail about each facility classification is presented below and on the following pages, and the existing and planned network for Palmdale is illustrated in Figure 6.11.

Multi-Use Paths (Class I)

Class I bikeways are multi-use bicycle paths or paved trails that provide separate, exclusive right-of-way for bicycling, walking, and other non-motorized uses. Class I separated paths should be placed along routes that have few driveways and intersections and be properly separated from the roadway with few vehicle crossing points. Multi-use paths are the lowest stress facilities as they are physically separated from motor vehicle traffic. One example of an existing Class I bicycle facility in Palmdale is on Sierra Highway between Columbia Way/Avenue M and Technology Drive.


Class I Bike Lane in Palmdale

Bicycle Lane (Class II)

Class II bicycle lanes are striped, preferential on-street bicycle lanes for one-way bicycle travel. Some bicycle lanes include striped buffers that add a few feet of separation between the bicycle lane and traffic lane or parking aisle. These facilities are important for the overall bikeway network because they provide a designated space for riders along the roadway. One example of an existing Class II bicycle facility in Palmdale is on 5th Street East between Avenue R and Avenue S.



Rendering of Class II Bike Lane

Bicycle Route/Sharrow (Class III)

Class III bicycle routes, often marked with sharrows, are signed routes where people riding bicycles share a travel lane with people driving. Because they are mixed-flow facilities, Class III bicycle routes are only appropriate on low-volume streets with slow travel speeds. Class III facilities may be configured with just shared-lane markings to reinforce the legitimacy of bicycle traffic on the street or as "bicycle boulevards" where roads are augmented with traffic calming measures such as bulb outs and chicanes to slow traffic.



Example of Class III Sharrow Being Installed[5]

Separated Bikeway (Class IV)

Class IV separated bikeways, also known as cycle tracks, are on-street facilities that are physically separated from motor vehicle traffic with vertical barriers, such as bollards, landscaping, raised medians, or parking aisles. Separated bikeways provide extra separation between people riding bicycles and moving vehicles. Separated bikeways are recommended on high-volume, high-speed roadways. Palmdale currently does not have Class IV bicycle routes.



Example of Class IV Bike Lane in San Diego[7]



People Riding Bikes

6. "Bike Lanes" by Bike East Bay, licensed under CC BY 2.0
7. "Bike Lane on 4th Ave" by RL0919 licensed under CC BY-SA 4.0

Proposed Bicycle Network

Most proposed bicycle facilities are recommended on Crosstown streets, like Avenue R and Avenue S, to provide people on bicycles with easy connectivity to community destinations. Crosstown streets see some of the highest speed limits within Palmdale, so it will be necessary for bicycle facilities to be designed beyond the minimum standard for Class II bicycle lanes. Like Regional streets, Crosstown streets are also adjacent to residential and commercial land uses, and where many severe and fatal bicycle- and pedestrian-involved collisions have occurred in the past. Improvements may include updated signal timing to prioritize people biking, striped lanes, buffers, and vertically separated facilities are critical to support a safe and inviting environment for bicyclists.

Bicycle facilities on Regional Streets, which in some cases overlap with designated truck routes as seen on Sierra Highway and 47th Street East, must be designed with maximum separation from vehicles as these are higher-volume, high-speed streets, and Class I or Class IV facilities are most appropriate on these streets. This can be achieved with physical buffers or grade separation. In some cases, dirt paths abutting vacant land along streets like 10th Street West can be upgraded to support Class I paths.

Bicycle facilities are also recommended on all Connector streets, such as 25th Street East and Avenue R-8, to connect residential neighborhoods with local activity centers found on Crosstown and Regional streets. Where existing right-of-way allows, facilities on Connector streets should be buffered bicycle lanes or standard Class II bicycle lanes. Sharrows should be reserved only for low-volume, low-speed roadways and are most appropriate on Neighborhood streets with traffic calming treatments.



Example of Class IV Bike Lane in New Orleans[8]



Class I Bike Lane in Palmdale

8. "Protected Bike Lane" by Bart Everson, licensed under CC BY 2.0

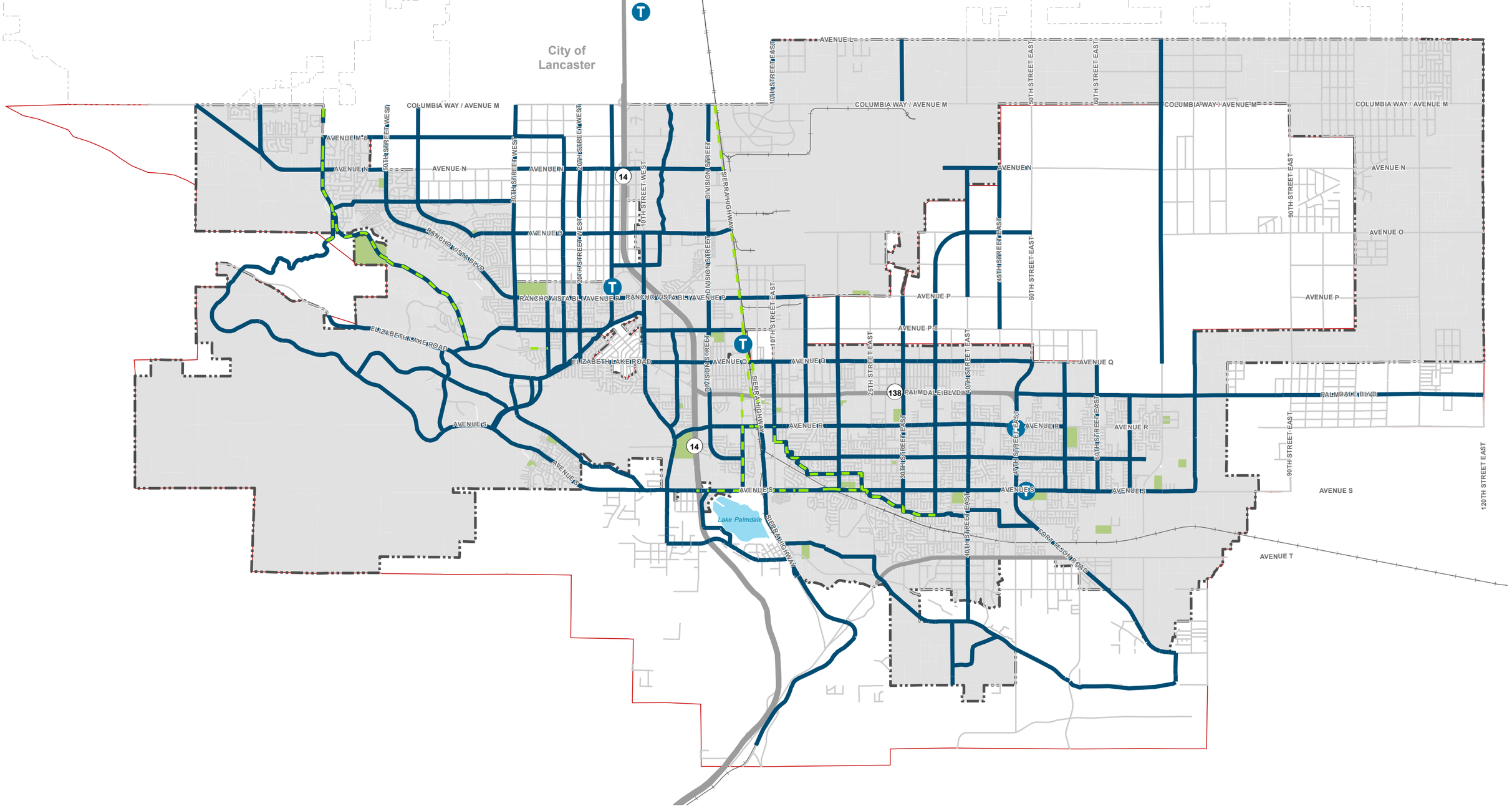


Figure 6.11

Existing and Planned Bicycle Network Map

- City Boundary
- Sphere of Influence
- Major Arterials
- Major Highway/Arterial
- Railroad
- Transit Center
- California Aqueduct
- Water Body
- Park
- Existing Bikeways
- Proposed Bikeways

Data Sources: City of Palmdale GIS data; World Terrain Base, 2015 ESRI, USGS, NOAA.

Produced by Nelson\Nygaard
March 2019

City of Lancaster
COLUMBIA WAY / AVENUE M
AVENUE M-8
AVENUE N
AVENUE O
AVENUE P
AVENUE P-8
AVENUE Q
AVENUE R
AVENUE S
AVENUE L
AVENUE T
60TH STREET WEST
30TH STREET WEST
20TH STREET WEST
10TH STREET WEST
10TH STREET EAST
30TH STREET EAST
40TH STREET EAST
45TH STREET EAST
50TH STREET EAST
60TH STREET EAST
90TH STREET EAST
120TH STREET EAST
DIVISION STREET
SIERRA HIGHWAY
RANCHO VISTA BLVD
RANCHO VISTA BL / AVENUE P
ELIZABETH LAKE ROAD
PALMDALE BLVD
FORT TEJON ROAD
Lake Palmdale
14
138

Figure 6.12

Existing and Planned Transit Network Map

- City Boundary
- Sphere of Influence
- Major Arterials
- Major Highway/Arterial
- Railroad
- Transit Center
- California Aqueduct
- Water Body
- Park
- Proposed High Frequency Transit Corridors
- Existing Lower Frequency AVTA Routes (>30 min)
- Existing AVTA Microtransit Ride Service Area

0 0.75 1.5 2.25 3 Miles

0 3,000 6,000 Feet

Data Sources: City of Palmdale GIS data; World Terrain Base, 2015 ESRI, USGS, NOAA.

Produced by Nelson\Nygaard
March 2019

Transit Service

Public transit plays an increasingly important role in the transportation network in Palmdale. Future improvements to the transit network build from existing higher-frequency transit routes. Proposed improvements also align with expected changes in land use and increased investment in local transit centers, rail stations, transit-oriented development (TOD) priority areas, and regional high-capacity transit.



Palmdale Transportation Center

Existing AVTA transit routes and the planned priority transit network are illustrated on Figure 6.12. These include lower frequency transit routes and proposed high frequency transit corridors, which are primarily located on Crosstown streets and currently support higher frequency transit service (30-minute headways or less). Proposed high frequency transit corridors are concentrated in the city's core to emphasize the need for targeted investments for local-serving transit. It includes streets abutting future commercial and residential developments where demand for high frequency transit service is expected—these include streets like Avenue Q west of 10th Street East, Avenue R, Avenue S and 40th Street East.



AVTA Bus

Improvements should increase the frequency of existing service and extend frequent service where feasible. Improvements may include the installation of transit priority lanes, transit signal priority and queue jumps, enhanced transit stop amenities and station area improvements, or other transit speed and reliability treatments. Some segments are not currently served by AVTA but are extensions of corridors with transit service. The City should work with AVTA to adjust and increase service on these corridors to align with future development.

Transit agencies are leveraging the technology of ride-hailing platforms to provide on-demand transit services known as microtransit. Microtransit has the potential to fill gaps in existing transit networks by creating dynamic and flexible on-demand service to accommodate passengers taking short trips. Transit agencies often integrate microtransit services within the existing fixed-route network where rail or traditional fixed-route service may not be efficient to allow passengers to seamlessly transfer between various mobility services. Riders can use a mobile app or website to schedule and pay for trips.



Passenger Boarding AVTA Micro Transit Service

Launched in September 2020, AVTA's On-Request Microtransit Ride Service Pilot Program offers an on-request ride service that connects passengers to and from the rural communities of Lake Los Angeles, Pearblossom, Littlerock, and Sun Village with the rest of AVTA's local transit system. Fares for this service are the same as AVTA's local transit system. Microtransit ridership gradually increased between September 2020 to June 2021 during the pilot. Where feasible, supplementary on-demand transit services may be considered to better connect neighborhoods on the eastern and western fringes of the city to the larger AVTA system.

Truck

The Mobility Element identifies designated truck routes to accommodate the regional circulation needs of large trucks, while discouraging truck travel through residential areas, and avoiding cut through traffic by trucks passing Palmdale. The designated truck route network is illustrated in Figure 6.13. Restrictions on truck access would not apply to small delivery vehicles. Should the City need to adjust, add, or remove a designated truck route to accommodate future land use changes, the California Vehicle Code provides a legal framework to establish, enforce, and revise truck routes within local jurisdictions. It also grants authority to cities to prohibit trucks on other streets through ordinance or within a General Plan update. Where feasible, local commercial deliveries should be encouraged to take the shortest route possible from a designated truck route and utilize off-peak travel hours.

Vehicles that weigh more than the 10,000-pound threshold must use the following truck routes:

- 10th Street West from Rancho Vista Blvd / Avenue P to Columbia Way (Avenue M)
- Sierra Highway from SR-14 to Columbia Way (Avenue M)
- 50th Street East from Palmdale Boulevard to Avenue L
- Columbia Way (Avenue M) from 70th St West to 90th Street East
- Rancho Vista Blvd / Avenue P from 10th Street West to 90th Street East
- City Ranch Road, Rayburn Road, and Avenue R from the Palmdale ~~Dump~~ Landfill to Sierra Highway
- Avenue S from Tierra Subida Avenue to Sierra Highway
- Pearblossom Highway from Sierra Highway to Fort Tejon Road (State Route 138)
- Avenue T from Fort Tejon Road (State Route 138) to 90th Street East
- Palmdale Boulevard from SR-14 to 90th Street East
- SR-14 through city limits
- Tierra Subida Avenue from Avenue S to Rayburn Road
- Fort Tejon Road (State Route 138) from 75th Street East to 47th Street East
- 47th Street East (State Route 138) from Fort Tejon Road to Palmdale Blvd
- 90th Street East from Avenue T to Avenue L

Commercial vehicles can still use local streets when making deliveries or picking up goods from local businesses. Restrictions on truck access do not apply to small delivery vehicles.



Example Cargo Truck in Empty Lot

Performance Standards

Since adoption of the previous General Plan, Senate Bill 743 (SB 743), has shifted focus of transportation analysis under the California Environmental Quality Act (CEQA) statewide from level of service (LOS), as measured by roadway capacity and vehicle delay, to vehicle miles traveled (VMT). VMT provides an estimate of the amount and distance driven by vehicle to reach a destination.

SB 743 calls for the City of Palmdale to establish VMT-based thresholds of significance for CEQA analysis, which may be defined in transportation analysis guidelines. SB 743 does not preclude using LOS for local traffic operations analysis, but LOS may no longer be used as a metric for evaluating a project's potential transportation impacts under CEQA. Local transportation analysis guidelines can define development review requirements and transportation analysis to support planned growth and address traffic operations needs while prioritizing safety and comfort for people walking, biking, and taking transit. These guidelines may identify different expectations for intersection delays and corridor travel times within areas that include mixed-use and commercial development, and on corridors that are part of the LA County Congestion Management Program (CMP) network.

City of Lancaster
COLUMBIA WAY / AVENUE M
AVENUE L
AVENUE M-8
AVENUE N
AVENUE O
AVENUE P
AVENUE P-8
AVENUE Q
AVENUE R
AVENUE S
AVENUE T
RANCHO VISTA BLVD
RANCHO VISTA BL / AVENUE P
ELIZABETH LAKE ROAD
PALMDALE BLVD
Lake Palmdale
FORT TEJON ROAD
SIERRA HIGHWAY
DIVISION STREET
50TH STREET WEST
30TH STREET WEST
20TH STREET WEST
10TH STREET WEST
10TH STREET EAST
20TH STREET EAST
25TH STREET EAST
30TH STREET EAST
40TH STREET EAST
45TH STREET EAST
47TH STREET EAST
60TH STREET EAST
90TH STREET EAST
120TH STREET EAST
14
138

Figure 6.13

Designated Truck Route Network

- City Boundary
- Sphere of Influence
- Major Arterials
- Major Highway/Arterial
- Railroad
- Transit Center
- California Aqueduct
- Water Body
- Park
- Truck Routes

0 0.75 1.5 2.25 3 Miles

0 3,100 6,200 Feet

Data Sources: City of Palmdale GIS data; World Terrain Base, 2015 ESRI, USGS, NOAA.

Produced by Nelson\Nygaard
March 2019

This page intentionally left blank.

Desired Outcomes, Indicators, and Targets

The following desired outcomes and metrics were identified to help the City of Palmdale track progress toward creating a safer and more accessible transportation system. This process follows the City of Palmdale's General Plan Vision and Guiding Principles document which was informed by the General Plan Advisory Committee (GPAC), the Planning Commission and City Council.

Top Key Outcomes

OUTCOME: Reduce severe injuries and fatal collisions on the City's roadway network

KPI's:
- Annual severe injuries and fatalities for people walking, riding bikes, and in vehicles using Statewide Integrated Traffic Records System (SWITRS)
- Number of intersections and number of miles of the future high injury network that are redesigned to improve safety

TARGET:
- **Downward trend of severe injuries and fatal collisions**

OUTCOME: Reduce vehicle miles traveled (VMT) per capita and per employee

KPI's:
- Percentage decrease in VMT per capita

TARGETS:

- **Decrease average distance or frequency of home-based drive-alone trips**

KPI:
- Percentage decrease in VMT per employee

TARGET:
- **Decrease average distance or frequency of commute and work-based drive-alone trips**

OUTCOME: More equitable and reliable access to public amenities, services, and opportunities

KPI:
- Percentage of residents within a 20-minute walk/or bike ride of a park, recreation center, or multi-use trail

TARGET:
- **Upward trend of residents with access to parks and recreation without a vehicle**

KPI's:
- Percentage of residents within a 15-minute transit ride of a grocery store
- Percentage of residents within a 15-minute transit ride of essential social services

TARGET:
- **Upward trend of residents with access to neighborhood commercial areas without a vehicle**

KPI:
- Percentage of K-12 and College students who walk, ride, or roll to school

TARGET:
- **Upward trend of students with active transportation access to school**

OUTCOME: Increase share of trips in the city made by walking, biking, transit, and shared rides

KPI's:
- Average daily transit boardings

TARGETS:

- **Upward trend in average daily transit ridership**

KPI:
- Percentage of people who walk, ride, or roll to school or work

TARGET:
- **Upward trend in active transportation trips**

KPI:
- Percentage of commuters who drive alone

TARGET:
- **Downward trend in drive-alone commute mode share**

OUTCOME: Increase quality of life and economic competitiveness

KPI's:
- Average commute time

TARGET:

- **Downward trend in average commute time**

KPI:
- Percent reduction in GHG emissions

TARGET:
- **Upward trend in local Air Quality Index**

Goals and Policies

The following section includes goals and policies for the Circulation and Mobility Element. Goals and policies are followed by implementation actions. Policies related to circulation and mobility are woven throughout the General Plan, including in the Land Use and Community Design Element, Equitable and Healthy Communities Element, and Public Facilities, Services, and Infrastructure Element, among others.

CIRCULATION AND MOBILITY

Goal TM-1

Build and maintain a transportation system that is safe and comfortable for travelers of all modes regardless of age or ability.

TM-1.1 Roadway design. Design and maintain the public right-of-way through a complete streets approach that facilitates safe, comfortable, and efficient travel for all roadway users.

TM-1.2 Modal conflicts. Use a systemic safety approach to proactively identify opportunities to improve safety where conflicts between users exist.

TM-1.3 Network gaps. Identify and program mitigation measures for gaps and deficiencies in the transportation system to accommodate each major transportation mode.

TM-1.4 Speed management. Include speed reducing elements along local and connector roadways and within all new private development projects.

TM-1.5 Railroad crossings. Implement grade separation at railroad crossings where feasible.

Goal TM-2
Build and maintain a transportation system that accommodates future growth and maintains transportation networks for all modes.

TM-2.1 Roadway classification. Classify streets based on their modal purpose and land use context.

TM-2.2 Multimodal travel. Prioritize safety, operations, and comfort for active and transit modes on streets that have been identified as part of the multimodal network.

TM-2.3 Intersection Design. Prioritize safety and mobility for non-motorized modes in all intersection designs.

TM-2.4 Network connectivity. Prioritize multimodal infrastructure that connects existing development with future infill development areas (i.e., gap closure projects).

TM-2.5 Multimodal comfort. Prioritize quality of multimodal facilities with respect to a user's experience of stress, connectivity, and safety for streets with a non-automobile priority, and ensure the appropriate balance with vehicular operations.

TM-2.6 Managing truck travel. Review the truck route network periodically and update as necessary to minimize impacts on residential neighborhoods while accommodating needs of commercial/industrial uses.

TM-2.7 Travel demand forecasting. Develop and maintain a traffic demand model based upon the designated network, using existing and projected levels to inform land use decisions.

TM-2.8 Growth management. Ensure that the cumulative and regional impacts of new development on the circulation system are mitigated to the extent feasible, concurrent with development. Concurrent shall mean that required facilities are installed as needed during various stages of development.

Goal TM-3

Build and maintain a transportation system that provides affordable, equitable, and efficient access to employment centers and essential services.

TM-3.1 Transit reliability. Make public transit a convenient and reliable option for daily trip making on a local and regional basis.

TM-3.2 Transit access. Encourage investments and Capital Projects that reduce first/last-mile barriers to transit stops.

TM-3.3 Access to employment. Encourage investments and Capital Projects that improve the safety and multimodal options for access to high quality jobs.

TM-3.4 Transit coordination. Work with AVTA to enhance the deployment of fixed-route and flex-route transit services, including increased frequency and service spans.

TM-3.5 Regional rail. Work with Metrolink to increase the frequency of on-peak services and later service hours.

TM-3.6 Transit information. Work with transit providers to improve the delivery of transit service availability and real-time information in an easy, dependable, and accessible means.

TM-3.7 Commute trip reduction. Work with large employers to implement programs that expand access to non-drive alone commute options for all commuters, including hourly staff and contract workers.

TM-3.8 Multimodal Station. Maximize access to downtown via transit and other modes through the Palmdale Transportation Center and future relocation to accommodate a station for high-speed rail.

Goal TM-4

Build and maintain a transportation system that enhances quality of life and public health.

TM-4.1 Access to essential services. Prioritize investments that improve access to healthcare and social services.

TM-4.2 Access to healthy foods. Improve mobility in neighborhoods with limited access to healthy food sources.

TM-4.3 Access to parks and open space. Prioritize investments that expand access to Palmdale's parks and trails and support physical activity.

TM-4.4 Neighborhood streets. Create neighborhood streets that unify neighborhoods, reduce vehicle speeds, reduce barriers for people walking, biking, and riding transit, and provide connectivity to connector and regional routes.

TM-4.5 Active friendly design. Design multimodal facilities to a standard that will increase physical activity.

TM-4.6 Lighting. Provide human scale lighting along pedestrian thoroughfares, in commercial districts, on trails, and at transit stops.

Goal TM-5

Build and maintain a transportation system that fosters a more active and vibrant downtown.

TM-5.1 Public space. Encourage wider sidewalks and plazas on downtown streets to enhance placemaking, improve public safety, and support local businesses.

TM-5.2 Parking supply. Promote and support creative and flexible approaches to parking, including maximizing use of existing public supply and sharing between uses to create a "park once environment."

TM-5.3 Walkability. Enhance the safety and comfort of existing pedestrian street crossings and reduce the distance between crossings.

TM-5.4 Streetscaping. Implement streetscape design that improves the pedestrian environment and appearance of downtown corridors.

TM-5.5 Secure bicycle parking. Install secure short- and long-term bicycle parking near key destinations, civic buildings, and transit facilities.

TM-5.6 Reduced parking minimums. Study reducing minimum on-site parking requirements for new development in districts of the City that can support shared parking between land uses and achieve parking demand reductions through transit and multimodal improvements.

TM-5.7 Compact development. Encourage the development of a healthy mix of land uses within proximity to promote internal capture, shared-parking, and de-emphasize the need for single-occupant vehicular travel.

TM-5.8 Context sensitive development. Balance development intensity and roadway capacity.

Goal TM-6

Build and maintain a transportation system that leverages the City's natural setting and reduces impacts to the environment.

TM-6.1 Vehicle miles traveled. Prioritize transportation investments and strategies that create opportunities for residents to reduce Vehicle Miles Traveled.

TM-6.2 Multimodal development. Encourage the development of dense, mixed-use, pedestrian-oriented land uses that link affordable housing options to daily needs.

TM-6.3 Transportation demand management. Promote trip reduction strategies, including telecommuting, through land-use decisions and TDM programming strategies.

TM-6.4 Commute trip reduction. Require TDM Plans for major employers, as defined by the Air Quality Management District.

TM-6.5 Landscaping. Incorporate appropriate landscaping elements as part of roadway projects.

Goal TM-7

Proactively prepare for the future, ensuring that implementation of transportation innovations and regional projects align with the City's vision.

TM-7.1 Emerging mobility. Support new and emerging mobility innovations that are focused on improving equitable distribution of mobility services.

TM-7.2 New roadway standards. Develop roadway standards that allow for emerging technologies and practices in the transportation industry to be incorporated in the future with minimal conflict.

TM-7.3 Interagency coordination. Coordinate with regional and State agencies to best leverage future roadway, rail, and aviation projects and funding opportunities for the benefit of Palmdale residents and businesses.

TM-7.4 Mobility partnerships. Seek strategic partnerships to pilot shared and emerging mobility options that meet the needs of Palmdale residents, workers, and visitors.

TM-7.5 Curb management. Identify the highest and best use of curb space and repurpose as appropriate (i.e., on-street parking, pick-up, drop-off zones, outdoor dining, etc.).

TM-7.6 Futureproofing. Consider how new projects will accommodate emerging technologies like autonomous and connected vehicles.

TM-7.7 High-speed rail. Consider the location of a future California High Speed Rail station and right-of-way in long term planning efforts and investment prioritization.

TM-7.8 Local coordination. Coordinate with neighboring jurisdictions to enhance integration of mobility networks.

Goal TM-8

Maintain the purpose and need of the essential functions of the City's transportation system.

TM-8.1 Capital improvements. Improve the existing street network based upon Figure 6.2, through implementation of the Capital Improvement Program and through requirements placed upon new development approvals.

TM-8.2 Preservation. Implement mobility network illustrated in Figure 6.2 to protect existing neighborhoods and/or significant environmental resources, wherever feasible.

TM-8.3 Right-of-way. Ensure that right-of-way is reserved wherever possible to implement the mobility network illustrated inFigure 6.2.

TM-8.4 Private streets. Adopt standards for use of private streets and require assurance of long-term maintenance for all private streets constructed within the city.

TM-8.5 Residential development. Require residential developments to contribute toward City programs to reduce vehicle trips.

Implementation Actions

The table below identifies programs, policy updates, planning efforts, coordination efforts, and other actions that will help implement the General Plan's vision and policies. Programs are consistent with this chapter's goals and policies.

The table provides a description of each Implementation Action and lists the correlating policies. Each action also identifies a timeframe for implementation with Short-term representing a 1–3-year timeframe, Medium-term is 4-7 years, Long-term is 8+ years and Ongoing represents an action that the City should continue. Additionally, the table includes the City department that should function as the lead for implementing the actions.



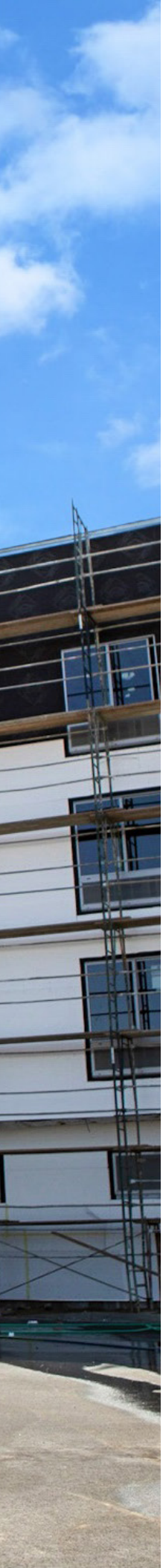
Correlating Goals	Description	Timeframe	Responsible Department
TM-1, TM-2, TM- 4	**Complete Streets Plan.** Revise the Draft Complete Streets Plan to be consistent with General Plan direction for adoption.	\	Economic and Community Development and Public Works
TM-1	**Bicycle Plan.** Revise the Draft Palmdale Bicycle Transportation Plan to be consistent with General Plan direction for adoption.	\	Economic and Community Development and Public Works
TM-1, TM-2, TM-4, TM-6, TM-7	**Complete Street Design Guidelines.** Develop street design guidelines to ensure that appropriate street types and design elements are implemented.	\	Economic and Community Development and Public Works
TM-1, TM-2, TM-4	**Safe Routes Plan.** Revise the Safe Routes to School Plan to be consistent with General Plan direction and provide additional strategies for safe and comfortable access of vulnerable travelers including consideration of Seniors in collaboration with relevant advocacy and expert groups.	\\	Economic and Community Development and Public Works
TM-1, TM-2, TM-5	**Vision Zero Policy.** Develop and adopt a Vision Zero policy and action plan that seeks to eliminate traffic fatalities and severe injuries across the transportation network.	\\	Economic and Community Development and Public Works
TM-1, TM-2, TM- 5	**Local Road Safety Plan.** Complete and regularly update a Local Road Safety Plan (LRSP) that identifies a High Injury Network (HIN) and location-specific improvements.	\\\\	Economic and Community Development and Public Works

Correlating Goals	Description	Timeframe	Responsible Department
TM-1	**Safe Rail Crossings.** Work with ~~the~~ Union Pacific Railroad to increase surface street access across the railroad tracks while minimizing impacts on rail service.		Public Works and Union Pacific Railroad
TM-2, TM-6,	**TDM Program.** Establish a Travel Demand Management Program to identify programmatic and infrastructure solutions for traffic operations to balance vehicle delay and efficient travel via other modes.		~~Economic and Community Development and~~ Public Works
TM-2, TM-5, TM- 8	**Local transportation analysis guidelines for development.** Establish development review guidelines that define transportation analysis and site design requirements to address multimodal access needs, connections to the surrounding street and mobility network, and right-sizes the roadway to the context of the development and its surroundings. Local transportation analysis guidelines can address traffic operations and multimodal access questions outside of the environmental review process.		Economic and Community Development and Public Works
TM-2, TM-3, TM-6, TM-8	**Transportation management for large developments.** Establish transportation analysis guidelines, access management guidelines, and a local mobility impact mitigation program for large developments to construct or fund multimodal improvements, implement congestion management strategies, or contribute to ITS projects in correlation with traffic impact analysis. Transportation management guidelines and programs may be defined within the local transportation guidelines.		Economic and Community Development and Public Works
TM-2, TM-6, TM-8	**VMT-based transportation analysis policy and mitigations for environmental review.** Establish and adopt local thresholds of significance for transportation analysis within environmental review and develop a mitigation program to support an overall decrease in VMT. The VMT-based thresholds of significance and mitigations may be defined within the local transportation guidelines.		Economic and Community Development and Public Works
TM-1, TM-4, TM-5	**Neighborhood speed management.** Create and implement a neighborhood speed management program that deploys traffic calming measures that allow for human activation of residential streets		Economic and Community Development and Public Works

Correlating Goals	Description	Timeframe	Responsible Department
TM-5	**Al Fresco program.** Create a permanent program that reallocates excess public right-of-way and off-street parking for the use of local restaurants and cultural programming, building off the City's temporary Al Fresco program.		Economic and Community Development
TM-6, TM-7, TM-8	**Frontage improvement program.** Create a program that allows for development to phase frontage improvements for the current context and use while also being flexible to accommodate future growth without an additional cost to the City.		Public Works
TM-7	**Emerging mobility guideline.** Develop an emerging mobility guideline that explicitly addresses equitable access to resources and services and is not exclusive to specific service providers, as well as establishes a framework through which new technologies can be assessed and compared fairly.		Economic and Community Development and Public Works
TM-7	**Emerging mobility provider standards.** Develop comprehensive regulations and standards for shared and micromobility services that require distribution of data to the City upon request.		Economic and Community Development and Public Works
TM-7	**Passenger air service.** Engage with partners and key employers to bring scheduled passenger air service to Palmdale Regional Airport.		Economic and Community Development and LAWA, U.S. Airforce
TM-3, TM-7	**Regional expressways.** Engage with partners on the feasibility and future construction of the High Desert Corridor (HDC).		Economic and Community Development, Caltrans, Metro and Public Works
TM-8	**Private street standards.** Develop standards for use of private streets, where appropriate; private streets, other than driveways and alleyways typically associated with multi-family development, should be constructed to City standards for public rights-of-way, and should be used only for gated communities.		Public Works



Construction of Hotel in Palmdale



Chapter 7

Economic Development

The purpose of the Economic Development Element is to establish policies essential to the economic success of the City of Palmdale and its residents. This Element provides policy direction and metrics to grow and diversify the City's economy and promote fiscal sustainability by attracting new businesses and residents, retaining, and nurturing existing industries, and expanding workforce development opportunities. Topics addressed in this chapter include jobs and workforce development, housing and community amenities, transportation and infrastructure investment and fiscal health.

Statutory Requirements

The State of California does not require a city's General Plan to include an Economic Development Element, however this chapter is consistent with Section 65503 of the State of California Government Code that allows jurisdictions to adopt additional elements that relate to economic development.



US Tool Group is a local supply and manufacturing business in Palmdale.

Relevant Plans & Documents

City of Palmdale Strategic Plan (2019/2020):

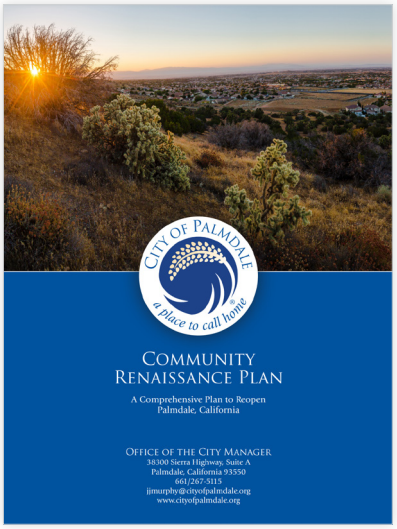
The Strategic Plan provides a guiding vision and principles for the health and well-being of the City's assets and resident's experiences. Key focus areas include public safety, fiscal health, infrastructure, and community culture. In 2020, the City adapted the Strategic Plan as the Renaissance Plan to address the COVID-19 pandemic and its impact on City resources and residents through providing more specific objectives that directly combat the negative effects of the pandemic in the community and maximizing the efficiencies around City service delivery.

Ten-year Capital Improvement Plan:

The City of Palmdale's Ten-Year Capital Improvement Plan (CIP) identifies proposed capital projects that advance the goals and policies of the elements in the General Plan. The CIP is updated annually.

Palmdale Transit Area Specific Plan (October 2020):

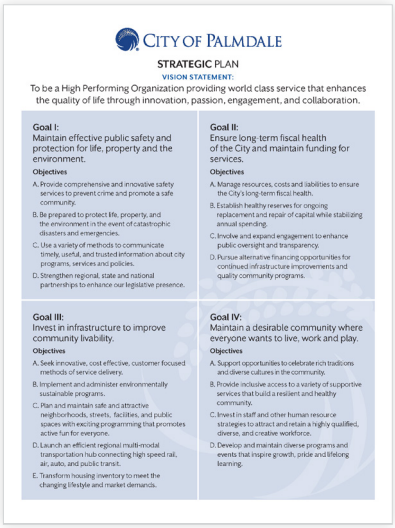
This specific plan outlines the City's vision for the area around the future multi-modal high speed rail station which capitalizes on the future arrival of high-speed rail to Palmdale. The plan details zoning, infrastructure improvements, and urban design guidelines around the future multimodal station.



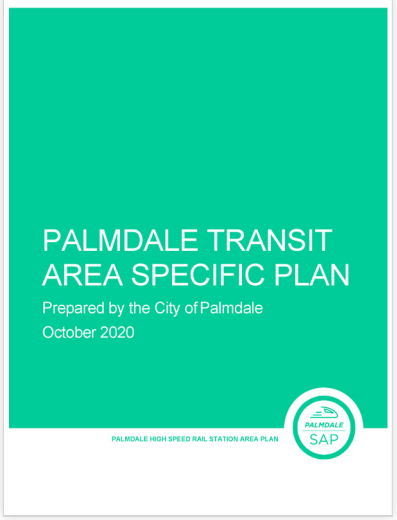
Palmdale Community Renaissance Plan



Ten-year Capital Improvement Plan



Palmdale Strategic Plan (2019/2022)

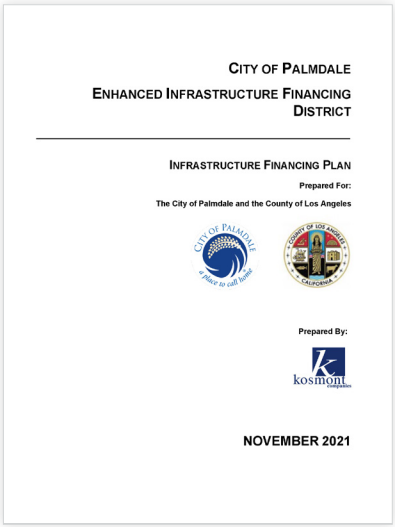


Transit Area Specific Plan (October 2020)

Relevant Plans & Documents

Palmdale EIFD Infrastructure Financing Plan (November 2021):

The City of Palmdale, in partnership with the County of Los Angeles, has established an Enhanced Infrastructure Financing District (EIFD) in boundaries of the City of Palmdale and unincorporated Los Angeles County. The purpose of this district is to create a funding mechanism that can facilitate the construction of public infrastructure improvements in this area. A portion of the property tax increment that the City of Palmdale and the County of Los Angeles receive would be specifically restricted to pay for the infrastructure projects listed in the Infrastructure Financing Plan (IFP) at an estimated $177606 million ~~be dedicated to the Palmdale EIFD over a 50-year period~~.These investments will spur new job creation, unlock new housing development, and support regional and local transportation projects benefiting Palmdale residents and businesses alike.


CITY OF PALMDALE

ENHANCED INFRASTRUCTURE FINANCING DISTRICT

INFRASTRUCTURE FINANCING PLAN

Prepared For:

The City of Palmdale and the County of Los Angeles

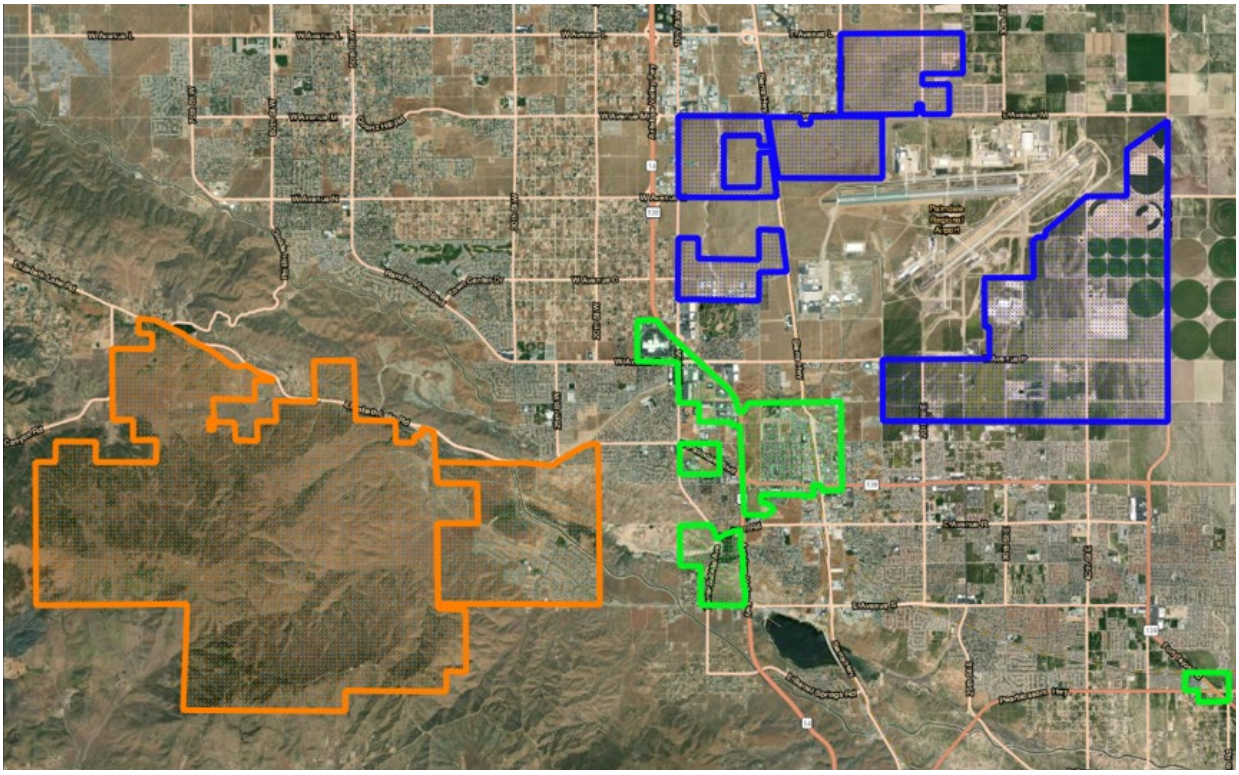
Prepared By:

kosmont

NOVEMBER 2021

EIFD Infrastructure Financing Plan

Figure 7.1 EIFD Proposed Districts (2021)



Area A: Aerospace Corridor
Area B: Palmdale Commercial Centers
Area C: Las Colinas

Existing Context

Demographic trends are used as indicators to help predict future growth patterns and identify opportunities and challenges for cities. This section provides a brief overview of the City of Palmdale's demographic profile and highlights areas of opportunity and challenges for the City and its residents moving forward. Please note that the demographic and economic data reflect pre-COVID trends and does not analyze the impacts of COVID-19.

Population Growth

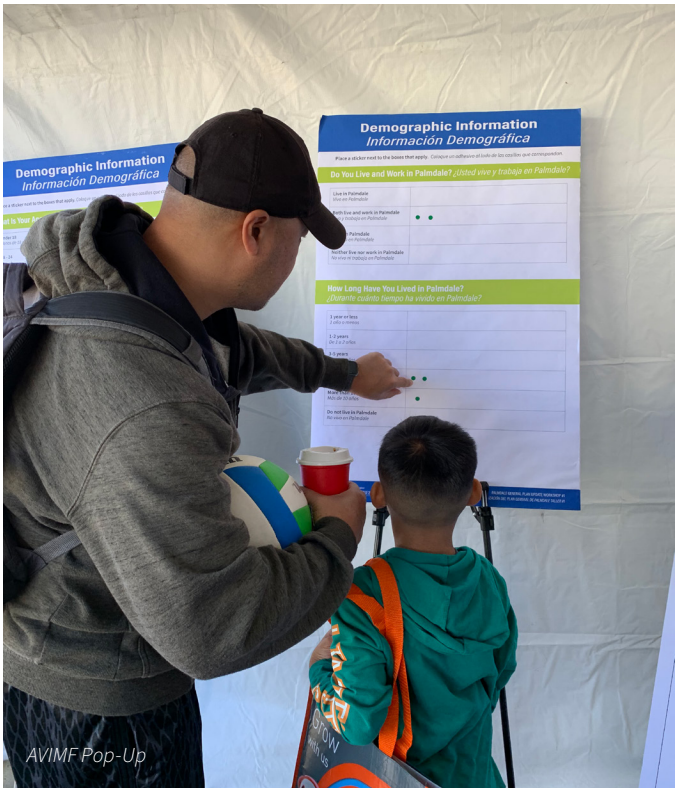
The City of Palmdale outpaced Los Angeles (L.A.) County in growth over the last two decades. Palmdale's population grew 1.5 percent annually between 1998-2018 as compared to 0.5 percent in L.A. County, also contributing to a 1.1 percent increase in household growth. However, Palmdale's growth has been markedly slower since the Great Recession, increasing only 4 percent overall growth between 2010-2018 as compared to 32 percent between 2000-2010. The Southern California Association of Governments (SCAG) projects Palmdale to continue outpacing L.A. County population growth, though at a slower rate than historical trends at 1.0 percent per annum. Additionally, SCAG projects household growth (35%) will outpace population growth (26%) by 2040, suggesting household size will decrease.

Demographic Characteristics

Palmdale's population is relatively young, with a median age of 31.3 compared to 36 years for L.A. County and has more family households with children under the age of 18. Though the age population distribution differs from L.A. County, Palmdale has a similar racial and ethnic makeup to the County. Approximately 54 percent of Palmdale's population identifies as Hispanic or Latino of any race with 27 percent White residents and 11 percent Black residents. However, Palmdale's Asian population differs slightly from L.A. County with only 3 percent Asian residents as compared to 13 percent in the County.

Households in Palmdale have a lower median income than households in L.A. County. Palmdale's median household income is $56,700 as compared to $61,015 for L.A. County overall. The City also has a higher percentage of middle-income earning residents with 32 percent of residents making between $50,000 and $99,999 annually, compared to only 28 percent in L.A. County. Though there is a large population of middle-income residents in the City, income is not distributed evenly across racial and ethnic groups. White and Asian households – who make up only 30 percent of the City's total population – have a median household income of $83,000 and $74,150, respectively. While Hispanic/Latino and Black residents have median household incomes of $54,480 and $53,700, respectively.

In summary, the above socio-demographic data provides more context for the economic opportunities and challenges highlighted in the next section that inform the economic development goals and policies at the end of this chapter.



AVIMF Pop-Up

Opportunities and Challenges

The following section builds on socio-demographic data, economic and development trends, and fiscal health data to highlight economic opportunities and challenges that will impact the City's economy and residents moving forward.

Housing

Lower housing costs have supported homeownership in the City, yet the limited development of new housing units, particularly multi-family units, has led to a lack of housing diversity.

Palmdale has a long history of lower-cost housing, as compared to the Los Angeles basin, which is affordable to middle class households. As of November 2021, the median sale price for a single-family home in Palmdale ($475,000) was 82 percent lower than the median sale price in L.A. County ($865,000), making Palmdale and the Antelope Valley one of the last areas in L.A. County where a household making the median wage can afford to purchase a home. Consequently, homeownership is higher than elsewhere in L.A. County with 64 percent of Palmdale households living in owner-occupied units as compared to 46 percent county wide.

Historically, the relative affordability of single-family homes has meant that developers have not invested in other housing types. Today, only 15 percent of housing units are multifamily and townhome options, compared to 49 percent county wide, with most new multifamily units being largely restricted to subsidized affordable products. This lack of housing diversity limits the appeal of Palmdale for certain workers in the aerospace and other manufacturing industries, seeking market rate multifamily options.



Courson Arts Apartments



Aeriel View of Palmdale Neighborhoods

Jobs and Workforce

The Manufacturing sector remains the top sector, however there is a need for more diverse job options that better connect with resident's skills.

Palmdale continues to attract employers that support jobs for middle income households in the City. Notably, a greater share of Palmdale residents is middle-income compared to L.A. County, with 32 percent making between $50,000 and $99,999 annually compared to 28 percent for the County. A main contributor to middle and higher paying jobs in the City is largely due to the presence of a strong manufacturing sector mostly represented by aerospace manufacturers. Employment in the City relies heavily on the manufacturing sector representing 23.5% of total jobs followed by retail trade & accommodations (18%) and healthcare (16%).[3] This poses a risk to the City's economy as the manufacturing sector is fueled by government defense contracts that are more vulnerable to the political climate and Federal policy decisions.

3. Data Source: OnTheMap, 2019

More diverse job options will protect Palmdale's economy from cyclical economic shocks and provide more options for residents that are commuting outside the City for job opportunities. Today, 86 percent of Palmdale residents work outside the City of Palmdale[4], suggesting a mismatch between residents' skills and jobs available. In addition, Palmdale's jobs to housing ratio is significantly lower than L.A. County with only 0.56 jobs per household, compared to 1.11 for the County. Bringing more diverse job options to Palmdale will support job opportunities for residents who are currently commuting outside the City to make a living. There are opportunities to attract firms that are part of the supply chain of existing industries, such as suppliers and manufacturers for the aerospace and defense industries, as well as regional firms in the fastest growing industries that require new land for expansion, such as film production and post-production.

Attraction of film, media and entertainment uses, particularly sound stages and post-production facilities, which are a City priority, are less likely to be an outcome of speculative real estate development in the near term, but a function of targeted business attraction, local incentives and clear articulation of Palmdale's value proposition and long history of location-based film production.

The "Studio Zone" or "Thirty Mile Zone (TMZ)" refers to the areas within a 30-mile radius of the intersection of West Beverly Boulevard and North La Cienega Boulevard in Los Angeles. An additional "Secondary Zone" extends 10 miles beyond the TMZ. These zones cover collective bargaining agreements with entertainment industry union workers. As illustrated in Figure 7.2, over half of the City of Palmdale falls within the Secondary Studio Zone. While Palmdale is located in the secondary 'Thirty Mile Zone' for film production, current labor and regulatory policies and relatively long travel time from central Los Angeles are challenges to overcome in the near term.

The City of Palmdale benefits from several location-based federal programs which can attract new employers to the City. The City of Palmdale's Foreign Trade Zone (Zone #191) encourages more international commerce, allowing companies to delay the payment of duty and federal excise taxes. Additionally, the City of Palmdale has six designated Federal Opportunity Zones (OZs) along Palmdale Boulevard, including around the future High-Speed Rail station. OZs allow investors to defer and reduce capital gains payments by investing in qualified real estate development and business expansion opportunities within an OZ.

Disconnect between residents' skills and available job opportunities in Palmdale remains a challenge due to lower educational attainment. Only 15 percent of Palmdale's residents have a bachelor's degree, which is lower than L.A. County's 31 percent. The high share of Palmdale residents with only a high school education does not effectively match the higher earning employment opportunities currently offered in Palmdale through aerospace manufacturing. Antelope Valley College and others continue to address this mismatch by providing resources to align resident's skills with employer needs through training programs and other vocational courses. The City of Palmdale also partners with America's Job Center of California, operated by JVS SoCal, to help employers and job seekers find the resources they need to match residents with the right positions. Additionally, attracting a 4-year university to the City will better optimize these current programs and resources, by supporting residents with more opportunities to attain a bachelor's degree to align with employer workforce needs.



Lockheed Martin Skunkworks


Local film crew

4. Data Source: OnTheMap

This page intentionally left blank.

City of Lancaster

COLUMBIA WAY / AVENUE M
AVENUE M-8
AVENUE N
AVENUE O
AVENUE P
AVENUE P-8
AVENUE Q
AVENUE R
AVENUE S
AVENUE T
60TH STREET WEST
50TH STREET WEST
30TH STREET WEST
20TH STREET WEST
10TH STREET WEST
10TH STREET EAST
20TH STREET EAST
30TH STREET EAST
50TH STREET EAST
60TH STREET EAST
45TH STREET EAST
90TH STREET EAST
120TH STREET EAST
40TH STREET EAST
25TH STREET EAST
47TH STREET EAST
5TH STREET WEST
DIVISION STREET
SIERRA HIGHWAY
TOWN CENTER DRIVE
RANCHO VISTA BLVD
RANCHO VISTA BL / AVENUE P
TECHNOLOGY DRIVE
ELIZABETH LAKE ROAD
RANCH CENTER DRIVE
BRIDGE ROAD
TIERRA SUBIDA AVENUE
PALMDALE BLVD
PEARBLOSSOM HIGHWAY
FORT TEJON ROAD
14
138
Lake Palmdale
Little Rock Reservoir

Figure 7.2

Studio Film Zones

- City Boundary
- Sphere of Influence
- Major Arterials
- Highway
- Railroad
- 30-Mile Studio Zone
- Secondary Studio Zone

0 1.25 2.5 5 Miles

0 2,500 5,000 10,000 Feet

Data Sources: Urban Footprint, City of Palmdale GIS Data, World Terrain Base, 2015 Esri, USGS, NOAA

Produced by Raimi + Associates
April 2022

This page intentionally left blank.

Regional Connectivity

Palmdale's current transportation options are dependable and will be complemented by proposed rail and air infrastructure projects.

Palmdale is connected through several transportation options to nearby cities in the Antelope Valley region and to other parts of Los Angeles County. SR-14 is the main state highway connecting residents, workers, and goods to the Antelope Valley and destinations beyond. Beyond road traffic, residents and workers have access to the Antelope Valley Transit Authority (AVTA) Commuter and Bus Service, ~~Amtrak,~~ and Metrolink, all of which are easily accessible at the Palmdale Transportation Center.

Proposed improvements include the California High-Speed Rail, which would include a new multi-modal station in the future Downtown Area. The proposed station will bring both economic and community benefits to Palmdale residents and workers as a catalyst for new economic investments. The future multi-modal High-Speed rail station will also provide connection to Las Vegas through the Brightline West rail. In addition to California High-Speed rail investments, the City is also actively exploring options for commercial ~~passenger operations~~ adjacent to Plant 42. This will connect residents and workers with other regional airports and hubs for work and leisure.

Development

Palmdale has large amounts of undeveloped and underdeveloped land available for development, but a lack of infrastructure, low market rents and sales prices limit short-term development feasibility of many uses.

One of Palmdale's greatest assets is the availability of raw land for development. Per the Land Use Existing Conditions Report, there is over 66,000 acres of vacant land in Palmdale representing 62 percent of the City's land area. This contrasts sharply to the built-out remainder of Los Angeles County, offering space to accommodate future employment and residential growth for the region.

However, there are several barriers to development in the City. In many cases, the achievable rents or sales prices, which are lower than the Los Angeles Basin, are not high enough to justify new construction; while land is cheaper, the cost of materials and labor are similar county wide. This is true for many uses including most housing typologies. Single family home construction demonstrates this fact with little new construction taking place since the Great Recession in 2008. Sales prices initially declined by 45 percent post-recession and have only recently surpassed pre-Recession levels, compressing the profitability of new development. This has resulted in limited new housing production and slowing population growth. The recovery of single-family home prices should enable more widespread development going forward. Additionally, moderate appreciation of rents, from 2021 levels should render lower density multifamily, such as three-story garden-style rental apartments with surface parking, feasible in the near term. Further appreciation in rents combined with investments in amenities around the future downtown, could support even higher density residential development with midrise structures, over the mid to long term.

Additionally, much of the raw land in the City lacks horizontal infrastructure (utilities such as water, sewer, paved roads), creating high upfront costs to development. Lack of utilities and water infrastructure on industrial land has limited the growth of this type of use, which, despite vacancy rates below two percent, only added 120,000 square feet of new industrial space between 2010 and 2018. Nevertheless, the City and L.A. County recently passed resolutions in 2021 to jointly form an Enhanced Infrastructure Financing District (EIFD) to finance approximately $~~177150~~ million in infrastructure improvements around the City, which will help unlock the development potential of many vacant industrial parcels. Opportunities for capturing more light industrial development is high in the near term given the prevailing low vacancy and rents that could support new development. With the availability of land with high quality infrastructure and access to amenities, Palmdale can attract more Research and Development (R&D)/flex industrial uses in the mid to long term as rents appreciate and the City's competitive position is enhanced.

The Palmdale City Council recently approved an amendment to the municipal code to comply with the California Endangered Species Act, specifically related to the treatment of western Joshua trees. Future development will need to comply with these new regulations and guidelines, including additional permitting requirements and necessary coordination between the City and State in the case of relocation or removal of an onsite western Joshua tree.

For some uses, current market demand and regulatory forces are larger factors affecting future development in the City. Medical office is currently financially feasible given current construction costs and rents in the Antelope Valley, but a historically slow population growth after the Great Recession has slowed development. Anticipated residential growth will drive demand for new medical space in the future.

All land uses could see financial benefit from locating in one of the City's OZs if a project meets federal investment qualifications. When paired with other efforts, such as administrative and regulatory changes to zoning approvals and infrastructure investment, this program can meaningfully increase development feasibility.

In general, Palmdale is positioned to realize most development typologies envisioned in the General Plan as the Palmdale real estate market matures through 2045 and the City undertakes necessary infrastructure investments.

Fiscal Health

The City's fiscal health is strong, but there is a need to diversify the tax base to minimize the City's vulnerability to future economic shocks.

The City of Palmdale remains best in class among peer cities (Lancaster, Santa Clarita, and Victorville) in terms of overall fiscal health. Palmdale's revenue per capita ranks at the top across its peer cities though it has lower General Fund revenues, with only 50 percent of all revenue going toward this discretionary funding source. Like its peer cities, Palmdale is reliant on Property and Sales and Use Tax, which, as of 2018, had notably failed to fully recover to pre-recession highs prior to 2008. To minimize future fiscal shocks to the City's General Fund and recover from the COVID-19 pandemic, the City should seek to diversify the tax revenue base to include higher distributions of other tax revenue, such as increasing the Transient Occupancy Tax (TOT) and identifying opportunities to create more special assessment districts that dedicate funding streams for infrastructure maintenance.



Aerial View of Palmdale



Edwards Federal Credit Union Building

Desired Outcomes, Indicators, and Targets

The following desired outcomes and metrics were identified to help the City of Palmdale track progress toward creating a more diverse and equitable economy

Top Key Outcomes

OUTCOME: Foster a job market that sustains a high standard of living for workers with diverse skill sets

KPI:
- Distribution of jobs by industry sector[5]

TARGET:
- **Meet or exceed growth in new quality jobs relative to Los Angeles County**

OUTCOME: Create educational pathways for Palmdale residents to fully access future economic opportunities

KPI:
- Annual increase in percentage of residents with an Associate degree[6]

TARGET:
- **Increased number of residents completing at least an Associate degree comparable to County-wide levels**

OUTCOME: Build a downtown core in the City where residents and businesses can participate and celebrate in the City's economic prosperity

KPI:
- Number of completed units (office, retail and industrial) in the downtown core[7]

TARGET:
- **Advancement of development targets identified in the Palmdale Transit Area Specific Plan**

OUTCOME: Ensure that all residents and workers have access to safe and affordable housing

KPI:
- Percentage of affordable housing units that are multi-family[8]

TARGET:
- **Increased share of affordable multi-family units comparable to County-wide levels**

OUTCOME: Provide access to economic opportunities and resources for residents and workers through transportation options

KPI:
- Passenger ridership (local transit and flights)[9]

TARGET:
- **Increased number of residents using non-auto transportation modes comparable to County-wide levels**

OUTCOME: Promote a City environment that attracts and leverages new development to diversify the tax base

KPI:
- Distribution of tax revenue[10]

TARGET:
- **Increase (inflation adjusted) in per equivalent dwelling unit (EDU) revenues every five years; increase in per EDU share of non-sales tax revenues every year**

KPI = Key Performance Indicator

5. Data source: OnTheMap
6. Data source: Census American Community Survey
7. Data source: City of Palmdale Building Permits
8. Data source: Census American Community Survey
9. Data source: Various transit agencies (i.e., AVTA, Metrolink, LAWA)
10. Data source: City of Palmdale Comprehensive Financial Reports (CAFRs)

Goals and Policies

The following section includes goals and policies for the Economic Development Element based on the economic opportunities and challenges presented in the section above. The purpose of the goals and policies is to identify how the City can advance economic growth in the following areas

JOBS AND WORKFORCE

Goal ED-1

Preserve the existing economic base of high-quality jobs in the City.

ED-1.1 Attract manufacturing employers. Attract supply chain employers for the manufacturing and defense industries to strengthen Palmdale's economic viability and competitiveness within these sectors.

ED-1.2 Employee serving amenities. Encourage the development of business and employee serving amenities (i.e., retail, dining, hospitality) proximate to existing districts.

Goal ED-2

Attract diverse and high-quality job options that contribute to the City's economic growth by diversifying the economic base.

ED-2.1 Attract high growth industries. Target economic activities from high growth industries, including film, media and entertainment production, and clean technologies, to diversify Palmdale's economic base.

ED-2.2 Smart City technology. Maintain and enhance smart city technology in Palmdale to support local businesses and growth of telecommuting.

ED-2.3 Foreign Trade Zone. Position the existing Foreign Trade Zone designations to attract export-oriented employers.

Goal ED-3

Support the workforce pipeline to match residents with jobs through high-quality and accessible educational opportunities.

ED-3.1 Higher education. Promote and expand higher educational opportunities in Palmdale.

ED-3.2 Workforce training. Support additional trade school training and apprenticeship programs for key growth industries for youth and local workforce.

ED-3.3 Childcare and early education. Promote opportunities for affordable, high-quality childcare and workforce-related early education.

ED-3.4 Workforce programs. Expand partnerships and workforce programs with public schools, vocational schools, community colleges, and major employers within Palmdale.

ED-3.5 Job matching. Connect residents with job opportunities in aerospace and other emerging sectors.

HOUSING AND COMMUNITY OWNERSHIP

Goal ED-4

Activate a vibrant downtown that fosters a sense of local community and business ownership.

ED-4.1 Active downtown. Create a vibrant and active downtown environment, leveraging the Palmdale Transit Area Specific Plan to focus development.

ED-4.2 Community gathering. Leverage development to provide space for community gathering and events.

ED-4.3 Entertainment and retail. Increase opportunities for entertainment and/or shopping.

ED-4.4 Local business. Encourage and foster local businesses in Palmdale.

ED-4.5 Local businesses in downtown. Support local small businesses and legacy businesses to remain in or relocate to the downtown core.

Goal ED-5

Diversify housing options for residents at different stages of life and ability, to continue making Palmdale an affordable place to live.

ED-5.1 Affordable housing preservation. Encourage and preserve affordable housing for the residents of Palmdale.

ED-5.2 Supply and diversity of housing. Increase the supply and diversity of housing options to support different types of households including seniors, young adults, families, empty nesters, individuals or families with special needs, and multigenerational families.

ED-5.3 Transit-oriented development. Encourage transit-oriented development that meets community needs in the proposed downtown near the future multi-modal high speed rail station and at other transit nodes.

ED-5.4 Displacement. Address displacement issues due to redevelopment and large-scale capital projects.

ED-5.5 Assembly of parcels. Encourage assembly of small parcels via incentives to facilitate infill development.

ECONOMIC DEVELOPMENT AND INFRASTRUCTURE

Goal ED-6

Remain at the forefront of transportation innovations that connect residents and workers to the regional and national economy.

ED-6.1 Transportation investments. Support opportunities to bring more transportation investments such as a High-Speed rail station and opening commercial air services.

ED-6.2 Infrastructure investment. Prioritize infrastructure and development that unlocks economic investment around the City and increase usage of transportation facilities.

ED-6.3 Neighborhood transportation connections. Improve local transit and last mile connectivity between neighborhoods and regional transportation hubs/corridors.

Goal ED-7
Identify partnerships and resources to incentivize and implement sustainable development projects.

ED-7.1 Regional partnerships. Initiate and sustain multi-jurisdictional partnerships to leverage regional assets.

ED-7.2 Development review process. Encourage new development through simplifying the City's development review processes and exploring opportunities to create incentives for new development.

ED-7.3 Expand and diversify tax base. Expand tax base and analyze opportunities to diversify tax revenues to reduce the reliance on Sales and Use tax.

ED-7.4 Infrastructure financing. Explore and implement creative infrastructure financing and delivery mechanisms such as Public Private Partnerships and Community Benefit programs.

ED-7.5 Opportunity zone. Support the viability of the City's Opportunity Zones to expand existing businesses and attract new investment.

Implementation Actions

The table below identifies programs, policy updates, planning efforts, coordination efforts, and other actions that will help implement the General Plan's vision and policies. Programs are consistent with this chapter's goals and policies.

The table provides a description of each Implementation Action and lists the correlating policies. Each action also identifies a timeframe for implementation with Short-term representing a 1–3-year timeframe, Medium-term is 4-7 years, Long-term is 8+ years and Ongoing represents an action that the City should continue. Additionally, the table includes the City department that should function as the lead for implementing the actions.



Correlating Goals	Action	Timeframe	Responsible Department
All Goals	**City Economic Development and Planning Capacity.** Increase city staff capacity to advance economic development and planning policies and programs in Palmdale.	›››	Economic and Community Development
ED-1, ED-7	**Regional Partnerships.** Continue prioritization of multi-jurisdictional networks and partners, including the County of Los Angeles, LAEDC, and AV EDGE, to leverage regional support and assets that provide an economic development opportunity for the City. Key regional assets include Edwards Air Force Base, Mojave Air and Spaceport and Plant 42.	›››	Economic and Community Development
ED-1, ED-2	**Business Recruitment Strategy.** Create and implement a business recruitment strategy to attract employers in target industries that offer high quality jobs and diversify the job base, including firms that are in aerospace and defense supply chain, advanced manufacturing, and film production and post-production.	/	Economic and Community Development

Correlating Goals	Action	Timeframe	Responsible Department
ED-2	**Broadband Infrastructure.** Create and implement an internet master plan to collaborate with providers to achieve high quality broadband infrastructure for the community and to reduce the digital divide faced by small businesses and low-income residents. Palmdale can also market this infrastructure to attract businesses with high network demands, such as digital content creators		Public Works
ED-2	**Film Attraction Strategy.** Develop an overall strategy to attract more film production companies to Palmdale. This includes working with film-related business organizations and the Antelope Valley Film Office to recruit more sound stages and post-production companies, along with focusing on advocacy for labor rules that make the Antelope Valley more attractive for production and post-production work.		Economic and Community Development
ED-3	**Educational Coordination.** Continue collaborating with local schools and training facilities to create programs that support residents and workers seeking to continue their education beyond high school. This includes Antelope Valley Union High School District, Palmdale Aerospace Academy, and Antelope Valley College, including its corporate customized training programs, among others.		Economic and Community Development
ED-3	**Workforce Advisory Committee.** Convene a regular meeting with a committee of local educational and industry professionals to advise the City on workforce development challenges to inform workforce initiative strategies, vocational training programs and apprenticeships to train residents for local job opportunities.		City Manager's Office and Economic and Community Development
ED-3	**High-Quality Childcare.** Partner with local community organizations and schools to strategize potential opportunities to provide more affordable, high-quality childcare services for the local workforce.		Economic and Community Development
ED-3	**Jobs Postings.** Develop a job opportunities webpage to direct employers and residents to existing jobs resources, including the City's ongoing collaboration with organizations, such as Antelope Valley America's Job Centers of California, to provide a central space for local employers to promote job openings and connect with residents and workers.		Economic and Community Development

Correlating Goals	Action	Timeframe	Responsibility
ED-1, ED-4, ED-6	**Downtown Palmdale.** Implement the Palmdale Transit Area Specific Plan, including the recommended infrastructure, and approve development aligned with the plan's design guidelines.		Economic and Community Development and Public Works
ED-1, ED-2, ED-4, ED-7	**City Marketing Campaign.** Collaborate with Visit Palmdale and other partners to develop a marketing campaign the creates a city brand and markets Palmdale's unique advantages within the region using social media and traditional communication channels to attract businesses, tourism, and a wider diversity of residents.		Economic and Community Development
ED-1, ED-4, ED-4, ED-5, ED-7	**Development Regulations and Incentives.** Update development regulations and create incentives to encourage developers to deliver community amenities (e.g., community spaces, targeted retail, and entertainment offerings) and develop infill parcels.		Economic and Community Development
ED-5	**Explore locally controlled resources for affordable housing.** Advance a regional strategy to evaluate feasible tools and policies that create the opportunity for more affordable housing in Palmdale.		Economic and Community Development
ED-5, ED-7	**Zoning Regulations.** Update zoning regulations to streamline the entitlement process, align with market needs, and promote economic development goals to support all development including diverse housing types and mixed-use districts in transportation nodes.		Economic and Community Development
ED-5	**Anti-displacement Coordination.** Work with community-based organizations to understand the needs of businesses and residents impacted by new development and support the development of anti-displacement programs and policies.		Economic and Community Development
ED-5	**Commercial Air Service.** Coordinate with appropriate agencies and authorities to initiate commercial air services in Palmdale.		Economic and Community Development and City Manager's Office
ED-6	**Last Mile Infrastructure.** Improve bicycle and pedestrian infrastructure to increase transit access for residents and workers.		Economic and Community Development and Public Works

Correlating Goals	Action	Timeframe	Responsibility
ED-7	**Hotel Development.** Continue to approve new hotel developments to increase transient occupancy tax revenue.		Economic and Community Development
ED-7	**Assessment Districts.** Identify potential areas to create special assessment districts in the City to reduce the burden of financing infrastructure maintenance on the City's General Fund.		Economic and Community Development and Public Works
ED-2, ED-7	**EIFD Implementation.** Prioritize economic development projects under the newly formed EIFD that will maximize economic benefits for Palmdale residents and the City, such as expanding development opportunities within the City's Foreign Trade Zone and Opportunity Zones.		Economic and Community Development and Public Works
ED-2, ED-7	**Opportunity Zone Strategy.** Develop a strategy to attract investor developer interest to the City's Opportunity Zones, which may include regulatory or administrative actions to reduce project approval times, targeted fee waivers, and development of a database of sites and businesses suitable for OZ investment.		Economic and Community Development

This page intentionally left blank.


80329



Chapter 8

Military Compatibility

Palmdale is home to US Air Force Plant 42, a premier military installation, testing and research, and manufacturing site. Plant 42 is an important asset for the City's economy and its continued success and operations are of critical importance to the entire region. This chapter seeks to balance and protect the needs of Plant 42 and the overall community to promote a sustainable environment where both coexist successfully.

Statutory Requirements

While not mandated as a separate Element, military readiness activities are a required component of the General Plan. California Government Code Section §65302 (a)(2), states that the land use element: "shall consider the impact of new growth on military readiness activities carried out on military bases, installations, and operation and training areas, when proposing zoning ordinances or designating land uses covered by the General Plan for land, or other territory adjacent to military facilities, or underlying designated military aviation routes and airspace." As military and associated operations are a cornerstone of the City of Palmdale's identity and economy, the City has opted for a standalone General Plan Element to plan for continued safe operations of Plant 42.

In addition to the California Government Code, other State legislation relevant to military operations and compatibility include:

- **AB 1108** amended the California Environmental Quality Act (CEQA) to require military agency notification of proposed projects within two miles of installations or under training routes and special use airspace (SUA).
- **AB 2776** requires real estate disclosure for residences within airport influence areas.
- **SB 1462** expanded requirements for notification of the military when adopting or significantly amending a General Plan.
- **SB 1468** requires the General Plan Land Use Element to consider the impact of new growth on military readiness activities conducted on military bases, installations, and operating and training areas. It also defines open-space land to include areas adjacent to military installations, military training routes, and restricted airspace.



Retired Plane Tail-Wing

Relevant Plans & Documents

Air Installation Compatible Use Zone (AICUZ) Report—Air Force Plant 42

The Air Installation Compatible Use Zone Final Report (December 2011) documents aircraft operations at Plant 42 and reaffirms Air Force policy of assisting Federal, state, regional, and local officials in planning for the areas surrounding military installations. The report promotes compatible development within the AICUZ area of influence with the goal of protecting community health and Air Force operational capacity from the negative effects of incompatible land uses. The updated report replaces the preceding document from 2002 with 2010 activity levels, providing noise contours and compatible use guidelines for land use areas surrounding the installation.

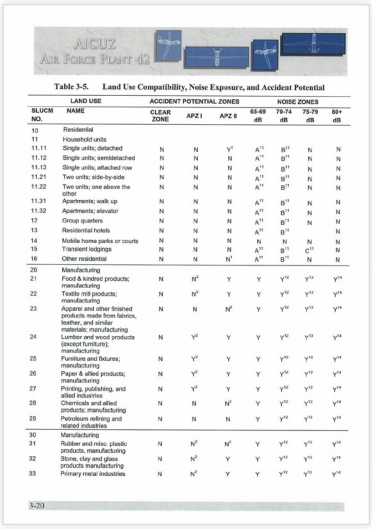


Table 3-5. Land Use Compatibility, Noise Exposure, and Accident Potential

SLUCM NO.	LAND USE NAME	ACCIDENT POTENTIAL ZONES: CLEAR ZONE	APZ I	APZ II	NOISE ZONES: 65-69 dB	70-74 dB	75-79 dB	80+ dB
10	Residential							
11	Household units							
11.11	Single units; detached	N	N	Y[7]	A[11]	B[11]	N	N
11.12	Single units; semidetached	N	N	N	A[11]	B[11]	N	N
11.13	Single units; attached row	N	N	N	A[11]	B[11]	N	N
11.21	Two units; side-by-side	N	N	N	A[11]	B[11]	N	N
11.22	Two units; one above the other	N	N	N	A[11]	B[11]	N	N
11.31	Apartments; walk up	N	N	N	A[11]	B[11]	N	N
11.32	Apartments; elevator	N	N	N	A[11]	B[11]	N	N
12	Group quarters	N	N	N	A[11]	B[11]	N	N
13	Residential hotels	N	N	N	A[11]	B[11]		N
14	Mobile home parks or courts	N	N	N	N	N	N	N
15	Transient lodgings	N	N	N	A[11]	B[11]	C[11]	N
16	Other residential	N	N	N[7]	A[11]	B[11]	N	N
20	Manufacturing							
21	Food & kindred products; manufacturing	N	N[8]	Y	Y	Y[12]	Y[13]	Y[14]
22	Textile mill products; manufacturing	N	N[8]	Y	Y	Y[12]	Y[13]	Y[14]
23	Apparel and other finished products made from fabrics, leather, and similar materials; manufacturing	N	N	N[8]	Y	Y[12]	Y[13]	Y[14]
24	Lumber and wood products (except furniture); manufacturing	N	Y[9]	Y	Y	Y[12]	Y[13]	Y[14]
25	Furniture and fixtures; manufacturing	N	Y[9]	Y	Y	Y[12]	Y[13]	Y[14]
26	Paper & allied products; manufacturing	N	Y[9]	Y	Y	Y[12]	Y[13]	Y[14]
27	Printing, publishing, and allied industries	N	Y[9]	Y	Y	Y[12]	Y[13]	Y[14]
28	Chemicals and allied products; manufacturing	N	N	N[8]	Y	Y[12]	Y[13]	Y[14]
29	Petroleum refining and related industries	N	N	N	Y	Y[12]	Y[13]	Y[14]
30	Manufacturing							
31	Rubber and misc. plastic products, manufacturing	N	N[8]	N[8]	Y	Y[12]	Y[13]	Y[14]
32	Stone, clay and glass products manufacturing	N	N[8]	Y	Y	Y[12]	Y[13]	Y[14]
33	Primary metal industries	N	N[8]	Y	Y	Y[12]	Y[13]	Y[14]

3-20

AICUZ Report—Plant 42

Terms and Definitions

Air Force installations includes Air Force Base, Air Base, Air Reserve Base, Air Guard Base, Air Force Station, Air Station, Air Reserve Station, or Air Guard Station, support sites, and other activities, and those facilities to which the Air Force, in overseas locations, has complete or partial access on a temporary or standby basis.

Instrument Flight Rules (IRF)[11] are rules that govern the procedures of flight under instrument meteorological conditions.

Military Influence Area (MIA) is a geographic planning or regulatory area that can be defined jointly by local governments and neighboring military installations. The MIA covers the areas where military operations may impact local jurisdictions and, conversely, where local activities may affect the military's ability to conduct its mission.

Military Operating Areas (MOA)[12] is airspace designated outside of Class A airspace, to separate or segregate certain nonhazardous military activities from Instrument Flight Rules traffic and to identify for Visual Flight Rules traffic where these activities are conducted.

Visual Flight Rules (VFR)[13] govern the procedures for conducting flight under visual conditions. The term "VFR" is also used in the United States to indicate weather conditions that are equal to or greater than minimum VFR requirements. In addition, pilots and controllers use it to indicate type of flight plan.

Special Use Airspace (SUA)[14] consists of that airspace wherein activities must be confined because of their nature, or wherein limitations are imposed upon aircraft operations that are not a part of those activities, or both.

11. https://www.faa.gov/air_traffic/publications/atpubs/pcg_html/glossary-i.html#$INSTRUMENT%20FLIGHT%20RULES, accessed April 7, 2022.
12. https://tfmlearning.faa.gov/publications/atpubs/AIR/air2501.html#:~:text=A%20military%20operations%20area%20(MOA,where%20these%20activities%20are%20conducted., accessed January 25, 2022.
13. https://www.faa.gov/air_traffic/publications/atpubs/pcg_html/glossary-v.html#$VISUAL%20FLIGHT%20RULES, accessed April 7, 2022.
14. https://www.faa.gov/air_traffic/publications/atpubs/aim_html/chap3_section_4.html, accessed January 25, 2022.

Context

Military Presence

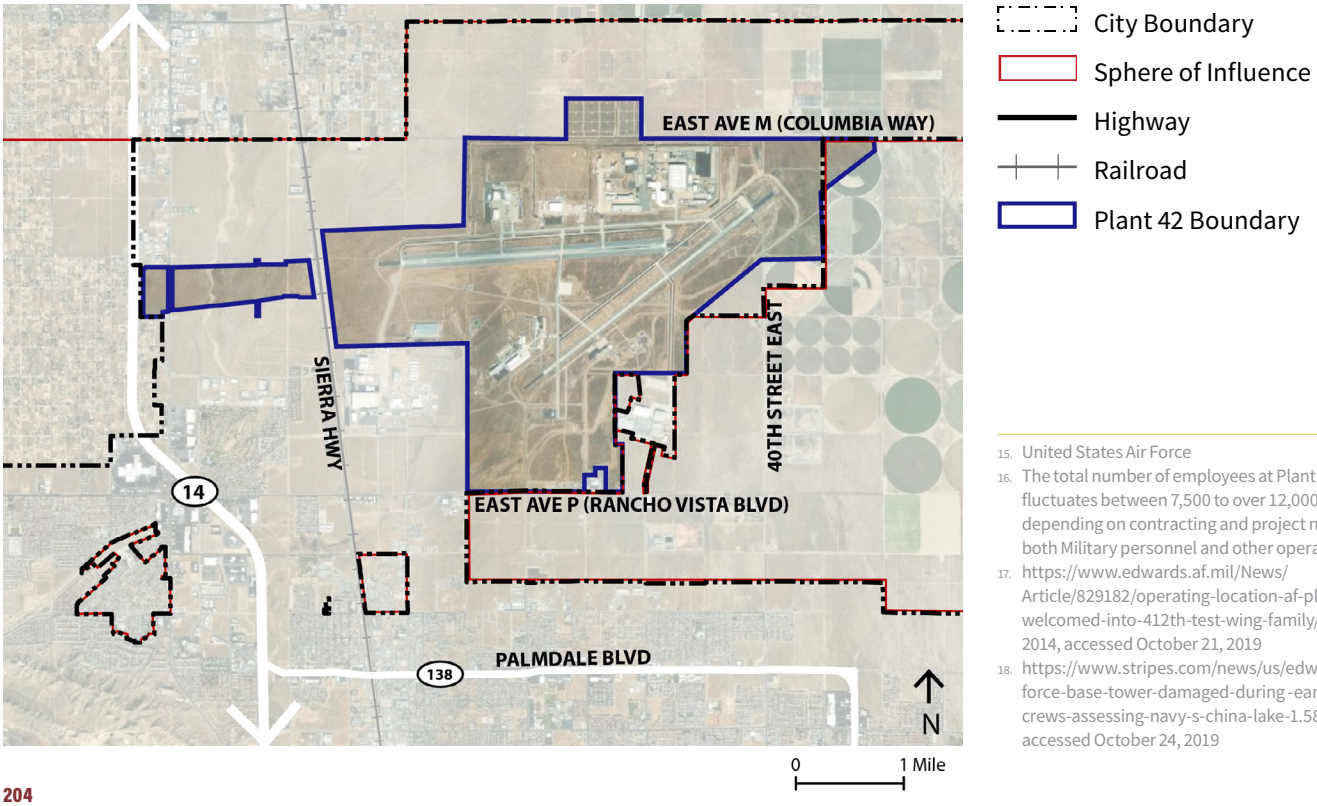
The City of Palmdale is home to U.S. Air Force Plant 42 (Plant 42), one of the premier aeronautical development, test, and production installations in the nation. Plant 42 is used primarily as a production flight test installation by the United States Air Force (USAF). Edwards Air Force Base (EAFB), located approximately 30 miles north of Plant 42, provides command and control of the airfield complex.

Plant 42 covers approximately 6,130~~15~~ acres[15] and is bounded by Columbia Way/East Avenue M to the north, ~~East~~ Rancho Vista Boulevard/East Avenue P to the south, SR-14 to the west, and 40th/50th Street East to the east. The facility is situated at an elevation of 2,543 feet above mean sea level. Mountainous terrain to the south and west reaches elevations more than 5,000 feet within approximately 10 miles of Plant 42. Immediately north of Plant 42 is a series of four military restricted airspace areas reaching Edwards AFB and extending to the northeast beyond China Lake. Figure 8.1 presents an aerial view of Plant 42.

Of the four USAF active plants located throughout the United States, Plant 42 is uniquely situated to fully support the newest and most advanced aerospace systems. Staffed by a mixture of civilian defense contractors and USAF personnel, Plant 42 provides industrial facilities for production, engineering, final assembly, modification, depot maintenance and flight testing of aerospace systems.

With approximately 12,000 employees[16,17,18], Plant 42 is the second largest employer in the Antelope Valley (after Edwards AFB), providing significant economic thrust and adding to the economic base of the City of Palmdale. Aerospace is the largest industry and employer in the City. In addition to the direct employment of government personnel, Plant 42 employs contract civilians located both on and off the installation. The City of Palmdale provides housing, support services, and a range of community services to these employees.

Figure 8.1 Plant 42 Aerial View



15. United States Air Force
16. The total number of employees at Plant 42 fluctuates between 7,500 to over 12,000 depending on contracting and project needs for both Military personnel and other operators.
17. https://www.edwards.af.mil/News/Article/829182/operating-location-af-plant-42-welcomed-into-412th-test-wing-family/, May 28, 2014, accessed October 21, 2019
18. https://www.stripes.com/news/us/edwards-air-force-base-tower-damaged-during-earthquake-crews-assessing-navy-s-china-lake-1.589472, accessed October 24, 2019

Plant 42 and Vicinity Composition

Plant 42 ownership responsibilities have been delegated to the Acquisition Environmental and Industrial Facilities Division through Air Force Material Command, based at Wright-Patterson AFB, Ohio. The site contains approximately 3.2 million square feet of industrial facilities. The industrial facilities serve primarily as manufacturing plants for the United States military and its military allies.

In addition to a non-operational regional airport, Plant 42 and the surrounding area is occupied by Department of Defense (DoD) contractors including Boeing, Lockheed Martin, and Northrop Grumman, NASA, Kinkisharyo, and Federal Aviation Administration (FAA)-controlled air route traffic control center, two aviation museums, and a 17,500 acre vacant parcel of land owned by Los Angeles World Airports (LAWA).

The Air Force leases space to these contractors on Plant 42 for military and aircraft development with use of the Plant 42 runways permitted through lease agreements. Contractors at Plant 42 either lease building space from the Air Force or own their own buildings. The plant incudes multiple high bay buildings with airfield access and flyaway capability.

Plant 42 is categorized by Sites 1-10 with Site 7 further divided into west and east halves. As detailed in the following section, Sites 1, 2, 3, 4, 7W, 7E, and 8 are leased among three contractor operators, while Sites 5 and 6 are operated and maintained through the 412th Test Wing / Operating Location at Air Force Plant 42.

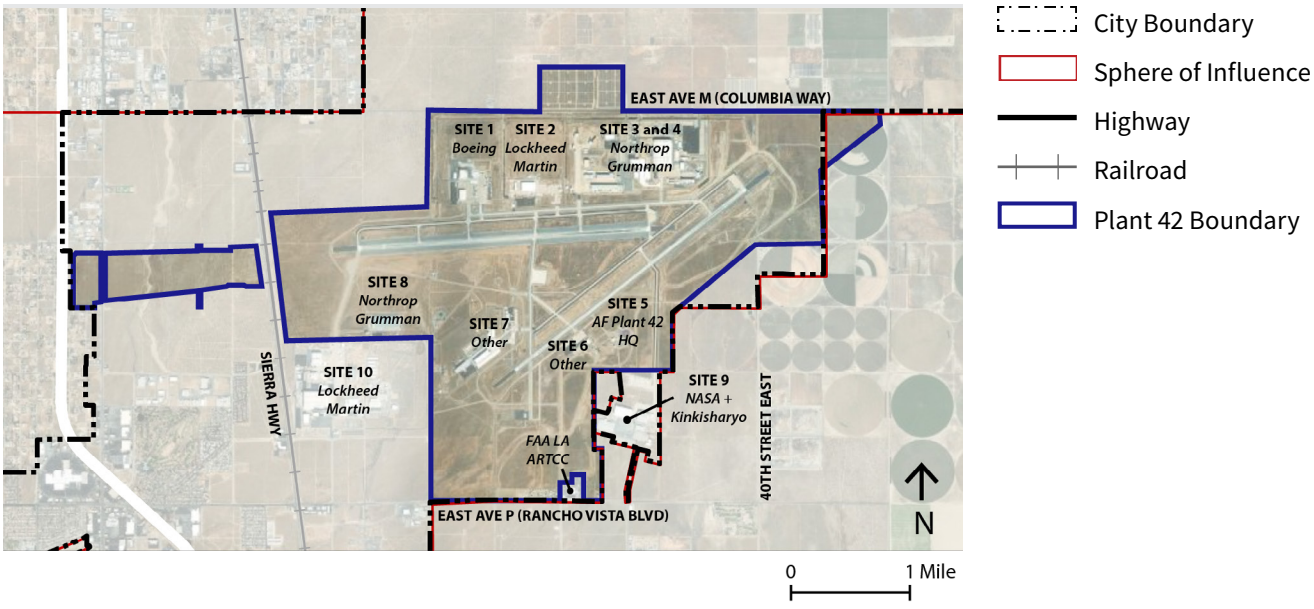


Lockheed Martin Skunkworks

Sites 9 and 10 are outside Plant 42 boundaries. Site 9 is owned by Los Angeles World Airports (LAWA) and leased by NASA and Kinkisharyo, while Site 10 is owned and operated by Lockheed Martin (in addition to space leased within Plant 42). Lockheed Martin's Site 10 is governed by a Specific Plan (Lockheed Plant 10 Palmdale)

Figure 8.2 illustrates the site plan of Plant 42 and vicinity as of April 2018.

Figure 8.2 Plant 42 Site Plan



Palmdale Regional Airport (PMD)

The Palmdale Regional Airport operated on and off through the late 1980s and early 2000s; however, passenger service was suspended in late 2008 for a wide range of reasons including low volumes. In 2013, ownership of the airport building was transferred to the City of Palmdale. The lease and Airport Joint Use Agreements expired on August 31, 2020.

The City of Palmdale also owns a 600-acre property northwest of USAF Plant 42 where a proposed air terminal is desired. The property bounds are Avenue M/Columbia Way on the north, Sierra Highway on the west and USAF Plant 42 to the south and east. Given the proximity to Plant 42 and the nature of research and development done on base, coordination and support from the aerospace sector will be vital to the success of passenger air service in Palmdale. As of 2022, the City is currently working with the Air Force to bring commercial air service back to Palmdale.

Los Angeles Air Route Traffic Control Center (ARTCC)

The FAA's Los Angeles ARTCC is located at the northeast corner of 25th Street East and Avenue P, adjacent to Blackbird Airpark. The Los Angeles ARTCC is one of 22 air route traffic control centers operated by the FAA. The center controls enroute air traffic over southern and central California, southwestern Nevada, southwestern Utah, western Arizona, and portions of the Pacific Ocean Air Defense Identification Zone, except for military airspace and lower-level airspace traffic that is controlled by local airport towers and Terminal Radar Approach Control Facilities (TRACON). TRACONs are terminal radar approach controls which manage traffic within a 30-to-50-nautical-mile radius from an airport. The Los Angeles ARTCC is the 10th busiest ARTCC in the United States—between January 1, 2017, and December 2017, the Los Angeles Center managed 2,255,026 aircraft operations.[19]

19. Federal Aviation Administration, (2018), Air Traffic Activity System retrieved from http://aspm.faa.gov/opsnet/sys/Center.asp
20. "Palmdale Airport Terminal" by Rcbutcher, licensed under CC BY-SA 3.0



Joe Davis Heritage Airpark



Historic Photo of Palmdale Regional Airport[20]



American Airlines Plane Taking Off

Aviation Museum/Airpark

Blackbird Airpark and the adjacent Joe Davies Heritage Airpark (formerly Palmdale Plant 42 Heritage Airpark) display the SR-71, U-2, Century Series fighters and other aircraft that were designed, engineered, manufactured, and flight tested in the Antelope Valley. All aircraft have been carefully restored for public display. The two airparks are located at Avenue P and 25th Street East near the FAA's Los Angeles Air Regional Traffic Control Center and are free to the public.

Blackbird Airpark is an extension of the Air Force Flight Test Museum at Edwards AFB, while the City of Palmdale operate Joe Davies Heritage Airpark. Both museums are staffed by volunteer retirees who previously worked in the aerospace industry.


LAWA Property

Los Angeles World Airports (LAWA) Land Holdings

LAWA is the airport authority that owns and operates Los Angeles International Airport (LAX) and Van Nuys Airport (VNY) for the City of Los Angeles. LAWA formerly owned and operated Palmdale Regional Airport (PMD), and currently provides oversight and operations for ~~a~~ 17,500-acres ~~parcel~~ of land immediately east of Plant 42. Strategic plans for the property are currently undefined.

This area is within unincorporated Los Angeles County and the City of Palmdale's Sphere of Influence. In preparation for the possible annexation in the future, the General Plan designates these parcels as primarily Aerospace Industrial (see Chapter 5: Land Use and Community Design for further description).

Land Use Compatibility

The City and community of Palmdale encourage and support ongoing aerospace innovation and manufacturing at Plant 42. For the success and safety of residents, ongoing coordination between the US Air Force, Plant 42 operators, and City of Palmdale is imperative. Land use compatibility is a critical factor toward continued safe and efficient military operations at Plant 42. Any development or new construction that seriously impacts or hinders the military operating area's function and viability is considered an incompatible land use. Planning to ensure that all future land uses are compatible is an overarching goal of this General Plan.

Military Influence Area

The Military Influence Area (MIA) covers areas where military operations may impact the local community and where the local community may impact military functions. Shown in Figure 8.3, the Military Influence Area (MIA) includes not only the military operations area, but also three safety zones extending from both ends of aircraft runways—the Clear Zone (CZ) and two Accident Potential Zones (APZs)—a high noise consideration zone (65 Dnl contours), and property owned by LAWA adjacent to Plant 42. These areas are described in greater detail below. The MIA requires further land use compatibility considerations and monitoring.

Incompatible land uses adjacent to the military installation can produce serious issues such as:

- Increased interference with air routes and communications through construction of cell towers, wind turbines, power lines, and other structures.
- Increased competition for, and interference with, data and communications frequencies.
- Displacement of threatened and endangered species in the remaining open space areas, including military ranges.
- Increased need to alter training and testing due to residential neighbors' concerns about noise and safety from surrounding residents.
- More rapid depletion of critical ground or surface water supplies, water treatment capacity, and other necessary resources.
- Increased air emissions in areas that may have finite air emission thresholds.[21]

Areas around military airfields are exposed to the possibility of aircraft accidents. While the maintenance of aircraft and training of aircrews are rigorous, and military flights at Plant 42 are primarily for flight test and proficiency training, accidents do occur. Accidents of military aircraft differ from accidents of commercial air carriers and general aviation due to the variety of aircraft flown, the type of missions and the number of training flights. As such, every airport prepares an AICUZ Report that governs land uses to minimize impacts of an accidents.

21. Ibid



Aerial View of Plant 42

Clear Zones and Accident Potential Zones

The Plant 42 AICUZ Report (2011) identifies three basic types of constraints that affect or result from flight operations.

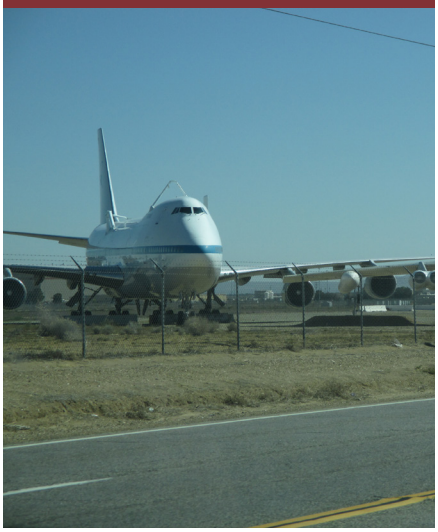
The first constraint involves areas identified by the FAA and DoD where height limitations on structures exist to prevent obstructions to air navigation.



The second constraint involves the potential effects arising from noise exposure resulting from aircraft overflight and ground engine runs. Refer to the Noise Element for further discussion.



The third constraint involves accident potential in areas near the runways based on past statistical analyses of past DoD aircraft accidents.



The DoD has identified three zones, described below, that have high relative potential for accidents - **the Clear Zone (CZ)**, the **Accident Potential Zone I (APZ I)**, and the **Accident Potential Zone II (APZ II)**. These zones are illustrated on Figure 8.3.

Clear Zones

Each end of runway has a CZ that starts at the runway threshold and extends outward 3,000 feet. The width of the CZ is based on the class of the runway. Of the three safety zones, the CZ has the highest potential for accidents (27 percent of the accidents studied). The Air Force has adopted a policy of acquiring property rights through purchase or easement to areas designated as CZs. All Clear Zones are located on Plant 42 owned property and consist of undeveloped land or air travel and testing supportive facilities.

APZ I

The APZ I extends outward from the CZ an additional 5,000 feet. This area has a significant, though reduced, accident potential (10 percent of the accidents studied). The APZ I is 3,000 feet wide and 5,000 feet long beginning 3,000 feet from the runway endpoint along and centered on the extended runway centerline. New public assembly, residential, or high intensity uses are prohibited in this zone.

APZ II

The APZ II extends from the outer end of the APZ I an additional 7,000 feet. This is an area having a lesser, but still significant potential for accidents (five percent of the accidents studied). The APZ II is 3,000 feet wide and 7,000 feet long beginning 8,000 feet from the runway endpoint along and centered on the extended runway centerline. Public assembly is prohibited in this zone, while single family detached and other residential types are permitted; however, density and other considerations apply.

A detailed list of allowed land use per accident potential zone (APZ), is included within Table 3-5 Land Use Compatibility, Noise Exposure, and Accident Potential[22] of the AICUZ.

22. Air Installation Compatible Use Zone: Air Force Plant 42, Final Report, December 2011.

Figure 8.3 illustrates the military influence area which includes the three APZ zones, the military operating zone, and areas which are subject to higher noise volumes. These areas are subject to Plant 42 coordination and should include greater scrutiny when reviewing proposed development projects.

As detailed in the Land Use Element, the land use plan indicates allowed uses for every parcel of land within the jurisdiction of the City of Palmdale and Sphere of Influence. Plant 42 land use compatibility was a key factor in preparing the final land use plan, which is consistent with the limitations set forth for the three zones. Figure 8.4 illustrates the land use plan compared to the three accident potential zones.

The purpose of the program is to promote compatible land development in the areas of increased noise exposure and accident potential from ongoing aircraft operations.

Three basic types of constraints are mentioned as affecting or resulting from flight operations:

- Height limitations on structures to prevent obstructions to air navigation
- Noise exposure resulting from aircraft overflight and ground engine runs
- Accident potential in areas near the runway

Plant 42 Coordination with the City of Palmdale

The City of Palmdale values the ongoing partnership with Plant 42. Both entities support the mission and goal of Plant 42, which is to safely and successfully further military operations, research, and development within Palmdale.

As the community evolves and changes over time, additional coordination between the City of Palmdale and Plant 42 may be needed.

Coordination activities may include:

Development review
Plant 42 representatives may be involved with reviewing individual development proposals within the City to provide feedback related to the safety and security of Plant 42.

Key topic coordination
Continued collaboration on topics of mutual importance related to employment, housing, transportation, and commercial development.

Other similar coordination efforts are detailed in the Implementation Action table in the following section.



U.S. Air Force Sign


Plant 42

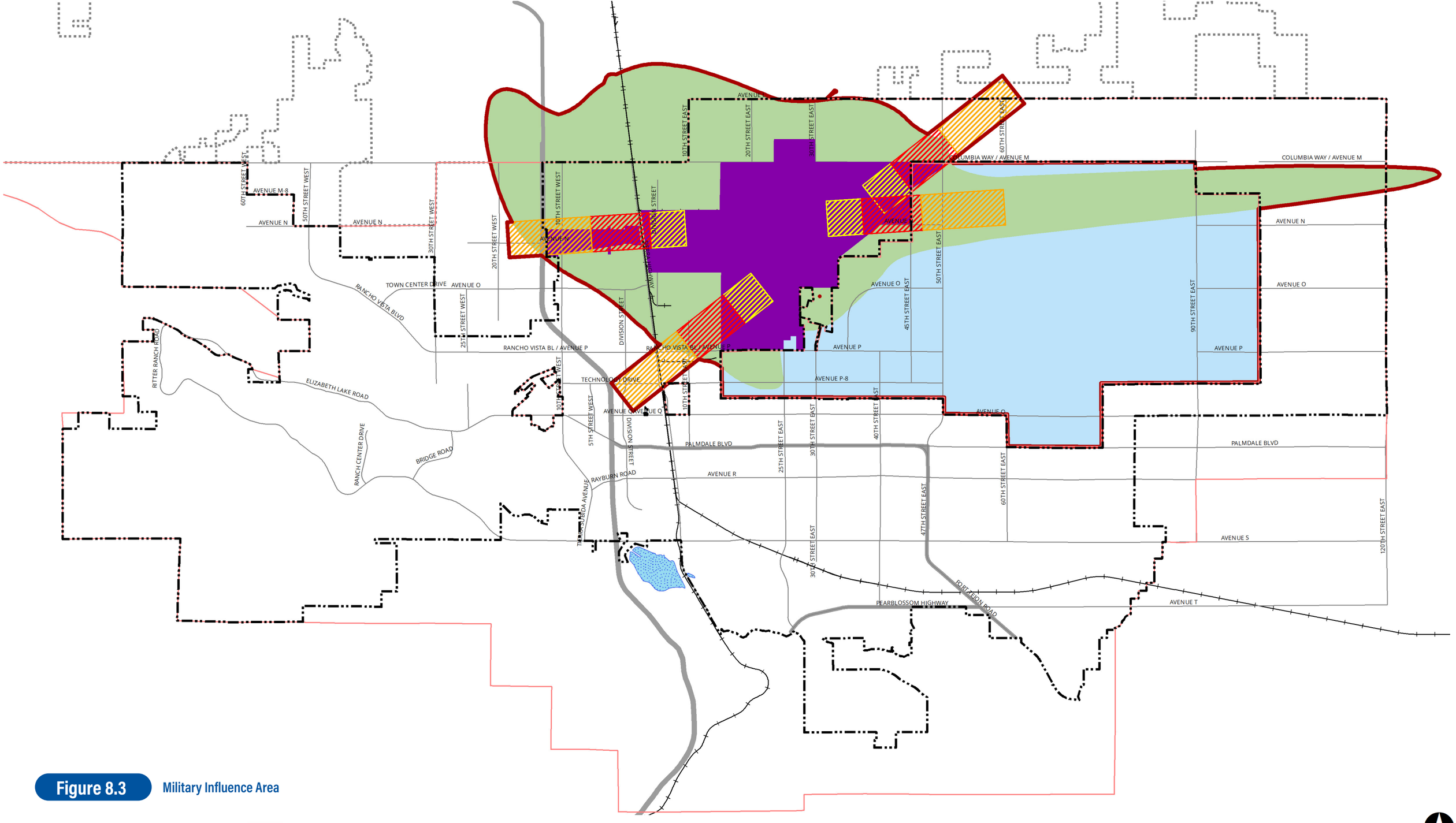


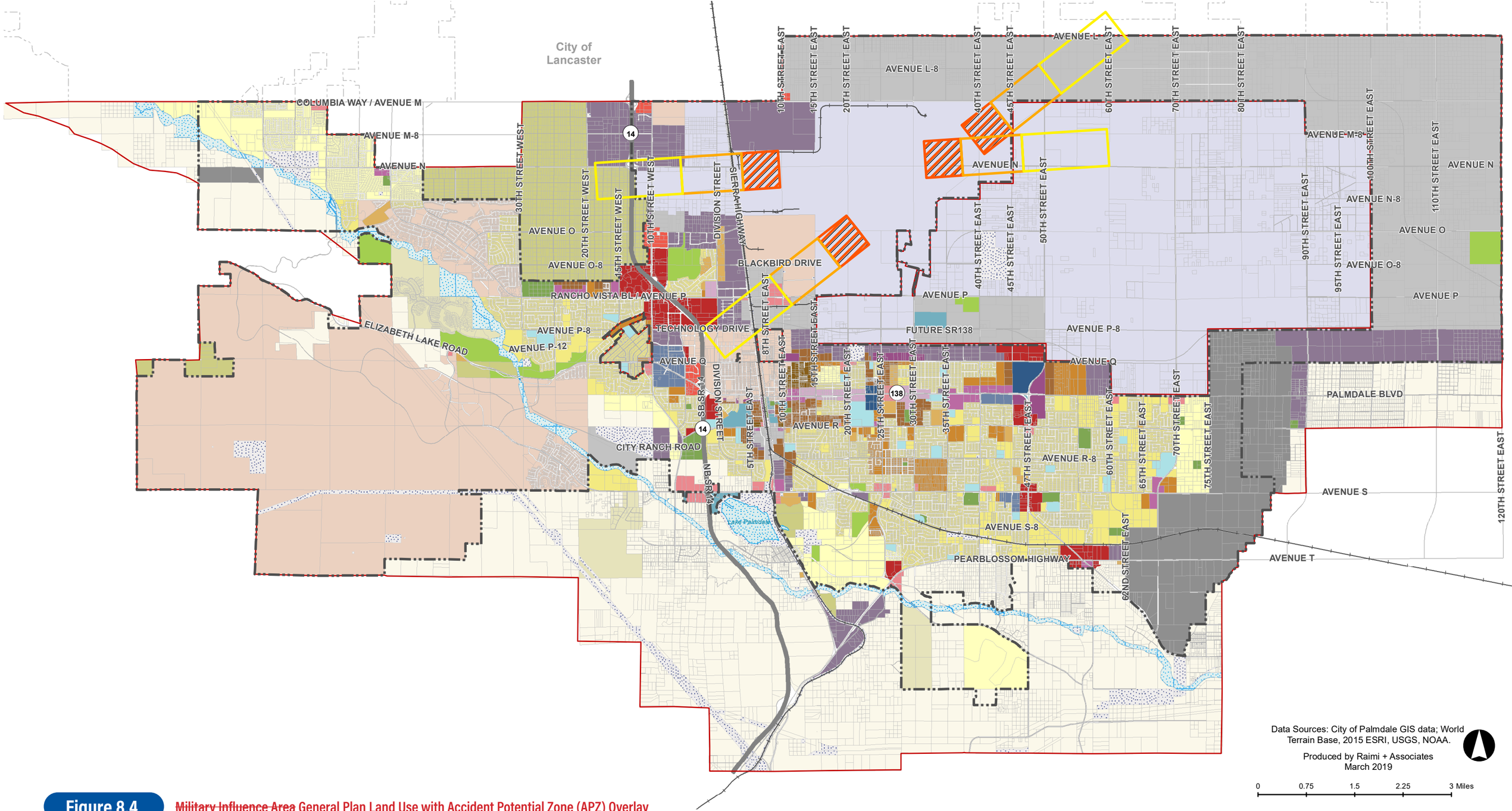
Figure 8.3 Military Influence Area

- City Boundary
- Sphere of Influence
- Major Arterials
- Highway
- Railroad
- Military Influence Area
- Clear Zone
- APZ I
- APZ II
- Military Operating Area
- 65 Dbl Noise Contour
- Airport Property (LAWA)
- Water Body

0 1 2 4 Miles

Data Sources: Urban Footprint, City of Palmdale GIS Data, World Terrain Base, 2015 Esri, USGS, NOAA

Produced by Raimi + Associates
Feb 2022



Data Sources: City of Palmdale GIS data; World Terrain Base, 2015 ESRI, USGS, NOAA.

Produced by Raimi + Associates
March 2019

0 0.75 1.5 2.25 3 Miles

Figure 8.4 ~~Military Influence Area~~ General Plan Land Use with Accident Potential Zone (APZ) Overlay

- Clear Zone
- APZ I
- APZ II
- Equestrian Residential
- Low Density Residential
- Single Family Residential
- Single Family Residential 2
- Single Family Residential 3
- Neighborhood Residential 1
- Neighborhood Residential 2
- Neighborhood Residential 3
- Neighborhood Residential 4
- Mixed Use 1
- Mixed Use 2
- Mixed Use 3
- Employment Flex
- Neighborhood Commercial
- Visitor Commercial
- Regional Commercial
- Health and Wellness
- Educational Flex
- Industrial
- Aerospace Industrial
- Mineral Resource Extraction
- Specific Plan
- Open Space
- Public Facility-Park
- Public Facility-School
- Public Facility-Civic
- Utilities
- City Boundary
- Sphere of Influence
- Major Highway/Arterial
- Railroad
- Water Body/Aqueduct

This page intentionally left blank.

Desired Outcomes, Indicators, and Targets

The following desired outcomes and metrics have been identified to help the City track progress toward reducing risks to the community while providing an employee base for Plant 42. This process follows the City's General Plan Vision and Guiding Principles document which was informed by the General Plan Advisory Committee (GPAC), the Planning Commission and City Council.

Top Key Outcomes

OUTCOME: Create pathways for Palmdale residents to fully access current and future economic opportunities in the aerospace sector.

KPI:
- Annual increase in percentage of residents with vocational training certificates in aerospace related fields[23].

TARGET:

- **Increased number of residents employed in aerospace jobs within the City.**

KPI:
- Annual increase in percentage of residents with a bachelor's degree[24]

TARGET:

- **Increased number of residents completing at least a bachelor's degree comparable to County-wide levels.**

OUTCOME: Reduced risk to the Palmdale community because of Plant 42 operations.

KPI:
- Decrease in population at risk within the APZs specified by the AICUZs.

TARGET:

- **Reduced number of residents within the APZs.**

KPI = Key Performance Indicator

23. Data source: Census Survey of Income and Program Participation (SIPP)
24. Data source: Census American Community Survey
25. "Lockheed Martin Skunkworks" by Alan Radecki, licensed under CC BY-SA 3.0

Goals and Policies

The following section includes goals and policies for the Military Compatibility Element. Goals and policies are followed by implementation actions. Additional military related policies are woven throughout the General Plan, including in the Land Use and Community Design, Circulation and Mobility, Economic Development, Public Facilities, Services and Infrastructure Elements.

LAND USE COMPATIBILITY

Goal MC-1

Compatible adjacent land uses that support continued operation of Plant 42.

MC-1.1 Aerospace compatible land uses. Maintain appropriate land use designations surrounding Plant 42 to limit incompatible uses and to ensure continued safe operation of airport activities.

MC-1.2 Land use buffers. Continue to buffer Plant 42 from adjacent, non-compatible residential and commercial uses by reviewing development applications in the Military Influence Area for potential conflicts.

MC-1.3 Non-industrial land uses. Limit non-industrial uses from locating in the Aerospace Industrial area (aside from uses that directly support Plant 42 or airport operations).

MC-1.4 Evaluate existing and future land uses. Use overlay maps of the Air Installation Compatibility Use Zones (AICUZ) noise contours and Air Force Land Use Compatibility Guidelines to evaluate existing and future land use proposals.

MC-1.5 Solar energy facility compatibility. Ensure that there is no potential conflict between the operational mission of ~~USAF~~ Plant 42 and any proposed adjacent solar energy facilities.

MC-1.6 Influence area development. Prohibit development in the Military Influence Area that would restrict access to military facilities, physically obstruct any portion of the Military Operating Area, or pose a health or safety hazard to military personnel.

Goal MC-2

Mitigate and/or avoid encroachment of incompatible development into space utilized by Plant 42 air operations.

MC-2.1 APZ development review. Within the Accident Potential Zones (APZ), review all development proposals for hazards to aircraft in flight including uses that release into the air any substance such as:

- Steam, dust, or smoke, which could impair pilot visibility; uses that produce light emissions, glare, or distracting lights, which could interfere with pilot vision or be mistaken for airfield lighting; sources of electrical emissions, which could interfere with aircraft communications or navigation; and uses that could attract birds or waterfowl to the extent that they would pose a danger to aircraft operation in the vicinity of Plant 42.
- Require project applicants to notify Plant 42 and the City of any potential hazards, including but not limited to the above list.

MC-2.2 AICUZ consistency. Require all development to be consistent with DoD regulations as outlined in the Plant 42 AICUZ Report and comply with regulations which affect development in the Clear Zones/ Accident Potential Zones.

MC-2.3 Aviation easement. Through the development review process, require that all new projects within the APZ's of ~~Air Force~~ Plant 42 provide an aviation easement.

LIMIT NOISE IMPACTS

Goal MC-3

Protect residents from excessive noise and protect Plant 42 from noise complaints by preventing incompatible land uses from encroaching upon the site.

MC-3.1 Noise and overflight compliance. Ensure that all new land use proposals comply with the noise and overflight policies of the most recent AICUZ for Plant 42.

MC-3.2 Restrict new residential in APZs. Prohibit new residential zoning and new schools in the APZs.

MC-3.3 Restrict residential in high noise areas. Prohibit the redesignation of residential land within the 65-DBL noise contour and the overflight area to increased residential densities.

MC-3.4 Home occupant notification. Require homebuyer/renter notification or disclosure of aircraft noise for all new residential development located in an APZ, or east of Division Street and south of Technology Drive and north of Avenue Q and west of Sierra Highway.

MC-3.5 Noise reduction measures. New development within the 65 DBL noise contour area must adhere to the recommended noise level reductions incorporated into the design and construction.

MC-3.6 Avoid Noise Sensitive Uses. Discourage new noise sensitive development, such as places of worship, residential development, schools, and other similar uses, clustered adjacent to a noise zone.

MC-3.7 Noise Considerations Through Land Use Action. Through conditions of approval, require that any owner of developed or undeveloped property within the 65 CNEL noise contour that is seeking a land use action from the City, provide an avigation easement to the Los Angeles World ~~Department of~~ Airports, the U.S. Air Force, and the City.

MC-3.8 Non-noise Sensitive Land Uses. Designate and permit land uses within the 65 CNEL contour that are primarily industrial, business park, commercial and recreational uses that are not noise sensitive; permit other uses only when it is found that no adverse noise impacts will result.

AEROSPACE GROWTH

Goal MC-4

Continued growth of Plant 42 operations in the Aerospace Industrial land use district.

MC-4.1 Land Supportive of Aerospace Industrial. Maintain sufficient land zoned for the Aerospace Industrial use to accommodate a wide variety of industrial, military, and supportive uses.

MC-4.2 Attract New Businesses. Encourage and recruit businesses that are affiliated with or are supportive of aerospace research and development.

MC-4.3 Land Supportive of Aerospace Industrial. Maintain and improve circulation to accommodate the unique demands of aerospace workplaces.

MC-4.4 Military Influence Area Coordination. Reference the Military Influence Area Map (Figure 8.3) to identify possible City actions in or near Plant 42 installations, operations areas, and/or military training routes and consult with Plant 42 for input, as appropriate.

MC-4.5 Legislation Support. Support ~~for~~ State or Federal legislation that positively impacts existing and future operations at Plant 42 (e.g., changes to airspace, state tax incentives, encroachment, etc.). Similarly, oppose legislation that may have a detrimental impact.

Goal MC-5

Ensure that new development within the Risk of Adverse Impact on Military Operations and Readiness Area (RAIMORA) or Military Training Route (MTR) complies with Federal Aviation Regulations regarding height and obstructions.

MC-5.1 Height and Obstruction Ordinance Compliance. Ensure that City height and obstruction ordinances reflect current Air Force and FAA Federal Aviation Regulation (FAR) Part 77 requirements related to the RAIMORA zone covering the Restricted Airspace R2508 and the Nevada Test and Training Range and the Military Training Route.

MC-5.2 Notification for MTR Obstructions. For any proposed uses that could penetrate[26] the MTR, provide notification to those responsible for Plant 42 military operations.

MC-5.3 New Construction Height Compliance. Ensure all new development within the City is constructed in accordance with FAR Part 77 that is concerned with any construction or alteration more than 150 feet above ground level, or as defined in the AICUZ.[27]

MC-5.4 Tall Structure Review. Provide for special review recommendation on tall structures in the RAIMORA or MTR.

26. For the purposes of determining whether a project penetrates the defined floor elevation of the Military Operating Area (MOA), a penetration means a physical obstruction from a structure or object, and/or a visual obstruction such as steam, dust, or smoke.
27. For the purposes of calculating height of new proposed structures, the height of all structures (including wind turbines) means the distance from ground to the top of the highest point of the structure. For wind turbines this means the highest point of the turbine blade in vertical position.

COORDINATION

Goal MC-6

Enhanced communications with City government and its residents.

MC-6.1 Plant 42 Disaster Preparation. Prepare residents in case of an industrial accident or release of hazardous materials at Plant 42; distribute instructions/ information to the public on actions to take if an incident occurs.

MC-6.2 Plant 42 Public Education. Participate in Plant 42 public education programs regarding missions and impacts associated with military aviation operations to increase public awareness.

MC-6.3 Military Liaison. Designate a military liaison function within the City to exchange information between the City and Plant 42 on issues of mutual concern including, but not limited to:

- Early notification of development projects near ~~the~~ Plant 42,
- Early notification to the City of potential changes in aircraft operations (flight patterns, operational tempo, etc.), ~~and/or~~
- Housing, recreation, and other issues related to Plant 42 personnel living in the City~~.~~,
- Track legislative impacts to the area.

Goal MC-7

Coordinate future development and infrastructure improvements.

MC-7.1 Project Coordination with Plant 42. Notify and coordinate with Plant 42 on major capital improvement projects or infrastructure expansion plans within the MIA that may impact Plant 42 operations.

MC-7.2 Grant Coordination with Plant 42. Collaborate with Plant 42 to pursue grant funding for things like infrastructure that will collectively serve the needs of Plant 42 and the community.

MC-7.3 Coordination Airport Plans with Plant 42. Notify and coordinate with USAF Plant 42 on City-initiated improvements or expansion plans related to the development of passenger air service at the Palmdale Regional Airport (PMD).

MC-7.4 Affordable and Workforce Housing. Promote the availability and development of affordable and workforce housing in the City to meet the needs of military personnel and their dependents.

MC-7.5 Coordination with Plant 42. Review and respond to any proposals from the USAF or other military contractors in Plant 42 involving any intensification of operations, changes in flight patterns, and relocation or extension of runaways that would potentially create safety or noise impacts for Palmdale residents.

MC 7.6 Interagency Land Use Coordination. Work with the County of Los Angeles, City of Lancaster and the military installations as needed to address any issues related to land use compatibility, safety, and operations.

Implementation Actions

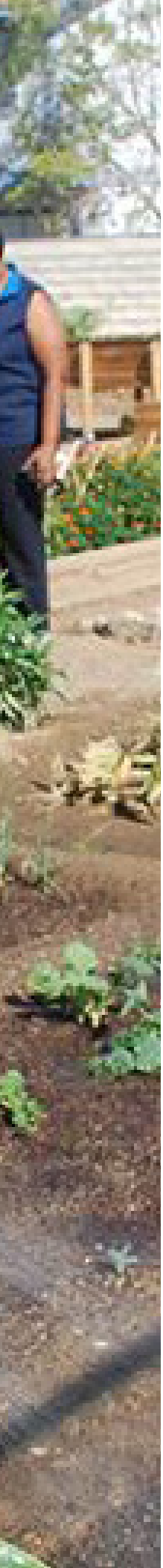
The table below identifies programs, policy updates, planning efforts, coordination efforts, and other actions that will help implement the General Plan's Military Compatibility objectives. Actions listed below are consistent with and implement this chapter's goals and policies.

The table provides a description of each Implementation Action and lists the correlating policies. Each action also identifies a timeframe for implementation with Short-term representing a 1–3-year timeframe, Medium-term is 4-7 years, Long-term is 8+ years and Ongoing represents an action that the City should continue. Additionally, the table includes the City department that should function as the lead for implementing the actions.



Correlating Goals	Description	Timeframe	Responsible Department
MC-1	**Infrastructure Related Plan Review.** Periodically review the zoning ordinance, subdivision ordinance, and other infrastructure plans to ensure they do not conflict with the continued viability of Plant 42. Incorporate AICUZ policies and guidelines into future specific plans within the City of Palmdale.	Ongoing	Economic and Community Development and Public Works
MC-3, MC-4	**Site-Specific Review.** Continue a site-specific review process for noise sensitive uses (e.g., hospitals, housing) within the APZs or MIA to assess proposed noise level reduction techniques.	Ongoing	Economic and Community Development
MC-6, MC-7	**Military Liaison.** Create a Military Liaison position within City to coordinate directly with Plant 42 on issues of mutual concern.	Short-term	City Manager's Office and Economic and Community Development
MC-6, MC-7	**Coordination with Plant 42.** Meet quarterly with Military operations and planning personnel to discuss Plant 42 and City mission and goals.	Ongoing	City Manager's Office and Economic and Community Development





Chapter 9

Equitable and Healthy Communities

The Equitable and Healthy Communities Element of the Palmdale General Plan outlines the goals and policies related to public health, equity, and environmental justice in Palmdale.

Statutory Requirements

Senate Bill 1000: Planning for Healthy Communities Act

Senate Bill 1000 (SB 1000), or the Planning for Healthy Communities Act, requires jurisdictions with disadvantaged communities to develop an environmental justice element, or related environmental justice goals and policies, as part of their general plans. The goal of SB 1000 is to help identify and reduce risks in communities disproportionately affected by environmental pollution and other hazards that can lead to negative health effects, exposure, or environmental degradation. In doing so, SB 1000 offers an opportunity to address existing community health concerns and mitigate the impacts of future health issues.

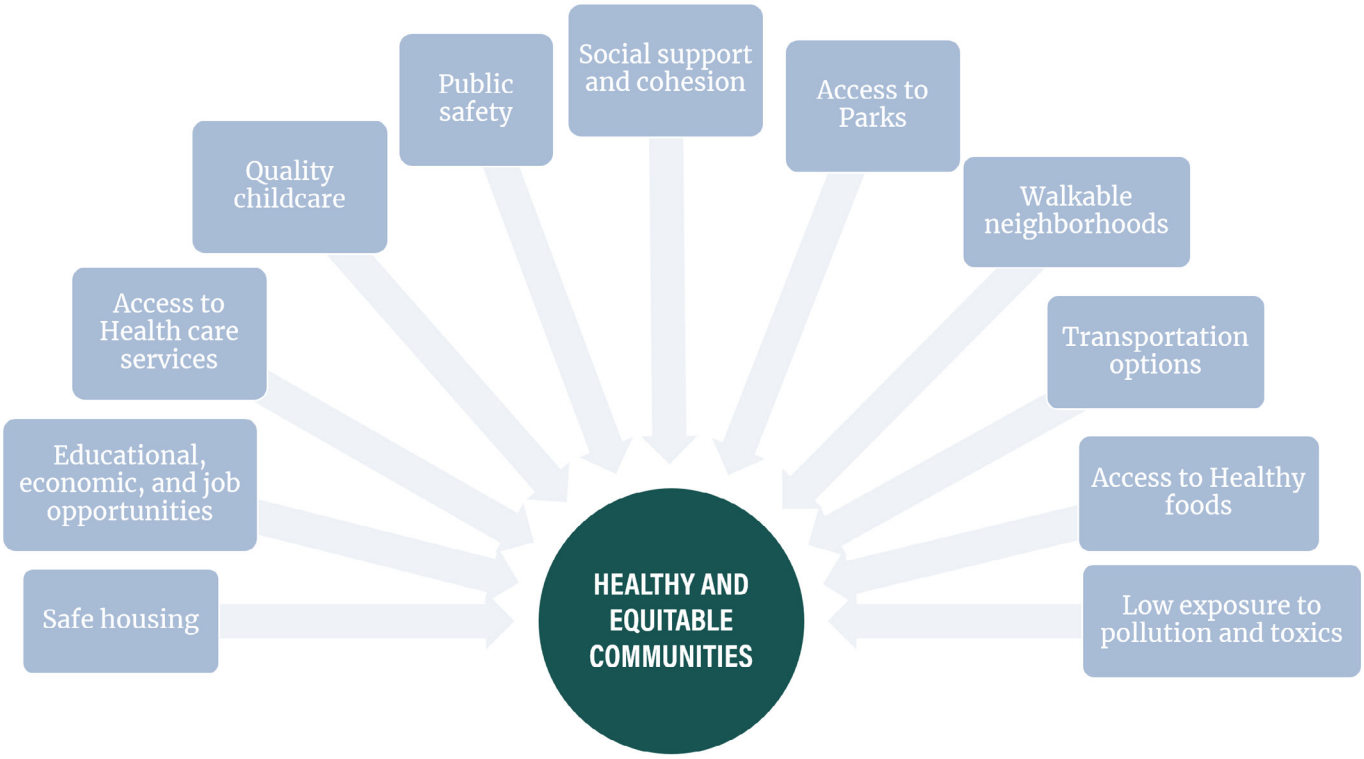
Foothill Park

Overview

Healthy Communities

Healthy communities are places that foster positive health outcomes for all who live, work, and play. Good nutrition, physical activity, and access to healthcare all influence health. However, health is also influenced by many other factors, including access to economic opportunities, safe and sanitary housing, high-quality education, and low exposure to pollution (see Figure 9.1). A city's physical, social, and economic environments combine to make residents healthier and more resilient to long-term changes and short-term shocks. Palmdale is working toward becoming a healthy community through the policy, program, and design interventions in the physical environment outlined in the General Plan.

Figure 9.1 Example of Healthy Communities Components



Environmental Justice

Environmental justice is defined in California's Government Code Section 65040.12(e) as "the fair treatment of people of all races, cultures, and incomes with respect to the development, adoption, implementation, and enforcement of environmental laws, regulations, and policies." For decades, many low-income communities and communities of color have experienced a disproportionate burden of environmental pollution because of past discriminatory land use and environmental policies. Environmental justice seeks to rectify these past injustices by protecting all people from exposure to pollution, toxins, hazardous wastes, radioactive materials, and other environmental harms. This Equitable and Healthy Communities Element incorporates goals, policies, and actions to address disproportionate pollution burden, prioritize improvements that address the needs of disadvantaged communities, and protect Palmdale residents from environmental harm and risk.


Smoke Stack

Disadvantaged Communities

According to California's Health and Safety Code (Section 39711), a "disadvantaged community" is defined as "a low-income area that is disproportionately affected by environmental pollution and other hazards that can lead to negative health effects, exposure, or environmental degradation." The California Communities Environmental Health Screening Tool (CalEnviroScreen) is a screening methodology developed by the California Office of Environmental Health Hazard Assessment (OEHHA) that is used to identify disadvantaged communities burdened by multiple sources of pollution. The General Plan's Public Health and Equity Existing Conditions Report utilized CalEnviroScreen version 3.0, the latest version at that time. Following the release of the Existing Conditions Report and before preparation of this element, OEHHA released CalEnviroScreen version 4.0, which includes updated data for all its component indicators as well as an additional pollution exposure indicator for children's lead risk from housing. Thus, this Element utilizes data from both CalEnviroScreen versions 3.0 and 4.0 to screen for and identify disadvantaged communities in Palmdale. Appendix A: Health and Equity Analysis provides the summary of the analysis.

As part of the General Plan process, other screening tools and data sources were also used to identify health impacts on disadvantaged communities in the city. For instance, the California Healthy Places Index[28] is a tool to understand the cumulative burden of social, economic, and environment conditions that may lead to unequal, inequitable, or disparate outcomes for a specific group of neighborhoods. This tool can be used to identify the top 25 percent highest scoring communities with less healthy community conditions, including housing, transportation, education, and poverty. Furthermore, the General Plan integrates data from the California Health Interview Survey and the County of Los Angeles's Community Health Profiles. Both data sources provide detailed information at multiple geographic levels of chronic disease rates, life expectancy, and other major health indicators.

28. Public Health Alliance of Southern California. Healthy Places Index 3.0. (2022). Retrieved from: https://map.healthyplacesindex.org/.

Context

This section provides an overview of existing health, equity, and environmental justice conditions in Palmdale. The description includes an identification of disadvantaged communities in the city and the major health inequities affecting residents.

Pollution Burden and Disadvantaged Communities

Compared to the rest of California, and especially compared to the rest of Los Angeles County, Palmdale has a lower pollution burden. The city has less exposure to environmental pollution such as lower levels of fine particulate matter (PM 2.5) and fewer groundwater threats and cleanup sites. However, most neighborhoods east of SR-14 are identified as disadvantaged communities based on two of the State's recommended screening methods, which includes CalEnviroScreen's overall index scores and low-income areas with high pollution burden for at least one pollution indicator. A high pollution burden for a given pollution indicator is defined as scoring in the top 25% compared to all other census tracts in the state[29]. The low-income areas shown in Figure 9.2 were identified as disadvantaged communities because of the high proportion of low-income households exposed to high pollution burden, mostly from ozone and toxic releases from facilities, in comparison to the rest of California. In addition, a few low-income areas were found to also face a high relative pollution burden from lead risk in housing and air pollution-related traffic impacts. Table 9.1 provides a summary of the pollution burden in the city.

29. California Office of Environmental Health Hazard Assessment. CalEnviroScreen 4.0. (2021). Retrieved from: https://oehha.ca.gov/calenviroscreen/report/calenviroscreen-40.

Table 9.1 Summary of Pollution Burden Indicators

Pollutant Exposures	Are Low-Income Areas Impacted?	Additional Considerations
Air quality: ozone	Yes, all low-income areas in the city have a high pollution burden for ozone. Thus, all low-income areas can be considered "disadvantaged communities."	The entire Antelope Valley basin has poor ozone levels, because of the region's plentiful sunshine and the air pollution that blows in from the Los Angeles basin.
Air quality: particulate matter 2.5	No low-income areas in Palmdale scored in the top 25% for this indicator.	There is no high relative pollution burden for particulate matter 2.5 in the city.
Children's lead risk from housing	Yes, four low-income census tracts scored in the top 25% for this indicator. Thus, these four low-income areas can be considered "disadvantaged communities."	One additional census tract in the far northeast of the city scored in the top 25%, but this area is unpopulated.
Diesel particulate matter	No low-income areas in Palmdale scored in the top 25% for this indicator.	There is no high relative pollution burden for diesel particulate matter in the city.
Drinking water contaminants	No low-income areas in Palmdale scored in the top 25% for this indicator.	There is no high relative pollution burden for drinking water contaminants in the city.
Pesticide use	No low-income areas in Palmdale scored in the top 25% for this indicator.	One census tract in the far northeast of the city scored in the top 25%, but this area is unpopulated.
Toxic releases from facilities	Yes, all low-income areas in the city have a high pollution burden for toxic releases from facilities. Thus, all low-income areas can be considered "disadvantaged communities."	Nearly all of Palmdale has high relative pollution burden for toxic releases from facilities, because of the nationally significant facilities in the city, such as Air Force Plant 42. (Plant 42)
Traffic impacts	Yes, one low-income census tract along SR-14 scored in the top 25% for this indicator. Thus, this low-income area can be considered a "disadvantaged community."	Although there are a few other census tracts that scored in the top 25% for this indicator, they are not low-income areas.

Pollutant Exposures	Are Low-Income Areas Impacted?	Additional Considerations
Cleanup sites	No low-income areas in Palmdale scored in the top 25% for this indicator.	There is no high relative pollution burden for cleanup sites in the city.
Groundwater threats	No low-income areas in Palmdale scored in the top 25% for this indicator.	There is no high relative pollution burden for groundwater threats in the city.
Hazardous waste generators and facilities	No low-income areas in Palmdale scored in the top 25% for this indicator.	Two census tracts in the city scored in the top 25%, but both are unpopulated areas owned by the LAWA or Plant 42.
Impaired water bodies	No low-income areas in Palmdale scored in the top 25% for this indicator.	There is no high relative pollution burden for impaired water bodies in the city.
Solid waste sites and facilities	No low-income areas in Palmdale scored in the top 25% for this indicator.	One census tract in the far west of the city scored in the top 25%, but this area is not low-income. Moreover, this indicator simply measures the presence of solid waste sites, such as the City's landfill, rather than actual risk of harm from such a facility.

As a result of pollution from the Los Angeles basin and the plentiful sunshine, the entire Antelope Valley has high levels of ozone pollution with the annual average exceeding safe levels for vulnerable populations. Diesel emissions from high volume roadways and truck routes, such as Palmdale Boulevard and Pearblossom Highway, also contribute to the high level of urban ozone pollution in lower-income neighborhoods. Moreover, because of the nationally significant facilities in the city, such as Plant 42, there is a higher relative concentration of toxic chemicals released into the air than in the rest of the state. Therefore, this element prioritizes improvements that address the needs of these identified disadvantaged communities by reducing disproportionate pollution burden and promoting public health.



Large Truck in Palmdale



Plant 42

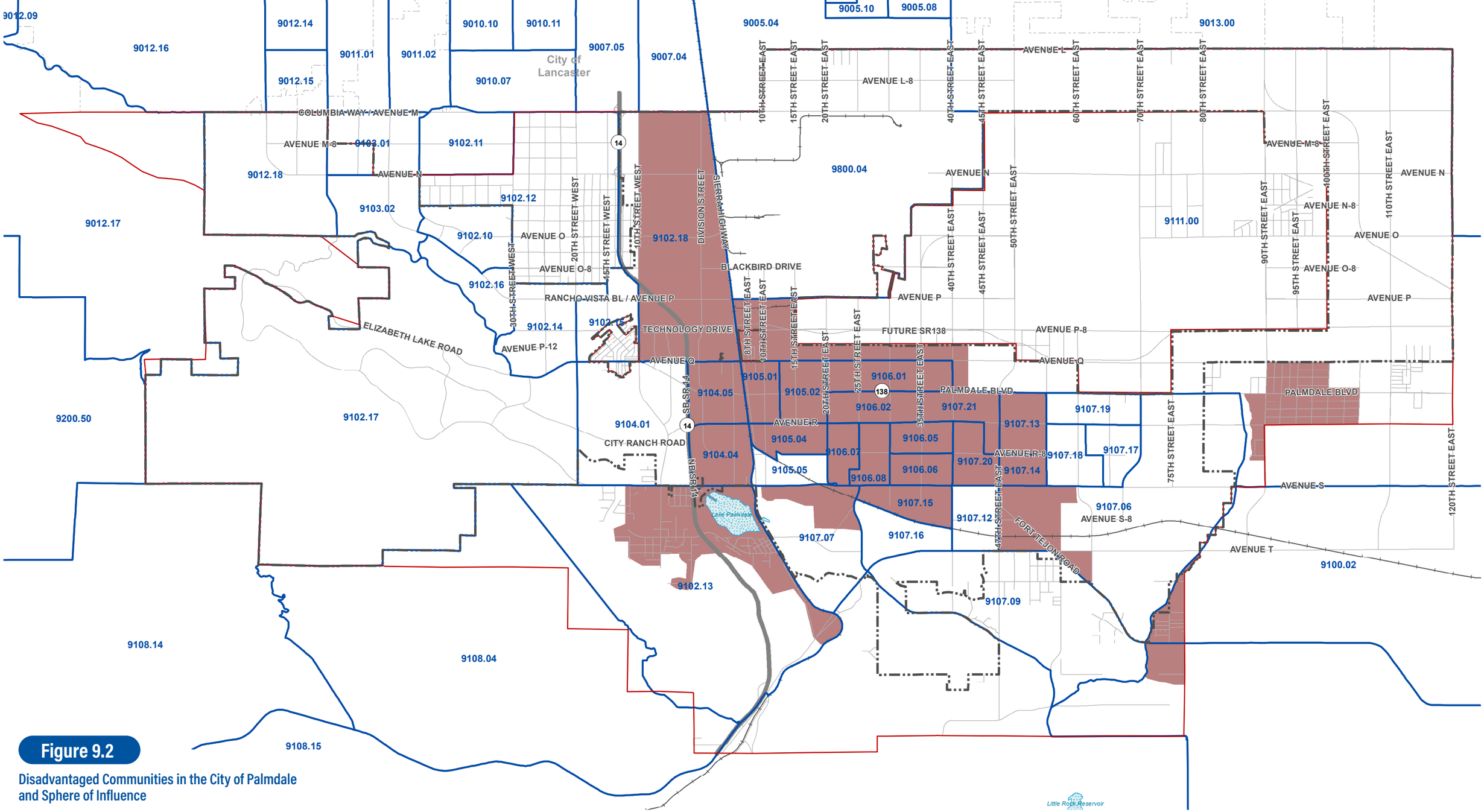


Figure 9.2

Disadvantaged Communities in the City of Palmdale and Sphere of Influence

This page intentionally left blank.

Social Determinants of Health

In addition to the environmental pollution assessment, the General Plan conducted an analysis of existing public health conditions in Palmdale. This section includes topics related to the social determinants of health, such as housing, economic opportunity, and access to public facilities. Table 9.2 provides a list of all the public health issues considered as part of the public health assessment and identified by City staff, focus groups, stakeholder interviews, and the consultant team. This section provides a summary of the public health assessment, more details can be found within the Palmdale 2045 General Plan Public Health and Equity Existing Conditions Report.

Health Status

Life expectancy varies depending on place of residence, race and ethnicity, gender identity, sexual orientation, and place of birth, among other factors. On average, life expectancy in Palmdale is 78.5 years; nearly four years less than Los Angeles County's life expectancy of 82.3 years.[30] However, ~~in southeastern Palmdale, south of East Avenue S and west of 26th Street East,~~ life expectancy ~~is as low as 74.7 years~~ within the city varies greatly by neighborhood; with some areas of central Palmdale having a life expectancy as low as 74.0 years, while areas of west Palmdale having a life expectancy of 84.0 years.[31] There is no single cause for this disparity. Rather, it suggests that the average Palmdale resident faces a variety of physical, social, and economic conditions that negatively impact health status and life expectancy. Disparities in life expectancy underscore the importance of improving community health as a critical long-term goal.

Other indicators of health status can highlight a population's risk factors and suggest policy priorities. For example, in 2018, 18.2% of adults in Palmdale had been diagnosed with asthma, which is significantly higher than the statewide adult asthma rate of 15.9%.[32] Moreover, in 2018, 33.3% of adults in the city had been diagnosed with obesity, which is significantly higher than the corresponding statewide rate of 26.8%. Compared to countywide averages, Palmdale also has higher rates of several other chronic diseases including chronic obstructive respiratory disease (COPD), coronary heart disease, diabetes, and mental illness. Similar to the geographic disparities in life expectancy mentioned above, there are disproportionately higher rates of chronic diseases in the low-income communities and communities of color east of SR-14. Therefore, General Plan policies and actions to improve air quality and to equitably expand safe and convenient opportunities for physical activity can make a significant difference in improving the health of Palmdale residents.

Table 9.2 Public Health Issues Assessed

Public Health Indicators		
Life expectancy	Obesity and overweight	Housing cost-burden
Heart disease	Youth physical activity levels	People experiencing homelessness
Chronic obstructive pulmonary disease	Mental health and substance abuse	High-volume roadways and truck routes
Lung cancer	Asthma	Food access
Stroke	Diabetes	Crime and public safety
Alzheimer's disease	Access to healthcare	



Large Road through Palmdale

30. Los Angeles County Department of Public Health. LA County Health Profile: City of Palmdale. (2018). Retrieved from: http://publichealth.lacounty.gov/ohae/docs/cchp/pdf/2018/Palmdale.pdf.
31. Centers for Disease Control and Prevention. Life Expectancy Estimates by U.S. Census Tract, 2010-2015. National Center for Health Statistics. 2020. Retrieved from: https://www.cdc.gov/nchs/data-visualization/life-expectancy/
32. UCLA Center for Health Policy Research. California Health Interview Survey. (2018).

Access to Housing and Economic Opportunity

Compared to the rest of Los Angeles County, Palmdale has a comparatively affordable housing stock that provides residents with a greater degree of housing security and allows residents an opportunity to achieve homeownership, as evidenced by high homeownership rates. Additionally, the city is also home to some of the most innovative research and development in the aerospace industry with Plant 42, which provides economic opportunity and supplies high quality STEM jobs for the region.

Though housing costs are comparatively lower than the Los Angeles basin, costs are still exceedingly high based on household income for some Palmdale residents. Many low-income families and households of color face significant housing cost-burden, which forces families to choose between housing and other important expenses, such as healthcare, prescription medicines, and healthy food. As of 2017, nearly half of the population (48 percent) was under 200 percent of the Federal Poverty Level, which was 10 percent higher than the countywide poverty rate of 38 percent. Furthermore, multifamily affordable housing is challenging to develop because of rising development costs and a lack of existing infrastructure in certain areas of the city. Therefore, this General Plan provides the opportunity to promote an inclusive economic, educational, and housing strategy that focuses on expanding access to jobs with prevailing wages, strengthening trade schools and job training programs, and providing more affordable housing opportunities for residents of all ages in the city.

People Experiencing Homelessness

A close connection exists between rising housing costs and homelessness. According to the Centers for Disease Control and Prevention, people experiencing unsheltered homelessness are those who are sleeping outside or in places not meant for human habitation[32]. In January 2020, the Los Angeles Homeless Services Authority reported 289 residents experiencing homelessness in Palmdale[33]. Of those 289 residents, 241 were unsheltered and 48 were in an emergency shelter. Of the 241 unsheltered residents, about 29% lived in makeshift shelters, 27% lived in RVs or campers, and 20% lived on the street without a makeshift shelter. Of the 48 who were in an emergency shelter, all were counted at the winter emergency shelter operated by the Volunteers of America – Greater Los Angeles.

To prevent and combat homelessness in Palmdale, the Housing Authority of the City of Palmdale partners with The Salvation Army, South Antelope Valley Emergency Services (SAVES), Hope of the Antelope Valley, the County of Los Angeles, and other organizations to implement the Homeless Prevention and Rapid Rehousing Program (HPRRP). The HPRRP supports households who are at risk of experiencing homelessness by preventing episodes of being without housing. The program also assists individuals and families experiencing homelessness by providing relevant and accurate information that creates a path for them to no longer be without housing and creates housing opportunities that meet their needs.

Access to Public Facilities and Amenities (Healthy Food, Healthcare, Recreational Facilities)

Affordability, long distances to healthcare facilities, and limited transportation options pose significant barriers for the city's large population of adults and children currently living at or below the poverty line. In fact, a quarter (25 percent) of adults in Palmdale report difficulty accessing health care[34]. While a variety of health facilities exist, there is a shortage of healthcare providers to meet the demand. Palmdale has been federally designated as a health shortage area for primary care providers, particularly in areas east of SR-14 and south of Avenue Q. Additionally, almost the entire city is federally designated as a health shortage area for mental health providers. Federal regulations stipulate that a shortage of providers is based on a population-to-provider ratio. For primary care providers, the ratio is 3,500 to 1, while for mental health providers, the ratio is 9,000 to 1[35].

While various food stores exist in Palmdale, access to fresh produce and healthy food is limited in certain neighborhoods, especially along the southern and eastern boundaries of the city. At the time this General Plan was prepared, no Certified Farmers Markets are offered in Palmdale. Additionally, the high concentration of fast-food restaurants along Palmdale Boulevard, East Avenue S, and Rancho Vista Boulevard exacerbates poor access to healthy food for residents. A priority of Palmdale 2045 is to locate grocery stores and other healthy food retailers that sell affordable, high-quality fruits and vegetables in low-income neighborhoods to improve nutrition and health outcomes for Palmdale residents.

33. Centers for Disease Control and Prevention. Interim Guidance on People Experiencing Unsheltered Homelessness. (2022). Retrieved from: https://www.cdc.gov/coronavirus/2019-ncov/community/homeless-shelters/unsheltered-homelessness.html.
34. Los Angeles Homeless Services Authority. 2020 Homeless Count Data: City of Palmdale. (2020). Retrieved from: https://www.lahsa.org/data?id=45-2020-homeless-count-by-community-city.
35. Los Angeles County Department of Public Health. LA County Health Profile: City of Palmdale. (2018). Retrieved from: http://publichealth.lacounty.gov/ohae/docs/cchp/pdf/2018/Palmdale.pdf.
36. U.S. Department of Health and Human Services, Health Resources and Services Administration. Designated Health Professional Shortage Areas Statistics. (2022). Retrieved from: https://data.hrsa.gov/Default/GenerateHPSAQuarterlyReport.

Through the community engagement process, Palmdale residents identified an ongoing division between the eastern and western portions of the city. Residents also noted the feeling of inequitable distribution of public services, including quality schools, parks, and recreational programs that influence health and quality of life. Through the General Plan update process, careful consideration of future park priority areas where identified. A map of future park priority areas and parks to neighborhood distribution can be found in the Parks, Recreation, and Open Space Element. Moving forward, by partnering with local school districts, there are opportunities to leverage school sites to further access to recreational facilities and primary care providers.

Tobacco Use

The Centers for Disease Control and Prevention report smoking as the leading cause of preventable death in the United States.[36] Though the effects of smoking are well-known and strong anti-smoking policies have reduced popularity since the mid-1990s, smoking is still prevalent in cities across the United States.

A 2015 Los Angeles County Health Survey found that 17% of Palmdale adults over age 18 smoke cigarettes, compared to 13% of adults in Los Angeles County[36]. The report found that smoking prevalence varies across communities and cities, though the Antelope Valley reported among the highest percentage of smokers in the county.[38]

The City of Palmdale has implemented measures to reduce smoking and limit secondhand smoke, most recently through the 2022 amendment to the City's Smoking Ordinance, that further restricts smoking in public places. The Palmdale Municipal Code includes several smoking related regulations including regulation of smoking in enclosed public places, places of employment, separation of nonsmoking and smoking areas, and places where smoking is not regulated. The City has also targeted illegal cigarette and tobacco sales to minors with the help of state funding through the California Department of Justice's Tobacco Grant Program. Ongoing efforts include coordination with the Palmdale Sheriff's Department for retail sales enforcement, and anti-tobacco advertising aimed at discouraging use, especially among minors.[36]







37. Centers for Disease Control and Prevention. Tobacco Information and Prevention (TIPS). Tobacco use in the United States. Retrieved from: http://publichealth.lacounty.gov/ha/reports/habriefs/2007/Cigarette_Smoking_Cities_finalS.pdf
38. Los Angeles County Department of Public Health. LA County Health Profile: City of Palmdale. (2018). Retrieved from: http://publichealth.lacounty.gov/ohae/docs/cchp/pdf/2018/Palmdale.pdf.
39. Los Angeles County Department of Public Health, Los Angeles County Health Survey, 2015.
40. City of Palmdale. Tobacco Compliance. Retrieved from: https://cityofpalmdale.org/661/Tobacco-Compliance

Community Engagement

Extensive community engagement was a key priority throughout the General Plan Update process. Activities and discussions took place over four years—and at every stage—to fully understand the key values and ideas residents have for the future of Palmdale. The City hosted 18 General Plan Advisory Committee (GPAC) meetings, 4 public workshops, 3 online surveys, 14 pop-up workshops, and dozens of small-group meetings that encouraged community members to collaborate with neighbors, prioritize outcomes, and participate in the land use map update, among others.

An important component of the engagement process was to seek participation from Spanish-speaking populations in Palmdale and those generally under-represented in local government. Most meetings offered simultaneous Spanish translation, while all meetings welcomed translation requests (made in advance to the City), all surveys were provided in hard copy format and in Spanish, and separate discussions with Spanish speakers, seniors, and others without internet access took place throughout the General Plan update process.



Palmdale Visioning Workshop

Community input helped shape the content and strategies of the Equitable and Healthy Communities Element and highlighted important themes which are woven throughout the General Plan. The themes related to health, equity, and environmental justice included:

A DESIRE FOR A MORE DIVERSE EMPLOYMENT BASE AND REDUCED RESIDENT COMMUTE TIMES.

IMPROVED ACCESS TO HEALTHCARE FACILITIES AND SERVICES.

AN IMPROVED PARKS AND OPEN SPACE SYSTEM WITH CONNECTIONS TO RESIDENTIAL NEIGHBORHOODS.

EXPANDED AND SAFE TRANSPORTATION OPTIONS INCLUDING BIKE LANES, TRAILS, AND SIDEWALKS.

A ROBUST AND HEALTHY FOOD SYSTEM.

DIVERSE AND AFFORDABLE HOUSING OPTIONS THAT PROVIDE PATHWAYS TO ACHIEVE HOMEOWNERSHIP.

It is important to note that the COVID-19 Pandemic occurred during the update process. From 2019 through March 2020, all General Plan activities were held both in-person and online. In response to State and local public health guidance regarding the COVID-19 virus, all engagement activities—except for some pop-up events—were held virtually from March 2020 through the end of the update process.

Desired Outcomes, Indicators, and Targets

The following desired outcomes and metrics have been identified to help the City of Palmdale track progress toward improving health and equity citywide. This process follows the City of Palmdale's General Plan Vision and Guiding Principles document which was informed by the General Plan Advisory Committee (GPAC), the Planning Commission and City Council.

Key Outcomes

OUTCOME: An equitable local economy that provides career pathways and economic opportunities for existing residents, especially local youth.

KPI:
- Expanded economic opportunities for existing residents.

TARGET:
- **Increase in the number of youths who participate in job training programs and are connected to employment opportunities in local industries.**

OUTCOME: Improved health and quality of life, and lower rates of chronic diseases, among all residents.

KPI:
- Greater opportunities for physical activity.

TARGET:
- **Increase in the proportion of residents living within a 20-minute walking distance from a dedicated public park, school, or multi-use trail.**

KPI:
- Improved access to healthy food.

TARGET:
- **Increase in the proportion of residents living within a 20-minute walking distance of a grocery store, farmers market, community garden, or other healthy food retailer.**

OUTCOME: Diverse housing options including mixed-use and affordable options, for existing and future residents.

KPI:
- Diversified housing stock in Palmdale.

TARGET:
- **Substantial increase in new multifamily housing units by 2045, 20% of which are affordable to families earning less than 80% of the area median income.**

OUTCOME: Improved air quality for all residents.

KPI:
- Improved air quality with increased landscaping and trees.

TARGET:
- **Expanded tree canopy, especially in disadvantaged communities.**

KPI:
- Reduced exposure to toxic air pollution from industrial facilities.

TARGETS:
- **Increase in the percentage of housing units, especially in disadvantaged communities, with air pollution reduction features and other measures that eliminate pollutants.**
- **Reduce smoking in public outdoor places in accordance with Ordinance No. 1580 and/or Ordinance No. 1571.**

KPI = Key Performance Indicator

Goals and Policies

The following section includes goals and policies for the Equitable and Healthy Communities Element. Goals and policies are followed by implementation actions. Health, equity, and environmental justice policies are woven throughout the General Plan, including in the Circulation and Mobility, Public Facilities, Services, and Infrastructure, and Parks, Recreation, and Open Space elements, among others.

It is the overall goal of this Equitable and Healthy Communities (EHC) Element to ensure that goals, policies, and implementation actions that address the needs of Palmdale's disadvantaged communities are given priority. While all goals, policies, and implementation actions of this Element apply to all residents, priority shall be given to those projects, programs, and resources that would fulfill the needs of residents living in disadvantaged communities.

ECONOMIC OPPORTUNITY / EDUCATION PARITY

Goal EHC-1

A City that promotes equitable access to economic opportunity for all residents.

EHC-1.1 Equitable investments. Prioritize public infrastructure and facilities investments and develop incentives to promote private development investment in disadvantaged communities.

EHC-1.2 Community benefits agreements. Develop a community benefits agreement for major private development projects, which may include affordable housing, job training funds, housing assistance, payment of parks and recreation fees or installation of amenities onsite and/or local hiring.

EHC-1.3 Equity impact assessments. Regularly evaluate the impact of public infrastructure, facilities, and program investments, such as through equity impact assessments, to ensure equitable distribution of public resources across Palmdale.

EHC-1.4 Small business development. Foster small business development with educational resources (e.g., funding sources, mentorship programs, etc.), permitting information, and services that can promote long term success in the city.

EHC-1.5 Small business funding. Consider establishing funding for small business grants that prioritize low-income, women-owned, minority-owned, and/or LGBTQ-owned small businesses.

EHC-1.6 Career pathways. Work with interested organizations and residents to create a youth job development partnership – connecting local businesses to youth for after school and summer work, volunteer positions, mentorship opportunities, and other skills development opportunities.

EHC-1.7 Services coordination. Actively encourage the provision of public and private employment training, rental assistance, financial training, and other supportive services in multiple languages to enable households to be self-sufficient.

EHC-1.8 Internet Access. Offer free high-speed ~~internet~~ Wi-Fi inside and outside of all City-owned facilities, especially in disadvantaged communities.

EHC-1.9 Bridging the digital divide. Ensure all homes and businesses in the city have access to a fiber optic internet connection.

Goal EHC-2

A City with high-quality educational services and facilities in all neighborhoods, especially disadvantaged communities.

EHC-2.1 Education districts. Create two education districts in locations that are well-served by transit:

- Near Antelope Valley ~~Community~~ College and Palmdale High School (Palmdale Boulevard and 25th Street East); and,
- In the vacant area on the northern side of Palmdale Boulevard and 47th Street East.

EHC-2.2 Educational uses. Attract a mix of educational uses such as public and private higher education facilities, satellite campuses, trade schools, along with supporting uses like retail and housing in the Educational Flex land use designation.

EHC-2.3 Higher education institution. Attract a new major higher education institution.

EHC-2.4 Access to public facilities. Maintain and expand access to education-related public facilities and services, including schools, libraries, and recreational spaces, to better support communities.

EHC-2.5 Daycare facilities. Promote opportunities for new affordable daycare, childcare, and pre-K facilities in Village Centers, and encourage these supporting uses in the Educational Flex land use designation.

COMMUNITY ENGAGEMENT

Goal EHC-3

A City that promotes meaningful and equitable engagement with all residents.

EHC-3.1 Strengthening community partnerships. Encourage continuous participation in City planning processes, especially targeting hard-to-reach populations, including developing partnerships with local community-based organizations and faith-based institutions to help facilitate conversations.

EHC-3.2 Communication and transparency. Regularly monitor key milestones of investments in disadvantaged communities and provide regular updates via City communication channels and networks.

EHC-3.3 Equity Committee. Consider the creation of a Palmdale Equity Committee to provide guidance on equity-related topics in City governance.

EHC-3.4 Youth Council. Create a Palmdale Youth Council to participate in City governance and share in decision-making around issues impacting youth.

EHC-3.5 Reduce barriers to participation. Address barriers to civic participation at all public meetings by scheduling them at times convenient for residents and by providing transportation options, childcare services, and healthy food options at meetings.

EHC-3.6 Language accessibility. Provide multilingual interpretation at all public meetings, translate all meeting materials into Spanish and, by request, into other spoken and visual languages.

EHC-3.7 Virtual participation. Continue to make public hearings and meetings available virtually to expand community participation.

ACCESS TO HEALTH CARE

Goal EHC-4

A City committed to supporting health equity and promoting access to high-quality health care.

EHC-4.1 Health and wellness districts. Create three health and wellness districts in locations that are well-served by transit:

- Around the Palmdale Regional Medical Center (Palmdale Boulevard and 10th Street West)
- Along Palmdale Boulevard and 40th/45th Streets East
- Adjacent to Kaiser Permanente (East Avenue S and 45th Street East)

EHC-4.2 Health and wellness uses. Allow and encourage a mix of public and private medical, health, and wellness uses including emergency medical facilities, medical and supportive retail, offices, healthcare clinics and pharmacies in the Health and Wellness land use designation.

EHC-4.3 Access to primary care. Encourage programs and practices that aim to increase access to primary healthcare, especially for low-income residents. Support partnerships with local health service providers, Los Angeles County Public Health Department, schools, and other community-based organizations to promote health, wellness, and preventative care.

EHC-4.4 Transit access to healthcare. Work with local transit agencies to ensure that bus routes provide transit service to health service facilities, especially from disadvantaged communities.

EHC-4.5 Subsidized medical transportation. Partner with local health systems and service providers to support Medicare and Medi-Cal recipients in accessing existing reimbursement programs for non-emergency medical transportation.

EHC-4.6 Health data monitoring. Collaborate with the County of Los Angeles to track health data and ensure the City has necessary health-related data to guide decision-making.

EHC-4.7 Community Health Profile. Partner with the Los Angeles County Department of Public Health to provide regular updates to Palmdale's Community Health Profile, as needed.

EHC-4.8 Affordable healthcare options. Partner with the Los Angeles County Department of Public Health and other regional partners to provide residents with information on affordable and accessible healthcare services.

Goal EHC-5

A City committed to promoting access to high-quality mental health care and social services.

EHC-5.1 Access to mental healthcare. Collaborate with the County of Los Angeles and regional health organizations to improve access to mental healthcare, especially in disadvantaged communities.

EHC-5.2 Community input. Partner with the County and local health systems to gather community input on the city's existing mental healthcare infrastructure to improve behavioral health services accordingly.

EHC-5.3 Preventive mental healthcare. Develop programs and services that improve wellbeing and help reduce stress and mental health issues, especially for vulnerable populations such as foster youth, at-risk youth, and older adults.

EHC-5.4 Homeless services coordination. Coordinate with the Los Angeles County Homeless Services Authority to help residents currently or at risk of experiencing homelessness to access education, facilities, and health services.

EHC-5.5 Homelessness Coordinator. Consider creating a dedicated City staff position to function as a liaison with the County and Palmdale residents currently or at risk of experiencing homelessness.

EHC-5.6 Partnerships with local shelters. Continue to partner with local shelters to provide cots for emergency shelter situations, including extreme heat and cold days.

EHC-5.7 At-risk youth services. Coordinate with the Los Angeles County Department of Children and Family Services to support programs for at-risk youth and parents of at-risk youth, such as parent training programs, health and mental health resources, and youth transition programs.

EHC-5.8 Cooling centers. Coordinate with local agencies and organizations to establish centralized cooling centers during extreme heat days, and provide transportation to these facilities for older adults, disabled individuals, and other residents who may have transportation barriers.

HOUSING

Goal EHC-6

Promote neighborhoods with a range of housing opportunities that provide housing opportunities for people of all ages, abilities, socio-economic status, family structure and size.

EHC-6.1 Transit-oriented housing. Direct the location of senior and multi-family housing to high resource areas accessible to public transportation, supportive commercial uses, and community facilities.

EHC-6.2 Housing diversity. Encourage a variety of housing types developed at a range of densities to serve varying household types, including, but not limited to, single-family attached and detached, accessory dwelling units, multi-family apartments, townhomes, duplexes, triplexes, quadplexes, and condominiums.

EHC-6.3 ADA compliant housing. Facilitate housing for older adults, special needs groups, including the developmentally disabled, and non-traditional family groups by allowing a diverse range of housing configurations that are Americans with Disabilities Act (ADA) compliant and flexible.

EHC-6.4 Aging in place. Promote development of housing types that support multi-generational households and opportunities to age in place.

EHC-6.5 Resource families. Promote development of housing types that support resource families and meet the needs of foster youth and transition age youth.

EHC-6.6 Development review process. Periodically lead a comprehensive review of all steps in the development approval process to identify the factors that impede a variety of new residential construction, including affordable housing.

EHC-6.7 Streamlining housing development. Create a one-stop permitting shop that streamlines review of potential housing projects and makes it accessible and easy for applicants to get the answers they need.

EHC 6.8 Pre-application housing meetings. Encourage pre-application meetings with department staff to review potential projects and ensure consistency with the General Plan vision.

Goal EHC-7

A City that preserves and expands its supply of affordable housing.

EHC-7.1 Affordable housing preservation. Preserve or replace units with expiring affordable housing subsidies.

EHC-7.2 Mobile home parks. Use regulatory and financial tools to make mobile home spaces permanently affordable.

EHC-7.3 Vacant and underutilized land. Identify vacant and underutilized land, including publicly owned land, suitable for affordable housing.

EHC-7.4 Affordability period. Require that all units developed under any of the City affordable housing programs remain affordable for the longest possible time or at least 30 years.

EHC-7.5 Affordable housing impact fee. Consider a program where new commercial and/or industrial developments pay a fee to fund affordable housing units.

EHC-7.6 Accessory dwelling units. Periodically update the City's Accessory Dwelling Unit (ADU) ordinance to be consistent with State law. Consider providing permit ready ADU plans to residents.

EHC-7.7 Expedited permitting for affordable housing. Develop an expedited permitting program to support the creation of new affordable housing.

Goal EHC-8

A City that encourages the construction and maintenance of safe, sanitary, and health-promoting housing.

EHC-8.1 Housing rehabilitation. Consider a housing rehabilitation program that assists multi-family residential property owners in modernizing and maintaining units. For example, support efforts to upgrade affordable units with effective ventilation and insulation systems, and eliminate common home pollutants such as lead, asbestos, mold, and pests.

EHC-8.2 Code enforcement. Develop a community code enforcement partnership to ensure ongoing and effective health and safety code enforcement, with priority given to rental properties in disadvantaged communities.

EHC-8.3 Residential Rental Housing Inspection Program. Evaluate the existing Residential Rental Housing Inspection Program and develop measures to improve effectiveness.

EHC-8.4 Municipal code and healthy housing. Review, revise, and update the municipal and zoning code (as well as other relevant plans, procedures, regulations, guidelines, programs, and design manuals) as needed, to promote healthy housing quality. Regulations may include:

- Siting buildings to encourage walking and physical activity
- Designing internal staircases that are visually prominent and attractive
- Designing buildings to allow for high levels of natural light and air
- Limiting concentration of unhealthy uses in proximity to sensitive uses
- Providing safe linkages to parks, trails, schools, and recreation
- Providing on-site recreational facilities
- Using materials that are proven to avoid negative health impacts

Goal EHC-9

A City that proactively supports low-income residents who are housing insecure.

EHC-9.1 Renter education and assistance. Connect low-income residents to City, County, State, and non-profit resources that provide technical, legal, and financial assistance for renters facing eviction.

EHC-9.2 Tenant protections. Consider developing a tenant protections plan, which may include a rent stabilization policy, just cause eviction and harassment protections, tenant and landlord mediation programs, right of first refusal, rental assistance, tenant legal counseling, and a rent board to implement the program.

EHC-9.3 Fair housing. Strictly enforce fair housing laws to protect residents from housing discrimination.

EHC-9.4 Mortgage assistance resources. Connect low-income residents at risk of foreclosure to county, state, and non-profit homeowner assistance programs.

EHC-9.5 Rapid rehousing. Continue to support the Homeless Prevention and Rapid Rehousing Program to support households who are at risk of becoming unhoused.

EHC-9.6 Permanent supportive housing. Implement the U.S. Department of Housing and Urban Development's Housing First program once permanent supportive housing is available in the city.

EHC-9.7 Limited-equity housing. Encourage resident controlled limited-equity ownership, such as limited-equity condominiums, limited-equity cooperatives, and community land trusts.

PHYSICAL ACTIVITY

Goal EHC-10

Encourage neighborhoods with a range of opportunities to exercise, including parks and recreational facilities.

EHC-10.1 Near-universal access to recreation. Work toward a goal of having 90 percent of residents living within a 20-minute walking distance of a dedicated park, school, or multi-use trail.

EHC-10.2 Access to open space. Plan for new parks and increase access to existing and future parks, trails, and open spaces, especially in disadvantaged communities.

EHC-10.3 Recreational programs. Prioritize investments in recreational programs that focus on physical activity.

EHC-10.4 Community partnerships. Partner with community-based organizations to improve access to recreational opportunities that promote physical activity across the city, particularly in park-poor neighborhoods.

EHC-10.5 Fee waivers. Consider fee waivers for low-income families, such as families with children who participate in the National School Lunch Program, so that all residents have access to the City's recreational programming.

Goal EHC-11

Encourage neighborhoods that support safe pedestrian, bicycle, and public transit access for people of all ages, income levels, and cultural backgrounds.

EHC-11.1 Near-universal walk access to retail and services. Plan for 90 percent of residents (except for equestrian residential areas) to be within a 20-minute walking distance of a Village Center with retail and neighborhood services.

EHC-11.2 Complete ~~s~~Streets investments. Prioritize transportation system improvements that promote Complete Streets objectives, incorporate universal design principles, and encourage walking, biking, and transit use in disadvantaged communities.

EHC-11.3 Improve connectivity. Strive for a high level of connectivity of residents to Village Centers and neighborhood services through site design, open space linkages, and bicycle facilities. Integrate land use and transportation infrastructure to support a connected system of sidewalks, bikeways, greenways, and transit.

EHC-11.4 Streetscape enhancements. Enhance existing streetscapes to include greater sidewalk coverage, walkway connectivity, street trees and shade, street lighting, street crossing safety features, traffic calming measures, transit shelters, and other design elements, especially in disadvantaged communities.

EHC-11.5 Safe routes for older adults. Develop safe routes for aging adults, particularly routes to transit and shopping centers.

AIR QUALITY / RESPIRATORY HEALTH

Goal EHC-12

A City designed to improve air quality and reduce disparate health impacts.

EHC-12.1 Tree planting. Plant street trees, identified within the City's plant palette, throughout Palmdale, and especially in disadvantaged communities. Plant trees to provide shade and screening, especially along south and west facing sides of buildings.

EHC-12.2 City vehicle fleet. Transition the City's vehicle fleet to lower-emission fuel technologies.

EHC-12.3 Truck routes. Designate truck routes to avoid sensitive land uses, where feasible.

EHC-12.4 Sensitive land uses. Avoid siting schools, daycare facilities, playgrounds, older adult housing, and housing near land uses that produce localized air pollution (e.g., SR-14, SR-138, and Plant 42). For sensitive land uses that cannot be sited at least 500 feet away from sources of localized air pollution, potential design mitigation options include:

- Provide residential units with individual heating, ventilation, and air conditioning (HVAC) systems to allow adequate ventilation with windows closed.
- Locate air intake systems for HVAC systems as far away from existing air pollution sources as possible.
- Use High Efficiency Particulate Air (HEPA) air filters in the HVAC system and develop a maintenance plan to ensure the filtering system is properly maintained.
- Use sound walls, berms, and vegetation as physical barriers.
- Notify new potential home buyers of risks from air pollution.

EHC-12.5 Air quality monitoring. Develop a citywide air quality monitoring program to identify areas with high gas, oil, and toxic chemical emissions, in addition to tracking changes over time, identifying polluters, and analyzing potential interventions.

EHC-12.6 Air quality planning. Participate in air quality planning efforts with local, regional, and state agencies that improve local air quality to protect human health and minimize the disproportionate impacts on sensitive population groups.

EHC-12.7 Toxic air emissions. Coordinate with regional, state, and federal agencies, including the U.S. Environmental Protection Agency, as well as large aerospace and industrial employers to decrease toxic chemical emissions. Proactively explore potential partnerships and interventions to decrease potential exposure of residents to these chemicals.

Goal EHC-13

A City that strives to be a smoke-free community.

EHC-13.1 Smoke-free public space. Update the municipal code to require all City-owned public places, including outdoor facilities, to be smoke-free and vape-free to reduce exposure to second-hand smoke.

EHC-13.2 Smoke-free workplaces. Encourage employers to provide smoke-free and vape-free workplaces.

EHC-13.3 Smoke-free multifamily housing. Adopt an ordinance to transition all multi-family buildings into smoke-free and vape-free housing.

EHC-13.4 Smoking product retailers. Limit the sale of tobacco and other nicotine products in neighborhoods with a significant concentration of stores (e.g., multiple stores on the same block or intersection) and near child-sensitive areas, such as schools, parks, and daycare facilities. Consider distance requirements from sensitive uses.

EHC-13.5 Limit smoking advertisements. Encourage store owners to limit advertising for tobacco products.

EHC-13.6 Anti-smoking education. Coordinate with Los Angeles County Department of Public Health and local community partners to continue educational campaigns regarding anti-smoking measures.

FOOD ACCESS

Goal EHC-14

A City that provides safe and convenient access to affordable and high-quality fruits and vegetables.

EHC-14.1 Near-universal walk access to healthy food retailers. Work toward a goal of having 90 percent of residents living within a 20-minute walking distance of a grocery store, farmers market, community garden, or other healthy food retailer.

EHC-14.2 Farmers' markets. Partner with organizations to bring one (or more) weekly Certified Farmers Markets to Palmdale. Encourage future farmers markets to accept CalFresh Electronic Benefit Transfer (EBT) cards; Women, Infants, and Children (WIC) benefits; and Senior Farmers' Market Nutrition Program (SFMNP) benefits.

EHC-14.3 Grocery stores. Partner with developers and other stakeholders to bring full-service and affordable grocery stores to disadvantaged communities in Palmdale.

EHC-14.4 Corner store conversion. Utilize economic development incentives to encourage existing convenience stores, especially in disadvantaged communities, to expand inventory and to sell fresh, healthy foods such as produce. Assist convenience stores in modifying retail space with basic refrigeration and shelving ~~and to~~ transform into economically viable healthy food retailers.

EHC-14.5 Other healthy food retail. Incentivize the location and expansion of new and existing small businesses that sell and/or serve healthy food options.

EHC-14.6 Fast food and liquor stores. Limit drive-through restaurants and off-sale alcohol beverage establishments—as defined in the municipal code—in neighborhoods with a significant concentration of stores (e.g., multiple stores on the same block or intersection) and child-sensitive areas, such as schools, parks, and childcare facilities.

EHC-14.7 Local food production. Strengthen the local economy by encouraging local food production, community gardens, and farmers markets on vacant or underutilized parcels.

EHC-14.8 Transit access to healthy food retailers. Improve ready access to healthy food retailers along key transit corridors and within transit-oriented developments. Work with local transit agencies to ensure that bus routes provide service from disadvantaged communities to healthy food retailers.

EHC-14.9. Food waste diversion. Partner with local grocery stores, restaurants, and other food retailers to divert food waste and donate extra food to local food banks, soup kitchens, and shelters.

Goal EHC-15

A City that encourages healthy eating habits for all residents.

EHC-15.1 Student nutrition education. Work with local school districts and other educational facilities to create or implement educational programs for children about healthy eating, such as edible schoolyards and healthy cooking classes.

EHC-15.2 Healthy food options. Require that City-funded events offering refreshments, also offer healthy food choices and water to participants.

EHC-15.3 Communications support. Help publicize small retailers and restaurants that sell and/or serve affordable and high-quality fruits and vegetables, including locally grown foods.

EHC-15.4 Nutrition education. Partner with the Los Angeles County Department of Public Health to develop food education programs, including culturally tailored messages, fruit and vegetable incentives, parenting skill classes, nutrition, and physical activity.

EHC-15.5 Gardening education. Partner with community-based organizations to provide gardening and composting classes citywide with an emphasis in disadvantaged communities.

CRIME AND PUBLIC SAFETY

Goal EHC-16

A City that improves public safety for all residents by reducing crime and injuries.

EHC-16.1 Pedestrian and bicyclist safety. Strive for a safe transportation system by making transportation improvements in areas with a high incidence of collisions, injuries, and death, especially for pedestrians and bicyclists. Street improvements may include the following:

- Marked crosswalks
- Bicycle lanes
- Traffic calming

EHC-16.2 Coordination with Sheriff's Department. Continue to coordinate with Los Angeles County~~'s~~ Sheriff's Department for improvements to public safety.

EHC-16.3 Crime prevention through environmental design. Use Crime Prevention Through Environmental Design (CPTED) strategies in new and existing development to improve public safety, including the following:

- Active public space
- Building design to promote "eyes on the street"
- Maintenance of public places
- Removal or repair of vandalism or broken property

EHC-16.4 Public realm lighting. Improve lighting and nighttime security across all city neighborhoods to prevent crime and increase safety.

EHC-16.5 Graffiti prevention. Continue to support the graffiti prevention team to remove graffiti from public property (including parks, street signs, sidewalks) or property adjacent to public rights-of-way.

Implementation Actions

The table below identifies programs, policy updates, planning efforts, coordination efforts, and other actions that will help implement the General Plan's Equitable and Healthy Communities Element vision and policies. Programs are consistent with this chapter's goals and policies.

The table provides a description of each Implementation Action and lists the correlating policies. Each action also identifies a timeframe for implementation with Short-term representing a 1–3-year timeframe, Medium-term is 4-7 years, Long-term is 8+ years and Ongoing represents an action that the City should continue. Additionally, the table includes the City department that should function as the lead for implementing the actions.



Correlating Goals	Action	Timeframe	Responsible Department
EHC-1	**Small business incubator.** Explore public and private partnerships to develop a small business incubator for lower-income entrepreneurs~~residents~~.	///	Economic and Community Development
EHC-1	**Hiring apprentices.** Develop apprenticeship utilization requirements for public infrastructure projects in Palmdale, focusing efforts on hiring apprentices who live in the city and experience significant barriers to employment.	/	Economic and Community Development and Public Works
EHC-1	**Youth internships.** Expand the City's existing youth/teen internship program to all departments, with targeted recruitment of youth from disadvantaged communities.	/	City Manager's Office
EHC-2	**Childcare business portal.** Maintain an online portal and resources for childcare business development.	//	Economic and Community Development and Communications
EHC-2	**Childcare grants.** Explore the provision of one-time grants for home childcare businesses for zoning permit applications, home improvements, and waving fines for businesses to legalize their family childcare homes.	//	Economic and Community Development and Neighborhood Services
EHC-3	**Dedicated equity staff person.** Continue to fund dedicated staff position to advance equity initiatives and monitor equity-related outcomes throughout Palmdale.	////	City Manager's Office

Correlating Goals	Action	Timeframe	Responsible Department
EHC-3	**Hire multilingual staff.** Hire staff who speak multiple languages, including Spanish.		City Manager's Office
EHC-4	**School-Based Health Centers.** Partner with the Palmdale School District, the Westside School District, and the Antelope Valley Union High School District to establish school-based health centers, especially in disadvantaged communities.		City Manager's Office
EHC-6	**Transit-oriented housing strategy.** Develop a strategy to promote affordable housing in areas within a mile of the proposed California High-Speed Rail station.		Economic and Community Development and Neighborhood Services
EHC-6, EHC-7	**Affordable housing incentives.** Develop a package of developer incentives to promote the construction of affordable housing.		Economic and Community Development
EHC-7	**Housing cost burden assessment.** Assess the strength of affordable housing policies in each Housing Element update.		Economic and Community Development
EHC-8	**Lead removal.** In cooperation with Los Angeles County and other regional agencies, establish a lead removal program for homes built before 1980.		Neighborhood Services
EHC-8	**Air filtration.** Establish a program that provides incentives to property owners of existing multifamily residential buildings, especially those in disadvantaged communities, to install heating, ventilation, and air conditioning (HVAC) systems with High Efficiency Particulate Air (HEPA) filters for all units.		Neighborhood Services and Economic and Community Development
EHC-10	**Shared Use of Community Facilities.** Develop an agreement with the Palmdale School District, the Westside School District, and the Antelope Valley Union High School District to allow city residents access to outdoor recreational areas during non-school hours.		Parks and Recreation and City Manager's Office
EHC-10	**Open Space Partnerships.** Develop public, private, and non-profit partnerships to develop and maintain parks, recreational facilities, and publicly accessible private open spaces in disadvantaged communities.		Parks and Recreation, Neighborhood Services and City Manager's Office

Correlating Goals	Action	Timeframe	Responsible Department
EHC-11	**Safe Routes to School.** Partner with local school districts and community-based organizations to adopt a Safe Routes to Schools plan.	\	Economic and Community Development and Public Works
EHC-12	**Truck traffic rerouting.** Partner with Caltrans to study the potential to re-route Palmdale Boulevard truck traffic to Pearblossom Highway and Avenue M (Columbia Way).	|||	Economic and Community Development and Public Works
EHC-13	**Smoking product retailers.** Update the zoning code to prohibit new tobacco/smoking product retailers, including the sale of vape products, within 1,000 feet of child-sensitive areas (e.g., schools, parks, libraries, and recreation centers) and 1,000 feet of another tobacco/smoking product retailer.	\	Economic and Community Development and Neighborhood Services
EHC-14	**Conditional uses.** Update the zoning code to identify drive-through restaurants and convenience stores as conditional uses. Require conditional use review upon lease renewal or at point of business sale.	\	Economic and Community Development
EHC-14	**Drive-through restaurants.** Update the zoning code to limit new drive-through restaurants within 1,000 feet of child-sensitive areas (e.g., schools, parks, libraries, and childcare facilities) and within 1,000 feet of another drive-through restaurant.	\	Economic and Community Development
EHC-14	**Off-sale alcohol beverage establishments.** Update the zoning code to prohibit new off-sale alcohol beverage establishments, which sell alcohol for off-site consumption, within 1,000 feet of child-sensitive areas (e.g., schools, parks, libraries, and childcare facilities) and within 1,000 feet of another off-sale alcohol beverage establishment.	\	Economic and Community Development and Neighborhood Services
EHC-16	**Vision Zero.** Adopt and implement a Vision Zero program that reduces vehicle related fatalities to zero.	\	Public Works
EHC-16	**Traffic enforcement.** Partner with the County Sheriff's Department to enforce traffic safety near child-sensitive areas (e.g., schools, parks, libraries, and childcare facilities).	|	Neighborhood Services and Public Works

This page intentionally left blank.



Joshua Ranch Trail



Chapter 10

Parks, Recreation, and Open Space

The purpose of the Parks, Recreation, and Open Space Element is to set goals, policies and actions related to the acquisition, management, and maintenance of parks and open space, and planning of recreational facilities and programs.

Statutory Requirements

Palmdale's Parks, Recreation, and Open Space Element meets the State of California requirements for Open Space Elements as defined in Sections 65302(a) of the Government Code. The Open Space Element must contain goals and policies to protect and maintain undeveloped lands, natural resources, and recreation areas such as parks and trails.

Topics covered in this element include parks and open space access and services, trails, priority areas, funding mechanisms, and goals and policies for preserving and expanding parks, recreation, trails, and open space across the city.

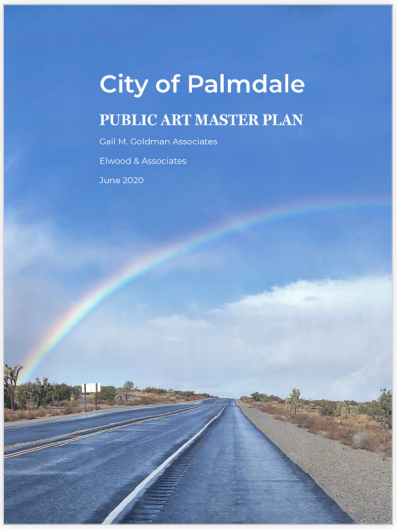


Walking Trail in Palmdale

Relevant Plans & Documents

Public Art Master Plan

Finalized in 2020, the Palmdale Public Art Master Plan sets forth a vision and key goals to expand artwork on City property and within the public realm throughout Palmdale. The Plan includes a summary of key recommendations and a strategic approach to funding, managing, and reviewing local public art projects that will celebrate Palmdale's identity, expand economic opportunities, and encourage multidisciplinary collaboration.



Palmdale Public Art Master Plan



2k Foundation Court Renovation at Marie Kerr Park

Existing Context

The City's~~Palmdale~~ Department of Parks and Recreation oversees the planning, acquisition, and programming of public parks and recreational opportunities in Palmdale. City parks and trails are maintained by the Department of Public Works, while limited City-owned open spaces are overseen by the Department of Parks and Recreation.

The sections below provide background and context for the Parks, Recreation, and Open Space goals and policies, which are provided at the end of this chapter.

Parkland

The City of Palmdale operates 19 parks, totaling 370 acres, which provide a variety of features for residents and visitors. Palmdale parks include active and passive leisure amenities like grassy areas, playgrounds, basketball courts, tennis courts, skateparks, walking paths, softball fields, sand volleyball courts, picnic tables, community rooms, pools, and public restrooms, among others. The City's largest Park, Marie Kerr, has a variety of lighted sports facilities and outdoor fields, a picnic pavilion, barbeques, walking paths, and a public pool. Detailed descriptions of this park, and all others can be found in the Public Facilities and Open Space Existing Conditions Report.

Palmdale's parks can be categorized as in fair to good condition, though the City prioritizes additional improvements to better serve the community. The City's newest park, Rancho Vista Neighborhood Park, ~~is expected to be~~ was completed in Summer 2022. This and other Palmdale parks are listed in Table 10.1 below. The distribution of existing parks is illustrated on Figure 10.1.

Parks Service and Access

The City of Palmdale has a parkland-to-population goal of 5.0 acres per 1,000 residents. The City's current population of 169,450[40] and existing parkland of 351 acres result in approximately 45% of the current target for public parks. The City would need an additional 496 acres of parkland to meet the current parkland to resident ratio target.

Figure 10.2 illustrates the current distribution and access to public parks from residential neighborhoods as they stand today. While Palmdale's overall parks acreage is below the target, walk access is relatively high. As shown on the map, most residential neighborhoods in the city's core are within a 20-minute walk of a park.

Table 10.1 Existing Palmdale Parks

#	Facility	Size
COMMUNITY PARKS		
5	Anaverde Hills Park	6 acres
1	Arnie Quinones Park	10 acres, 3 developed
18	Domenic Massari Park	38 acres
9	Desert Sands Park	20 acres
4	Foothill Park	12 acres
15	Joshua Hills Park	4 acres
7	Manzanita Heights Park	4 acres
3	Marie Kerr Park	77 acres
12	Melville J. Courson Park	5 acres
16	Palmdale Oasis Park	29 acres
6	Pelona Vista Park	76 acres
2	Rancho Vista Neighborhood Park*	4 acres
17	Sam Yellen Community Park	25 acres, 12 developed
13	Tejon Equestrian Park	20 acres
14	William J. McAdam Park	19 acres
GREENWAYS		
10	Dr. Robert C. St. Clair Parkway	9 acres
19	Legacy Park	1 acre
11	Poncitlan Square	2 acres
SPECIAL USE PARKS		
8	American Indian Little League Fields*	5 acres
20	Palmdale Pony League Baseball Fields**	5 acres
Total		**351 developed acres**

**Property not owned by the City of Palmdale*

***Property not owned by the City of Palmdale and not operational*

40. 2020 U.S. Census

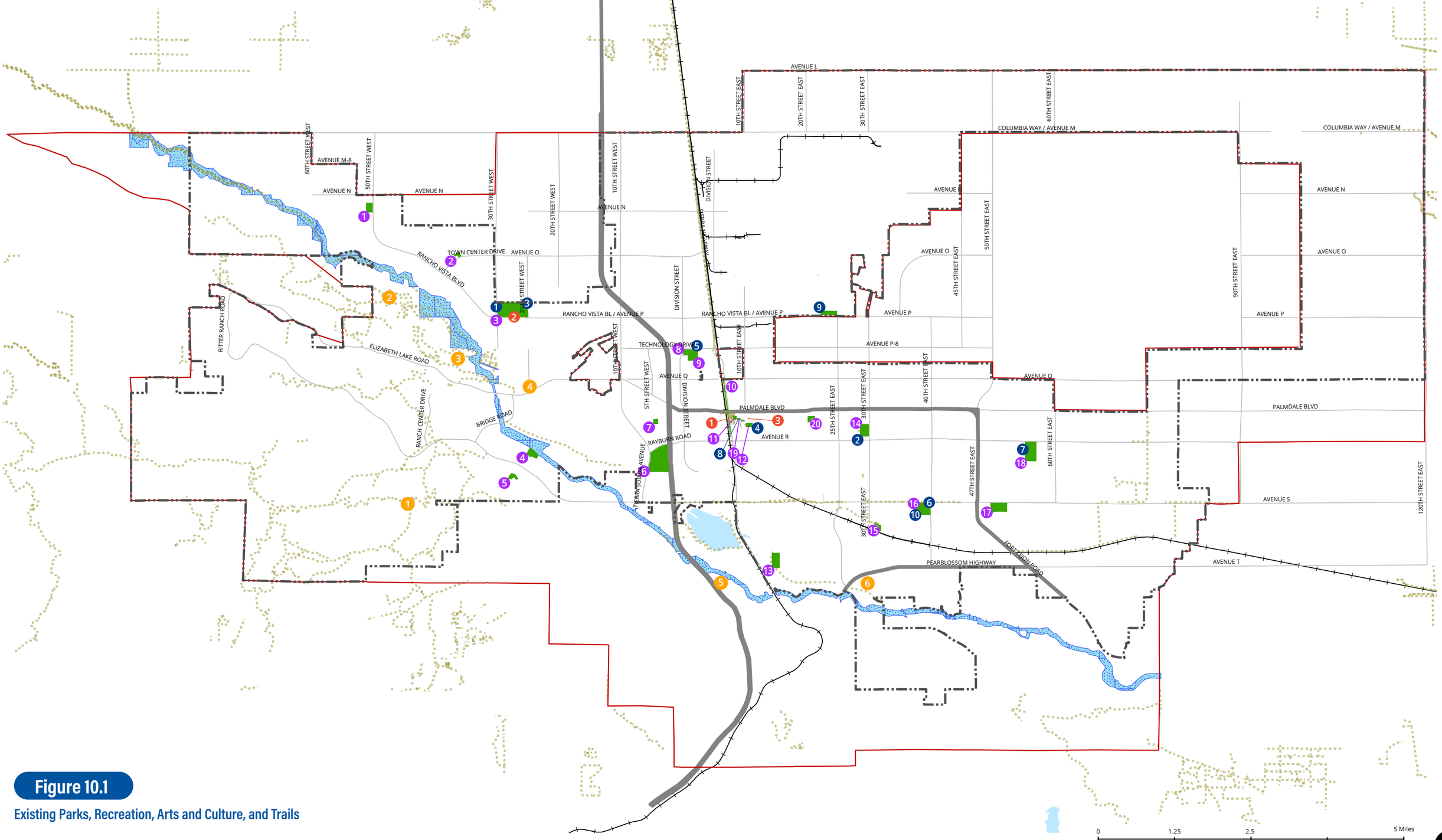


Figure 10.1

Existing Parks, Recreation, Arts and Culture, and Trails

- City Boundary
- Sphere of Influence
- Major Arterials
- Highway
- Railroad
- Existing Trails
- Water Body
- Existing Parks
- California Aqueduct
- Parks
- Recreation Facilities
- Trailheads
- Arts and Culture Facilities

Data Sources: Urban Footprint, City of Palmdale GIS Data, World Terrain Base, 2015 Esri, USGS, NOAA

Produced by Raimi + Associates
April 2022

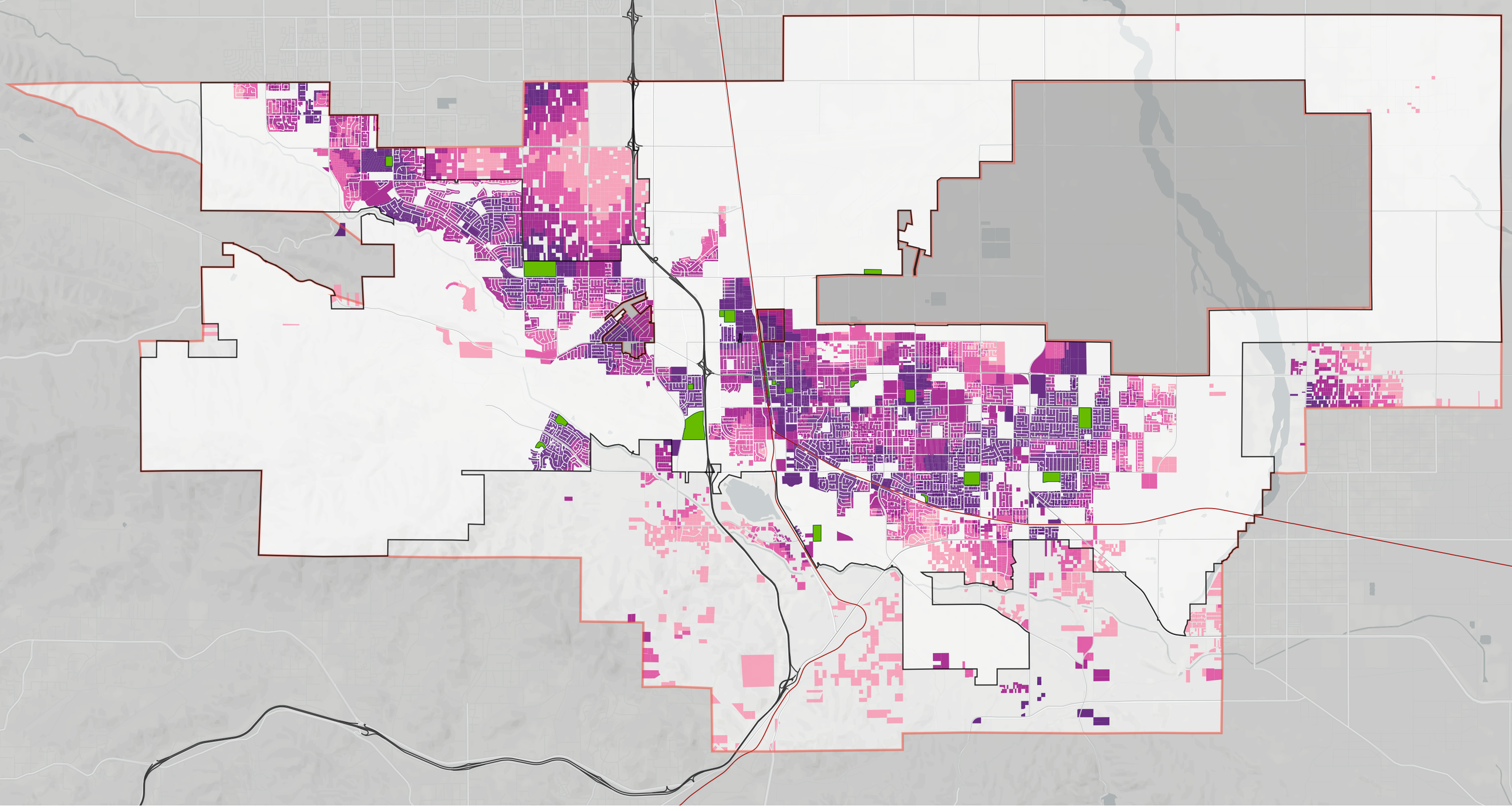


Figure 10.2
Current Park Access

Data Sources: City of Palmdale GIS, Urban Footprint, 2021.

This page intentionally left blank.

Planned and Proposed Parks

Several parcels of land, both publicly and privately owned, are planned for future park development. These parks will be constructed as Specific Plan development phases are completed – in the case of privately owned land – or as funds are available and public need arises – for publicly owned properties.

It is estimated that 27 parks are planned or anticipated across the city. Of these, 21 are attributed to two Specific Plans - Ritter Ranch Specific Plan and Anaverde Nuevo Specific Plan. The remaining six undeveloped park properties are owned by the City of Palmdale and located adjacent to the developed core of the city. Future parks are illustrated on Figure 10.3, along with priority areas that are discussed in the next section.



Marie Kerr Park



DryTown Water Park

Future Park Priority Areas

Improving parks and open space access is critically important to the Palmdale community and decision-makers. This Element aims to increase park access and service across the city by strategically identifying future park priority areas in underserved neighborhoods. Figure 10.3 (Future Parks Priority Areas) and Figure 10.4 (Residential Neighborhoods Compared to Park Priority Areas) illustrate the distribution of existing parks to future residential land uses—based on the Land Use Map—and indicate where future parks are needed. The future park priority analysis considers areas that are or will contain higher density residential[41] uses or development, and areas that are low-income and disproportionately affected by environmental pollution and other hazards (known as Disadvantaged Communities per SB 1000: see Equitable and Healthy Communities Element). While these priority areas are not exact locations of where future parks will occur, they indicate priority areas that should be examined as future development in these areas occurs.

41. High density residential refers to multifamily housing where population per square mile is higher as compared to single-family housing units.

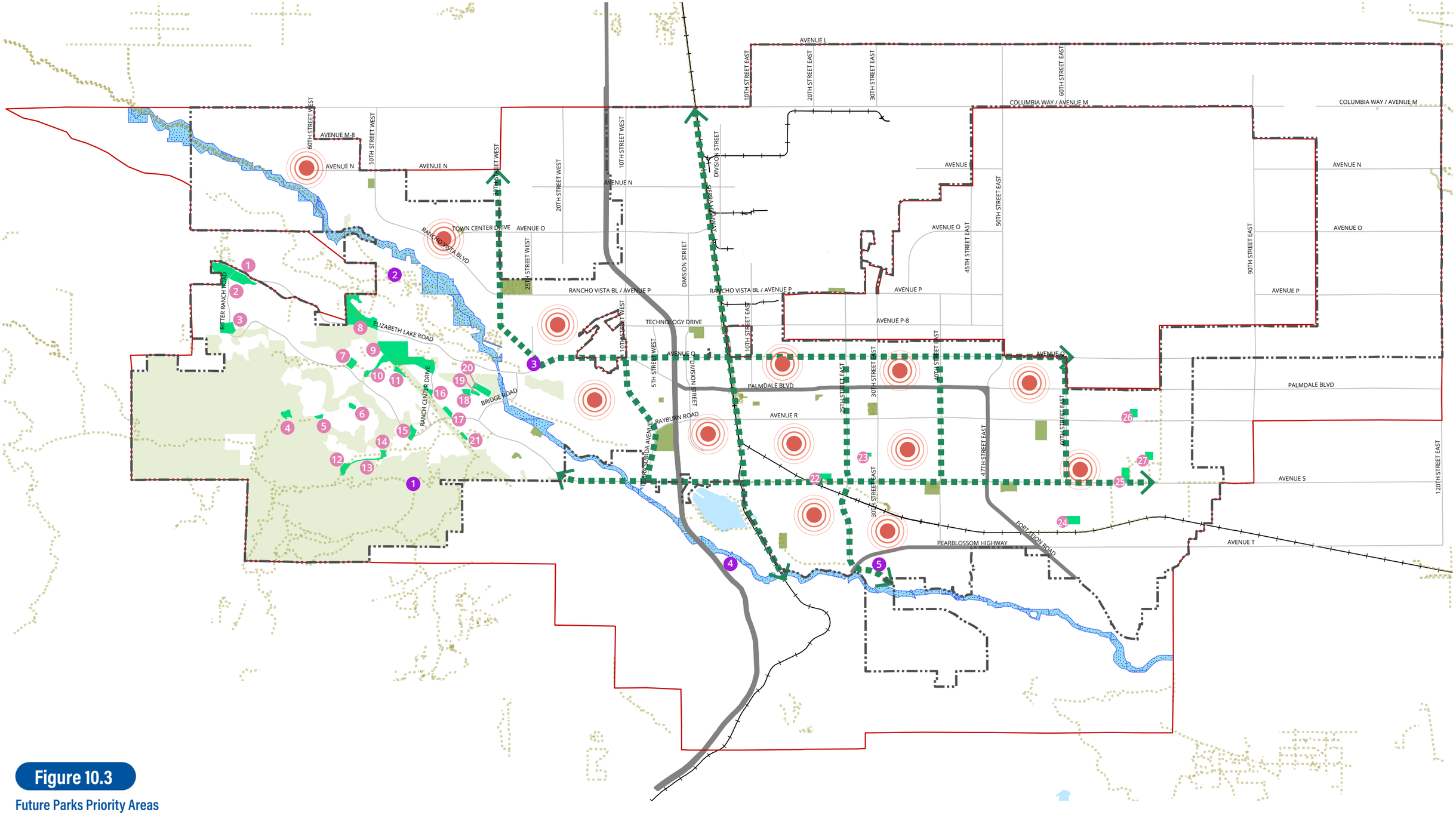


Figure 10.3

Future Parks Priority Areas

- City Boundary
- Sphere of Influence
- Major Arterials
- Highway
- Railroad
- Existing Parks
- Future Parks
- Future Open Space
- California Aqueduct
- Water Body
- Future Park Priority Area
- Existing Trails
- Key Access Routes

Trailheads
1-Ritter Ranch Park
2-Joshua Hills Trail (not currently accessible)
3-Amargosa Creek Trail
4-Palmdale Hills Trail
5-Barrel Springs Trail

Future Parks
1-18-Ritter Ranch Specific Plan
19-21-City Ranch Specific Plan
22-Palmenthol History Park
23-Undeveloped Park
24-60th St East & Avenue S8
25-Undeveloped Park
26-70th St East & North of Avenue R
27-72nd St East & Avenue R8

0 1.25 2.5 5 Miles

0 2,500 5,000 10,000 Feet

Data Sources: Urban Footprint, City of Palmdale GIS Data, World Terrain Base, 2015 Esri, USGS, NOAA

Produced by Raimi + Associates
November 2021

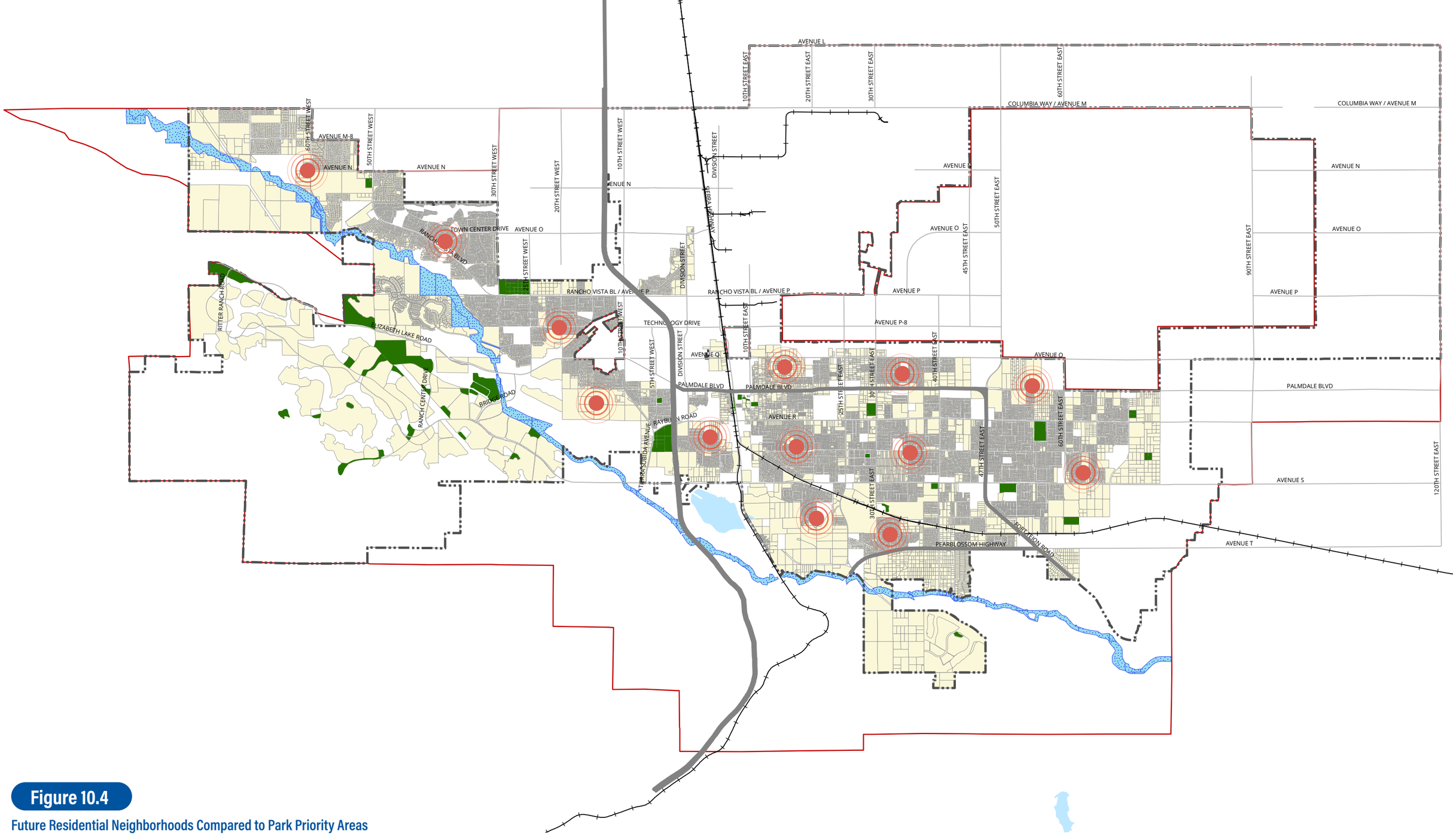


Figure 10.4

Future Residential Neighborhoods Compared to Park Priority Areas

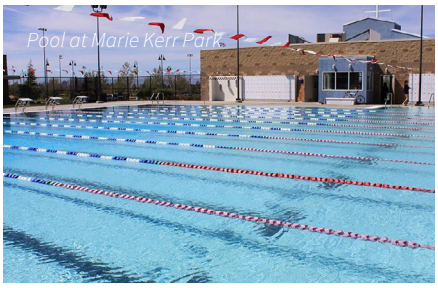
- City Boundary
- Sphere of Influence
- Major Arterials
- Highway
- Railroad
- Residential or Mixed Use
- Existing or Future Park
- Future Park Priority Area
- California Aqueduct
- Water Body

Data Sources: Urban Footprint, City of Palmdale GIS Data, World Terrain Base, 2015 Esri, USGS, NOAA

Produced by Raimi + Associates
April 2022

This page intentionally left blank.


DryTown Water Park


Pool at Marie Kerr Park



Joe Davies Heritage Airpark

Recreation Facilities

Existing Recreation Facilities

The City of Palmdale offers several recreation facilities including community centers, public pools, an outdoor amphitheater, playhouse, and waterpark, as listed in Table 10.2 below and shown on Figure 10.1. Many of these facilities are co-located, offering meeting and special event space, active and passive recreation space, aquatics, and arts and culture opportunities in proximity. Facilities typically include restrooms, vehicle and bicycle parking, and athletic fields or courts.

In addition to active and passive recreation space, the City operates a public waterpark and several public pools. All public pools are integrated into City parks; Marie Kerr, McAdams, Courson, and Palmdale Oasis.

The Palmdale City Library also offer community resources, meeting space, and recreational programming which is detailed further in the Public Facilities, Services, and Infrastructure Element of the General Plan.

Planned Recreation Facility Improvements

Notable recreation facility upgrades or expansions that are currently funded include: expansion of the Marie Kerr Pool Deck, regular investments in maintaining DryTown water park and City pool infrastructure, McAdam Park sports field, restroom, playground and parking improvements, Courson Park irrigation, restroom and park amenity improvements, Yellen Phase II construction, Marie Kerr Park parking lot and playground expansion, Domenic Massari Park athletic field lighting expansion, Wi-Fi improvements at Desert Sands Park and Palmdale Amphitheater.

Shared Use Agreements

Several High School athletic facilities are utilized for local sports leagues and organizations after school hours. Shared access or shared use allows an existing recreation asset to be used by a larger subset of the Palmdale community, and to expose youth to High School campuses. The City of Palmdale encourages the ongoing shared access of recreational facilities, especially in neighborhoods where recreation amenities are lacking.

Table 10.2 Existing Recreation Facilities

#	Facility	Address
3	Best of the West Softball Complex	2723 W Rancho Vista Boulevard
5	Desert Sands Community Building	39117 3rd Street East
7	Domenic Massari Park Chris O'Leary Skatepark	37716 55th Street East
6	DryTown Water Park	3850 East Avenue S
9	Joe Davies Heritage Airpark	2001 East Ave P
8	Legacy Commons for Active Seniors	930 East Avenue Q-9
1	Marie Kerr Pool, Community Building, Recreation Center, and Skate Park	39700 30th Street West
4	Courson Pool	38226 10th Street East
10	Palmdale Oasis Park Pool and Recreation Center	3850 East Avenue S
2	William J. McAdam Park Pool	38115 30th Street East

Parks and Recreation Funding

Existing parks and recreation facilities lack permanent funding sources to support ongoing maintenance and improvements. While a top City priority, funding for parks and recreation can prove challenging. In addition to the funding sources listed below, the City of Palmdale seeks additional special funding sources like state and federal grants, and the non-profit collaborations to finance parks and recreations facilities, improvements, and ongoing maintenance.

Park Maintenance and Recreation Improvement District

The City of Palmdale's Park Maintenance and Recreation Improvement District provides funding for the installation, maintenance, and servicing of parks and recreation facilities until 2032. The Improvements District is financed by an annual assessment which is set by the City Engineer and approved by City Council.

Park Development Impact Fees

Park Development Impact fees are collected from development projects to mitigate the impacts associated with that development on the City's existing park system. Fees go toward assisting with the development and rehabilitation of City parks and recreation facilities.



Arts and Culture

The City of Palmdale celebrates local arts and culture through its facilities, events, committees, and physical representations, among others. Listed below are some of the primary arts and culture resources in Palmdale.

Public Art Commission

Palmdale's Public Art Commission provides recommendations to the City Council for the commission and acquisition of public art on City property, deaccession of artwork, acceptance of artwork gifts and loans, and proposals for memorials and murals on City-owned property.

Existing Arts and Culture Facilities

In addition to several private art galleries, studios, and schools, the City of Palmdale offers three public regional arts and cultural facilities. These include:



Palmdale Playhouse
The Palmdale Playhouse is a community theater serving the Antelope Valley that offers all forms of art and music. The Playhouse offers touring performances, classes and workshops, recitals, and family friendly events year-round.



Palmdale Amphitheater
The Palmdale Amphitheater is an outdoor event stage that offers live music, movie nights, and other events for families, residents, and visitors of the Antelope Valley.



Chimbole Cultural Center
The Chimbole Cultural Center is a public facility that offers meeting rooms, banquet space, a commercial kitchen and stage, and other resources for the Palmdale community.

Table 10.3 Existing Arts and Cultural Facilities

#	Facility	Address
1	Chimbole Cultural Center	38250 Sierra Highway
2	Palmdale Amphitheater (at Marie Kerr Park)	2723 Rancho Vista Boulevard
3	Palmdale Playhouse	38334 10th Street East



Open Space at Ritter Ranch

Open Space

Open Space is undeveloped land that is preserved from future development and typically accessible by the public for passive and active recreation. Palmdale has a plethora of undeveloped land, though most is not currently protected open space owned by a public agency for public recreation. In order to preserve hillsides and natural areas, and accommodate outdoor recreation, the City will need to earmark additional acres of open space either through acquisition, partnerships with open space conservancies, or as part of private development.

Existing and Future Open Space

The City of Palmdale contains 1,129 acres of open space, of which, 75 acres are outside the City limits in the Sphere of Influence area. Across the City, many acres of open space are owned by agencies or private individuals, these include private open space uses like cemeteries and golf courses. Within Palmdale, the County of Los Angeles and Mountains Recreation and Conservation Authority own and manage open spaces.

In addition to open space shown on the General Plan Land Use Map (Figure 5.18), several of the Specific Plans across Palmdale include dedicated Open Space. The Ritter Ranch Specific Plan area includes nearly 7,700 acres of preserved public open space within City limits, as indicated on Figure 10.3 Future Park Priority Areas. A portion of the Ritter Ranch open space is located outside City limits and managed by the Mountains Recreation and Conservation Authority[42], offering residents nearby access to scenic views and hiking trails.

42. Source: https://mrca.ca.gov/parks/park-listing/ritter-ranch/

Trails

Trails offer safe recreation options and alternative forms of travel throughout the City. While Palmdale has abundant undeveloped land, formal bicycle and pedestrian trails are fairly limited within City limits. As the community grows and develops, Palmdale has the desire to increase formalized trails, trailheads, signage, and improve access to residential neighborhoods.

Current trails include the Avenue S Bike Trail—a Class I bike path—which runs approximately 4.7 miles, with minor gaps, east to west along Avenue S from SR-14 to 45th Street East. The 1.5-mile Barrel Springs Trail also provides access to open space. Other trails include the Ritter Ridge and Joshua Ranch Loop that offer hikers and mountain bikers an 11-mile trail to enjoy and view wildlife[43]. While the Sierra Highway Bike Trail, a Class 1 bike path, extends from the Lancaster Metrolink Station south to the Palmdale Transit Center, totalling nearly 7.5 miles. Table 10.4 lists the approximate location of each trail, which corresponds to Figure 10.1.

Future Trails

The City of Palmdale 2018 Draft Bicycle Transportation Plan prioritizes development of over 173 new miles of trails for biking, hiking, and horseback riding, dependent on the availability of future funding. These along with bike lanes, bikeways, bike routes and multi-use trails detailed in the Mobility Element, promote alternative modes of travel, and connect key destinations throughout the city. The trail system could be further expanded by formalizing trails in the foothills near Barrel Springs, as funding and acquisition of land allows.

43. Source: https://www.alltrails.com/trail/us/california/ritter-ridge-joshua-ranch

Table 10.4 Trailheads

	Facility	Address
4	Amargosa Creek Trail	Elizabeth Lake Rd, 25th St W
6	Barrel Springs Trail	1300 E Barrel Springs Rd
2	Joshua Hills Trail	North of Pearblossom Highway and West of 25 Street East
5	Palmdale Hills Trail	E Barrel Springs Rd and Courson Ranch Rd
1	Ritter Ranch Park	4010 Elizabeth Lake Rd
3	Joshua Ranch Trail	Joshua Ranch Rd; West of the California Aqueduct



Open Space in Palmdale



Trails in Palmdale

Parks and Recreation Standards

The following tables include standards for various parks and amenities throughout Palmdale. These standards shall remain in place unless or until the City of Palmdale adopts a Parks Master Plan or similar document to include further detail and guidelines documentation for parks and recreation facilities and amenities.

Table 10.5 Parks Standards

Park Type	Typical Size	Typical Features
Mini-Park	0-3 Acres	Tot lots, play areas and picnic areas
Neighborhood Park	3-7 Acres	Ballfields, picnic areas, tot lots, restrooms, playgrounds, basketball courts, tennis courts, volleyball courts, trails
Community Park (Including linear park, specialty parks, and nature parks)	5-50+ Acres	Includes features found in neighborhood parks plus pools, gymnasiums, amphitheaters, equestrian facilities, sports complexes, and other similar facilities

Table 10.6 Recreation Facility Guidelines

Facility Type	Guideline
Tot lots	1 per park
Picnic areas	1 per acre, which should be shaded by trees or a structure
Ballfields (softball, baseball, little league, soccer/football)	1 field/5,000 population
Courts(basketball courts, tennis courts, volleyball courts)	1 court/5,000 population
Swimming pools	1 pool/20,000 population
Gymnasium	1 gymnasium/20,000 population
Stage/bandstand	1 stage or bandstand/50,000 population
Amphitheater	1 amphitheater/100,000 population
Equestrian center	1 equestrian center/150,000
Sports complex	1 sports complex/150,000 population

(Guidelines include all available facilities citywide, including those facilities provided on school sites or by private recreation providers)

Table 10.7 Trails Standards

Facility Type	Guideline
EASEMENTS	Typical width: 12 to 20 feet, unless adjacent to a bikeway. Easements for feeder trails can be as narrow as 8 feet
TRAIL TREAD	Minimum width: 10 feet for backbone trails, 6 feet for feeder trails
MINIMUM CLEARANCE FROM GRADE: 12 FEET	
Vertical Grade:	
0% to 5%	Optimum vertical grade
6% to 10%	Maximum grade for distanced over 500 feet
11% to 15%	Permitted vertical grade, limited to distances of 500 feet or less
16% to 20%	Vertical grade permitted only in extreme cases and for distances less than 100 feet
21% and above	Not permitted
CROSS SECTION SLOPES:	
1% to 2%	Optimum cross section slope
3%	Permitted cross section slope
4%	Maximum cross section slope, and only as approved by City Engineer
5% and above	Not permitted
SIDE SLOPE CUTS AND FILLS:	2:1 grade maximum permitted
TREAD SURFACING	Decomposed granite or cinder (or other materials approved by the City), minimum depth of 6" after 90% compaction. At trail entrances, tread surface may be asphalt or other surface which facilitates wheelchair access
FENCING	Fencing not required within areas designated as open space. Fencing is required on all other trail segments. Fencing may consist of lodge pole pine, PVC or equivalent.

Desired Outcomes, Indicators, and Targets

The following desired outcomes and metrics have been identified to help the City of Palmdale track progress toward creating a more diverse and equitable economy. This process follows Palmdale 2045's General Plan Vision and Guiding Principles document, which was informed by the GPAC, the Planning Commission and City Council.

Top Key Outcomes

OUTCOME: Provide more publicly accessible trails

KPI's:
- Increase in miles of trails
- Connections to existing neighborhoods

TARGETS:
- **Increase miles of trails**
- **All new trails provide trailheads with basic amenities**

OUTCOME: Provide more public parkland and open space

KPI's:
- Increase in acres of parks and open space
- Connections to existing neighborhoods

TARGETS:
- **5.0 acres of parkland or open space per 1,000 residents**
- **90% of residents are within 20-minute walk of park, trailhead, open space, or recreation facility**

OUTCOME: Expanded public recreation amenities and programs

KPI's:
- Participation in self-directed and organized public programs
- Equitable access to amenities and programs citywide
- Diversity of programs offered

TARGETS:
- **Maximize program participation citywide**
- **Expand and create new programs reflective of current community needs**
- **Utilize community partners to grow recreational opportunities**



Marie Kerr Park

KPI = Key Performance Indicator

Goals and Policies

The following section includes goals and policies for the Parks, Recreation, and Open Space Element. Goals and policies are followed by implementation actions.

PARKS AND RECREATION

Goal PR-1

Provision of adequate park and recreation facilities to meet the needs of all existing and future residents.

PR-1.1 Parks and Recreation Master Plan. Prepare a Parks and Recreation Master Plan to address park conditions and needs, recreation programming, facilities, and funding opportunities. As a part of a Parks Master Plan, evaluate adopted park standards, including designations for type of parks and guidelines for the facilities to be developed in future parks.

PR-1.2 Park location. Ensure that park sites are located equitably, throughout the city, to maximize access to parks for residents within a 20-minute walking distance.

PR-1.3 Parks accessibility. Provide a variety of parks and recreational facilities accessible to all residents throughout the city, including community and neighborhood parks, to meet the needs of youth, adults, and senior citizens.

PR-1.4 Future parks priority areas. As feasible, work with the private development community to facilitate creation of parks in the future parks priority areas as indicated in Figure 10.3.

PR-1.5 Prioritize underserved areas. Prioritize development of new parks and recreation facilities in underserved areas of the city, encouraging access to free or low-cost recreation for all Palmdale residents.

PR-1.6 Expand park amenities. Encourage expansion of amenities at existing public parks.

PR-1.7 ADA Design. Incorporate all design features, required by the Americans with Disabilities Act, which improve access to parks and park facilities for citizens with different abilities and needs.

PR-1.8 School and park synergy. Co-locate schools and parks and partner with non-profit organizations to provide recreational opportunities that benefit both students and the public.

PR-1.9 Parkland incentives. Work with the private development community to incentivize creation of publicly accessible parkland either on-or-off-site.

Goal PR-2
Promote bicycling as an important mode of transportation and recreation in the City of Palmdale.

PR-2.1 Bikeway network. Encourage bicycle use by developing a comprehensive bikeway network for the city that meets access needs of all bicyclists.

PR-2.2 Bicycle safety. Increase the level of public safety for all bicyclists.

PR-2.3 Transportation modes to parks, schools, and recreation. Promote biking, walking, or taking public transit to public parks and recreation facilities.

PR-2.4 Sidewalks. Ensure connecting sidewalks are well maintained throughout the city.

Goal PR-3
Provide a broad range of recreational programs for all ages and activity levels to enrich the lives of residents.

PR-3.1 Recreation education. Collaborate with community partners to expand healthy, and educational recreation programs and services for youth and families.

PR-3.2 Culturally sensitive programming. Provide culturally sensitive programming at various recreation facilities to serve the city's diverse population.

PR-3.3 Shared school amenities. Work with local school districts to make campus recreation amenities (such as open grassy areas, basketball courts, baseball fields, gymnasiums, among others) available to surrounding neighborhoods and local sports leagues or organizations during off-school hours.

PR-3.4 Arts and culture programming. Work with local schools, non-profits, local organizations, and artists to increase arts and culture programming (such as such as performing arts and theater, visual arts, youth, and senior programs) throughout Palmdale.

PARKLAND

Goal PR-4

Explore various means of acquiring parkland and seek creative and flexible techniques to accomplish park goals.

PR-4.1 Incorporate parkland. Wherever feasible, incorporate uses that increase the public benefit of park land, and are compatible with the goal of providing active recreation opportunities.

PR-4.2 Non-traditional parks. Consider non-traditional types of parks to extend the range of recreational opportunities available within the city, including linear parks, neighborhood parks, and remodeling vacant buildings for indoor activities, among others.

PR-4.3 Public input. Seek public input on locations for and amenities in new neighborhood and community parks.

PR-4.4 Recreation, cultural and artistic opportunities. Continue to work with public and private entities to provide opportunities for recreational, cultural, and artistic activities within the community.

PR-4.5 Park site considerations. Account for physical, land use, and cost considerations when evaluating future park sites for acquisition or dedication.

PR-4.6 Dual purpose recreation. Explore options to provide public recreation access (i.e., walking or picnicking) to utility and or drainage basin areas as safety permits.

Goal PR-5

Evaluate the need for establishing a funding mechanism for parks development and the need for satellite services.

PR-5.1 Park maintenance and improvements funding. Provide sufficient funding for maintenance and improvements for all parks.

PR-5.2 Park fees. Collect park fees and review this fee annually, to provide financing for improvement of parkland.

PR-5.3 Parks financing. Consider formation of a citywide public financing district to provide funding for design, acquisition, construction, and maintenance of parks throughout Palmdale.

PR-5.4 Parks planning. Continue to use the City's Capital Improvement Program as the mechanism for short-term planning for acquisition of park land and construction of park and upgrades to existing facilities.

PR-5.5 Grant funding opportunities. Identify and pursue Quimby grant funding and other opportunities to finance future park development to meet parkland goals.

OPEN SPACE NETWORK

Goal PR-6

Provide a network of open space areas to provide for passive and active recreation opportunities, enhance the integrity of biological systems, and provide visual relief from the developed portions of the city.

PR-6.1 Open Space network. Develop an open space network through preservation of corridors along fault zones, natural drainage courses and in hillside areas to connect with the large areas of open space designated on the General Plan Land Use Map.

PR-6.2 Acquire natural open spaces. Work with private property owners, conservation agencies, and the County of Los Angeles ~~County~~ to expand and acquire natural open spaces and hillsides on the periphery of the city.

PR-6.3 Passive recreation use. Encourage the use of open space areas for passive recreation with access points, multi-use trails, and interpretive information.

PR-6.4 Incentivize open space. Work with the private development community to incentivize new publicly accessible open space through land dedications, land swaps, or other means.

TRAILS NETWORK

Goal PR-7

Maintain a system of multi-use trails that provide connections to regional trails systems and residential neighborhoods.

PR-7.1 Multi-use trails. Provide and maintain multi-use trails, for use by pedestrians, bicyclists, and equestrians, connecting to existing or currently planned multi-use trails.

PR-7.2 Multi-use trail connections. Prioritize multi-use trail connections to existing neighborhoods, public parks, and public facilities based on the modal priority network in the Mobility Element.

PR-7.3 Promote new multi-use trails. When feasible, consider adding multi-use paths near or within areas used for water retention, like the aqueduct, or below transmission lines, to increase local walking and biking routes.

PR-7.4 Trail accessibility. To the extent feasible, ensure that trails are accessible to all residents and incorporate ADA design features.

PR-7.5 Trail amenities and facilities. Provide trail support facilities, such as benches, trash cans and trail heads/staging areas, as needed throughout the multi-use trails network.

PR-7.6 Trails acquisition. Explore various means of acquiring trail easements or rights-of-way and pursue all available funding sources to provide trail acquisition and construction.

PR-7.7 Trail financing. To the extent feasible, use grant funding and private donations to finance trail construction.

PR-7.8 Trails network adoption. Incorporate the citywide multi-purpose trail network adopted under the General Plan into the regional trail system.

OPEN SPACE PRESERVATION

Goal PR-8

Preserve significant natural and constructed open space areas that give the city its distinct form and identity.

PR-8.1 Greenbelt program. Establish a greenbelt program to create a network of open spaces on the city's periphery.

PR-8.2 Varied open space features. Utilize a variety of features, including city entry points, landscaped arterial roadways, bikeways, equestrian paths, hiking trails, and park sites, to create an open space network.

PR-8.3 Open space linkages. Create a network of open space by creating linkages wherever possible, especially to and from residential neighborhoods.

PR-8.4 Open Space preservation through Hillside Management Ordinance. Implement the standards adopted under the City's Hillside Management Ordinance for new development including clustering and density transfer of housing units, in order to maintain areas of scenic and other open space within hillside areas.

PR-8.5 Location and retain open spaces. Utilize the City's discretionary land use approval process to locate and retain areas for use as open space through dedication or other legal means. Develop criteria and guidelines to identify areas that should be protected.

PR-8.6 Integrate natural hazards to open spaces. Integrate natural hazard areas, such as floodways, seismic fault zones, and unstable soils, among others into the open space network to ensure public health, safety and welfare while preserving open space.

PR-8.7 Open Space funding. Identify and utilize all available funding sources for acquisition and maintenance of open space areas for public benefit.

PR-8.8 Work to preserve Open Space. Cooperate with private and public entities whose goals are to preserve natural and constructed open space.

PR-8.9 Land Trust criteria. Develop criteria and guidelines to identify how to establish land trust open space locations.

Implementation Actions

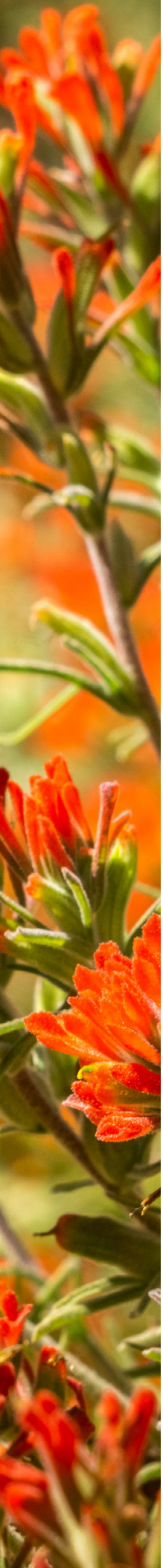
The table below identifies programs, coordination efforts, and other actions that will help implement the General Plan's Parks, Recreation, and Open Space vision and policies. Programs listed below are consistent with this chapter's goals and policies.

The table provides a description of each Implementation Action and lists the correlating policies. Each action also identifies a timeframe for implementation with Short-term representing a 1–3-year timeframe, Medium-term is 4-7 years, Long-term is 8+ years and Ongoing represents an action that the City should continue. Additionally, the table includes the City department that should function as the lead for implementing the actions.



Correlating Goals	Action	Timeframe	Department Responsible
PR-1, PR-4	**Parks and Recreation Master Plan.** Develop and implement a Parks and Recreation Master Plan to increase parkland and meet current and future parks and recreation needs. Every three years revisit and update (as needed) the Master Plan.	//	Parks and Recreation and Public Works
PR-5	**Parks Funding.** Pursue long term funding sources and grants to fund park development and ongoing maintenance.	////	Parks and Recreation and Public Works
PR-6, PR-8,	**Green Belt Program.** Establish a greenbelt program to create a network of open spaces on the city's periphery.	/	Parks and Recreation and Public Works
PR-5	**Parks District.** Investigate the feasibility of instituting a Parks District to help fund park development, improvements, and ongoing maintenance.	/	Parks and Recreation and Public Works
PR-3	**Arts and Culture events at City Parks.** Develop public arts and culture programming at City Parks.	//	Parks and Recreation
PR-3	**Recreation Programming.** Expand and diversify recreation programming and locations around the city.	//	Parks and Recreation
PR-1, PR-6, PR-8	**Development Incentives.** Provide incentives for development to increase publicly accessible parkland and open space in Palmdale.	//	Parks and Recreation, Economic and Community Development, and Public Works





Chapter 11

Conservation

This Element of the Palmdale General Plan outlines the goals and policies related to conservation of natural and cultural resources in Palmdale. A discussion of open space in Palmdale is included in Chapter 10: Parks, Recreation, and Open Space.

Statutory Requirements

The United States Federal Government and the State of California acknowledge the importance of preserving and enhancing existing natural and cultural resources within their jurisdictions. Per California Government Code 65302, a Conservation Element is required within a General Plan to describe the jurisdiction's natural resources: land, water, ecosystem services and living resources, and the benefits that these resources provide to the community. The following regulations exist to protect valued community resources from degradation and extinction.

Federal Clean Water Act

The Federal Clean Water Act (FCWA) is the comprehensive federal law governing water quality and water pollution in the United States. The FCWA works to protect water resources by prohibiting unlawful discharge of any pollutant into local waterways and authorizing the United States Environmental Protection Agency (US EPA) to develop national water quality criteria for pollutants in surface water.

Tribal Consultation- Assembly Bill 52/Senate Bill 18

Assembly Bill (AB) 52 and Senate Bill (SB) 18 require tribal consultation to assure protection and preservation of natural resources and Native American historic, cultural, or sacred sites. Resources could potentially be lost or damaged if sites are not thoroughly investigated. Therefore, City consultation with local tribes will help ensure that cultural resources are preserved and mitigated through acceptable means.

Federal Endangered Species Act

The Endangered Species Act (ESA) provides a program for the conservation of threatened and endangered plants and animals and the habitats in which they are found. The lead federal agencies for implementing ESA are the U.S. Fish and Wildlife Service (FWS) and the U.S. National Oceanic and Atmospheric Administration (NOAA) Fisheries Service. The FWS maintains a worldwide list of endangered species. Species include birds, insects, fish, reptiles, mammals, crustaceans, flowers, grasses, and trees. The law requires federal agencies, in consultation with the FWS and/or the NOAA Fisheries Service, to ensure that actions they authorize, fund, or carry out are not likely to jeopardize the continued existence of any listed species or result in the destruction or adverse modification of designated critical habitat of such species. The law also prohibits any action that causes a "taking" of any listed species of endangered fish or wildlife. Likewise, import, export, interstate, and foreign commerce of listed species are all generally prohibited.

California Endangered Species Act

The California Endangered Species Act (CESA) is a state regulation focused on the conservation and protection of plants and animal species that are at risk of extinction. The CESA was enacted in 1970 and includes a formal designation system for threatened or endangered animals as well as limitations on development that may impact sensitive species. The California Department of Fish and Wildlife (CDFW) is the regulatory body responsible for overseeing the mandates and controls outlined within the CESA. Through the CESA, the CDFW oversees permit (Incidental Take Permit) processing and review for projects that may have potentially significant impacts to listed species.

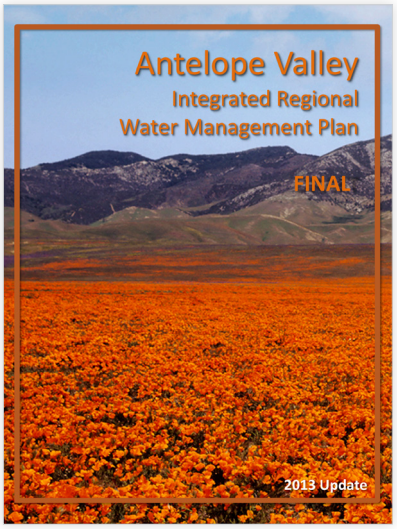


Lake Palmdale

Relevant Plans and Requirements

Antelope Valley Integrated Regional Water Management Plan (2013)

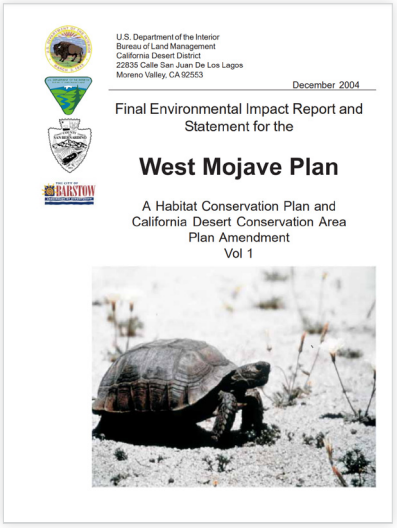
The Antelope Valley Integrated Regional Water Management Plan (IRWMP) aims to coordinate and integrate existing water management planning efforts across the Antelope Valley into one comprehensive regional plan. The IRWMP is a collaborative document that serves to manage regional water resources and address competing water demands. The Plan outlines funding for existing agencies to support plans, programs, and projects that impact water management.



Antelope Valley Integrated Regional Water Management Plan

West Mojave Plan

The West Mojave Plan is a habitat conservation plan that acts as a comprehensive strategy to conserve the desert tortoise, Mohjave ground squirrel, and over 100 sensitive plants, animals, and natural communities. It encompasses a 9.4 million acre planning area and applies to public and private land. Palmdale lies almost entirely within the jurisdiction of the West Mojave Plan, which provides for a streamlined program for complying with the requirements of the California and federal Endangered Species Acts.



West Mojave Plan

Native Desert Vegetation Ordinance

The City of Palmdale has a native desert vegetation ordinance (Chapter 14.04 of the Palmdale Municipal Code) designed to protect western Joshua trees and California Junipers in the city. Western Joshua trees and California Junipers both provide a unique natural desert aesthetic to the community, which the City aims to maintain. The Ordinance was originally adopted in 1992 and was amended by Emergency Ordinance No. 1556 in 2020 in response to the California Fish and Game Commission's vote to list the western Joshua tree as a candidate species under the CESA. Per the Ordinance, western Joshua trees and California Junipers trees shall not be removed from any parcel of land unless a permit has been obtained from the city. Furthermore, any development proposal on a parcel of land containing native desert vegetation requires a desert vegetation preservation plan prepared in compliance with the Palmdale Municipal Code. Listing of the western Joshua tree under the CESA gives that species additional legal protections, such that any take of the species (including removal of western Joshua tree or similar actions) requires a permit from CDFW.

Native Desert Vegetation Ordinance

Context

Natural Resources

Palmdale contains a diversity of natural communities and biotic habitats that differ greatly between the foothills in the western portion of the City and the flat desert in the east. There are a number of sensitive ecological habitats within the City that include: Big Rock Wash, Little Rock Wash, Ritter Ridge, Portal Ridge, and Alpine Butte. The City's open space and natural areas supports a variety of plant and wildlife species, including species that are rare, threatened, or endangered. Protecting these species and their habitats remains a priority for the community and the City. In coordination with various resource agencies, the City will continue to manage the open spaces to protect sensitive ecological habitats and the species that occupy them.

Natural Communities

There are several different types of natural communities outside of the urbanized portions of Palmdale that can host a variety of protected plant and animal species. Many of the natural communities include varieties of shrub and scrub, chaparral, and grassland with some Juniper, western Joshua tree and riparian habitats. Table 11.1 lists the existing communities with their approximate acreage in Palmdale. Figure 11.1 shows where these various communities are located.

Table 11.1 Palmdale Natural Communities

Natural Community and Biotic Habitat	Total Acres	Percentages (%)
Annual Grassland	9,691	14.25
Mixed Chaparral	8,042	11.82
Desert Scrub	7,154	10.52
Sagebrush	5,891	8.66
Western Joshua Tree	4,351	6.40
Alkali Desert Scrub	3,369	4.95
Juniper	3,410	5.01
Montane Hardwood	1,062	1.56
Barren	536	0.79
Desert Wash	442	0.65
Lacustrine	323	0.48
Montane Chaparral	174	0.26
Desert Riparian	75	0.11
Bitterbrush	51	0.07
Chamise-Redshank Chaparral	45	0.07
Montane Riparian	44	0.06
Saline Emergent Wetland	40	0.06
Valley Foothill Riparian	29	0.04
Fresh Emergent Wetland	18	0.03
Coastal Scrub	4	0.01
Coastal Oak Woodland	3	<0.01
Agricultural	1,621	2.38
Urban	21,644	31.82
Total	**68,021**	**100**

Source: California Department of Fish and Wildlife. Natural Diversity Database, 2021.

City of Lancaster

50TH STREET WEST
30TH STREET WEST
20TH STREET WEST
10TH STREET WEST
DIVISION STREET
20TH STREET EAST
COLUMBIA WAY / AVENUE M
AVENUE N
AVENUE O
RANCHO VISTA BLVD
RANCHO VISTA BL / AVENUE P
AVENUE P
AVENUE P-8
AVENUE Q
AVENUE R
AVENUE S
AVENUE T
45TH STREET EAST
50TH STREET EAST
90TH STREET EAST
120TH STREET EAST
ELIZABETH LAKE ROAD
RITTER RANCH ROAD
BRIDGE ROAD
SIERRA SUBIDA AVENUE
SIERRA HIGHWAY
14
138
PALMDALE BLVD
Lake Palmdale
PEARBLOSSOM HIGHWAY
FORT TEJON ROAD

Figure 11.1

Palmdale Natural Communities

Natural Community Name

- Alkali Desert Scrub (6,606.43 ac)
- Annual Grassland (14,883.09 ac)
- Barren (1,027.03 ac)
- Bitterbrush (97.14 ac)
- Chamise-Redshank Chaparral (44.81 ac)
- Coastal Oak Woodland (2.67 ac)
- Coastal Scrub (3.78 ac)
- Deciduous Orchard (150.31 ac)
- Desert Riparian (161.90 ac)
- Desert Scrub (12,680.99 ac)
- Desert Wash (1,184.13 ac)
- Dryland Grain Crops (4.00 ac)
- Fresh Emergent Wetland (32.25 ac)
- Irrigated Hayfield (120.54 ac)
- Irrigated Row and Field Crops (6,232.38 ac)
- Western Joshua Tree (7,881.91 ac)
- Juniper (8,400.17 ac)
- Lacustrine (1,034.13 ac)
- Mixed Chaparral (13,156.03 ac)
- Montane Chaparral (185.63 ac)
- Montane Hardwood (1,06 2.21 ac)
- Montane Riparian (45.86 ac)
- Pasture (77.01 ac)
- Sagebrush (8,602.64 ac)
- Saline Emergent Wetland (40.03 ac)
- Urban (28,510.64 ac)
- Valley Foothill Riparian (48.84 ac)

- City Limits
- City Boundary
- Sphere of Influence
- Major Highway/Arterial
- Railroad
- Arterials
- Waterbody

0 0.75 1.5 2.25 3 Miles

0 3,000 6,000 Feet

Data Sources: City of Palmdale GIS data; CALFIRE, 2015.

Produced by Rincon Consultants, Inc.
June 2019

City of Lancaster

AVENUE L
COLUMBIA WAY / AVENUE M
AVENUE M-8
AVENUE N
AVENUE O
RANCHO VISTA BL / AVENUE P
AVENUE P-2
AVENUE P-8
AVENUE Q
AVENUE R
AVENUE S
AVENUE T
PALMDALE BLVD
PEARBLOSSOM HIGHWAY
50TH STREET WEST
30TH STREET WEST
20TH STREET WEST
10TH STREET WEST
DIVISION STREET
20TH STREET EAST
45TH STREET EAST
90TH STREET EAST
120TH STREET EAST
10TH STREET EAST
50TH STREET EAST
40TH STREET EAST
47TH STREET EAST
60TH STREET EAST
30TH STREET EAST
25TH STREET EAST
RANCHO VISTA BLVD
RITTER RANCH ROAD
BRIDGE ROAD
SIERRA SUBDA AVENUE
SIERRA HIGHWAY
FORT TEJON ROAD
14
138

Figure 11.2

Western Mojave Habitat Conservation Plan Area

- Western Mojave Habitat Conservation Plan
- City of Palmdale Boundary
- Sphere of Influence
- Other City Boundary
- Major Highway/Arterial
- Railroad

0 0.75 1.5 2.25 3 Miles

0 3,000 6,000 Feet

Data Sources: City of Palmdale GIS data.; Los Angeles County, 2018.

Produced by Rincon Consultants, Inc.
June 2019

Protected Wildlife Species

Palmdale lies primarily within the jurisdiction of the Western Mojave Habitat Conservation Plan. The Plan boundaries are shown in Figure 11.2. As mentioned above, the Western Mojave Habitat Conservation Plan is focused on protecting sensitive species across the region. Wildlife plant and animal species that are native to California are also protected by the CDFW. Table 11.2 identifies protected wildlife species that are known to exist within Palmdale.

Table 11.2 Protected Species within Palmdale

Species	Background
Bell's Sage Sparrow	Mixed chaparral habitat suitable for breeding and foraging exists in the City and it has been observed in this habitat just east of Ritter Canyon.
Burrowing Owl	Suitable sparse, dry habitat for breeding and foraging exists in the City and it has been observed in this habitat in various locations.
California Red-Legged Frog	A pond fed by artesian springs in the Ritter Ranch area provides suitable habitat for foraging and breeding adults have been observed.
Coast Horned Lizard	Suitable habitat for breeding and foraging exists and it has been observed in the scrub and grassland habitats of the western portion of the City.
Cooper's Hawk	Likely nesting habitat of riparian forest exits in Amargosa Creek in the western portion of the City.
Ferruginous Hawk	Suitable habitat for foraging of desert scrub and juniper habitats exists and it has been observed in this habitat at the northwest end of Anaverde Valley in the western portion of the City.
Le Conte's Thrasher	A desert resident which commonly nests in a dense spiny shrub or densely branched cactus in desert wash habitat. It has been observed in multiple locations throughout the City.
Least Bell's Vireo	An endangered species which has been observed on the eastern edge of Una Lake in a habitat consisting of willow and mulefat scrub.
Loggerhead Shrike	Palmdale includes suitable habitat for foraging and nesting, including western Joshua trees, desert scrubs and washes. It has been observed perched on western Joshua trees northwest of U.S. Air Force Plant 42 and on powerlines southeast of Anaverde Valley.
Mohave Ground Squirrel	Restricted to the Mojave Desert, the open desert scrub and western Joshua tree woodland in the city provides suitable habitat for foraging and nesting.
Mountain Plover	Multiple observations have been reported in mowed agricultural fields, north of the Palmdale Airport. The short vegetation provides suitable habitat for foraging and nesting.
Northern California Legless Lizard	A disjunct Mojave Desert population exists in the city where the sandy soils provide suitable habitat for breeding and foraging.
San Joaquin Pocket Mouse	The fine-textured, sandy soils of the arid scrubland that exists within the City provide suitable breeding and foraging habitat.
Southern California Rufous-Crowned Sparrow	A resident of Southern California sparse mixed chaparral, which frequents relatively steep and rocky hillsides with grass and forb patches. It has been observed just southwest of Anaverde Valley and just South of Leona Valley.
Tricolored Blackbird	A candidate endangered species, it breeds and nests in colonies near open water with availability of protected nesting. Colonies have been observed at Lake Palmdale and Leona Valley Pond, which provide suitable habitat for breeding and foraging.
Two-Striped Gartersnake	Suitable habitat for foraging and breeding of dense riparian with permanent fresh water exists within the city. It has been observed along Amargosa Creek in the western portion of the City.
Wester Pond Turtle	Riparian habitat and open water within the city provide suitable habitat for foraging and breeding. There have been multiple observations in and along Amargosa Creek in the western portion of the City.
Short-joint Beavertail	A perennial stem succulent which blooms, April through June, is characteristic of the Juniper woodland, western Joshua tree woodland and Mojavean Desert Scrub natural communities within the city.
Slender Mariposa-Lily	A perennial bulbiferous herb found in chaparral, valley, and foothill grasslands, often on shaded canyons or grassy slopes. It has been found at the southeast end of Portal Ridge, near Leona Valley.

Source: California Natural Diversity Database, 2019

Significant Ecological Areas

The County of Los Angeles ~~County~~ designates areas in which irreplaceable biological resources exist as Significant Ecological Areas (SEAs). There are a number of SEAs within the City of Palmdale. These areas contain some of the County's most important biological resources for sustaining key species populations. Figure 11.3 depicts the SEAs within Palmdale and the surrounding area. These designated areas include Big Rock Wash, Little Rock Wash, Ritter Ridge, Portal Ridge, and Alpine Butte. Development in these areas must take steps to identify and protect significant species.



Open Space at Ritter Ranch



Open Space at Ritter Ranch

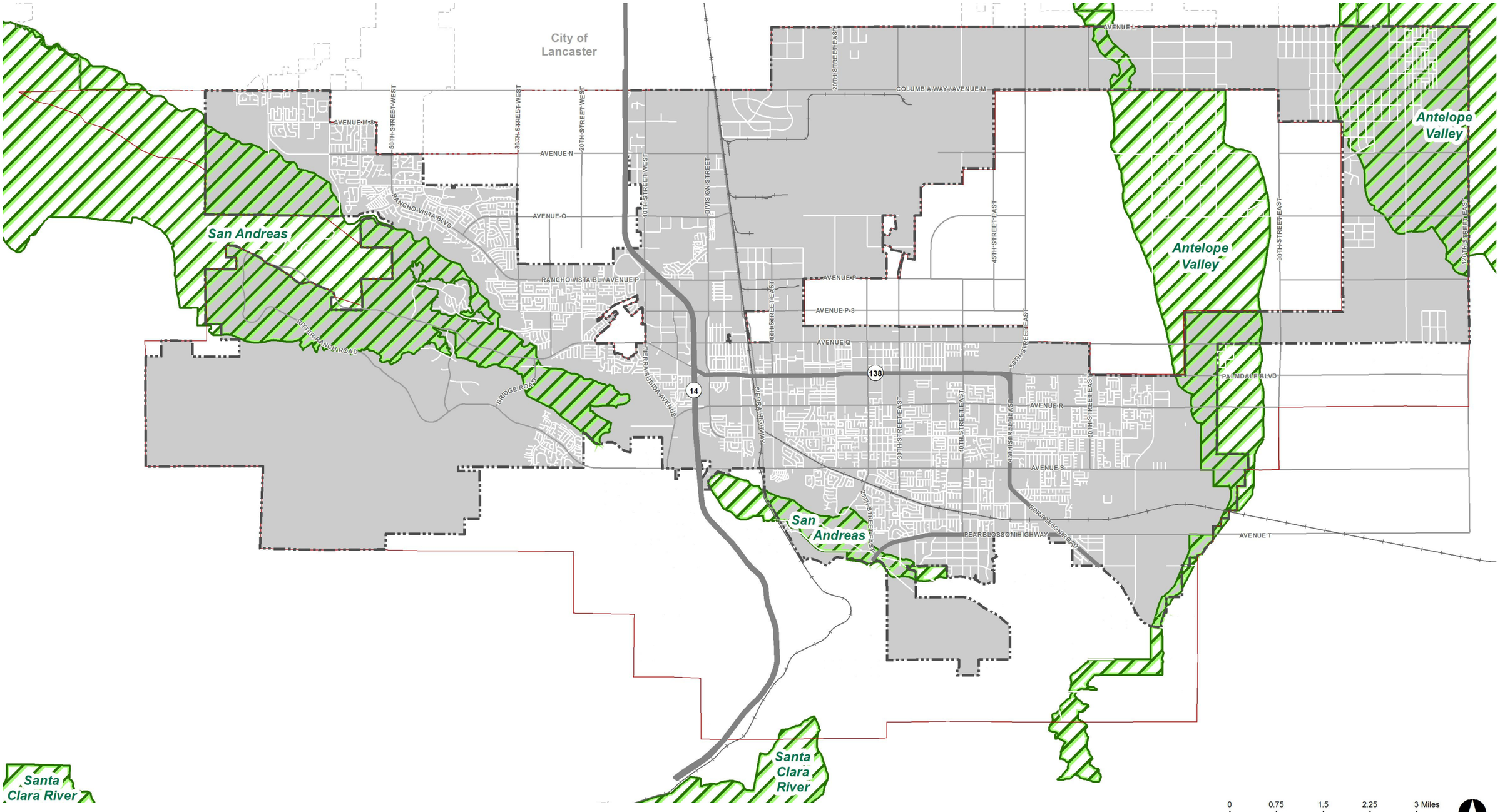


Figure 11.3
Significant Ecological Area

Data Sources: City of Palmdale GIS data.; Los Angeles County, 2018.

Produced by Rincon Consultants, Inc.
June 2019

This page intentionally left blank.

Land Resources

Agriculture Lands

Agricultural lands are a rapidly disappearing natural resource. The state and federal government have made the preservation of agricultural resources a community priority. Within the Palmdale Planning Area, there are no significant agricultural lands. Surrounding Palmdale, agricultural lands exist to the east of the Plant 42, on lands which are almost entirely under Los Angeles County jurisdiction. Crops produced on this land are primarily non-food crops such as alfalfa, but also consist of pistachio, sod, onion, carrots, and tomatoes. This area is not classified by the California Department of Conservation as prime agricultural land and is not considered regionally significant.

Mineral Resources

Palmdale lies within the Palmdale Production Consumption region, which is a California Department of Conservation designated Mineral Resource Zone encompassing 1,103 square miles, including Palmdale and Lancaster. The mineral deposits within Palmdale are the Little Rock Fan and the Big Rock Creek Fan alluvial deposits. The Little Rock Fan is a 12 square mile area extending from the north flank of the San Gabriel Mountains for about 8 miles, which includes the Little Rock Wash floodplain and the fan area to the west. The Big Rock Creek Fan encompasses a 26 square mile area extending northward from the San Gabriel Mountains for 8 miles. Both mineral deposits are composed of about 60% fine to coarse sand and silt, overlain by about 40% pebbly gravel.

Sand and Gravel Mining widely occurs throughout Little Rock Wash (floodplain within the Little Rock Fan).

Active quarries exist in the following locations:

- Along 75th Street East, between East Avenue S and Palmdale Boulevard
- The area bordered by East Avenue T to the south, East Avenue S to the north, 70th Street East to the west, and 87th Street East to the east
- The region North of State Route -138, bordered by Little Rock Wash to the east, 62nd Street East to the west, and East Avenue T to the north

Soil and Erosion

Most of Palmdale's soils consist of unconsolidated sedimentary deposits, sourced from granitic rocks in the San Gabriel Mountains. The floor of the Antelope Valley was at one point occupied by a large intermittent lake, which was the site for accumulation of fine-grained materials. During this time, precipitation events would result in the erosion of materials from the San Gabriel and Tehachapi Mountains, which formed the clay beds that currently underlie the Antelope Valley. The current upper soil levels of Palmdale are derived from the downslope erosion of soil and rock caused by wind and rain. These soils can be characterized as alkali with a low water holding capacity.



View of San Gabriel Mountains



Historical Photo of Little Dam

Palmdale City Library

Cultural Resources

Historically, humans have inhabited the Western Mojave region for an estimated 5,000 years. Cultural groups known to have occupied the Antelope Valley before European contact include the Kitanemuk, Kawaiisu, Tatavium, and Serrano/Vanyume. As urbanization in Palmdale has increased, more cultural resources have been identified as site surveys have been conducted. Existing state laws ensure that cultural resources are preserved and mitigated through acceptable means.

Palmdale's modern history is recognized through several historical buildings and sites. There were two early settlements that existed within the geographic area, known as Harold and Palmenthal. These settlements were established in 1886 and existed at the crossing of the Southern Pacific Railroad tracks and Fort Tejon Road. The origins of these settlements can be traced to the families of German and Swiss descendants that moved westward, from the Midwest, towards California. Palmdale's earliest modern residents settled in its current location in 1899.

Palmdale has engaged in promoting awareness of existing cultural and historical resources, increasing awareness of Antelope Valley's history, and creating community identity. The City's history is recognized through several historic buildings and sites. Some of these buildings and sites include Moore's Hall, the Bank of Italy, Old Leona School house, and Old Palmdale Cemetery.

The City will continue to identify and protect cultural resources through application of federal, state, and local requirements. Coordination with local Native American tribes as required by recent changes in state law will be a critical component of the review of new development with the potential to affect Native American resources. The continued effort to preserve historic resources in the City and cultivate Palmdale's unique culture will help preserve culturally and historically significant areas.

Historical Photo of Train Passing Through Palmdale



Water Resources

Streams

Palmdale has three seasonal streams, Anaverde Creek, Amargosa Creek, and Little Rock Wash, and many smaller streams, as shown in Figure 11.4. Although Palmdale is considered dry, desert land; these streams will flow during rain and snow melt events in the surrounding mountains, and during the occasional local rainstorm. Amargosa Creek flows eastward, from the San Gabriel Mountains, through Leona Valley, then turning northward near the center of Palmdale terminating at Piute Pond and Rosamond Dry Lake to the north of Lancaster. Anaverde Creek flows from the San Gabriel Mountains, through the Anaverde Community, connecting with the Amargosa Creek near the center of Palmdale. Little Rock Wash begins at Little Rock Reservoir to the south of Palmdale and flows northward through Palmdale and Lancaster, terminating at the dry bed of Rosamond Lake (USGS 1984). The Amargosa and Anaverde Creeks provide riparian habitats for migrating birds and raptors.

Water Quality

The Palmdale Water District's surface water is stored at Little Rock Creek Dam Reservoir and Lake Palmdale. Little Rock Dam Reservoir has a capacity of approximately 3,000-acre feet and is filled by natural runoff from the local San Gabriel Mountains. Water from Little Rock Reservoir is transferred to Palmdale Lake through an open channel connecting the two reservoirs. This local surface water supply has historically been of very high quality. The Palmdale Water District does not currently experience or foresee future issues with local surface water.



Lake Palmdale

Desired Outcomes, Indicators, and Targets

The following desired outcomes and metrics were identified to help the City of Palmdale track progress toward conserving natural and cultural resources. This process follows the City of Palmdale's General Plan Vision and Guiding Principles document which was informed by the General Plan Advisory Committee (GPAC), the Planning Commission and City Council.

Top Key Outcomes

OUTCOME: Preservation of scenic and natural features

KPI:
- Preservation of scenic and natural features

TARGET:
- **Acquisition of lands for open space preservation**

KPI:
- Protection of sensitive ecological areas

TARGET:
- **Buffers between new development and sensitive ecological areas**

OUTCOME: Minimize changes to surface runoff patterns and maintain water quality

KPI:
- Preservation of water runoff patterns and water quality

TARGET:
- **New and existing development meet applicable NPDES standards**

OUTCOME: Identify and protect historically significant resources

KPI:
- Maintain an up-to-date cultural sensitivity map

TARGET:
- **Update the cultural sensitivity map as necessary to track cultural assets in Palmdale**

OUTCOME: Awareness and preservation of historical, cultural, and paleontological resources

KPI:
- Protection for historical, cultural, paleontological, and archaeological resources

TARGET:
- **Develop and adopt a cultural and/or historical resources protection ordinance**

OUTCOME: Cultural programs that embrace cultural identities in the City

KPI:
- Promotion of cultural resources to the public

TARGET:
- **Landmark designation plaques, directional signage, self-guided tours, school curriculum, programs, and events**

OUTCOME: Phased transition of mining operations

KPI:
- Reclamation funding for mining operations

TARGET:
- **Development of a reclamation fund for mining operators to contribute to annually to be used after operations cease**

KPI = Key Performance Indicator

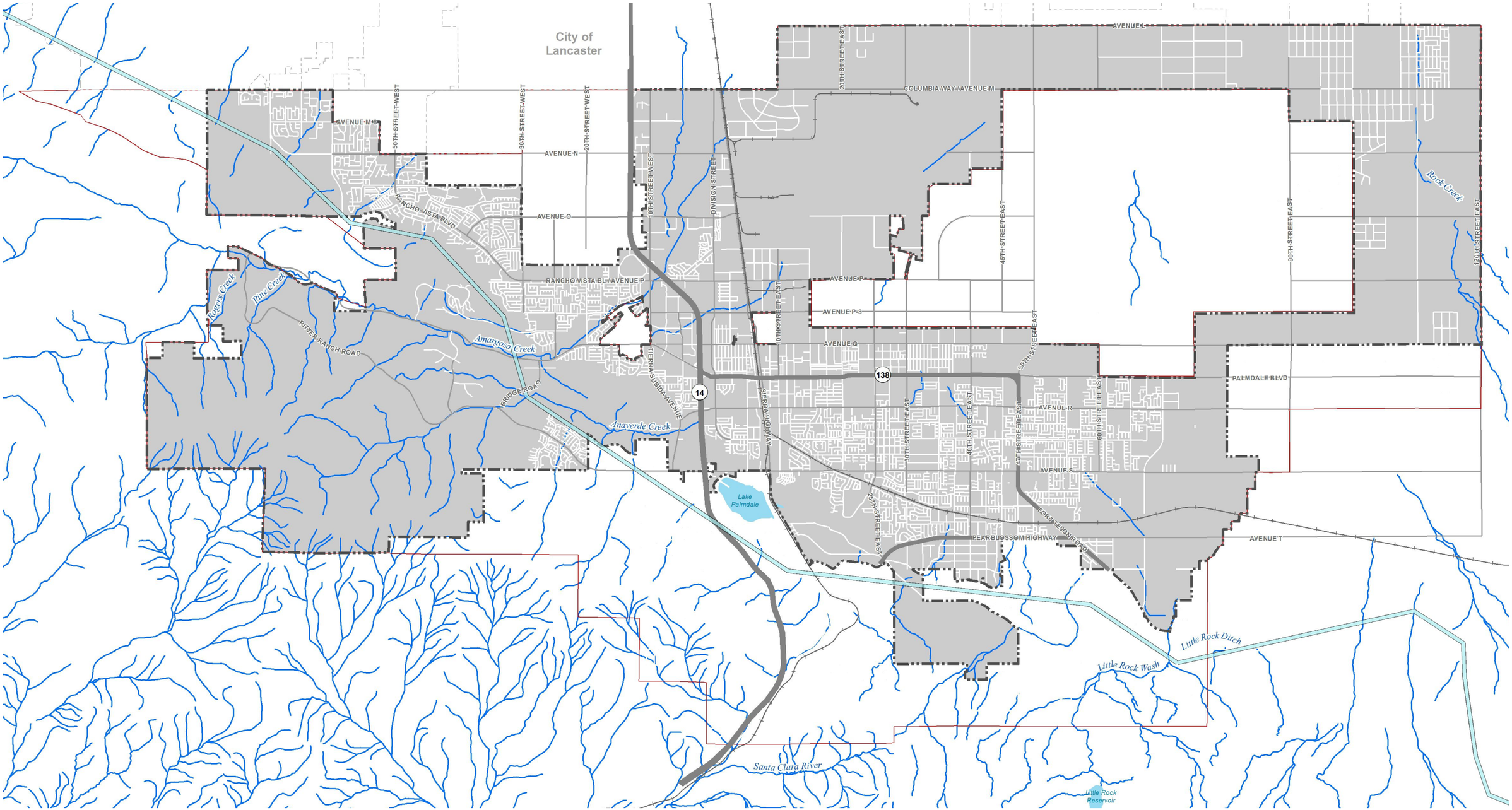


Figure 11.4

Palmdale Streams and Water Bodies

- Water Body
- California Aqueduct
- Stream
- City of Palmdale Boundary
- Sphere of Influence
- Other City Boundary
- Major Highway/Arterial
- Railroad

0 0.75 1.5 2.25 3 Miles

0 3,000 6,000 Feet

Data Sources: City of Palmdale GIS data.; USGS, 2018.

Produced by Rincon Consultants, Inc.
June 2019

This page intentionally left blank.

Goals and Policies

The following section includes goals and policies for the Conservation Element. Goals and policies are followed by implementation actions. Some related policies are woven throughout the General Plan, including in the Land Use and Community Design, Parks, Recreation, and Open Space, and Sustainability, Climate Action, and Resilience Elements.

SENSITIVE HABITAT AND RESOURCES

Goal CON-1

Protect Significant Ecological Areas in and around the City, including, but not limited to, sensitive flora and fauna habitat areas.

CON-1.1 Endangered species protection. Ensure local compliance with the California Endangered Species Act and the Federal Endangered Species Act (ESA).

CON-1.2 Joshua and Juniper trees. Continue enforcing the City's Native Vegetation Ordinance to protect western Joshua trees and Juniper trees.

CON-1.3 West Mojave Plan. Comply with the required implementation of the West Mojave Plan for protection of desert tortoise and Mohave ground squirrel.

CON-1.4 Significant ecological areas. Identify and preserve to the greatest extent feasible significant ecological areas (SEA's) as shown in Figure 11.3. Areas to consider for open space preservation include, but are not limited to, Tejon Park, Barrel Springs Southern Trailhead, and the Una Lake area.

CON-1.5 Preserve ecological resource areas. Preserve natural drainage courses and riparian areas where ecological resources exist in significant concentrations.

CON-1.6 Increase conservation areas. Coordinate with state agencies to help achieve the goals of 30x30: to protect 30 percent of California's land by 2030 by identifying optimal sites for land conservation.

CON-1.7 Wetland and floodplain areas. Solicit and utilize all available sources of local, regional, state, and federal funds to acquire significant wetland areas and floodplains to minimize disturbance and prevent damage from erosion, turbidity, siltation, loss of wildlife and vegetation, or the destruction of the natural habitat.

Goal CON-2

Preserve designated natural hillsides and ridgelines in the Planning Area, to maintain the aesthetic character of the Antelope Valley.

CON-2.1 Hillside land management. Establish a systematic approach to the management of land uses and development in hillside areas.

CON-2.2 Natural ridgelines. Retain the integrity of the natural ridgelines of Ritter Ridge, Portal Ridge, Verde Ridge, the Ana Verde Hills, the Sierra Pelona Mountains, and the lower foothills of the San Gabriel Mountains.

CON-2.3 Density transfers. Encourage density transfers where appropriate so that the density of development respects and is reflective of the natural terrain.

CON-2.4 Development in suitable locations. Facilitate development in more suitable locations while retaining significant natural slopes and areas of environmental sensitivity as natural open space.

MINERAL RESOURCES

Goal CON-3

Plan for safe operations of mineral resource extraction areas and reduce unreasonable impacts.

CON-3.1 Reduce mineral resource extraction impacts. Reduce impacts to human and environmental health caused by mineral resource extraction including:

- Ground water contamination
- Removal or demise of sensitive Ecological Areas of flora and fauna
- Excessive noise or dust

CON-3.2 Land use buffers. Maintain buffers between mineral resource extraction areas and other sensitive land uses (i.e., residential, public, institutional, open space and parks, among others) to reduce unnecessary impacts while in operation.

Goal CON-4

Plan for mineral resource extraction site remediation and end users.

CON-4.1 Mining reclamation plan. Require mining operators to establish a reclamation plan that indicates end users when mining operations cease and how the transition to new uses shall be implemented.

CON-4.2 Reclamation fund. Establish a use-based mechanism for mining operators to begin contributing to a reclamation fund annually to be used after operations cease.

CON-4.3 Plan remediation and restoration of sites. Plan for remediation and restoration of extraction sites after operations cease, including adequate areas for groundwater recharge.

WATER RESOURCES

Goal CON-5

Protect the quality and quantity of local water resources.

CON-5.1 Ground water recharge. Ensure that ground water supplies are recharged and protect natural recharge areas such as the Little Rock and Big Rock Washes, and Amargosa and Anaverde Creeks from pollutants or other materials, which might degrade groundwater supplies.

CON-5.2 Groundwater protection. Ensure that no mineral resource recovery activities extend below the groundwater table.

CON-5.3 Regional monitoring cooperation. Cooperate with Los Angeles County Health Department and the Regional Water Quality Control Board in monitoring industrial and commercial uses utilizing hazardous or potentially polluting materials and fluids, to prevent their discharge into the groundwater aquifer.

CON-5.4 Flood control measures. Maximize groundwater recharge capabilities with flood control measures.

Goal CON-6

Minimize the impacts of urban development on groundwater supplies.

CON-6.1 Encourage natural recharge. Restrict building coverage and total impervious area in the vicinity of natural recharge areas.

CON-6.2 Reduce landscaping irrigation needs. Require the use of water conserving native or drought resistant plants and drip irrigation systems where feasible.

CON-6.3 Reduce street runoff. Design streets to incorporate vegetation, soil, and engineered systems to slow, filter, and cleanse stormwater runoff.

CON-6.4 New construction water conservation. Require water conserving appliances and plumbing fixtures in all new construction.

CON-6.5 Monitoring and coordination. Coordinate with local water agencies to monitor ground water levels, State water allocations and development approvals, to assure that development does not outpace long-term water availability.

Goal CON-7

Maintain and further the City's commitment to long-term water management within the Antelope Valley by planning for the conservation and managed use of water resources, including groundwater, imported water, and reclaimed water.

CON-7.1 Reclaimed water irrigation. Assess and implement, when and where feasible, reclaimed water for landscape irrigation.

CON-7.2 Water run-off capture. Work with local water purveyors to assess the potential for capturing local run-off and utilization of imported water (water banking) for groundwater recharge within the Planning Area.

CON-7.3 Retain recharge areas. Through the land use planning process, ensure that important recharge areas are retained.

CON-7.4 Water management. Continue to seek out long-range water management techniques as new technology is developed.

CON-7.5 Implementation. Promote implementation of water reduction and recycling systems that are feasible and appropriate to the Planning Area.

CON-7.6 Water recycling. Encourage residents and businesses to recycle water where feasible, and where water recycling does not result in health and safety concerns.

CON-7.7 Water sources. Participate in regional efforts to retain imported water allocations and seek out other sources as they become available.

HISTORIC AND CULTURAL RESOURCES

Goal CON-8

Protect historical and culturally significant resources, which contribute to the community's sense of history.

CON-8.1 Historic landmark identification. Identify and recognize historic landmarks from Palmdale's past.

CON-8.2 Cultural and historic buildings. Identify and preserve unique cultural and historic buildings and features in order to enhance community character.

CON-8.3 Identified landmarks. Maintain, rehabilitate, and appropriately reuse identified landmarks where feasible.

CON-8.4 Preservation in new development. Require that new development preserve significant historic, paleontological, or archaeological resources.

CON-8.5 Tribal consultation. Conduct Native American consultation consistent with the applicable regulations when new development is proposed in potentially culturally sensitive areas.

CON-8.6 Discovery coordination with Tribal groups. When human remains suspected to be of Native American origin are discovered, coordinate with the Native American Heritage Commission and any local Native American groups to determine the most appropriate course of action.

CON-8.7 Cooperation with preservation entities. Cooperate with private and public entities whose goals are to protect and preserve historic landmarks and important cultural resources.

CON-8.8 Recognition of local historic resources. Promote respect and recognition of unique historical resources within the community by identifying significant cultural resources with landmark designation plaques, directional signage, self-guided tours, school curriculum, programs, and events.

CON-8.9 Maintain cultural assets. Discourage historic landmark properties from being altered in such a manner as to significantly reduce their cultural value to the community.

Goal CON-9

Promote community design that reflects Palmdale's history and preserves Palmdale's cultural resources.

CON-9.1 Design elements. Promote use of design elements, which reflect the various periods of history and settlement in Palmdale.

CON-9.2 Locally relevant community design. Community design should reflect the community's roots, rather than simulating historic periods or events, which did not occur in the Antelope Valley.

CON-9.3 Locally appropriate landscape design. Preserve the natural heritage of the region through landscape design by ensuring the local stock of native trees and vegetation is replenished and protected.

Implementation Actions

The table below identifies programs, planning efforts, coordination efforts, and other actions that will help implement the General Plan's Conservation Element goals and policies. Programs are consistent with this chapter's goals and policies.

The table provides a description of each Implementation Action and lists the correlating policies. Each action also identifies a timeframe for implementation with Short-term representing a 1–3-year timeframe, Medium-term is 4-7 years, Long-term is 8+ years and Ongoing represents an action that the City should continue. Additionally, the table includes the City department that should function as the lead for implementing the actions.



Correlating Goal	Action	Timeframe	Responsible Department
CON-7	**Recycled Water.** Investigate the potential for recycled water use and, as appropriate, develop and implement a water recycling plan.	//	Public Works
CON-8	**Historic Preservation Ordinance.** Develop an Historic Preservation Ordinance to protect local historic resources from the impacts of development.	//	Economic and Community Development
CON-8	**Municipal Code Review.** Review the existing survey protocol and report/ mapping requirements for the protection of paleontological and archeological resources within the Municipal Code to ensure that the most recent legislation and best practices are utilized.	/	Economic and Community Development
CON-8	**Historic Resource Assessment.** Perform an updated assessment of historic resources of local importance and publish a list of these resources on the City webpage.	/	Economic and Community Development
CON-8	**Cultural Sensitivity Map.** Develop and maintain a cultural sensitivity map. Require special studies/surveys to be prepared for any development proposals in areas reasonably suspected of containing cultural resources, or as indicated on the sensitivity map.	//	Economic and Community Development



Palmdale Development Services Building



Chapter 12

Public Facilities, Services, and Infrastructure

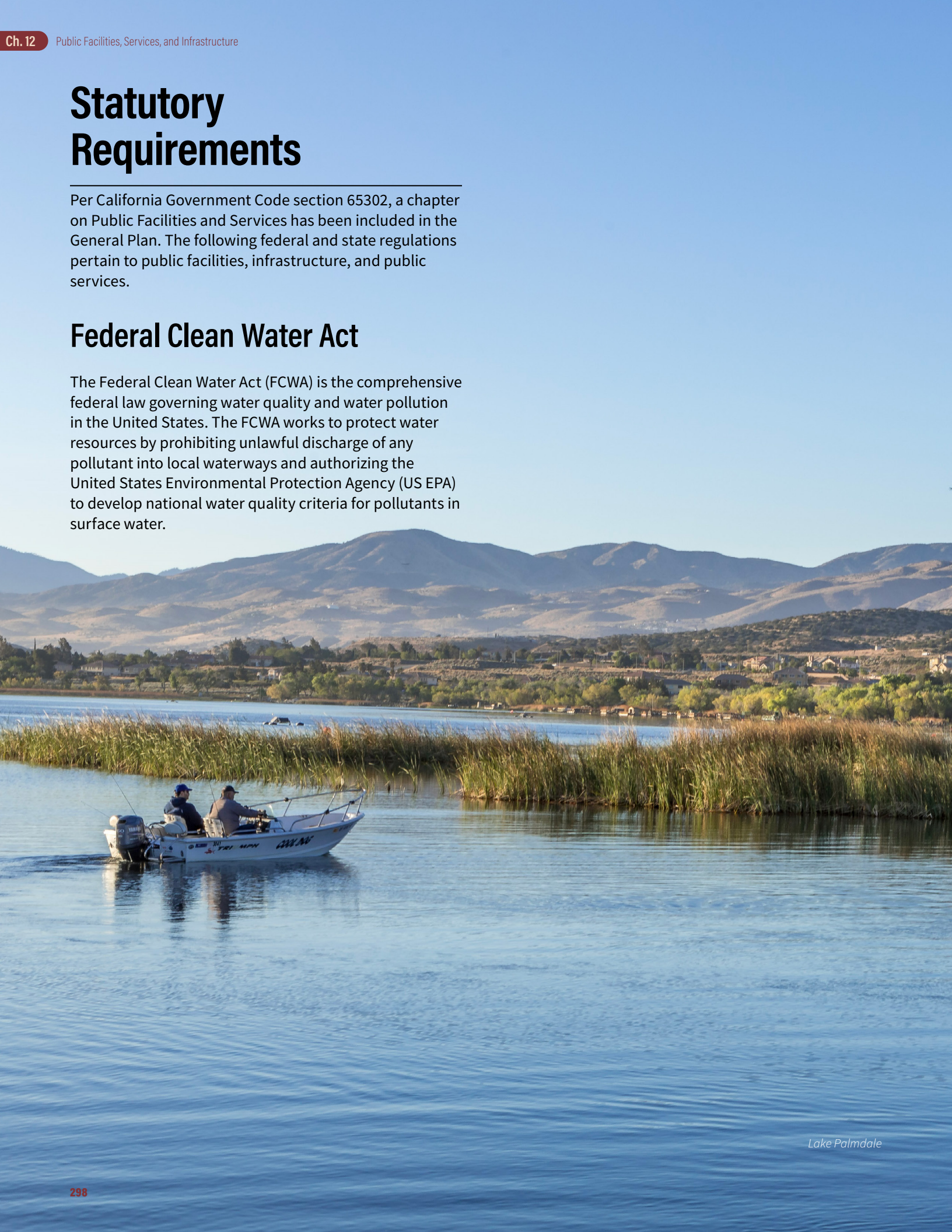
This section of the Palmdale General Plan outlines the goals and policies related to public facilities, services, and infrastructure in Palmdale. Information on park facilities in the city can be found in Chapter 8: Parks, Recreation, and Open Space.

Statutory Requirements

Per California Government Code section 65302, a chapter on Public Facilities and Services has been included in the General Plan. The following federal and state regulations pertain to public facilities, infrastructure, and public services.

Federal Clean Water Act

The Federal Clean Water Act (FCWA) is the comprehensive federal law governing water quality and water pollution in the United States. The FCWA works to protect water resources by prohibiting unlawful discharge of any pollutant into local waterways and authorizing the United States Environmental Protection Agency (US EPA) to develop national water quality criteria for pollutants in surface water.

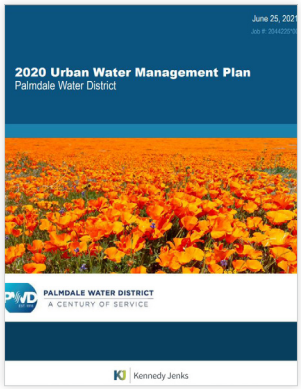


Lake Palmdale

Relevant Plans & Documents

Palmdale Water District Urban Water Management Plan (2020)

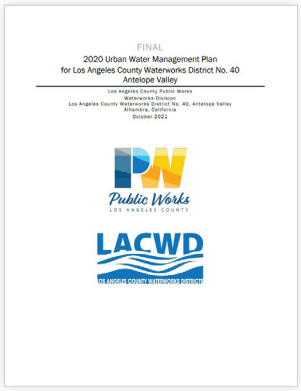
The Palmdale Water District's (PWD) 2020 Urban Water Management Plan (UWMP) projects water demand and supply for the district's service area through the year 2045. The Plan is focused on identifying sources of water supply available to meet existing and future water needs and aims to diversify those sources to limit impacts on depleted water resources.



Palmdale Water District Urban Water Management Plan

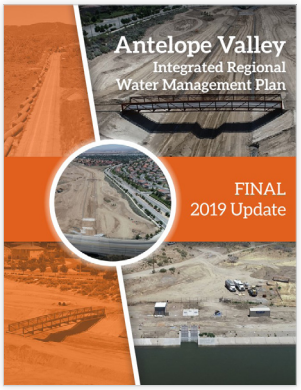
Los Angeles County Waterworks District No. 40 2020 Urban Water Management Plan (2020)

The Waterworks District No. 40 UWMP projects water demand and supplies through 2045, describes water supply reliability under a range of scenarios, provides a water shortage contingency plan, and describes various water demand management measures for the District service area.



Antelope Valley Integrated Water Management Plan (2019 Update)

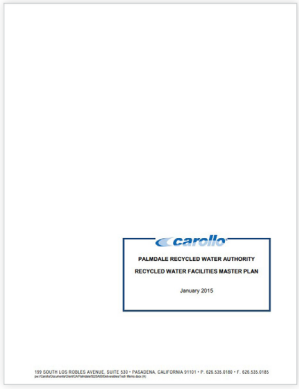
The Integrated Water Management Plan (IWRM) provides a mechanism for: 1) coordinating, refining and integrating existing planning efforts within a comprehensive, regional context; 2) identifying specific regional and watershed-based priorities for implementation projects; and 3) providing funding support for the plans, programs, projects and priorities of existing agencies and stakeholders. The 2019 update complies with new State integrated planning requirements, improves the content, and enhances eligibility for future grant funding.



Antelope Valley Integrated Water Management Plan

Recycled Water Facilities Master Plan (2015)

The Palmdale Recycled Water Authority (PRWA) adopted the Recycled Water Facilities Master Plan in 2015 to coordinate recycled water resources generated and used within the Palmdale area. The PRWA oversees recycled water planning, installation, and development throughout the majority of Palmdale, generally east of State Route 14 (SR-14). The goal of the PRWA is to analyze existing and planned recycled water facilities and explore opportunities to offset potable water demand using recycled water.



Recycled Water Facilities Master Plan

City of Palmdale Storm Water Management Plan (2003)

The Palmdale Storm Water Management Plan (SWMP) was adopted in 2003. The Plan was prepared by the Palmdale Department of Public Works with the objective to preserve the quality of City waters, including storm water conveyances such as closed conduits, open channels, drainage basins, and dry wells. The city currently maintains a "small" Municipal Separate Storm Sewer System (MS4) permit that authorizes the city to legally discharge stormwater into local waterways. The goal of the SWMP is to reduce the discharge of pollutants to the MS4 to the Maximum Extent Practicable (MEP). The Plan requires that each development attenuate post-developed flows to 85 percent of pre-developed flows, enforced through City Ordinance.


City of Palmdale
Department of Public Works
Engineering Division

StormWater Management Plan (SWMP)

Submitted to:
Lahontan Regional Water Quality Control Board

For

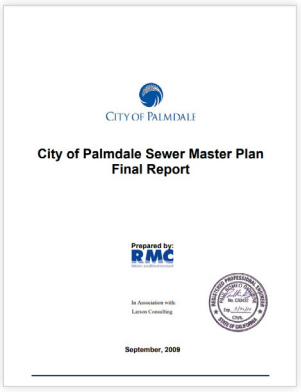
National Pollutant Discharge Elimination System (NPDES)
Phase II

Revised: August 21, 2003
Due Date: August 29, 2003

Palmdale Storm Water Management Plan

Palmdale Sewer System Management Plan (2009)

The Palmdale Sewer System Management Plan (SSMP) was adopted in 2009 to address the planning, operation, and maintenance of the City's sewer system. The SSMP presents an analysis of the hydraulic capacity of the sewer system under current and future flow conditions and provides an assessment of the existing structural conditions of the sewer system. Updates to this plan took place in 2014 and are underway as of 2022.


CITY OF PALMDALE

City of Palmdale Sewer Master Plan
Final Report

Prepared by:
RMC

In Association with:
Larsen Consulting

September, 2009

Palmdale Sewer System Management Plan

Palmdale Drainage Master Plan (1989)

The Palmdale Drainage Master Plan was adopted in 1989 to address existing drainage issues associated with storm water runoff and prepare for anticipated drainage from future development. The Plan outlines construction of flood control facilities in Palmdale that would connect with the planned regional drainage system. As of 2022, the City of Palmdale is underway with an update to this plan to reflect changes to the Anaverde and Pearblossom drainage areas.

Context

Public Facilities

The City of Palmdale offers a range of public facilities to meet community needs. Palmdale's main governmental offices are centrally located at the intersection of Palmdale Boulevard and Sierra Highway and includes City Hall, which houses the office of the City Manager, elected officials, City Council chambers, City Attorney, Administrative Services, and ~~the~~ City Clerk. The City's Development Services Building is located at 38250 Sierra Highway, and includes Building & Safety, Planning, Public Works, Business License, Economic Development, and Neighborhood Services.

As shown in Figure 12.1, in addition to the main Palmdale governmental offices, there are several other local, regional, and federal facilities that are open to the public. Table 12.1 lists major publicly accessible City services and ~~or~~ facilities in Palmdale. These are organized by the City of Palmdale, County of Los Angeles ~~County~~, and Federal facilities. Note that recreation facilities and programs are discussed and mapped in Chapter 10: Parks, Recreation, and Open Space.



Palmdale City Library



Piece of "Facing the Sun" by Lazzari and Evans Public Art

Table 12.1 Palmdale Facilities and Services

Map #	Facility	Address
CITY OF PALMDALE		
1	Palmdale City Hall	38300 Sierra Hwy
2	Palmdale City Library	700 East Palmdale Boulevard
3	Palmdale Playhouse	38334 10th Street East
4	Palmdale Parks and Recreation ~~Office~~	827 E. Avenue Q-9
5	Palmdale South Antelope Valley Emergency Services (SAVES)	1002 East Avenue Q-12
COUNTY OF LOS ANGELES		
6	Los Angeles County Animal Care Center	38550 Sierra Hwy
7	Los Angeles County Department of Children & Family Services	39959 Sierra Highway #150
8	Los Angeles County Housing Authority	2323 E Palmdale Boulevard
9	Los Angeles County Public Works	38126 Sierra Hwy
10	Palmdale GAIN Office*	1050 East Palmdale Boulevard
FEDERAL		
11	Antelope Valley Veterans Center	38925 Trade Center Drive
12	SSA Office of Disability Adjudication and Review	38925 Trade Center Drive

**The GAIN (Greater Avenues for Independence) program is provided by the Department of Public Social Services, for Los Angeles County.*

Schools

Palmdale is served by three school districts. These districts include two elementary (K-8) districts – Westside School District and Palmdale School District; and one high school district – Antelope Valley Union High School District. Table 12.2 lists each school serving Palmdale by district and grade level. Schools serving Palmdale are mapped in Figure 12.2.

Palmdale contains three charter schools within its purview: the Antelope Valley Learning Academy for home-schooled children, Palmdale Academy Charter School, and The Palmdale Aerospace Academy. With the clustering of aerospace industries in the city, many campuses have taken a focused approach to educating local talent and inspiring young minds to join the aerospace industry. The City of Palmdale nominates members to serve on the board of the Palmdale Aerospace Academy, which provides specialized STEM education for grades 7-12.

Table 12.2 Schools Serving Palmdale

Map #	Institution	Address	Grades
ANTELOPE VALLEY UNION HIGH SCHOOL DISTRICT			
1	Highland High School	39055 25th St West	9-12
2	Knight High School (William J. "Pete" Knight High School) and Academy Prep Junior High School Knight Campus	37423 70th St East	9-12
3	Palmdale High School	2137 East Avenue R	9-12
4	R. Rex Parris Alternative High School	38801 Clock Tower Plaza Dr East	9-12
5	Palmdale Prep Academy Junior High School/SOAR	2270 East Avenue Q	7-8
PALMDALE SCHOOL DISTRICT			
6	Barrel Springs Elementary	3636 Ponderosa Way	K-5
7	Buena Vista Elementary	37005 Hillcrest Dr	K-5
8	Cactus Intermediate	3243 East Ave R-8	6-8
9	Chaparral Elementary	37500 50th St East	K-5
10	Cimarron Elementary	36940 45th St East	K-5
11	David G. Millen Intermediate	39221 22nd Street West	6-8
12	Desert Rose Elementary	37730 27th St East	K-5
13	Desert Willow Intermediate	36555 Sunny Lane	6-8
14	Dos Caminos Elementary	39147 Palm Tree Way	K-5
15	Golden Poppy Elementary	37802 Rockie Lane	K-5
16	Innovations Academy of Palmdale	37230 37th Street East	K-8
17	Joshua Hills Elementary	3030 Fairfield Ave	K-5
18	Los Amigos Elementary	6640 East Ave R-8	K-5
19	Manzanita Elementary	38620 33rd St East	K-5
20	Mesquite Elementary	37622 43rd St East	K-5
21	Oak Tree Community Day	37230 37th Street East	K-8
22	Oak Tree Learning Center	38136 35th St East	K-8
23	Ocotillo Elementary	38737 Ocotillo School Drive	K-5
24	Palm Tree Elementary	326 East Avenue R	K-5
25	Palmdale Discovery Center	39174 Palm Tree Way	K-8, Special Education

Map #	Institution	Address	Grades
26	Palmdale Learning Plaza	38043 Division Street	K-8
27	Quail Valley Elementary	37236 58th St East	K-5
28	Sage Space & Aeronautics Gateway to Exploration Magnet Academy	38060 20th Street East	6-8
29	Shadow Hills Intermediate	37315 60th St East	6-8
30	Summerwind Elementary	39360 Summerwind Drive	K-5
31	Tamarisk Elementary	1843 East Ave Q-5	K-5
32	Tumbleweed Elementary	1100 E Avenue R-4	K-5
33	Yellen Learning Center	37015 Goldenview Way	K-8, Special Education
34	Yucca Elementary	38440 2nd St East	K-5
WESTSIDE UNION SCHOOL DISTRICT			
35	Anaverde Hills Elementary	2902 Greenbrier St	K-8
36	The IDEA Academy at Cottonwood	2740 West Avenue P-8	K-5
37	Esparanza Elementary	40521 35th St West	K-5
38	Gregg Anderson Academy Elementary	5151 West Avenue N-8	K-8
39	Hillview Intermediate	40525 Peonza Lane	6-8
40	Rancho Vista Elementary	40525 Peonza Lane	K-5
PRIVATE AND OTHER SCHOOLS			
41	Antelope Valley Learning Academy	37212 47th Street East	K-12
42	Antelope Valley YouthBuild	38626 9th Street East	HS Diploma, Trades Training
43	Berean Fellowship Christian School	38050 30th Street East	1-12
44	Empowered Church International/Empowered Learning Academy	2205 East Palmdale Boulevard, Suite B	K-12
45	Palmdale Academy Charter School	3838 East Avenue R	9-12
46	The Palmdale Aerospace Academy (PSD, City of Palmdale, NASA)	37212 47th Street East	TK-12
47	Saint Mary School	1600 East Avenue R-4	K-8
48	Shepherd Christian School	1730 High Vista Ave	K-12
49	Westside Christian	40027 11th Street West	K-8



Barrel Springs Elementary School

Higher Education

The city is also home to four higher education institutions. Antelope Valley Adult Education provides Career Technical Education programs for adults interested in starting a new career in the clerical, medical, dental, and technology fields. Additionally, the Aircraft Fabrication and Assembly (AFAB) program, housed at the Antelope Valley College Palmdale Center, prepares students with entry-level and upgraded skills for the aerospace industry. Higher education, along with schools serving Palmdale, are mapped on Figure 12.2. Table 12.3 lists the higher education institutions serving the city.

While Palmdale offers a variety of higher education opportunities, residents and employers cited a need for additional higher education—specifically a four-year university—and training opportunities for Palmdale adults.

Table 12.3 Higher Education in Palmdale

Map #	Institution	Address	Type
HIGHER EDUCATION			
50	Antelope Valley ~~Adult Education~~ – Palmdale Campus	1156 East Avenue S	Public Adult School
51	Antelope Valley College – Palmdale Center	2301 East Palmdale Blvd	Community College
52	University of Massachusetts Global "UMass Global" (Formerly Brandman University)	39115 Trade Center Dr Suite 203	Private
53	DeVry University Keller Graduate School of Management	39115 Trade Center Dr Suite 100	Private
54	Embry-Riddle Aeronautical University High Desert Campus	40015 Sierra Hwy Suite B-110	Private



Antelope Valley Adult Education - Palmdale Center

City of Lancaster

COLUMBIA WAY / AVENUE M

AVENUE N

AVENUE P

AVENUE P-8

AVENUE Q

AVENUE R

AVENUE S

AVENUE T

RANCHO VISTA BL / AVENUE P

TECHNOLOGY DRIVE

ELIZABETH LAKE ROAD

PALMDALE BLVD

TOWN CENTER DRIVE

BRIDGE ROAD

RANCH CENTER DRIVE

SUBIDA AVENUE

DIVISION STREET

SIERRA HIGHWAY

5TH STREET WEST

10TH STREET WEST

20TH STREET WEST

25TH STREET WEST

30TH STREET WEST

50TH STREET WEST

60TH STREET WEST

10TH STREET EAST

20TH STREET EAST

25TH STREET EAST

30TH STREET EAST

40TH STREET EAST

45TH STREET EAST

50TH STREET EAST

60TH STREET EAST

90TH STREET EAST

47TH STREET EAST

PEARBLOSSOM HIGHWAY

FORT TEJON ROAD

Lake Palmdale

138

14

12 11 6 4 8 1 10 2 9 5 3 7

Figure 12.1

Palmdale Public Facilities and Services

City Boundary
Sphere of Influence
California Aqueduct
Major Highway/Arterial
Railroad

Federal
County
City

0 0.75 1.5 2.25 3 Miles

0 3,000 6,000 Feet

Data Sources: City of Palmdale GIS data; World Terrain Base, 2015 ESRI, USGS, NOAA.

Produced by Raimi + Associates
May 2019

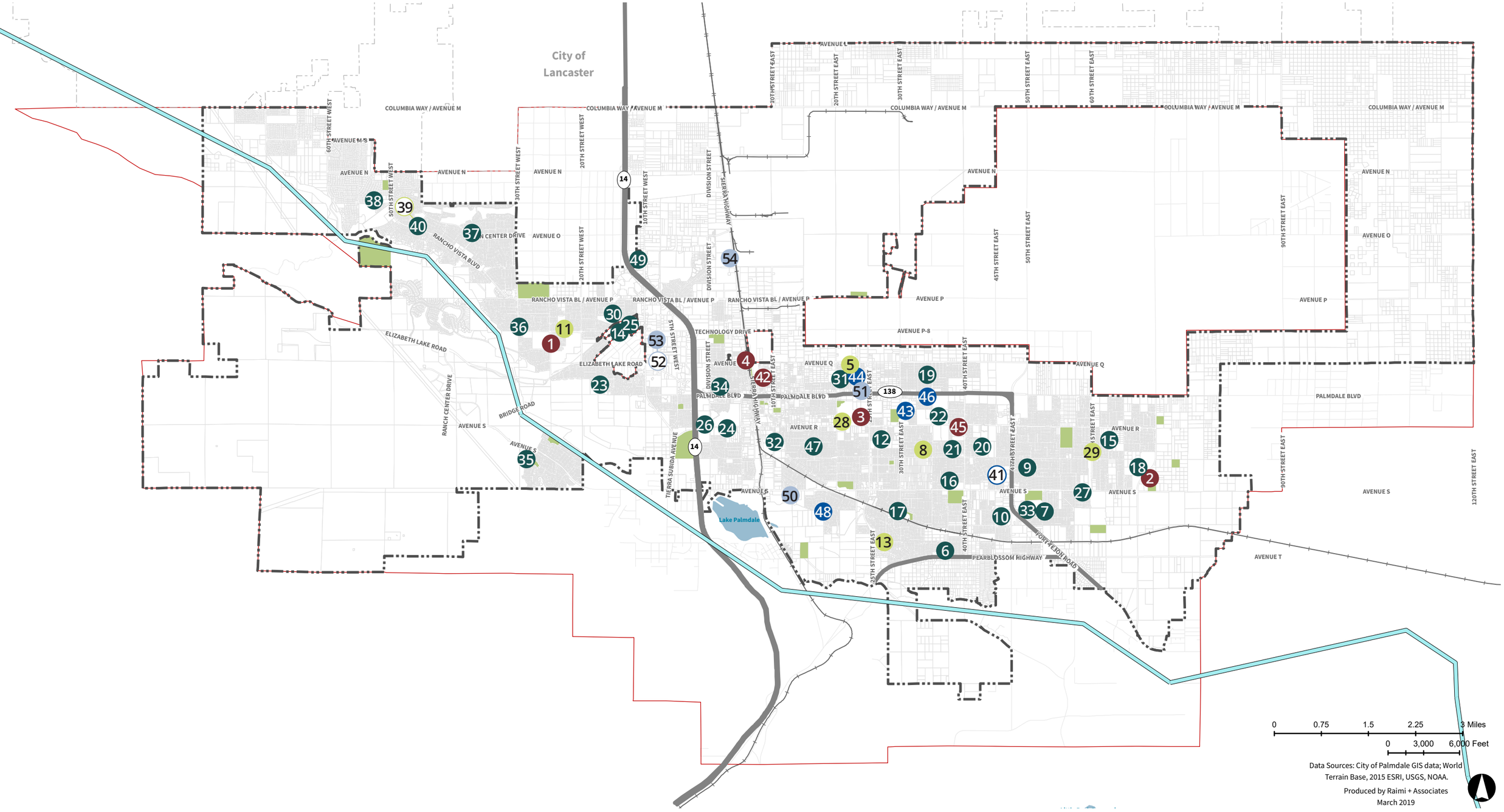


Figure 12.2

Palmdale Schools and Higher Education

- City Boundary
- Sphere of Influence
- California Aqueduct
- Major Highway/Arterial
- Railroad
- Water Body
- Park

- Elementary
- K-12
- Middle School
- High School
- Higher Education

This page intentionally left blank.

Emergency Services

The City contracts with the County of Los Angeles ~~County~~ for law enforcement, fire, and emergency medical services. Palmdale contains one sheriff's station and five fire stations, as shown on Table 12.4 and Figure 12.3 Emergency Facilities.

Law Enforcement

As noted above, Palmdale contracts law enforcement services through the Los Angeles County Sheriff's Department (LASD). LASD operates one station located at 750 East Avenue Q, which serves the City of Palmdale and surrounding communities (Acton, Agua Dulce, Big Pines/Wrightwood, Green Valley, Lake Elizabeth, Lake Hughes, Leona Valley, Littlerock, Llano, Pearblossom, Sun Village, Valyermo ~~Vallyermo~~, and Vasquez Rocks). The LASD's response time goal is under 6 minutes for on scene arrival.

The Palmdale Sherriff's Station is a state-of-the-art facility constructed in 2006 to replace the previous neighborhood sub-station. The sheriff's station includes a 47,000 square-foot main building, 7,800 square-foot jail, and 8,400 square-foot motor pool and storage building.

Fire and Emergency Medical Service

Fire protection, first response emergency and medical services in Palmdale are contracted through the County of Los Angeles Fire Department (LACoFD). LACoFD operates five stations within the City of Palmdale which are categorized under the North Regional office, Division Five, within Battalions 11 and 17. According to the LACoFD incident analysis for the city, the response times have generally decreased across all categories since 2015 and are within the LACoFD response time goal of 4-6 minutes for on scene arrival.

Emergency Operations

The City of Palmdale has an Emergency Services Coordinator that works in conjunction with law enforcement and fire personnel. The Emergency Services Coordinator facilitates the City's efforts to prepare for, respond to, and recover from natural or human made disasters.



Palmdale Fire Station 131

Table 12.4 Emergency Facilities

Map #	Facility	Address
1	Los Angeles County Sheriff's Station	750 East Avenue Q
2	Los Angeles County Fire Department Station #24	1050 West Avenue P
3	Los Angeles County Fire Department Station #37	38318 9th Street East
4	Los Angeles County Fire Department Station #93	5624 East Ave R
5	Los Angeles County Fire Department Station #131	2629 East Ave S
6	Los Angeles County Fire Department Station #136	3650 Bolz Ranch Rd

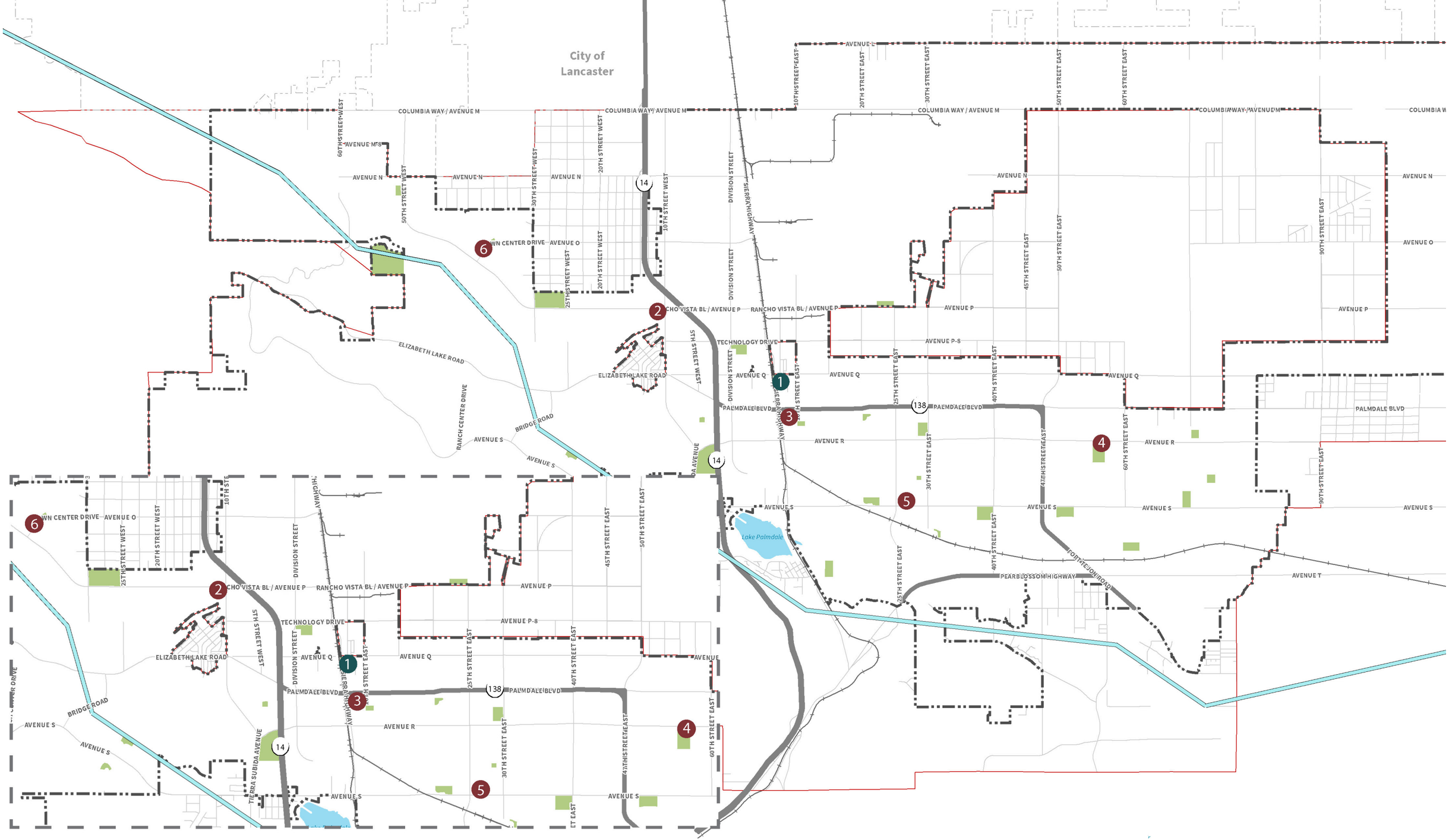


Figure 12.3

Palmdale Emergency Facilities

- City Boundary
- Sphere of Influence
- California Aqueduct
- Major Highway/Arterial
- Railroad
- Fire Department Station
- Sheriff's Department Station

0 0.75 1.5 2.25 3 Miles

0 3,000 6,000 Feet

Data Sources: City of Palmdale GIS data; World Terrain Base, 2015 ESRI, USGS, NOAA.

Produced by Raimi + Associates
May 2019

City of Lancaster
60TH STREET WEST
30TH STREET WEST
20TH STREET WEST
10TH STREET WEST
DIVISION STREET
20TH STREET EAST
COLUMBIA WAY / AVENUE M
45TH STREET EAST
50TH STREET EAST
90TH STREET EAST
120TH STREET EAST
AVENUE N
AVENUE O
RANCHO VISTA BLVD
RANCHO VISTA BL / AVENUE P
AVENUE P
AVENUE P-8
AVENUE Q
AVENUE R
AVENUE S
PALMDALE BLVD
ELIZABETH LAKE ROAD
RITTER RANCH ROAD
BRIDGE ROAD
SIERRA HIGHWAY
SIERRA SUBIDA AVENUE
138
14
Lake Palmdale
PEARBLOSSOM HIGHWAY
FORT TEJON ROAD
AVENUE T
Little Rock Reservoir

Figure 12.4

Palmdale Water Supplier Service Areas

- City of Palmdale Boundary
- Other City Boundary
- Sphere of Influence
- California Aqueduct
- Major Highway/Arterial
- Railroad
- Water Body
- Park
- Palmdale Water District
- LA County Water Works
- Private Mutual Water Company

0 0.75 1.5 2.25 3 Miles

0 3,000 6,000 Feet

Data Sources: City of Palmdale GIS data; Los Angeles County, 2019.

Produced by Rincon Consultants, Inc.

Water Utilities and Infrastructure

The City has an extensive water infrastructure system. The infrastructure related to water includes pipelines, storage tanks, pumps, groundwater wells, and sewers/sewer lines. In addition, existing flood control facilities include engineered channels and retention basins along Amargosa Creek. There is also a flood retention basin along Anaverde Creek, protecting areas in the vicinity of 20th Street East and 30th Street East.

Water Suppliers

Palmdale is predominantly served by two water suppliers: Palmdale Water District (PWD) and Los Angeles County Waterworks District No. 40 (LACWD 40). PWD water supplies include groundwater, local surface water, and imported water. LACWD 40 purchases water from the Antelope Valley – East Kern Water Agency (AVEK). PWD serves the central and southern portions of Palmdale while LACWD 40 serves areas both east and west of State Route 14 (SR-14). Other water suppliers in and around Palmdale include Quartz Hill Water District, Littlerock Creek Irrigation District, various small mutual water companies, and private wells. These suppliers generally serve small portions of the city or areas adjacent to city limits. Figure 12.4 presents service areas for water suppliers in the Palmdale area.

Water Sources

Water supply in Palmdale is from the Antelope Valley Groundwater Basin, the State Water Project, and Little Rock Dam Reservoir, which is fed by natural run-off from snowpack in the San Gabriel Mountains and from rainfall. The Antelope Valley Groundwater Basin (AVGB) (Basin 6-44 is a 1,580-square mile aquifer with an estimated storage of 68 million AF (DWR 2004). The AVGB is divided into 12 sub-basins, with Palmdale overlying the Lancaster, Buttes, and Pearland sub-basins. Figure 12.5 displays locations of groundwater wells and features in the Palmdale region.

Groundwater from the AVGB has historically served as the primary supply source for PWD and a secondary source for LACWD 40. In 2015, groundwater from the basin accounted for approximately 64 percent of PWD's supply and 47 percent of LACWD 40's supply. Table 12.5 summarizes historic groundwater pumping in the AVGB by both water agencies.

Table 12.5 Historic Groundwater Basin Pumping by Palmdale Water Suppliers

Year	Palmdale Water District (AFY*)	Los Angeles County Water District 40 (AFY*)
2016	8,470	16,002
2017	5,350	17,397
2018	6,060	17,274
2019	4,430	12,813
2020	7,600	14,266

**Acre-feet per year (AFY).*

PWD and AVEK have annual Table A allocations of 21,300 acre-feet (AF) and 144,844 AF, respectively, from the State Water Project (PWD 2016; County of Los Angeles 2017). The actual amount of SWP water received annually by contractors varies depending on availability.

Little Rock Dam Reservoir has a storage capacity of 3,500-acre feet or 1.1 billion gallons of water. Water from the reservoir is transferred to Palmdale Lake via a pipeline.

Recycled Water

In 2012, the City of Palmdale and PWD created the Palmdale Recycled Water Authority (PRWA) through a Joint Exercise of Powers Agreement. The PRWA oversees recycled water planning, installation, and development throughout a majority of Palmdale, generally east of SR-14. To date, recycled water infrastructure in the city is limited to a recycled water transmission line connecting the Palmdale Water Reclamation Plant to McAdams Park for delivery of irrigation water supply. Locally, at least one park uses recycled water for landscaping purposes, but there is currently no regional recycled water distribution system to convey treated water from Palmdale to locations where it can be used.

In 2015, PRWA published the Recycled Water Facilities Master Plan, calling for construction of approximately 70,000 linear feet of recycled water pipeline and a variable horsepower pump station over a 10-year period. As of 2022, the PRWA is investigating development of an advanced treatment system that would allow recycled water to be injected into the aquifer and extracted as potable water.

Sewers

Most sewers in Palmdale are within Los Angeles County Sanitation District (LACSD) 20, which covers most of the southern half of Palmdale. These sewers carry wastewater for treatment at the Palmdale Water Reclamation Plant. Some of the sewers in the northern portion of Palmdale discharge to LACSD trunk sewers that convey flow to the Lancaster Reclamation Plant within LACSD District 14. The discharge from sewers on-site at USAF Plant 42 is split between LACSD District 20 and LACSD District 14. There are also approximately 2,726 septic tanks served by the system, of which approximately 1,000 are within Palmdale city limits. The City sewer system was assessed in 2009 and found to be in adequate condition. The City continually provides for sewer system cleaning and repair as needed.

Water Treatment

Water and wastewater treatment facilities in Palmdale are shown in Figure 12.6. A summary of existing facilities is included below.

- The Palmdale Water Treatment Plant, also known as the Leslie O. Carter Treatment Plant, is located at 700 East Avenue S, along the shores of Lake Palmdale. It can treat 35 million gallons per day. Water from Lake Palmdale is conferred to the treatment plant via a pipeline along East Avenue S.

- The Palmdale Water Reclamation Plant, north of Palmdale, provides primary, secondary, and tertiary treatment for 12 million gallons of wastewater per day. Effluent is reused for irrigation of trees and fodder crops on the City of Los Angeles airport property, and for parks in the City of Palmdale.

- The Acton Water Treatment Plant treats water from the SWP and is operated by the Antelope Valley-East Kern Water District (AVEK). This water is pumped via pipeline from the plant site near Barrel Springs Road, to Vincent Hill Summit. From there it is pumped into the Los Angeles County Waterworks pipeline for transport to the Acton area.

- The Quartz Hill Water treatment plant is located in western Palmdale off West Avenue N, near the California Aqueduct. As a water wholesaler, AVEK is a SWP contractor who obtains all its water from the California Aqueduct to supply the Antelope Valley with potable water and untreated agricultural water.

- The Eastside Water Treatment Plant is operated by AVEK and is located between Littlerock and Pearblossom.

- The Little Rock Reservoir is formed behind the Littlerock Dam, south of Palmdale in the San Gabriel Mountains. The capacity of the Littlerock Reservoir is 3,270-acre feet. Water travels to the Palmdale Water Treatment Plant through an earthen channel called Palmdale Ditch.

Storm Drainage and Flood Protection

Portions of Palmdale adjacent to Amargosa Creek and Anaverde Creek, along the southwestern portion of Palmdale, are classified by FEMA as Zone A, AE, or AO—areas subject to inundation by the 1-percent-annual-chance flood. A wide swath along the Littlerock Wash in the eastern portion of Palmdale (and currently occupied by mining operations) is also classified as Zone A.

Storm water mitigation in the City of Palmdale consists mostly of a network of flood control channels and culverts maintained by the Los Angeles County Flood Control District. Floodwaters are restricted by catch basins feeding into a network of 396 miles of gravity flow sewer mainlines and 2,790 feet of forced flow mainlines. There are approximately 172 catch basins within the Palmdale city limits. Two pump stations operate within Palmdale.

The Los Angeles County Flood Control District also maintains three debris retention basins along the southern edge of the city.

The Upper Amargosa Creek Recharge Project, completed in 2021, provides flood control along with erosion protection for housing developments along Elizabeth Lake Road and 25th Street West. This project provides groundwater recharge and protection of buried utilities in addition to flood control.

The City's Capital Improvement Plan specifies the development of a new regional detention basin located near Division Street and Avenue R. The new basin will store water from the Anaverde Watershed and reduce flooding along Avenue R and a secondary drainage channel near the existing Palmdale Transportation Center.

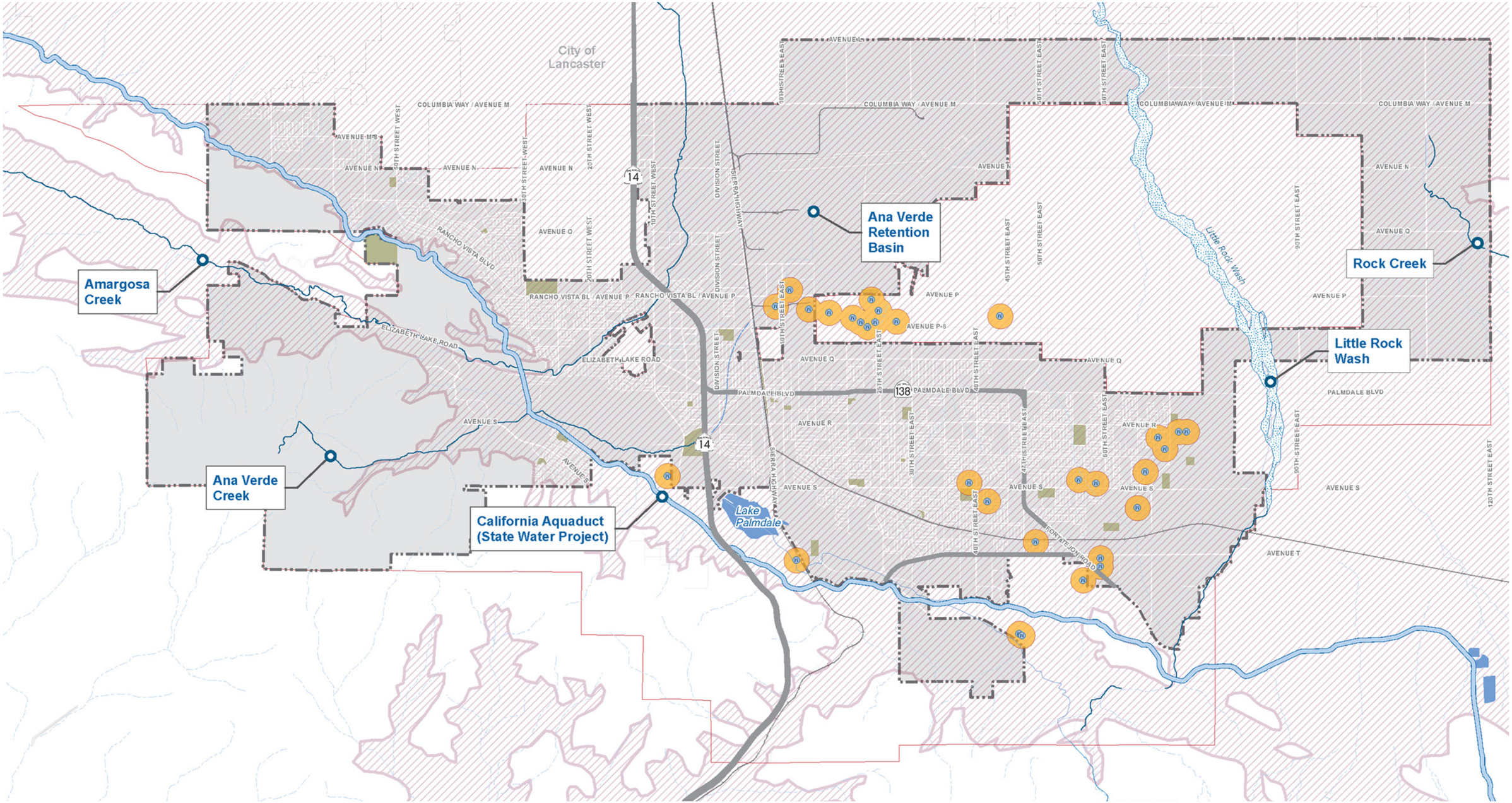


Figure 12.5

Palmdale Water Sources

- Groundwater Well
- Groundwater Well Protected Area
- California Aqueduct
- River/Creek (intermittent)
- River/Creek (perennial)
- Antelope Valley Groundwater Unit
- City of Palmdale Boundary
- Sphere of Influence
- Water Body

0 0.5 1 1.5 2 2.5 3 Miles

0 5,000 Feet

Data Sources: City of Palmdale GIS data; World Terrain Base, 2015 ESRI, USGS, NOAA.

Produced by Raimi + Associates
March 2019

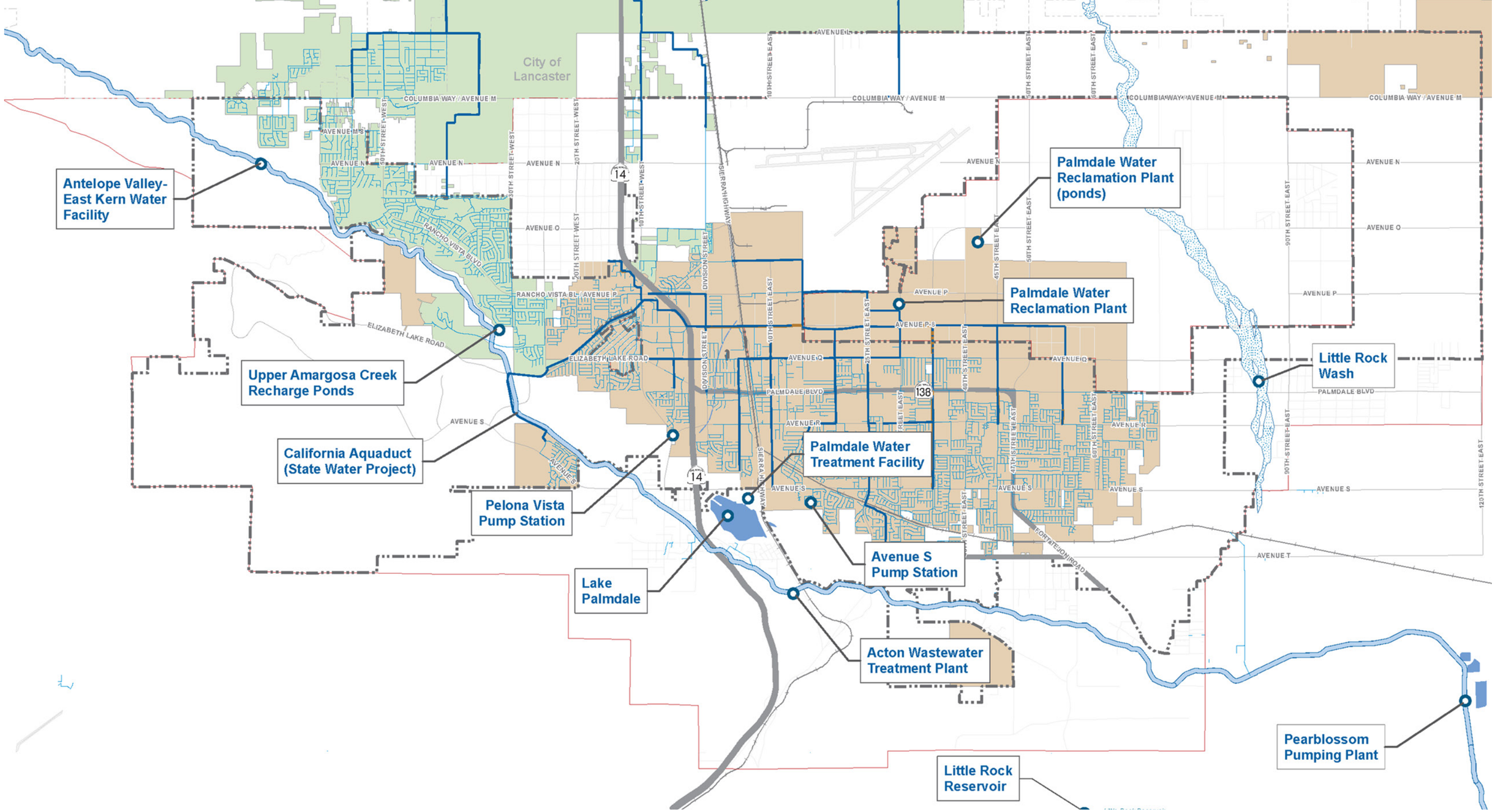


Figure 12.6

Palmdale Wastewater Facilities

City Boundary
Sphere of Influence
California Aqueduct
Major Highway/Arterial
Railroad

Sewers
Sewer (Trunk)
LACSD District 14
LACSD District 20

0 0.75 1.5 2.25 3 Miles
0 3,000 6,000 Feet

Data Sources: City of Palmdale GIS data; World Terrain Base, 2015 ESRI, USGS, NOAA.

Produced by Raimi + Associates
May 2019

Dry Utilities and Infrastructure

Landfill

The Antelope Valley Recycling and Disposal facility is operated by Waste Management and is located off City Ranch Road, west of State Route 14. Onsite facilities include a weigh station and a liquefied natural gas fueling station. There is an operations facility, facilities for green waste recycling and electronic waste recycling.

Additional places in Palmdale to bring materials for recycling include:

- Alameda Metals
- Allen Company Recycling Center
- 75th Street Quarry & Recycling
- Genesis Recycling
- Granite Materials
- Vulcan Materials
- Hi Grade Materials Company
- ~~Pre Con Products~~
- AV Quarry
- Robertsons

Electricity

Southern California Edison is responsible for the distribution of electricity in the Palmdale area. There are several electric substations located throughout the City of Palmdale. High voltage electrical transmission lines (220 kilovolts and greater) cross the Palmdale area along the western border and along the base of the San Gabriel Mountains in the south. The high voltage transmission lines converge on the Vincent Substation south of Palmdale. Standard electrical distribution lines run along existing street right-of-way throughout the city. All substations are located along the electrical distribution lines.

Other sites associated with electrical distribution include the Southern California Edison Antelope Valley Service Center, located on 10th Street West in Lancaster, and the Lockheed Energy Plant. As of 2022, the Lockheed Energy Plant, located at a Lockheed facility near Plant 42, is under construction and will produce power for Lockheed Martin and other users, using a single axis photovoltaic system that racks the sun and converts direct current (DC) to alternating current (AC), before it goes to the grid.

The City has established a Community Choice Aggregation (CCA) Program that will be available for municipal and residential customers in October 2022 and commercial and industrial customers in May 2023. The CCA Program allows the local utility (Southern California Edison ~~in Palmdale~~) to continue to provide the infrastructure needed to serve a location, but the CCA will produce the energy on behalf of rate payers. This will allow the City to have better control over greenhouse gas emissions and the City's sources for renewable and non-renewable energy.



Palmdale Lake Wind Turbine

Gas

Natural gas is distributed by Southern California Gas. The distribution lines are located throughout the Palmdale area. A 30-inch main gas transmission pipeline runs through the southern portion of Palmdale, along an easement on the south side of Avenue S.

Telecommunications

Cell phone towers, microwave towers and other telecommunication equipment are located throughout the city. Cell phone, fiber optic, and microwave towers are owned by AT&T, CenturyLink, Direct TV, Dish Network, Excede Satellite Internet, Frontier Communications, HughesNet, Sprint, Time Warner, Verizon, and Viasat Satellite. Television/radio towers are in the foothills of the San Gabriel Mountains.

Infrastructure Limitations to New Development

As shown in Figure 12.5, sewer access is limited to the developed core of Palmdale. The lack of existing sewer connections in the northern portion of the city--as well as the outer perimeter of Palmdale--adds expenses to new development already saddled with rising construction and labor costs. Specifically, the lack of available sewer utilities is one of the constraints that suppresses new housing production on undeveloped land.

While the Palmdale community, and State of California, desperately need new housing, cheaper development on the outer edges of a city can bring a host of unforeseen costs and consequences. This development style, when developers skip over land to obtain cheaper land further away from developed areas, leaves huge swaths of vacant land between the developed core and new construction. This exacerbates reliance on automobiles for daily goods and services and reduces opportunities to safely walk and bike as a means of transportation. Leap-frog development also adds a cost burden to local government who are now required to maintain and provide future upgrades to new infrastructure created by developers.



Leap-frog development

While the lack of critical infrastructure makes new development more costly, it also encourages new construction to take place where sewer connections already exist – thus promoting infill development. Infill development offers benefits like, access to existing public transportation, access to goods and services, promotes walkability, and preserves natural resources and open spaces.

In an effort to expand critical utilities that support new development, the City of Palmdale has created an Enhanced Infrastructure Financing District (EIFD), which is described in the following section.

Palmdale's Enhanced Infrastructure Financing District (EIFD)

Approved by State legislation in 2014, EIFDs are special districts with defined boundaries that use local property taxes to issue bonds to fund infrastructure projects (e.g., streets, utilities, sidewalks, pedestrian safety enhancements) or affordable housing. EIFDs can be formed among any entities with property taxing authority, including a City, County, or Special District, but excluding school districts. In Palmdale's case, the two entities with property taxing authority include the City and the County of Los Angeles.

The City of Palmdale, in partnership with the County of Los Angeles ~~County~~, initiated an EIFD in 2021. The goal of the Palmdale Enhanced Infrastructure Financing District ("Palmdale EIFD" or "District") is to support needed infrastructure in the Antelope Valley to help accelerate the production of quality jobs and accessible housing. The Palmdale EIFD will help fund investments in streets and roads, utilities, and exploration of an Antelope Valley County Service Center to help fulfill economic goals for the City, County, and State, as well as promote sustainability by connecting jobs and housing in the Antelope Valley. The anticipated $176.2 million of infrastructure will help accelerate $3.5 billion in private sector investment to promote jobs and housing in Palmdale and the growing Antelope Valley.

Desired Outcomes, Indicators, and Targets

The following desired outcomes and metrics were identified to help the City of Palmdale track progress toward maintaining and enhancing public facilities, services, and infrastructure. This process follows the City of Palmdale's General Plan Vision and Guiding Principles document which was informed by the General Plan Advisory Committee (GPAC), the Planning Commission and City Council.

Top Key Outcomes

OUTCOME: Protection of Palmdale's residents, workers, and visitors from fire hazards

KPI's:
- Fire service response times
- Fire Station proximity to developed areas

TARGETS:
- **Maintain Los Angeles County Fire Protection District's response time goal of 4-6 minutes**
- **Maintain a 2-mile proximity of fire stations to all existing and newly developed areas**

OUTCOME: Protection of persons and property from criminal activity

KPI's:
- Police service response times
- Crime rate

TARGETS:
- **Maintain police emergency response time under 6 minutes**
- **Rates of violent and non-violent crime below State averages**

OUTCOME: Reduce reliance on imported water from the State Water Project.

KPI's:
- Recycled water use

TARGETS:
- **Construct and maintain infrastructure needed to store and distribute recycled water as appropriate.**

OUTCOME: Maintenance of a consistent level of wastewater treatment service to meet existing and new development demands.

KPI's:
- Adequate wastewater treatment capacity
- Adequate sewer line capacity

TARGETS:
- **Upgrade treatment capabilities at facilities once utilization of the current capacity reaches 85%**
- **Address sewer line inadequacies as outlined in the City's Capital Improvement ~~Project~~ Program**

KPI = Key Performance Indicator

Goals and Policies

The following section includes goals and policies for the Public Facilities, Services, and Infrastructure Element. Goals and policies are followed by implementation actions. Some related policies are woven throughout the General Plan, including in the Land Use and Community Design, Equitable and Healthy Communities, and Safety Elements.

PUBLIC FACILITIES AND SCHOOLS

Goal PFSI-1

Maintain superior public facilities to support the Palmdale community.

PFSI 1.1 Community Facilities Master Plan. Prepare a citywide master plan for community facilities that addresses existing and future facilities and equitable access. Include evaluation of existing facilities, need for new or expanded facilities and potential locations, and a funding plan.

PFSI 1.2 Accessibility. Promote accessibility for all residents within City facilities by meeting ADA guidelines and expanding language resources when feasible.

PFSI 1.3 Expand Public Facilities. Expand public facilities, recreation, and library facilities to underserved areas as needed, including the areas west of SR-14.

PFSI 1.4 Access to Library Services. Consider expanding library services to include branch locations in Village Centers (including retail centers), Education Districts, near public parks, and other similar settings to provide access to residents across Palmdale.

PFSI 1.5 Pursue Funding. Pursue federal and state funding sources to utilize in the expansion and enhancement of local public facilities, especially in underserved areas.

PFSI 1.6 Rehabilitate Facilities. Rehabilitate City-owned public facilities using the most innovative technologies and best practices available to ensure long term efficacy.

PFSI 1.7 City Facility Efficiency. Install energy efficient lighting and promote energy conservation practices in all city-owned facilities.

PFSI 1.8 Public Facilities Adequacy. Assess deficiencies in public facilities and address identified issues when feasible.

PFSI 1.9 Higher Education Facilities. Attract, encourage, and support the development of higher education facilities, trade and vocational training in areas within the Education District land use designation.

PFSI 1.10 Private Educational Facilities. In order to encourage development of educational facilities, permit development of private educational facilities that are found to meet the general educational needs of the community within residentially designated districts.

Goal PSFI-2

Maintain superior public safety services to protect the community and meet the need of residents, businesses, and visitors.

PFSI 2.1 Response Times. Maintain existing or superior average response times for fire and police services as the City's population expands.

PFSI 2.2 Fire Protection. Coordinate with and assist the Los Angeles County Fire Department in planning for future fire station sites in Palmdale and facilitate location and construction of fire stations in conjunction with other City facilities (such as parks or municipal buildings) where feasible.

PFSI 2.3 Service Level Expansion. Regularly assess the need for service level expansion for fire and police services as the City's population expands.

PFSI 2.4 County Sheriff Coordination. Coordinate with the Los Angeles County Sheriff's Department to ensure that service availability, resources, and staffing are appropriate for the community need.

PFSI 2.5 County Fire Coordination. Coordinate with the Los Angeles County Fire Department to ensure that service availability, resources, and staffing are appropriate for the community need.

PFSI 2.6 Community Policing. Strengthen the relationship between law enforcement and the community by developing programs and initiatives focused on community policing.

WASTE AND WASTEWATER

Goal PSFI-3

Ensure that all development in Palmdale is served by adequate water distribution and sewage facilities.

PFSI 3.1 Water Supply and Delivery. Support water suppliers and other jurisdictions within the Antelope Valley in studying status and projected needs for water supply and delivery.

PFSI 3.2 Local Drainage Detection Basins. Make use of interim local drainage detention basins to slow stormwater runoff until such time as permanent drainage facilities are constructed.

PFSI 3.3 Retention Facilities. Where feasible, plan for detention or retention facilities in areas where groundwater recharge can be accomplished.

PFSI 3.4 Drainage Facilities. Through the development review process, reserve land in appropriate locations for construction of drainage facilities.

PFSI 3.5 Sanitation District Collaboration and Water Purveyors. Work with the Sanitation District and Water Purveyors to identify users for reclaimed water and support plans for its treatment and distribution.

PFSI 3.6 Code Compliance. All private sewage disposal systems must comply with the requirements of the City of Palmdale Plumbing Code, the Los Angeles County Health Department, and Lahontan Regional Water Quality Control Board and any Memorandum of Understanding between these agencies concerning private sewage disposal systems.

PFSI 3.7 Public Sewer System Prioritization. Require that all commercial, industrial, institutional, and multiple family uses be connected to a public sewer system with only limited use of private sewage disposal systems.

WASTE AND WASTEWATER

Goal PSFI-3

Ensure that all development in Palmdale is served by adequate water distribution and sewage facilities.

PFSI 3.8 Public Sewer System Utilization Requirement. Require that all single-family residential uses with lot sizes of less than one acre be connected to a public sewer system.

PFSI 3.9 Renewable Energy Project Disposal Systems. Allow the use of private sewage disposal systems on nonresidential renewable energy projects with domestic discharge only on property with an IND (Industrial) General Plan Land Use designation located between Avenue L and M between 50th Street East and 120th Street East, and on property with an IND (Industrial) General Plan Land Use designation on property located south of Avenue M, north of Avenue P-8, between 90th Street East and 120th Street East. The maximum daily estimated discharge shall not exceed 500 gallons/acre/day wastewater flow with a maximum discharge of 5,000 gallons per day.

PFSI 3.10 Mining and Construction Disposal Systems. Allow the use of private sewage disposal systems on nonresidential industrial aggregate mining and construction aggregate related uses with domestic discharge only within the MRE (Mineral Resource Extraction) General Plan Land Use designations. The maximum daily estimated discharge shall not exceed 500 gallons/acre/day wastewater flow with a total maximum of 5,000 gallons per day.

PFSI 3.11 New Development Fees. Require new development to pay necessary fees for expansion and ongoing maintenance of the sewage disposal system to the appropriate agencies, to handle the increased load, which it will generate.

PFSI 3.12 Water and Wastewater BMPs. Utilize best management practices (BMPs) in the purveyance of water resources and management of wastewater.

PFSI 3.13 Low Impact Development. Require new development to minimize storm water runoff and pollutant exposure by incorporating low impact development (LID) measures and appropriate best management practices (BMPs) consistent with the National Pollution Discharge Elimination System (NPDES).

PFSI 3.14 Water and Wastewater Provision. Ensure the provisions of adequate water and wastewater services to all new development.

PFSI 3.15 Diversify Water Supplies. Coordinate with water purveyors to facilitate the commitment to diversifying the region's water supply through water banking projects and expanded recycled water projects.

PFSI 3.16 Service Levels. Provide sufficient levels of water, sewer, and storm drain services throughout the City.

PFSI 3.17 Adequate Systems. Identify and correct issues within the City's sewer and storm drain systems to prevent system failures.

PFSI 3.18 Water Conservation. Support and promote water conservation across all facets of City water infrastructure.

Goal PSFI-4

Maximize the use of infrastructure facilities through appropriate land use strategies.

PFSI 4.1 Infill Development. Direct growth toward areas which already have backbone infrastructure available by providing incentives for infill development.

PFSI 4.2 Utilize Existing Infrastructure. Encourage development, which fully utilizes existing infrastructure systems, while decreasing the need for costly extensions of infrastructure into undeveloped areas.

PFSI 4.3 Infrastructure Evaluation. Evaluate infrastructure facilities and service levels within developed areas, which annex to the City, and promote programs to retrofit street, drainage and sewer improvements where warranted.

PFSI 4.4 Cluster Development. Encourage clustering of development where appropriate, to maximize use of infrastructure.

PFSI 4.5 Planning Documents. Require comprehensive planning documents such as area plans, specific plans, and development agreements, to specify the nature, timing and financing of both capital improvements and ongoing operations/maintenance of public improvements and services.

PFSI 4.6 Mixed Use Development. Encourage mixed use development to maximize use of existing infrastructure systems.

PFSI 4.7 EIFD. Utilize Palmdale's Enhanced Infrastructure Financing District to issue bonds to fund infrastructure projects (e.g., streets, utilities, sidewalks, pedestrian safety enhancements) or affordable housing.

UTILITIES

Goal PSFI-5

Ensure that adequate public utilities are available to support development in an efficient and orderly manner.

PFSI 5.1 Development Priorities. Prioritize development in areas that have existing horizontal infrastructure (roads, sewer, water, drainage, etc.).

PFSI 5.2 On-site Infrastructure. Require all new development, including major modifications to existing development, to construct required on-site infrastructure improvements pursuant to City standards.

PFSI 5.3 Off-Site Fair Share Contribution. Require all new development, including major modifications to existing development, to construct or provide a fair share contribution toward construction of required off-site improvements needed to support the project. This includes a fair share contribution toward development of regional master facility plans for roads, sewer, water, drainage, schools, libraries, parks, fire, and other community facilities, prior to granting approval of development applications.

PFSI 5.4 Funding for Maintenance. Ensure there is a funding plan in place for the ongoing maintenance of these off-site facilities.

PFSI 5.5 Improvements Prior to Occupancy. Require that on- and off-site improvements are constructed prior to occupancy of a new development project, or phase thereof, unless otherwise approved by the City.

PFSI 5.6 Land Use Changes. When reviewing applications for land use designation changes (i.e., zone change, General Plan Amendment, specific plan amendment), conduct a thorough analysis of the impacts of the proposed change on all elements of the City's infrastructure systems, and require mitigation as deemed appropriate.

PFSI 5.7 Adjacent Development Integration. Require that individual development projects integrate with adjacent development with respect to backbone infrastructure (streets, sewer, water, and drainage). If adjacent property is undeveloped, a conceptual plan should be prepared to show that the pending development will allow for future integration and development of adjacent properties in a manner which is reasonable from a design, construction, and cost standpoint.

Goal PSFI-6

Coordinate with utility providers to support adequate provision of critical utilities.

PFSI 6.1 Infrastructure Equity. Distribute the costs of extending infrastructure equitably among those benefiting from the improvements.

PFSI 6.2 Waste Ordinance Review. Regularly review the City's ordinances related to recycling and solid waste to reflect updated best management practices and technological innovation.

PFSI 6.3 New Utility Development. When feasible, require new utility lines to be constructed underground and along existing utility corridors.

PFSI 6.4 Utility Construction Cost Minimization. Coordinate installation of utility line placement with street construction to minimize cost, where possible.

PFSI 6.5 Utility Provision. Coordinate with electricity, gas, and waste providers to ensure adequacy of services for future and current needs.

PFSI 6.6 Prioritize Connections. Work with providers to prioritize connections near existing development in the core of the city.

PFSI 6.7 Utility Safety. When feasible, require new utility lines to be constructed away from fault lines, flood zones, fire zones, and other vulnerable areas.

PFSI 6.8 Utility Easements. Through the development review process, protect existing utility easements and require dedication of additional easements where needed.

PFSI 6.9 Telecommunication Retrofitting. Work with telecommunication providers to retrofit underserved areas with necessary telecommunication facilities and utilities.

PFSI 6.10 Capital Improvement Plans. Adopt and annually update the City's Capital Improvement Program to prioritize funding for public works projects in accordance with the General Plan.

PFSI 6.11 City-Initiated Planning. Inform adjacent cities, town councils and county agencies of City-initiated planning and public works projects which may impact infrastructure systems and consider input and recommendations from these entities in the land use decision process.

PFSI 6.12 Area-Wide Improvements. Participate in regional efforts to gain State or Federal funding for area-wide improvements.

Implementation Actions

The table below identifies programs, planning efforts, coordination efforts, and other actions that will help implement the General Plan's Public Facilities, Services, and Infrastructure goals and policies. Programs are consistent with this chapter's goals and policies.

The table provides a description of each Implementation Action and lists the correlating policies. Each action also identifies a timeframe for implementation with Short-term representing a 1–3-year timeframe, Medium-term is 4-7 years, Long-term is 8+ years and Ongoing represents an action that the City should continue. Additionally, the table includes the City department that should function as the lead for implementing the actions.



Correlating Goals	Action	Timeframe	Responsible Department
PFSI-1	**Facilities Master Plan.** Prepare a master plan for the City's community facilities including libraries, recreation facilities, City services, etc.	//	Public Works and Parks and Recreation
PFSI-3, PFSI-4, PFSI-5	**Fee Programs.** Review the City's Impact Fee program to determine if additions are needed to facilitate City growth and adequate provisions.	/	Economic and Community Development and Public Works
PFSI-3	**Water Use Efficiency Ordinance.** Adopt an ordinance aimed at efficient water use. The ordinance will address a variety of water conservation measures, potentially including but not limited to low water use fixtures, low water use landscaping and irrigation, and water recycling/use of graywater.	//	Public Works
PFSI-3	**Sewer System Management Plan.** Review and update the City's Sewer System Management Plan.	//	Public Works
PFSI-3	**Sewer System Assessment.** Perform an assessment of the City's sewer and storm drain system to identify infrastructure deficiencies. Develop a strategy to address deficiencies when feasible.	//	Public Works

Correlating Goals	Action	Timeframe	Responsibility
PFSI-4	**Federal Recovery and Infrastructure Fund.** Follow procedures to secure both formula allocation as well as competitive grant funds to be deployed via the bi-partisan infrastructure bill.		City Manager's Office and Public Works
PFSI-6	**High Speed Broadband Infrastructure.** Implement universal broadband to reduce the digital divide faced by small businesses and low-income households.		Public Works



Hiking Trail in Palmdale



Chapter 13

Safety

This Safety Element outlines the goals and policies related to hazards and safety in Palmdale.

Statutory Requirements

The United States Federal Government and the State of California require local governments to address potential hazards that may have an impact on community safety including flood hazards, wildfires, seismic risks, and more. Per California Government Code section 65302, a Safety Element provides protection of the community from any unreasonable risks associated with the effects of seismically induced surface rupture, ground shaking, ground failure, tsunami, seiche, and dam failure; slope instability leading to mudslides and landslides; subsidence; liquefaction; and other seismic hazards identified pursuant to Chapter 7.8 (commencing with Section 2690) of Division 2 of the Public Resources Code, and other geologic hazards known to the legislative body; flooding; and wildland and urban fires. The Safety Element also includes mapping of known geologic hazards and addresses evacuation routes, military installations, peak load water supply requirements, and minimum road widths and clearances around structures, as those items relate to identified fire and geologic hazards. The following State and Federal regulations have been established to prevent and mitigate community harm associated with safety hazards.

Federal Emergency Management Agency

The Federal Emergency Management Agency (FEMA) is the national department assigned to prepare for, prevent, and mitigate emergency events and natural disasters within the United States. FEMA was assigned federal authorities under the Stafford Act of 1974 and has since been authorized to oversee hazard mitigation planning through programs such as the National Flood Insurance Program (NFIP).

The NFIP was developed through the Flood Disaster Protection Act of 1973. Under the NFIP, FEMA works to evaluate flood hazards across geographic areas and provide Flood Insurance Rate Maps (FIRM's) for local and regional planners to promote appropriate land use and floodplain development. Further, FEMA maintains a voluntary Community Rating System (CRS) that recognizes communities that implement superior floodplain management practices through a credit-based system. This Safety Element identifies and reviews areas that are subject to flooding or identified by flood plain mapping prepared by FEMA or the Department of Water Resources.

Senate Bill 379

California Senate Bill (SB) 379 requires cities and counties within the state to consider and address climate change and resiliency within the Safety Element of their General Plans. The Bill requires local agencies to perform a vulnerability assessment that identifies the potential impacts to the community associated with climate change. Further, cities and counties must utilize the vulnerability assessment to develop goals and policies to facilitate climate adaptation and minimize the risks associated with climate impacts. For the purposes of this General Plan, goals and policies related to climate change and vulnerability are addressed within a defined sustainability chapter (Chapter 12: Sustainability and Climate Vulnerability Assessment).

Senate Bill 99 and Assembly Bill 747

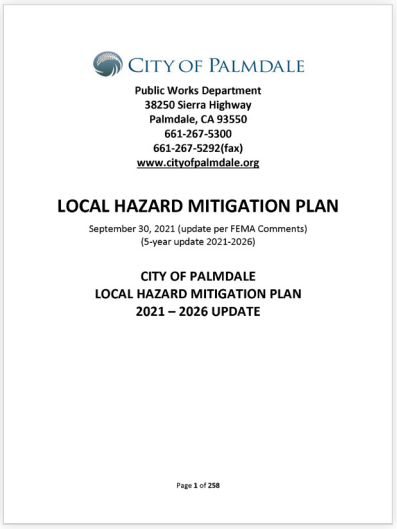
SB 99 requires all cities and counties, upon the next revision of the housing element on or after January 1, 2020, to update the Safety Element to include information identifying residential developments in hazard areas that do not have at least two emergency evacuation routes. By increasing the duties of local officials, this bill would impose a state-mandated local program. Assembly Bill (AB) 747 requires all cities and counties to identify evacuation routes in the General Plan Safety Element beginning January 1, 2022. The bill requires evaluation of evacuation route capacity, safety, and viability under a range of emergency scenarios. The bill allows cities or counties with an adopted local hazard mitigation plan, emergency operation plan, or other document that fulfills commensurate goals and objectives, to summarize or incorporate the information from these plans or documents in the safety element to comply with this requirement.

Barrel Springs Trail

Relevant Plans & Documents

Local Hazard Mitigation Plan (2021)

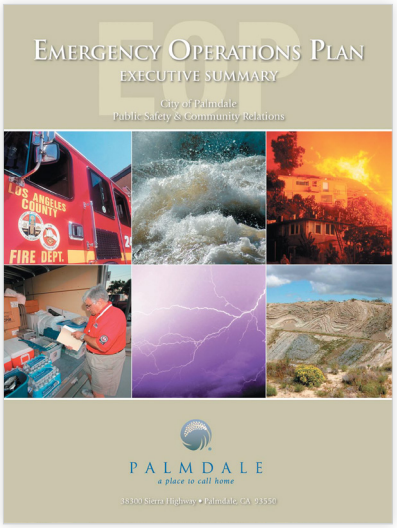
FEMA requires all local governments to participate in local hazard mitigation planning as a prerequisite to qualifying for FEMA grant assistance. As part of this planning process, state and local government agencies must prepare a comprehensive disaster mitigation plan to address risks from natural and manmade hazards and reduce the loss of life associated with local disasters. The City of Palmdale Local Hazard Mitigation Plan (LHMP) was submitted to CalOES for review in January 2022 and will be reviewed by FEMA before it goes to City Council for Adoption. The updated LHMP includes mitigation strategies related to hazard risks such as wildfires, geologic hazards, flooding/inundation, severe weather, and utility failure, among others.



Local Hazard Mitigation Plan (2021)

City of Palmdale Emergency Operations Plan (2012)

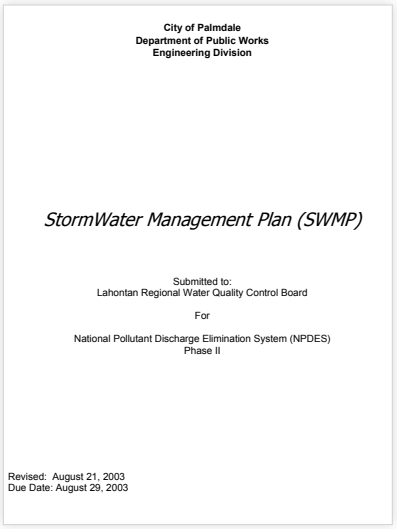
The Palmdale Emergency Operations Plan was developed in 2012 to serve as a guiding document for emergency/disaster response in the city and is currently being updated with the goal of City adoption by December 2022. The Plan assigns responsibility to organizations and individuals for carrying out specific actions at projected times and places in an emergency that exceeds the capability or routine responsibility of any one agency. Sets forth lines of authority and organizational relationships and shows how all actions will be coordinated. Describes how people and property will be protected in emergencies and disasters. Identifies personnel, equipment, facilities, supplies, and other resources available--within the jurisdiction or by agreement with other jurisdictions--for use during response and recovery operations.



Emergency Operations Plan (2012)

City of Palmdale Storm Water Plan (2003)

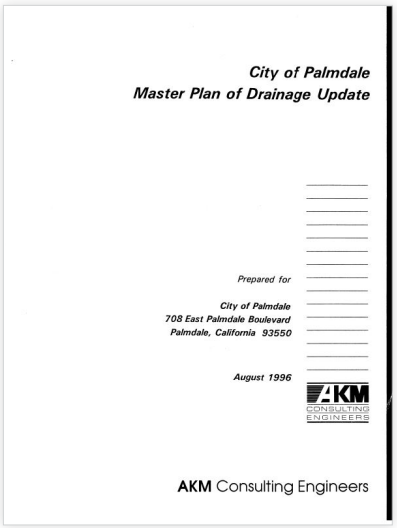
The Palmdale Storm Water Management Plan (SWMP) was adopted in 2003. The Plan was prepared by the Palmdale Department of Public Works with the objective to preserve the quality of city waters, including storm water conveyances such as closed conduits, open channels, drainage basins, and dry wells. The City currently maintains a “small” Municipal Separate Storm Sewer System (MS4) permit that authorizes the City to legally discharge stormwater into local waterways. The goal of the SWMP is to reduce the discharge of pollutants to the MS4 to the Maximum Extent Practicable (MEP). The Plan requires that each development attenuate post-developed flows to 85 percent of pre-developed flows.



City of Palmdale Storm Water Plan (2003)

Palmdale Drainage Master Plan (1996)

The most recent Palmdale Drainage Master Plan (DMP) was adopted in 1996 to address existing drainage issues associated with storm water runoff and prepare for anticipated drainage from future development. The DMP outlines construction of flood control facilities in Palmdale that would connect with the planned regional drainage system.


City of Palmdale
Master Plan of Drainage Update

Prepared for

City of Palmdale
708 East Palmdale Boulevard
Palmdale, California 93550

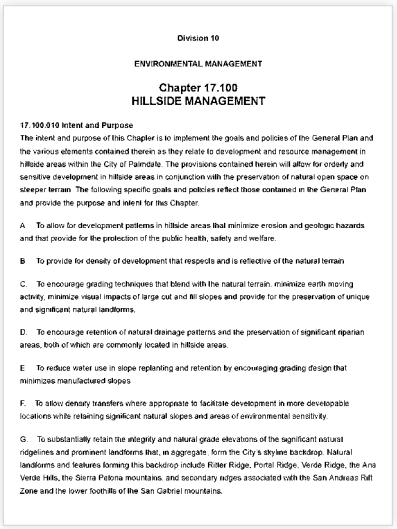
August 1996

AKM CONSULTING ENGINEERS

AKM Consulting Engineers

Palmdale Hillside Management Ordinance

Palmdale Municipal Code Chapter 17.100 was adopted to establish hillside development standards to prevent landslide and erosion hazards. The Ordinance establishes the maximum angle and height of manufactured slopes and maintenance of natural drainage.


Division 10

ENVIRONMENTAL MANAGEMENT

Chapter 17.100
HILLSIDE MANAGEMENT

17.100.010 Intent and Purpose

The intent and purpose of this Chapter is to implement the goals and policies of the General Plan and the various elements contained therein as they relate to development and resource management in hillside areas within the City of Palmdale. The provisions contained herein will allow for orderly and sensitive development in hillside areas in conjunction with the preservation of natural open space on steeper terrain. The following specific goals and policies reflect those contained in the General Plan and provide the purpose and intent for this Chapter.

A. To allow for development patterns in hillside areas that minimize erosion and geologic hazards and that provide for the protection of the public health, safety and welfare.

B. To provide for density of development that respects and is reflective of the natural terrain.

C. To encourage grading techniques that blend with the natural terrain, minimize earth moving activity, minimize visual impacts of large cut and fill slopes and provide for the preservation of unique and significant natural landforms.

D. To encourage retention of natural drainage patterns and the preservation of significant riparian areas, both of which are commonly located in hillside areas.

E. To reduce water use in slope replanting and retention by encouraging grading design that minimizes manufactured slopes.

F. To allow density transfers where appropriate to facilitate development in more developable locations while retaining significant natural slopes and areas of environmental sensitivity.

G. To substantially retain the integrity and natural grade elevations of the significant natural ridgelines and prominent landforms that, in aggregate, form the City's skyline backdrop. Natural landforms and features forming this backdrop include Ritter Ridge, Portal Ridge, Verde Ridge, the Ana Verde Hills, the Sierra Pelona mountains, and secondary ridges associated with the San Andreas Rift Zone and the lower foothills of the San Gabriel mountains.

Hillside Management Ordinance

Existing Context

Geologic and Seismic Hazards

Fault Rupture

Palmdale lies within a seismically active geographic area in California. Several faults in the city are capable of producing fault rupture hazards in the event of an earthquake. Faults in the city include the San Andreas, Nadeau, Cemetery, Little Rock, and Leona Avenue. All of these are considered active or potentially active. Palmdale lies in the northern portion of Los Angeles County, through which the San Andreas Fault runs. It is estimated that large and potentially destructive earthquakes occur on the San Andreas Fault about every 130 years. Figure 13.1 shows the location of local faults, and the earthquake fault zones where there is the potential for surface rupture.

The Alquist-Priolo Earthquake Fault Zoning Act requires State Geologists to delineate "special study zones" along known active faults. The San Andreas Fault zone is among those identified; therefore, the City is required to regulate development within these seismic hazard zones. The City implements the Alquist-Priolo Earthquake Fault Zoning Act by means of development review process, in which every proposed development within a seismic hazard zone is required to prepare a detailed geotechnical report and fault rupture survey.

Ground Shaking

The intensity of ground shaking during an earthquake is dependent upon the distance from the fault; the magnitude and failure mechanism of the earthquake; and the nature of the bedrock, alluvium, and soil through which the shock waves travel. There are a number of existing faults within Palmdale that may cause ground shaking. The city's proximity to the San Andreas Fault makes it susceptible to the highest level of earthquake hazard risk related to ground shaking. The fault is estimated to be capable of producing earthquakes of magnitude 8.0 or greater. In addition to faults within the city, there are several city-adjacent faults that are capable of producing ground shaking which could impact Palmdale. These adjacent faults include the Sierra Madre-San Fernando, Garlock, Owens Valley, and White Wolf faults. Generally, shock waves weaken with distance from the focus of the earthquake; therefore, faults located further away from the city are likely to have a lesser impact.

Liquefaction

Liquefaction occurs when soil that exists below the water table temporarily loses strength during an earthquake and changes to a near-liquid state. Liquefaction can cause large movements of surface ground and damage buildings and buried utilities. A related occurrence, known as lateral spreading, can cause damage to structures located on gently sloping ground. Figure 13.2 shows liquefaction risk zones within Palmdale. The majority of Palmdale consists of low relative liquefaction susceptibility zones, which are indicated on the map as non-shaded areas. However, liquefaction risk zones are present in the city. These areas include Little Rock Wash in the eastern portion of the city as well as Anaverde Creek, and areas along the San Andreas Fault. Development in liquefaction risk zones is subject to the same regulations as described for ground shaking hazard; a geotechnical study is required along with compliance with the Palmdale Building Code and California Building Code.



Aerial View of Palmdale

Erosion

Erosion occurs when the land detaches because of the movement of soil and rock fragments during a flood or storm over years through the action of wind, water, or another geological process. Though not immediately impacted by erosion in Palmdale, concerns arise because of the impact erosion can have on transportation assets throughout Southern California. Areas within Palmdale have been identified to have moderate erosion potential and therefore, erosion control measures are common for development projects within Palmdale.

Landslides

A landslide refers to the movement of rock, earth, or debris down a sloped section of land. Slopes greater than 25 percent are considered unsafe for development as they typically have high risk of landslides. Slopes ranging from 10 to 25 percent are required to implement hillside construction techniques to reduce risk of landslides, while slopes lower than 10 percent are considered to have low landslide risk. As shown in Figure 13.3, the southern and western edges of Palmdale contain steep hillsides with slopes greater than 25 percent that are susceptible to landslides. The remainder of the Planning Area is relatively flat, with low landslide risk.

Dam Failure

Earthquakes can cause the rupture of dams in Palmdale. The rupture of the Lake Palmdale Dam or the Littlerock Dam can result in flooding. Subsequent flooding could be as deep as 50 feet immediately downstream of the Littlerock Dam. Failure of the Littlerock Dam would result in the inundation of a 300-foot-wide area for 0.25 miles north of the dam. The water depth would vary from 50 to 15 feet along this length. Earthquake damage to Lake Palmdale, would greatly impact ~~the~~ one of the City's primary sources of water and cause inundation across the city reaching Plant 42. Ten minutes after the dam failure, the floodwater would veer eastward for 800 feet to Avenue U, where the depth would be reduced to 10 feet. Trending north from Avenue U, the water would eventually dissipate so that the depth is no longer a risk to downstream developments.

Tsunami

A tsunami is a great sea wave produced by submarine earth movement or volcanic eruption. Tsunamis are not a threat in Palmdale since Palmdale is located approximately 40 miles from the coast.



Open Space in Palmdale

High Wind Hazards

High winds are commonly associated with severe thunderstorms and hurricanes. In ~~S~~southern Palmdale, they occur due to differences in air pressure and are called Santa Ana winds. Santa Ana winds are defined as warm, dry winds that blow down from the east or northeast into basins. These winds are usually strongest in the valley and canyon areas near the mountains and typically occur in the fall and winter. Typically, these winds blow in the 40-55 mile per hour range and can gust up to 90 miles per hour. Santa Ana winds develop when a high-pressure region builds over the high plateau east of the Sierra Mountains and west of the Rocky Mountains. Clockwise circulation around the center of a high-pressure area forces air down the slope from the high plateau. The air warms as it descends toward the California coast due to the heating of the air caused by compression. This heating of the air as it is compressed provides the primary source of warming. The air is dry since it originated in the desert, and its moisture will continue to dissipate as it is heated. Santa Ana winds typically occur between October and April and can be catalysts for wildfire outbreaks in the region. They also cause downed power lines, blown over trees, and blown debris.

Wildfires

Wildfire hazard ~~risk~~ is determined by a combination of factors including precipitation, winds, temperature, landscape, and vegetation conditions. Based on these factors, Palmdale has been identified by the California Department of Forestry and Fire Protection (CAL FIRE) as being within a wildland-urban interface. Wildland-urban interface areas are those areas in which homes or other structures are built near or among lands prone to wildland fire. The extent to which lands are prone to wildfire can be determined using CAL FIRE severity zone designations. The zone designations are based on factors such as fuel, slope and fire weather and include the following designations:

- Moderate ~~Medium~~ Fire Hazard Severity
- High Fire Hazard Severity
- Very High Fire Hazard Severity

In Palmdale, the areas south and west of the California Aqueduct, including Joshua Ranch, Ritter Ranch, and Anaverde Nuevo neighborhood and the adjacent open space, are identified as very high fire hazard severity zones (VHFHSZ) and are considered to be under local fire agency responsibility (see Figure 13.4). These areas consist primarily of undeveloped open space, which is largely vegetated with chaparral, trees and grassland groundcover, which can provide fuel for wildfires. Development within VHFHSZ's is considered ~~as~~ unless fire suppression improvements are built to address existing issues like ~~is impeded by~~ lack of water, rugged terrain, and lack of fire facilities ~~delayed response times~~. The remainder of Palmdale is not under significant wildfire hazard risk. The sparse vegetation and urban development do not provide significant fuel for wildfire propagation.

There are several notable areas adjacent to Palmdale that are subject to high and very high fire risk. These areas have the potential to rapidly spread wildfire into the city and may have widespread air quality impacts. These notable areas include the areas to the south and west of Palmdale, within Palmdale's sphere of influence. There are moderate fire hazard severity zones just south of Avenue S - between Sierra Highway and SR-14 and just south of where Pearblossom Highway intersects Fort Tejon Road. In addition, there are high and very high fire hazard severity zones that extend outside of these identified areas. As shown in Figure 13.8, there are no public or emergency facilities located in the VHFHSZ or in the State Responsibility Areas (SRAs).

Although Palmdale has not experienced any major fire events, it should be noted that there has been two major fire events in the outlying areas of the Antelope Valley. The Powerhouse Fire occurred in May 2013 and burned 30, 274 acres in the Antelope Valley and the Los Angeles County mountains. In 2010, the Crown Fire occurred west of Palmdale in the Leona Valley Area and burned more than 14,000 acres, destroying 10 structures and damaged 6 homes.

Hazardous Materials

A wide variety of products, chemicals, and elements that are considered hazardous or toxic are used in households, commercial businesses, and industrial operations and processes. The improper use and management of hazardous materials can pose a significant potential threat to the community and its environment. Prevalent sources of hazardous material exposure in cities are often commercial and industrial sites. Leaking underground storage tanks (LUST) and former industrial and commercial land uses sites can expose the community and environment to hazardous materials. Leaks require immediate action upon detection to reduce the spread of contaminants and reduce potential harm. In addition, industrial and commercial activities sometimes utilize hazardous and toxic chemicals for operations. Spills or mishandling of these materials can result in site contamination. These sites are known as "brownfields", and their clean-up and revitalization is regulated by the U.S. Environmental Protection Agency.

A number of hazardous material sites are located in Palmdale. These include LUST and contaminated groundwater sites under the jurisdiction of the State Water Resources Control Board Site Cleanup Program. While many of these sites have been remediated or closed, there were five open or active cleanup sites within the city and its sphere of influence in 2019. As of 2021, three of these five sites have been remediated. The status of the five sites is listed in Table 13.1 with their locations shown in Figure 13.6.

Table 13.1 Palmdale Open And Active Cleanup Sites

Site Name/Site ID	Site Type	Site Status	Address	Contaminants Present
Circle K Store # 2709464 (T10000012661)	LUST Cleanup Site	Completed- Case Closed as of 2/18/2020	520 West Rancho Vista Boulevard	None Present
Petro-Lock Inc. (T0603700266)	LUST Cleanup Site	Completed- Case Closed as of 7/7/2021	38206 Sierra Highway North	Gasoline
Shayan Capital Ventures (T10000012057)	LUST Cleanup Site	Completed- Case Closed as of 1/9/2020	103 W Palmdale Boulevard	Diesel
Palmdale Water Reclamation Plant (T10000004967)	Cleanup Program Site	Open-Assessment & Interim Remedial Action as of 10/15/2006	39300 30th Street East	Nitrate
Air Force Plant 42 (Multiple)	Military Cleanup Site	Open	2503 East Avenue P	Metal, VOCs, Trichloroethylene Cyanide

Source: California Water Resource Control Board. Geotracker. https://geotracker.waterboards.ca.gov/. Accessed October 30, 2021

Climate Change

Climate Change is the long-term modification of temperature and weather patterns associated with human activity. Forecasted effects to Palmdale from climate change include increased average temperature, increased prevalence of wildfires and extreme heat, and diminished local air quality. The goals and policies included in this Element are related to safety in the City and account for local climate change vulnerabilities as identified within the 2021 Vulnerability Assessment. Detailed goals and policies related to climate vulnerability and adaptation, in accordance with SB 379, are included within the Sustainability Element of the General Plan.

Flooding

Flood damage is a significant hazard for many communities across California. In Palmdale, localized flooding occurs when rainfall is heavy and prolonged. Rainfall in the city is typically sparse due to its location on the leeward side of the Sierra Pelona and San Gabriel Mountains. The typical amount of rainfall for Palmdale is 7.4 inches per year. Nevertheless, periods of excessive rainfall can occur during winter storms, from October to March, and monsoonal thunderstorms during summer months.

Areas in Palmdale with known flood hazards include the natural drainage channels of Amargosa Creek, Anaverde Creek, Little Rock Wash and Big Rock Wash. These natural drainage channels are mapped in Figure 11.4 of the Conservation, Natural, and Cultural Resources chapter. The drainage channels are subject to a one-percent annual-chance-flood, also referred to as a 100-year flood.

Portions of Palmdale adjacent to Amargosa Creek and Anaverde Creek, along the southwestern portion of Palmdale, are classified by FEMA as Zone A, AE, or AO—areas subject to inundation by the 1-percent-annual-chance flood. A wide swath along the Little Rock Wash in the eastern portion of Palmdale (and currently occupied by mining operations) is also classified as Zone A. Flat plains and natural depressions in Palmdale are also subject to flooding. These depressions in combination with increases in impermeable surfaces have contributed to street flooding caused by storm water runoff. Some of the city flat plain and depression areas are within 500-year flood zones. These include urban areas near the center of Palmdale and the undeveloped region east of Sierra Highway. ~~Highway~~ Figure 13.5 depicts FEMA Flood Insurance Program designated flood zones in the City.

Emergency Evacuation

Emergency evacuation is a vital component of ensuring community safety and resilience in the face of a hazardous event. Facilitating efficient evacuation within a coordinated system of emergency service providers, facilities, and among residents is essential. Palmdale contracts law enforcement, fire, and emergency medical services to the County of Los Angeles ~~County~~, as noted in Chapter 10 Public Facilities, Services, and Infrastructure. As discussed earlier in this Chapter under Relevant Plans and Documents, the City's Emergency Response Plan is currently being updated with the goal of City Council adoption by December 2022. This updated Plan identifies evacuation routes, personnel, equipment, facilities, supplies, and other resources available for use during response and recovery operations.

This Safety Element addresses recent evacuation legislation (Senate Bill 99 and Assembly Bill 747) to: 1) identify residential developments in hazard areas that do not have at least two emergency evacuation routes and 2) evaluate evacuation route safety under a range of emergency scenarios. A brief summary of this analysis is provided below.

1. Most residential developments throughout the city have at least two points of ingress and egress. However, five neighborhoods, only 4 of which are currently within the City of Palmdale—developments with 30 or more homes—have only one point of access, some of which are located in the Fire Hazard Severity Zones. These are shown in Figure 13.7 Single Access Neighborhoods.

2. The existing grid pattern roadway network allows for many ways to exit the city, therefore emergency evacuation is not a major concern in Palmdale. A scenario-based evacuation analysis shows that generally the vulnerability of the city's transportation network during an emergency event is low. Events that could cause delays in evacuation

This page intentionally left blank.

City of Lancaster

COLUMBIA WAY / AVENUE M
AVENUE N
AVENUE O
AVENUE P
AVENUE P-8
AVENUE Q
AVENUE R
AVENUE S
AVENUE T
PALMDALE BLVD
ELIZABETH LAKE ROAD
RANCHO VISTA BLVD
RITTER RANCH ROAD
SIERRA SUBIDA AVENUE
SIERRA HIGHWAY
FOOTHILL BLVD
FORT TEJON ROAD
50TH STREET WEST
30TH STREET WEST
20TH STREET WEST
10TH STREET WEST
DIVISION STREET
10TH STREET EAST
45TH STREET EAST
50TH STREET EAST
90TH STREET EAST
120TH STREET EAST
25TH STREET EAST
30TH STREET EAST
40TH STREET EAST
47TH STREET EAST
60TH STREET EAST
14
138
A.C. Warnack Nature Park
Marie Kerr Park
Beesley Sands Park
William J. McAdam Park
Domenic Massari Park
Palmdale Oasis Park
Lake Palmdale
Little Rock Reservoir

Figure 13.1

Palmdale Fault Traces and Hazard Zones

- City Boundary
- Sphere of Influence
- Major Arterials
- Highway
- Railroad
- Fault Line
- Fault Zone
- Water Body
- Parks
- California Aqueduct

0 1.5 3 Miles

0 3,000 6,000 Feet

Data Sources: City of Palmdale GIS data; California Geological Survey, 1979; USGS.

City of Lancaster

50TH STREET WEST
30TH STREET WEST
20TH STREET WEST
10TH STREET WEST
DIVISION STREET
20TH STREET EAST
COLUMBIA WAY / AVENUE M
45TH STREET EAST
50TH STREET EAST
90TH STREET EAST
120TH STREET EAST
AVENUE N
AVENUE O
RANCHO VISTA BLVD
RANCHO VISTA BL / AVENUE P
AVENUE P
AVENUE P-8
AVENUE Q
PALMDALE BLVD
ELIZABETH LAKE ROAD
RITTER RANCH ROAD
BRIDGE ROAD
TIERRA SUBIDA AVENUE
SIERRA HIGHWAY
14
138
AVENUE R
30TH STREET EAST
40TH STREET EAST
47TH STREET EAST
60TH STREET EAST
AVENUE S
FORT TEJON ROAD
PEARBLOSSOM HIGHWAY
AVENUE T

Figure 13.2

Palmdale Liquefaction Risk

- City Boundary
- Sphere of Influence
- Major Arterials
- Highway
- Railroad
- Seismic Hazard Liquefaction Zone

0 0.75 1.5 2.25 3 Miles

0 3,000 6,000 Feet

Data Sources: City of Palmdale GIS data; California Geological Survey, 2005, USGS.

Produced by Rincon Consultants, Inc.
June 2019

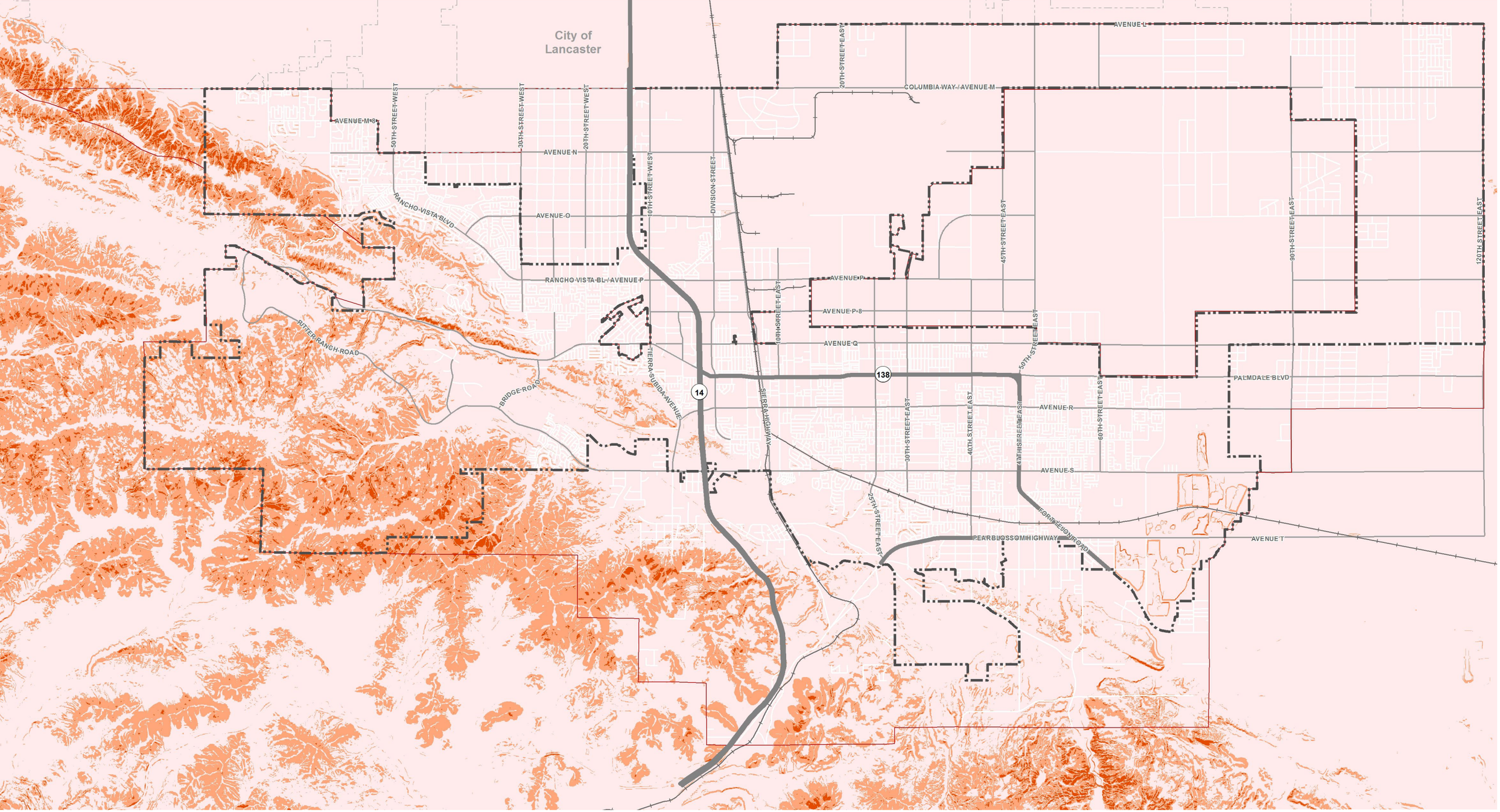


Figure 13.3
Palmdale Slope Map

City Boundary
Sphere of Influence
Major Arterials
Highway
Railroad

Slope (Degrees)
0-5
5-10
10-25
>25

0 0.75 1.5 2.25 3 Miles
0 3,000 6,000 Feet

Data Sources: City of Palmdale GIS data.; USGS, 2019.

Produced by Rincon Consultants, Inc.
June 2019

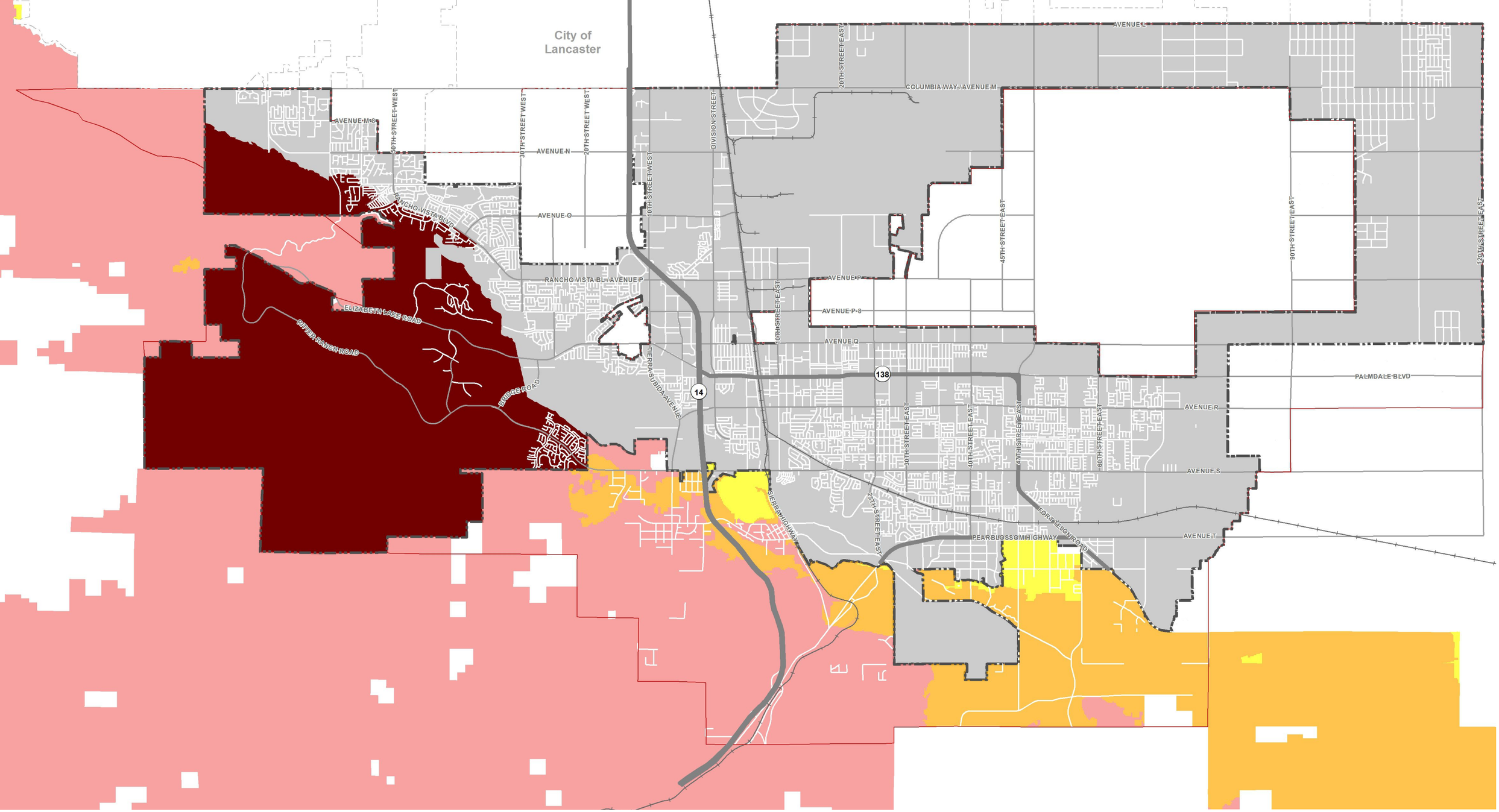


Figure 13.4

Palmdale Fire Hazard Area ~~Zone~~

Data Sources: City of Palmdale GIS data; CAL FIRE. 2012.

Produced by Rincon Consultants, Inc.
June 2019

City of Lancaster

50TH STREET WEST
40TH STREET WEST
20TH STREET WEST
10TH STREET WEST
DIVISION STREET
20TH STREET EAST
COLUMBIA WAY / AVENUE M
45TH STREET EAST
50TH STREET EAST
90TH STREET EAST
120TH STREET EAST

AVENUE N
AVENUE O
RANCHO VISTA BLVD
RANCHO VISTA BL / AVENUE P
AVENUE P
AVENUE P-8
AVENUE Q
AVENUE R
AVENUE S
AVENUE T

ELIZABETH LAKE ROAD
RITTER RANCH ROAD
RANCH CENTER DRIVE
BRIDGE ROAD
TIERRA SUBIDA AVENUE
SIERRA HIGHWAY
PALMDALE BLVD
25TH STREET EAST
30TH STREET EAST
40TH STREET EAST
47TH STREET EAST
60TH STREET EAST
FOOTHILL BLVD
PEARBLOSSOM HIGHWAY

138
14

Figure 13.5
Palmdale Flood Hazard Areas

City Boundary
Sphere of Influence
Major Arterials
Highway
Railroad

Moderate to Low Risk Areas
High Risk Area
Undetermined Risk Area

0 0.75 1.5 2.25 3 Miles
0 3,000 6,000 Feet

Data Sources: City of Palmdale GIS data; FEMA, 2019.

Produced by Rincon Consultants, Inc.
June 2019

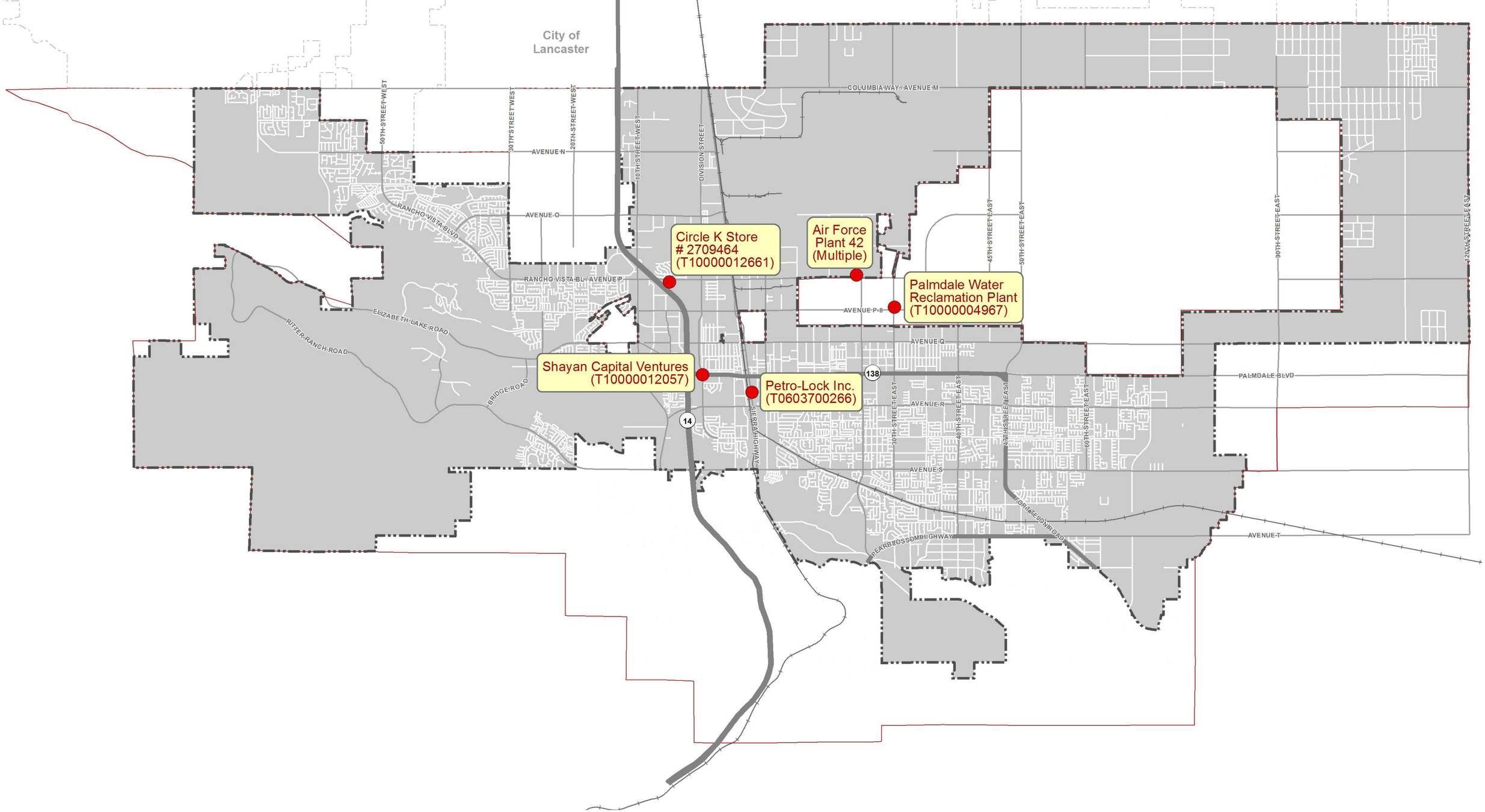


Figure 13.6

Palmdale Hazardous Waste Sites

City Boundary
Sphere of Influence
Major Arterials
Highway
Railroad
Hazardous Waste Sites

0 0.75 1.5 2.25 3 Miles
0 3,000 6,000 Feet

Data Sources: City of Palmdale GIS data; California Water Resources Control Board, 2019.

Produced by Rincon Consultants, Inc.
June 2019

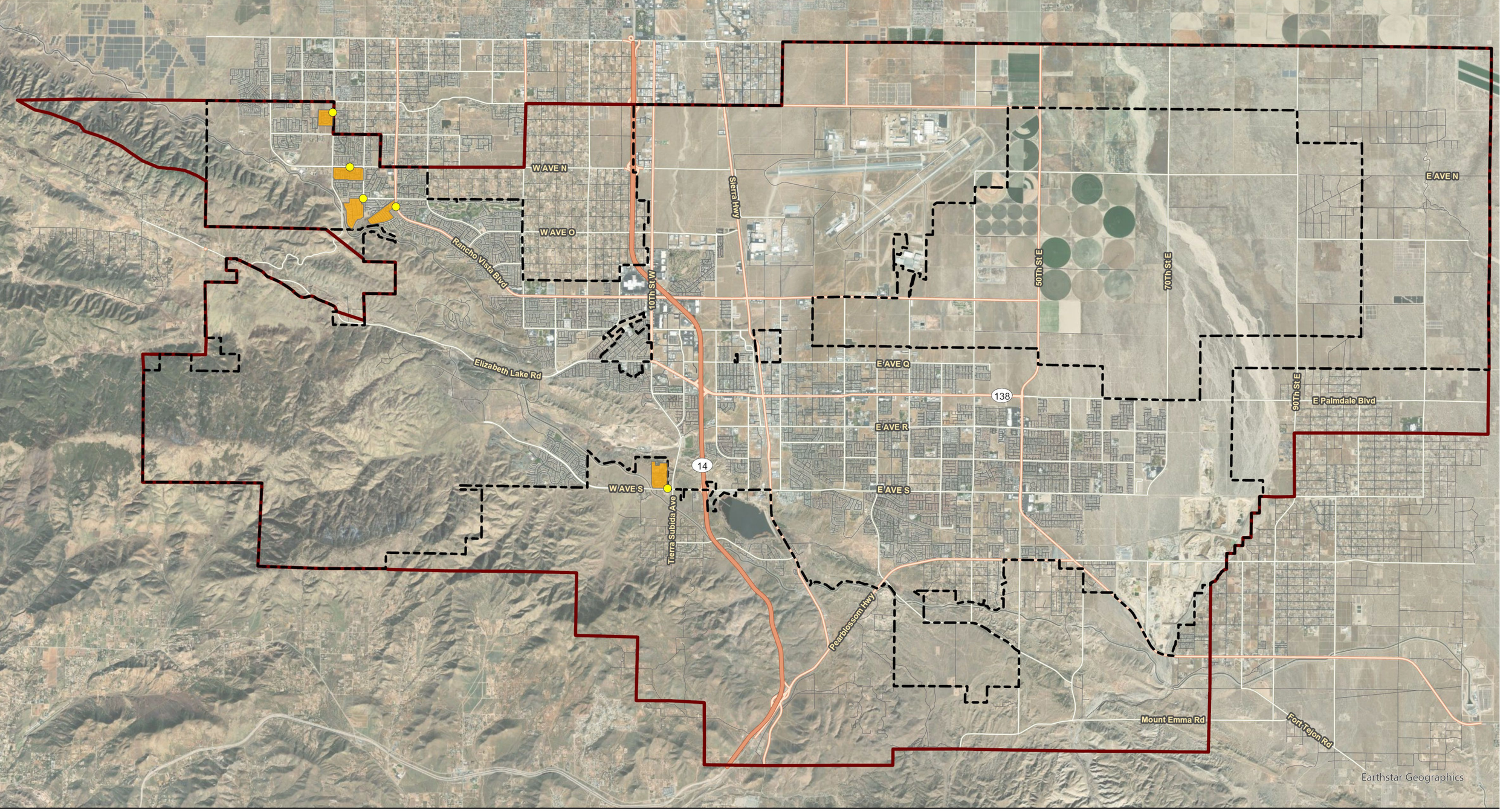


Figure 13.7

Single Access Neighborhoods

City Boundary
Sphere of Influence
Exit/Entry Point
Single Exit/Entry Neighborhood
Undetermined Risk Area

Road Hierarchy

Highway
Arterial Roads
Collector Roads
Local Road

0 0.75 1.5 2.25 3 Miles
0 3,000 6,000 Feet

Data Sources: City of Palmdale GIS data.

Produced by Rincon Consultants, Inc.
May 2022

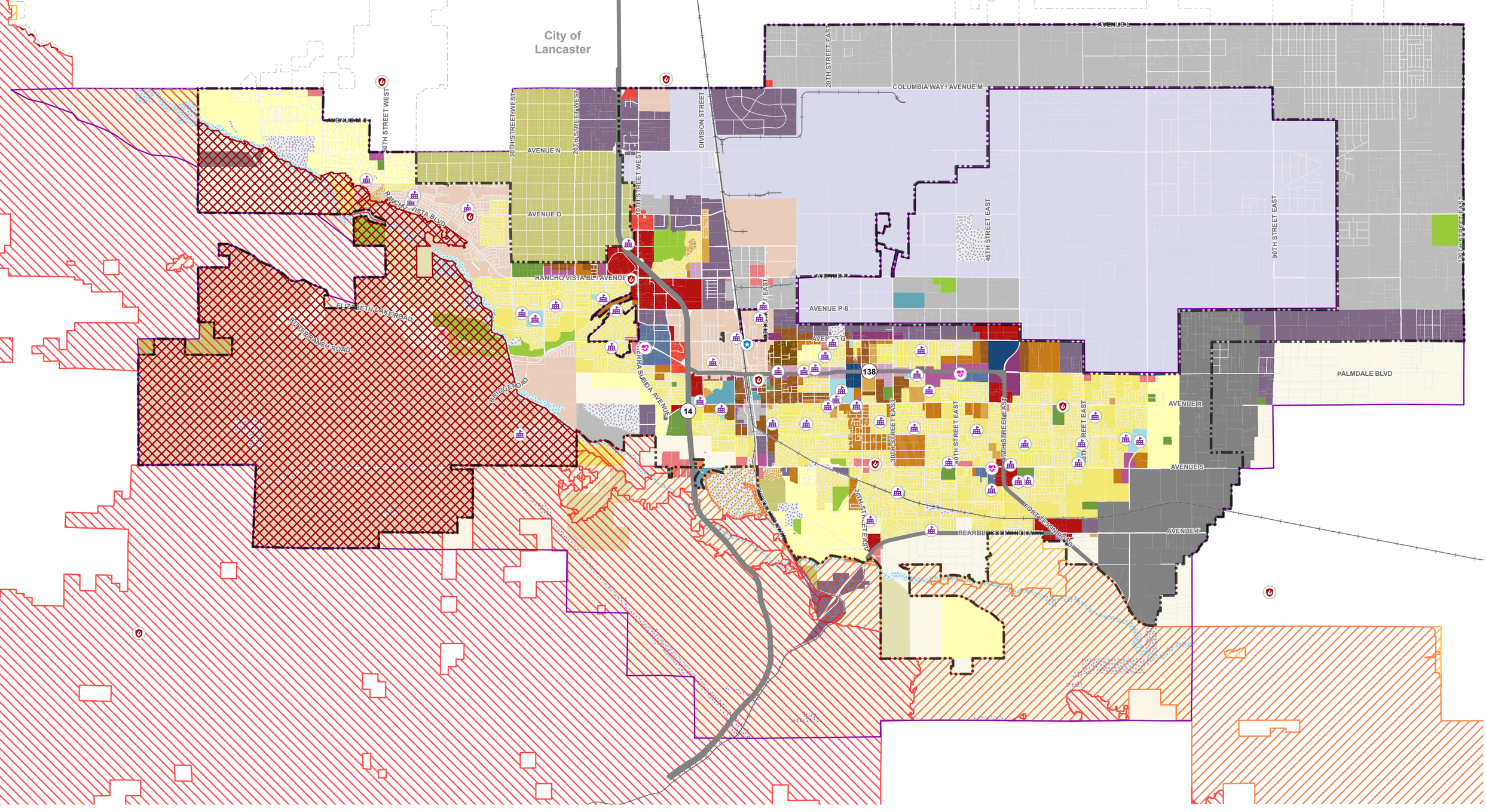


Figure 13.8

Palmdale Fire Hazard Areas ~~Zone~~ Related to General Plan Land Use and Public Facilities

- City Boundary
- Sphere of Influence
- Major Arterials
- Highway
- Railroad
- Water Body/Aqueduct

- Equestrian Residential
- Low Density Residential
- Single Family Residential
- Single Family Residential 2
- Single Family Residential 3
- Neighborhood Residential 1
- Neighborhood Residential 2
- Neighborhood Residential 3
- Neighborhood Residential 4

- Mixed Use 1
- Mixed Use 2
- Mixed Use 3
- Employment Flex
- Neighborhood Commercial
- Visitor Commercial
- Regional Commercial
- Health and Wellness
- Educational Flex

- Industrial
- Aerospace Industrial
- Mineral Resource Extraction
- Specific Plan
- Open Space
- Public Facility-Park
- Public Facility-School
- Public Facility-Civic
- Utilities

- Moderate, State Responsibility Area ~~Zone~~
- High, State Responsibility Area ~~Zone~~
- Very High, State Responsibility Area ~~Zone~~
- Very High, Local Responsibility Area ~~Zone~~

- Sheriff Stations
- Hospitals
- Fire Stations
- Schools

0 0.75 1.5 2.25 3 Miles
0 3,000 6,000 Feet

Data Sources: City of Palmdale GIS data; CAL FIRE. 2012.

Produced by Rincon Consultants, Inc.
August 2022

Desired Outcomes, Indicators, and Targets

The following desired outcomes and metrics were identified to help the City of Palmdale track progress toward maintaining and enhancing safety. This process follows the City of Palmdale's General Plan Vision and Guiding Principles document which was informed by the General Plan Advisory Committee (GPAC), the Planning Commission and City Council

Top Key Outcomes

OUTCOME: Address increased risk related to climate change in accordance with State requirements, particularly along the wildland urban interface at the southwestern and western edge of the City

KPI's:
- Wildfire hazard protection

TARGETS:
- **Reduced human casualties and property damage in a wildfire event**

OUTCOME: Protection of persons and property from criminal activity

KPI's:
- Police service response times and crime rate

TARGETS:
- **Maintain police emergency response time under 6 minutes**
- **Rates of violent and non-violent crime below State averages**

OUTCOME: Ensure that soil and groundwater are not at risk from flooding, water quality, and erosion to ensure that they are suitable to support redevelopment following a large fire

KPI's:
- Presence of soil/groundwater contamination

TARGETS:
- **Clean-up of identified contamination prior to development/redevelopment of individual properties**

OUTCOME: Protection of Palmdale's residents, workers, and visitors from fire hazards

KPI's:
- Fire service response times and fire station proximity to developed areas

TARGETS:
- **Maintain Los Angeles County Fire Protection District's response time goal of 4-6 minutes**
- **Maintain a 2-mile proximity of fire stations to all existing and newly developed areas**

KPI = Key Performance Indicator

Goals and Policies

The following section includes goals and policies for the Safety Element. Goals and policies are followed by implementation actions. Some safety policies are woven throughout the General Plan, including in the Land Use and Community Design, Conservation, Equitable and Healthy Communities Elements, among others.

SEISMIC SAFETY

Goal SE-1

A city with minimal public health, safety, and welfare impacts resulting from seismic hazards.

SE-1.1 Geologic Review. Review development within or adjacent to geologic hazard zones and provide copies of geotechnical reports and studies to be reviewed by a qualified geologist and implement recommendations to ensure adequate provisions for public safety.

SE-1.2 California Building Code. Require appropriate structural setbacks from active fault rupture traces in accordance with Alquist-Priolo standards and continue to follow California Building Code.

SE-1.3 Utility Lines Design. Design utility lines crossing active fault traces to withstand the expected movement of the earth in these locations. Utility lines as defined here include, but are not to be limited to, electricity, water, internet, natural gas, and sewer.

SE-1.4 Essential Service Buildings Location. As feasible, ensure that essential services buildings are not located in geologic hazard zones.

SE-1.5 Local Hazard Mitigation Plan. Implement the policies and mitigation strategies outlined within the Palmdale Local Hazard Mitigation Plan.



WILDFIRE AND FIRE

Goal SE-2

Minimize public health, safety, and welfare impacts resulting from wildfire hazards.

SE-2.1 Critical Facilities. Prohibit new public or critical facilities in Very High Fire Hazard Severity Zones, except when other options do not exist.

SE-2.2 Redevelopment Compliance. After a large fire, ensure that re-development located in the in the High and Very High Fire Hazard Severity Zones complies with fire safety requirements for construction, accounting for any increased risk related to climate change.

SE-2.3 Wildland Development. Require that developments located in VHFSZ incorporate and enforce standards for construction, including a fuel modification program (i.e., brush clearance, planting of fire-retardant vegetation) to reduce the threat of wildfires, accounting for any increased risk related to climate change.

SE-2.4 Landscaped Buffer Zones. Provide fire-resistant landscaped buffer zones between high-risk fire hazard areas and urban development with fire clearance located on private land and maintained by the property owner(s).

SE-2.5 Maintain Firesafe Zones. Require property owners to clear brush and high fuel vegetation and maintain firesafe zones (a minimum distance of 30 feet from the structure or to the property line, whichever is closer) to reduce the risk of fires. For structures located within a Very High Fire Hazard Severity Zone, the required brush clearance distance is 200 feet from structures to the property line.

SE-2.6 Soils and Waterways. Evaluate soils and waterways for risks from flooding, water quality, and erosion to ensure that they are suitable to support redevelopment following a large fire.

SE-2.7 Emergency Access Routes for Wildfire Hazard Zones. Require all new development in or near designated wildfire hazard zones to identify multiple evacuation/ emergency access routes and file with City.

SE-2.8 Los Angeles County Fire Department Coordination. Continue to coordinate with the Los Angeles County Fire Department to provide emergency evacuation support and address fire hazards.

SE-2.9 Development Requirements. As part of the city's development review process, require that all new buildings and facilities comply with Los Angeles County, state, and federal regulatory standards such as the California Building and Fire Codes as well as other applicable fire safety standards and work with the Fire Department to ensure the provision of adequate fire stations, personnel, and equipment to meet the City's needs over time.

SE-2.10 Water system requirements. Require all new development to be served by a water system that meets applicable fire flow requirements.

SE-2.11 Non-conforming Development. Require existing non-conforming development to comply with contemporary fire safe standards during a permit or entitlement process, in terms of road standards and vegetative hazard, and meet or exceed SRA Fire Safe Regulations.

SE-2.12 Fire Protection Plans. Require fire protection plans for all new development in the VHFSZ.

SE-2.13 Long-term Maintenance. Continue annual brush inspections and enforce clearance requirements on public and private property within the Very High Fire Hazard Severity Zone (VHFHSZ), as dictated by CAL FIRE, in accordance with the Board of Forestry and Fire Protection Fire Safe Regulations, California Building Standards Code, and Palmdale Municipal Code related to ongoing maintenance of vegetation clearance on public and private roads, roadside fuel reduction plan, and defensible space clearances (including fuel breaks).

SE-2.14 Water Evaluation. Evaluate the location and capacity of the City's water supply availability to suppress wildfire as part of the City's Local Hazard Mitigation Plan Updates.

HAZARDOUS MATERIALS

Goal SE-3

~~A~~ Minimize risks associated with the transport, storage, use, and disposal of hazardous materials.

SE-3.1 Hazardous Materials. Coordinate with the Los Angeles County Fire Department to maintain a list of hazardous waste generators that could affect City residents.

SE-3.2 Remediate Contaminated Sites. Continue to support and encourage state and county efforts to identify and remediate contaminated sites.

SE-3.3 Soil and Groundwater Cleanup. Require clean-up of soil and/or groundwater containing hazardous materials exceeding regulatory action levels to the satisfaction of the agency having jurisdiction prior to granting permits for new development.

SE-3.4 Hazardous Materials Transport. Require transport of hazardous materials along designated routes that minimize risks to the public and sensitive environmental areas and cooperate with regional agencies in developing and maintaining such routes.

SE-3.5 Review Development Near Hazardous Materials. Review proposed development in proximity to any existing or proposed facility that uses, stores, or transports large amounts of hazardous materials to ensure adequate mitigation of impacts related to hazardous materials (e.g., appropriate site design, setbacks, and buffering).

SE-3.6 Hazardous Waste Facility Compliance. Require all proposed hazardous waste facilities to comply with the City's hazardous waste management plan and the Hazardous and Waste Facilities Section of the Palmdale Municipal Code.

FLOODING

Goal SE-4

Minimize impacts to public safety and/or property as a result of flooding.

SE-4.1 Floodplain Management Ordinance. Require development in designated flood hazard areas to meet standards outlined in the City's Floodplain Management Ordinance and related criteria in the City's Engineering Design Standards.

SE-4.2 Drainage Management Plan. Implement the City's drainage management plan through the capital improvement program and development review process.

SE-4.3 National Pollutant Discharge Elimination System and Low Impact Development. Ensure that new development meets National Pollutant Discharge Elimination System (NPDES) and associated Low Impact Development (LID) standards that limit peak runoff to pre-development rates.

SE-4.4 Recharge Areas. As appropriate, use open space and recreational areas to serve as floodplains that reduce downstream flooding and aid in groundwater recharge.

SE-4.5 Floodplains Value. Preserve and restore the natural and beneficial values served by floodplains to the extent feasible, consistent with public health, safety, and welfare.

SE-4.6 Localized Flooding. Address localized flooding east of SR-14, particularly near Amargosa Creek, Anaverde Creek, Little Rock Wash, and Big Rock Wash.

INFRASTRUCTURE SAFETY

Goal SE-5

Minimize damage from catastrophic failure of infrastructure.

SE-5.1 Evaluate inundation hazards. As appropriate, evaluate inundation hazards related to the potential rupture of the following when reviewing development proposals: California Aqueduct, Palmdale Dam, Littlerock Dams and/or proposed basins.

SE-5.2 Buffers for gas lines. Require buffers for development in areas near high-pressure natural gas lines and that ensure such development is provided with alternative access/evacuation routes.

AIRCRAFT SAFETY

Goal SE-6

Minimize impacts to public safety and property resulting from aircraft accidents.

SE-6.1 Consistent development with Department of Defense. Require all development to be consistent with Department of Defense regulations as outlined in the Air Force Plant 42 Air Installation Compatibility Use Zone (AICUZ) Report and comply with applicable FAA regulations that affect development in the Accident Potential Zones.

SE-6.2 Linear corridor in Accident Potential Zones. Through the design review process, ensure that new buildings are located in a manner that will promote clear linear corridors through the developed area in any Accident Potential Zones.

SE-6.3 Evaluate incompatible land uses near the airport. Review and evaluate currently existing incompatible development within the low altitude overflight areas uses and determine the potential for redevelopment to convert those land uses to airport compatible uses.

EMERGENCY PREPAREDNESS

Goal SE-7

Ensure safe evacuation of residents in the event of an emergency requiring evacuation.

SE-7.1 Maintain Emergency Evacuation Map. Maintain and, as necessary, update a map of designated emergency evacuation routes for various types of disasters (e.g., earthquake, wildfire, hazardous material release, dam failure) and disaster scenarios.

SE-7.2 Evacuation Route Information. Make information regarding emergency evacuation routes readily available to all city residents.

SE-7.3 Review Development Consistency. Review all new development for consistency with applicable evacuation plans and ensure access to at least two evacuation routes.

SE-7.4 Emergency Evacuation Evaluation. Continue to evaluate evacuation route capacity, safety, and viability under a range of emergency scenarios.

SE-7.5 Evacuation in VHFSZ and HFSZ. Require developers proposing development on properties within VHFSZ and HFSZ areas to evaluate and provide adequate evacuation routes.

SE-7.6 Assess Emergency Service Needs. Continue to assess current and projected emergency service needs, and goals or standards for emergency services training for City staff and volunteers as part of the City's Emergency Operation Plan Updates.

Goal SE-8

Improve disaster preparedness in the event of an emergency.

SE-8.1 Emergency Operations Plan. Maintain and, as necessary, update the City's Emergency Operations Plan.

SE-8.2 Annual Maintenance Review. Periodically, but not less than annually, review emergency service equipment and shelters to ensure that they are adequate to meet the needs of changing land uses and development types.

SE-8.3 Disaster Preparedness Training. Require City staff to undergo regular disaster preparedness training annually at minimum.

SE-8.4 Legible Signs. Require all residences and businesses to maintain visible and clearly legible signs and/or street numbers to shorten the response times of emergency personnel.

SE-8.5 Emergency Water. Promote the use of emergency water supplies or water filtration systems at point-of-delivery to ensure provision of acceptable water quality in emergency situations.

Goal SE-9

Improve public safety.

SE-9.1 Palmdale Municipal Code. Ensure safe and sanitary living and working conditions throughout the City and coordinate with other agencies, including but not limited to Los Angeles County Department of Health, Los Angeles County Fire Department, and Los Angeles County Sheriff's Department to maintain the goals, standards, resources, and training for enforcement and emergency services.

SE-9.2 Public Education. Continue and, as appropriate, update public education programs regarding response to hazards such as earthquakes, floods, hazardous material spills, and wildfire for residents, businesses, and schools.

Goal SE-10

Reduce crime activity.

SE-10.1 Crime Rate. Track the rates of crime in the community on an ongoing basis and reallocate resources as necessary to address crime-related issues of concern.

SE-10.2 Crime Statistics. Make up-to-date crime statistics readily available to the community via the City's website or other media.

SE-10.3 Maximize Safety and Security. Through the development review process, ensure that sites are designed in order to maximize safety and security, considering such factors as visibility, lighting, emergency access, legibility of street numbers, and fencing.

SE-10.4 Adequate Lighting. Require all commercial and industrial developments to provide adequate lighting for buildings and parking areas as well as sufficient visibility for patrol vehicles to assist in law enforcement surveillance.

SE-10.5 Watch Group Education. Encourage the formation and continued education of neighborhood and business watch groups to assist in crime prevention and detection.

SE-10.6 Crime Prevention Efforts. Coordinate with local partners to encourage community-based crime prevention efforts.

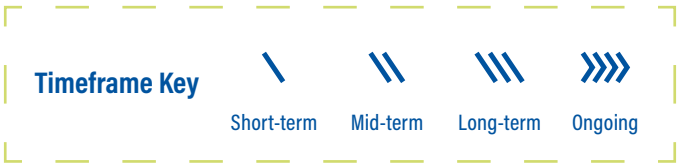
SE-10.7 Safe Environment Programs. Promote after school, volunteer, and Business and Neighborhood Watch programs, and other innovative programs to help maintain a safe environment.

SE-10.8 Law Enforcement and Youth Interaction. Expand opportunities for positive law enforcement and youth interaction.

Implementation Actions

The table below identifies programs, planning efforts, coordination efforts, and other actions that will help implement the General Plan Safety Element goals and policies. Programs are consistent with this chapter's goals and policies.

The table provides a description of each Implementation Action and lists the correlating policies. Each action also identifies a timeframe for implementation with Short-term representing a 1–3-year timeframe, Medium-term is 4-7 years, Long-term is 8+ years and Ongoing represents an action that the City should continue. Additionally, the table includes the City department that should function as the lead for implementing the actions.



Correlating Goals	Action	Timeframe	Responsible Department
SE-1	**LHMP:** Implement the 2021 Palmdale Local Hazard Mitigation Plan	//	Public Works
SE-1	**Seismic Standards:** Update existing and future standards of the Palmdale Municipal Code to meet seismic safety standards established by the California Building Code and Alquist-Priolo Earthquake Fault Zoning Act in order to protect residents of Palmdale	////	Economic and Community Development
SE-2, SE-5, SE-7	**Fire Hazard Pre-Plans:** Develop evacuation strategies and other preemptive measures	/	Public Works, Economic and Community Development, Neighborhood Services, LA County Sheriff's Department, Los Angeles County Fire Department
SE-2	**Wildland Interface Fire Standards:** Require that developments located in VHFSZ incorporate and enforce standards for construction, including a fuel modification program (i.e., brush clearance, planting of fire-retardant vegetation).	/	Public Works, Economic and Community Development, Neighborhood Services, LA County Sheriff's Department, Los Angeles County Fire Department
SE-3	**Hazard and emergency safety information:** Provide hazard and emergency safety information to the public, including evacuation routes and fire protection resources via the City's website and social media platforms	////	Public Works, Economic and Community Development, and Neighborhood Services

Correlating Goals	Action	Timeframe	Responsible Department
SE-2, SE-5, SE-8	**Stakeholder Meetings:** Meet with key stakeholders to ensure evacuation resources and emergency protocols are sufficient		Economic and Community Development and Neighborhood Services
SE-2, SE-3, SE-5, SE-8	**Roadway Assessment:** Assess existing roadways along evacuation routes and emergency access routes to determine the adequacy of existing infrastructure		~~Economic and Community Development,~~ Public Works, and Los Angeles County Fire Department
SE-2, SE-3	**Critical Facilities Relocation Plan:** Identify critical facilities in hazard zones and prepare a plan for relocation of these facilities		Economic and Community Development and Public Works
SE-1, SE 2, SE-3, SE-9	**Municipal Code Updates:** Update the Municipal Code to include a requirement for the use of fire-safe landscaping in VHFHSZ's and a requirement for property owners to clear brush and high fuel vegetation in VHFHSZ's		Economic and Community Development, Neighborhood Services, and Public Works
SE-4	**Drainage Master Plan:** Update the City's Drainage Master Plan		Public Works
SE-4, SE-5	**Update flood hazard data:** Biannually review flood hazard maps and other relevant floodplain data and revise local maps and information as new data becomes available		Economic and Community Development, Neighborhood Services, and Public Works
SE-1, SE-8	**Review Climate Change Trends:** Annually assess novel state and national trends related to climate change to inform City procedure and future policy development		Public Works
SE-2, SE-3	**Critical Facilities Evaluation:** Perform an evaluation of existing critical facilities to identify necessary updates and improvements.		Public Works
SE-8	**Review of the City's Emergency Operation Plan:** Perform a comprehensive review of the City's Emergency Operation Plan to determine the need for an update.		City Manager's Office, Neighborhood Services, and Public Works
SE-1, SE-3, SE-5, SE-8, SE-9, SE-7, SE-10	**Publish safety information:** Publish mapped evacuation routes, crime statistics, and other pertinent safety information on the City webpage and social media		~~Economic and Community Development,~~ Neighborhood Services, Communications, and Public Works
SE-9 and SE-10	**Training and Education Program:** Annually implement an education and training program regarding how to increase public safety in response to natural hazards and crime.		Communications, ~~Economic and Community Development,~~ Neighborhood Services, and Public Works



Envision
PALMDALE 2045
a complete community



Chapter 14

Sustainability, Climate Action, and Resilience

This chapter of the General Plan serves as the Climate Action Plan for the City of Palmdale and outlines the City's greenhouse gas reduction and sustainability strategies.

Overview

Climate change is affecting California and the Los Angeles region, and the impacts are projected to worsen, even with only moderate increases in greenhouse gas (GHG) emissions. Climate change is not only impacting our natural environment, but also threatening the health and economic vitality of communities across the State. The future extent to which Palmdale is impacted by climate change is dependent on our actions today. By curbing GHG emissions and adapting our community to the already changing environment, we can significantly reduce the damages incurred from climate change. Palmdale is in a unique position to become a regional climate leader by implementing citywide policies, incentives, and education programs to deploy new technologies, pilot regulatory mechanisms, and spark behavioral change to meet the deep greenhouse gas reduction targets established by the State of California.

Palmdale has embedded this Climate Action Plan (CAP) into its General Plan to serve as a guide for the community's response to challenges posed by climate change and to build on the City's ongoing efforts to mitigate and adapt to the impacts of climate change. In addition to climate concerns, this chapter addresses the following additional sustainability issues: water quality and supply, waste management, ecosystem stewardship, environmental literacy, equitable access to open spaces, and supporting the health, well-being, and spirit of the community.



Wind Turbine near Lake Palmdale

What is Sustainability?

Sustainability is the ability to meet the needs of the current generation without compromising the ability of future generations to meet their needs. Sustainability is a cross-cutting issue that centers on the dynamic relationship between environmental, social equity, and economic considerations. In specific terms, taking a sustainability approach means conserving energy and water, diverting waste from landfills, reducing greenhouse gas emissions, protecting, and restoring ecosystems, and preparing for the potential impacts of climate change, among others.

The importance of practicing sustainability is becoming a greater priority due to the potential impacts of climate change. Climate is the long-term behavior of the atmosphere – typically represented as averages – for a given time of year. This includes average annual temperature, snowpack, or rainfall. Human emissions of carbon dioxide and other greenhouse gases are important drivers of global climate change. Greenhouse gases trap heat in the atmosphere, resulting in warming over time. This atmospheric warming leads to other changes in earth systems, including changing patterns of rainfall and snow, melting of glaciers and ice, and warming and acidification of oceans.



Wildfire

California, the Antelope Valley, and the City of Palmdale are already experiencing the effects of a changing climate. Both gradual climate change (e.g., extreme heat days or weather events) and climate hazard (e.g., wildfires) events expose people, infrastructure, buildings and properties, and ecosystems to a wide range of stress-inducing and hazardous situations. These hazards and their impacts often have a disproportionate effect on the most vulnerable populations in the City.

The future impacts of climate change depend in part on the amount of greenhouse gas emissions that are present in the atmosphere. Greenhouse gas emissions are driven by economic systems, land use patterns, transportation and energy systems, resource use, and other social and political factors. The City can help to mitigate the long-term impacts of climate change by reducing greenhouse emissions. Adaptation strategies such as increasing shade and increasing light-colored surfaces can reduce the negative effects of high heat days. Combining climate strategies with other efforts related to water conservation, energy efficiency, recycling, and ecosystem protection helps to increase the overall sustainability and livability of the community.

What is a Climate Action Plan?

A Climate Action Plan (CAP) is the City's strategic planning document that outlines:

- Current inventory of greenhouse gas emissions
- Projected greenhouse gas emissions
- Greenhouse gas emissions reduction targets
- Strategies and actions for reducing emissions to meet the targets
- Projected changes to natural hazards from climate change

The CAP is reflective of Palmdale's unique environment and community, and it affirms the City's environmental leadership in the region.

CEQA Qualified Plan

The GHG reduction targets specified by the State are consistent with substantial scientific evidence published by the Intergovernmental Panel on Climate Change (IPCC) and the United Nations Framework Convention on Climate Change (UNFCCC) regarding the need to ultimately reduce global GHG emissions to 80% below 1990 levels by 2050. This consistency is important for creating a "qualified" CAP. The concept of having a "qualified" CAP means that a CAP meets the criteria specified in CEQA Guidelines Section 15183.5(b) for a plan for the reduction of greenhouse gas emissions, such that a "qualified" CAP may then be used for the specific purpose of streamlining the analysis of GHG emissions in subsequent projects. Local governments have discretion on what levels or targets are established in a "qualified" CAP, provided they address adopted policies and are based on substantial evidence.

State Regulatory Framework

California is a national leader on climate action. The following section describes key elements of the legislative and regulatory context in California. This legislative framework guided the development of the CAP and GHG forecasting.

Climate Action Targets

Executive Order B-55-18 (2018): Carbon neutrality by 2045

This Executive Order set a target of statewide carbon neutrality by 2045 and to maintain net negative emissions thereafter.

Senate Bill 32 (2016): Greenhouse Gas emission reduction target for 2030

This Senate Bill establishes a statewide GHG emission reduction target of 40% below 1990 levels by 2030.

Assembly Bill 32 (2006): California Global Warming Solutions Act of 2006.

This Assembly Bill requires the California Air Resources Board (CARB) to adopt a statewide GHG limit equivalent to the statewide GHG levels in 1990 to be achieved by 2020. It was California's first GHG reduction target.

Senate Bill 379 (2015): Adaptation and Resiliency Planning

This Senate ~~Bb~~ill requires cities and counties to include climate adaptation and resiliency strategies in their general plan updates. The updates were required to include a set of goals, policies, and objectives based on a vulnerability assessment.

Climate Change Scoping Plan (2017)

The Climate Change Scoping Plan was approved by CARB in December 2008 and outlines the State's plan to achieve the GHG reductions required in AB 32. The plan directed municipal governments to reduce emissions by at least 15% by 2020 compared to 2008 levels or earlier. The Scoping Plan was updated in 2017 to reflect the SB 32 target of reducing emissions by 40% under 1990 levels by 2030.

Clean Energy

Senate Bill 100 (2018): Renewable Portfolio Standard

This Senate bill requires that 100% of all electricity within California be carbon-free by 2045. Electricity providers must procure from eligible renewable energy sources, with interim goals of 40% by 2024 and 50% by 2030.

Transportation

Senate Bill 375 (2008): Greenhouse Gas emission reduction targets for vehicles

The Sustainable Communities & Climate Protection Act of 2008 requires CARB to develop regional GHG reduction targets for passenger vehicles. CARB is required to establish targets for 2020 and 2035 for each region covered by one of the State's 18 metropolitan planning organizations.

Senate Bill 743 (2013): Transportation Impacts

Introduces a new performance metric, vehicle miles travelled (VMT), as a basis for determining significant transportation impacts under CEQA. Projects that are anticipated to increase VMT may mitigate impacts through measures such as car-sharing services, unbundled parking, improved transit, and enhanced pedestrian and bicycle infrastructure.

Executive Order N-79-20 (2020): Zero Emission Vehicles

In line with the carbon neutrality goal, this Executive Order requires the elimination of new, internal combustion passenger vehicles by 2035.

Assembly Bill 2127 (2018): EV charging infrastructure

The California Energy Commission is required to prepare and biennially update a statewide assessment of the electric vehicle charging infrastructure needed to support the levels of electric vehicle adoption for the state to meet its goal of putting at least 5 million zero-emission vehicles on California roads by 2030.

Advanced Clean Truck Rule (2020): Zero emission trucks

CARB adopted this rule requiring manufacturers of heavy-duty, on-road trucks to sell an increasing number of zero-emission trucks. By 2035, zero-emission truck/chassis sales would need to be 55% of Class 2b – 3 truck sales, 75% of Class 4 – 8 vocational truck sales, and 40% of Class 7-8 truck tractor sales.

Innovative Clean Transit (2018): Zero emission bus fleets

CARB adopted this rule requiring public transit agencies to gradually transition to 100% zero-emissions bus fleets by 2040. This regulation applies to all transit agencies that own, operate, or lease buses with gross vehicle weight rating (GVWR) above 14,000 lbs.

Safer Affordable Fuel-Efficient (SAFE) Vehicles Rule (2018)

The U.S. Environmental Protection Agency (US EPA) and the National Highway Traffic Safety Administration (NHTSA) issued the SAFE Vehicles Rule. This rule set a vehicle fleet efficiency standard increase of 1.5% per year above 2020 standards through 2026.

Solid Waste

Senate Bill 1383 (2016): Short-lived Climate Pollutants - Organic Waste Reductions

This Senate Bill establishes a statewide target to reduce the disposal of organic waste by 75% by 2025 to reduce methane emissions from organic material in landfills. As well as establishes edible food rescue requirements.

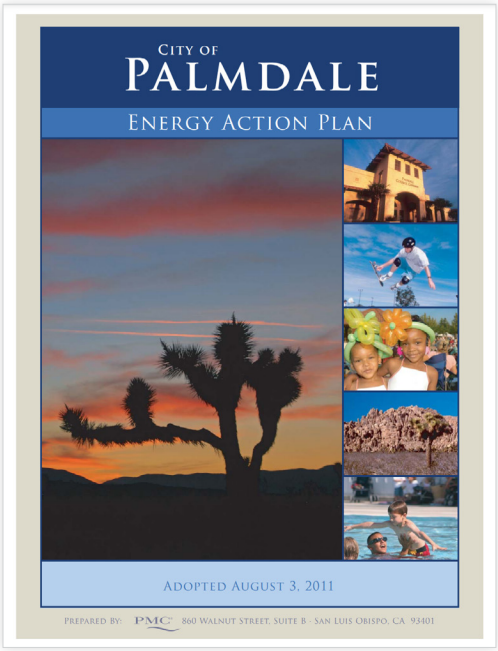
Assembly Bill 341 (2012) and Assembly Bill 1826 (2016): Mandatory Recycling

AB 341 requires all commercial businesses and public entities that generate four cubic yards or more of waste per week and all multi-family apartments with five or more units to have a recycling program in place to help meet the state's recycling goal of 75% diversion by 2020. AB 1826 requires all commercial businesses to collect yard trimmings, food scraps, and food-soiled paper for composting.

Current Conditions

Sustainability in Palmdale

To date, Palmdale has several key plans in place with the direct purpose of reducing GHGs citywide. The City is implementing the 2011 Palmdale Energy Action Plan (PEAP). Efforts include implementing interior and exterior lighting and heating, ventilation, and air conditioning (HVAC) upgrades across City facilities and installing solar panels to generate renewable, carbon-free energy. The City also installed 21 publicly accessible electric vehicle (EV) chargers, including five DC Fast Chargers to support the transition to EVs. Most importantly, the City is moving forward with a Ccommunity Cchoice Aaggregation program (CCA) to supply carbon-free electricity to City residents and businesses starting in October of 2022. Focusing on community emission mitigation provides the City with the greatest opportunity to reduce emissions.



Climate Resilience in Palmdale

Senate Bill 379

California Senate Bill (SB) 379 requires cities and counties within the state to consider and address climate change and resiliency within the Safety Element of their General Plans. The Bill requires local agencies to perform a vulnerability assessment that identifies the potential impacts to the community associated with climate change. Further, cities and counties must utilize the vulnerability assessment to develop goals and policies to facilitate climate adaptation and minimize the risks associated with climate impacts.

Resilience issues impacting the City include changes to temperature, precipitation, and wildfire threats. See Table 14.1 for a more detailed explanation of the current and future climate hazards facing Palmdale.

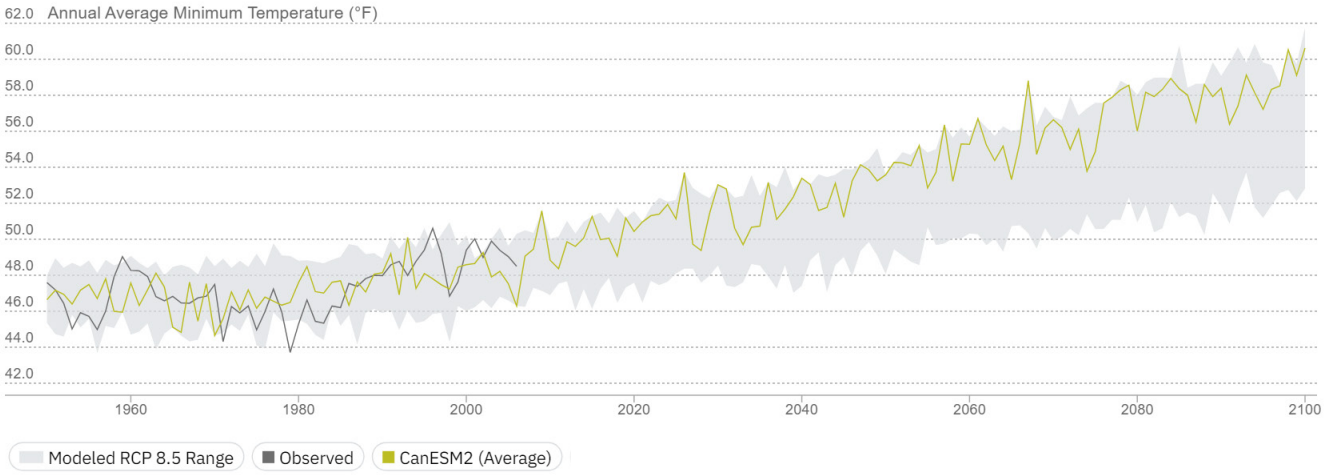
Temperature

Average temperatures and the number of extreme heat days are expected to increase in the future. Annual temperatures are estimated to increase by 4.6°F to 9.1°F by the end of the century.[44] Similarly, the number of high heat days[45] is modeled to increase from 11 in 2017 to 27-33 in 2045 and 35-60 days by the end of the century according to Cal-Adapt.[46] Higher temperatures and prolonged heat waves can negatively impact human health. Figure 14.1 illustrates the projected change in average annual minimum temperature in Palmdale, while Figure 14.2 illustrates the projected change in average annual maximum temperatures in Palmdale.

44. Temperature change range represent lower and higher-emissions scenario for Palmdale. California Energy Commission. (2017). Cal-Adapt. Retrieved from: http://cal-adapt.org/.
45. Number of days in a year when daily maximum temperature is above a threshold temperature of 102.5 °F. Threshold temperature is defined as the 98th percentile value of historical daily maximum/minimum temperatures (from 1961–1990, between April and October) observed at a location.
46. CalAdapt. (2018). Business as Usual Scenario (High Emissions), CanESM2 Model (Average). Retrieved from: https://cal-adapt.org/tools/annual-averages/

Figure 14.1 Projected Change in Average Annual Minimum Temperatures in Palmdale

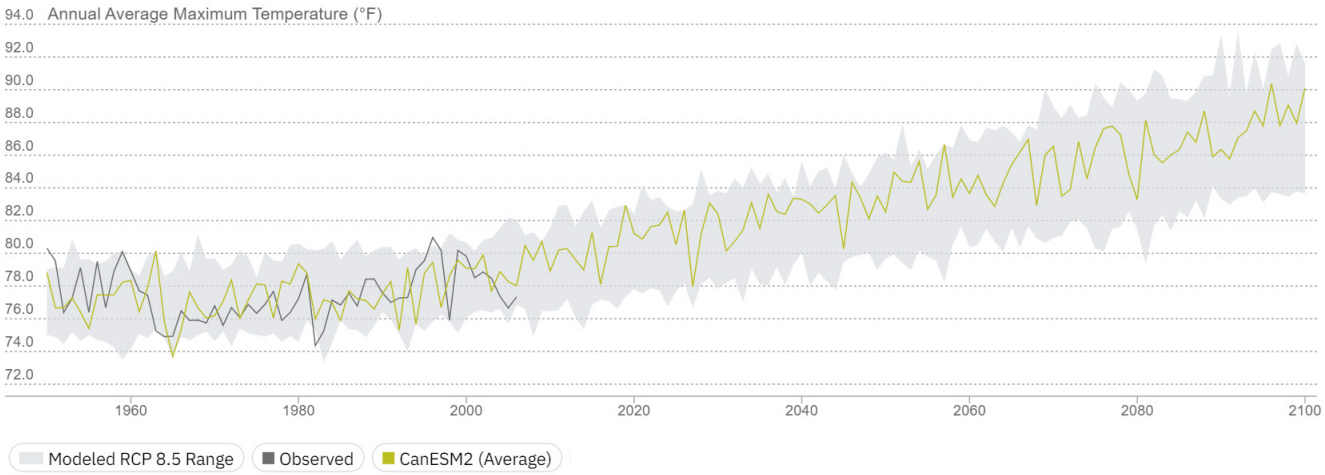
MODELED HISTORICAL Baseline (1961-1990)		FUTURE PROJECTIONS Mid-Century (2035-2064)		FUTURE PROJECTIONS End-Century (2070-2099)	
30 YEAR AVG	30 YEAR RANGE	30 YEAR AVG	30 YEAR RANGE	30 YEAR AVG	30 YEAR RANGE
46.9 °F	44.7–49.7 °F	52.4 °F	49.7–56.7 °F	56.2 °F	52.4–60.5 °F



Source: Cal-Adapt. Data: LOCA Downscaled CMIP5 Climate Projections (Scripps Institution of Oceanography), Gridded Observed Meteorological Data (University of Colorado Boulder), LOCA Derived Products (Geospatial Innovation Facility).

Figure 14.2 Projected Change in Average Annual Maximum Temperatures in Palmdale

MODELED HISTORICAL Baseline (1961-1990)		FUTURE PROJECTIONS Mid-Century (2035-2064)		FUTURE PROJECTIONS End-Century (2070-2099)	
30 YEAR AVG	30 YEAR RANGE	30 YEAR AVG	30 YEAR RANGE	30 YEAR AVG	30 YEAR RANGE
77.1 °F	73.7–80.2 °F	83.0 °F	79.3–87.7 °F	86.2 °F	81.6–90.4 °F



Source: Cal-Adapt. Data: LOCA Downscaled CMIP5 Climate Projections (Scripps Institution of Oceanography), Gridded Observed Meteorological Data (University of Colorado Boulder), LOCA Derived Products (Geospatial Innovation Facility).

Precipitation

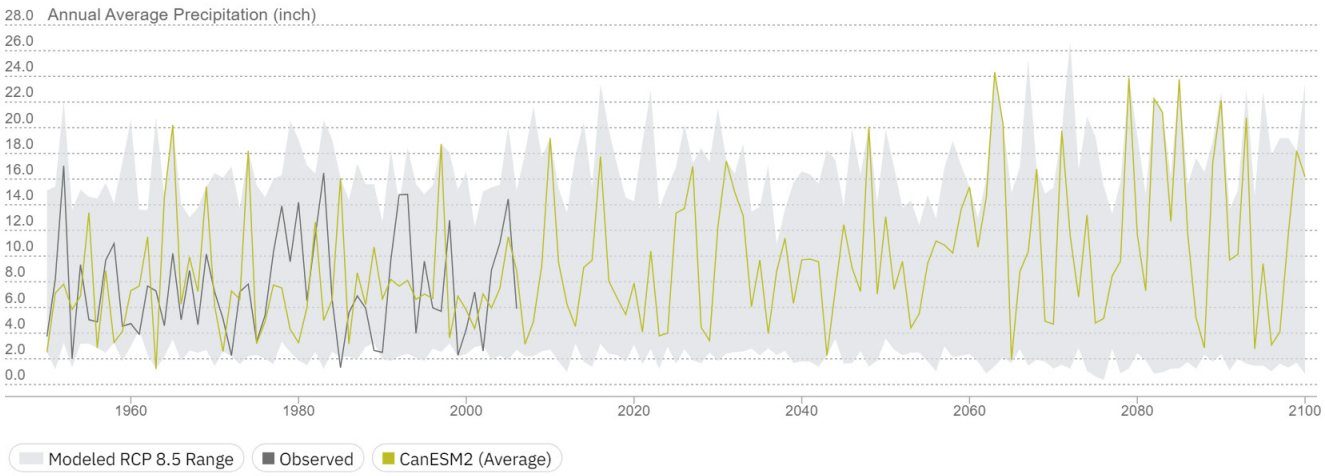
In the present-day climate, the region experiences wide swings in precipitation from year-to-year, and this variability is expected to continue under climate change with fluctuations between wet years and dry years.[47] Climate change is likely to increase the duration and severity of droughts in California. Increasing temperatures and changing precipitation patterns can create periods of abnormally dry weather that result in water supply shortages. Reduced water supplies can have direct and indirect impacts on natural vegetation, wildlife, and quality of life. Figure 14.3 below illustrates the annual precipitation variability beginning in the year 1950 projected through the year 2100.

Similarly, these fluctuations in precipitation can exacerbate flooding hazards. The Antelope Valley Integrated Water Management Plan identified flash flooding and inland flooding as likely to increase due to climate change.[48] The areas of Amargosa Creek, Anaverde Creek, Little Rock Wash, and Big Rock Wash are subject to 100-year floods.

47. Berg, N, et al. (2015). Twenty-Frist Century Precipitation Changes over the Los Angeles Region. Journal of Climate. 28: 401 – 421.
48. 2013. Antelope Valley Integrated Regional Water Management Plan. Retrieved from http://www.avwaterplan.org/

Figure 14.3 Projected Change in Average Annual Maximum Temperatures in Palmdale

MODELED HISTORICAL		FUTURE PROJECTIONS		FUTURE PROJECTIONS	
Baseline (1961-1990)		**Mid-Century (2035-2064)**		**End-Century (2070-2099)**	
30 YEAR AVG	30 YEAR RANGE	30 YEAR AVG	30 YEAR RANGE	30 YEAR AVG	30 YEAR RANGE
7.7 inch	1.2–20.8 inch	7.8 inch	0.8–24.3 inch	8.7 inch	0.9–23.9 inch



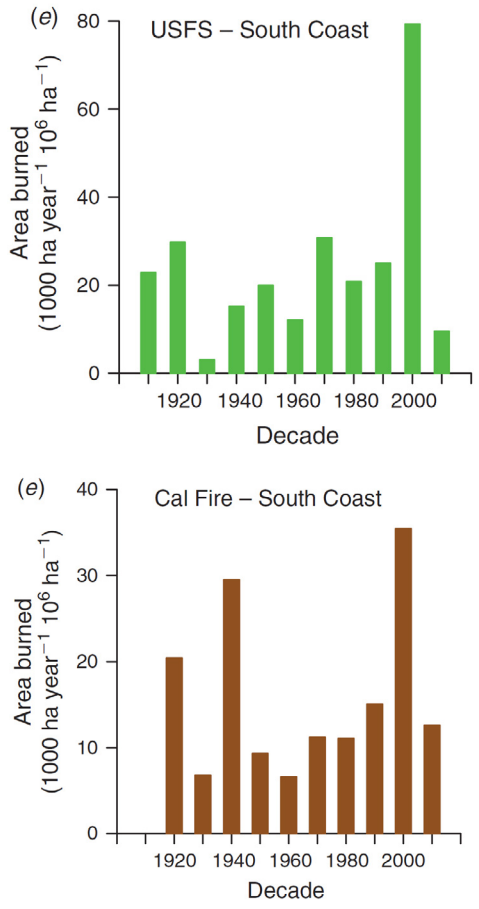
Source: Cal-Adapt. Data: LOCA Downscaled CMIP5 Climate Projections (Scripps Institution of Oceanography), Gridded Observed Meteorological Data (University of Colorado Boulder), LOCA Derived Products (Geospatial Innovation Facility).

Wildfire

Wildfires in the Angeles National Forest and other nearby forested and natural areas and the associated property damage and worsened air quality are also a concern. Fire danger is impacted by human activity, vegetation, wind, temperature, relative humidity, atmospheric stability, etc. The Keetch-Byram Drought Index (KBDI) represents a simplified proxy for favorability of occurrence and spread of wildfire but is not itself a predictor of fire. The KBDI suggests that by 2045 Palmdale could have 57-64 days with conditions to produce and spread wildfire and 62-91 days by the end of the century.[49] As shown in Figure 14.4, the South Coast region, which includes Palmdale, had significant peaks in the area burned in the 1920s, 1940s, 2000s in CalFire state lands and 1920s, 1970s, and 2000s in USFS federal lands. The South Coast region was among the few areas within the State that had an increase in burned area in recent decades.[50]

Figure 14.4

Decadal Burning on US Forest Service and Cal Fire Managed Lands



Source: Keeley, J.E. and A.D. Syphard (2017).[51]

Air Quality

Air quality is expected to worsen with climate change, as shown in Table 14.1 which describes historic and expected climate impacts in California. Air quality is strongly dependent on weather, and climate change is expected to impact air quality through warming temperatures and more frequent episodes of stagnant air. Many strategies that are used to reduce greenhouse gases, however, will also reduce emissions of air pollutants, such as ozone and particulate matter. Palmdale is part of the Antelope Valley Air Quality Management District (AVAQMD), which does not currently meet state or federal standards for ozone or particulate matter (PM10).

Table 14.1 Existing Palmdale Parks

Climate Change Hazards	Historical Trend	Future Change	Confidence for Future Change
PRIMARY CLIMATE CHANGE IMPACTS			
Average Temperature	Warming (last 100+ years)	Warming	Very High
Extreme Heat	Rising (last 100+ years)	Rising	Very High
Annual Precipitation	No significant trends (last 100+ years)	Unknown	Low
Heavy Precipitation Events	No significant trends (last 100+ years)	Increasing	Medium-High
SECONDARY CLIMATE CHANGE IMPACTS			
Drought	No significant trends (last 100+ years)	Increasing	Medium-High
Air Quality	Improving (30+ years)	Worsening	Low
Wildfire	Increasing (last 30+ years)	Increasing	Medium-High

Source: Adapted from California's Fourth Climate Change Assessment (2018).[52]

49. Wildfire risk range represent lower and higher-emissions scenario for Palmdale. California Energy Commission. (2017). Cal-Adapt. Retrieved from: http://cal-adapt.org/.
50. Keeley, JE, AD Syphard. (2017). Different historical fire–climate patterns in California. International Journal of Wildland Fire 26(4): 253-268.
51. Keeley, JE, AD Syphard. (2017). Different historical fire–climate patterns in California. International Journal of Wildland Fire 26(4): 253-268.
52. Hall, Alex, Neil Berg, Katharine Reich. (University of California, Los Angeles). (2018). Los Angeles Summary Report. California's Fourth Climate Change Assessment. Publication number: SUM-CCCA4-2018-007.

Social Vulnerability

There are many social, economic, and environmental factors that influence community and individual vulnerability to climate impacts and their ability to adapt to climate change. Chapter 9: Equitable and Healthy Communities identifies disadvantaged communities (DACs) in Palmdale where residents experience health inequities based on pollution burden and social determinants of health. The populations in DACs may also be more vulnerable to climate change.

For example, outdoor workers are at greater risk of heat stroke and related illnesses from extreme heat events, lower income residents have fewer resources to repair flood or fire damage and may live in poor housing conditions, and people with limited English language proficiency are less likely to access programs that could help during or after an extreme weather event. Moreover, individual biological factors, such as age or health status, can amplify a population's sensitivity to climate change. The following sections describe social vulnerabilities to wildfire, heat, flood, and air quality.

Wildfire

The direct and indirect impacts of wildfire are particularly harmful to vulnerable segments of the population. Damage to housing and community assets, evacuation, rebuilding incurs financial losses for which low-income households may not have resources. Residents who are more physically vulnerable (i.e. older adults, people with disabilities) and those without access to information and resources (i.e. people with limited English proficiency or households without a vehicle) may experience challenges evacuating and accessing emergency services like shelters.[53] Older adults, people with heart disease, and people with respiratory conditions are more susceptible to adverse health impacts from wildfire smoke exposure.[54] Children are also more at risk for lung issues related to smoke because their lungs are still developing and other physiological factors.[55] Unhoused individuals are also vulnerable to wildfire smoke if they live outdoors and do not have places to take refuge or access filtered air.

As shown in Figure 14.5, DACs within the Palmdale city limits are not directly within any of the fire hazard severity zones. Within the Sphere of Influence, the DAC portion of census tract 9102.13 is within Moderate, High, and Very High fire hazard severity zones. The DAC portion of census tract 9110.01 is in the High fire hazard severity zone. Regardless of inclusion in fire hazard severity zones, it is important to note that wildfire smoke can affect all DAC tracts by producing bad air quality in the entire city.

Flood

Like wildfire, the direct and indirect impacts of flood are particularly harmful to vulnerable segments of the population. In general, people with lower income are less able to pay for resources to respond and recover from flooding; for instance, recovering from property damage may be burdensome to low-income households, households without flood insurance, and renters.[56] Similarly, unhoused individuals are highly vulnerable to flood because their dwellings and possessions are directly exposed to damage from flooding and susceptible to developing mold post-flood.[57] Households with lower educational attainment and/or who are linguistically isolated are vulnerable to flood impacts as they may have insufficient understanding of preparedness information for flooding risks.[58] After a flood, people with respiratory conditions and other preexisting conditions are more susceptible to adverse health effects from mold accumulation.

As shown in Figure 14.6, Palmdale's DACs are mostly within the moderate to low-risk zones so they are not highly exposed to flood hazards. Small portions of the DAC tracts east of State Route 14 (Tracts 9102.18, 1905.05, and 1904.04) are in high-risk flood areas.

53. County of Los Angeles. (2021). LA County Climate Vulnerability Assessment.
54. US Environmental Protection Agency (EPA). (2021). Which Populations Experience Greater Risks of Adverse Health Impacts Resulting from Wildfire Smoke Exposure? Available: https://www.epa.gov/wildfire-smoke-course/which-populations-experience-greater-risks-adverse-health-effects-resulting
55. US Environmental Protection Agency (EPA). 2021. Which Populations Experience Greater Risks of Adverse Health Impacts Resulting from Wildfire Smoke Exposure? Available: https://www.epa.gov/wildfire-smoke-course/which-populations-experience-greater-risks-adverse-health-effects-resulting
56. County of Los Angeles. (2021). LA County Climate Vulnerability Assessment.
57. Ibid.
58. United States Environmental Protection Agency (EPA). (2021). Climate Change and Social Vulnerability in the United States.

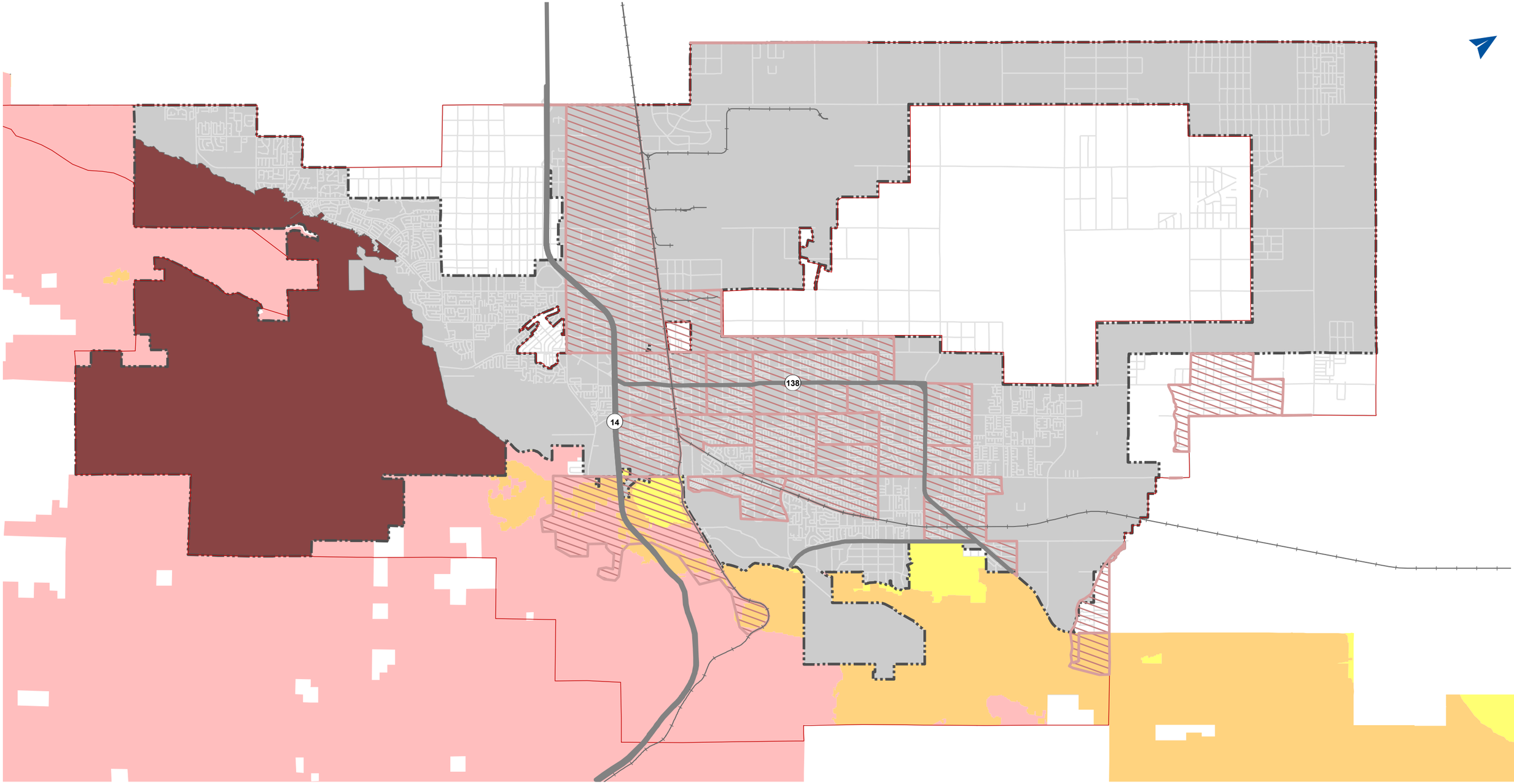


Figure 14.5

WildFfire Hazard Severity Zones and DACs

Fire Hazard Severity Zones

- City Boundary
- Sphere of Influence
- Major Highway/Arterial
- SB1000 DAC (Not Vacant)

Fire Hazard Responsibility Area, Severity Reponsibility Area

- Moderate, SRA
- High, SRA
- Very High, SRA
- Very High, LRA

0 0.75 1.5 2.25 3 Miles

0 3,200 6,400 Feet

Data Sources:
City of Palmdale GIS data; CalFire, 2007, 2012

Produced by
Raimi + Associates
April 2022

City of Lancaster
50TH STREET WEST
30TH STREET WEST
20TH STREET WEST
10TH STREET WEST
DIVISION STREET
20TH STREET EAST
COLUMBIA WAY / AVENUE M
AVENUE N
AVENUE O
RANCHO VISTA BLVD
RANCHO VISTA BL / AVENUE P
ELIZABETH LAKE ROAD
RITTER RANCH ROAD
RANCH CENTER DRIVE
BRIDGE ROAD
TERRA SUBIDA AVENUE
SIERRA HIGHWAY
14
138
45TH STREET EAST
50TH STREET EAST
90TH STREET EAST
AVENUE P
AVENUE P-8
AVENUE Q
PALMDALE BLVD
120TH STREET EAST
AVENUE R
AVENUE S
25TH STREET EAST
30TH STREET EAST
40TH STREET EAST
47TH STREET EAST
60TH STREET EAST
PEARBLOSSOM HIGHWAY
FOOTHILL BLVD
AVENUE T

Figure 14.6

Flood Hazard Areas and DACs

City Boundary
Sphere of Influence
Other City Boundary
Major Highway/Arterial
Railroad
SB1000 Disadvantaged Communities

Flood Hazard Areas

Moderate to Low Risk Areas
High Risk Areas
Undetermined Risk Areas

0 0.75 1.5 2.25 3 Miles
0 3,000 6,000 Feet

Data Sources: City of Palmdale GIS data; FEMA, 2019.

Produced by Raimi + Associates
April 2022

This page intentionally left blank.

Air Quality

Air quality could worsen with climate change due to the increased occurrence of stagnation events, a term that describes the phenomenon of contaminated air lingering over a region combined with a lack of rain and wind.[59] Stagnation events lead to an increased concentration of pollution exposure, and thus, increased risk of heart disease and respiratory illnesses. Additionally, ozone production generally increases with hotter temperatures, which can result in the number of ozone days increasing up to 9 days by 2050.[60] In California, rising temperatures could also see an increase between 22-30 days in the annual number of ozone days with over 90 parts per billion (ppb).[61] The current EPA standard for ground-level ozone is 70 ppb, based on scientific evidence of the effects of ozone on public health, including asthma attacks, emergency room visits, and premature death.

Older adults are particularly vulnerable to negative health impacts because they are more likely to have chronic heart conditions and respiratory illness that are exacerbated by poor air quality. Additionally, people of all ages who exercise, work, or live outdoors are more likely to be impacted due to greater exposure.[62]

Heat

Older adults, people with heart disease, and people with respiratory conditions are more susceptible to heat-related illness and death when exposed to extreme heat. Extreme heat affects these physically vulnerable populations because it exacerbates pre-existing conditions and thus their ability to regulate their body temperature.[63] Children are also more vulnerable to impacts of high temperatures because they have less ability to naturally cool their bodies. [64,65]

Households with lower socioeconomic status are also more at risk of heat stress and/or high temperature mortality. One reason is that having access to air conditioning contributes to one's ability to withstand high temperatures. Lower income households may not have air conditioning in their dwellings, or if they do, they may not be able to afford running it. Having a lower income is also associated with lack of access to quality healthcare in the case that they experience heat stress or illness.[66] Lastly, workers in outdoor occupations are also more vulnerable to the impacts of extreme heat because they are exposed for longer periods of time to high temperatures.

As shown in Figure 14.7 and Figure 14.8, all DACs in Palmdale will be exposed to extreme heat to varying degrees based on representative concentration pathway (RCP)8.5 projections for mid- and end-of century. By mid-century, the DAC tracts around the State Route 14 and Highway 138 connection (portions of census tracts 9102.18 and all of census tracts 9104.05, 1904.04, and 9102.13) and those south of Avenue R-8 (portions of census tracts 9106.02, 9106.08, 9107.20 and 9107.06; and all of census tracts 9106.06, 9107.15 and 9107.14) will experience 60-89 extreme heat days annually. The other tracts will experience 90-119 extreme heat days annually. By end-of-century, all DAC tracts will experience 90-119 extreme heat days annually. The tract in the eastern portion of Palmdale's Sphere of Influence will experience slightly more, with an expected 120.6 extreme heat days annually.

Resilience and Adaptation Opportunities

Land use modifications, water efficiency and stormwater management, renewable energy generation and storage, and increased organic waste diversion are all adaptive approaches that can improve sustainability on an ongoing basis while also increasing resilience to both the stressors and shocks related to climate change. Additionally, the Local Hazard Mitigation Plan (LHMP) and Safety Element provide guidance to prepare for and respond to earthquakes and other disasters. Many of the measures established in the LHMP can also be activated to respond to climate-related events such as high heat, poor air quality, extreme storm events, or temporary disruption of electricity service. Resilience and adaptation opportunities are addressed by the policies under Goal 8: proactively advance community resilience. Additional emergency response and hazard mitigation policies are included in the Safety, Air Quality, and Equitable and Healthy Communities Elements.

59. Horton, D., et. al. (2014). "Occurrence and persistence of future atmospheric stagnation events." Nature Climate Change 4 (8): 698-703.
60. Shen, L., et. al. (2016). "Impact of increasing heat waves on U.S. ozone episodes in the 2050s: Results from a multi-model analysis using extreme value theory." Geographical Research Letters 43: 4017-4025.
61. Mahmud, A., et. al. (2008). "Statistical downscaling of climate change impacts on ozone concentrations in California." Journal of Geophysical Research 113.
62. https://www.cdc.gov/air/ozone.html
63. US Environmental Protection Agency. (2021). Climate Change and Social Vulnerability in the United States. https://www.epa.gov/system/files/documents/2021-09/climate-vulnerability_september-2021_508.pdf
64. Kenney WL, Craighead DH, Alexander LM. 2014. Heat waves, aging, and human cardiovascular health. Med Sci Sports Exerc. 46(10): 1891-1899.
65. Natural Disasters and Severe Weather. 2017. Centers for Disease Control and Prevention, National Center for Environmental Health. https://www.cdc.gov/disasters/extremeheat/heat_guide.html
66. Natural Disasters and Severe Weather. 2017. Centers for Disease Control and Prevention, National Center for Environmental Health. https://www.cdc.gov/disasters/extremeheat/heat_guide.html

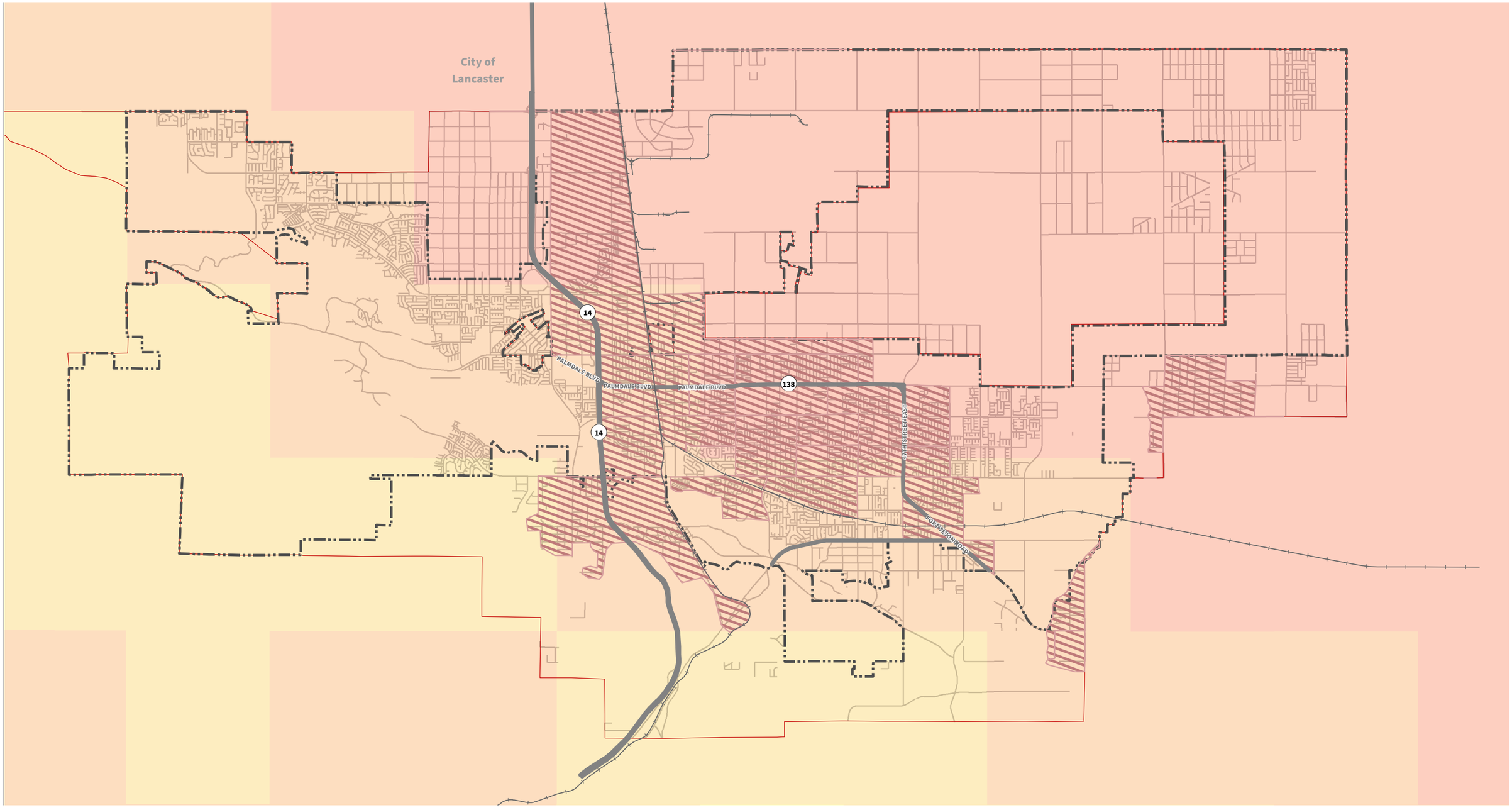


Figure 14.7

Extreme Heat Days and DACs (Mid-Century)

Extreme Heat Days Mid-Century (RCP 8.5)

- City Boundary
- Sphere of Influence
- SB1000 DAC
- Major Highway/Arterial
- Railroad

- 0-29
- 30-59
- 60-89
- 90-119
- 120-152

0 0.75 1.5 2.25 3 Miles

0 3,200 6,400 Feet

Data Sources: City of Palmdale GIS data;
Business as Usual Scenario (High Emissions), Coupled Model Intercomparison Project (CMIP5)
Fengpeng S, et al. 2015;
World Terrain Base, 2015 ESRI, USGS, NOAA.

Produced by Raimi + Associates
April 2022

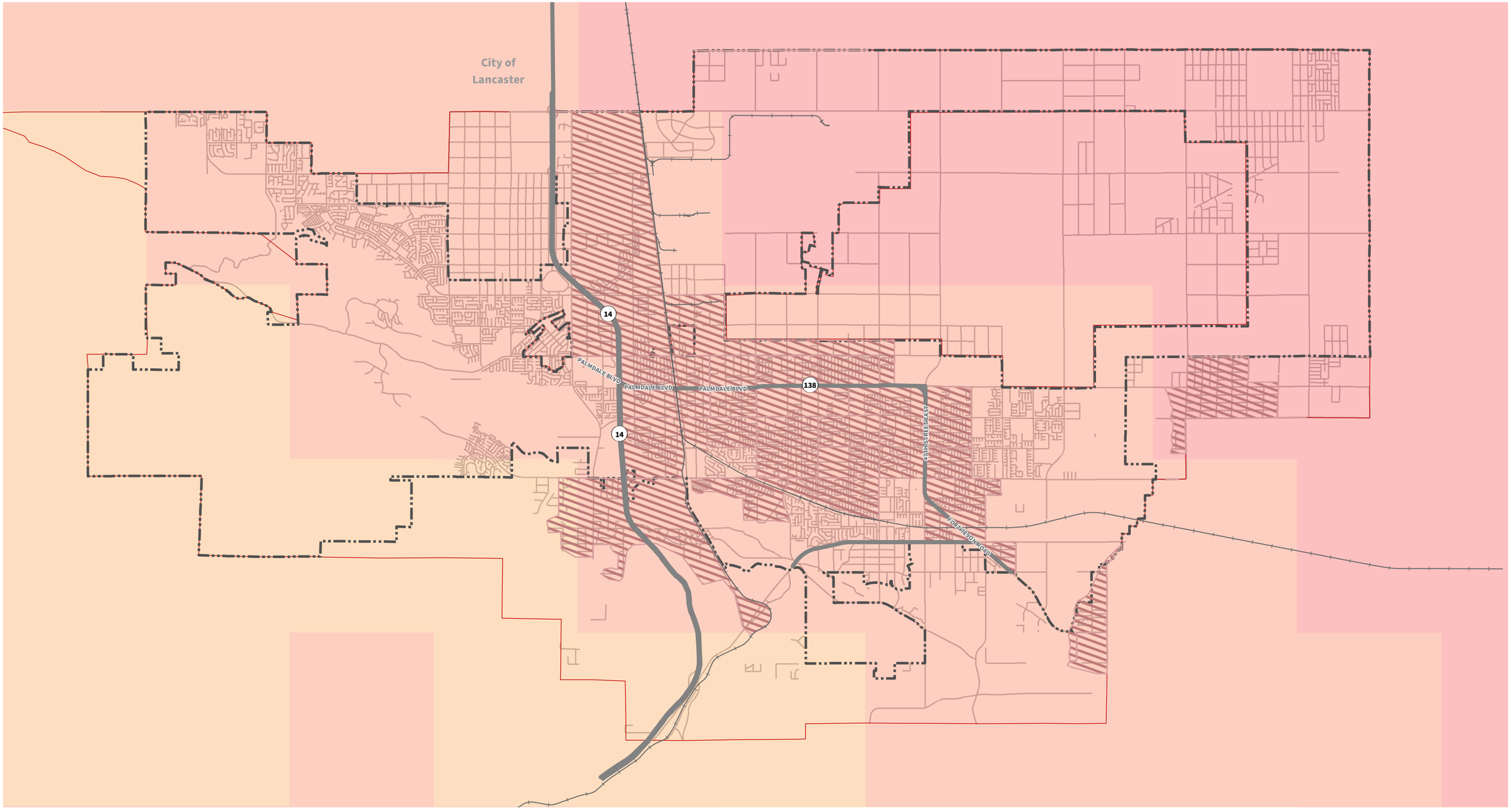


Figure 14.8

Extreme Heat Days and DACs (End-of-Century)

Extreme Heat Days End of Century (RCP 8.5)

- City Boundary
- Sphere of Influence
- SB1000 DAC

- 0-29
- 30-59
- 60-89
- 90-119
- 120-152

0 0.75 1.5 2.25 3 Miles

0 3,200 6,400 Feet

Data Sources: City of Palmdale GIS data;
Business as Usual Scenario (High Emissions), Coupled Model Intercomparison Project (CMIP5)
Fengpeng S, et al. 2015;
World Terrain Base, 2015 ESRI, USGS, NOAA.

Produced by Raimi + Associates
April 2022

This page intentionally left blank.

2017 Greenhouse Gas Inventory

The 2017 City of Palmdale greenhouse gas emissions inventory captures communitywide emissions generated from transportation, energy consumption in homes and buildings, solid waste, water, and off-road transportation (e.g., construction and landscaping equipment). It was developed using the ICELI Global Protocol for Community-Scale Greenhouse Gas Emission Inventories.

The City's most recent GHG inventory for calendar year 2017 estimates total community emissions of 1,042,284 metric tons of Carbon Dioxide equivalent (MTCO2e) (see Table 14.2). Transportation related emissions are the largest contributor to community emissions, accounting for 59%, followed by residential energy use, accounting for 19%, and nonresidential energy use, accounting for 16% of emissions.[67] The remaining 6% of emissions are made up of solid waste, off-road equipment, water and wastewater, and industrial sources (see Figure 14.9).

Community-wide, the City of Palmdale emitted 1,042,284 MTCO2e in 2017, an increase of 13% from the 2005 GHGs estimate of 934,415 MTCO2e. Despite a 13% increase in overall emissions, annual per service population emissions decreased from 2005 to 2017 by 12%, from 6.1 MTCO2e in 2005 to 5.3 MTCO2e in 2017. The service area population is a sum of the populations that live and/or work in the city (population and jobs). These numbers show that population, job growth, and a strong regional economy are the primary driver of emission increases.

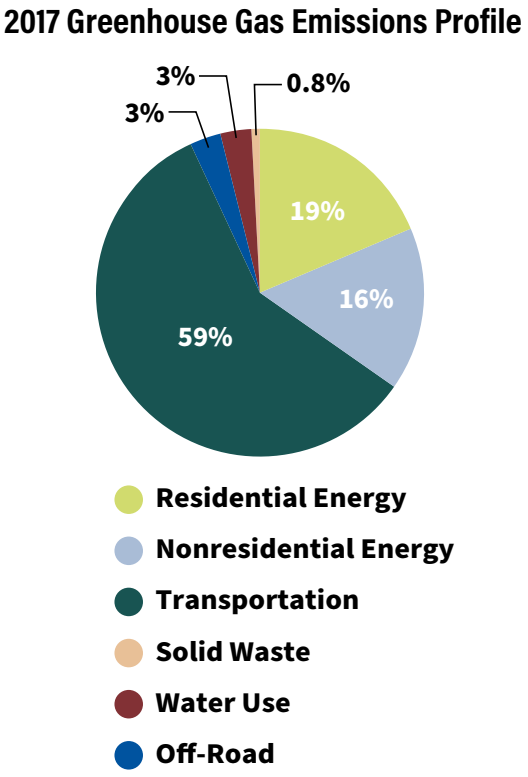
67. Nonresidential energy use data for 2017 is not fully complete because of privacy and aggregation laws that prevent the utilities from providing information for certain customer types. Nonresidential gas and electricity use is likely higher, which would increase total greenhouse gas emissions.

Table 14.2 Total Annual Community GHG emissions (2005-2017)

Sector	Subsector	2005	2017
RESIDENTIAL ENERGY	Residential electricity	98,080	90,470
	Residential natural gas	114,620	107,180
NONRESIDENTIAL ENERGY	Nonresidential electricity	142,570	119,700
	Nonresidential natural gas	77,510	42,310
TRANSPORTATION	On-Road Transportation	379,810	615,601
SOLID WASTE	Landfilled Waste	44,050	30,490
OFF-ROAD	Off-Road Equipment	31,300	8,634
WATER	Water and Wastewater	46,475	27,900
Total		**934,415**	**1,042,284**

Source: R+A 2017 Community GHG Emissions Inventory. 2021.

Figure 14.9 Percent of Palmdale Community GHG Emissions by Source in 2017



Source: R+A 2017 Community GHG Emissions Inventory. 2021.

Greenhouse Gas Emissions Forecast

Two emissions forecasts were prepared to estimate Palmdale's emissions from 2020-2045 as presented in Table 14.3. The forecasts were developed based on the General Plan growth projections related to population and the number of jobs and housing units in the City in horizon year 2045. Population is projected to increase 31%, jobs 95%, housing units 48%, and service population 43% by 2045.

These forecasts show the emissions reductions the CAP actions will need to achieve to become carbon neutral by 2045.

Business-As-Usual (BAU)
The BAU scenario projects future emissions based on current population and regional growth trends, climate patterns and their impacts on energy use, and regulations (Federal, State, and local) introduced before the 2017 inventory year. BAU projections demonstrate the expected growth in GHG emissions if no further action is taken by the State or at the local level after 2017. Under this "do nothing" scenario, the City's emissions are estimated to increase by 54% by 2045 as compared to 1990 levels.

Adjusted Business-as-Usual (ABAU)
The ABAU forecast shows how Palmdale's emissions are anticipated to change while accounting for the impacts of adopted State climate-related policies if no action is taken at the local level. Based on the results of the ABAU forecast, emissions are expected to decrease of 10% by 2045 as compared to 1990 levels.

Table 14.3 Community GHG Forecast 2020-2045 in MTCO2e

	1990 (Backcast)	2020	2025	2030	2035	2040	2045
BAU	794,253	1,064,115	1,121,756	1,179,398	1,236,709	1,294,680	1,352,322
ABAU		1,017,165	933,108	849,051	795,517	767,790	706,943

Source: R+A Emissions Forecast (2021).

Greenhouse Gas Reduction Targets

Palmdale has set the following GHG reduction targets consistent with State policy:

40% BELOW 1990 LEVELS BY 2030 (SB 32)

CARBON NEUTRALITY BY 2045 (EO B-55-18)

The CAP includes strategies and actions to significantly reduce GHGs in the future—but legacy use of natural gas or other fossil fuels or technological constraints may prevent the ability to reduce emissions to absolute zero by 2045. As a result, to achieve carbon neutrality, the City may need to offset any remaining tons of GHGs emitted with an equivalent amount of GHGs removed through a combination of nature-based solutions, carbon capture technology, and carbon offsets.

Greenhouse Gas Reduction Strategy

One of the primary objectives of this CAP is to identify pathways for reducing local GHG emissions from the City of Palmdale. The following section includes mitigation opportunities to reduce local GHG emissions.



Solar Panel Farm

Mitigation Opportunities

Clean Energy

Residential and nonresidential energy use, including electricity and natural gas, account for 35% of Palmdale's greenhouse gas emissions.[68] These emissions are mainly driven by the burning of fossil fuel and natural gas. The proportion of emissions related to natural gas are expected to increase while emissions related to electricity are expected to decrease because the City has created a Community Choice Aggregation (CCA) program, Energy for Palmdale's Independent Choice (EPIC), that will be able to supply less carbon intensive electricity than what is currently available from Southern California Edison. A keystone effort being led by the State to help achieve its climate goals is to provide clean grid electricity, including the installation of distributed energy resources (DERs) such as local solar projects. Senate Bill 100's renewable portfolio standard will require that supplied energy not only be 100% carbon-free by 2045 but also 100% generated from renewable sources like wind, solar, and local biogas. This opportunity for clean energy to fuel buildings and vehicles in Palmdale is addressed by the policies under Goal 2: Utilize a fossil fuel free energy system (SB 100).

68. Raimi + Associates. (2021). Palmdale 2017 Greenhouse Gas Inventory.

Buildings

Buildings are the primary users of energy within the city and the main vehicle to reduce energy-related emissions. Electricity use in residential and nonresidential buildings accounts for 20% of community emissions and natural gas use accounts for 14% of community emissions; however, natural gas use is underestimated due to aggregation laws. There are two main approaches to reduce emissions in buildings. The first is improved energy efficiency of new and existing buildings and the second is through the electrification of buildings. Electrification removes natural gas systems from buildings and uses electric alternatives to take advantage of the cleaner electricity that will be provided by EPIC.

The number of employees and residents in Palmdale is expected to increase through 2045, and this growth will result in the construction of new residential and commercial buildings. New construction is governed by the California Building Code and must meet the California Green Building Standards (CALGreen), which includes requirements for energy performance. The building code is updated every three years to reflect industry best practices and increase the sustainability of new construction. However, to avoid developing GHG-emitting buildings and infrastructure with useful lives beyond the City's emissions reduction goals, Palmdale will need to exceed CALGreen standards for all new construction and major remodels in the city.



Building Under Construction

Most building-related emissions are attributable to the existing building stock, which is much less efficient than new construction due to being built when building energy standards were nonexistent. Decarbonizing existing buildings is critical to meeting emissions reduction goals. There are many challenges associated with improving the performance of existing buildings including costs, rental/ownership status and split incentives, and technological constraints. However, benefits include healthier indoor air quality, reduced energy use and lower utility bills, and more resilient building systems. The opportunity to reduce building related emissions are addressed by the policies under Goal 3: Green and decarbonized buildings for new construction and major renovations.



Electric Vehicle Charging Stations

Transportation

Having access to clean electricity makes supporting the transition to electric vehicles across Palmdale more beneficial. Although transportation demand policies are addressed in the Mobility Element of the General Plan, transportation is the largest contributor to community emissions, accounting for 59% of total emissions. Transportation is also projected to account for most emissions in 2045. To date, Palmdale has participated in the Southern California Electric Vehicle Ready project and is installing electric vehicle charging stations in public parking facilities. The City also partners with regional transit agencies including Antelope Valley Transit Authority (AVTA), Santa Clarita Transit, and Metrolink to provide alternative transportation choices. In March 2022, AVTA became the first agency to place into service a 100% zero-emission transit fleet in North America with 57 BYD zero-emission buses, 10 GreenPower EV Star Microtransit vans, and 20 MCI battery-electric commuter coaches. The City is also currently undertaking several Complete Streets projects to encourage walking and biking. The opportunity to reduce transportation related emissions are addressed by the policies under Goal 4: Reduced greenhouse gas emissions from transportation (SB 379, EO N-79-20).

Solid Waste

Solid waste accounts for 3% of Palmdale's community emissions. By consuming less materials, recycling, and composting more, the community will be able to reduce the amount of waste sent to the landfill. Specifically, diverting organic material including food waste is a crucial step to meeting long-term goals, because organic materials produce methane, which is a more potent GHG than carbon dioxide. The State adopted Senate Bill 1383, the Short-Lived Climate Pollutants Act, which requires jurisdictions to divert 75% of food waste from landfills by 2025 and recover food waste that can be repurposed. Moreover, organics recycling can provide useful byproducts including compost and biogas, which can further reduce emissions and provide economic benefits. The opportunity to reduce solid waste related emissions are addressed by the policies under Goal 5: Increased resource capture and reduced waste sent to landfills (SB 1383).

Water and Wastewater

Water is a critical resource in California and Palmdale. Regional water supplies are already being adversely affected by climate change induced drought and decreased snowpack. Two water suppliers predominantly serve Palmdale: Palmdale Water District (PWD) and Los Angeles County Waterworks District 40 (LACWD 40). Both suppliers draw primarily from imported water from the State Water Project or Antelope Valley-East Kern Water Agency and local groundwater. Local groundwater supplies account for 25%-65% of supplies. Climate change may impact local hydrology and affect natural recharge to the local groundwater aquifers and the quantity of groundwater that could be pumped sustainably over the long-term. Lower rainfall and/or more intense runoff, increased evaporative losses, and warmer and shorter winter seasons can also alter natural recharge of groundwater.

Although water related emissions in Palmdale account for only 3% of the communitywide total emissions, the ecosystem and quality of life benefits that reliable clean water provide are important to protect. Thus, reducing indoor and outdoor water use through fixture upgrades and climate-appropriate landscaping for both residential and nonresidential buildings is incorporated in the General Plan. The opportunity to reduce water and wastewater related emissions are addressed by the policies under Goal 6: Safe and secure water supply.

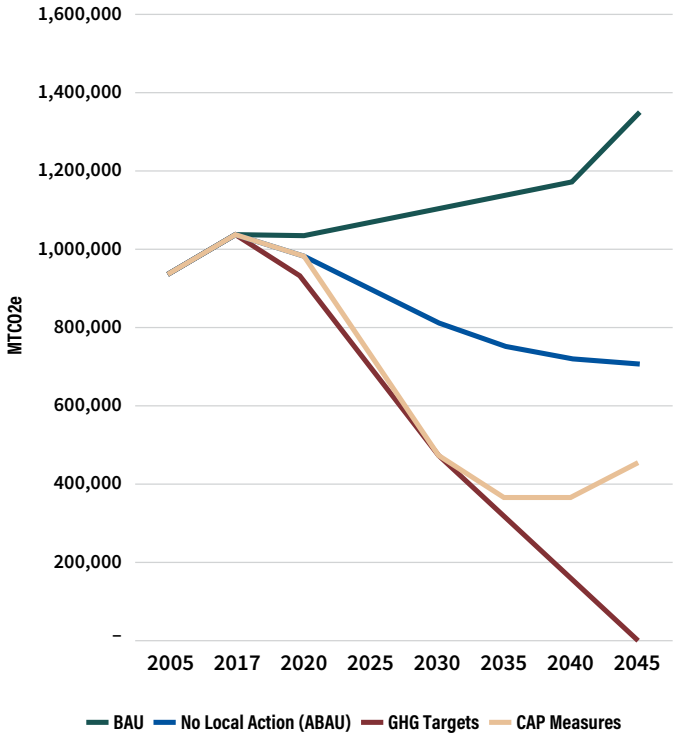
Ecosystems

Carbon sequestration is the long-term removal of carbon dioxide from the atmosphere into the earth's natural systems including trees, grasses, soils, and riparian areas, thereby slowing the accumulation of GHGs in the atmosphere. There are several forms of carbon sequestration, including planting trees, applying compost to open spaces, reusing tree biomass (tree chips) as mulch, and restoring and protecting natural areas. Carbon sequestration through the enhancement of natural systems provides many quality-of-life and resiliency co-benefits in addition to emissions reductions. For example, expanding the urban forest can help mitigate the urban heat island, improve air quality, provide traffic calming, and reduce energy use. Similarly, protecting open space can provide increased opportunities for outdoor recreation and promote biodiversity. Opportunities for ecosystem enhancement and sequestration are addressed by the policies under Goal 7: Open spaces designed to provide multiple climate and sustainability functions.

As illustrated in Figure 14.10 below, the City will need to proactively take local climate action to reduce and offset greenhouse gas emissions to achieve the GHG reduction targets. Implementing these measures can achieve the 2030 target and SB 32 goal of a 40% mass emissions reduction below 1990 levels. Furthermore, this analysis shows a 73% reduction of emissions is possible by 2045. State and regional policies and regulations are projected to reduce 2045 business-as-usual (BAU) emissions by 48%, while the actions within this CAP are projected to further reduce 2045 emissions by 25%. Therefore, additional action will be needed to close the gap of 369,956 MTCO2e to achieve carbon neutrality by 2045.

Figure 14.10

Percent of Palmdale Community GHG Emissions by Source in 2017

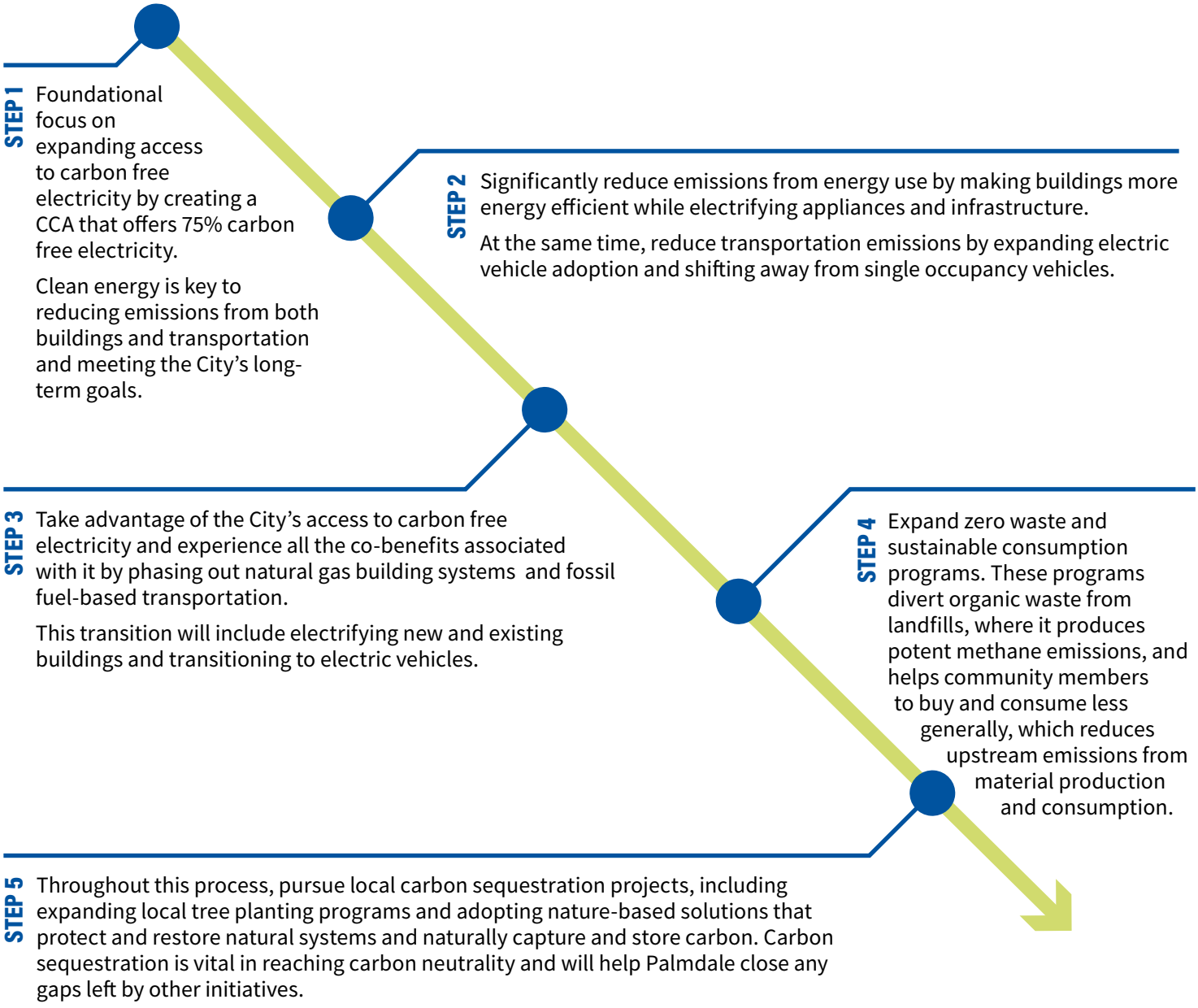


Source: R+A GHG Reduction Analysis. 2021.

Reduction Approach

Palmdale will work to achieve carbon neutrality by 2045 by building upon the progress the City has already made and adopting new emissions reduction strategies and actions. Together, these strategies and actions: (1) provide a framework for reaching carbon neutrality; (2) make Palmdale more resilient to future climate impacts; and (3) have important social and economic benefits, such as addressing historic inequities, creating green jobs, increasing community green spaces, and improving public health. Figure 14.11 outlines the City's five step approach to reducing community GHG emissions.

Figure 14.11 Approach To Reduce GHG Emissions



Desired Outcomes, Indicators, and Targets

The following desired outcomes and metrics were identified to help the City of Palmdale in tracking progress toward creating a more sustainable community. This process follows the City of Palmdale's General Plan Vision and Guiding Principles document which was informed by the General Plan Advisory Committee (GPAC), the Planning Commission, and City Council.

Top Key Outcomes

OUTCOME: Palmdale is a regional leader by integrating sustainability and climate action into all decisions and inspiring other communities to eliminate greenhouse gas emissions.

KPI's:
- Reduction in energy and water use
- Reduction in vehicle miles traveled
- Increased diversion of waste from landfills

TARGET:
- **Carbon neutrality by 2045 (EO B-55-18)**

OUTCOME: New and existing buildings are decarbonized and able to operate on carbon-free energy.

KPI's:
- Number of buildings retrofit per year to be all-electric
- Renewable or carbon-free content of electricity
- Total kilowatts or megawatts of distributed renewables installed
- Energy ~~U~~use ~~i~~ntensity for existing buildings

TARGETS:
- **100% of new and 50% of existing buildings are all-electric and energy efficient**
- **Energy supply is 100% renewable (SB 100)**

OUTCOME: Secure water supply and efficient use through aquifer management and increased water reuse.

KPI's:
- Compliance with water quality regulations for potable water and stormwater quality
- Water use per capita (gpcd)
- Number of permitted greywater reuse systems

TARGET:
- **Water use is 85 gallons or less per person per day**

OUTCOME: Reduced emissions from transportation, increase access and safety for walking, biking, and transit use.

KPI's:
- Number of pedestrian and cyclist accidents and fatalities
- Vehicle miles travel~~l~~ed
- Mode share
- Number of EV chargers installed
- Electric vehicle ownership

TARGETS:
- **Zero pedestrian and cyclist fatalities**
- **Increase in walking and biking mode share**

KPI = Key Performance Indicator

OUTCOME: Ecosystems and other existing or future natural open spaces are enhanced through restoration, redesign, and ongoing maintenance practices.

KPI's:
- Total area of parks
- Park space per capita
- Percentage of people within a 20-min ~~a ½ mile walk~~ to a park or open space

TARGET:
- **80% of residents have nearby access to natural or open space**

OUTCOME: The most vulnerable residents are protected from climate and hazard impacts.

KPI's:
- Number of resilience hubs
- Number of low-income and senior housing units receiving weatherization and energy efficiency upgrades
- Number of heat-related deaths, hospitalizations, and emergency room visits

TARGETS:
- **A community resilience hub at each Village Center and Multiuse Nodes**
- **50% of existing low-income dwelling units receive weatherization/upgrades**
- **15% reduction in heat-related hospitalization and emergency room visits**

OUTCOME: Impacts of urban heat island are reduced and mitigated.

KPI's:
- Total area of green space and reflective roofs

TARGETS:
- **30% of heat trapping surfaces converted to green space or reflective materials**
- **40% tree canopy cover**



CV Link Trail in Cathedral City, California

KPI = Key Performance Indicator

Goals and Policies

The following section includes goals and policies for the Sustainability, Climate, and Resilience Element. Goals and policies are followed by implementation actions. Related Sustainability, Climate, and Resilience policies are woven throughout the General Plan, including in the Land Use and Community Design, Circulation and Mobility, Public Facilities, Services, and Infrastructure, Equitable and Healthy Communities, and Safety Elements, among others.

MAINTAIN AND IMPLEMENT CAP

Goal SCR-1

Achieve a carbon neutral community by 2045 (EO B-55-18).

SCR-1.1 CAP Maintenance. Maintain and regularly update a Climate Action Plan to reduce GHGs generated within the City.

SCR-1.2 GHG Inventory. Conduct community GHG inventories every 3-5 years to track progress toward achieving the City's GHG reduction goal.

SCR-1.3 Funding Sources. Seek funding to support implementation of GHG reduction projects for the City, residents, and businesses.

SCR-1.4 Community Engagement. Develop and implement comprehensive community engagement including educational outreach, issue-specific awareness campaigns, and technical assistance.

CLEAN ENERGY

Goal SCR-2

Utilize a fossil fuel free energy system (SB 100).

SCR-2.1 Carbon Free Energy. Direct EPIC to provide 75% carbon-free or renewable electricity to residents and businesses by 2030, achieving 100% carbon-free electricity by 2045.

SCR-2.2 Community Solar. Explore the development of community solar projects and microgrids.

SCR-2.3 Battery Permitting. Establish a streamlined approval process for battery storage systems.

BUILDINGS

Goal SCR-3

Green and decarbonized buildings for new construction and major renovations.

SCR-3.1 Energy Efficient New Construction. Integrate CALGreen Tier 1 and Tier 2 green building and energy efficiency standards into new construction and major remodels.

SCR-3.2 All-Electric Reach Code. Consider adopting a local reach code to encourage new buildings to be all-electric.

SCR-3.3 Solar and Storage. Require installation of photovoltaic panels and battery storage on all residential new construction and nonresidential new construction over 5,000 sq. ft.

SCR-3.4 Energy Efficient Existing Buildings. Establish an energy and water efficiency upgrade program for existing buildings, focusing resources on the most underserved populations.

SCR-3.4 Benchmarking Energy and Water Use. Register municipal buildings with Energy Star Portfolio Manager and report energy and water use (AB 802).

TRANSPORTATION

Goal SCR-4

Reduced greenhouse gas emissions from transportation (SB 379, EO N-79-20).

SCR-4.1 Bike Facilities. Promote bicycle use with new private development projects through requirements for bicycle parking, lockers and showers, bike share facilities, and when feasible, connections to City bike lanes.

SCR-4.2 Public Transit. Expand the public transit system, increase frequency of service, and provide shade at transit stops.

SCR-4.3 Public EV Chargers. Install EV chargers at suitable public facilities, including any parking structures, the future multi-modal High Speed Rail station, and community parks.

SCR-4.4 EV Reach Code. Adopt EV requirements beyond CALGreen in both number of chargers and charger capacity.

SCR-4.5 ZEV Purchasing. When purchasing City vehicles give preference to fuel efficient vehicles, including the use of zero emission vehicles.

SCR-4.6 Clean Fuels. Require use of clean fuels for City construction and maintenance vehicles and lawn/garden equipment.

SCR-4.7 Pedestrian and Cyclist Safety. Promote bicycle and pedestrian modes of travel by promoting pedestrian and cyclist safety.

SOLID WASTE

Goal SCR-5

Increased resource capture and reduced waste sent to landfills (SB 1383).

SCR-5.1 Zero Waste Plan. Create a zero-waste plan that institutes cost-effective diversion programs for municipal operations and the community.

SCR-5.2 Organic Waste Diversion. Establish programs to comply with State-established requirements for organics and food waste diversion.

SCR-5.3 Waste Diversion Education and Assistance. Develop an education and technical assistance program for residents and businesses on composting, recycling, and reuse of materials.

SCR-5.4 Nonresidential Collection Efficiency. Continue to review waste franchise agreements to establish rate structures that encourage less frequent nonresidential collection.

WATER AND WASTEWATER

Goal SCR-6

Safe and secure water supply.

SCR-6.1 Recycled Water. Increase municipal reuse of local recycled water. Support the efforts of the Palmdale Water District and the Joint Powers Authority (JPA) Palmdale Recycled Water Authority (PRWA) in its proof of concept and implementation of aquifer augmentation through ~~A~~advanced ~~T~~treatment of ~~R~~recycled water.

SCR-6.2 Water Efficiency Standards. Establish water efficiency standards that are more stringent than CALGreen and model water efficient landscape ordinance (MWELO).

SCR-6.3 Low-Water Use Plant List. Implement the City's landscape plant list and use of low-water plants in new or renovated landscaped areas.

SCR-6.4 Rainwater Capture. Encourage rainwater capture and use of cisterns for outdoor watering purposes.

SCR-6.5 Greywater Permitting. Establish a streamlined permitting process for greywater systems.

ECOSYSTEMS

Goal SCR-7

Open spaces designed to provide multiple climate and sustainability functions.

SCR-7.1 Tree Planting in Public Spaces. Plant additional trees on streets, parks, and other public spaces to sequester carbon, provide shade, contribute to stormwater management, provide habitat, and enhance community character.

SCR-7.2 Preferred Tree and Plant List. Establish a preferred tree list of species appropriate for the urban forest which are more resilient to drought, heat, and pests. Prioritize native plants and pollinator-friendly plants.

SCR-7.3 Tree Planting on Private Property. Adopt a tree preservation ordinance to encourage tree preservation and additional planting on private property as appropriate.

SCR-7.4 Green Infrastructure. Integrate green infrastructure stormwater management practices into the design of open spaces and public rights-of-way.

SCR-7.5 Cool Pavement. Incorporate cool pavement practices into street maintenance activities to reduce the urban heat island effect.

COMMUNITY RESILIENCE AND AWARENESS

Goal SCR-8

Proactively advance community resilience.

SCR-8.1 Local Hazard Mitigation Plan. Build on the existing LHMP and acknowledge the LHMP in the General Plan per AB 2140.

SCR-8.2 Areas of Physical and Social Vulnerability. Focus investments on areas of high vulnerability, exposure, and sensitivity for both physical infrastructure and social communities.

SCR-8.3 Public Safety Power Shutoffs. Work with Southern California Edison (SCE) to minimize the impacts of Public Safety Power Shutoffs.

SCR-8.4 Resilience Features. Add resilience features to community facilities to provide basic services during disruptive events or disasters.

SCR-8.5 Pre-Disaster Recovery Plan. Create a pre-disaster recovery plan that sets up post-disaster policies and programs indicating which areas will be replanned and when, and that shows where and how rebuilding will occur.

SCR-8.6 Disaster Rebuilding and Recovery. Develop policies to ensure that housing units damaged during a natural disaster are repaired or replaced in ways that advance the policies, objectives, and actions of the General Plan.

SCR-8.7 Heat and wildfire mitigation. Develop policies and building standards that reduce the urban heat island effect and the risk and damage of wildfire such as:

- Encourage the use of high-albedo roofs and paving
- Incorporate more robust temperature and air quality controls in facility retrofits and designs
- Provide consolidated public messaging about wildfire preparation, evacuation, and communications avenues in multiple languages
- Encourage fire-wise landscaping including alternatives to wood fencing
- Require ember-resistant attic ventilation openings
- Encourage the installation of air filters to protect against indoor air quality impacts during wildfire smoke exposure events
- Identify and modify vulnerable infrastructure in high wildfire risk areas, such as replacing wooden utility poles or undergrounding utility lines

Goal SCR-9

Awareness of Palmdale's environmental past and present.

SCR-9.1 Integration of Sustainability. Integrate environmental and sustainability issues into City decision-making processes, operations, community activities, and criteria in budgeting and prioritization efforts through a "triple bottom line" approach.

SCR-9.2 Acknowledge Indigenous History. Acknowledge and celebrate the Indigenous history and tradition of the area now known as Palmdale.

SCR-9.3 Raise Awareness about Natural Systems. Provide interpretive displays and other information on natural systems at parks, nature centers, and trailheads.

Implementation Actions

The table below identifies programs, policy updates, planning efforts, coordination efforts, and other actions that will help implement the General Plan's sustainability, climate, and resilience vision and policies. Programs are consistent with this chapter's goals and policies.

The table provides a description of each Implementation Action and lists the correlating policies. Each action also identifies a timeframe for implementation with Short-term representing a 1–3-year timeframe, Medium-term is 4-7 years, Long-term is 8+ years and Ongoing represents an action that the City should continue. Additionally, the table includes the City department that should function as the lead for implementing the actions.



Correlating Goals	Description	Timeframe	Responsible Department
SCR-1	**Conduct community GHG inventory and update CAP.** Track GHG reductions by inventorying community emissions and update CAP to address challenges.	Short-term / Mid-term	Economic and Community Development and Public Works
SCR-1	**Conduct Outreach.** Develop and implement comprehensive community engagement including educational outreach, issue-specific awareness campaigns (i.e., wildfire prevention, water, and energy efficiency, building and vehicle electrification, etc.), and celebrate Palmdale's natural and cultural history.	Mid-term	Economic and Community Development and Public Works
SCR-2	**Provide 75% carbon-free electricity.** Prepare for EPIC to provide 75% carbon-free electricity by 2030 and 100% carbon-free electricity by 2045 through the Integrated Resource Plan (IRP) process.	Short-term / Long-term	Finance and City Manager's Office
SCR-2	**Streamline battery permitting process.** Establish a streamlined approval process for battery storage systems.	Mid-term	Economic and Community Development

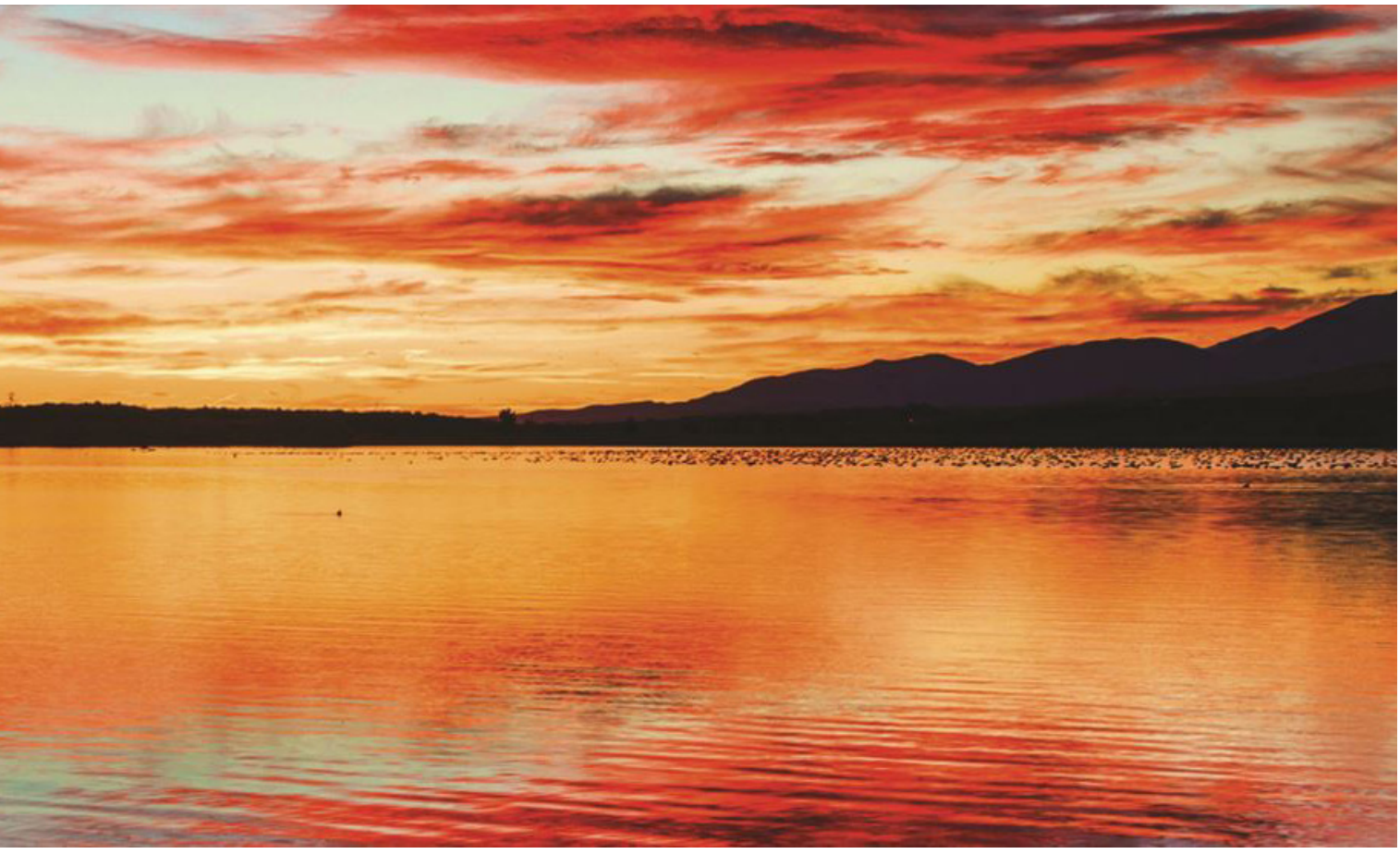
Correlating Goals	Description	Timeframe	Responsible Department
SCR-3, SCR-4	**Adopt Reach Codes.** Amendment to the Building Code that incentivizes all-electric new construction, increased energy efficiency, electric-ready buildings, enhanced solar and battery requirements, and installation of EV chargers or EV-Ready infrastructure.		Public Works and Economic and Community Development
SCR-4	**Install public EV chargers.** Install EV chargers at suitable public facilities, including Downtown parking structures and community parks and the future High-speed rail station.		Public Works
SCR-4	**Adopt City purchasing policies.** Adopt city vehicle purchasing policy giving preference to fuel efficient vehicles and zero emission vehicles. Require use of clean fuels for City construction and maintenance vehicles and lawn/garden equipment.		Finance and Public Works
SCR-5	**Zero Waste.** Explore ways to reduce waste generation and divert recyclables and organic waste from landfills to move toward zero waste.		Public Works
SCR-5	**Establish compliance pathways to comply with SB 1383.** Establish programs to comply with requirements for organics and food waste diversion.		Public Works
SCR-5	**Develop and implement community outreach.** Develop an education and technical assistance program for residents and businesses on composting, recycling, and reuse of materials.		Public Works and Communications
SCR-3, SCR-4, SCR-6, SCR-7, SCR-8	**Implement Code/Guideline Modifications.** Multiple code modifications to Building Code and Zoning Ordinance to address expanded application of the MWELO, stricter plumbing fixture standards, tree planting, battery storage, and microgrids		Public Works, Finance, and Economic and Community Development
SCR-6	**Streamline greywater permitting process.** Establish a streamlined permitting process for greywater systems.		Economic and Community Development

Correlating Goals	Description	Timeframe	Responsible Department
SCR-8	**Adopt City policies and plans to improve emergency response** ~~including.~~ Develop resilient infrastructure and supply networks, including back up sources of water, power, and communications; increasing membership in CERT; and creating evacuation procedures for vulnerable populations in partnership with CBOs and facilities that serve identified populations.		Economic and Community Development, Public Works, and Neighborhood Services
SCR-8	**Prioritize investments in vulnerable populations.** Assess climate hazards/resilience benefits in capital improvement planning and building design. Use projected climate change impacts rather than historical averages.		Economic and Community Development, Public Works, and Neighborhood Services
SCR-8	**Increase resilience to power outages from public safety or weather-related events.** ~~by~~ Rrequir~~eing~~ battery backup systems in new residential and multi-family developments whenever cost is not prohibitive.		Economic and Community Development and Public Works



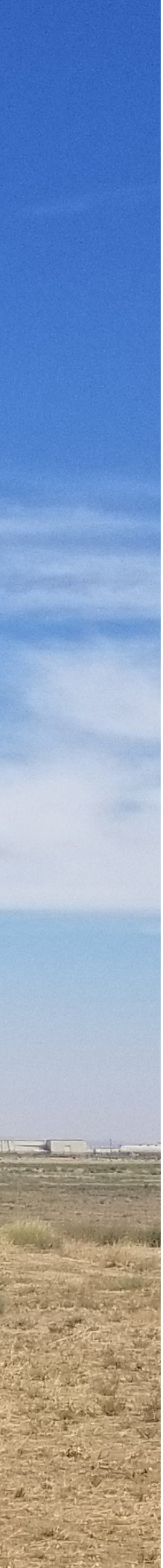
Lake Palmdale at Sunset

Correlating Goals	Description	Timeframe	Responsible Department
SCR-8	**Add resilience features to community facilities.** Identify and implement modifications to existing cooling centers to function as resilience hubs, clean air spaces, and community space during disaster events		Public Works



Open Space in Palmdale





Chapter 15

Air Quality

The Air Quality Element establishes goals and policies related to protecting, maintaining, and enhancing air quality within Palmdale.

Statutory Requirements

The federal and state government each regulate air quality by monitoring and limiting emission of airborne pollutants. Both levels of government have established ambient air quality standards for outdoor concentrations of various pollutants that are used to determine the adequacy of a community's air environment. Per California Government Code Section 65302, objectives and policies centered around air quality are geared toward reducing the unique or compounded health risks in disadvantaged communities by means that include, but are not limited to, the reduction of pollution exposure, including the improvement of air quality, and the promotion of public facilities, food access, safe and sanitary homes, and physical activity.

Federal Clean Air Act

The Federal Clean Air Act (FCAA) is the comprehensive federal law that regulates air emissions at the national level. The goal of the Act is to protect public health by ensuring that air quality across the United States meets the recommended guidance to protect human wellbeing. The law grants the United States Environmental Protection Agency (USEPA) the authority to establish National Ambient Air Quality Standards (NAAQS). Through the FCAA, the USEPA requires states to develop state implement plans (SIPs) that outline strategies to meet the established national standards. Federal and state standards have been established for ozone, CO, NO2, SO2, PM10, PM2.5, and Pb. The national and state ambient air quality standards have been set at levels whose concentrations could be generally harmful to human health and welfare, and to protect the most sensitive persons from illness or discomfort with a margin of safety.

California Air Resource Board

The California Air Resource Board (CARB) is a regulatory body that establishes standards and procedures for adequate air quality across the state. The state air quality standards regulated by CARB are known as the California Ambient Air Quality Standards (CAAQS). Local control in air quality management is provided by CARB through multi-county and county-level Air Pollution Control Districts (APCD). CARB establishes statewide air quality standards and is responsible for the control of mobile emission sources, while the local APCDs are responsible for enforcing standards and regulating stationary sources. Palmdale is under the jurisdiction of the Antelope Valley Air Quality Management District (AVAQMD), with monitoring contracted to the Mojave Desert Air Quality Management District. The California Air Resource Board (CARB) is a regulatory body that establishes standards and procedures for adequate air quality across the state. The state air quality standards regulated by CARB are known as the California Ambient Air Quality Standards (CAAQS). Local control in air quality management is provided by CARB through multi-county and county-level Air Pollution Control Districts (APCD). CARB establishes statewide air quality standards and is responsible for the control of mobile emission sources, while the local APCDs are responsible for enforcing standards and regulating stationary sources. Palmdale is under the jurisdiction of the Antelope Valley Air Quality Management District (AVAQMD), with monitoring contracted to the Mojave Desert Air Quality Management District.

Relevant Plans & Documents

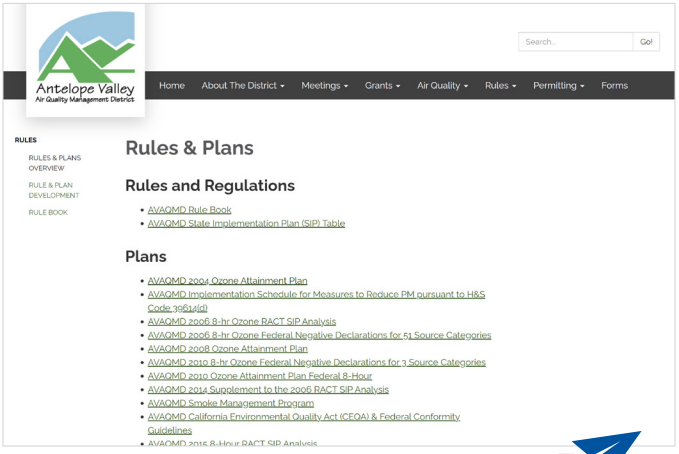
AVAQMD Air Quality Management Plan

Under state law, the AVAQMD is required to prepare a plan for air quality improvement for pollutants for which the district is in non-compliance. The AVAQMD updates the plan every three years. Each iteration is an update of the previous plan and has a 20-year horizon. AVAQMD released the final 2016 Air Quality Management Plan (AQMP) in March 2017. It provides a comprehensive and integrated plan primarily focused on addressing ozone standards. The plan is a regional and multi-agency effort involving AVAQMD, CARB, the Southern California Association of Governments (SCAG), and the USEPA.

AVAQMD Attainment Planning Documents

The AVAQMD has several additional planning documents that are prepared to facilitate regional compliance with air quality standards. In the Los Angeles County portion of the Mojave Desert Air Basin (MDAB), the AVAQMD is required to prepare a plan for improvement for the air pollutants for which the MDAB is in non-attainment. The AVAQMD has developed the following federal and State attainment planning documents:

- 8-hour Reasonably Available Control Technology State Implementation Plan (SIP) (2015)
- 8-hour Ozone Standards State Implementation Plan: Coachella Valley and Western Mojave Desert 8-hour Ozone Nonattainment Areas (2014)
- 2008 Ozone Early Progress Plans
- 2007 Mojave Desert Ozone Attainment Plan
- 2004 Antelope Valley Ozone Attainment Plan



AVAQMD Attainment Planning Documents

Context

Climate and Topography

As noted above, Palmdale is located in the MDAB, which is under the jurisdiction of the AVAQMD. The AVAQMD is the local air quality management agency responsible for monitoring the local air pollutant levels to ensure that state and federal air quality standards are met. The MDAB is characterized by mountain ranges and valleys, with frequent prevailing winds originating from the coastal and central regions.

Palmdale is located in northern Los Angeles County within Antelope Valley. Antelope Valley is located on the western side of the Mojave Desert which stretches approximately 3,000 square miles. The Antelope Valley is separated from the San Joaquin Valley on the northwest by the Tehachapi Mountains. It is also divided by the San Gabriel Mountains on the south and southwest. Isolated buttes distinguish the north and east boundaries of the Antelope Valley. Palmdale is dominated by the region's Pacific high-pressure system, which contributes to the area's hot, dry summers, and relatively mild winters.



Aerial View of Palmdale

As a result of its location and extreme heat of the Mojave Desert, Palmdale's air quality is greatly impacted by transport air pollution which is sourced from the poor air quality areas of the Los Angeles Basin and San Joaquin Valley. In Southern California, pollutants are transported from upwind areas to the inland areas, including Palmdale. The pollutant transport pattern degrades the local air quality within the City of Palmdale and the surrounding jurisdictions.

Air Pollutants of Primary Concern

The United States EPA and the CARB have established ambient air quality standards for certain "criteria" pollutants. Criteria pollutants are those pollutants in which the relative atmospheric concentrations are indicators of overall air quality. The primary criterion pollutants for which EPA and CARB standards exist include ozone (O3), carbon monoxide (CO), suspended particulates (PM10), fine particulate matter (PM2.5), lead (Pb) and sulfur dioxide (SO2). Ambient criteria air pollutant concentrations are affected by the rates and distributions of corresponding air pollutant emissions, as well as by the climate and topographic influences discussed above. The primary determinant of concentrations of non-reactive pollutants, such as carbon monoxide (CO) and suspended particulate matter, is proximity to major sources. Ambient CO levels usually closely follow the spatial and temporal distributions of vehicular traffic. The primary pollutants of concern includes ozone, carbon monoxide, nitrogen dioxide, suspended particles, lead, Toxic Air Contaminants (TAC), and sulfur. See the Air Quality section in the Existing Conditions Report for a description of each pollutant of concern.



Retired Boeing 747

Existing Ambient Air Quality

As mentioned above, the USEPA and CARB have established ambient air quality standards for major pollutants, including O3, CO, NO2, SO2, Pb, PM10, and PM2.5. Standards have been set at levels intended to be protective of public health. California standards are more restrictive than federal standards for each of these pollutants except for lead and the eight-hour average for CO.

Attainment Status

Local air districts and CARB monitor ambient air quality to ensure that air quality standards are met and develop strategies to meet the standards when they are not met. As part of this effort, the local air district must sample local air quality via regional monitoring stations. These air quality monitoring stations measure pollutant ground-level concentrations at multiple locations. Depending on whether the state and federal standards are met, the local air basin is classified as in "attainment" or "non-attainment." Some areas are unclassified, which means no monitoring data are available, but the area is considered to be in attainment.

Table 15.1 summarizes the California Ambient Air Quality Standards (CAAQS) and the National Ambient Air Quality Standards (NAAQS) for each criteria pollutant as well as the attainment status of the MDAB. As shown in the table, the MDAB is in non-attainment for the State and Federal standards for ozone. Table 15.1 also shows how the reported local levels for Palmdale in terms of ozone, PM10, PM2.5and nitrogen dioxide are in line with State and National standards.

Table 15.1 Ambient Air Quality Measurements and Basin Attainment Status

Pollutant	Averaging Time	Local Measurements (2020)	California Standard (CAAQS)	MDAB Attainment Status for California Standard	Federal Standard (NAAQS)	MDAB Attainment Status for Federal Standard
Ozone	1-hour 8-hour	0.099 ppm 0.084 ppm	0.09 ppm 0.07 ppm	Non-Attainment	n/a 0.075 ppm	Non-Attainment
Carbon Monoxide	1-hour 8-hour	** **	20.0 ppm 9.0 ppm	Attainment	35.0 ppm 9.0 ppm	Attainment/ Unclassified
Nitrogen Dioxide	1-hour Annual	0.052 **	0.18 ppm 0.03 ppm	Attainment/ Unclassified	100 ppb 0.053 ppm	Attainment/ Unclassified
Sulfur Dioxide	Annual 24-hour 1-hour	** ** **	** 0.04 ppm 0.25 ppm	Attainment	0.03 ppm 0.14 ppm 75 ppb	Attainment/ Unclassified
PM_{10}	Annual 24-hour	** 192.3 µg/m³	20 µg/m³ 50 µg/m³	Non-Attainment	n/a 150 µg/m³	Non-Attainment
$PM_{2.5}$	Annual 24-hour	** 74.7 µg/m³	12 µg/m³ n/a	Non-Attainment	150 µg/m³ n/a	Attainment/ Unclassified
Lead	30-Day Quarter 3- Month avg	** ** **	1.5 µg/m³ ** **	Attainment	n/a n/a 1.5 µg/m³	Attainment/ Unclassified

Source: California Air Resource Board (CARB 2022); Mojave Desert Air Quality Management District (MDAQMD 2022).
Note: Ambient air pollutant concentrations in Palmdale are monitored in the City of Lancaster. Local monitoring occurs on an annual basis. Attainment status determination is based on historical monitoring and undergoes approval by CARB and EPA after continuous attainment is shown.

ppm= parts per million
µg/m³ = micrograms per cubic meter
ppb = parts per billion
n/a = not applicable
*** = Data not available, not reported by local monitoring stations*

Source Categories

CARB provides emissions estimates from various sources, including stationary, areawide, and mobile sources. Areawide emissions tend to be released from smaller operations and therefore are commonly found and not location specific. Examples of areawide emissions include the use of consumer products, fireplaces, road dust, and farming operations. Stationary source emissions are attributed to large operations emitted at one concentrated location. Examples of stationary sources include pollutants generated by industrial and manufacturing activities. Mobile source emissions are those emissions from on- and off-road motor vehicles that generate tailpipe and evaporative emissions. Examples of mobile sources include cars, buses, trucks, ships, trains, aircraft, and various other vehicles. According to the statewide emissions inventory and estimates, mobile sources are the largest contributor to annual CO and NOx emissions in California.

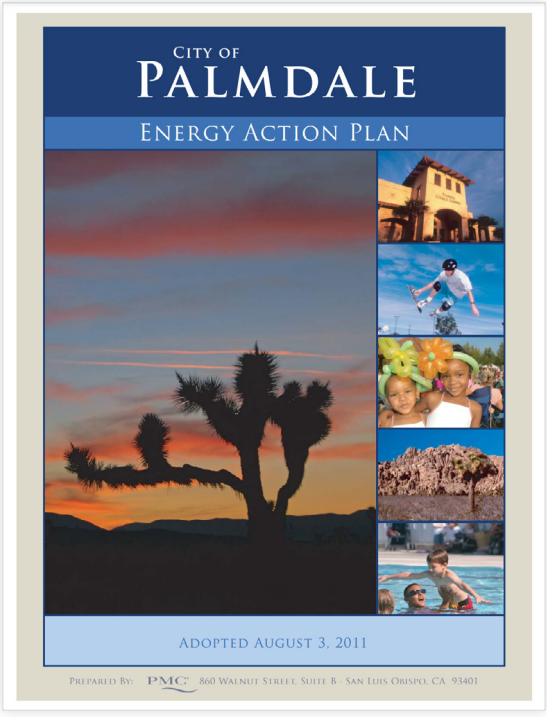
As mentioned previously, the AVAQMD is considered to be in nonattainment for Ozone and PM10. Most ozone in the atmosphere is formed as a result of the interaction of ultraviolet light, reactive organic gases (ROG), and oxides of nitrogen (NOX). NOX emissions in California are primarily sourced from mobile sources, especially vehicles. The primary roadways in the Antelope Valley are SR-14 and State Route 138. Both arterials carry a substantial amount of daily commute traffic from the region into the Greater Los Angeles Basin. In addition, Air Force Plant 42 has historically been a source of ozone emissions, a result of aircraft operations and aerospace development and manufacturing. Particulate matter exposure has been associated with distance of residences to freeways. Roadway dust is a primary source of PM10 for communities across California.

Greenhouse Gas Emissions

The Sustainability, Climate and Resilience Element focuses on the reduction of greenhouse gas (GHG) emissions in the community. The City of Palmdale developed an Energy Action Plan in 2011. The Plan utilizes a GHG emissions inventory for the year 2005 as a baseline for the developed reduction targets. In 2017, the city emitted approximately 1,042,284 metric tons of carbon dioxide equivalent (MTCO2e) within City limits. Transportation related emissions are the largest contributor to community emissions, accounting for 59%, followed by residential energy use, accounting for 19%, and nonresidential energy use, accounting for 16% of emissions.[69]

Palmdale has set the following GHG reduction targets consistent with State policy:

- 40% below 1990 levels by 2030 (SB 32)
- Carbon neutrality by 2045 (EO B-55-18)



69. Nonresidential energy use data for 2017 is not fully complete because of privacy and aggregation laws that prevent the utilities from providing information for certain customer types. Nonresidential gas and electricity use is likely higher, which would increase total greenhouse gas emissions.

Desired Outcomes, Indicators, and Targets

The following desired outcomes and metrics were identified to help the City of Palmdale track progress toward maintaining and enhancing air quality. This process follows the City of Palmdale's General Plan Vision and Guiding Principles document which was informed by the General Plan Advisory Committee (GPAC), the Planning Commission and City Council.

Top Key Outcomes

OUTCOME: Meet state and federal standards for all criteria air pollutants[70].

KPI:
- Regional air quality

TARGET:
- **Achieve state and federal air quality standards for all criteria pollutants.**

OUTCOME: Reduce VMT per capita, VMT per employee, and improve air quality through land use decisions that reduce travel distances and increase use of alternative transportation modes.

KPI:
- VMT

TARGET:
- **Achieve VMT per capita below the current Citywide per capita average for new development in accordance with the Office of Planning Research (OPR) recommendation.**

KPI:
- Transit ridership

TARGET:
- **Increased transit ridership.**



Antelope Valley[71] Transit Services in Palmdale

KPI = Key Performance Indicator

70. Note that the City only constitutes a portion of the local air basin so the City lacks complete control over this outcome.
71. "BYD Articulated Bus" by Nate Pitkin, licensed under CC BY-SA 4.0

Goals and Policies

The following section includes goals and policies for the Air Quality Element, followed by implementation actions. Some air quality policies are woven throughout the General Plan, including in the Circulation and Mobility, Equitable and Healthy Communities, Sustainability, Climate Action and Resilience Elements, among others.

CIRCULATION

Goal AQ-1

Minimize local air pollution caused by motor vehicles.

AQ 1-1 Reduced work-related trips. Reduce the number and length of work-related trips through such means as providing a balance of jobs and housing in the community, promoting alternate work schedules, telecommuting, teleconferencing, company-sponsored ride-share and alternative fuel vehicle programs, use of commuter trains and other alternative modes of transportation to the workplace, creation of additional park and ride facilities, and improving the fiber optic network and connectivity.

AQ 1-2 Reduced Non-Work Trips. Reduce motor vehicle non-work trips through such means as location of residences in proximity to shopping and recreation/entertainment destinations, transit system improvements, and promoting merchant transportation incentives, and distance learning.

AQ 1-3 Improve Traffic Flow. Reduce vehicle emissions by maintaining and improving traffic flow per the Mobility Element.

AQ 1-4 High Occupancy Vehicle Lanes. Coordinate with Caltrans to promote high occupancy vehicle lanes on SR-14.

AQ 1-5 Reduced Tailpipe Emissions. As technology allows, reduce tailpipe emissions from City vehicles by replacing them with alternative fuel vehicles and encourage reduction of emissions from private vehicles through such means as reducing parking requirements and providing preferential parking for alternative fuel vehicles and bicycles.

AQ 1-6 Airport Emissions Control. To the extent practicable, reduce emissions from the future Palmdale Regional Airport by purchasing renewable energy, installing airport renewable energy systems, reducing energy consumption, monitoring the efficiency of heating, ventilation, and colling systems, and purchasing low or zero emission vehicles and ground support equipment.

AQ 1-7 Expand Dial-A-Ride. Expand services of the existing dial-a-ride program, resulting in reduced need for automobiles and parking by seniors and those with disabilities.

AQ 1-8 Environmentally Review New Development. Use the environmental review process for new development applications to assess and, as necessary, mitigate the impacts of new development related to increased vehicle miles traveled.

AQ 1-9 Encourage transit and bike use. Provide incentives to residents who bike or use public transportation such as free or discounted public transit or employer-provided subsidies or reimbursements for residents willing to bike or use public transit.

AQ 1-10 Truck routes. Restrict freight to certain routes and times by adopting rules and regulations that prohibit the use of trucks in certain areas within Palmdale.

PARTICULATE MANAGEMENT

Goal AQ-2

Minimize particulates less than 10 microns in size (PM10) and minimizes activities that generate dust.

AQ 2-1 Vegetative Stabilization. Reduce roadway dust by requiring paving or vegetative stabilization of unpaved roads and parking lots.

AQ 2-2 Construction Site Requirements. Require measures at construction sites to prevent deposition of soil onto public right-of-way.

AQ 2-3 Natural Contours. Encourage developers to maintain natural contours to the greatest degree possible, to eliminate the need for extensive land clearing, blasting, ground excavation, grading and cut and fill operations.

AQ 2-4 Erosion and Dust Control Measures. Require erosion and dust control measures for new construction, including covering soil with straw mats or use of chemical soil and dust binders during site grading, followed by hydroseeding and watering disturbed construction areas as soon as possible after grading to prevent fugitive dust.

AIR POLLUTION REDUCTION

Goal AQ-3

Reduction and/or elimination of unnecessary sources of air pollution.

AQ 3-1 AVAQMD and Proven Technologies. Promote the AVAQMD program to encourage local entities to install public electric vehicle charging stations to offer incentivize residents to purchase electric vehicles (e.g., vehicle buy-back program), and the Carl Moyer program, which aims to improve the local air quality by funding local, cost-effective projects to upgrade heavy-duty equipment (Gross Vehicle Weight Rating greater than 14,000 lbs.) using proven technologies.

AQ 3-2 Eliminate Emissions. Promote the AVAQMD's efforts to eliminate emissions from such sources as excessive car dealership cold starts, excessive curb idling, emissions from advertising vehicles, and emissions from leaf blowers, among others, through assisting with implementation and enforcement of AVAQMD programs and rules.

AQ 3-3 Complete Streets. Design a more effective street system by emphasizing complete streets which accommodate all modes of transportation.

AQ 3-4 Reduce Reactive Organic Gas. Reduce reactive organic gas (ROG) and particulate emissions from building materials and construction methods, by promoting the use of nonsolvent-based, high-solid, or water-based coatings, and requiring compliance with all pertinent AVAQMD rules.

AQ 3-5 Minimize Emissions. Minimize emissions of toxic air contaminants that contribute to climate change and ozone depletion, and that create potential health risks for residents, workers, and visitors.

AQ 3-6 Community Awareness. Promote community awareness of the effects of climate change and ozone depleting gases, as well as methods to minimize the creation of those gases, by preparing and distributing educational materials, and cooperating with AVAQMD in establishing regional programs.

AQ 3-7 Environmentally Review New Development Applications. Through the environmental review process for new development applications, ensure that emissions of toxic air contaminants are minimized and that any significant health effects associated with such contaminants are appropriately mitigated.

AQ 3-8 Green Technology Companies. Encourage non-polluting industry and clean green technology companies to locate in the city.

ENERGY CONSUMPTION

Goal AQ-4

Reduce air pollution caused by energy consumption.

AQ 4-1 EPIC Participation. Encourage residents and business owners to participate in Energy for Palmdale's Independent Choice (EPIC).

AQ 4-2 Energy Conservation. Encourage energy conservation from all sectors of the community by promoting and/or requiring the use of energy efficient appliances, processes, and equipment, and promoting energy audits and retrofits of existing structures.

AQ 4-3 Recycling. Require local government, Palmdale citizens, and local businesses and industries to recycle, as mandated by state law, and to otherwise recycle to the maximum extent possible in accordance with the requirements of the Palmdale Municipal Code.

AQ 4-4 Solar Energy. Require new developments to minimize obstruction of direct sunlight for solar energy systems on adjacent properties.

Implementation Actions

The table below identifies programs, planning efforts, coordination efforts, and other actions that will help implement the General Plan's Air Quality goals and policies. Programs are consistent with this chapter's goals and policies.

The table provides a description of each Implementation Action and lists the correlating policies. Each action also identifies a timeframe for implementation with Short-term representing a 1–3-year timeframe, Medium-term is 4-7 years, Long-term is 8+ years and Ongoing represents an action that the City should continue. Additionally, the table includes the City department that should function as the lead for implementing the actions.



Correlating Goal	Description	Timeframe	Responsible Department
AQ-1, AQ-2, AQ- 3, AQ-4	**Municipal Code Update:** Update the Municipal Code to require new multi-family residential buildings and other sensitive land uses in areas with high levels of localized air pollution be designed to achieve good indoor air quality through landscaping, ventilation systems, filtration systems or other measures.	\	Economic and Community Development, Public Works
AQ-1, AQ-3, AQ-4	**Air Quality in Residential Areas:** Identify locations in the city where residential uses are located in areas with high levels of air quality pollution and develop strategies to improve air quality such as tree planting and requiring use of electric powered lawn equipment.	\	Economic and Community Development
AQ-1, AQ-3, AQ-4	**Improve Interior Air Quality**: Develop a campaign to provide homeowners with information regarding strategies for improving interior air quality.	\	Economic and Community Development

This page intentionally left blank.



NASA Plane at Plant 42



Chapter 16

Noise

The Noise Element outlines the goals and policies related to the noise environment in the Palmdale community.

Statutory Requirements

The United States Federal Government and the State of California acknowledge the impact that the noise environment can have on public health and wellbeing. Per Government Code 65302, a Noise Element identifies and appraises noise problems in the community. The noise element analyzes and quantifies the projected noise level of the following sources:

- Highways and freeways,
- Primary arterials and major local streets,
- Passenger and freight online railroad operations and ground rapid transit systems,
- Commercial, general aviation, heliport, helistop and military airport operations, aircraft overflights, jet engine test stands, and all other ground facilities and maintenance functions related to airport operation,
- Local industrial plants, including, but not limited to, railroad classification yards, and,
- Other ground stationary noise sources, including, but not limited to, military installations, identified by local agencies as contributing to the community noise environment.

The following State and Federal regulations have been established to mitigate the negative externalities of excessive noise and support healthy noise environments across communities.

Federal Noise Control Act of 1972

The Federal Noise Control Act establishes a national policy to limit the negative impacts to American health and welfare because of excessive noise. The Act authorizes the establishment of Federal noise level standards for major noise sources in commerce, including motor vehicles and machinery, and directs the EPA to oversee noise research and noise control. The Act establishes local governments as the primary responsible party in addressing noise mitigation.

California Noise Insulation Standards (California Code of Regulations, Title 24)

The California Noise Insulation Standards are established in Title 24 of the California Code of regulations. The regulation establishes an interior noise limit of 45 dBA CNEL in any habitable room. To facilitate the established noise limit, Title 24 requires an acoustical analysis for any new residential building located in an area where CNEL noise levels exceed 60 dBA.

California Airport Noise Standards (California Code of Regulations, Title 21)

Title 21 of the California Code of Regulations establishes airport noise standards for airports within the state. Title 21, Section 5012 outlines the standard for the acceptable level of aircraft noise for persons living in the vicinity of airports as 65 dBA CNEL.

Federal Highway Administration Noise Standards

The Federal Highway Administration (FHWA) has established noise standards for noise sourced from highway traffic. The FHWA mandates that each state is responsible for enforcing the standards outlined by the administration. The noise standards consist of noise prediction requirements, noise analyses, noise abatement criteria, and requirements for informing local officials.

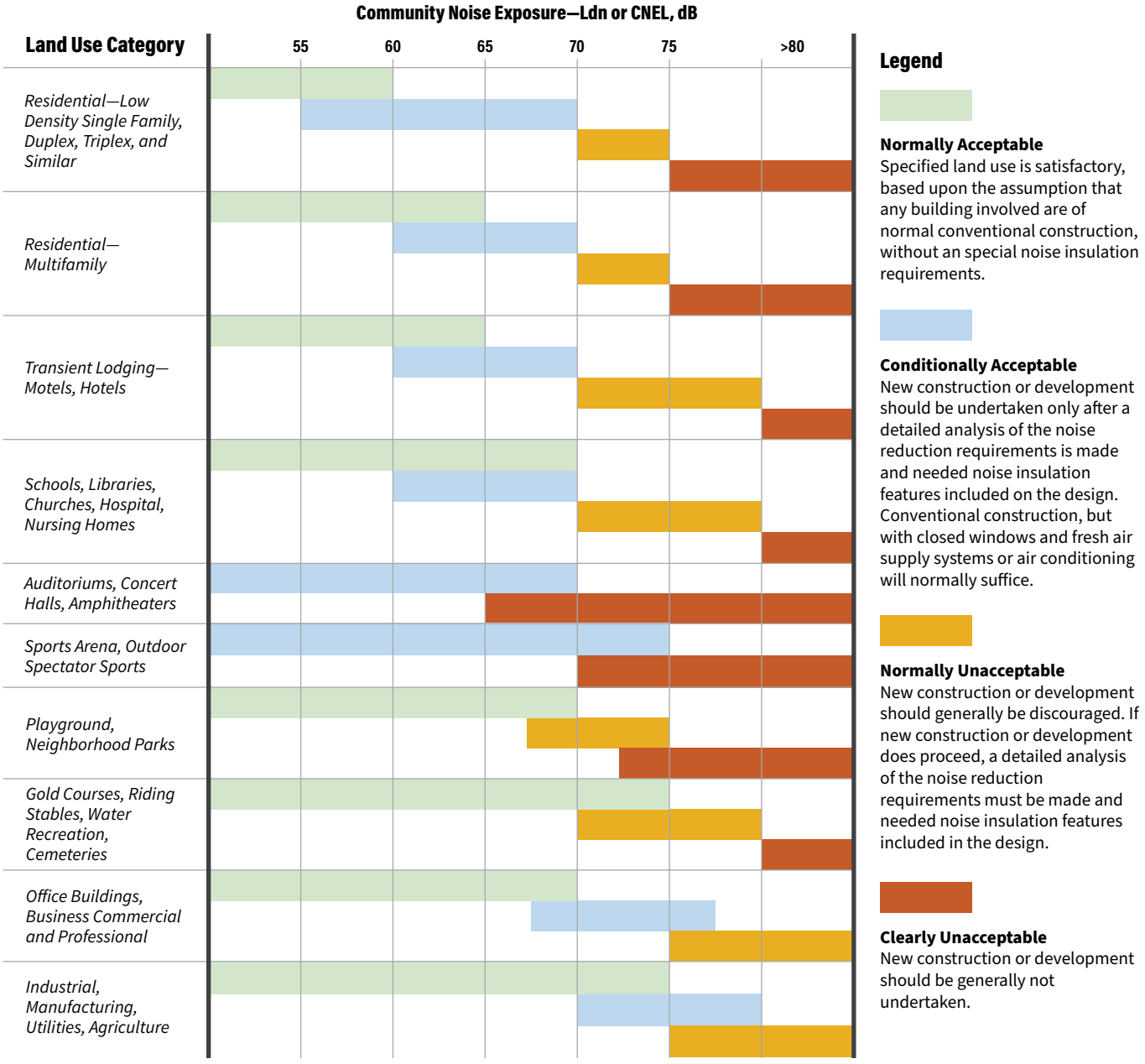
Aerial View of Palmdale

Relevant Plans & Documents

California Land Use and Noise Compatibility Guide

The State of California Office of Noise Control (ONC) has established a set of noise standards based on land use compatibility. These standards are shown in Figure 16.1 below. The noise standards are intended to provide guidelines for the development of municipal noise elements. These basic guidelines may be tailored to reflect the existing noise and land use characteristics of a particular community.

Figure 16.1 California Noise Land Use Compatibility Standards



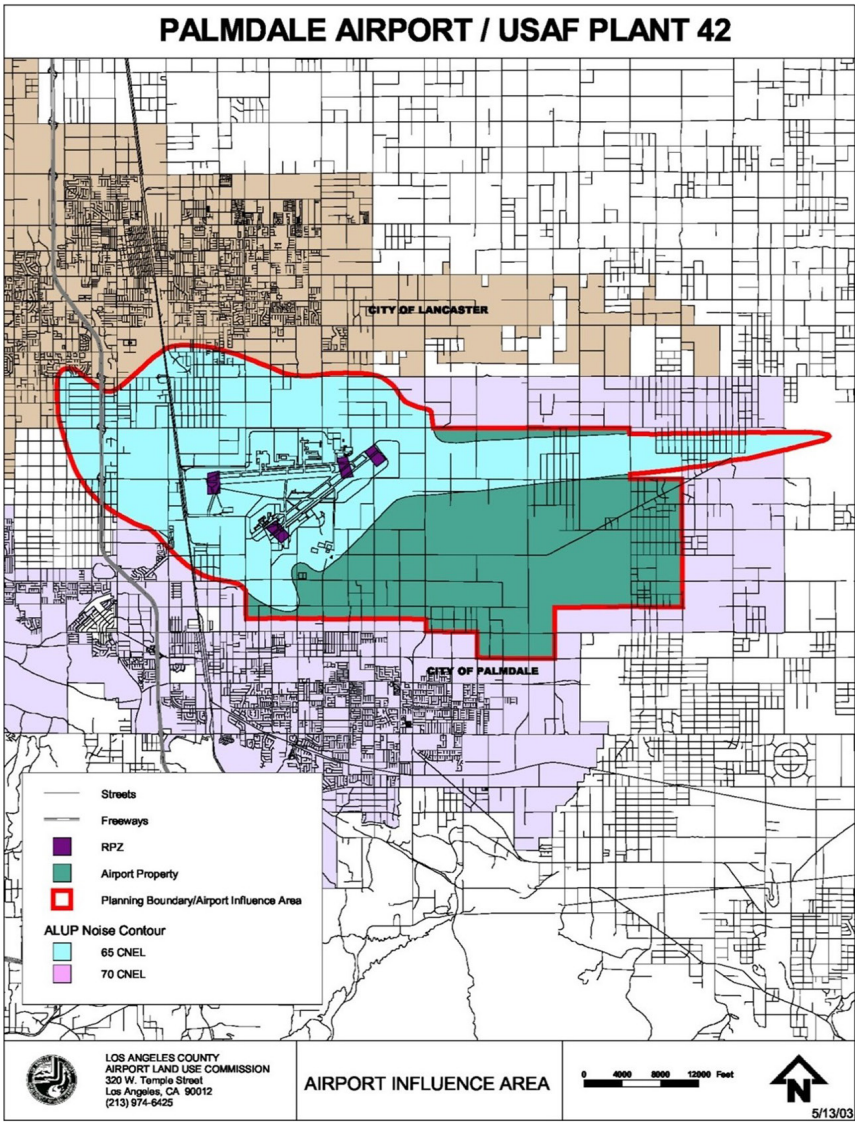
Los Angeles County Airport Land Use Commission-Palmdale Regional Airport Influence Area

The Los Angeles County Airport Land Use Commission (ALUC) is a county-level agency required by the State to develop a plan for promoting compatibility between local airports and surrounding land uses. The ALUC is responsible for designating an Airport Influence Area (AIA) for every airport within its jurisdiction. An AIA is an airport planning area boundary that consists of all areas in which current or future airport-related noise, over flight, safety, and/or airspace protection factors may significantly affect land uses or necessitate restrictions on those areas. The Palmdale Regional AIA is shown in Figure 16.2. Development within these areas conform with the use, density, and intensity recommendations of the within the Accident Potential Zone (APZ) and Air Installations Compatible Use Zones (AICUZ.

Palmdale Municipal Code (Noise Standards)

The Palmdale Municipal Code (PMC) establishes a restriction on excessive noise that would disturb neighborhoods or other sensitive uses. The Municipal Code's Noise Ordinance does not contain any specific limits, but rather states that "It shall be unlawful for any person to willfully make or continue, or cause or to be made or continued, any loud, unnecessary, or unusual noise…" The use of the Noise Ordinance to regulate noise is limited given no specific limits are provided by which to determine if a noise source is excessive or not. PMC Section 8.28.030 addresses construction-related noise by prohibiting earth excavating and similar activities between 8:00 p.m. and 6:30 a.m. and on Sundays in any residential zone or within 500 feet of any residence, hotel, motel, or recreational vehicle park.

Figure 16.2 Palmdale Airport Influence Area Noise Levels



Existing Context

Introduction

The noise environment within a geographic area may have a significant impact on the quality of life for community residents and workers. Excessive noise is defined as sound that is loud, unpleasant, unexpected, or undesired. The effects of excessive noise on humans can include general annoyance, interference with communication, sleep disturbance and hearing impairment. Perceptions of excessive noise can be highly variable and may be impacted by the time of day, distance to noise sources, characteristics of the noise receiver and qualities of the noise source. Therefore, jurisdictions must strategically establish noise standards in a manner that considers all aspects of how noise may be perceived.

Understanding the potential effects and externalities of noise requires an understanding of sound and how sound is measured. Noise is typically described in terms of loudness (amplitude) of the sound and frequency (pitch) of the sound. Noise loudness is measured in decibels (dB). Decibels (dB) are based on a logarithmic scale that condenses range in sound pressure levels to a more usable range of numbers. A 10 dB increase represents a 10-fold increase in sound intensity, a 20 dB change is a 100-fold difference, and so forth.

The human ear is not equally sensitive to all frequencies within the sound spectrum. Therefore, a method called "weighting" is applied to decibel noise measurements and used to filter noise frequencies that are not audible to the human ear. A weighted decibel (dBA) is an adjusted measure of sound loudness that adjusts the sound rating scale to levels consistent with the sensitivity range of the human ear. Typical exterior daytime noise levels range from 50 to 75 dBA.

In California, noise land use compatibility is primarily measured using Community Noise Equivalent Level (CNEL). The CNEL rating is the average sound level over a 24-hour period, with a penalty of 4 dB added between 7pm and 10pm and a penalty of 10 dB added for the nighttime hours of 10 pm to 7 am. The noise levels identified within this chapter are all discussed using dBA CNEL, unless otherwise indicated.

Noise Generators

Noise generators are major sources of noise within a community that may impact residents or workers. These major sources of noise include motor vehicles, railways, airports, and construction activities. The most distributed and predominant noise source across cities in California is traffic noise, due to the prevalence of motor vehicles driving along area roadways. Traffic noise is of primary concern because it is characterized by a high number of individual events, which often create a sustained noise level over time. In Palmdale, noise levels are the highest adjacent to freeways, highways, and other large roadways.



SR-14 Southbound

Traffic Noise

Traffic noise is the primary noise source in the city. The highest noise levels occur along high traffic volume roadways, including freeways, highways, and arterials. These roadways in Palmdale include Highway 138/ Palmdale Boulevard, SR-14, Sierra Highway, and major streets such as Pearblossom Highway, 5th Street West, 50th Street East, 30th Street East, Avenue S, and Rancho Vista Boulevard. For modeled existing and future noise contours along high-volume roadways, see Figure 16.3 and Figure 16.4.

Railway Operation Noise

In general, noise from rail operations is under the jurisdiction of the Federal Railroad Administration (FRA). The FRA sets forth and enforces railway noise safety standards, including noise emissions for railroad locomotive cabs, at-grade crossing bells, and locomotive warning horns. Union Pacific and Metrolink, which

transport freight and people, respectively, operate rail lines in Palmdale. These rail line operators must meet any mandates enforced by the FRA.

Currently, the Antelope Valley Station Line of the Metrolink commuter rail system runs through Palmdale adjacent to the Sierra Highway. As a commuter rail service, most weekday trains on the Antelope Valley line run during the peak traffic morning and evening hours, when noise levels are high due to peak traffic amounts.

The California High Speed Rail from San Francisco to the Los Angeles area is proposed to run through Palmdale. According to the Rail Authority, the High-Speed Rail is anticipated to result in moderate to severe impacts to the noise environment in those locations where train speeds and operations are near sensitive land uses. The level of noise impacts associated with the High-Speed Rail in Palmdale will depend on the final rail alignment and the nature and density of nearby sensitive uses.

An additional high-speed rail line, known as Brightline West, is undergoing environmental permitting, and anticipated to run from Las Vegas to Los Angeles through Palmdale. Similar to the High-Speed Rail, noise impacts associated with the rail line will depend on the final rail alignment and the nature and density of nearby sensitive uses.

Freight rail in Palmdale is transported along the Union Pacific Railroad. Most of the freight train traffic occurs between the hours of 1:00 am and 5:00 am. Freight traffic does not have a set schedule. Noise generated by freight trains in Palmdale was previously measured at 64 to 73 dBA. Approximately 10 to 25 freight trains travel through Palmdale per day.


Union Pacific Freight Train

Mineral Extraction

Sand and gravel mining widely occurs within the city, specifically throughout Littlerock Wash (floodplain within the Littlerock Fan[72]). Active quarries are located within an existing floodplain where no other type of development exits. Consequently, development is not located near noise-generating mineral extraction activities.


Sand Mine in Palmdale

Airport Noise

Plant 42, a US Air Force facility, is located in the northern part of the city near existing industrial uses and undeveloped land that is designated as industrial. The airport currently has two operational runways. Noise levels in this area of the City have been measured at 60.5 – 68.5 dBA depending on proximity to major noise sources. Peak noise levels due to aircraft operations (approaches and landings) have been measured at 85.5 dBA near the USAF Plant 42 runway. Figure 16.2 depicts the noise levels surrounding the Palmdale Regional Airport. Overall community noise levels surrounding the airport are typically around 65 CNEL.


Joe Davies Airpark

72. The Littlerock Fan is a 12 square mile area extending from the north flank of the San Gabriel Mountains for about 8 miles, which includes the Littlerock Wash floodplain and the fan area to the west

The City is considering the construction of a new passenger airport terminal, which would promote an increase in commercial flights. Proposed commercial flights would not increase noise levels beyond those observed historically. In addition to the Palmdale Regional Airport, there are several airports adjacent to the city that may impact the noise environment. Airports in the vicinity of Palmdale include:

- Agua Dulce Airpark in Agua Dulce located approximately four miles from Palmdale City limits.
- ~~Sterks Ranch Airport in Lancaster located approximately four miles from Palmdale City limits.~~ Bohunk's Airpark in Lancaster located approximately five miles from Palmdale City limits.
- Nichols Farms airport located in the unincorporated area of Los Angeles County approximately 5 miles from the Palmdale City limits.
- General William J. Fox Airfield in the Lancaster located approximately 7 miles from Palmdale.

Stationary Noise

Whereas mobile-source noise affects many receptors along an entire length of roadway, stationary noise sources affect only their immediate areas. Stationary sources of noise may occur within all types of land uses. Generally, residential uses generate noise from landscaping, maintenance activities, and air conditioning systems. Commercial uses tend to generate higher levels of noise, sourced from building operations such as heating, ventilation, air conditioning (HVAC) systems, loading docks, as well as activity from restaurants, bars, outdoor dining, parking garages/lots, etc. Consequently, potential noise concerns can arise when new developments with a mix of uses (i.e., residential, commercial, office) are proposed.

Industrial uses may generate noise from HVAC systems, loading docks, and machinery; all of which may be on a more continual basis due to the nature of the particular activities. Industrial activity is typically the generator of the highest levels of stationary source noise. However, Palmdale's industrial uses (e.g., Air Force Plant 42, Northrop Grumman, and Boeing) are geographically insulated from noise sensitive land uses. The major industrial uses in Palmdale are primarily located in the northeastern section of the city.

A notable source of stationary noise comes from construction-related activity. Construction of new development could result in stationary noise from various types of construction equipment, such as backhoes, dump trucks, and paving machines, all of which can cause substantial short-term increases in noise in the vicinity of construction sites.

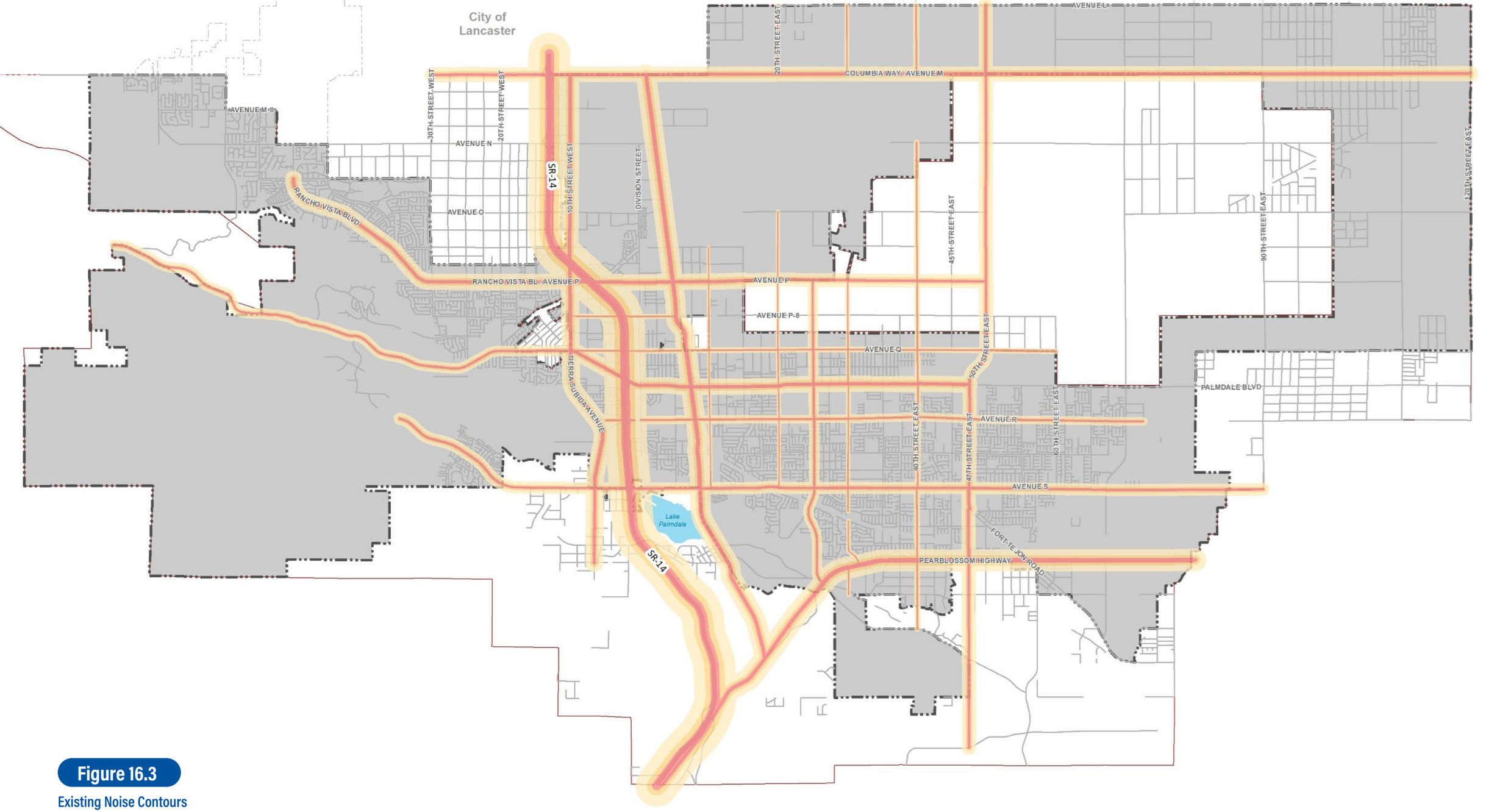


Construction on Avenue R-5

Sensitive Land Uses

Noise sensitive land uses are considered sensitive to noise impacts. Noise exposure goals for various types of land uses reflect the varying noise sensitivities associated with each of these uses. Noise sensitive land uses include residences, schools, libraries, hospitals/ medical facilities, and assisted living facilities. These uses are considered the most sensitive to noise intrusion and, therefore have more stringent noise exposure standards than manufacturing or agricultural uses that are not subject to impacts such as sleep disturbance. The sensitive noise land uses in Palmdale are shown in Figure Figure 16.3.

This page intentionally left blank.


City of Lancaster
AVENUE M-8
AVENUE N
AVENUE O
RANCHO VISTA BLVD
RANCHO VISTA BL // AVENUE P
AVENUE P
AVENUE P-8
AVENUE Q
AVENUE R
AVENUE S
COLUMBIA WAY // AVENUE M
AVENUE L
30TH STREET WEST
20TH STREET WEST
20TH STREET EAST
40TH STREET WEST
DIVISION STREET
SR-14
TIERRA SUBIDA AVENUE
45TH STREET EAST
50TH STREET EAST
40TH STREET EAST
47TH STREET EAST
60TH STREET EAST
90TH STREET EAST
120TH STREET EAST
PALMDALE BLVD
Lake Palmdale
PEARBLOSSOM HIGHWAY
FORT TEJON ROAD
SR-14
Figure 16.3
Existing Noise Contours
City Boundary
Sphere of Influence
Major Arterials
Highway
Railroad
Decibels (dBA)
60 dBA
65 dBA
70+ dBA
0 1.25 2.5 3.75 5 Miles
0 2,800 5,600 Feet
Data Sources: City of Palmdale GIS data.
Produced by Rincon Consultants, Inc.
May 2022

City of Lancaster
AVENUE L
20TH STREET EAST
COLUMBIA WAY / AVENUE M
AVENUE M-8
50TH STREET WEST
30TH STREET WEST
20TH STREET WEST
AVENUE N
10TH STREET WEST
DIVISION STREET
45TH STREET EAST
90TH STREET EAST
120TH STREET EAST
RANCHO VISTA BLVD
AVENUE Q
SR-14
RANCHO VISTA BL / AVENUE P
AVENUE P
AVENUE P-8
RITTER RANCH ROAD
AVENUE Q
50TH STREET EAST
PALMDALE BLVD
BRIDGE ROAD
SIERRA SUBIDA AVENUE
40TH STREET EAST
47TH STREET EAST
60TH STREET EAST
AVENUE R
AVENUE S
SR-14
Lake Palmdale
FORT TEJON ROAD
PEARBLOSSOM HIGHWAY
AVENUE T

Figure 16.4

Future Noise Contours

City Boundary
Sphere of Influence
Major Arterials
Highway
Railroad

Decibels (dBA)

60 dBA
65 dBA
70+ dBA

0 1.25 2.5 3.75 5 Miles

0 2,800 5,600 Feet

Data Sources: City of Palmdale GIS data.

Produced by Rincon Consultants, Inc.
May 2022

City of Lancaster

COLUMBIA WAY / AVENUE M
AVENUE M-8
AVENUE N
AVENUE O
AVENUE P
AVENUE P-8
AVENUE Q
AVENUE R
AVENUE S
AVENUE T
60TH STREET WEST
50TH STREET WEST
30TH STREET WEST
25TH STREET WEST
20TH STREET WEST
10TH STREET WEST
5TH STREET WEST
10TH STREET EAST
20TH STREET EAST
30TH STREET EAST
35TH STREET EAST
45TH STREET EAST
50TH STREET EAST
60TH STREET EAST
90TH STREET EAST
120TH STREET EAST
DIVISION STREET
SIERRA HIGHWAY
RANCHO VISTA BL/ AVENUE P
TOWN CENTER DRIVE
TECHNOLOGY DRIVE
ELIZABETH LAKE ROAD
RITTER RANCH ROAD
RANCH CENTER DRIVE
BRIDGE ROAD
SIERRA SUBIDA AVENUE
RAYBURN ROAD
PALMDALE BLVD
PEARBLOSSOM HIGHWAY
FORT TEJON ROAD
138
14

Figure 16.5

Noise Sensitive Land Uses

- City Boundary
- Sphere of Influence
- Major Arterials
- Highway
- Railroad

Land Use

- Equestrian Residential
- Low Density Residential
- Single Family Residential 1
- Single Family Residential 2
- Single Family Residential 3
- Neighborhood Residential 1
- Neighborhood Residential 2
- Neighborhood Residential 3
- Neighborhood Residential 4
- Specific Plan
- Preschool
- Elementary; K-8; 6-12 Schools
- Middle Schools
- High Schools
- School District Office
- Hospitals

0 0.75 1.5 2.25 3 Miles

0 3,000 6,000 Feet

Data Sources: City of Palmdale GIS data; World Terrain Base, 2015 ESRI, USGS, NOAA.

Produced by Rincon Consultants, Inc.
June 2022

This page intentionally left blank.

Desired Outcomes, Indicators, and Targets

The following section includes goals and policies for the Noise Element. Goals and policies are followed by implementation actions. Some Noise policies are woven throughout the General Plan, including in the ~~Mobility, Health, Equity + Environmental Justice Elements~~, and Land Use Elements, among others.

Top Key Outcomes

OUTCOME: Minimize noise exposure and noise generation near noise sensitive uses.

KPI:
- Noise sensitive uses near major noise generators

TARGET:
- **No noise sensitive uses (e.g., residences, schools, hospitals) in areas where noise from freeways, high traffic volume roads, rail activity, or the airport exceeds 65 dBA CNEL**

OUTCOME: Noise levels for all new development are within the "Normally Acceptable" range or the "Conditionally Acceptable" range.

KPI's:
- Acceptable noise levels
- Construction and operational noise exposure for noise-sensitive land uses

TARGETS:
- **Ensure that noise levels for all new development are within the "Normally Acceptable" or the "Conditionally Acceptable" range by ensuring design features can achieve the applicable interior and exterior noise standards**
- **Minimize exposure of noise-sensitive land uses to excessive construction and operational noise.**

KPI = Key Performance Indicator

Goals and Policies

The following section includes goals and policies for the Noise Element. Goals and policies are followed by implementation actions. Some Noise policies are woven throughout the General Plan, including in the Circulation and Mobility, Equitable and Healthy Communities, and Land Use and Community Design Elements, among others.

NOISE EXPOSURE

Goal N-1

Minimize resident exposure to excessive noise.

N-1.1 Future Noise Levels. Use the state-recommended noise level guidelines shown in Figure 16.1 to determine the compatibility of proposed land uses with the existing and future noise environment of each proposed development site.

N-1.2 Restrict Land Uses. Restrict noise sensitive land uses near existing or future air, rail, or highway transportation noise sources unless mitigation measures have been incorporated into the design of the project to reduce the noise levels at the noise sensitive land use to less than 65 dBA CNEL at all exterior living spaces including but not limited to, single-family yards and multi-family patios, balconies, pool areas, cook-out areas and related private recreation areas.

N-1.3 Acoustical Analysis for Stationary Noise Sources. When proposed stationary noise sources could exceed an exterior noise level of 65 dBA CNEL at the property line or could impact future noise sensitive land uses, require preparation of an acoustical analysis and mitigation measures to reduce exterior noise levels to no more than 65 dBA CNEL at the property line.

N-1.4 Noise Abatement Strategies. Explore the use of noise abatement strategies such as natural barriers, sound walls, and other buffers to mitigate excessive noise.

N-1.5 Quiet Zones. Where deemed appropriate, restrict train horn noise by establishing quiet zones within Palmdale based on Train Horn Rule (49 CFR Part 222).

Goal N-2
Maintain acceptable noise environments throughout the City.

N-2.1 Extreme Noise Sources. Avoid locating new extreme noise sources adjacent to noise sensitive land uses unless mitigation measures can mitigate noise impacts to the sensitive uses.

N-2.2 Restrict Construction Activities. Restrict construction activities in the vicinity of sensitive receptors during the evening, early morning, and weekends and holidays.

N-2.3 Maintain Acceptable Noise Environments. Utilize any or all the following measures to maintain acceptable noise environments throughout the city:

- Control of noise at its source, including noise barriers and other muffling devices built into the noise source.
- Provision of buffer areas and/or wide setbacks between the noise source and other development.
- Reduction of densities, where practical, adjacent to the noise source (freeway, airport, railroad).
- Use of sound insulation, blank walls, double paned windows and other design or architectural techniques to reduce interior noise levels.
- Designation of appropriate land uses adjacent to known noise sources.

N-2.4 Acoustical Analysis for Noise Sensitive Land Uses. Where deemed appropriate based upon available information, require acoustical analysis and appropriate mitigation for noise-sensitive land uses proposed in areas that may be adversely impacted by significant intermittent noise sources. Such noise sources may include but not be limited to railroads, racetracks, stadiums, aircraft overflights and similar uses.

N-2.5 High Speed Rail and Palmdale Airport. As necessary, participate in future planning for the High-Speed Rail and the Palmdale Airport expansion to ensure that neither facility creates noise conditions that adversely affect residents, businesses, or visitors.

COMPATIBLE LAND USES

Goal N-3

Promote noise compatible land uses within the 65 dBA CNEL contour and the Frequent Overflight Area of Air Force Plant 42.

N-3.1 Frequent Overflight Area. Designate and permit employment flex, industrial, aerospace industrial, and similar uses within the 65 dBA CNEL contour and the Frequent Overflight Area.

N-3.2 Areas Within 65 dBA CNEL. Restrict noise sensitive land uses (such as residential uses, religious institutions, schools, assisted living facilities, or similar uses) within areas designated within both the 65 dBA CNEL contour and the Frequent Overflight Area, unless mitigation measures prevent adverse health impacts from high noise emissions.

N-3.3 Areas Outside 65 dBA CNEL. In areas outside of the 65 dBA CNEL contours but within the Frequent Overflight Area, encourage land uses that are not noise-sensitive, to the extent feasible.

N-3.4 Require Disclosure Statement. Through the development review process, require a disclosure statement indicating that the property is subject to frequent overflight and aircraft noise upon sale of property within the Accident Potential Zone (APZ) and Air Installations Compatible Use Zones (AICUZ).

N-3.5 Aviation Easement. Through conditions of approval, require that any owner of property within the 65 dBA CNEL noise contour or the low altitude overflight area of Plant 42 seeking a land use action from the City to provide an aviation easement to the Los Angeles Department of Airports, the U.S. Air Force, and the City of Palmdale.

CIRCULATION

Goal N-4

Minimize adverse noise impacts associated with transportation.

N-4.1 Coordinate with Caltrans. Coordinate with Caltrans to implement noise mitigation measures, such as sound barrier walls, in the design, improvement, or expansion of freeways and major roadways.

N-4.2 Assess Noise Environment in Residential Areas. Regularly assess the noise environment in residential areas related to heavy vehicle traffic to determine if adjustments should be made to transportation routes.

N-4.3 Insulate Sensitive Receivers. Implement traffic calming and traffic diversion measures across the City to insulate sensitive land uses from freeway and roadway noise.

N-4.4 Protect Disadvantaged Community Members. Prohibit new high noise generating uses in disadvantaged communities, as feasible.

Implementation Actions

The table below identifies programs, planning efforts, coordination efforts, and other actions that will help implement the General Plan's Noise goals and policies. Programs are consistent with this chapter's goals and policies.

The table provides a description of each Implementation Action and lists the correlating policies. Each action also identifies a timeframe for implementation with Short-term representing a 1–3-year timeframe, Medium-term is 4-7 years, Long-term is 8+ years and Ongoing represents an action that the City should continue. Additionally, the table includes the City department that should function as the lead for implementing the actions.



Correlating Goals	Action	Timeframe	Responsible Department
N-1, N-2, N-3	**Noise Standards:** Establish numeric noise standards within the Palmdale Municipal Code consistent with the State recommended noise level guidance.	\	Economic and Community Development
N-1, N-2, N-3	**Municipal Code Update:** Update the Palmdale Municipal Code to include noise regulations consistent with all policies outlined within this Noise chapter.	\	Economic and Community Development
N-1, N-2, N-3, N-4	**Noise Reporting Platform:** Develop a noise reporting platform in collaboration with existing City applications or webpages to allow for easy noise reporting for community members.	\\	Economic and Community Development and Public Works
N-1, N-4	**Quiet Zones:** Meet and coordinate with railroad operators to install Quiet Zones at rail crossings near sensitive uses.	\	Economic and Community Development
N-1, N-2, N-4	**Regional High-Speed Rail:** Meet and coordinate with regional high-speed rail operators to implement the best practices for noise reduction and mitigation within the city.	\\	Economic and Community Development
N-1, N-2, N-4	**Traffic Calming/Diversion:** Evaluate the need for the insulation of sensitive land uses from freeway and roadway noise throughout the city and include the development of insulation measures into the Capital Improvements Plan.	\\	Economic and Community Development and Public Works

City of Palmdale
Public Draft General Plan

Envision
PALMDALE 2045
a **complete** community

CITY OF PALMDALE
a place to call home

EXHIBIT V

PALMDALE GENERAL PLAN

2021-2029 Housing Element



Envision PALMDALE 2045
a complete community

Table of Contents

1. Introduction 1
2. Community Outreach 2
3. Housing Needs Assessment 7
4. Constraints 34
5. Housing Resources 59
6. Housing Plan 70
Appendix A: Public Outreach A-1
Appendix B: Sites Inventory B-1
Appendix C: Review of Past Accomplishments C-1
Appendix D: Assessment of Fair Housing D-1

List of Tables

Table 1: Population Growth (2000-2021)....7
Table 2: Age Distribution....8
Table 3: Race and Ethnicity....9
Table 4: Income Distribution in Palmdale (2000-2019)....10
Table 5: Employment by Industry 2019....10
Table 6: Major Employers in the Antelope Valley 2020....11
Table 7: Household Characteristics (2018)....12
Table 8: Average Persons per Household (2019)....12
Table 9: Households by Income Category....13
Table 10: Housing Assistance Needs of Lower Income Households (2013-2017)....14
Table 11: Overcrowded Households....15
Table 12: Special Needs Groups in Palmdale (2019)....16
Table 13: Large Households (2019)....17
Table 14: Persons Aged 65 and Over....18
Table 15: Licensed Residential Care Facilities in Palmdale....18
Table 16: Disability Status....19
Table 17: Homeless Services....22
Table 18: Housing Unit Growth and Type....24
Table 19: Tenure of occupied Units (2010-2019)....25
Table 20: Household Size by Tenure....25
Table 21: Housing Stock Age....26
Table 22: Substandard Units (2019)....26
Table 23: Home Sale Prices (May 2020 and May 2021)....27
Table 24: Average Monthly Rent (2021)....28
Table 25: Affordable Housing Costs (2020)....30
Table 26: Assisted Rental Housing....31
Table 27: Rental Subsidies Required....33
Table 28: Zoning Designations and Density....35
Table 29: Draft Place Types....36
Table 30: Residential Development Standards....42
Table 31: Specific Plans Allowing Residential Uses....44
Table 32: Planning Department Application Fees - Residential....50
Table 33: Estimated Total Fees - Single-Family Detached Unit....50
Table 34: Estimated Total Fees – Multi-Family Project....51
Table 35: Timelines for Permit Procedures....52
Table 36: Typical Processing Procedures by Project Type....53
Table 37: RHNA 2021-2029....60
Table 38: RHNA Credits and Remaining Need....60
Table 39: Potential ADUs....61
Table 40: Vacant Sites....64
Table 41: Summary of RHNA....64
Table 42: Summary Matrix of Fair Housing Issues and Actions for Mitigation....84
Table 43: Summary of Quantified Objectives....89
Table D-1: Fair Housing Discrimination Complaints by Basis in Palmdale (2014-2019)....D-2
Table D-2: Racial/Ethnic Dissimilarity Trends....D-5
Table D-3: RHNA Unit Distribution by % Minority Concentration....D-6

Table D-4: RHNA Unit Distribution by % Population with Disabilities D-8
Table D-5: Household Characteristics D-10
Table D-6: RHNA Unit Distribution by % Children in Married-Couple Households D-10
Table D-7: RHNA Unit Distribution by % Children in Female-Headed Households D-10
Table D-8: RHNA Unit Distribution by % LMI Households in Census Tract D-20
Table D-9: RHNA Unit Distribution by R/ECAPs D-22
Table D-10: White Household Income and Percent Population D-25
Table D-11: Opportunity Indicators by Race/Ethnicity D-29
Table D-12: Domains and List of Indicators for Opportunity Maps D-30
Table D-13: Domains and Index Scores Census Tracts D-31
Table D-14: RHNA Unit Distribution by Opportunity Score D-31
Table D-15: RHNA Unit Distribution by CalEnviroScreen 4.0 Scores D-39
Table D-16: Housing Type and Cost Burden D-43
Table D-17: Severe Cost Burden by Race/Ethnicity D-48
Table D-18: Overcrowded Housing Units D-50

List of Figures

Figure 1: Enhanced Infrastructure Financing Districts 49
Figure 2: Development Processing Schedule.....52
Figure 3 Residential Sites Inventory 62
Figure D-1: Racial/Ethnic Minority Concentrations (2010) ..... D-**Error! Bookmark not defined.**3
Figure D-2: Racial/Ethnic Minority Concentrations (2018) D-3
Figure D-3: RHNA Unit Distribution by % of Minority Concentration D-6
Figure D-4: Percent Population with Disabilities in the Region D-9
Figure D-5: Percent Population with Disabilities in Palmdale and Distribution of RHNA D-9
Figure D-6: Percent Population of Adults Living Alone D-11
Figure D-7: Percent Population of Adults Living with their Spouse D-11
Figure D-8: Percent of Children in Married Couple Households and RHNA Distribution D-13
Figure D-9: Percent of Children in Single Female-Headed Households & RHNA Distribution D-14
Figure D-10: Low and Moderate Income (LMI) areas in the Region D-21
Figure D-11: Low and Moderate Income Areas in Palmdale and RHNA Distribution D-21
Figure D-12: Racially Concentrated Areas of Poverty and RHNA Distribution D-23
Figure D-13: Racially Concentrated Areas of Poverty in the Region..... D-24
Figure D-14: White Majority Population D-26
Figure D-15: Median Income..... D-26
Figure D-16: White Majority Population - Region..... D-27
Figure D-17: Median Income - Region D-27
Figure D-18: Opportunity Score by Census Tract and RHNA Distribution D-33
Figure D-19: Education Score by Census Tract D-34
Figure D-20: Economic Score by Census Tract..... D-36
Figure D-21: Job Proximity Index by Census Block Group D-38
Figure D-22: Job Proximity Index by Census Block Group - Region..... D-38
Figure D-23: Environmental Score by Census Tract and RHNA Distribution D-40
Figure D-24: Overpayment – Renter Households..... D-45
Figure D-25: Overpayment – Owner Households..... D-45
Figure D-26: Overpayment – Renter Households in the Region..... D-49
Figure D-27: Overpayment – Owner Households in the Region D-49
Figure D-28:Overcrowded Households in the Region..... D-55
Figure D-29: Urban Displacement..... D-56
Figure D-30: SB 535 Disadvantaged Communities D-59
Figure D-31: Housing Choice Vouchers Utilization by Tract in the Region D-61
Figure D-32: Median Gross Rent/Affordability Index..... D-61

1. Introduction

1.1 Legal Framework

This 2021-2029 Housing Element represents the City of Palmdale's effort in fulfilling the requirements under State Housing Element law. The California State Legislature has identified the attainment of a decent home and suitable living environment for every Californian as the State's major housing goal. Recognizing the important role of local planning and housing programs in the pursuit of this goal, the Legislature has mandated that all cities and counties prepare a housing element as part of the comprehensive General Plan.

Pursuant to State law, the Housing Element must be updated periodically according to statutory deadlines. This Housing Element covers the planning period of October 15, 2021, to October 15, 2029.

State Law requires that the Element include the following components:

- An analysis of the City's population, household, and employment base, and the characteristics of the housing stock.
- A summary of the present and projected housing needs of the City's households.
- A review of potential constraints to meeting the City's identified housing needs.
- An evaluation of opportunities that will further the development of new housing.
- A statement of the Housing Plan to address the identified housing needs.

1.2 Sources of Data

The Housing Element update relies on a variety of data sources to document the demographic and housing characteristics. These include:

- 2010 Census and 2015-2019 American Community Survey for demographic and housing data
- 2013-2017 Comprehensive Housing Affordability Strategy (CHAS) by HUD for housing problems by income group
- 2021 Population and Housing Estimates by the State Department of Finance

These are the most recent sets of data available for the Housing Element update.

1.3 Relationship to the General Plan

This Housing Element is being updated as part of the comprehensive update to the General Plan, including the Safety and Environmental Justice Elements. As such, all elements of the General Plan have been reviewed for internal consistency. As individual elements are updated in the future, the City will review the various related elements for consistency. Pursuant to SB 1087, upon adoption of the 2021-2029 Housing Element update, the City will provide a copy to its water and sewer service providers.

2. Community Outreach

2.1 Community-wide Outreach

To make the Housing Element and larger General Plan update successful, extensive involvement by the community was prioritized to fully understand their values and ideas for the future. There were many opportunities for members to express their visions, collaborate with neighbors, and explore possible innovations in housing, transportation, recreation, and economic development throughout multiple outreach events. Specifically, during the engagement, the City conducted stakeholder interviews, online surveys, and virtual workshops. The General Plan update involved longtime residents, new residents, seniors, youth, clubs, organizations, business owners, and many more. Although in-person outreach was extremely limited due to COVID-19 constraints, the community adapted and found meaningful ways to get involved through digital engagement platforms. The City made sure to reach out and invite members of all segments of the population including across the geographic, demographic and socio-economic spectrum. A summary of outreach activities conducted during the multi-year planning effort is provided below.

During the last two years, the City has conducted an extensive outreach campaign for the General Plan Update, including the Housing Element, with the goal of reaching as many community members as possible. This includes input and participation from low income and special needs residents, and those who are not typically engaged in civic or planning processes.

Appendix A of this Element has a detailed listing of the outreach efforts undertaken by the City. A summary of these activities are described below. Many outreach methods were used to raise awareness and promote the various activities. A citywide notification campaign was undertaken in both English and Spanish, which included print, digital and radio components.

Electronic noticing was a key component in the notification process. The following is a complete list of the electronic notification methods:

- English/Spanish paid and organic social media posts via city social portals
- Digital geotargeting
- Digital press releases in the Antelope Valley Press, Antelope Valley Times and the Antelope Valley Daily News
- Spanish ads via Café Con Leche radio show
- 15-minute interviews on Spanish radio
- The Palmdale Minute weekly video segments in English and Spanish
- Palmdale Connections online newsletters
- English/Spanish project e-blasts
- Electronic billboard advertisements in both English and Spanish (two locations)
- Internal and external City and project websites

Print notifications. The project team used print notification as another key component in the notification process. This effort was made in an attempt to reach those in the community who have limited or no online/digital access to notification materials. All print materials were distributed in both English and Spanish. The following is a complete list of the print notification methods and repository sites:

- Flyers to Palmdale Aerospace Academy and Palmdale School District for inclusion in school lunch program
- Posters in the Neighborhood House community garden
- Flyers and posters in the City maintenance yard
- Vinyl banners at the Palmdale Library and select City parks
- Flyers, posters and postcards to the AV Hispanic Chamber
- Postcards in the library
- Flyers and surveys at Legacy Commons Senior Center
- Print advertisements in El Sol Magazine, AV Smart Buys and Palmdale Connections Magazine
- Articles in the Antelope Valley Press, Antelope Valley Tines, and Antelope Valley Daily News. Digital press releases in the Antelope Valley Press, Antelope Valley Times, and the Antelope Valley Daily News

2.2 Stakeholder Focus Group Meetings

Three rounds of stakeholder interviews and focus groups took place between 2019 and 2021. The General Plan team sought input from employers, non-profits, service providers, faith-based organizations, community-based organizations, the educational and medical community, economic development, business, and real estate community, Spanish speaking and underserved community, County Pocket stakeholders, first responders and service organizations.

The initial round of meetings sought input on issues, opportunities, strengths, and weaknesses. Participants brainstormed key challenges and opportunities their organization and the larger Palmdale community faces now and into the future. This set the stage for existing conditions and highlighted needs and opportunities for the visioning process.

The second round of interviews solicited feedback on the three draft land use alternatives. The GP Team walked through each of the land use alternatives and asked targeted questions to learn which alternative was most supported by each organization and why.

The final round of interviews presented the preferred land use alternative and highlighted the differences between the three alternatives and the final preferred land use alternative.

2.3 General Plan Advisory Committee

The Palmdale City Council appointed a diverse 13-member General Plan Advisory Committee (GPAC) comprised of residents who meet and collaborate regularly to provide community insight

throughout the City's General Plan Update process. Over the course of the General Plan Update, the GPAC has met 17 times to discuss critical topics related to the General Plan, including housing. The GPAC held one meeting focused on housing in December 2019 that provided an overview of existing housing conditions in Palmdale to solicit input on housing needs. Housing Element requirements, Regional Housing Needs Allocation (RHNA), and potential areas of change and stability were also discussed in the meeting. The information in parenthesis and italics below are specific Housing Element programs that address the public's comments). Comments received include:

- Denser development; however, such development may command higher costs as the City has an abundance of vacant land that is more affordable. *(Addressed in HE Program 1: Adequate Sites for RHNA and Program 2: By-Right Approval of Projects with 20 Percent Affordable Units).*
- Programs that support aging in place and first-time homebuyers. *(Addressed in HE Program 9: Homeownership Assistance Programs and Program 15: Senior Housing).*
- Variety of housing types such as mixed use, cottage clusters, mobile homes, and small lot single-family homes. *(Addressed in HE Program 1: Adequate Sites to Meet the RHNA, Program 3: Accessory Dwelling Units and Program 13: Mobile Home Space Rent Control).*
- Need for affordable housing *(Addressed in HE Program 1. Adequate Sites for RHNA, Program 2: By-Right Approval of Projects with 20 Percent Affordable Units, Program 6: Affordable Housing Land Bank, Program 7: Affordable Housing Development, Program 8: Zoning Amendments and Program 14: Conversion of At-Risk Units*

During the meeting, GPAC members and the public identified areas of stability and areas of potential change.

2.4 Community Events and Workshops

Over the course of the General Plan Update, three community workshops were held. The first was held as an in-person event on both a Saturday morning (August 24, 2019) and a Tuesday evening (August 27, 2019) (same materials presented at both) at the Palmdale Aerospace Academy and Highland High School. These locations were selected to serve both the East and West sides of town and to accommodate residents with differing schedules. This series focused on identifying what makes Palmdale unique, developing a shared vision for the General Plan update, and reviewing issues and opportunities.

Due to the COVID-19 Pandemic, the next two workshops were held as virtual events. The second workshop was a live virtual event hosted on August 8, 2020, that included an online survey that was open between July 15-August 23, 2020 to receive input on the three proposed concepts for future land use regulations in the City. The survey was available 24-hours a day, 7-days a week. Paper copies were also distributed throughout the City.

The third workshop was a live virtual presentation hosted on February 4, 2021. The City hosted an online survey accompanied with a briefing book that detailed the preferred land use alternative for the City's General Plan update. The online platform invited feedback on the preferred land use alternative which will ultimately become the City's updated General Plan Land Use Map. The survey and briefing book was available 24-hours a day, 7-days a week between January 13-February 17, 2021. Paper copies were also distributed throughout the City.

At all workshops, live Spanish interpretation was provided for participants, as well as workshop materials available in Spanish. Members of the public could request American Sign Language (ASL) or other language interpretation in advance of the meeting. Both workshops were recorded and posted to the Palmdale2045 YouTube channel to be viewed at any time following the events.

Key housing-related comments received include:

- Current development interest in Palmdale *(Addressed in HE Program 3: Accessory Dwelling Units, Program 8: Zoning Amendments, Program 13: Mobile Home Program 15: Senior Housing and Program 16: Developmentally Disabled)*.
- Senior and multifamily housing *(Addressed in HE Program 15: Senior Housing, Program: 1 Adequate Sites for RHNA*).
- Vertical mixed-use development *(A mixed use corridor is created in the General Plan for longer-term development)*
- Vacant parcels within city limits allow for targeted infill development *(Addressed in HE Program 1: Adequate Sites for RHNA and Program 6: Affordable Housing Land Bank).*
- Palmdale's homeless population is increasing *(Addressed in HE Program 8: Zoning Amendments).*
- Existing development regulations that hinder new urbanism development *(Addressed in HE Program 8: Zoning Amendments as well as the upcoming General Plan and Development Code Updates)*

2.5 Surveys

As mentioned above, the City of Palmdale General Plan Team utilized surveys as a means of collecting feedback from the community throughout several phases of the General Plan Update process. Three surveys have been administered throughout the General Plan Update process, all available in English and Spanish for several weeks. Residents, employees, and other interested parties could participate in the online version or complete a hard copy version. Surveys were available at major city events, City Hall, Libraries, and other city facilities. In addition, social service providers and religious organizations distributed hard copy surveys to residents with limited mobility and those who lacked internet access. In some instances, gift card incentives were provided for residents to fill out surveys while waiting at food distribution days hosted by SAVES and SALVA.

The initial survey was an online "icebreaker" survey to inform residents of the ongoing General Plan Update, collect feedback related to daily life in Palmdale, and demographics information. The survey was available on the Palmdale General Plan Update website (Palmdale2045.org) from April 2019 to August 2019.

The second survey was part of the land use alternatives phase hosted on ArcGIS StoryMaps, which was released prior to the second workshop virtual live event. The online survey was available between July 15-August 23, 2020.

The preferred land use alternative survey was the third of the series, open between January 13-February 17, 2021, accompanied with a briefing book that detailed the preferred land use alternative for the City's General Plan Update.

2.6 Pop-Up Workshops

The City of Palmdale held five pop-up workshops at local events to identify what makes Palmdale unique, develop a shared vision for the General Plan Update, and review issues and opportunities. The first series was held in the Fall of 2019 and included interactive activities with the residents who attended. The second series of nine promotional pop-up events were held in the summer of 2020 and was modified due to COVID-19 constraints and focused primarily on spreading awareness for the virtual engagement activities to follow.

2.7 City Council and Planning Commission Briefings

Over the course of the General Plan Update, Palmdale City Council and Planning Commission will be regularly provided with project updates to receive feedback. The first phase of the General Plan Update took place in Fall 2019 and included discovery and visioning for the future of Palmdale. The phase one briefing to City Council and Planning Commission included an overview of the project status, existing conditions, community engagement, and the draft vision and guiding principles.

In a two-step approach, the General Plan Team presented decision-makers with the community's vision for the future General Plan land use map. The results from a series of community engagement events on three land use alternatives was presented to Planning Commission and City Council in September 2020. Following direction from both decision-making bodies, the General Plan Team revised the three concepts into one preferred map, referred to as the "preferred land use alternative." The preferred alternative received community feedback and direction which was later presented to Planning Commission and City Council in March 2021. Decision-makers provided additional direction and endorsed the preferred land use map.

At the May 13, 2021, Planning Commission meeting, the General Plan Update Team presented an overview of Housing Element requirements and their relationship to the General Plan. This presentation included the Regional Housing Needs Assessment (RHNA), the City's preliminary strategy for meeting its RHNA, and the process and tentative schedule for the Housing Element Update.

2.8 Envision Palmdale 2045 Website

The Palmdale 2045 website contained a wealth of resources for the community. Project updates, background information, existing surveys, summaries of public engagement activities, and notices of opportunities to participate are readily available to the public.

2.9 Housing Element Public Review

The Draft Housing Element was published on the City's website on September 3, 2021. An email blast was sent to over 1,400 interested parties, including community stakeholders, key property owners and developers. The City also published an announcement on City website and social media. Comments could be emailed to the General Plan Team at generalplan@cityofpalmdale.org

3. Housing Needs Assessment

This section of the Housing Element discusses the characteristics of the City's population and housing stock as a means of better understanding the nature and extent of unmet housing needs. The Housing Needs Assessment is comprised of the following components: 1) Community Profile, 2) Household Profile, 3) Special Housing Needs, 4) Housing Stock Characteristics, 5) Housing Preservation Needs, and 6) Regional Housing Needs

3.1 Community Profile

The City strives to achieve a balanced housing stock that meets the varied needs of all income segments of the community. To understand the City's housing needs, the nature of the existing housing stock and the housing market are comprehensively evaluated. This section of the Housing Element discusses the major components of housing needs in Palmdale, including population, household, economic and housing stock characteristics. Each of these components is presented in a regional context, and where relevant, in the context of other nearby communities. This assessment serves as the basis for identifying the appropriate goals, policies, and programs for the City to implement during the 2021-2029 Housing Element cycle.

3.2 Population Characteristics

Understanding the characteristics of a population is vital in the process of planning for the future needs of a community as characteristics affect the type and amount of housing needs. Issues such as population growth, race/ethnicity, age, and employment trends are factors that combine to influence the type of housing needed and the ability to afford housing. The following section describes and analyzes the various population characteristics and trends that affect housing needs.

Population Growth

Table 1 shows Palmdale's population growth between 2000 and 2021. The population grew from 116,670 to 152,750 persons, an increase of 36,080 (23.6 percent) from 2000 to 2010. From 2010 to 2021, population growth in Palmdale has slowed considerably with only a two percent increase in population (3,324 persons).

Table 1: Population Growth (2000-2021)

Year	Population	Increase	Percent Increase
2000	116,670	--	--
2010	152,750	36,080	23.6%
2021	156,074	3,324	2.1%
Total		39,404	25.2%

Source: California Department of Finance (DOF), Report E-5. 2010 and 2021, and U.S. Census 2000

Although most population growth in Los Angeles County is due to natural increase[1] (the excess of births over deaths, excluding migration), affordable housing prices that draw working families in search of affordable single-family homes have been the engine driving population increase in Palmdale and will continue to do so during this Housing Element Cycle.

[1] California Department of Finance

Age Characteristics

Table 2 shows the age distribution of Palmdale in 2000, 2010, and 2019 and compares the age distribution of Palmdale's residents in 2019 to that of the County as a whole in 2019. Between 2000 and 2010 as Palmdale's population increased by more than 20 percent, the distribution by age group shifted somewhat with substantial changes in just a few age groups. The shift in ages has continued as the City's residents continue to grow older. Residents 55 and older make up a larger proportion of the City's residents than they did in 2010.

A community's current and future housing needs are determined in part by the age characteristics of residents. Typically, each age group has distinct lifestyles, family types and sizes, ability to earn incomes, and therefore, housing preferences. As people move through each stage of life, housing needs and preferences change. Traditional assumptions are that the young adult population (20 to 34 years old) tends to favor apartments, low to moderate cost townhomes/condominiums, and smaller single-family units. The adult population (35 to 64 years old) represents the major market for moderate to relatively high cost condominiums and single-family homes. The senior population (65 years and older) tends to generate demand for housing that requires less maintenance, or with supportive services. In order to create a balanced community, it is important to provide housing options that suit the needs of all age groups.

Table 2: Age Distribution

Age Group	2000	2010	2019	LA County 2019
0 - 4	9.3%	8.3%	7.8%	5.8%
5-14	22.9%	18.5%	16.8%	12.0%
15-19	8.9%	10.1%	8.3%	6.1%
20-24	5.4%	7.4%	7.7%	6.8%
25-34	12.7%	12.2%	13.0%	16.3%
35-44	18.4%	14.0%	12.2%	13.7%
45-54	11.3%	14.3%	13.5%	13.2%
55 - 64	5.4%	8.6%	11.4%	12.1%
65 - 74	3.4%	3.9%	5.7%	8.1%
75 plus	2.2%	2.7%	3.5%	6.0%
Total population	116,670	152,750	156,293	10,039,107

Source: 2000 and 2010 U.S. Census, 2015-2019 American Community Survey.

Race and Ethnicity Characteristics

Race/ethnicity of the population is important to an analysis of housing needs and conditions for several reasons. A community's racial and ethnic composition may have implications for housing needs to the extent that different groups have different household characteristics, income levels, and cultural backgrounds that may affect their housing needs and preferences.

Table 3 shows how Palmdale residents reported their race and or ethnicity in 2000, 2010 and 2015-2019 ACS. In 2019, about 60 percent of the City's residents identified as being Hispanic or Latino and 46 percent of residents identified as being White. Because the race and ethnicities are not mutually exclusive, residents can identify as multiple races/ethnicities. Since 2000 there has been a shift from a majority of the City's residents identifying as White to a majority in 2019 identifying as Hispanic or Latino. The number of Black or African American residents has declined since 2010, but still remains higher than that of 2000.

Table 3: Race and Ethnicity

Race	2000 Census percent		2010 Census percent		2019 ACS percent	
	Number	Percent	Number	Percent	Number	Percent
Total Population	116,670	--	152,750	--	156,293	--
Hispanic or Latino (and any other race)	43,725	37.5%	83,097	54.4%	94,377	60.4%
White	63,905	54.8%	74,901	49.0%	72,016	46.1%
Black or African American	16,913	14.5%	22,677	14.8%	20,569	13.2%
American Indian & Alaska Native	1,198	1.0%	1,316	0.9%	2,453	1.6%
Asian	4,468	3.8%	6,548	4.3%	7,321	4.7%
Native Hawaiian and Other Pacific Islander	224	0.2%	335	0.2%	597	0.4%
Some Other Race	23,858	20.4%	38,773	25.4%	45,516	29.1%
Two or more races	6,104	5.2%	8,200	4.8%	7,821	5.0%

Source: US Census 2000 and 2010, 2015-2019 American Community Survey.

The changes in Palmdale's racial and ethnic distribution make it more like that of Los Angeles County in the proportion of persons identifying themselves as Hispanic or Latino (and any other race) or White alone. Palmdale has a higher proportion of African Americans and a lower proportion of Asians than the County as a whole. Table 3 shows that in Palmdale 60.4 percent of the Palmdale population identifies as Hispanic or Latino; the proportion countywide is 48.5 percent.

3.3 Economic Characteristics

Employment has an important impact on housing needs. Incomes associated with different jobs and the number of workers in a household determines the type and size of housing a household can afford. In some cases, the types of jobs themselves can affect housing needs and demand (such as in communities with military installations, college campuses, and large amounts of seasonal agriculture). Employment growth typically leads to strong housing demand, while the reverse is true when employment contracts.

Income

Table 4 below compares the distribution of household income in 2010 with that in Palmdale and the County as a whole in 2019. Median income in Palmdale has increased since 2010 and has also had a decline in the proportion and number of households earning less than $10,000 per year. Although the County has a smaller proportion of households in the very lowest income groups and a larger proportion in the highest groups, median income countywide in 2019 is not much different than the City. According to the 2015-2019 American Community Survey (ACS), 15.6 percent of all Palmdale households and 14.9 percent of the County's households lived below the poverty level in 2019.

Table 4: Income Distribution in Palmdale (2000-2019)

Household Income	2010	2019	LA County 2019
Total Households	40,215	41,538	3,328,398
Less than $10,000	6.2%	3.9%	5.4%
$10,000 - 14,999	5.9%	3.1%	4.3%
15,000 - 24,999	10.1%	6.5%	7.5%
25,000 - 34,999	9.2%	9.7%	7.3%
35,000 - 49,999	14.4%	11.6%	10.5%
50,000 - 74,999	21.6%	17.9%	16.2%
75,000 - 99,999	13.9%	17.3%	12.4%
100,000 -149,999	12.0%	18.6%	16.8%
149,000-199,000	3.9%	6.6%	8.4%
200,000 or more	2.8%	4.8%	11.3%
Median Income	$53,048	$71,774	$72,797

Source: 2010 Census, 2015-2019 American Community Survey

Employment

In 2019, the three largest occupational categories for City residents were education/health/social services, retail, and manufacturing (Table 5). These categories accounted for one-third (44.8 percent) of jobs held by Palmdale residents.

Table 5: Employment by Industry 2019

Industry 2019	Number	Percent
Agriculture	533	0.8%
Construction	5,560	8.8%
Manufacturing	7,108	11.3%
Wholesale/Retail	1,683	2.7%
Retail	7,404	11.7%
Transportation	4,174	6.6%
Information	1,163	1.8%
Finance, Insurance, Real Estate	2,888	4.6%
Professional, management	5,811	9.2%
Education, health care, social services	13,746	21.8%
Arts, entertainment, food services	6,224	9.9%
Other	3,260	5.2%
Public Administration	3,486	5.5%
Total workforce	63,040	100.0%

Source: 2015-2019 American Community Survey

According to the 2020 Economic Roundtable Report prepared for the Greater Antelope Valley Economic Alliance (GAVEA), the 10 largest employers in the Antelope Valley are shown below in Table 6.

Table 6: Major Employers in the Antelope Valley 2020

Employer	Number of Employees
Northrop Grumman	28,000
Edwards Air Force Base	8,929
County of Los Angeles	3,933
Antelope Valley Hospital	2,425
AV Union High School District	2,300
AV Mall	1,800
Palmdale School District	1,792

Source: GAVEA, 2020 Economic Roundtable Report

The Antelope Valley lies in two different counties--Los Angeles County and Kern County. According to estimates in the 2020 GAVEA Economic Roundtable Report, there are a total of about 126,000 jobs in the Antelope Valley as a whole, with a majority of these being in Los Angeles County. The largest single employment sector is government employment in Los Angeles County.

3.4 Household Characteristics

The Census defines a household as all persons who occupy a housing unit, which may include single persons living alone, families related through marriage or blood and unrelated individuals living together. Persons living in retirement or convalescent homes, dormitories or other group living situations are not considered households. Household type and size, income levels, the presence of special needs populations, and other household characteristics determine the type of housing needed by residents, their preferences, and their ability to obtain housing that meets their needs. For example, single-person households, typified by seniors or young adults, tend to reside in apartment units or smaller single-family homes. Families typically prefer and occupy single-family homes. This section details the various household characteristics affecting housing needs.

Household Type and Size

According to the 2019 ACS as shown in Table 7, among Palmdale households almost 50 percent were families with children present, the largest proportion in the surrounding area and the County as a whole. Palmdale also has the smallest proportion of single persons households and senior headed households. Santa Clarita has a slightly lower proportion of single-parent households than Palmdale.

Table 7: Household Characteristics (2018)

Jurisdiction	Single Person Households	Senior Headed Households	Families with Children	Single-Parent Households
Palmdale	**16.1%**	**17.0%**	**47.6%**	**18.9%**
Lancaster	21.9%	18.8%	41.8%	26.1%
Santa Clarita	18.9%	21.0%	39.5%	16.2%
Los Angeles County	25.7%	22.3%	32.6%	21.5%

Source: 2015-2019 American Community Survey

Household size is a significant factor in housing demand. Often, household size can be used to predict the unit size that a household will select. For example, small households (one and two persons per household) traditionally can find suitable housing in units with zero to two bedrooms while larger households (three or more persons per household) can usually find suitable housing in units with three to four bedrooms.

Table 8 compares the household size in Palmdale to household size in the surrounding cities and the County. Palmdale had the highest average household size. In 2019, the average number of persons per household in the surrounding jurisdictions was 3.16 in Lancaster and 3.06 in Santa Clarita with an average of 2.99 in the County as a whole. Palmdale had an average of 3.60 persons per households.

Table 8: Average Persons per Household (2019)

Jurisdiction	Average Household Size
Palmdale	**3.60**
Lancaster	3.16
Santa Clarita	3.06
Los Angeles County	2.99

Source: 2015-2019 American Community Survey

Household Income

Household income indicates the wealth of a community and therefore is directly connected to the ability to afford housing. As household income increases, the more likely that household is to be a homeowner. As household income decreases, households tend to pay a disproportionate amount of their income for housing and the number of persons occupying unsound and overcrowded housing increases.

For planning and funding purposes, the California State Department of Housing and Community Development (HCD) has developed the following income categories based on the Area Median Income (AMI) of a metropolitan area (such as Los Angeles County):

- Extremely Low Income: households earning up to 30 percent of the AMI
- Very Low Income: households earning between 31 and 50 percent of the AMI
- Low Income: households earning between 51 percent and 80 percent of the AMI
- Moderate Income: households earning between 81 percent and 120 percent of the AMI
- Above Moderate Income: households earning over 120 percent of the AMI

Combined, the extremely low, very low-, and low-income groups are referred to as lower income.[2]

Between 2013 and 2017, approximately 38 percent of Palmdale households earned above moderate incomes (Table 9), below countywide average. Approximately 62 percent of households had incomes in the very low-, low-, and moderate-income levels.

Table 9: Households by Income Category

Income Category (% of County AMI)	Palmdale	LA County
Very Low Income (50% AMI)	27%	26%
Low Income (80% AMI)	17%	15%
Moderate Income (120% AMI)	18%	16%
Above Moderate Income (>120% AMI)	38%	43%

Source: SCAG, RHNA Calculator, based on 2013-2017 ACS.

3.5 Housing Problems

The Comprehensive Housing Affordability Strategy (CHAS) developed by the Census for HUD provides detailed information on housing needs by income level for different types of households in Palmdale. Detailed CHAS data based on the 2013-2017 ACS data is displayed in Table 10. Housing issues considered by CHAS include:

- Units with physical defects (lacking complete kitchen or bathroom);
- Overcrowded conditions (housing units with more than one person per room);
- Housing cost burden, including utilities, exceeding 30 percent of gross income; or;
- Severe housing cost burden, including utilities, exceeding 50 percent of gross income.

The identified vary according to household income, type, and tenure. Some highlights include:

- In general, renter-households had a higher level of housing problems (58 percent) compared to owner-households (38 percent).
- Elderly renter-families experienced the highest level of cost burden (35 percent).
- Approximately 77 percent of the extremely low income (households earning up to 30 percent of the AMI) and 77 percent very low-income households (households earning between 31 percent and 50 percent of the AMI) experienced housing problems.

[2] Federal housing and community development programs typically assist households with incomes up to 80 percent of the AMI and use different terminology. For example, the Federal Community Development Block Grant (CDBG) program refers households with incomes between 51 and 80 percent AMI as moderate income (compared to low income based on State definition).

Table 10: Housing Assistance Needs of Lower Income Households (2013-2017)

Household by Type, Income, and Housing Problem	Renters				Owners				Total
	Elderly	Small Families	Large Families	Total Renters	Elderly	Small Families	Large Families	Total Owners	
Extremely Low (0-30% HAMFI)	1,075	2,775	1,120	6,120	955	1,240	570	3,230	9,350
% with any housing problem	79.5%	88.1%	97.8%	85.4%	63.4%	81.0%	94.7%	76.8%	82.4%
% with cost burden >30%	79.5%	87.7%	96.0%	84.9%	61.8%	80.2%	82.5%	73.8%	81.1%
% with cost burden > 50%	54.4%	72.6%	76.8%	67.9%	42.9%	72.6%	67.5%	59.0%	64.8%
Very Low Income (31-50% HAMFI)	495	1,695	725	3,295	1,105	1,725	1,090	4,145	7,440
% with any housing problem	70.7%	83.5%	93.8%	82.9%	56.6%	84.1%	84.9%	76.8%	79.5%
% with cost burden >30%	71.7%	79.4%	79.3%	77.7%	56.6%	84.1%	78.9%	75.4%	76.4%
% with cost burden >50%	25.3%	29.8%	26.9%	28.2%	27.1%	50.4%	27.5%	37.5%	33.4%
Low Income (51-80% HAMFI)	205	1,295	840	2,810	1,040	2,700	2,020	6,255	9,065
% with any housing problem	65.9%	56.8%	60.1%	59.6%	42.8%	46.9%	62.1%	52.1%	54.4%
% with cost burden >30%	61.0%	54.1%	14.3%	44.3%	42.8%	45.9%	35.1%	42.8%	43.3%
% with cost burden > 50%	4.9%	2.3%	1.8%	2.3%	7.2%	7.2%	1.7%	6.0%	4.9%
Moderate Income (81% HAMFI)	380	1,770	785	3,640	2,275	8,040	2,445	14,575	18,215
% with any housing problem	34.2%	9.0%	29.3%	15.4%	11.9%	8.9%	21.7%	12.9%	13.4%
% with cost burden >30%	34.2%	6.5%	3.8%	8.7%	11.4%	8.1%	9.0%	10.3%	10.0%
% with cost burden > 50%	10.5%	0.0%	0.0%	1.1%	0.4%	1.0%	0.0%	1.1%	1.1%
Total Households	2,155	7,535	3,470	15,865	5,375	13,705	6,125	28,205	44,070
% with any housing problem	68.2%	63.1%	72.3%	64.2%	36.2%	32.4%	53.1%	38.3%	47.7%
% with cost burden >30%	68.0%	61.0%	51.9%	58.7%	35.7%	31.7%	36.9%	34.4%	43.1%
% with cost burden > 50%	35.3%	33.8%	30.8%	32.7%	14.8%	14.9%	11.8%	14.1%	20.8%

Note: This table presents the percent of households with housing problems by tenure, income, and household type. Data presented in this table are based on special tabulations from sample Census data. The number of households in each category usually deviates slightly from the 100 percent total due to the need to extrapolate sample data out to total households. Interpretations of these data should focus on the proportion of households in need of assistance rather than on precise numbers.
Elderly Households = 1- to 2-person households with elderly persons aged 62+ Small
Families = 2- to 4-person family households
Large Families = 5+ person family households
Other non-family households are not included in this table.
Source: HUD Comprehensive Housing Affordability Strategy (CHAS), based on 2013-2017 ACS data.

Overcrowding

The combination of low incomes and high housing costs has forced many households to live in overcrowded housing conditions. "Overcrowding" is generally defined as a housing unit occupied by more than one person per room (including living room and dining rooms, but excluding hallways, kitchen, and bathrooms). Under State law a housing unit is considered overcrowded if there is less than 120 square feet of livable space (all space except the bath, kitchen and hallways) for the first two people and less than an additional 50 square feet for each additional person. Overcrowding may indicate that a community does not have an adequate supply of affordable housing, especially for large families.

Overcrowding typically occurs when there are not enough adequately sized units within a community, when high housing costs relative to income force too many individuals to share a housing unit than it can adequately accommodate, or when families reside in smaller units than they need to devote income to other necessities, such as food and health care. Overcrowding tends to accelerate the deterioration of housing. Therefore, maintaining a reasonable level of occupancy and alleviating overcrowding are critical to enhancing quality of life.

According to the 2015-2019 ACS data, 4.9 percent of Palmdale's owner-occupied units were overcrowded and another 1.3 percent very overcrowded (Table 11). However, overcrowding was more frequent among renter households with 10.3 percent reporting more than 1.01 persons per room and another 1.4 percent severely overcrowded with 1.5 or more persons per room.

Table 11: Overcrowded Households

Overcrowding	Owner Households		Renter Households		Total Households	
	Number	% of Owners	Number	% of Renters	Number	% of Total
Total Overcrowded (>1.0 persons/room)	1,390	4.9%	1,555	10.3%	2,945	6.8%
Severely Overcrowded (>1.5 persons/room)	375	1.3%	214	1.4%	589	1.4%

Sources: 2015-2019 American Community Survey

Cost Burden

Measuring the portion of a household's gross income that is spent for housing is an indicator of the dynamics of demand and supply. This measurement is often expressed in terms of "cost burden": households paying an excessive amount of their income for housing, therefore decreasing the amount of disposable income available for other needs. This indicator is an important measurement of local housing market conditions as it reflects the affordability of housing in the community. Federal and state agencies use cost burden indicators to determine the extent and level of funding and support that should be allocated to a community. State and federal programs typically define cost burden as those lower income households paying over 30 percent of household income for housing costs. A household is considered experiencing a severe cost burden if it spends more than 50 percent of its gross income on housing.

Table 10 presented earlier provides cost burden detail by income group and household type for Palmdale between 2013 and 2017. Approximately 43 percent of low-income households, 75 percent of very low-income households, and 74 percent of extremely low-income households were cost burdened versus 10 percent of moderate income and above households.

3.6 Special Needs Groups

Certain segments of the population may have more difficulty in finding decent, affordable housing due to their special needs. Special circumstances may be related to one's employment and income, family characteristics, disability and household characteristics, among other factors. Consequently, certain residents in Palmdale may experience higher incidences of housing overpayment (cost burden), overcrowding, or other housing problems. The special needs groups analyzed include the elderly, persons with disabilities, homeless people, single parents, large households, military personnel, and farm workers (Table 12). Many of these groups overlap, for example many farm workers are homeless, and many elderly people have a disability of some type. The majority of these special needs groups could be assisted by an increase in affordable housing, especially housing located near public transportation and services.

Table 12: Special Needs Groups in Palmdale (2019)

Special Needs Group	# of People or Households	Number of Owners	% Owner	Number of Renters	% Renter	% of Total Households or Population
Households with Seniors	10,545	--	--	--	--	24.3%
Senior Headed Households	7,377	5,424	19.2%	1,953	13.0%	17.0%
Seniors Living Alone	2,937	1,846	6.5%	1,091	7.2%	6.8%
Persons with Disabilities	18,562	--	--	--	--	11.9%
Large Households	10,465	7,067	24.9%	3,398	22.6%	24.1%
Single-Parent Households	5,991	--	--	--	--	13.8%
Female Headed Households (no spouse present)	8,094	3,540	12.5%	4,554	30.2%	18.6%
Female Headed Households with children (no spouse present)	4,495	--	--	--	--	10.4%
People Living in Poverty	24,152	--	--	--	--	15.6%
Farmworkers**	306	--	--	--	--	0.5%
Homeless	289	--	--	--	--	0.2%

** = All farming, fishing, and forestry occupations. Source: 2015-2019 American Community Survey

The following sections provide a detailed discussion of the housing needs facing each particular group as well as programs and services available to address their housing needs.

Single-Parent Households

Single-parent families, particularly female-headed families with children, often require special consideration and assistance because of their greater need for affordable housing and accessible day care, health care, and other supportive services. Female-headed families with children are a particularly vulnerable group because they must balance the needs of their children with work responsibilities, often while earning limited incomes.

In 2019 there were 4,495 female-headed families with children under age 18 in Palmdale of which 41.9 percent (1,883) were living below the poverty level. They made up 15.6 percent of all Palmdale families with children. In the County as a whole there are 211,592 female-headed households with children who constitute 23 percent of all County households with children.

Countywide, the proportion of female-head households in poverty is substantially lower with 33.3 percent living below the poverty level.

Impoverished female-head Palmdale families with children are likely to need subsidized housing. Those without subsidized housing could be at risk of becoming homeless. Domestic violence is one of the factors that lead to homelessness for women and children who often must leave home in order to be safe from a battering spouse or domestic partner.

Resources

Lower income single-parent households can benefit from City programs that provide direct rental assistance (such as Housing Choice Vouchers) or that will facilitate the development of affordable housing.

Large Households

Large households are defined as those consisting of five or more members. These households comprise a special need group because of the often limited supply of adequately sized and affordable housing units in a community. To save for other basic necessities such as food, clothing and medical care, it is common for lower-income large households to reside in smaller units, which frequently results in overcrowding and can result in accelerated unit deterioration.

Table 13 shows that in 2019 28.4 percent of all owner-occupied households and 25.9 percent of all renter-occupied households had five or more persons. Overall, 27.6 percent of all Palmdale households had five or more persons.

Table 13: Large Households (2019)

Household Size	Owner		Renter		Total	
	Number	Percent	Number	Percent	Number	Percent
1-4 Persons	19,705	71.6	10,375	74.1	30,080	72.4
5+ Persons	7,828	28.4	3,630	25.9	11,458	27.6
Total	27,533	100.0	14,005	100.0	41,538	100.0

Source: 2015-2019 American Community Survey

Overall, a greater percentage of large renter families (72 percent) and large owner families (53 percent) experienced some sort of housing problem between 2013 and 2017 (Table 10).

Resources

Lower and moderate-income large households can benefit from various affordable housing programs. These affordable housing developments are assisted with City, State, and federal funds, and Housing Choice Vouchers, among others.

Seniors

Many senior-headed households have special needs due to their relatively low incomes, disabilities or limitations, and dependency needs. Specifically, people aged 65 years and older often have four main concerns:

- Housing: Many seniors live alone and may have difficulty maintaining their homes.
- Income: People aged 65 and over are usually retired and living on a limited income.
- Health care: Seniors are more likely to have high health care costs.
- Transportation: Many of the elderly rely on public transportation; especially those with

disabilities.

The limited income of many elderly persons often makes it difficult for them to find affordable housing. Table 14 shows that 14,522 persons were age 65 and over in Palmdale in 2019. This accounted for 9.3 percent of residents, lower than the percentage in the surrounding area and the County as a whole.

Table 14: Persons Aged 65 and Over

Jurisdiction	Total	Age 65+	Percent Age 65+
Palmdale	156,293	14,522	9.3%
Lancaster	159,028	15,611	9.8%
Santa Clarita	213,411	25,075	11.7%
Los Angels County	10,081,570	1,335,978	13.3%

Source: 2015-2019 American Community Survey

From 2015-2019, 17 percent of City households were headed by someone 65 years old or older (Table 12). Of these households, the majority (74 percent) owned their homes, while the remainder (26 percent) rented their homes. Approximately 4,875 elderly households were considered lower income (Table 10).

Aside from overpayment problems faced by seniors due to their relatively fixed incomes, many seniors are faced with various disabilities. Roughly 31 percent of Palmdale's senior population was listed as having one or more disabilities in the 2015-2019 ACS (Table 16). Among these disabilities, the most common were ambulatory difficulties (44 percent) and hearing difficulties (45 percent).

Resources

As of July 2021, there are 23 four- to six-bed residential care homes serving the elderly. Together these 23 facilities provide 129 beds for elderly persons who need assisted living.

Table 15: Licensed Residential Care Facilities in Palmdale

Facility Type	Facility Size (<= 6 beds)		Facility Size (>6 beds)	
	Number of Facilities	Total Number of Beds	Number of Facilities	Total Number of Beds
Residential Care Facilities for the Elderly*	23	129	--	--
Adult Residential Facilities**	30	138	1	60

* = Residential Care Facilities for the Elderly are facilities that provide services to persons 60 years of age and over and persons under 60 with compatible needs. RCFEs may also be known as assisted living facilities, retirement homes and board and care homes. The facilities can range in size from six beds or less to over 100 beds. The residents in these facilities require varying levels of personal care and protective supervision.

** = Adult Residential Facilities are facilities of any capacity that provide 24-hour non-medical care for adults ages 18 through 59, who are unable to provide for their own daily needs. Adults may be physically handicapped, developmentally disabled, and/or mentally disabled.

Source: State of California, Community Care Licensing Division, 2021

Persons with Disabilities (Including Developmental Disabilities)

Physical, mental, and/or developmental disabilities may prevent a person from working, restrict one's mobility, or make it difficult to care for oneself. Thus, disabled persons often have special

housing needs related to limited earning capacity, a lack of accessible and affordable housing, and higher health costs associated with a disability. Some residents suffer from disabilities that require living in a supportive or institutional setting.

The 2015-2019 ACS defines six types of disabilities: hearing difficulties, vision difficulties, cognitive difficulties, ambulatory difficulties, self-care difficulties, and independent living difficulties. A more detailed description of each disability is provided below:

- Hearing difficulty: Refers to respondents who are deaf or have serious difficulty hearing.
- Vision difficulty: Refers to respondents who are blind or have serious difficulty seeing even when wearing glasses.
- Cognitive difficulty: Refers to respondents with serious difficulty concentrating, remembering, or making decisions due to a physical, mental, or emotional condition.
- Ambulatory difficulty: Refers to respondents who experience serious difficulty walking or climbing stairs.
- Self-care difficulty: Refers to respondents who have trouble dressing or bathing.
- Independent living difficulty: Refers to respondents who experience difficulty doing errands alone such as visiting a doctor's office or shopping due to a physical, mental, or emotional condition.

According to the 2015-2019 ACS, approximately 12 percent of Palmdale residents had a disability. The ACS tallied the number of disabilities by type for residents with one or more disabilities. Among the disabilities tallied, 10.9 percent were hearing difficulties, 10.3 percent were vision difficulties, 21 percent were cognitive difficulties, 24.3 percent were ambulatory difficulties, 13.7 percent were self-care difficulties, and 19.9 percent were independent living difficulties (Table 16). The 2015-2019 ACS reported that 14.8 percent of persons with disabilities in Los Angeles County were living below the poverty level. It also estimates that a majority (52 percent) of persons with a disability in the County are not in the labor force. Of those with a disability in the labor force, 91 percent are employed.

Table 16: Disability Status

Disability Type	% of Disabilities Tallied			
	Under 18	Age 18 to 64	Age 65+	Total
Hearing Difficulty	8.9%	46.5%	44.6%	10.9%
Vision Difficulty	12.2%	54.6%	33.1%	10.3%
Cognitive Difficulty	20.3%	55.4%	24.3%	21.0%
Ambulatory Difficulty	3.8%	52.6%	43.5%	24.3%
Self-care Difficulty	10.8%	50.8%	38.4%	13.7%
Independent Living Difficulty	0.0%	60.1%	39.9%	19.9%

Source: 2015-2019 American Community Survey

According to the State Department of Developmental Services, there are 6,589 persons with a disability that were assisted at the North Los Angeles County Regional Center – Antelope Valley in 2020. In Palmdale, 3,426 (52 percent) of those persons are 17 years of age or younger and 3,163 (48 percent) are over the age of 18. A majority of the persons with disabilities reside in the 93535 ZIP code (26 percent) followed by 93550 (20 percent).

Changes in State law requires that the Housing Element discuss the housing needs of persons with developmental disabilities. As defined by State law, "developmental disability" means a severe, chronic disability of an individual that:

- Is attributable to a mental or physical impairment or combination of mental and physical impairments;
- Is manifested before the individual attains age 18;
- Is likely to continue indefinitely;
- Results in substantial functional limitations in three or more of the following areas of major life activity: a) self-care; b) receptive and expressive language; c) learning; d) mobility; e) self-direction; f) capacity for independent living; or g) economic self-sufficiency; and
- Reflects the individual's need for a combination and sequence of special, interdisciplinary, or generic services, individualized supports, or other forms of assistance that are of lifelong or extended duration and are individually planned and coordinated.

The Census does not record developmental disabilities. According to the U.S. Center for Disease Control and Prevention (CDC) Developmental Disabilities department, approximately 17 percent of children between the ages of 3 and 17 have one or more developmental disabilities.[3] This equates to 8,739 persons in the City of Palmdale with developmental disabilities, based on the 2015-2019 ACS population. According to the State Department of Social Services, approximately 1,059 persons with developmental disabilities from Palmdale ZIP Codes sought services at the Regional Center. About half of the developmentally disabled residents in Palmdale were living at home with parents or guardians.

Many developmentally disabled persons can live and work independently within a conventional housing environment. More severely disabled individuals require a group living environment where supervision is provided. The most severely affected individuals may require an institutional environment where medical attention and physical therapy are provided. Because developmental disabilities exist before adulthood, the first issue in supportive housing for the developmentally disabled is the transition from the person's living situation as a child to an appropriate level of independence as an adult.

Resources

The most obvious housing need for persons with disabilities is housing that is adapted to their needs. Most single-family homes are inaccessible to people with mobility and sensory limitations. Housing may not be adaptable to widened doorways and hallways, access ramps, larger bathrooms, lowered countertops, and other features necessary for accessibility. Location of housing is also an important factor for many persons with disabilities, as they often rely upon public transportation to travel to necessary services and shops. "Barrier free design" housing, accessibility modifications, proximity to services and transit, and group living opportunities are important in serving this group. Incorporating barrier-free design in all new multi-family housing is especially important to provide the widest range of choices for the disabled.

State and federal legislation mandate that a specified number of units in new or rehabilitated multi-family apartment complexes be accessible to individuals with limited physical mobility. The City offers flexibility in development standards for projects proposing housing affordable to seniors

[3] CDC. 2019. Facts About Developmental Disabilities. https://www.cdc.gov/ncbddd/developmentaldisabilities/facts.html. Accessed October 2020.

and persons with disabilities. In addition, a number of residential care facilities are located in Palmdale to accommodate persons with disabilities.

Homeless

The 2020 Greater Los Angeles Homeless Count conducted a one-night survey to collect data on the number of homeless persons in the County at a point in time. The 2020 Homeless Count Report also provided an estimate for the number of persons homeless over the period of a year. Results from the 2020 Los Angeles County Homeless Count indicate that while the total number of people experiencing homelessness has increased overall in the County, the number of homeless individuals has decreased in Palmdale, reporting 289 people experiencing homelessness, down from 325 reported in 2016. Overall Los Angeles County numbers increased from 39,587 in 2016 to 54,291 in 2020.

When compared with the other Service Planning Areas (SPAs), the homeless population of Antelope Valley had the second highest proportion of unaccompanied minors being homeless with 23 individuals being unaccompanied minors.

Palmdale does not have an emergency shelter or any transitional housing programs. Homeless families and individuals call 211 to obtain motel vouchers for a night or weekend and then must go to the Valley Oasis Access Center in Palmdale to obtain assistance with additional motel vouchers, and/or placement in emergency, transitional or permanent housing, as well as case management to obtain supportive services, help applying for public benefits and a range of other needs. There is an emergency shelter in Lancaster, the High Desert MACC, operated by Volunteers of America.

The City of Palmdale funds and operates the South Antelope Valley Emergency Services program (SAVES), which provides a food bank, motel vouchers and clothing distribution for extremely low-income and homeless individuals and families and makes referrals to 211 and the homeless services available in Lancaster. SAVES does not keep records of the number of inquiries, requests for assistance or referrals provided to homeless families and individuals.

Resources

Services for homeless individuals and families in Los Angeles County are organized in a "continuum of care" a planning strategy developed by HUD and implemented as a condition of receiving funding from federal McKinney-Vento funds. In Los Angeles County agencies obtain these funds through applications to the Los Angeles Homeless Services Authority (LAHSA). HUD defines a continuum of care plan as "a community plan to organize and deliver housing and services to meet the specific needs of people who are homeless as they move to stable housing and maximum self-sufficiency."

Although the Antelope Valley is only one of eight SPAs in Los Angeles County, that could share resources it is a two-hour drive from the major centers of service provision in the City of Los Angeles and other major cities such as Pasadena and Long Beach and coordinates through the Los Angeles County continuum of care. This includes emergency shelter, transitional housing, supportive services and case management along with motel vouchers, and a range of special housing and services for the mentally ill, victims of domestic violence, and emancipated foster youth. Table 17 below provides information on programs that provide emergency and transitional facilities and supportive services for homeless individuals and families in the Antelope Valley.

Emergency shelter for adult men and women is provided at the High Desert MACC, operated by Volunteers of America and located in the City of Lancaster. The High Desert MACC is the only emergency shelter in the Antelope Valley serving the general population of homeless single adults. This all-year emergency shelter facility can accommodate 93 people each night. Valley

Oasis operates a 56-bed emergency shelter for victims of domestic violence. The location of this shelter is confidential.

The Valley Oasis Access Center, located in Palmdale, provides case management, service referrals, motel vouchers, and placement in transitional and permanent housing. The Access Center, which is operated by the Valley Oasis, has improved coordination and continuity of services to homeless persons in the Antelope Valley. The Antelope Valley Transit Authority provides bus service throughout the Antelope Valley, allowing referrals from SAVES to the Department of Public Social Services, the Access Center and the High Desert MACC in Lancaster. However, according to Valley Oasis staff, transportation can be a significant barrier for homeless and very low-income individuals and families without cars whose travel to Lancaster for services means a trip that may require a long walk to bus stops and an hour and a half or more of travel time in each direction. The City of Palmdale has offered space within the SAVES building to the Access Center and other service providers, so that staff from these organizations may process clients from the Palmdale area to minimize the need to travel to receive services.

Table 17: Homeless Services

Name of Service and Location	Operating Agency	Type of Service
Valley Oasis CES Homeless Programs for Families, Adults and TAY 310 Palmdale Blvd Palmdale, CA 93550	Valley Oasis	One stop case management & referral including motel vouchers, supportive services and transitional and permanent housing placement Showers, Laundry, Emergency Transportation, Food and Clothing
Valley Oasis Domestic Violence Shelter (confidential location)	Valley Oasis	60-day domestic violence shelter for individuals and families
Steppin' into the Light	Valley Oasis	Individual & Family Transitional (Domestic Violence)
SAVES in Palmdale	City of Palmdale	Food bank, motel vouchers and referrals to 211, Access Center and Lancaster Shelter. Also provides services to Emancipated Foster Youth.
Scheuer House Antelope Valley Independent Living Program	Gay and Lesbian Adolescent Services Palmdale	Emancipated Foster Youth
Mental Health Case Management and Housing Programs	Mental Health America – Palmdale	Case management & day programs for homeless mentally ill
Permanent Housing with services (up to six years)	25 Shelter + Care Vouchers for Domestic Violence	Permanent housing with services for victims of domestic violence

Farmworkers

Agricultural workers are traditionally defined as persons whose primary incomes are earned through permanent or seasonal agricultural labor. Permanent farm laborers work in the fields, processing plants, or support activities on a generally year-round basis. When workload increases during harvest periods, the labor force is supplemented by seasonal labor, often supplied by a labor contractor. For some crops, farms may employ migrant workers, defined as those whose travel distance to work prevents them from returning to their primary residence every evening.

According to the 2020 *Economic Roundtable Report* produced by the Greater Antelope Valley Economic Alliance (GAVEA), agricultural production in the Antelope Valley is valued at about $108 million per year. Major crops in order of importance include woody ornamentals, bedding plants, vegetable crops, fruits and nuts and field crops.

The 2015-2019 ACS counted 306 persons employed in agriculture, forestry, fishing and hunting and mining in Palmdale in a wide variety of occupations (Table 12). The number of farmworkers currently residing in Palmdale cannot be estimated from this information. The persons employed in agriculture and mining could have a variety of occupations that include farm owners or managers, orchard consultants, mining engineers, equipment operators, truck drivers and so on. Also, as there are many active mining operations within the City of Palmdale, the number of farm workers is likely to be significantly lower than 306 persons.

Most farm work is seasonal and large numbers of farm workers are needed only during the harvest. Some farmworkers migrate from area to area during the harvest season, others are local residents who take other seasonal work or receive unemployment once the harvests are finished. Farm work usually pays very low wages and farmworkers in rural areas are often poorly housed, living in substandard dwellings in fields that are sprayed with pesticides or in deteriorated migrant camps. Farmworkers who live in Palmdale have the same housing needs as other extremely low-income families and individuals and are likely to encounter the same barriers. There are not enough units affordable to families or individuals earning minimum wage or less.

Resources

An increase in the number of units affordable to households earning 30 percent or less of area median income and an increase in the number of available Section 8 vouchers would benefit Palmdale farmworkers and their families as well as other low-income Palmdale families. Additionally, the City currently allows for second dwelling units by-right in any zone in which residential development is permitted and on any parcel with an existing or proposed single or multi-family residence, which creates additional opportunities to provide units suitable for very-low and low-income households. The Palmdale Municipal Code (PMC) allows employee housing in the A-1 (agricultural) zone through Site Plan Review approval and employee housing for six or fewer persons in residential zones as of right.

3.7 Housing Stock Characteristics

A community's housing stock is defined as the collection of all housing units located within the jurisdiction. The characteristics of the housing stock, including growth, type, age and condition, tenure, vacancy rates, housing costs, and affordability are important in determining the housing needs for the community. This section details the housing stock characteristics of Palmdale to identify how well the current housing stock meets the needs of current and future residents of the City.

Growth in the Supply of Housing Stock

The California Department of Finance (DOF) compiles an annual estimate of units constructed by type based on data submitted by each City and County in the State. Population, vacancy and persons per household are all estimates based on 2000 benchmarks and changes in national data. The data in Table 18 is from DOF's Table E-5 published annually in May but dated January 1 of the publication year.

Between 1980 and 2000 Palmdale's housing stock increased from 4,658 housing units to 37,009 an increase of 694 percent. Growth slowed in the last decade, but still continues to provide housing for the growing population. The DOF data shows an increase of 9,535 units between

January 1, 2000, and January 1, 2010, an increase of 25.8 percent. In comparison, DOF data for Los Angeles County as a whole during the period of 2000 to 2010 shows an increase of only 4.9 percent. From 2010 to 2021 the growth has slowed significantly with only an increase if 1.7 percent in the housing stock.

Nearly all new units in Palmdale since 2000 have been single-family units. This can be accounted for by several factors: 1) there was a moratorium imposed on new multi-family housing construction in place between 1999 and 2001; 2) there was substantial public opposition to any new multi-family housing and 3) until October 2012, Palmdale's highest residential density, R-3, allowed a maximum of only 16 units per acre and imposed very restrictive and inflexible development standards, pushing the price of development up. The Palmdale General Plan update will provide new opportunities for increased housing production, especially affordable housing, as it will accommodate a larger variety of densities and housing types.

Table 18: Housing Unit Growth and Type

Year	Total Units	Single-Family Detached	Attached (Condo)	2-4 Units	5 + Units	Mobile Homes	Occupied	Vacant	Per HH
2000	37,009	28,254	905	940	5,215	1,782	34,285	7.58	3.40
2010	46,544	36,770	852	1,714	5,349	2,147	42,952	7.70	3.55
2021	47,353	37,273	854	1,416	5,653	2,157	43,984	7.10	3.54

Source: California Department of Finance, Report E-5 2010 and 2021

Housing Type

Table 18 shows the distribution of Palmdale's 46,544 residential structures by type and number of units on January 1, 2021 according to the DOF. Most dwelling units, (37,273) are single-family homes. Only 854 are attached condos or townhomes with 1,416 units in properties or buildings with two to four units, 5,653 of units in properties or buildings with five or more buildings and 2,157 mobile homes. Over the decade between 2000 and 2010 single-family homes increased by 30.1 percent, buildings with two to four units doubled, multi-family housing of five or more units increased by two percent and the number of mobile homes increased by 20.4 percent. Despite the mortgage crisis and economic downturn beginning in 2007-2008 there was a 25.8 percent increase in Palmdale's housing stock, dominated by single-family homes. Not much has changed other than growth in single-family homes from 2020 through 2021.

Housing Availability and Tenure

Housing tenure and vacancy rates are important indicators of the supply and cost of housing. Housing tenure refers to whether a unit is owned or rented. Tenure is an important market characteristic because it is directly related to housing types and turnover rates. The tenure distribution of a community's housing stock can be an indicator of several aspects of the housing market, including the affordability of units, household stability and residential mobility among others. In most communities, tenure distribution generally correlates with household income, composition and age of the householder.

In 2010, among the City's occupied housing units, approximately 70 percent were owner-occupied, while 30 percent were renter-occupied (Table 19). According to the 2015-2019 ACS, the home ownership rate in Palmdale decreased to 65 percent of the occupied units. Renter-occupied housing units made up about 35 percent of the City's occupied housing stock.

Table 19: Tenure of occupied Units (2010-2019)

Tenure	2010		2019	
	Number	Percent	Number	Percent
Owner Occupied	28,196	70.2%	28,336	65.3%
Renter Occupied	11,957	29.8%	15,068	34.7%
Total Occupied	40,153	100.0%	43,404	100.0%

Source: Bureau of the Census, 2010 Census; 2015-2019 American Community Survey

As shown in Table 20 in 2010, average renter-household size was 3.74 persons compared to 3.60 persons for the average owner-household. In 2019, average renter-household size decreased to 3.56 persons compared to 3.61 persons per for the average owner-household, a very slight increase from 2010.

Table 20: Household Size by Tenure

Tenure	Average Household Size	
	2010	2019
Owner-Occupied	3.60	3.61
Renter-Occupied	3.74	3.56
Total	3.64	3.60

Source: Bureau of the Census, 2010 Census; 2015-2019 American Community Survey

Vacancy rates are an important housing indicator because they indicate the degree of choice available. High vacancy rates usually indicate low demand and/or high supply conditions in the housing market. Too high of a vacancy rate can be difficult for owners trying to sell or rent. Low vacancy rates usually indicate high demand and/or low supply conditions in the housing market. Too low of a vacancy rate can force prices up making it more difficult for low- and moderate-income households to find housing. Vacancy rates between two to three percent are usually considered healthy for single-family housing; and five to six percent for multi-family housing. However, vacancy rates are not the sole indicator of market conditions. They must be viewed in the context of all the characteristics of the local and regional market.

According to the 2015-2019 ACS, the overall vacancy rate in Palmdale is about 7 percent and is consistent with the estimates from the DOF (Table 18). Specifically for rent housing units make up the highest number of vacancies with 744 units currently available to rent being vacant.

Housing Age and Condition

Housing age can be an important indicator of housing condition within a community. Like any other tangible asset, housing is subject to gradual physical or technological deterioration over time. If not properly and regularly maintained, housing can deteriorate and discourage reinvestment, depress neighboring property values, and eventually impact the quality of life in a neighborhood. Many federal and state programs also use the age of housing as one factor in determining housing rehabilitation needs. Typically, housing over 30 years of age is more likely to have rehabilitation needs that may include new plumbing, roof repairs, foundation work and other repairs.

Table 21 shows Palmdale's housing stock by year built. It shows that almost half (47 percent) of the City's housing units were built after 1990. The other 53 percent of the City's housing stock could be in need of some sort of rehabilitation based on the age of the units.

Table 21: Housing Stock Age

Year Built	Number of Units	Percent
2014 to present	138	0.3%
2010-2013	643	1.4%
2000-2009	9,096	19.6%
1990-1999	11,930	25.7%
1980-1989	15,289	32.9%
1970-1979	3,284	7.1%
1960-1969	1,495	3.2%
1950-1959	3,919	8.4%
1940-1949	258	0.6%
Before 1940	410	0.9%
Total	46,462	100.0%

Source: 2015-2019 American Community Survey

The City has serious concerns about the condition and appearance of the approximately 9,578 dwelling units built in 1979 and earlier. Therefore, many of the City's housing programs focus on improving housing condition and neighborhood infrastructure in older Palmdale neighborhoods. Palmdale regards housing condition as a matrix of issues and has designed several City programs that coordinate the activities of key public agencies to improve older neighborhoods plagued by inadequate infrastructure, deteriorating housing, and poor maintenance and management practices. According to Code Compliance records, the City receives about 200 complaints per year regarding substandard housing units. With these numbers and the number of units built in 1979 or earlier, the City has projected approximately 4,800 substandard units in the City.

Although the Census does not include statistics on housing condition based upon observations, it includes statistics that correlate closely with substandard housing conditions. The three factors most commonly used to determine housing conditions are age of housing, overcrowding, and lack of plumbing/kitchen facilities. Housing that is not maintained can discourage reinvestment, depress neighboring property values, and can negatively impact the quality of life in a neighborhood. Improving housing is an important goal of the City. Table 22 presents substandard units in the City.

Table 22: Substandard Units (2019)

Condition	Number	Percentage
Lacking complete plumbing facilities	80	0.2%
Lacking complete kitchen facilities	345	0.8%
Total occupied substandard units	425	1.0%
Total occupied units	43,404	

Source: 2015-2019 American Community Survey

3.8 Housing Costs and Affordability

Housing costs are indicative of housing accessibility to all economic segments of the community. Typically, if housing supply exceeds housing demand, housing costs will fall. If housing demand exceeds housing supply, housing costs will rise. This section summarizes the cost and affordability of the housing stock to Palmdale residents.

Home Ownership Market

In 2020, median home prices around Palmdale ranged from $288,000 in Littlerock to $675,500 in Acton (Table 23). Palmdale's median home price is on the lower end of the spectrum at $350,000 in 2020, much lower than the Los Angeles County median price of $620,000.

Median home sale prices in Palmdale increased by over 28 percent between 2020 and 2021. Other cities and communities also saw similar increases in their median home prices during this time period.

Table 23: Home Sale Prices (May 2020 and May 2021)

Jurisdiction	2020	2021		Percent Change in Median Sale Price
	Price	Number Sold	Price	
Littlerock	$288,000	20	$367,500	27.6%
Palmdale	**$350,000**	**243**	**$449,000**	**28.3%**
Acton	$675,500	16	$770,000	14.0%
Lancaster	$312,500	302	$405,000	29.6%
Santa Clarita	$595,000	151	$710,500	19.4%
Los Angeles City	$817,500	1,235	$965,000	18.0%
Los Angeles County	$620,000	7,800	$775,000	25.0%

Source: Corelogic.com California Home Sale Activity by City, May 2021

Rental Market

In 2021, rents in Palmdale were relatively affordable compared to the City of Los Angeles. In 2012, median and average rents for one-, two- and three-bedroom apartment units in Palmdale still fall within the limits of "fair market rents" set by the federal government. However, rental units are not affordable for households with limited incomes from Social Security, Disability, CalWorks or minimum wage employment. Those households would all have to pay much more than 30 percent of income for rent. Nevertheless, a very low income (31 percent to 50 percent of median) family of four earning $41,150 could pay the rent for a two- or three-bedroom Palmdale apartment or house and stay within the limits of 30 percent of income for rent and a low-income (51 percent to 80 percent of median) family of four with $66,250 per year could easily afford the median price for any of the apartments and homes in except the five bedroom house.

Table 24 tabulates the asked-for rents for 55 units in Palmdale listed on Craigslist Antelope Valley and Zillow in May of 2021.

Table 24 shows that average monthly rents in Palmdale ranged from $700 for a one bedroom to $2,975 for a five-bedroom house. Rents in Palmdale are still considered to be lower than the rest of Los Angeles County which has an average rent of $2,450 for a two-bedroom apartment according to Zillow.

Table 24: Average Monthly Rent (2021)

Unit Size	# of Units	Rent Range	Average Rent
1 bedroom	4	$ 700-$1,100	$950
2 bedroom	17	$1,250-$1,895	$1,310
3 bedroom	27	$1,425-$2,050	$1,775
4 bedroom house	4	$1,800-$2,500	$2,100
5 bedroom house	3	$2,235-$2,975	$2,565

Source: Survey of Palmdale rents on Craigslist (34 listings) and Zillow (21 listings), May 2021

However, without a Housing Choice Section 8 Voucher, even a one-bedroom unit is too expensive for individuals or families living on the incomes provided by CalWORKs, Supplemental Security Income, or Disability. These individuals and families must spend nearly all of their income for rent or double up with another family and are vulnerable to losing their housing altogether if the property owner raises the rents or if there is a medical or other family emergency.

Housing Affordability by Income Level

Housing affordability can be inferred by comparing the cost of renting or owning a home in the City with the maximum affordable housing costs for households at different income levels. Taken together, this information can generally show who can afford what size and type of housing and indicate the type of households most likely to experience overcrowding and overpayment.

HUD conducts annual household income surveys nationwide to determine a household's eligibility for federal housing assistance. Based on this survey, HCD developed income limits that can be used to determine the maximum price that could be affordable to households in the upper range of their respective income category. Households in the lower end of each category can afford less by comparison than those at the upper end.

Table 25 shows the annual income for extremely low, very low, low, and moderate-income households by the size of the household and the maximum affordable housing payments based on the federal standard of 30 percent of household income. From these income and housing cost limits, the maximum affordable home prices and rents are determined. The table also shows the maximum amounts that households at different income levels can pay for housing each month (e.g., rent, mortgage and utilities) without exceeding the 30 percent housing cost-to-income ratio. The maximum affordable payments can be compared to current market prices for single-family homes, condominiums, and apartments to determine what types of housing opportunities a household can afford.

Comparison of these maximum affordable housing costs with the sales price data shown previously in Table 23, indicates that not even moderate-income households (101 to 120 percent AMI) would be able to afford single-family homes sold in Palmdale in this market. It should be noted however that asking prices can often be higher than actual sales prices. At a maximum affordable purchase price of about $347,334, it is not likely that low-income households (51 percent to 80 percent AMI) could afford even a small condominium unit as shown in Table 25. The high price of single-family housing indicates that the opportunities for home ownership in the City are limited for lower and moderate income groups. In addition, the down payment and closing costs may still represent a significant obstacle to home purchase.

The Housing Element acknowledges that opportunities to accommodate housing affordable to lower income households in Palmdale are limited. This is based on rental rates for apartment units in Palmdale (

Table 24) as well as information gathered to determine for-sale housing costs (Table 23).

Table 25: Affordable Housing Costs (2020)

Household	Annual Income[1]	Affordable Costs (All Costs)	Estimated Utility Allowance, Taxes & Insurance2		Affordable Rent	Affordable Home Price
			Utilities	Taxes, Ins., HOA (Ownership)		
Extremely Low-Income (0-30 percent AMI)						
1-Person	$23,700	$593	$151	$207	$442	$61,790
2-Person	$27,050	$676	$166	$237	$510	$72,096
3-Person	$30,450	$761	$190	$266	$571	$80,244
4-Person	$33,800	$845	$223	$296	$622	$86,069
5-Person	$36,550	$914	$264	$320	$650	$86,953
Very Low Income (31-50 percent AMI)						
1-Person	$39,450	$986	$151	$345	$836	$129,241
2-Person	$45,050	$1,126	$166	$394	$960	$149,182
3-Person	$50,700	$1,268	$190	$444	$1,077	$166,966
4-Person	$56,300	$1,408	$223	$493	$1,185	$182,427
5-Person	$60,850	$1,521	$264	$532	$1,257	$191,020
Low Income (51-80 percent AMI)						
1-Person	$63,100	$1,578	$151	$552	$1,427	$230,524
2-Person	$72,100	$1,803	$166	$631	$1,637	$265,026
3-Person	$81,100	$2,028	$190	$710	$1,837	$297,157
4-Person	$90,100	$2,253	$223	$788	$2,030	$327,179
5-Person	$97,350	$2,434	$264	$852	$2,170	$347,334
Median Income (81-100 percent AMI)						
1-Person	$54,100	$1,353	$151	$473	$1,202	$191,981
2-Person	$61,850	$1,546	$166	$541	$1,380	$221,130
3-Person	$69,550	$1,739	$190	$609	$1,548	$247,693
4-Person	$77,300	$1,933	$223	$676	$1,710	$272,361
5-Person	$83,500	$2,088	$264	$731	$1,824	$288,020
Moderate Income (101-120 percent AMI)						
1-Person	$64,900	$1,623	$151	$568	$1,472	$238,233
2-Person	$74,200	$1,855	$166	$649	$1,689	$274,020
3-Person	$83,500	$2,088	$190	$731	$1,897	$307,435
4-Person	$92,750	$2,319	$223	$812	$2,096	$338,527
5-Person	$100,150	$2,504	$264	$876	$2,240	$359,325

Assumptions: 2020 income limits; 30 percent of household income spent on housing; LACDA utility allowance; 35 percent of monthly affordable cost for taxes and insurance; 10 percent down payment; and 3 percent interest rate for a 30-year fixed-rate mortgage loan. Taxes and insurance apply to owner costs only; renters do not usually pay taxes or insurance.

Sources: California Department of Housing and Community Development 2020 Income Limits; Los Angeles County Development Authority (LACDA), 2020 Utility Allowance Schedule; Veronica Tam & Associates, 2020.

3.9 Affordable Housing

Section 65583(a)(8) of California Housing Element law requires each city and county to identify the assisted housing units in its jurisdiction that are at risk of conversion to market rates within 10 years of the beginning of the planning period. The element must conduct an analysis that includes an inventory of all such units, an estimate of the cost of preserving the existing units or producing comparable new units and the availability of nonprofit corporations capable of acquiring and operating these units. Possible financing sources for preservation or replacement must also be identified. Finally the analysis must state the community's goals, quantified objectives, policies and programs for housing preservation and production (see Section VIII, Policies and Programs). This analysis covers the 10-year period between October 15, 2021, and October 15, 2031.

Identification of At-Risk Units

The City of Palmdale has facilitated the development of numerous projects to improve the supply of affordable housing through construction of new units and the acquisition and rehabilitation of old units. There are 24 developments in the City that provide 2,439 affordable units to residents (Table 26). Three of the developments consisting of 126 affordable units are at-risk of being converted to market rate housing.

In general, Carmel Apartments would be considered at the highest risk of converting to market rate housing as the bond program requires only 20 percent of the units to be affordable in exchange for bond financing. No long-term rent subsidies are available for these units. On the other hand, Desert View and East 35th Street Apartments have Ongoing rent subsidies from the HUD project-based Section 8 program and all units at these projects are set aside as affordable housing. For East 35th Street Apartments, the short-term Section 8 and long-term deed restrict both expire in 2025. For Desert View Apartments, while the current short-term Section 8 contract may expire in 2023, the project is deed restricted as affordable housing through 2033. Therefore, among the three at-risk projects, Desert View is least likely to convert to market-rate housing.

Table 26: Assisted Rental Housing

Development Name	Total Units	Low/Mod Units	Household Type	Funding Source	Expiration of Affordability
Carmel Apartments	112	23	Family	Local Mortgage Revenue Bond	2023
Desert View Apartments	55	55	Family	Section 8	9/1/2023
East 35th Street Apartments	48	48	Family	Section 8	2025
Manzanita Villas	144	29	Family	City Regulatory Agreement	2042
Summerwood Apartments	54	52	Family	Multi-Family Housing Revenue Bond	9/3/2070
La Quinta Apartments	100	98	Family	Multi-Family Housing Revenue Bond	9/3/2070
Park Vista Apartments	28	27	Family	Multi-Family Housing Revenue Bond	9/3/2070
Impressions Apartments	109	107	Senior	Multi-Family Housing Revenue Bond	9/3/2070
Boulders at the Ranch I	358	358	Mobile Home Park	Tax-Exempt (A)and Taxable Bonds secured by Housing Set-Aside funds(B)	5/6/2032

Development Name	Total Units	Low/Mod Units	Household Type	Funding Source	Expiration of Affordability
Boulders at the Ranch II	206	206	Mobile Home Park	Tax-Exempt (A)and Taxable Bonds secured by Housing Set-Aside funds(B)	5/6/2032
Boulders at the Lake	222	222	Mobile Home Park	Tax-Exempt (A)and Taxable Bonds secured by Housing Set-Aside funds(B)	5/6/2032
Palmdalia Apartments	64	64	Family	Section 8	7/1/2044
Palmdale Gardens	76	76	Senior	Section 8	N/A
Palmdale East Q	90	90	Family	Section 8, LIHTC	2055
Palmdale Desert Club Apartments	80	80	Family	Section 8, LIHTC	N/A
Village Garden Apartments	80	80	Family	Section 8	N/A
Whispering Palms	75	74	Senior	Housing Set Aside Funds, Multi-Family Housing Revenue Bond, HOME	2073
Cielo Azul	80	79	Senior	Housing Set Aside Funds, LIHTC	8/13/2063
Summer Terrace	80	79	Senior	Housing Set Aside Funds, LIHTC, HOME	2064
Palo Verde Terrace	78	77	Senior	Housing Set Aside Funds, LIHTC, HOME	12/30/2065
Casablanca Apartments	200	200	Family	LIHTC	2055
Wright Brothers Court	156	156	Family	Housing Set Aside Funds, LIHTC, HOME	2074
Courson Arts Colony – East & West (Meta Housing)	161	159	Family	LIHTC, HOME Housing Assets Fund	2074. 2105
Total	2,656	2,439			

Cost and Resources for Replacement or Preservation

Preservation of the at-risk units can be achieved in several ways: 1) facilitate transfer of ownership of these projects to or purchase of similar units by nonprofit organizations; 2) purchase of affordability covenant; and 3) provide rental assistance to tenants using funding sources other than Section 8.

Transfer of Ownership: Long-term affordability of the units at risk can be secured by transferring ownership of these projects to non-profit housing organizations. A search on LoopNet shows several rental properties for sale, averaging about $450,000 per unit. The at-risk units are smaller, older units and therefore likely to command lower market prices. Nevertheless, transferring ownership or purchasing replacement units would require significant resources.

Purchase of Affordability Covenant: Another option to preserve the affordability of at-risk projects is to provide an incentive package to the owners to maintain the project as low-income housing. Incentives could include writing down the interest rate on the remaining loan balance, and/or supplementing the Section 8 subsidy amount received to market levels. The feasibility of this option depends on whether the property is highly leveraged. By providing lump sum financial incentives or ongoing subsidies in rents or reduced mortgage interest rates to the owner, the City can ensure that some or all of the units remain affordable.

Rent Subsidy*:* Tenant-based rent subsidies could be used to preserve the affordability of housing. Similar to Section 8 vouchers, the City, through a variety of potential funding sources could provide assistance to very low income households. The level of the subsidy required to preserve the at-risk affordable housing is estimated to equal the Fair Market Rent for a unit minus the housing cost affordable by a very low-income household. Table 27 shows the rent subsidies required for both of the projects with at-risk units. As shown, subsidizing the very low-income at-risk units would require approximately $541,800 annually, an average of $645 per unit per month.

Table 27: Rental Subsidies Required

Unit Size/Household Size	Number of Units	Fair Market Rent[1]	Household Annual Income	Affordable Housing Cost[3]	Monthly per Unit Subsidy[4]	Total Annual Subsidy
Very Low Income (50 percent AMI)[2]						
1 Bedroom/ 2-person household	126	$1,605	$45,050	$960	$645	$975,240

Source: Veronica Tam and Associates, 2021.
Notes:
1. Fair Market Rent (FMR) is determined by HUD. These calculations use the 2021 HUD FMR for the Los Angeles.
2. Rents are restricted to 50 percent AMI, which puts residents in the Very Low Income Category, set by the California Department of Housing and Community Development (HCD).
3. The affordable housing cost is calculated based on 30 percent of the AMI, minus utilities for rentals.
4. The monthly subsidy covers the gap between the FMR and the affordable housing cost

Replacement Housing Cost: The cost of developing new housing depends on a variety of factors such as density, size of units, location and related land costs, and type of construction. Assuming an average development cost of $500,000 per unit for multi-family rental housing, replacement of the 126 at-risk units would require approximately $63 million.

Resources

Preservation of at-risk housing requires not only financial resources but also administrative capacity of nonprofit organizations. Qualified entities to acquire and preserve at-risk housing in Los Angeles County include, but are not limited to:

- Many Mansions
- Mercy Housing
- Bridge Housing
- National Community Renaissance (National CORE)
- Clifford Beers Housing
- Innovative Housing Opportunities

4. Constraints

Various nongovernmental factors, governmental regulations, and environmental issues pose constraints to the provision of adequate and affordable housing. These constraints may result in housing that is not affordable to lower and moderate income households, or may render residential construction market prices economically infeasible for developers. This section addresses these potential constraints.

4.1 Governmental Constraints

The issue of housing constraints refers to land use regulations, housing policies and programs, zoning designations, and other factors that may influence the price and availability of housing opportunities in Palmdale. These housing constraints may increase the cost of housing or may render residential construction economically infeasible for developers. Additionally, constraints to housing production significantly impacts lower income households and those with special needs.

Transparency in Development Process

To increase transparency and certainty in the development application process as required by law, the City provides a range of information online for ease of access, some of which is as follows:

- General Plan: https://www.cityofpalmdale.org/279/General-Plan
- Zoning Ordinance: https://www.codepublishing.com/CA/Palmdale/
- Site Plan Review Process and Schedule: https://www.cityofpalmdale.org/287/Site-Plan-Review
- Specific Plans: https://www.cityofpalmdale.org/289/Specific-Plans-Other-Plans
- Development Application Materials: https://www.cityofpalmdale.org/267/Applications

Land Use Policies

The Land Use Element of the Palmdale General Plan sets forth policies for residential development. These land use policies, combined with zoning regulations, establish the amount and distribution of land to be allocated for different uses. Housing supply and costs are affected by the amount of land designated for residential use, the density at which residential development is permitted, and the standards that govern the character of development. This Housing Element update is for the State required 6th cycle update that will cover the period beginning on October 15, 2021, and ending on October 15, 2029.

The Land Use Element (1993) provides for the following land use designations which allow for residential development:

- Equestrian Residential (ER): 1 dwelling unit per 2.5 gross acres
- Low Density Residential (LDR): 1 dwelling unit per acre
- Single-family Residential-1: 0 – 2 dwelling units per acre
- Single-family Residential-2: 0 – 3 dwelling units per acre
- Single-family Residential-3: 3.1 – 6 dwelling units per acre
- Medium Residential: 6.1 – 10 dwelling units per acre
- Multi-family Residential: 10.1 – 16 dwelling units per acre
- Medium-High Density Residential: 30-50 dwelling units per acre
- High Density Residential: 50-60 dwelling units per acre

Table 28: Zoning Designations and Density

Land Use Designation	Zoning Designation	Type	Density-DU Per Acre
Equestrian Residential (EQ)	A-1	Single-family	1 du per 2.5 acres
Low Density Residential (LDR)	R-1-1	Single-family	1 du per acre
Single-family Residential 1 (SFR-1)	R-1-15,000 to 20,000	Single-family	0-2 du per acre
Single-family Residential 2 (SFR-2)	R-1-10,000 to 13,000	Single-family	0-3 du per acre
Single-family Residential 3 (SFR-3)	R-1-7,000	Single-family	3.1-6 du per acre
Medium Residential (MR)	R-2	Single-family / Multi-family	6.1 -10 du per acre
Multiple Residential (MFR)	R-3	Multi-family	10.1-16 du per acre
Medium High Density Residential (MFR)	R-4(30)	Multi-family	30-50 du per acre
High Density Residential (HDR)	R-4(50)	Multi-family	50-60 units per acre

Source: City of Palmdale Zoning Ordinance

The City's current General Plan and Zoning Ordinance leave a void in the continuum of housing options – whereby either low density residential or fairly high density residential uses are permitted. Housing in the moderate density range (16-29.9 dwelling units per acre) is not accommodated under the current land use designations. The City is currently in the process of conducting a comprehensive update to the General Plan. An objective of this General Plan Update is to fill in the density gap to allow for a variety of housing types in the City. The General Plan Update is anticipated to be adopted in Spring 2022 followed by the comprehensive Development Code Update in Fall 2022. Any development applications that are submitted between winter 2021 and spring 2022 would be processed using the multi-family development guidelines (described below) and the new General Plan densities.

As part of the update, the Land Use Element is being revised in part by replacing the land use categories with Place Types. The previous land use categories with densities higher than single-family will be replaced with four new neighborhood types. Four new mixed-use designations will be added, and a new mixed use Educational Flex District will also be added. The new Land Use Element will identify additional districts, village centers, a corridor and nodes. Table 29 provides the draft Place Types that are being developed as part of the update along with the corresponding residential densities and allowable heights. As shown in Table 29, the draft Place Types, particularly the Mixed Use 4 (MU4)(PTASP – Urban Core) Place Type, allows for significantly higher residential densities than what is allowed in the current Land Use Element. Due to the significant changes in the Land Use Element a comprehensive update of the Development Code will be necessary in order to implement the new Land Use Element.

Table 29: Draft Place Types

Place Types	Descriptions	Min. and Max. Residential Density	Max. Commercial FAR	Height
RESIDENTIAL				
Equestrian Residential (ER)	Rural single-family buildings on lot sizes 2.5 acres or larger. Animal keeping activities permitted, and overall accessed primarily by car	up to 0.4 du/ac		35 feet
Low Density Residential (LDR)	Detached single-family buildings located on hillsides or in valleys and as a transition between rural and suburban areas. Lot sizes range between 1-2.5 acres, and are accessed primarily by car	up to 1 du/ac		35 feet
Single-family Residential 1 (SFR1)	Detached single-family buildings in a semi-rural environment with horse/animal keeping possible. Lot sizes range between 0.5-1 acres, and are accessed primarily by car	up to 2 du/ac		35 feet
Single-family Residential 2 (SFR2)	Single-family buildings, appropriate in those areas between the valley floor and steeper hillside areas (having less than ten percent slope). Lot sizes range between 0.3-0.5 acres, and are accessed primarily by car	up to 3 du/ac		35 feet
Single-family Residential 3 (SFR3)	Detached single-family subdivisions containing the City's standard 7,000 square foot minimum lot size will typically be located within this designation. Accessed primarily by car but also accessible to bicycles and pedestrians	3 to 6 du/ac		35 feet
Residential Neighborhood 1 (RN1)	A neighborhood that may include mobile homes, single-family detached, single-family attached, small lot homes, townhouses, condominiums, duplexes, triplexes, 4-plexes oriented for walking and biking while still accessible by car.	6 to 10 du/ac		35 feet
Residential Neighborhood 2 (RN2)	A neighborhood that may include a variety of attached and detached housing units like a mix of townhomes, 2-3 story walkups, or courtyard style apartments. Oriented for walking and biking while still accessible by car	10 to 20 du/ac		35 feet
Residential Neighborhood 3 (RN3)	A walkable neighborhood where buildings are close to the sidewalk and may include housing types like garden apartments, rowhouses, mid-rise apartment buildings within walking distance of goods, services, and transit	20-30 du/acre		45 feet
Residential Neighborhood 4 (RN4)	A walkable neighborhood where buildings are close to the sidewalk and may include a variety of attached dwelling types like townhouses, condominiums, and mid-rise to high-rise apartments all within walking distance of goods and services, and transit	30 to 50 du/ac		65 feet
Mobile Home	Existing mobile home parks			

Place Types	Descriptions	Min. and Max. Residential Density	Max. Commercial FAR	Height
MIXED USE				
Mixed Use 1 (MU1)	A neighborhood-scale main street with services and active storefronts located at or near the sidewalk. Including some residential above or next to commercial uses with some as 2-story buildings	10-20 du/acre	0.35	35 feet
Mixed Use 2 (MU2) (TASP - General Urban)	A slightly taller neighborhood scale environment with ground floor office or retail located at or near the sidewalk with housing next to or above, some as 3-4 story buildings	20-30 du/ac	1.0-2.0	45 feet
Mixed Use 3 (MU3) (TASP - Urban Center)	A more urban, walkable neighborhood with office, light R&D, and retail ground floor located at or near the sidewalk with housing next to or above, including townhomes and 3-6 story residential	30-50 du/acre	1.5-3.0	65 feet
Mixed Use 4 (MU4) (TASP - Urban Core)	An urban, walkable, downtown environmental with ground floor retail, light R&D, office on the ground floor at or near the sidewalk and some housing next to or above, buildings ranging from 3-7 stories	50-80 du/acre	2.5-4	85 feet
Educational Flex (EDF)	Mix of educational types uses including trade schools, public and private higher educational facilities and satellite campuses, supportive retail, office, and housing.	20-30 du/acre		45 feet

Provisions for a Variety of Housing Types

State Law pertaining to the Housing Element requires that cities' land use policies and development standards allow for the development of a variety of housing types for all income levels, including single-family dwellings, multi-family dwellings, manufactured homes, and transitional and supportive housing. The City's General Plan Land Use Element and Development Code designate particular areas within the City for residential development and accommodate various types of housing as discussed in the following section.

The City's current residential land use designations provided for the development of a wide range of housing types including single-family dwellings, mobile homes, townhomes, condominiums, accessory dwelling units, and multi-family units at various densities. The updated Palmdale General Plan 2045, when adopted, will place more emphasis on creating residential neighborhoods and mixed-use nodes with desired housing types including townhouses, duplexes, triplexes, 4-plexes, courtyard style apartments, garden apartments, rowhouses, mid-rise apartment buildings, and high-rise apartments in areas specifically designated on the General Plan land use map. Adoption of the new General Plan is expected in Spring of 2022.

Conventional Housing

The City of Palmdale allows conventional single and multiple-family housing in four residential zones. Single-family housing is permitted in three zones (A-1, R-1 and R-2). The Light Agriculture A-1 zone permits large-lot single-family residential on lots typically one or more acres. The R-1 zone permits single-family dwelling units at a gross density of 0-6 dwelling units per acre. The R-2 zone permits both single-family and multi-family housing at a gross density of 6.1 – 10 dwelling units per acre.

Multi-family housing is permitted in three residential zones (R-2, R-3, and R-4). As stated above, permitted gross density in the R-2 zone is 6.1 – 10 dwelling units per acre, and R-3 permits a gross density of up to 16 dwelling units per acre. Permitted gross density in the R-4 zone, intended for apartments, is 30-50 dwelling units per acre, and 50-60 dwelling units per acre.

The City also contains several specific plans and community plans that allow for single-family and multi-family development. These plans are discussed in greater detail later in this section.

Mixed-Use Housing

The Palmdale Transit Area Specific Plan (PTASP) was developed for a 746-acre area surrounding the planned Palmdale Station, a multimodal transportation hub in downtown Palmdale. The PTASP was adopted in December 2020, and replaces the previous Palmdale Transit Village Specific Plan, which encompassed just 110 acres, in its entirety. The plan uses a form-based code to provide for a pedestrian-oriented mixed-use district, which will include a variety of housing types, single-family, multi-family and mixed-use housing with residential uses above first floor retail. Housing development is planned at residential densities that range from the Traditional Neighborhood at a maximum of 8 dwelling units per acre; General Urban at 20 – 30 dwelling units per acre; Urban Center at 30 – 50 dwelling units per acre; and Urban Core at 50 – 80 dwelling units per acre. The projected buildout is phased with expected residential buildout to be 367 units by 2025, and 1,229 units by 2035. Future phases will add more residential units; however, these are beyond the 6th cycle Housing Element planning timeframe.

Accessory Dwelling Units (Second Dwelling Units)

Accessory dwelling units can provide an important source of affordable housing for persons and families of low and moderate income. Per the PMC, an accessory dwelling unit is defined as “an attached or detached residential dwelling unit which provides complete independent living facilities for one or more persons. It shall include permanent provisions for living, sleeping, eating, cooking and sanitation on the same parcel as a single-family or multi-family dwelling is situated.” Accessory dwelling units may also include efficiency units and manufactured homes as defined by the California Health and Safety Code.

Numerous new State laws in recent years have impacted the way that local jurisdictions regulate accessory dwelling units, including AB 68, AB 587, AB 881, and SB 13. With the goal of increasing accessory dwelling unit production, these bills have modified allowable fees, application procedures, and development standards that cities are permitted to employ. In response to this legislation, the City adopted an updated accessory dwelling unit ordinance in 2020 that complies with State requirements. Per the ordinance, accessory dwelling units are permitted by-right in any zone in which residential development is permitted and on any parcel with an existing or proposed single-family or multi-family residence.

Manufactured Home Parks and Subdivisions

Mobile homes are an important housing type in Palmdale, comprising 5 percent of the housing stock. Zoning Ordinance Section 17.41.090.G.13 specifically allows for the installation or construction of a manufactured home where the code allows for the construction of a detached single-family structure. Manufactured homes must comply with all standards of development for detached single-family structures.

There are 10 mobile home parks in Palmdale with a total of 2,241 mobile home units. Three of the parks are owned and operated by the Palmdale Housing Authority, which purchased the parks with funding from the City’s Redevelopment Housing Set-Aside. The parks were rehabilitated and all of the 786 spaces in the three parks are reserved for low and moderate-income households. In addition, assistance for purchase of mobile homes has been provided to 74 low

and moderate-income households. The City continues to regulate rents in privately owned mobile home parks.

Manufactured home parks and subdivisions are allowed in the R-3 Zone; the minimum lot area is 5-acres. PMC Sections 17.91.050 and 17.91.060 establish the specific standards for manufactured home parks and subdivisions.

Farmworker Housing and Employee Housing

The City currently provides for agricultural workers' living quarters within the A-1 (Light Agriculture) zone with Site Plan Review. As part of the City's comprehensive update to the Zoning Ordinance, the City will clarify its compliance with the State required provisions for farmworker and employee housing. Specifically, the State Employee Housing Action regarding farmworker housing (Health and Safety Code Section 17021.6) specifies that any farmworker housing consisting of no more than 36 beds in group quarters or 12 units is considered an agricultural land use and therefore similarly permitted where agricultural uses are permitted. Furthermore, the Employee Housing Act (Health and Safety Code Section 17021.5) specifies that any employee housing providing accommodations for six or fewer employees shall be deemed a single-family structure with a residential land use designation.

Emergency Shelters

Emergency shelters, referred to as Homeless Shelters in the PMC, are permitted in the C-2 zone and the MX overlay zone with a Site Plan Review. The C-2 zone includes 224 acres of vacant land. This offers adequate capacity to accommodate the City's estimated 289 unsheltered homeless.

Section 17.94.040 of the PMC was amended in 2012 to reduce the distance separation requirement between Homeless Shelters to within 300 feet and remove the distance separation requirements to schools and single-family residential uses. This distance requirement is not consistent with State law. State law allows a city to establish a separation requirement from another emergency shelter only, but not other land uses. The City's ordinance includes a separation from transitional or supportive housing, which is not permissible under State law.

Furthermore, AB 139 (Emergency and Transitional Housing) states that local governments may include parking requirements for emergency shelters, but specifies that adequate parking must be based solely on shelter staffing level and not exceed the requirements for residential and commercial uses in the same zone. The City will amend the PMC to comply with State law on the provision of emergency of shelters.

Low Barrier Navigation Centers

Adopted in 2019, AB 101 defines a Low Barrier Navigation Center as "a Housing First, low-barrier, service-enriched shelter focused on moving people into permanent housing that provides temporary living facilities while case managers connect individuals experiencing homelessness to income, public benefits, health services, shelter, and housing." Low Barrier shelters may include options such as allowing pets, permitting partners to share living space, and providing storage for residents' possessions.

AB 101 requires jurisdictions to permit Low Barrier Navigation Centers that meet specified requirements by-right in mixed-use zones and other nonresidential zones permitting multi-family residential development. The bill also imposes a timeline for cities to act on an application for the development of a Low Barrier Navigation Center. The provisions of AB 101 are effective until 2026 when they sunset. The PMC has not been updated to permit this type of development; therefore, a Housing Program has been added to amend the PMC to ensure consistency with AB 101.

Transitional Housing and Supportive Housing

In 2012 the City amended its Zoning Ordinance to comply with SB 520 and SB 2. The Zoning Ordinance now permits Transitional Housing and Supportive Housing within a single-family dwelling unit within the A-1 and R-1 zones as an administrative use. Transitional Housing and Supportive Housing with four or fewer units within the R-2, R-3 and R-4 zones will be permitted with administrative approval; those located with five or more units will require Site Plan Review approval, consistent with the requirements for all residential uses.

AB 2162, adopted in 2018, requires that supportive housing developments with 50 or fewer units be permitted by-right in zones where multi-family and mixed-use developments are permitted, provided the development meets certain requirements. Additionally, the bill prohibits jurisdictions from imposing parking requirements based on the number of units for supportive housing developments within one half mile of a public transit stop. A program is included in the Housing Plan to amend the Development Code to ensure its supportive housing provisions are compliant with State law.

Residential Care Facilities

A Residential Care Facility is defined in the California Community Care Facilities Act and is any family home, group care facility, or similar facility determined by the State Director of Health Care Services, for 24-hour non-medical care of persons in need of personal services, supervision, or assistance essential for sustaining the activities of daily living or for the protection of the individual. A small residential care facility is licensed by the State of California to house six or fewer individuals. The PMC permits small residential care facilities in the R-1, R-2, R-3 and R-4 zones.

Large Residential Care Facilities, (also called Assisted Living Facilities in the PMC), are licensed by the State of California to house seven or more individuals in accordance with the California Community Care Facilities Act. Currently, the PMC allows these facilities with a Site Plan Review approval in the R-2, R-3, R-4 and MX zones. In addition, large residential care facilities are conditionally permitted in the C-2 zone. During the 6th cycle Housing Element reviews, the State Department of Housing and Community Development has identified the exclusion of large community care facilities from lower density residential zones as a potential constraint on housing for persons with disabilities. The City has included a program in the element to evaluate expanding such facilities to all residential zone districts during the upcoming comprehensive Zoning Code update.

Single Room Occupancy Units

There is no current provision within the PMC for Single Room Occupancy (SRO). These are typically a small unit with shared kitchen and bathroom facilities. There are currently no SROs within Palmdale. Historically there has not been a market demand for the development of SRO's due to the affordability of larger rental properties within the City. The PMC does currently include provisions for Boarding Houses and Rooming Houses within the R-3 and R-4 zones with a Conditional Use Permit. Additionally, at the present time, the PMC does not regulate a single-family residential unit where four or fewer individuals rent individual rooms. A business license for a single-family rental is only required where the property owner is not living within the residence.

Multiple-Family Housing Design Standards

Design criteria such as open space, amenities and landscaping requirements are important to maintaining quality of life in residential developments. The City is in the process of updating the PMC to add design standards for multi-family housing in each of the zones where it is allowed, R-2, R-3, R-4 and the Mixed-use Overlay in order to be consistent with the Goals, Policies and

Objectives of the Community Design Element of the General Plan. The standards apply unless in conjunction with a housing project for low-income households, seniors, or assisted living facilities.

The standards ensure that all multi-family housing projects in the City consisting of five or more units are built to include such features as common usable open space, recreational amenities, private walled patios or balconies, private enclosed storage space, washer and dryer hookups or a common laundry room, refuse areas, pre-wiring for cable, and bicycle racks provided in secure locations. Because these standards are objective and applied equally throughout each of the zones that permit multi-family housing, and the standards do not apply to housing for lower income households, seniors, or assisted living facilities, the imposition of these standards is not an impediment to the development of multi-family residential units. Rather, the purpose of these design standards is essentially to improve the livability and functionality of each residential unit. They enhance the development and quality of life for residents.

Development Standards

Environmental Assessment Requirements

Existing environmental settings in Palmdale do not present a major constraint to housing development. The majority of the residential sites in Palmdale would be subject to a (Mitigated) Negative Declaration. Some infill parcels adjacent to existing development may be determined to be Categorically Exempt under the CEQA Guidelines. Sites within the Palmdale Transit Area Specific Plan have been previously assessed within the Environmental Impact Report prepared for a previous study that covered the same geographical area; however, they will still be subject to site-specific review. The General Plan Update EIR, when completed, will provide an opportunity for future developments to tier from the updated document, saving time and cost.

Residential Development Standards

The PMC implements the General Plan. It contains development standards for each zoning district consistent with the land use designations of the General Plan. The PMC was comprehensively updated in 2019. It provides for the following residential zones:

- Light Agriculture (A-1): one dwelling unit per one or more gross acre
- Single-Family Residential (R-1): one-six dwelling units per gross acre
- Medium Residential (R-2): 6.1-10 dwelling units per gross acre
- Multiple Residential (R-3): up to 16 dwelling units per gross acre
- High Density Residential (R-4): 30-50 and 50-60 dwelling units per gross acre

Light Agriculture (A-1) -- (one dwelling unit/one or more gross acre): This designation is intended to ensure that existing rural character is maintained. Typical development in this zone is low density, large-lot single-family homes with truck farming, field and tree crops.

Single-Family Residential (R-1) -- (one-six dwelling units/gross acre): This designation is intended for the development of single-family detached dwellings at gross densities ranging from zero to 6 dwelling units per acre and a minimum lot size of seven thousand (7,000) square feet. Development within the R-1 zone generally consists of single-family residential neighborhoods of a suburban type and density.

Medium Residential (R-2) -- (6.1-10 dwelling units/gross acre): This designation is intended to allow the development of housing at a gross density of between 6.1 and 10 dwelling units per acre. This zone permits a mix of dwelling unit densities and structure types, including single-family detached and attached; zero lot line and wide-shallow subdivisions; duplexes, triplexes,

condominium and townhouse developments; and moderate density apartment and manufactured housing development.

Multiple Residential (R-3) -- (up to 16 dwelling units/gross acre): This designation is intended to promote the development of grouped housing such as townhouses, condominiums and apartments at a density of up to 16 dwelling units per gross acre. This designation permits the development of self-contained residential communities, which provide adequate on-site recreational facilities and open space to meet the immediate needs of its residents.

High Density Residential (R-4) -- (30-50 and 50-60 dwelling units/gross acre): This designation is intended to promote the development of apartments at a density of between 30 to 50 and 50 to 60 dwelling units per gross acre. This designation permits the development of self-contained residential communities that provide adequate on-site recreational facilities and open space to meet the immediate needs of its residents.

The PMC establishes residential development standards for each zone to ensure quality of development in the community. Site Development Criteria as specified in the PMC for each applicable zone is presented in Table 30.

Table 30: Residential Development Standards

	R-1	R-2	R-3	R-4
Minimum net lot area (square feet)	7,000	For SF detached, min. 7000; for SF attached or multiple- family structures, min. 4000/du; min. 3500/du for manufactured home subdivisions	20,000; or 5 acres for manufactured home subdivisions	40,000
Density Ranges (du/gross acre)	0-6	6.1-10	Up to 16	30-50 and 50-60
Minimum Lot Width	Minimum lot width varies by size of lot, and depending on whether the lot is an interior lot, corner lot, reverse corner lot or end of a cul-de-sac or street knuckles. Lots siding onto an arterial, railroad right-of-way, or more intensive land use or designation require additional lot width. A typical interior 7,000 square foot lot will have a minimum required lot width of 70 feet.	For SF detached, same as R-1	100’	100’
Minimum Lot Depth	Minimum lot depth is not less than 100 feet. Each lot that backs up to an arterial, or more intensive land use or designation require a minimum lot depth of 110 feet. Lots backing up to railroad right-of-way require a minimum depth of not less than 130 feet.	--	--	--
Minimum Flag Lot Frontage	20’	--	--	--

	R-1	R-2	R-3	R-4
Maximum Lot Coverage	40%	50%	50%	80%
Minimum Setbacks[1]		For SF detached, same as R-1; all other housing types as follows:		
Front **Side yard[2]** **Rear[3]**	15' 5'/10' 20'	20' Min. 5'/story Min. 15'	20' Street side 20', interior side 5' per story Min. 15'	5' Street side 5', interior side 5' per story with a max of 15' Min. 15'
Maximum Height	35' (two stories)	35' (two stories)	45' (three stories)	5 stories or 60'
Private and Common Open Space (sq. ft. per unit)	—	Private: Min. 7' patio depth + Min. average 200 or 25% of average unit size Common: With 5 or more units, minimum 30% usable common open space for passive and active recreational use	Private: Min. average 200 or 25% of ave. du size Common: With 5 or more du's, minimum 30% usable common open space for passive and active recreational use	Private: Min. 7' patio depth + Min. average 150 or 25% of ave. du size Common: With 5 or more du's, minimum 15% usable common open space for passive and active recreational use
Parking Requirements (off-street)	Fully enclosed 2 car garage, min. 20' x 20'	For SF detached, same as R-1; all multiple-family apartments as follows: <u>Studio</u>: 1.25 spaces/unit, 1 of which must be covered and designated for a specific unit <u>One Bedroom</u>: 1.5 spaces/unit, 1 of which must be covered and designated for a specific unit <u>Two or more Bedrooms</u>: 2.25 spaces/unit, 1 of which must be covered and designated for a specific unit		

Source: City of Palmdale, CA, 2021

[1]All Setbacks measured in feet from the edge of the public right-of-way.

[2]Except on corner or reversed corner lots where both side yards must be a minimum of 10'. When siding onto a designated arterial street, or a more intensive land use or designation, minimum 20', and when siding onto a railroad right-of-way, minimum 50'.

[3] When backing onto a designated arterial street, or a more intensive use, rear yard setback shall be a minimum 30', when backing onto a railroad right-of-way, minimum 50'.

Specific Plans

In addition to the above residential land use categories, the City has 11 Specific Plans, seven of which allow for residential development at various densities. The purpose of specific plans is to provide a clear vision and implement comprehensive standards which reflect the unique characteristics of the planning area.

Hillside Specific Plan is built out. Two of the specific plan areas, Rancho Vista and Joshua Hills, are well developed with infrastructure in place and little vacant residential land. City Ranch, also known as Anaverde Nuevo, contains more than 1,500 existing residential units and major infrastructure has been installed. Ritter Ranch has installed infrastructure but has not yet been developed. Foothill Ranch Specific Plan, formerly known as College Park, is the only one of the specific plan areas where infrastructure is not yet in place. It is located within a fault zone area and has Flood Zone, Hillside and Biological constraints. Palmdale Transit Area Specific Plan (PTASP) was adopted in 2020. It replaces and expands upon the previous Transit Village Specific Plan which was rescinded. Its focus is on Palmdale's downtown area, whereas the other Specific Plans are in the City's periphery.

Table 32 lists the Specific Plans within the City that allow for residential development along with their permitted densities. As shown, the Plans allow for the development of a variety of housing types from single-family large lot development (Foothill Ranch Specific Plan) to high density multi-family and mixed-use developments (i.e. PTASP). The specific plans with remaining residential development potential for the 6th cycle Housing Element are further discussed in the Housing Resources section.

Table 31: Specific Plans Allowing Residential Uses

Specific Plan	Residential Type Permitted	Density Range Permitted
City Ranch (Anaverde)	Single-family detached, attached, and multi-family residential	3.1 – 6.1 du/ac, 6.2 – 10 du/ac, and 10.1 – 16 du/ac respectively
Foothill Ranch (College Park)	Single-family, one ac minimum	380 units total
Hillside Specific Plan	Single-family, large lot	407 SF residential units
Joshua Hills	Single-family detached and multi-family	1,725 units of SF residential at densities of 4.5 – 5.7 du/ac, 736 MF units at 13.3 – 22.0 du/ac
Palmdale Transit Area SP (2020)	Mix of residential uses permitted as part of a form-based code	Urban Core (T6): 50-80 du/ac Urban Center (T5): 30-50 du/ac General Urban (T4): 20-30 du/ac Traditional Neighborhood (T3): up to 8 du/ac. SF residential
Palmdale Transit Village Addendum	Superseded by the new Transit Area SP	See Palmdale Transit Area SP (above)
Rancho Vista SP	Single-family detached, multi-family at varying densities	Urban Residential: SF – 3.2 du/ac, 2,584 units Urban Medium: SF – 5.6 du/ac, 206 units Urban Village: MF – 13.6 du/ac, 450 units Urban High: MF – 22 du/ac, 176 units
Ritter Ranch	Single-family detached and multi-family	80 SF equestrian estates 5,089 SF detached units 1,189 SF attached units 348 MF units 494 senior housing units

Building Codes and Their Enforcement

Building Code Requirements

The City has adopted the 2019 California Building Code (CBC), which is largely based on the International Building Code, to address building code requirements. Under State law, this code can be amended by local governments only for geological, topographical, or climatological reasons. These codes are considered to be the minimum necessary to protect the public health, safety, and welfare, and are not considered an unnecessary constraint to housing. The City has not adopted any local amendments to the CBC that would significantly increase the cost of housing construction.

Code Enforcement

The City puts a high priority on building code enforcement. It has a Neighborhood Improvement Program in which the Building and Safety Division works with law enforcement, the County of Los Angeles Fire Department, the Los Angeles County Department of Health Services, the Department of Public Works and other agencies to coordinate clean up, infrastructure improvements, housing rehabilitation, crime reduction and improvements in property management practices in selected areas of the City. A program of the Department of Neighborhood Services Public Safety Division, called Partners Against Crime (PAC), is an educational program for multi-family properties. This program is essentially Neighborhood Watch for multi-family properties. The program is not an enforcement program and participation is voluntary. This program educates neighbors on how to properly secure their home, vehicles and persons to prevent becoming a victim of a crime. Residents are made aware of how to properly report crime and suspicious activity. Because the program is not an enforcement program, it does not monitor any specific criminal conducts. The program does not require or encourage disclosure of any personal information. It does encourage being a good neighbor as well as getting to know your neighbors to develop a sense of community.

The components of the program include:

- Completion of landlord training classes that focus on the benefits of active and community-oriented approach to management. Training includes up to date information on applicant screening and other housing topics. Participants are encouraged to contact the City's fair housing consultant, the Housing Rights Center, for questions.
- Holding Neighborhood Watch meetings with residents to provide residents with resources and information and to improve the sense of community.
- Inspection and certification through the Building and Safety Rental Inspection Program. This certification focuses on crime prevention through environmental designs and allows both the landlord and tenant to verify all building and safety measures are met.

All multi-family properties are encouraged to participate. No distinction is made between affordable or market rate properties, or any special populations. A property that successfully completes the program components above receives a PAC sign that can be posted at the property as a certificate of quality management.

Off-Site Improvements

Dedication Requirements

In addition to impact fees, new development is required to dedicate land where needed to construct infrastructure improvements to support the residents it generates. These requirements are most commonly applied to dedication of land along street frontages for additional right-of-way needed to widen roads in order to carry additional traffic. All new housing projects are required to dedicate half-width street right-of-way and construct improvements within the interior of the project. Where the project boundary abuts a public street, right-of-way dedication is required along the project frontage, and street improvements are required to be constructed. Street right-of-way may also be used for placement of sewers, storm drains, and utility easements. The requirements placed on the project must be directly related to the project's impacts on infrastructure systems, and must represent a fair share contribution based on the project's share of the facility needs in order to meet the tests of nexus and proportionality.

The requirement to dedicate right-of-way and/or easements for public improvements to support development is typical of all California cities and is specified as a subdivision requirement by the State Subdivision Map Act. There are no unusual requirements in the City of Palmdale for dedication of land to construct infrastructure.

Improvement Requirements

In areas of existing development, the street system is complete and developers only have to install sidewalks, driveways and curbs for their own developments. In the downtown area and near other developments, water, sewer and power may extend to vacant infill lots in one area, but in another area developers of vacant lots may have to bring services to the lots from a distance. The same is true of larger parcels in the City's older areas. Some may already have services close to the site; for other sites a developer may have to make a larger infrastructure investment. If infrastructure is not available to a new development, the developer is required to install the required infrastructure to service the project, with the potential for impact fee credits and reimbursement. The Southern California Gas Company and Southern California Edison provide gas and electricity respectively.

Examples of types of improvements required of developers include the following:

- Street improvements, including curb, gutter and sidewalks; streetlights and traffic control devices, bus turnouts & shelters
- Grading, drainage and drainage structures
- Walls and fences
- Sanitary sewers
- Water mains and fire hydrants
- Street trees and landscaping

Due to the change in traffic impact analysis, affordable housing projects, infill projects of a smaller size, and projects relying on previously approved environmental documents can screen out of Vehicle Miles Traveled (VMT) standards and are not required to prepare separate traffic studies. A traffic mitigation fee is paid on a per unit basis to offset the costs of transportation related capital improvements. The City has a Capital Improvement Plan for improvements to the circulation system and the mitigation fee is combined with other funds, including grant funds, to pay for street, traffic light and other improvements that are made according to a prioritized schedule.

Some of Palmdale's residentially zoned land lies in areas that are still largely unimproved. Developers are required to demonstrate the ability to provide and gain access to streets, drainage, sewers, power, and water as a condition of approval for raw land development. This Housing

Element focuses on residential land with near-term development potential. Specifically, the City encourages infill development in the central areas of Palmdale where infrastructure is already in place and vacant parcels are available. The cost of on- and off-site improvements in the central areas would be substantially lower than in the peripheral areas.

Water

The City of Palmdale is primarily served by Palmdale Water District (PWD) and Los Angeles County Waterworks District (LACWD) 40, with numerous small water companies providing service to smaller areas.

PWD receives water from Littlerock Creek Dam and Reservoir, the State Water Project (SWP) and groundwater. Groundwater is obtained from underground aquifers via active wells scattered throughout PWD and chlorinated prior to distribution. LACWWD 40 receives water from the SWP, purchased through the Antelope Valley East Kern Water Agency (AVEK), and local groundwater.

The Antelope Valley groundwater basin was in overdraft, which is the condition where annual extraction exceeds the safe-yield for a period of at least approximately 61 years. However the Antelope Valley adjudication process was finalized in 2015. The goal of the adjudication was to bring management to the basin and to limit further subsidence. The adjudication provides a framework to sustainably manage the basin and reduce groundwater declines and subsidence. To administer the judgement, the court directed appointment of the Watermaster (5-member board). The Antelope Valley Watermaster (established in 2016) is charged with administering adjudicated water rights and managing groundwater resources within the adjudicated portion of the Antelope Valley. After 15 years of complex proceedings, the judgement identified a state of overdraft, established respective water rights among groundwater producers, and ordered a ramp-down of production to the native basin safe yield. PWD's groundwater supplies accounted for 13 to 39 percent of PWD's potable water supplies between 2016 and 2020. The projected groundwater pumping volumes in the Antelope Valley Groundwater Basin will decrease in the future due to the adjudication process.[4]

The 2020 PWD Urban Water Management Plan (UWMP) evaluated project water usage in the district in five-year increments up until 2045. PWD anticipates having adequate supplies to meet demands during normal years. However, PWD anticipates that during single-dry year conditions, demands will exceed supplies starting in 2030 and during multiple-dry year conditions, demands will exceed supplies starting in 2045. Additionally, in a consecutive five-year drought, PWD anticipates demands exceeding supplies in 2021 and 2023. Therefore, additional supplies are assumed to be needed to meet demands under those conditions. PWD has identified numerous short-and long-term transfer and exchange opportunities that would provide additional supplies to help overcome supply shortages. The 2020 Water Shortage Contingency Plan identifies numerous opportunities to reduce customer demand during water shortages.[5] Anticipated water supplies addressed in the UWMP include groundwater, groundwater or surface water augmentation, local surface water, imported SWP water, water from the Butte Transfer agreement and recycled water.

The PWD 2020 UWMP includes the projected use of water for lower income households within the District boundaries. The proportion of lower income households through the year 2045 was projected to be 50 percent. In addition, the UWMP states that PWD will not deny or condition approval of water services, or reduce the amount of services applied for by a proposed

[4] Palmdale Water District, 2020 Urban Water Management Plan, June 25, 2021.
[5] Palmdale Water District, 2020 Urban Water Management Plan, June 25, 2021.

development that includes housing units affordable to lower income households unless one of the following occurs:

- PWD specifically finds that it does not have sufficient water supply;
- PWD is subject to a compliance order issued by the SWRCB DDW that prohibits new water connections; or,
- The applicant has failed to agree to reasonable terms and conditions relating to the provision of services.

LACWD 40 does not anticipate any supply deficiencies under normal, single-dry or multiple-dry year conditions, largely due to the availability of banked groundwater supplies.

Sewer

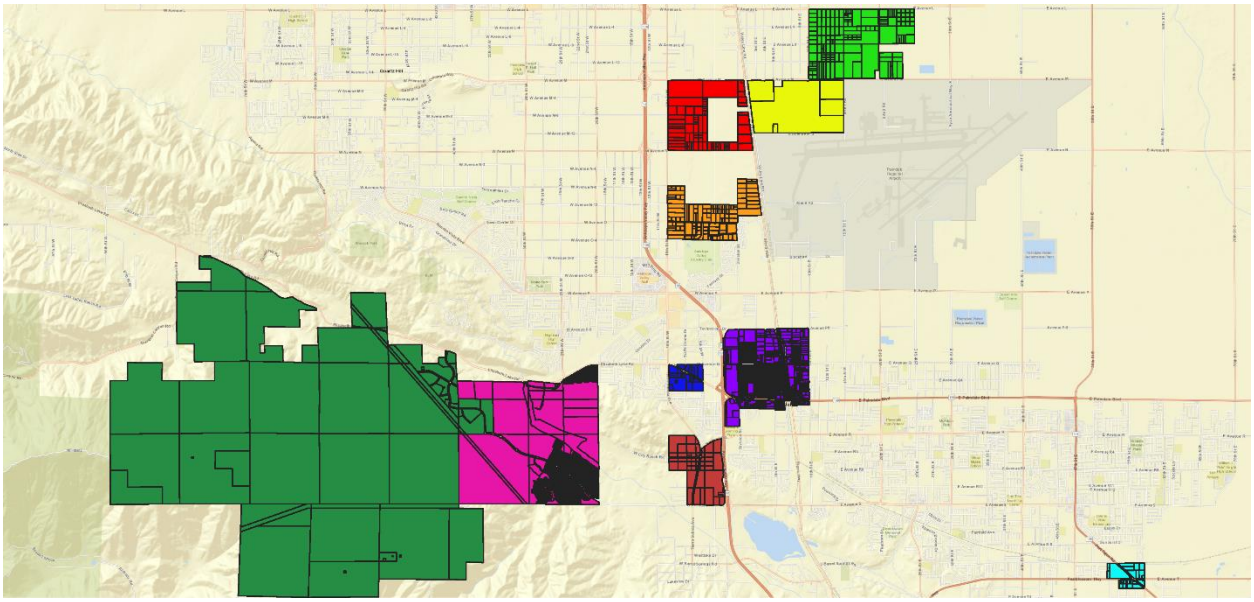
The City of Palmdale owns the wastewater collection system that collects wastewater from all properties on the sewer system pipelines within the City's municipal boundaries and transfers it to large trunk sewers that in turn empty into the Palmdale or Lancaster Water Reclamation Plant.

Most sewers in Palmdale are within Los Angeles County Sanitation District (LACSD) 20, which covers most of the southern half of Palmdale. These sewers carry wastewater for treatment at the Palmdale Water Reclamation Plant. Some of the sewers in the northern portion of Palmdale discharge to LACSD trunk sewers that convey flow to the Lancaster Reclamation Plant within LACSD District 14. The discharge from sewers on-site at USAF Plant 42 is split between LACSD District 20 and LACSD District 14.

There are also approximately 2,726 septic tanks served by the system, of which approximately 1,000 are within Palmdale city limits.

To expand Palmdale's sewer capacity, the City formed an Enhanced Infrastructure Financing District (EIFD) in 2014. EIFDs are special districts with defined boundaries that use local property taxes to issue bonds (tax increment financing) to fund infrastructure projects (e.g. streets, utilities, sidewalks, pedestrian safety enhancements) or affordable housing (see Figure 1). It was formed in partnership with the County of Los Angeles. The goal of the Palmdale EIFD is to support needed infrastructure in the Antelope Valley to help accelerate the production of quality jobs and accessible housing. The resolution of intent was approved by the City Council on June 1, 2021, and the infrastructure financing plan for the EIFD was just approved on October 28, 2021.

Figure 1: Enhanced Infrastructure Financing Districts



The Palmdale EIFD encompasses approximately 22,971 acres of land; 18,860 acres located within Palmdale city limits (representing approximately 28 percent of the City's total approximately 68,032 acres and 4,140 acres located in unincorporated County. The Palmdale EIFD boundaries are non-contiguous, focusing on the jobs and housing centers of the City. These areas include Ritter Ranch, Anaverde Nuevo and the PTASP. The EIFD can be used to increase sewer capacity should it be needed.

An Environmental Impact Report (EIR) Addendum is being prepared for the 6th Cycle Housing Element. The Addendum analyzes the 6th Cycle Housing Element Update's potential to have new or substantially increased environmental effects compared to those analyzed in the City's 2006-2014 Housing Element Update Environmental Impact Report (EIR). Consistent with the findings of the HE EIR, which analyzed sites that would use the same utilities and service systems, access to utility and service systems is available and there would be capacity for increased wastewater in sewers.

Fees and Other Exactions

The City charges a range of development fees and exactions to recover the costs of providing services to new development. Fees are designed to ensure that developers pay a pro-rata fair share of the cost of providing infrastructure. While these fees do increase the cost of housing development, they are necessary to ensure public health and safety, as well as to maintain a high quality of life for residents of the City. Additionally, application processing fees are necessary to facilitate thorough and consistent project review and orderly development within the City.

Planning and Development Fees

Planning application fees are established by a Fee Study, which analyzes a number of factors including processing time and number and experience level of people needed to review an application. The purpose of the fee study is to determine fee levels that accurately cover the cost of application review, which are then reviewed and adopted by the City Council. The most recent update to the fee schedule became effective on July 1, 2021. These fees are not considered excessive and are comparable to surrounding communities. Table 32 summarizes the Planning Department fee requirements for residential development applications. Planning and impact fees

combined, the City estimates that the fees for a typical single-family home total approximately $21,983, slightly below 10 percent of the building valuation. For a typical multi-family development project, average per unit fees total to $14,800, also approximately 10 percent of the building valuation. Fees in Palmdale are not excessive.

Table 32: Planning Department Application Fees - Residential

Application	Application Fee
Annexation	$4,144 + $5/ac + LAFCO fees
Conditional Use Permit Residential	$7,150
Development Agreement and Density Bonus	$3,450
Site Plan Review	$7,150
Subdivision Development Plan Review	$1,050
Environmental Review	
Initial Environmental Study	$2,000
Environmental Impact Report	$8,000
General Plan Amendment	$3,108 + $50/acre for first 200 acres
Minor Exception, Minor Site Plan Review	$1,000
Pre-Application to Development Advisory Board	$250
Request meeting with DAB	$250
Specific/Community/Master Plan, New	$4,869.20 + $15/res. unit
Specific/Community/Master Plan Amendment	$2,331
Tentative Parcel Map	$5,000
Tentative Tract Map	
Small Maps (1-40 lots/units)	$7,500
Large Maps (over 40 lots/units)	$9,000
Time Extension (Administrative/PC Approval)	Fee equal to 80% of current base fee, depending on type of application
Variance	$1,813
Zoning Map Amendment	$3,108

Source: City of Palmdale, Fee Schedule, June 2021. Note this is a snapshot applicable to June 2021, and does not include all applicable fees.

Table 33: Estimated Total Fees - Single-Family Detached Unit

Source of Cost	Amount
Planning Department Fees Plan Check	$2,881
Building And Safety Fees Plan Check and Permits	$3,521
Traffic Impact Fees	$1,740
Park Impact Fees	$6,812
Fire Facility Impact Fees	$2,414
Sewer Fees (Hook-Up)	$2,864
Public Facility Fees	$1,751
Total Fees	**$21,983**
Prototype Assumption: 2,200 sq. ft. unit- 4 bedrooms plus 500 sq. ft. garage	

Source: City of Palmdale Planning, Building and Safety and Engineering Departments.

Table 34: Estimated Total Fees – Multi-Family Project

Source of Cost	Amount
Planning Department Fees Plan Check	$88,206
Building and Safety Fees Plan Check and Permits	$103,901
Park Impact Fees	$585,888
Fire Facility Impact Fees	$81,320
Sewer Fees (Hook-Up)	$117,269
Public Facility Fees	$59,466
Total Fees	**1,036,050**
Per Unit Fees	**$14,800**
Prototype Assumption: 70-unit development with 64 3-bedroom units and 6 2-bedroom units for a combined 85,600 sq. ft. apartment complex with carports and balconies.	

Source: City of Palmdale Planning, Building and Safety and Engineering Departments

Local Processing and Permit Procedures

Development permits typically must undergo a variety of City approval processes depending upon the scope and scale of a residential project. The purpose of the development review process is to encourage development that is compatible and harmonious with neighborhoods; foster sound design principles resulting in creative and imaginative solutions; utilize quality building design that avoids monotony; promote and maintain the public health, safety, general welfare; and implement General Plan policies that encourage the preservation and enhancement of the unique character of the City. The PMC sets forth the procedures for the various development permits and reviews required by the City. These processes are critical to ensuring quality residential projects that are consistent with City design goals and standards. Table 35 indicates the approximate review timeline and approval authority for various application types.

Overview of the Development Review Process

Figure 2 on the following page provides a flow chart of the development entitlement process. The development review process maximizes efficiency and utilizes a multi-departmental Development Advisory Board (DAB) to review proposed developments. The DAB process expedites project review by ensuring completeness of formal applications and provides an opportunity for early communication between departments in order to minimize contradictory requirements.

The City has a 120-day schedule for getting a development application through to City Council review, once the application is deemed complete. The Building and Safety and Engineering Divisions typically require two to three weeks for each check on a permit plan check.

Multi-family developments of four or fewer units are approved administratively and developments containing five or more units are subject to Site Plan Review. The Site Plan Review hearing is conducted by a Hearing Officer. The Site Plan Review is not considered a constraint on the development of multi-family housing because approval is only subject to conformity with all adopted development standards of the zone and the goals, policies and objectives of the General Plan, including this Housing Element. For a project subject to Site Plan Review approval, the land use itself is permitted as of right; the only discretion the Hearing Officer has is to ensure the site plan and building(s) are consistent with the PMC with respect to development standards such as setbacks, height, maximum site coverage, parking and landscaping.

Figure 2: Development Processing Schedule

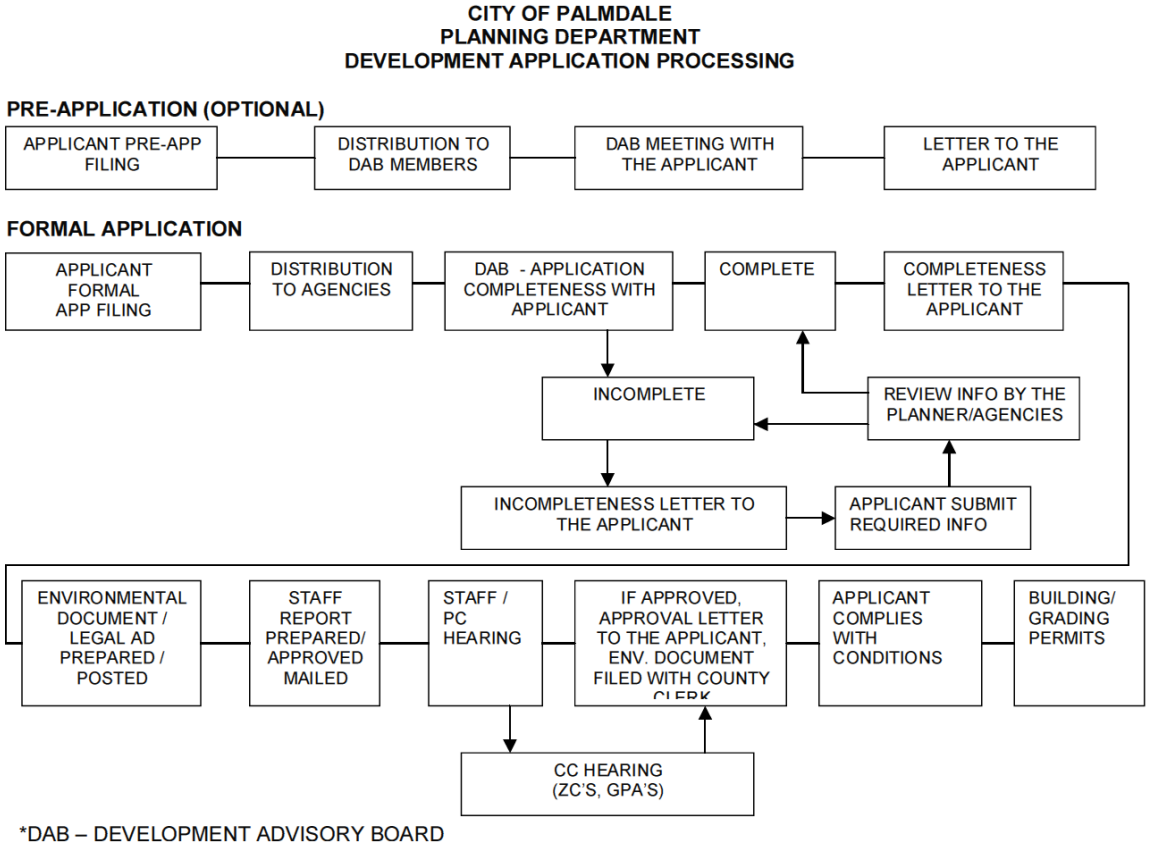


Table 35 and Table 36 below provide timelines for the development approval process. Table 36 assumes all applications and submittals are complete on the first submittal.

Table 35: Timelines for Permit Procedures

Type of Approval or Permit	Typical Processing Time
Administrative/Ministerial Review	5-10 days
Conditional Use Permit	4-6 months
Zone Change	4-6 months
General Plan Amendment	4-6 months
Site Plan Review	3-6 months
Architectural/Design Review	5-10 days
Tract Maps	4-6 months
Parcel Maps	3-4 months
Initial Environmental Study	2-4 weeks
Environmental Impact Report	9-12 months

Source: City of Palmdale Planning Department

Table 36: Typical Processing Procedures by Project Type

	Single-Family Unit	Subdivision	Multi-Family ≤ 4 units	Multi-Family 5 or more units
Process	Administrative approval	Tentative Map	Administrative approval	Site Plan Review
		Final Map		
		Initial Study – (Mitigated) Negative Declaration		Initial Study – (Mitigated) Negative Declaration
		Subdivision Development Plan		
Estimated Total Processing time	5-10 days	4-6 months	5-10 days	4-6 months

Source: City of Palmdale Planning Department

Tract or Parcel Maps

Tentative Tract or Tentative Parcel Map applications are filed with the Planning Division. These applications are evaluated based on the applicable development standards of the underlying zone, which typically includes minimum lot size, lot width, lot depth, and frontage width. A tentative tract or tentative parcel map processed concurrently with another application, such as a Site Plan Review, does not lengthen or increase the time period for staff to review the application. The Planning Commission is the approval authority for Tentative Tract and Tentative Parcel Maps.

Conditional Use Permits

The purpose of a Conditional Use Permit is to allow certain uses that contribute to the orderly growth and development of the City to be properly integrated into the surroundings in which they are to be located. The Conditional Use Permit process is intended to provide an opportunity for public review and evaluation of site specific requirements and characteristics, to provide adequate mitigation of any potentially adverse impacts, and to ensure that all site development regulations and performance standards are provided in accordance with the PMC. Residential uses that require a Conditional Use Permit are manufactured home parks and subdivisions (R-3), convalescent facilities (R-3 and R-4 zones), boarding and rooming houses (R-3 and R-4 zones), and alcohol and drug treatment facilities (R-3, R-4 and C-3 zones).

The Planning Commission cannot deny a Conditional Use Permit if the facility meets all development standards. As of 2021, the City has 10 mobile home parks and the City works to preserve affordability of the mobile home parks through rent stabilization. While the Conditional Use Permit process may add uncertainty to the development of such housing facilities, the process has not precluded their development in the City.

Variances and Minor Exceptions

Variance and minor exception applications are typically filed to request a deviation from applicable development standards where unique property characteristics would create a hardship in complying with the PMC. The characteristics must be unique to the property, and in general, not shared by other adjacent parcels. Minor exceptions are approved through Administrative Review by the Planning Manager, such as a modification to fence height, setbacks, building height, or other minor deviations from development standards. If the deviations do not qualify for a Minor Exception, a Variance application could be approved by the Planning Commission at a public hearing. Variance requests include such modifications to development standards as fences, walls

and screening; front, rear and side yards; height of structures; parking; landscaping; and usable open space.

Both the variance and minor exception requests require the following findings to be made in order to support approval:

- There are special circumstances or conditions applicable to the property, including size, shape, topography, location or surroundings, so that the strict application of the Zoning Ordinance would deprive such property of privileges enjoyed by other properties in the vicinity and under identical land use classification;
- Granting the minor exception or variance is necessary for the preservation and enjoyment of a substantial property right possessed by other properties in the same vicinity and land use district and denied to the property for which the variance is sought;
- Granting the variance or minor exception will not be materially detrimental to the public health, safety, or welfare or injurious to properties or improvements in such vicinity and land use district in which the property is located; and,
- Granting the minor exception or variance does not constitute a special privilege inconsistent with the limitations upon other properties in the vicinity and land use district in which such property is located.

General Plan Amendment, Development Code Amendments, and Zoning Map Amendments

With the comprehensive General Plan update and move toward a “form-based” land use policy, the City would offer increased flexibility in the types of uses and development standards. The need for General Plan and Zoning amendments should be less frequent in the future.

Density Bonus

The City's Affordable Housing Incentives/Density Bonus Provisions assist in the development of affordable housing opportunities in accordance with Government Code §65915-65918. These provisions allow a density bonus and other regulatory concessions to provide incentives for "the production of housing for very low income, lower income, moderate income, and senior households" to "facilitate the development of affordable housing" within the City. The provisions function by allowing a reduction in development standards in exchange for the development of affordable housing units. Based on the number of units provided and the percentage of those units designated for low, very low, and senior households, the applicant may request a density bonus and/or other regulatory concessions to facilitate the development. Regulatory concessions act as incentives, which can include reduced building setbacks, reduced open space, increased lot coverage, increased maximum building height, reduced on-site parking standards, reduced minimum building separation requirements, or other site or construction conditions applicable to residential development. However, the caveat regarding the density bonus is that the development incentive granted must contribute significantly to the economic feasibility of providing the targeted number of units.

On April 2, 2019, the City of Palmdale updated the City’s Density Bonus Ordinance to comply with State law, and included the regulations from AB 1763, also enacted in 2019. In the meantime, AB 2345 signed by the Governor in September 2020 further incentivizes the production of affordable housing by increasing the maximum available density bonus from 35 percent to 50 percent for qualifying projects not composed exclusively of affordable housing.

The Housing Plan includes a program to update Zoning Ordinance 17.25.110 in order to comply with the new State provisions related to affordable housing density bonuses.

Housing for Persons with Disabilities

Persons with disabilities often have special housing needs; therefore, housing options for persons with disabilities are often limited. To ensure adequate housing for persons with disabilities, State law requires cities to analyze constraints to the development, maintenance, and improvement of housing for persons with disabilities; demonstrate efforts to remove governmental constraints; and include programs to accommodate individuals with disabilities.

Allowable Housing Types

The PMC defines a Residential Care Facility as a facility as defined in the California Community Care Facilities Act and is any family home, group care facility, or similar facility determined by the State Director of Health Care Services, for 24-hour non-medical care of persons in need of personal services, supervision, or assistance essential for sustaining the activities of daily living or for the protection of the individual. The PMC further stipulates that a Residential Care Facility must be licensed by the State of California.

Palmdale complies with applicable State law requirements and permits Residential Care Facilities, serving six or fewer persons, to be located in all residential districts. The PMC further distinguishes these as small Residential Care Facilities.

Residential Care Facilities serving seven or more persons, are permitted in the R-2, R-3, and R-4 zones, subject to the Site Plan Review process. The PMC also distinguishes these as Large Residential Care Facilities, which is the same as the definition of an Assisted Living Facility, and does not include nursing homes, convalescent homes, substance abuse recovery facilities, alcohol and drug residential recovery homes, sober living homes alcohol and drug treatment facilities, or transitional housing. The PMC establishes off-street parking requirements for Assisted Living Facilities of one space for every three beds, plus one space for each employee scheduled to work on the largest shift. In addition, all required off-street parking shall be located a maximum of 150 feet from at least one entrance to the facility. When the facility provides individual units that can be considered “dwelling units,” as defined in the PMC, with individual kitchens, the facility shall be subject to the development standards for senior housing projects. The PMC does not establish a maximum concentration in any single area for these facilities, does not establish separation requirements (in addition to those established by State law), and are subject to the applicable review requirements of the base zone.

Definition of Family

The PMC does not have a definition of “family”; however, “household” is defined as, “one or more individuals, related or unrelated, living together in a single dwelling unit.”

This definition does not regulate the number or relationships of occupants in a home (i.e. blood relation), or distinguish residential uses by the type of occupant or disability. Therefore, there are no constraints to the development of housing for persons with disabilities based on household size or type, type of disability or medical condition, or any other arbitrary grouping.

Reasonable Accommodations

Both the Federal Fair Housing Act and the California Fair Employment and Housing Act impose an affirmative duty on local governments to make reasonable accommodations (i.e., modifications or exceptions) in zoning and other land use regulations when such accommodations may be necessary to afford disabled persons an equal opportunity to use and enjoy a dwelling.

A 2004 update included the establishment of procedures for reasonable accommodations in PMC Section 17.26.100 in compliance with state and federal fair housing laws. Applications for reasonable accommodations are submitted to the Planning Division and are approved through administrative review by the Planning Manager. Applications for reasonable accommodation require

the applicant to identify the basis for the claim that the individual is considered disabled, the applicable PMC provision, regulation or policy from which reasonable accommodation is being requested, and why the reasonable accommodation is necessary to make the specific property accessible to the individual. The decision to approve a reasonable accommodation requires the making of specific findings related to the accommodation, including:

1. Special need created by the disability;
2. Potential benefit that can be accomplished by the requested modification;
3. Potential impact on surrounding uses;
4. Physical attributes of the property and structures;
5. Alternative accommodations which may provide an equivalent level of benefit;
6. In the case of a determination involving a single-family dwelling, whether the structure would be considered a single housing unit if it were not using special services that are required because of the disability of the residents;
7. Whether the requested accommodation would impose an undue administrative burden on the City; and
8. Whether the requested accommodation would require a fundamental alteration in the nature of a City program or law, including but not limited to land use and zoning.

The findings required for the City's reasonable accommodation procedures may be viewed as constraining to housing for persons with disabilities. For example, potential impacts on surrounding uses and physical attributes of the property and structures may be considered subjective. Furthermore, reasonable accommodation should be available to all housing unit types, regardless of whether special services are required. The City will amend the reasonable accommodation procedures to ensure the required findings are objective, provide certainty in outcomes, and that the request can be processed expeditiously.

Streamlining (SB 35)

SB 35 allows a streamlined, ministerial review process for multifamily residential projects that meet certain minimum affordable housing guarantees. This ministerial review process is required for jurisdictions that have not made significant progress in meeting their allocation of the regional housing need. To comply with State law, Palmdale will amend the Zoning Code to include written procedures in accordance with SB 35 (please refer to Housing Element Program 8).

4.2 Nongovernmental Constraints

Nongovernmental constraints refer to economic and market factors that impact the maintenance, development, and improvement of affordable housing. Although every community is impacted to varying degrees by market constraints, the City of Palmdale has instituted policies and programs to offset the impact of market forces, and conserve and expand the availability of safe, decent, and affordable housing opportunities.

Housing Market

The City of Palmdale offers abundant opportunities for residential development. However, the City has not seen a significant increase in housing supply, especially multi-family housing construction. One key factor relates to the City's current land use and zoning structure that leaves

a missing link – moderate density (16-30 du/ac) – between low density single-family residential uses and very high density urban residential uses. As part of the comprehensive update to the General Plan, the City is introducing the Residential Neighborhood 2 (RN2) and Residential Neighborhood 3 (RN3) that would bridge the density (and housing type) gap by allowing residential development between 20 and 30 units per acre.

The market can also constrain the timing between project approval and requests for building permits. In some cases, this may be due to the inability for a developer to secure financing for construction, or the ability of the project applicant in making corrections to plans. In Palmdale, the average time between project approval and request for building permit is typically one to six months.

Timing and Density

Non-governmental constraints can also include timing between project approval and requests for building permits. In many cases, this has to do with securing construction financing. In Palmdale, the City allows for concurrent Planning and Plan Check submittal, at the applicant's risk, during the entitlement process. The average time between project approval and request for building permit is approximately three months.

The level of development that is anticipated by a jurisdiction may not always be what is proposed by the property owner or developer. While the City would not support projects below minimum density requirements, inquiries have been made by developers. However, no formal submittals have been received to develop below minimum densities.

Land Cost

Palmdale has an abundance of vacant land available on the market. A quick search online (Zillow.com and Redfin.com) indicates over 200 vacant properties available for sale. Prices vary depending on zoning and availability of infrastructure, ranging from about $30,000 per acre to over $100,000 per acre for more readily developable land. Sites that appear to require significant infrastructure improvements command significantly less.

Cost of Construction

One indicator of construction costs is Building Valuation Data compiled by the International Code Council (ICC). The unit costs compiled by the ICC include structural, electrical, plumbing, and mechanical work, in addition to interior finish and normal site preparation. The data is national and does not take into account regional differences, or include the price of the land upon which the building is built. In 2020, according to the latest Building Valuation Data release, the national average for development costs per square foot for apartments and single-family residences in 2020 are as follows:

- Type I or II, R-2 Residential Multi-family: $148.82 to $168.94 per square foot
- Type V Wood Frame, R-2 Residential Multi-family: $113.38 to $118.57 per sq. ft.
- Type V Wood Frame, R-3 Residential One and Two Family Dwelling: $123.68 to $131.34 per sq. ft.
- R-4 Residential Care/Assisted Living Facilities generally range between $143.75 to $199.81 per sq. ft.

In general, construction costs can be lowered by increasing the number of units in a development, until the scale of the project requires a different construction type that commands a higher per square foot cost. These costs are exclusive of the costs of land and soft costs, such as entitlements, financing, etc. The City's ability to mitigate high construction costs is limited without direct subsidies. Another factor related to construction cost is development density. For multi-family attached units, construction costs are slightly lower as developers can usually benefit from economies of scale with discounts for materials and diffusion of equipment mobilization costs. Construction costs are relatively consistent throughout Los Angeles County, and therefore high construction costs are a regional constraint on housing development rather than a local constraint.

Financing

The availability of mortgage financing can impact the ability of a household in achieving homeownership. According to the Home Mortgage Disclosure Act (HMDA) data for 2020, more than 600,000 households applied for home mortgage financing in 2020, with an approval rate of 65 percent and a denial rate of about 13 percent. About 22 percent of the loan applications were either deemed incomplete or withdrawn by applicants. This approval rate is fairly consistent with the average rates in recent years. Interest rates have also been at the historic lows, hovering slightly below three percent. However, the major obstacle to homeownership for many households, especially lower income households, is the ability to save up for the required down payment. Prior to the elimination of redevelopment, many communities were able to provide down payment assistance to first-time buyers. Most communities have suspended these programs along with the elimination of redevelopment.

Another impediment to decent housing is the access to financing for home improvement, which usually has much lower approval rates than mortgage financing. Often households are already highly leveraged with the first mortgage loan to qualify for a second loan for home improvement. Unfortunately, similar to homebuyer assistance, many communities have to suspend home rehabilitation assistance as well.

The City of Palmdale had to suspend both its Mortgage Assistance Program and Single-family Rehabilitation Program due to lack of funding.

The City of Palmdale had to suspend both its Mortgage Assistance Program and Single-Family Rehabilitation Program due to lack of funding.

Constraints Analysis

This Housing Element includes programs to remove potential governmental constraints to housing production, including Program 8, which has several Zoning Code Amendments such as: streamlined approval, updated density bonus requirements and permitted locations for residential care facilities. Programs in this Element also aim to reduce non-governmental constraints including Program 9, Homebuyer Assistance, and Program 10, Housing Rehabilitation Assistance.

Furthermore, the City is undergoing comprehensive General Plan and Development Code updates. The objective of the Development Code update is to ensure appropriate development standards are established to implement the new General Plan, facilitating development at the densities allowed under the new Plan.

5. Housing Resources

Housing resources refer to the land, financial, and administrative resources that are available to meet Palmdale's housing needs to mitigate the housing constraints identified in earlier sections of this Housing Element. This section provides an inventory, analysis, and assessment of the City's resources to address its housing needs, including the City's share of the Regional Housing Needs Assessment (RHNA).

5.1 Potential for Future Housing

State law requires that jurisdictions provide an adequate number of and properly zoned sites to facilitate the production of their regional share of housing. To determine whether a jurisdiction has sufficient land to accommodate its share of regional housing needs for all income groups, that jurisdiction must identify "adequate sites." Under State law (California Government Code section 65583[c][1]), adequate sites are those with appropriate zoning designations and development regulations —with services and facilities—needed to facilitate and encourage the development of a variety of housing for all income levels. The land resources available for the development of housing in Palmdale are addressed here.

Regional Housing Needs Allocation (RHNA)

California General Plan law requires each city and county to have land zoned to accommodate its fair share of the regional housing need. The State Department of Housing and Community Development (HCD) allocates a numeric regional housing goal to the Southern California Association of Governments (SCAG). SCAG is then mandated to distribute the housing goal among the cities and counties in the region. This share for the SCAG region is known as the Regional Housing Needs Assessment, or RHNA. The SCAG region encompasses six counties (Imperial, Los Angeles, Orange, Riverside, San Bernardino and Ventura) and 191 cities in an area covering more than 38,000 square miles. The major goal of the RHNA is to assure an equitable distribution of housing among cities and counties within the SCAG region so that every community provides for a mix of housing for all economic segments. The housing allocation targets are not building requirements; rather, they are planning goals for each community to accommodate through appropriate planning policies and land use regulations. Allocation targets are intended to assure that adequate sites and zoning are made available to address anticipated housing demand during the planning period.

The current RHNA for the SCAG region covers an eight-year planning period (June 30, 2021 to October 15, 2029)[6] and is divided into four income categories: very low, low, moderate and above moderate. As determined by SCAG, the City of Palmdale's allocation is 6,640 units divided among the four income categories shown in Table 37.

[6] The Housing Element planning period differs from the RHNA planning period. The Housing Element covers the planning period of October 15, 2021 through October 15, 2029.

Table 37: RHNA 2021-2029

Income Group	Total Housing Units Allocated	Percentage of Units
Extremely/Very Low	1,777	27%
Low	935	14%
Moderate	1,004	15%
Above Moderate	2,924	44%
Total	6,640	100%

Source: Southern California Association of Governments (SCAG)
Note: The City has a RHNA allocation of 1,777 very low-income units (inclusive of extremely low income units). Pursuant to State law (AB 2634), the City must project the number of extremely low income housing needs based on Census income distribution or assume 50 percent of the very low income units as extremely low income. However, for purposes of identifying adequate sites for the RHNA, State law does not mandate the separate accounting for the extremely low-income category.

Credits Towards the RHNA

State law allows local governments to receive credits towards its RHNA housing goals with housing units constructed, building permits issued, and projects approved during the RHNA planning period. Table 38 summarizes Palmdale's RHNA credits and the remaining housing need through October 15, 2029. The City will be able to meet all of its above moderate income RHNA with anticipated ADUs and current pipeline projects. The City must accommodate the remaining RHNA of 3,604 lower and moderate-income units with vacant and nonvacant sites with development potential.

Table 38: RHNA Credits and Remaining Need

	Extremely/Very Low/Low	Moderate	Above Moderate	Total
RHNA	**2,712**	**1,004**	**2,924**	**6,640**
Potential ADUs	**110**	**2**	**48**	**160**
Entitled Projects	**0**	**0**	**7,487**	**7,487**
City Ranch SP (Anaverde Nuevo)	0	0	2,318	2,318
Ritter Ranch SP	0	0	5,169	5,169
Remaining Need	**2,602**	**1,002**	**0**	**3,604**

ADU Projection

SCAG has conducted analysis that provides jurisdictions in the region with assumptions for ADU affordability that can be used to assign ADUs to income categories for RHNA. The analysis examined current market rents for reasonably comparable rental properties. The analysis relied on a survey of 150 existing ADUs between April and June of 2020. Based on the rent survey, SCAG developed an appropriate income distribution for potential ADUs by county. This income distribution has already been approved by HCD for use in the 6th cycle Housing Element.

Between 2017 and 2021, Palmdale permitted 97 ADUs:

- 3 units permitted in 2017
- 2 units permitted in 2018
- 26 units permitted in 2019

- 21 units permitted in 2020
- 45 units permitted in 2021 (as of October 2021)

Based on the recent trend between 2018 and 2021, the City conservatively assumes an annual average of 20 ADUs between 2021 and 2029, 160 over the planning period Table 39.

Table 39: Potential ADUs

Income Group	SCAG Affordability Assumption (Percentage of Total ADUs)	Potential ADUs
Extremely Low	15.0%	24
Very Low	8.5%	14
Low	44.6%	72
Moderate	2.1%	2
Above Moderate	29.8%	48

Entitled Projects

The City currently has many residential projects at different stages of development. For purposes of this analysis and the sites inventory, two entitled projects will provide adequate capacity for the City's above moderate income RHNA:

- **City Ranch Specific Plan or Anaverde Nuevo:** There are 2,318 single-family detached homes currently in the pipeline to be constructed as a part of the specific plan. These units will be credited toward the City's above moderate income RHNA.
- **Ritter Ranch Specific Plan:** New tract maps have been submitted for the first phase of development. The specific plan will provide 5,169 single-family detached homes that will be credited toward the City's above moderate income RHNA.

Specifically, both Anaverde Nuevo and Ritter Ranch are ready to build with no timeline limitations on the different phases. The pace of construction is entirely dependent on market demands. Within Anaverde Nuevo, 448 units have entitlement but have not yet been constructed. Another 855 units are also ready to pull permits. Within Ritter Ranch, 2,395 units are identified as phase 1, with 553 units ready to pull permits. All entitled units within these two specific plans can take place within the eight-year planning period of this Housing Element, contingent on market demands.

Remaining RHNA

Accounting for potential ADUs and current pipeline projects, the City has a remaining RHNA of 3,604, specifically 2,602 for extremely low/very low and low income and 1,002 moderate income units. The City has already been able to meet its above moderate income RHNA with pipeline projects.

Residential Sites Inventory

Government Code §65583(a)(3) and §65583.2 requires "an inventory of land suitable for residential development, including vacant sites and sites having potential for redevelopment, and an analysis of the relationship of zoning and public facilities and services for these sites". The

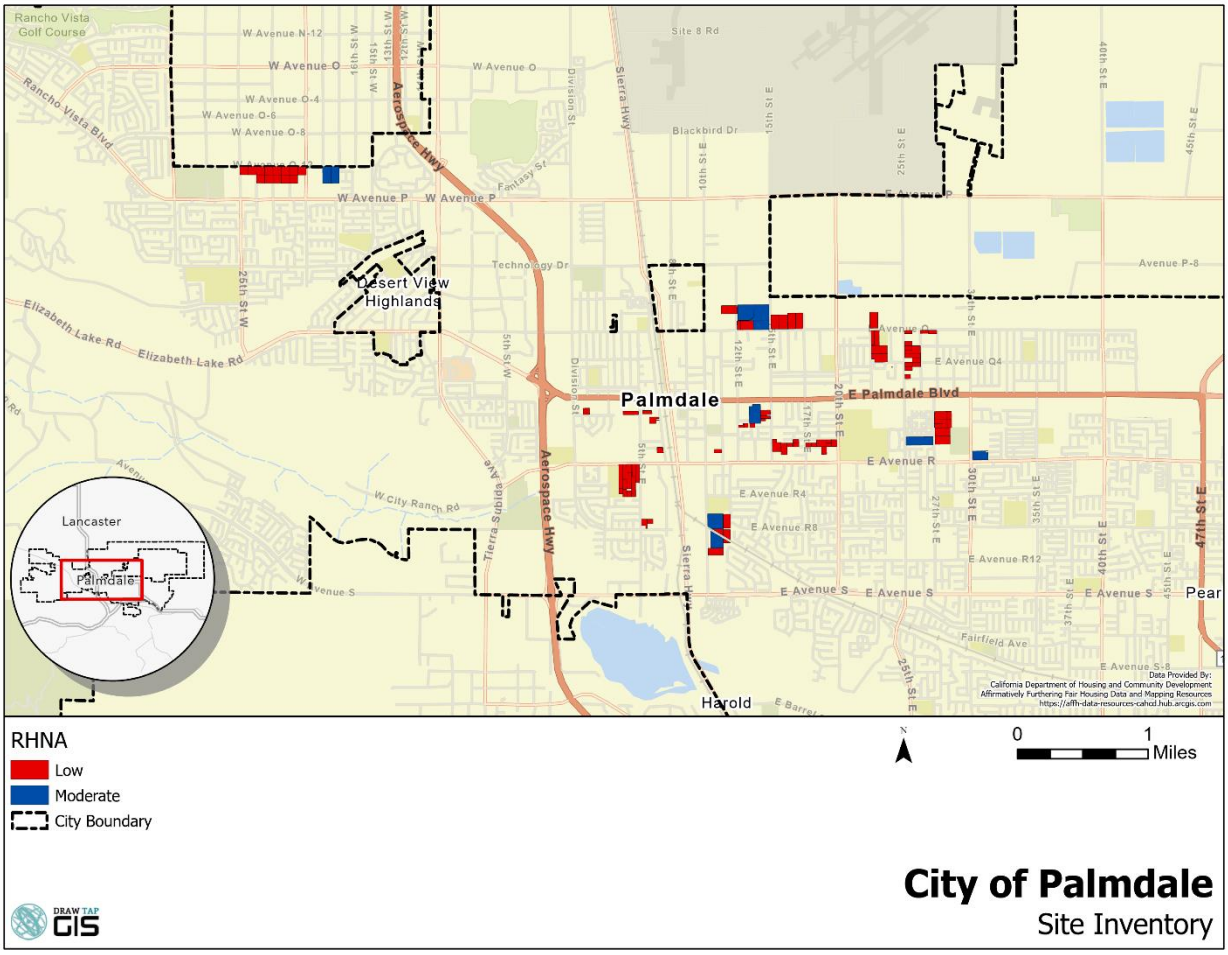
availability of vacant residential land is the sole resource needed to meet the City's affordable housing needs. Figure 3 below shows the sites inventory for the City.

State law requires that jurisdictions demonstrate that the land inventory is sufficient and adequate to accommodate the jurisdictions' share of the regional housing need. The Housing Element must identify those sites within the City of Palmdale that can accommodate the RHNA. Potential development sites at adequate densities and appropriate development standards must be made available to accommodate these remaining units. Pursuant to State law, the default density of 30 units per acre is considered an adequate density to facilitate and encourage the development of lower income housing.

The City of Palmdale's General Plan Update is facilitating development by introducing a new Land Use Plan that transforms select areas of the City into specialty districts, corridors, place types and neighborhoods with a diverse mix of uses. The updated General Plan will incorporate a range of housing densities and mixed-use infill that will guide the development of more diverse housing opportunities.

The Housing Element utilizes the General Plan Land Use Element and Development Code updates for the provision of residential sites for RHNA.

Figure 3: Residential Sites Inventory



Methodology

The development of the sites inventory started with vacant sites that were identified using GIS and assessor data that were labeled with an existing use of vacant. The status of vacant parcels was then confirmed with staff knowledge and input. These parcels were also cross-checked with sites used in the previous housing element cycle so that sites being used for a second cycle could be identified as such.

When estimating residential development potential, some factors were considered:

- Not all vacant sites will be developed over the eight-year period
- Not all vacant sites will develop at the maximum density permitted

Taking these factors into consideration, the residential sites inventory for this Housing Element was compiled using a very conservative assumption that development will occur at the lowest allowable density on each site based on the zoning. Further analysis was done to identify sites feasible for lower income housing that are larger than 0.5 acre and smaller than 10 acres.

Vacant Sites

For the purposes of this sites inventory vacant sites under the new General Plan Land Use designation of Residential Neighborhood 3 (RN3) were selected. Under the new Land Use Plan RN3 will have an allowable density range of 20-30 dwelling units per acre and is suitable for the development of lower income housing. Vacant sites were chosen if they were designated as RN3, had access to sewer and water, and were of appropriate size for lower income housing. In total, 104 sites of vacant land comprising of about 258 acres were selected. The vacant sites in Table 40 have the capacity to provide a minimum of 3,710 lower income units and 1,402 moderate income units. Sites that do not accommodate at least 16 units based on minimum density are assumed to be feasible for moderate income housing.

Table 40: Vacant Sites

Income/ Affordability[1]	Land Use Designation	Total Acres	Minimum Potential Units
Low Income	Residential Neighborhood 3	187.89	3,710
Moderate Income	Residential Neighborhood 3	70.41	1,402
	Total	**258.00**	**5,112**

1. Based on density level, RN3 can facilitate lower income housing. However, some sites are also identified and assumed to be feasible for moderate income housing.

Adequacy of the Sites for RHNA

Based on the development potential on vacant sites throughout the City and the new General Plan Land Use Element, the City can fully accommodate its RHNA for the planning period (Table 41).

Table 41: Summary of RHNA

	Extremely/Very Low/Low	Moderate	Above Moderate	Total
RHNA	**2,712**	**1,004**	**2,924**	**6,640**
Potential ADUs	**110**	**2**	**48**	**160**
Pipeline Projects	**0**	**0**	**7,487**	**7,487**
City Ranch SP (Anaverde)	0	0	2,318	2,318
Ritter Ranch SP	0	0	5,169	5,169
Remaining Need	**2,602**	**1,002**	**0**	**3,604**
Sites Inventory	**3,710**	**1,402**	**0**	**5,112**

Availability of Site Infrastructure and Services

All sites identified in the inventory are located within areas where infrastructure and public services are readily available or can be extended. Lateral water and sewer lines would be extended onto the properties from the adjoining public rights-of-way as development occurs. Within both the Ritter Ranch and City Ranch specific plan areas, the master developer has installed trunk water and sewer lines and arterial roadways Any missing public improvements (e.g., curbs, gutters, sidewalks, etc.) along property frontages would also be constructed at that time. None of the housing sites are subject to significant environmental constraints that would prevent development of these sites into housing.

The Palmdale Water District 2020 Urban Water Management Plan states the following:

> *The most recent version of DWR's Bulletin 118, California's Groundwater (2019), does not characterize the groundwater basin as overdrafted; however, it was deemed a 'low-priority' basin by DWR. It is noted that the prior versions of Bulletin 118 (1980 and 2003) identified the Antelope Valley groundwater basin as overdrafted and 'high-priority', respectively. The court in the ongoing adjudication referred to above made a finding that the basin is overdrafted, and PWD agrees with that finding. The adjudication judgment and physical solution will eliminate, over time, the long-term overdraft, either by reduction of pumping or the purchase of replacement water.*
>
> And Section 4.2.1.3 states:
>
> In late 2015, PWD as well as the majority of parties involved agreed to a stipulated judgment for the adjudication of the Antelope Valley Groundwater Basin1. Per the judgment, PWD is receiving a groundwater production right of 2,770 AFY. The judgment is being appealed, but the PWD believes that it is unlikely that its groundwater production right will change significantly as a result of the appeal. Prior to the judgment, PWD had an unquantified right to pump water for beneficial use and assumed projected pumping volumes of up to 12,000 AF based on pumping capacity. The judgment allows pumpers seven years, until 2023, to ramp down pumping and come into compliance with the judgement. PWD opted out of the seven-year ramp down period and has been in full compliance with the judgement, pumping within its final adjudicated right since 2016.

Based on the information provided above, groundwater basin overdraft will not be a constraint for the Housing Element. As required by State law, a copy of the certified Housing Element will be provided to the water and sewer service providers.

Financial Resources

The ability of a City to provide affordable housing opportunities requires substantial public subsidies. The City of Palmdale has access to a number of local, State, and Federal resources. The key funding sources are described below.

SB 2 Grants

In 2017, Governor Brown signed a 15-bill housing package aimed at addressing the State's housing shortage and high housing costs. Specifically, it included the Building Homes and Jobs Act (SB 2, 2017), which establishes a $75 recording fee on real estate documents to increase the supply of affordable homes in California. Because the number of real estate transactions recorded in each county will vary from year to year, the revenues collected will fluctuate.

The first year of SB 2 funds are available as planning grants to local jurisdictions. The City of Palmdale received $310,000 for planning efforts to facilitate housing production. For the second year and onward, 70 percent of the funding will be allocated to local governments for affordable housing purposes. A large portion of year two allocations will be distributed using the same formula used to allocate federal Community Development Block Grants (CDBG). The City anticipates receiving approximately $935,000 annually.

Community Development Block Grant

CDBG funds are provided by the U.S. Department of Housing and Urban Development (HUD) and are based on a formula that considers census data, extent of poverty, and age of the housing

stock. Based upon these criteria, the CDBG program allows local governments to utilize Federal funds to alleviate poverty and blight. The CDBG program provides funds for a wide range of community development activities, including the acquisition and/or disposition of property, public facilities and improvements, relocation, housing rehabilitation, homeownership assistance, and support to public services.

In 2021, the City of Palmdale received $1,541,561 in CDBG entitlement funding. The City's CDBG program provides funding for: 1) public improvements to lower income areas of the City, 2) public service groups, including South Antelope Valley Emergency Services, and 3) Administration including fair housing services.

Home Investment Partnerships Program

The HOME Investment Partnerships Program (HOME), similar to CDBG, is a formula-based block grant program funded through HUD. HOME funds are provided to eligible state and local governments for the creation of affordable housing opportunities for low-income families. HOME funds must be spent only on housing, and are intended to provide incentives for the acquisition, construction, and rehabilitation of affordable rental and home ownership properties.

In 2021, the City of Palmdale received $577,747 of HOME funds. The City's HOME activities include tenant-based rental assistance and Community Housing Development Organization (CHDO) set-aside funds for affordable housing development.

Administrative Resources

The City of Palmdale actively works with a number of nonprofit organizations to expand and preserve affordable housing in the City. The following nonprofit agencies are either actively providing or preserving affordable housing:

- Housing and Development Law Institute: The Housing and Development Law Institute is a nationwide non-profit member organization whose mission is to serve as a legal resource for stakeholders in the affordable and public housing industry.
- California Housing Partnership Corporation: The California Housing Partnership Corporation (CHPC) is chartered by the state legislature to provide education and technical assistance concerning expiring uses issue to cities, nonprofits and tenants.
- Meta Housing: Meta Housing develops affordable and mixed-income apartment communities throughout California including family housing, supportive housing and arts colonies in Palmdale.
- Homes4Families: Building and providing low-income veterans and active-duty military with affordable homes in Palmdale.

In addition to the above listed agencies, several other non-profits in the region focus on low-income housing. These include:

- National Community Renaissance (National CORE) (previously Southern California Housing Development Corporation): This organization was incorporated in 1992 for the purpose of acquiring, constructing, maintaining, and managing housing units for low-income households.
- Workforce Homebuilders: This organization incorporated in 2005, with the purpose of establishing, maintaining, and operating housing units for lower-income households.

- LINC Housing: Since 1984, LINC Housing has had a hand in building more than 6,000 affordable homes throughout California. LINC provides housing for people underserved by the marketplace.
- Habitat for Humanity: HFH focuses on ownership housing for lower income households. Its development model often relies on land donation from local jurisdictions and sweat equity from the eligible homebuyers.

Opportunities for Energy Conservation

California Government Code §65583(a)(8) requires "[a]n analysis of opportunities for energy conservation with respect to residential development."

Water Conservation

The City of Palmdale addresses water conservation in new housing through the provisions of Title 24 of the California Building Code. In accordance with California Government Code Section 65591, the Water Conservation and Landscaping Act, the City has a Water Efficient Landscape Ordinance (Ordinance No. 1262, adopted October 2008) that includes a point system for water conservation techniques.

These techniques include:

- No turf is permitted in any single-family residential front yard and is permitted only in designated active recreational areas in multi-family projects;
- No turf is permitted on commercial or industrial projects, except in designated recreational areas;
- Decorative water features must use recirculating water;
- Use of low water use plant material that does not exceed the Maximum Applied Water Allowance;
- Plants grouped in hydrozones (by water requirements);
- Soil management plan (laboratory soil analysis, on-site assessment including identification of amendment needed;
- A minimum 2-inch layer of mulch on all shrub and ground cover areas;
- Climatic conditions considered in plant selection (i.e. north vs. south facing slopes, wind conditions, shading requirements); and
- All projects must utilize an active evapotranspiration (ET)-based irrigation controller.

Each project must provide a water budget calculation worksheet that includes:

- Irrigation system design and efficiency;
- Automatic ET-based controller (commercial grade or designed for homeowners);
- Water supply type (reclaimed or recycled water, potable, blended or gray water);
- Compliance with Maximum Applied Water Allowance;
- Slope factors and climatic conditions considered in design; and
- Hydrozone information.

The City also has a Landscape Ordinance and lists of approved plants and trees. The water and landscape ordinances and the approved plant and tree lists are published on the City's website.

Energy and water provisions of proposed new development are reviewed as part of the landscape plan review. The water conservation ordinance is applicable to City and private development projects requiring a permit, plan check or design review. It also applies to all new single-family residences, and any property that has a recorded Declaration of Substandard Property due to landscape deficiencies.

In 2009, the City of Palmdale became the retail recycled water supplier for that portion of the City of Palmdale not served by Los Angeles County Waterworks, District No. 40. The Recycled Water section is sanctioned to install and maintain the backbone and distribution system for the City's recycled water region to provide recycled water to city facilities such as parks and landscape maintenance districts. The City's goal is to provide 2,000 acre-feet of water to City facilities and schools upon build out of the recycled water system and to reduce the City's dependence on imported water as mandated by the State. Any increase in the utilization of recycled water will result in more potable water available for residential development.

Energy Conservation

Recommended or required construction methods for energy and water conservation include the following:

- All windows double glazed;
- Increase south facing glazing;
- Reduce west facing glazing;
- Landscape to shade windows;
- Deciduous plants for winter solar gain/summer shade;
- Roof overhangs on southerly windows;
- Attic ventilation;
- Solar heating for pools;
- Flow restrictions on faucets/showers;
- Weatherization;
- Energy efficient lighting systems; and,
- Peak load management.

The City of Palmdale currently offers the following programs for enhancing the energy efficiency of existing residential structures:

- AB 811: In partnership with the County of Los Angeles, the City of Palmdale is participating in the development of a program to use Assembly Bill 811 funds for a program that would provide energy audits, energy efficiency upgrades and installation of photovoltaic solar power systems on residential units for little or no out-of-pocket cost to the property owner.
- Energy Upgrade California in Los Angeles Program: Energy Upgrade California is designed for home improvement projects that lower energy use, conserve water and

natural resources, and make homes healthier and more comfortable. Program participants receive an assessment of their homes' energy use and specific recommendations to make their homes more energy efficient. Assistance from specially trained contractors will ensure the highest level of service from nationally recognized home performance and green building organizations.

6. Housing Plan

The previous sections of this Housing Element provided an assessment of the City's housing needs, an assessment of constraints to the development of housing, and an inventory of housing resources. This section establishes the City of Palmdale's strategy for addressing the housing needs and mitigating constraints with available resources.

6.1 Goals and Policies

Goal 1: Promote the construction of a variety of residential development opportunities for all income groups.

- Encourage the production of housing for all segments of the City's population, including all income levels (including extremely low-income households) and those with special needs.
- Encourage a variety of housing types such as single-family attached (townhomes), multi-family units, planned unit developments, mixed-use housing, and other housing types to fulfill regional housing needs.
- Encourage the development of new affordable units through the provision of incentives.
- Encourage the development of housing that is affordable to lower income groups in areas well served by public transportation, schools, retail, and other services.

Goal 2: Preserve and improve the existing supply of affordable housing.

- Require that all units developed under any of the City affordable housing programs remain affordable for the longest possible time or at least 30 years.
- Use regulatory and financial tools to make mobile home spaces permanently affordable.
- Preserve or replace units with expiring subsidies.

Goal 3: Mitigate local government constraints on housing.

- Assess financial impacts of zone changes on housing affordability.
- Assess feasibility of land use concessions and fee reductions to make new housing more affordable.
- Revise the Zoning Ordinance when necessary to remove constraints in compliance with State law.

Goal 4: Promote equal housing for all persons regardless of their special characteristics as protected under State and Federal fair housing laws.

- Ensure that mixed income housing is focused in areas that have access to transit and resources, specifically in Residential Neighborhoods of RN2 and above and all the Mixed-Use Districts.
- Provide fair housing services that include public information, counseling, and investigation.

Goal 5: Facilitate adequate housing for households with special needs.

- Permit a variety of housing types for seniors including dependent housing units and congregate housing with supportive services.
- Recognize the unique characteristics of elderly and disabled households and address the special needs of these households.
- Establish and maintain standards for units designated as senior units to ensure that they are accessible and convenient for older persons and persons with disabilities.

Goal 6: Address the needs of persons experiencing homelessness.

- Provide emergency food, shelter and referrals to homeless and very low-income individuals and families.
- Provide zoning designations for the development of shelters for the homeless.
- Cooperate in regional homeless assistance feasibility studies.
- Provide referral services and accept referrals from homeless service agencies for emergency housing placement.

Goal 7: Increase access to safe and adequate housing for people with disabilities.

- Ensure access for the disabled in residential, commercial, and public structures.
- Educate property managers about the reasonable accommodation provisions of the Americans with Disabilities Act and Federal and State fair housing laws through the Partners Against Crime program and the fair housing services provider.

Goal 8: Implement energy and water conservation measures.

- Ensure that energy and water conservation measures are included in all new development and redevelopment projects using an energy conservation checklist.
- Inform the public about retrofitting their homes with energy and water conservation measures.
- Incorporate native desert vegetation as a condition of approval for all proposed housing projects.

Goal 9: Enhance vitality and safety of existing residential neighborhoods.

- Actively enforce compliance with health, safety, building, fire, law enforcement and other regulations in all neighborhoods.
- Actively enforce the City's property maintenance ordinance.
- Improve property maintenance and management by providing training to owners and managers.

Goal 10: Promote neighborhood versatility by encouraging a mix of new housing alternatives to increase affordability and promote home ownership.

- Encourage voluntary inclusionary housing by offering incentives to developers.
- Evaluate the feasibility of small lots, reduced setbacks or other modifications to reduce cost of development.
- Encourage mixed-use housing in designated areas along transportation corridors and other commercial areas.

6.2 Housing Programs

The City of Palmdale administers various housing programs to implement its housing goals. Each housing program can implement multiple housing goals. Therefore, the housing programs are categorized by their main objectives:

- Promote new housing affordable to all income groups
- Mitigate governmental constraints
- Preserve and Improve the Existing Supply of Affordable Housing
- Address the housing needs of special needs populations
- Affirmatively Further Fair Housing

Pursuant to State law, housing programs must have specific actions, measurable outcomes, and schedule for achievements. Routine functions and funding sources are not considered housing programs per se in the Housing Element.

Promote New Housing Affordable to All Income Groups

Program 1: Adequate Sites for RHNA and Monitoring of No Net Loss

The City of Palmdale has been assigned a Regional Housing Needs Assessment (RHNA) of 6,640 units. Accounting for pipeline projects and potential ADUs, the City has a remaining RHNA of 3,604 units (1,739 very low income, 863 low income, and 1,002 moderate income units). Through the General Plan update, the City is creating a new land use designation Residential Neighborhood 3 (20 to 30 units per acre) to facilitate the development of affordable and workforce housing. The General Plan update is anticipated to be adopted by Spring 2022. Following the General Plan adoption, a comprehensive Development Code update will take place and will include standards to facilitate the allowable densities.

To ensure that the City monitor its compliance with SB 166 (No Net Loss), the City will develop a procedure to track:

- Unit count and income/affordability assumed on parcels included in the sites inventory.
- Actual units constructed and income/affordability when parcels are developed.
- Net change in capacity and summary of remaining capacity in meeting remaining Regional Housing Needs Allocation (RHNA).

Pursuant to SB 166, the No Net Loss requirements are:

- Make findings at the time of project approval regarding any site in the Housing Element sites inventory (must be implemented immediately);
- Identify or rezone sufficient, adequate sites within 180 days of project approval to accommodate any shortfall; and
- Acknowledge projects may not be denied solely because No Net Loss would require rezoning.

Responsible Agency: Planning Division

Funding Sources: Departmental budget

Objectives and Timeframe:

- Adopt the Preferred Land Use Plan as part of the General Plan update that provides increased residential development capacity by Spring 2022, ensuring that the updated Genera Plan offer adequate capacity for the City's remaining RHNA of 3,660 units (1,758 very low income, 899 low income, and 1,003 moderate income units). Specifically, the Residential Neighborhood 3 proposed for meeting the City's remaining lower and moderate income RHNA will meet the following conditions:
    - Allows residential development up to 30 units per acre with a minimum density of 20 units per acre;
    - Each site can accommodate at least 16 units (a site can comprise of multiple parcels); and,
    - Allows multi-family ownership and rental housing by right if 20 percent of the units are set aside as housing affordable to lower income households (see Program 2 below).
- Develop a procedure in 2022 to monitor the development of sites in the sites inventory and ensure adequate sites are available to meet the remaining RHNA by income category.
- Update Development Code by Summer 2022 to establish appropriate development standards that can facilitate residential development at the allowable densities.
- Provide information on available sites and development incentives to interested developers and property owners on City website.

Program 2: By-Right Approval of Projects with 20 Percent Affordable Units

Pursuant to AB 1397 passed in 2017, the City will amend Zoning Ordinance to require by-right approval of housing development that includes 20 percent of the units as housing affordable to lower income households. This requirement applies to sites identified to meet the lower income RHNA (refer to RN3 sites in Appendix B: Sites Inventory) when rezoning to make these sites available occurs after October 15, 2021 (statutory deadline of the Housing Element).

Responsible Agency: Planning Division

Funding Sources: Departmental budget

Objectives and Timeframe:

- Amend the Development Code to provide by-right approval pursuant to AB 1397 by Summer of 2022.
- Utilize the Multi-Family Residential Guidelines to process by-right applications to implement the General Plan Update and the Development Code Update.

Program 3: Accessory Dwelling Units (ADUs)

Accessory Dwelling Unit (ADU) represents an important affordable housing option to lower and moderate-income households. The City will explore incentives and tools to facilitate ADU construction. Incentive and tools may include, but not are limited to:

- Preapproved site and floor plans
- Expedited reviews
- Reduced fees beyond State law requirement
- Allowance of larger ADUs subject to discretionary review
- Online resources on the City website

Responsible Agency: Planning Division

Funding Sources: Departmental budget

Objectives and Timeframe:

- Develop incentives and tools to facilitate ADU construction by the end of 2022. Incentives and tools may include pre-approved plans, expedited reviews, and referral to available resources.
- Promote ADU construction by providing resources on the City's website and at public counters.
- Monitor the ADU construction trend annually and adjust incentives and tools as necessary.

Program 4: Small Lot Consolidation Program

While the City does not rely on small sites to fulfill its lower income housing needs, the City will play an active role in facilitating lot consolidations in order to promote efficient infill development. As an example, the City will work with non-profit developers and owners of small sites (less than one-half acre) to identify and consolidate parcels to facilitate the development of housing affordable to lower income households. The lot consolidation procedure will also be discussed with developers during the Pre-Application process. Lot consolidation will include allowing higher densities and larger parcels once consolidated, flexibility in development standards, expedited processing and/or reduced fees related to consolidation.

Responsible Agency: Planning Division, Housing Division

Funding Sources: State and Federal funds

Objectives and Timeframe:

- The City currently offers the following incentives for lot consolidation:
    - Priority processing for maps that include affordable housing units
    - Expedited review for sites available for consolidation where the development application can be found consistent with the General Plan or the PTASP
    - Financial assistance (based on availability of Federal, State, Local, and private housing funds)
    - Density bonuses; and,
    - Modification of development requirements such as reduced parking standards for low-income housing on a case-by-case basis.

- Administer an ongoing program to facilitate small lot consolidation, with the goal of facilitating four housing projects with lot consolidation over eight years. Specifically offer lot consolidation incentives for infill development within the City's core (which are mostly low-income neighborhoods.

Program 5: Large Site Development Program

The City will play an active role in facilitating land divisions and lot line adjustments on larger sites to assist the development of housing for lower income households. Parcel sizes that would facilitate multi-family developments affordable to lower income households in light of federal, State and local financing programs are general between two and ten acres in size. The City will work with property owners and non-profit developers to target and market the availability of sites with the best potential for development.

Responsible Agency: Planning Division, Housing Division

Funding Sources: State and Federal funds

Objectives and Timeframe:

- The City currently offers the following incentives for the division of large sites suitable for multi-family development:
    - Priority processing for maps that include affordable housing units
    - Ministerial review of lot line adjustments
    - Expedited review for sites available for division where the development action can be found to be consistent with the General Plan or the Palmdale Transit Area Specific Plan;
    - Density bonuses; and,
    - Modification of development requirements such as reduced parking standards for low-income housing on a case-by-case basis.
- Administer an ongoing program to facilitate the division of sites appropriate for multi-family housing affordable to lower income households, with the goal of achieving 200 affordable units over eight years.

Program 6: Affordable Housing Land Bank

The City acquired one lot in the PTASP for affordable housing. As funding permits, the City will continue to acquire and assemble parcels of land for the new construction of affordable housing. Currently, the Palmdale Housing Authority owns two small parcels, with one intended for a duplex using PLHA funds. The other small parcel is intended for community uses. The Housing Authority also owns two large parcels for 122 townhome units to be constructed by 2026. Prop 1 C funds would require at least 46 units to be affordable to lower income households. PLHA funds will be used to provide down payment assistance.

The City of Palmdale also owns two parcels intended for the development of a non-congregate shelter for 25 individual/family units utilizing PLHA, remaining Neighborhood Stabilization

Program (NSP), and HOME American Rescue Plan (ARP) funds. Construction of this shelter is intended to occur within five years.

Responsible Agency: Housing Division

Funding Sources: CDBG; HOME; and other State and Federal funds

Objectives and Timeframe:

- Continue to purchase and assemble developable land to accommodate lower income housing, specifically targeting parcels within the Palmdale Transit Area Specific Plan (PTASP).
- Beginning 2022, annually explore funding availability at State and Federal levels and pursue funding for land acquisition.
- Achieve 200 affordable housing units over eight years.

Program 7: Affordable Housing Development

The City will actively facilitate the development of affordable housing, including housing for extremely low income households. As funding permits, the City will provide funding in the form of land (see Program 6), and/or low-interest, deferred interest or residual receipts loans to nonprofit affordable housing organizations to construct new affordable units. In addition, the City will also facilitate affordable development with assistance in site identification and technical assistance.

Responsible Agency: Economic Development, Housing Division

Funding Sources: CDBG; HOME; Multi-Family Housing Revenue Bond; and other State and Federal funds

Objectives and Timeframe:

- Annually, identify affordable housing opportunities (new construction or acquisition/ rehabilitation) that the City consider pursuing and evaluate the financial feasibility of issuing new Multi-Family Housing Revenue Bonds to finance affordable housing development.
- Provide financial assistance to affordable housing projects with the goal of facilitating the development of 200 lower income units over eight years, including 40 extremely low income units.
- Maintain a list of interest of affordable housing developers. Provide information on opportunity sites (available for sale or partnership with owners) to interested developers.
- Conduct pre-application meetings with prospective developers to promote the use of State Density Bonus in exchange for affordable housing.

Mitigate Governmental Constraints

Program 8: Zoning Amendments

Recent changes to State law necessitates amendments to the Zoning Ordinance. Specifically, these include:

- **Affordable Housing Streamlined Approval**: SB 35 allows a streamlined, ministerial review process for multifamily residential projects that meet certain minimum affordable housing guarantees.
- **Density Bonus:** AB 2345 signed by the Governor in September 2020 incentivizes the production of affordable housing by increasing the maximum available density bonus from 35 percent to 50 percent for qualifying projects not composed exclusively of affordable housing.
- **Emergency Shelters:** SB 2 allows a separation requirement of no more than 300 feet. The Palmdale Zoning Ordinance requires the distance separation requirement between Homeless Shelters to be at least 300 feet.
- **Emergency and Transitional Housing:** AB 139 states that local governments may include parking requirements for emergency shelters, but specifies that adequate parking must be based solely on shelter staffing levels and not exceed the requirements for residential and commercial uses in the same zone.
- **Low Barrier Navigation Center:** AB 101 defines a Low Barrier Navigation Center as "a Housing First, low-barrier, service-enriched shelter focused on moving people into permanent housing that provides temporary living facilities while case managers connect individuals experiencing homelessness to income, public benefits, health services, shelter, and housing." Low Barrier shelters may include options such as allowing pets, permitting partners to share living space, and providing storage for residents' possessions.

  AB 101 requires jurisdictions to permit Low Barrier Navigation Centers that meet specified requirements by-right in mixed-use zones and other nonresidential zones permitting multi-family residential development. The bill also imposes a timeline for cities to act on an application for the development of a Low Barrier Navigation Center.
- **Supportive Housing:** AB 2162 requires that supportive housing developments with 50 or fewer units be permitted by-right in zones where multi-family and mixed-use developments are permitted, provided the development meets certain requirements. Additionally, the bill prohibits jurisdictions from imposing parking requirements based on the number of units for supportive housing developments within one half mile of a public transit stop.
- **Farmworker and Employee Housing:** The State Employee Housing Action regarding farmworker housing (Health and Safety Code Section 17021.6) specifies that any farmworker housing consisting of no more than 36 beds in a group quarters or 12 units is considered an agricultural land use and therefore similarly permitted where agricultural uses are permitted. Furthermore, the Employee Housing Act (Health and Safety Code Section 17021.5) specifies that any employee housing providing accommodations for six or fewer employees must be deemed a single-family structure with a residential land use designation.
- **Large Residential Care Facilities:** Currently, the PMC allows these facilities with a Site Plan Review approval in the R-2, R-3, R-4 and MX zones. In addition, large residential care facilities are conditionally permitted in the C-2 zone. During the 6th cycle Housing Element reviews, the State Department of Housing and Community Development has

identified the exclusion of large community care facilities from lower density residential zones as a potential constraint on housing for persons with disabilities. The City will evaluate expanding such facilities to all residential zone districts.

- **Reasonable Accommodation Procedures:** Amend the Zoning Ordinance to remove required findings that may be considered subjective or unduly constraining the development of housing for persons with disabilities.

Responsible Agency: Planning Division

Funding Sources: Departmental budget

Objectives and Timeframe:

- Amend the Development Code to address the requirements outlined in this program by the end of 2022.

Preserve and Enhance the Existing Supply of Affordable Housing

Program 9: Homeownership Assistance Programs

The City administers a number of programs to assist in homeownership. However, funding for these programs has depleted. The City will pursue funding to reinstate these programs during the 2021-2029 Housing Element. Specific program parameters may be adjusted to reflect funding program requirements and current market conditions.

- **Mortgage Assistance Program:** Program to provide down payment assistance for qualified first-time homebuyers. To be used with the Homes for Families CalVet REN development, the Transit Village project for sale of townhomes to low-moderate income families, and resale of Housing Authority single-family residential properties
- **Mobile Home First Time Homebuyer Program:** Provides down payment assistance to first time homebuyers who wish to purchase a new mobile home to be placed in one of the three City of Palmdale-owned mobile home parks.

Responsible Agency: Housing Division

Funding Sources: State and Federal housing funds

Objectives and Timeframe:

- Beginning in 2022, pursue funding available at the State and Federal levels (such as HCD, CalHFA, HUD) to reinstate these programs with the goal of achieving 40 MAP loans and 5 Mobile Home First Time Homebuyer loans over eight years.

Program 10: Housing Rehabilitation Assistance

The City administers a number of housing rehabilitation programs to assist lower income homeowners in making necessary repairs and improvements. Assistance to rental properties also help lower income tenants access decent and adequate housing. The City's programs include:

- **Emergency Grant:** Provides one-time grants for housing repairs to very low income (50

percent AMI) owner-occupants of single-family homes.

- **Single-Family Residential Rehabilitation:** Designed for three specific categories of low income, owner-occupied households:
    - Seniors and/or disabled persons
    - Homeowners who purchased a HUD home in need of repairs
    - Homeowners to correct unsafe or unhealthy conditions
- **Multi-Family and Single-Family Rental Unit Rehabilitation:** Make low-interest loans to owners of single- and multi-family rental properties. Owners must agree to rent their properties to eligible low-income households and to maintain the affordability of the assisted units for a period governed by the funding source.

However, due to funding limitation, the City has not been able to issue loans under the Single-Family Residential Rehabilitation or Multi-Family and Single-Family Rental Unit Rehabilitation programs. The City will pursue funding to reinstate these programs during the 2021-2029 Housing Element. Specific program parameters may be adjusted to reflect funding program requirements and current market conditions.

Responsible Agency: Housing Division

Funding Sources: CDBG; HOME; Housing Asset Funds; and other State and Federal housing funds

Objectives and Timeframe:

- Beginning 2022, explore funding available at the State and Federal levels to reinstate and/or continue housing rehabilitation assistance, with the goal of assisting:
    - Emergency Grant: 20 grants over eight years
    - Single-Family Rehabilitation: 12 loans over eight years
    - Multi-Family and Single-Family Rental Unit Rehabilitation: 40 units over eight years
- If and when programs are reinstated, implement an outreach program to publicize that availability of assistance to low- and moderate-income neighborhoods.

Program 11: Rental Housing Inspection Program

The Palmdale Building and Safety Division will proactively inspect all residential rental properties on a regular schedule. All rental properties are required to register with the City. Buildings in compliance must be re-inspected at 5-year intervals; buildings with violations must be re-inspected annually. The Building and Safety Division will also continue to respond to code violation complaints.

Responsible Agency: Building and Safety Division

Funding Sources: Departmental budget

Objectives and Timeframe:

- Inspect all rental housing units on a regular schedule (at five-year intervals).

- Direct potentially eligible properties to the City's Multi-Family and Single-Family Rental Unit Rehabilitation program for assistance.

Program 12: Vacant and Abandoned Property Registration Program

The City administers an abandoned and vacant property registration program as a mechanism to protect neighborhoods and commercial areas from becoming blighted through the lack of adequate maintenance and security of abandoned and vacated properties by requiring any beneficiary or any trustee of a Deed of Trust to register the property with the City. Based on the current market conditions, the number of abandoned/vacant properties is limited. According to HUD's foreclosure listing website, only 19 homes in Palmdale are either Real Estate Owned (REO) or in foreclosure sale (as of June 2022); however, the extended economic impact of COVID is unknown and foreclosure may be an issue if economic recovery is prolonged.

Responsible Agency: Community Compliance Division

Funding Sources: Departmental budget

Objectives and Timeframe:

- Pursue the registering of all REO and foreclosure sale homes (estimated at 200 homes over eight years). Perform an inspection on every registered vacant property to ensure the property is secure and maintained in an appropriate manner.

Program 13: Mobile Home Space Rent Control

This ongoing program regulates increases in month-to-month rent costs for mobile home park spaces to ensure that the spaces remain affordable to low- and moderate-income occupants.

Responsible Agency: Mobile Home Park Rental Review Board, Housing Division

Funding Sources: Departmental budget

Objectives:

- Continue to administer the Mobile Home Space Rent Control program to benefit tenants at seven mobile home parks with a total of 1,155 spaces, including 876 spaces under rent control.

Program 14: Conversion of At-Risk Units

Three projects totaling 126 assisted units are considered at risk of converting to market-rate housing – Carmel Apartments (23 units); Desert View Apartments (55 units); and East 35th Street Apartments (48 units). In order to meet the housing needs of persons of all economic groups, the City must guard against the loss of housing units available to lower income households. The City's objective is to retain all at risk units in the City as lower income housing.

Responsible Agency: Housing Division

Funding Sources: HOME; Housing Asset Funds; and other State and Federal funds as available

Objectives and Timeframe:

- Maintain and annually update the inventory of "at-risk" projects through the use of existing databases (e.g., HUD and California Housing Partnership).
- Take all appropriate steps to ensure that a project remains in or is transferred to an organization capable of maintaining affordability restrictions for the life of the project, including proactively ensuring notices to qualified entities, coordinating an action plan with qualified entities upon notice and assisting with financial resources or supporting funding applications where possible. Recent changes to state law require notification three years, one year, and six months prior to conversion.
- Annually monitor local investment in projects that have been acquired by non-or for-profit entities to ensure that properties are well managed and maintained and are being operated in accordance with the City's Rental Housing Inspection Program.
- Work with owners, tenants and nonprofit organizations to assist in the nonprofit acquisition of at-risk projects to ensure long-term affordability of the development. Annually contact property owners, gauge interest and identify non-profit partners and pursue funding and preservation strategy on a project-by-project basis.
- Annually identify funding sources for at-risk preservation and acquisition rehabilitation and pursue these funding sources at the federal, State or local levels to preserve at-risk units on a project-by-project basis.
- Where feasible, provide technical assistance and support to public and non-profit agencies and organizations interested in purchasing and/or managing units at-risk with respect to financing.
- The City will work with tenants of at-risk units and provide them with education regarding tenant rights and conversion procedures.

Address the Housing Needs of Special Needs Populations

Program 15: Senior Housing

The City will pursue the development of a variety of housing options suitable for seniors with different needs. Specifically, pursue affordable housing opportunities for seniors with lower income (especially extremely low income) in areas with access to transportation and services.

Responsible Agency: Housing Division

Funding Sources: CDBG; HOME; Housing Asset Funds; and other State and Federal funds as available

Objectives and Timeframe:

- Beginning 2022, annually pursue funding available at the State and Federal levels for the development of affordable senior housing.
- As funding permits, acquire land and provide financing for affordable senior housing with the goal of achieving 100 affordable senior housing units over eight years.

Program 16: Housing for the Developmentally Disabled

Work with the North Los Angeles County Regional Center (NLARC) to implement an outreach program that informs families within the City on housing and services available for persons with developmental disabilities. The program could include the development of an informational brochure, including information on services on the City's website.

Responsible Agency: Housing Division

Funding Sources: Departmental budget

Objectives and Timeframe:

- Annually, as part of the CDBG funding allocation and needs assessment process, conduct outreach to 1,200 developmentally disabled residents in Palmdale so they are aware of services available through the Regional Center and other City and County programs through social media and the City website.

Program 17: South Antelope Valley Emergency Services Program (SAVES)

The City provides administrative funding to the South Antelope Valley Emergency Services Program, which provides service referrals, motel vouchers and emergency food and clothing to homeless and very low income individuals and families in Palmdale. SAVES refers clients to the Antelope Valley Access Center and accepts referrals from the center when appropriate.

Responsible Agency: City Manager/SAVES Division

Funding Sources: CDBG, EFSP, Donations

Objectives and Timeframe:

- Continue to fund and administer the existing program with the goal of assisting 5,000 people annually with emergency services.

Affirmatively Further Fair Housing

Program 18: Place-Based Neighborhood Improvement Program

This is a comprehensive program to improve the quality of selected low- and moderate-income single-family Palmdale neighborhoods by enforcing compliance with building, safety, health, fire, and other regulations and improving the overall appearance of neighborhoods. The program is implemented by a team made up of officials from the City Departments of Planning, Building and Safety, Public Works, the Housing Division, Code Enforcement, the Fire Department, the Sheriff's Department and other agencies. This program sponsors neighborhood clean-ups, installs infrastructure improvements such as sidewalks and streetlights and uses City assistance to make loans or grants for facade improvements such as paint, landscaping and fences.

Five Focus Neighborhoods have been identified. These are the older neighborhoods of the City. More recent activity has been the rehabilitation of four-unit rental properties, providing affordable housing through the Housing Asset Funds.

Responsible Agency: Housing Division

Funding Sources: CDBG

Objectives and Timeframe:

- Annually identify neighborhoods targeted for improvements and provide infrastructure improvements and make referrals for neighborhood improvement grants for home and property repair. Planned activities to be completed over the eight-year planning period include:
  - Work with YouthBuild Charter School to build the duplex units on Housing Authority-owned property (see Program 6). This project would provide construction training for students and create affordable housing for low-income households (using PLHA funds).
  - Pursue CIP Projects to create complete streets and safe routes to school, to provide parks and recreation facilities, and to make other public improvements:
    - Park and Ride and Rancho Vista Gap Closure to Marie Kerr Park (Tract 9102.07) – Same tract as RHNA units (661 lower income, 206 moderate income). Moderate resource area.
    - 10th Street East Complete Streets and Courson Park Revitalization (Tract 9105.01) – RHNA Units (20 lower in tract, but adjacent to several other sites). TCAC area of high segregation and poverty.
    - Avenue R Complete Streets (Tracts 9105.04 and 9106.03) – Tract 9105.05 has 147 lower income units and 170 moderate income units. No units in Tract 9106.03. Tract 9105.05 is a TCAC area of high segregation and poverty.
    - Division Street and Avenue R Regional basin (Tract 9104.03) – RHNA Units (154 lower income). TCAC area of high segregation and poverty.
    - Palmdale Blvd 6th East to 8th East Street Improvements (Tracts 9104.02, 9104.03, and 9105.01) – RHNA Units in Tracts 9104.03 and 9105.01 (174 lower income total). Both TCAC areas of high segregation and poverty.
    - SR 14 and Palmdale Boulevard Interchange improvements (Tracts 9104.01 9104.02, and 9104.03) – 154 lower income units in Tract 9104.03. TCAC area of high segregation and poverty.

Program 19: Partners Against Crime (PAC)

Partners Against Crime (PAC) coordinates the activities of the Sherriff's Department, Code Enforcement, Housing, Public Safety and Building and Safety , to proactively address issues such as crime, maintenance and encourage effective property management in the City's multi-family housing. The team meets monthly to share information about properties engaged, management and tenant concerns and positive steps to address any issues.

The City's PAC program is intended to create a safe and decent living environment for both rental and ownership multi-family housing residents. The program involves the collaboration of Public Safety to address crime reports, Code Enforcement to address municipal code violations, and Building and Safety to address building code violations. PAC is essentially the same as Crime-Free Multi-Housing programs offered by many jurisdictions. Program participation is voluntary,

and the City encourages all property owners and managers to adhere to all fair housing guidelines when screening applicants. The program does not target specific criminal activities but aims to maintain an overall safe the crime-free environment either on the premises or in the neighborhood.

PAC offers a Crime Free Multi-Family Housing and Mobile Home Park Certification to building owners/managers. It is a three-phase program that includes: 1) an 8-hour property management training session; 2) how to start and maintain a neighborhood watch program for building tenants; and 3) a building inspection referred to as CPTED (crime prevention through environmental design). Information on affirmative marketing requirements is included in the training workshops.

Responsible Agency: Public Safety Division

Funding Sources: Department Budget

Objectives:

- Administer an ongoing program with the goal of conducting one training workshop annually.

Program 20: Fair Housing Services

Contract with the Housing Rights Center or other fair housing provider to provide fair housing services to Palmdale residents that include a monthly three-hour walk-in fair housing clinic at City Hall, intake and investigation of housing discrimination complaints and referrals for other types of issues, periodic public service announcements on fair housing law, and mailings to lenders. Housing Rights staff also attends the monthly meeting of the Antelope Valley Homeless Coalition. The City and the Housing Rights Center or other fair housing provider will conduct outreach and education activities, distribute literature and publicize the availability of fair housing services through various media.

Appendix D summarizes the fair housing issues and concerns in Palmdale based on findings from the 2020 AI and additional research conducted as part of this Housing Element update. Table 42 presents a summary of the issues, contributing factors, and the City's actions in addressing these issues.

Responsible Agency: Housing Division

Funding Sources: CDBG

Objectives and Timeframe: See Table 42 below.

Table 42: Summary Matrix of Fair Housing Issues and Actions for Mitigation

Contributing Factor	Priority Level	Meaningful Actions
Insufficient and Inaccessible Outreach and Enforcement		
• Lack of marketing community meetings • Lack of targeted outreach • Lack of local public fair housing enforcement	High	**Outreach and Education** The City has retained a new fair housing contractor – Housing Rights Center – that has the staffing and

Table 42: Summary Matrix of Fair Housing Issues and Actions for Mitigation

Contributing Factor	Priority Level	Meaningful Actions
• Lack of resources for fair housing agencies and organizations		technical capacity to conduct expanded outreach activities. By 2022, expand Fair Housing program or scope of work to target Downtown Palmdale and census tracts identified as being of low resource or high segregation and poverty. The Fair Housing Provider's outreach plan should: • Plan to hold in-person annual meetings in various locations in downtown Palmdale. • Seek sites that are transit-accessible and/or consider options to assist residents without vehicle access with transportation. • Hold meetings at a variety of times to accommodate the scheduling needs of residents Create an interest list of residents that will provide updates on fair housing and affordable housing projects by 2022. On an ongoing basis, contact interest list with updates regarding upcoming development and meetings. The program assists 300 residents currently; the goal is to increase outreach by 20 percent over eight years. Utilize non-traditional media (i.e. social media, City website) in outreach and education efforts, in addition to print media and notices. At least semi-annually, publicize fair housing rights and requirements on social media and City website. Beginning in 2023, involve the City's Communications Division to publicize fair housing meetings via social media. **Housing Choice Voucher Use** Expand outreach and education of the State's new Source of Income Protection (SB 329 and SB 222), defining public assistance including HCVs as legitimate source of income for housing. Conduct annual outreach and education to the census tracts with a higher concentration of HCV users should begin by December 2022. Coordinate with the LACDA on an annual basis to prioritize vouchers to be set aside for extremely low-income households to help with cost-burdened

Table 42: Summary Matrix of Fair Housing Issues and Actions for Mitigation

Contributing Factor	Priority Level	Meaningful Actions
		renters, as identified in the Displacement section of the AFFH analysis. Currently about 1,900 Palmdale households are HCV holders. Expanded outreach and education on HCV with the goal of increasing voucher use by 10 percent over eight years, especially voucher use in higher resource areas. **Landlord and Management Fair Housing Outreach** Through the landlord training classes and neighborhood watch meetings, provide information to managers of rental housing who participate in Partners Against Crime (PAC) landlord training on compliance with affirmative marketing practices. Continue to provide fair housing information in the PAC property management training program for lenders who participate in the mortgage assistance programs. These meetings are conducted annually. Currently, the City received about 30 fair housing complaints annually. The goal is to reduce fair housing complaints at multi-family housing by 20 percent. **Neighborhood Advisory Committee (NAC)** The Neighborhood Advisory Committee is comprised of pastors, public safety, housing staff, local nonprofits, Los Angeles County Sheriff's Department, and community members. The NAC meets once a month to connect community members with assistance and to put together community events. Utilize the NAC to promote fair housing awareness at least once a year.

Table 42: Summary Matrix of Fair Housing Issues and Actions for Mitigation

Contributing Factor	Priority Level	Meaningful Actions
Segregation and Integration		
• Lack of private investments in specific neighborhoods • Lack of public investments in specific neighborhoods, including services or amenities • Location and type of affordable housing	High	Currently about 1,900 Palmdale households are HCV holders. As part of a Fair Housing Outreach Plan, inform tenants and landlords of the State's new Source of Income Protection (SB 329 and SB 222) with the goal of increasing voucher use by 10 percent over eight years, especially in higher resource areas. Annually, coordinate with Public Works to prioritize areas identified as Disadvantaged Communities (SB 535) for actions and improvements. Complete list of projects identified in Program 18 (Place-Based Strategy for Neighborhood Improvements) by 2029. Work with developers to create a sites list for potential affordable housing developments in areas lacking affordable housing (see program 6)
Access to Opportunities		
• Lack of private investments • Lack of public investments in specific neighborhoods, including services or amenities • Lack of access to local jobs	Medium	Through the City's five-year Consolidated Planning process, address the following strategies: • If feasible, create a targeted investment plan to focus on improving community assets (infrastructure, public facilities) as well as improving quality of housing and increasing affordable housing in low resource and high segregation and poverty areas. • If feasible, provide economic development opportunities in the low resource and high segregation and poverty areas through microenterprise loans and technical assistance. • Pursue YouthBuild projects (see Program 18) to provide job training for students. Pursue one additional YouthBuild project over eight years. The next Consolidated Plan update is scheduled for FY 2025. Through the annual planning process, allocate funding to improve neighborhood conditions in areas with low and moderate income concentrations. Annually, recruit residents from areas of concentrated poverty to serve on boards,

Table 42: Summary Matrix of Fair Housing Issues and Actions for Mitigation

Contributing Factor	Priority Level	Meaningful Actions
		committees, task forces and other local government decision-making bodies.
Racially and Ethnically Concentrated Areas of Poverty		
• Location and type of affordable housing • Displacement of residents due to economic pressures • Lack of private investments in specific neighborhoods	High	**Economic Development** Annually, in Downtown Palmdale, help local businesses through microloans, technical assistance, and vocational training. Offer free small business support training programs and one-on-one business counseling through partnerships with Small Business Development Center and the local chambers of commerce. Assist 5 businesses annually. **Housing Rehabilitation** Annually, pursue funding opportunities for acquisition and rehabilitation efforts targeted in the areas of concentrated poverty. Assist 10 lower income owner-occupied households with ADA accessibility improvements. **Tenant Protection and Anti-Displacement** As part of the project application review, require applicant to provide advance noticing to existing tenants. By 2023, create a registry for "first-right of refusal" for displaced lower income tenants to return if affordable housing is created in the new project. Achieve a no-net-loss of affordable units over eight years. By 2029, establish policies to preserve Single Room Occupancy (SRO) housing and mobile home parks with the goal of preserving all seven mobile home parks and increase the number of spaces under rent control by 10 percent.

6.3 Summary of Quantified Objectives

Table 43 below summarizes the City's proposed quantified objectives for new construction, preservation of existing housing stock, and conservation of at-risk affordable housing based on available and projected resources.

Table 43: Summary of Quantified Objectives

	Extremely Low (0-30%)	Very Low (31-50%)	Low (51-80% AMI)	Moderate (81-120% AMI)	Above Moderate (Over 120% AMI)	Total
RHNA	888	889	935	1,004	2,924	6,640
New Construction	5	80	80	400	2,000	2,565
Rehabilitation	24	24	24	---	---	72
Conservation of At-Risk Housing	63	63	---	---	---	126

Appendix A: Public Outreach

The 2021-2029 Housing Element, especially the strategy for housing growth, reflects the outcomes of the public outreach process. Conversations with the community focused on areas of change in the City, emphasizing on focusing growth within the City limits in areas where infrastructure improvements exist or expansions are planned. The desire to see higher intensity development with affordable housing options as a strategy to attract young workforce to live and work in Palmdale is also reflected in the Housing Element.

Outreach to Special Needs Residents. At several key points in the General Plan Update process, the General Plan Team has sought input and participation from low income and special needs residents, and those who are not typically engaged in civic or planning processes.

Stakeholder Interviews.

Three rounds of stakeholder interviews and focus groups took place between 2019 and 2021. The General Plan Team solicited input and direction from services organizations and representatives of low income and special needs populations. One stakeholder focus group was held in Spanish to accommodate individuals and organizations who support and serve primary Spanish speaking communities in Palmdale. While additional organizations were contacted to participate, the following is a consolidated list of representatives who attended and participated in at least one stakeholder meeting.

** Represent organizations who provide services to and/or represent populations with lower income or special needs.

Stakeholder interview participants/organizations

- **Education Representatives:**
  - Antelope Valley College**
  - Antelope Valley Union High School District**
  - AV Career Prep Council**
  - Opportunities for Learning**
  - Palmdale School District**
  - The Palmdale Aerospace Academy**
  - W.E.C.A.R.E. Education & Employment Services – Antelope Valley Union High School district**
  - Westside Union School District**
- **Service Organizations**
  - First 5 LA**
  - Palmdale Women's Club**
  - P.A.W.S Forward**
  - Antelope Valley Boys and Girls Club**
  - Legacy Commons for Active Adults**
- **Aerospace Industry Representatives + Industrial Employers**
  - Allen Company
  - Lockheed Martin
  - Los Angeles Airport Land Use Commission
  - NASA Armstrong

- Northrop Grumman
- US Air Force Plant 42

- **Business, Real Estate, Development, and Chamber Representatives**
  - Palmdale Chamber of Commerce
  - Antelope Valley Hispanic Chamber of Commerce
  - Lancaster Chamber of Commerce
  - Greater Antelope Valley Economic Alliance
  - Antelope Valley Mall
  - Camacho Auto Sales
  - LAMAR Advertising
  - Courtyard Marriott
  - Embassy Suites
  - LY Developers and Management
  - Local businessowners
- **Faith-Based Organizations Representatives**
  - American Islamic Institute of Antelope Valley**
  - Crosswind Church**
  - Desert Winds Community Church**
  - Faith Community Church**
  - Palmdale United Methodist Church**
  - Palmdale Vineyard Church**
  - Seventh-Day Adventist Church**
  - St Stephen's Lutheran Church**
  - St. Mary's Catholic Church**
  - The Highlands Christian Fellowship**
- **Community-Based Organizations Representatives**
  - Vets 4 Veterans**
  - Antelope Valley League of United Latin American Citizens (LULAC) **
  - Valley Oasis**
  - Mental Health American Military Resource Center**
  - Los Angeles Homeless Services Authority (LAHSA) **
  - P.A.Ws Forward Foundation**
  - First 5 Los Angeles/Best Start Palmdale**
- **Spanish Speaking/Underserved Community**
  - Café con Leche Radio Talk Show (held in Spanish)**
  - Child 360**
  - Coalition for Humane Immigrant Rights of Los Angeles (CHIRLA) **
  - Pueblo Y Salud**
- **County Pocket Stakeholders**
  - Antelope Valley Audubon Society
  - Palmdale residents
- **Medical Service Providers**
  - Penny Lane Centers
  - Los Angeles County Department of Mental Health**
  - Tarzana Treatment Center**
  - Palmdale Regional Medical Center**
- **First Responders/Service Organizations**

- Los Angeles County Fire Department**
- Los Angeles County Department of Mental Health**
- Antelope Valley WIC Program**
- County of Los Angeles Department of Regional Planning
- SoCal Gas Company
- Children's Bureau**
- Los Angeles County Sheriff's Department – Palmdale Station

Stakeholder Interviews – Housing Feedback (Opportunities, Challenges and other feedback):

- Current development interest in Palmdale
- Existing desire for vertical mixed-use development
- Vacant parcels within city limits allow for targeted infill development projects
- Desire for senior and multifamily housing
- Existing infrastructure needs improvements and or upgrades
- Palmdale's homeless population is increasing
- Existing development regulations that hinder new urbanism development
- Palmdale has a negative reputation for crime, low-income, few jobs, and no recreational opportunities and few amenities and services

Popup Workshops.

At two key phases in the process, the General Plan Team hosted pop-up workshops at popular City events or destinations to spread awareness and gather input for the General Plan Update. Pop-up workshops were targeted towards popular events where youth, seniors, low-income, and Spanish-speaking residents were likely to attend.

Phase One pop-up workshops – Fall 2019

- Antelope Valley International Multicultural Festival: 38315 9th St East
- National Women's Health & Fitness Day: 37716 55th St East
- Hispanic Heritage Month Celebration: 38315 9th St East
- Kaleidoscope Music & Art Festival: 2723 Rancho Vista Blvd
- Dia de los Muertos Fiesta: 38315 9th St East

Phase Two pop-up workshops – Summer 2020

- Courson Pool: 38226 10th Street E
- SAVES: 1002 E Ave Q-12
- Marie Kerr Pool: 2723 Rancho Vista Blvd.
- WalMart: 37140 47th Street East
- Palmdale Transportation: 39000 Clock Tower Plaza Dr (2)
- Super Target: 38019 47th Street E
- Smart and Final Extra: 5038 W Avenue N
- AV Mall: 1233 Rancho Vista
- Drytown: 3850 E Avenue S

General Plan Workshops

Over the course of the General Plan Update, three community workshops have been held. The first was held as an in-person event on both a Saturday morning and a Tuesday evening (same materials presented at both) at the Palmdale Aerospace Academy and Highland High School. These locations were selected to serve both the East and West sides of town and to accommodate residents with differing schedules.

Due to the COVID-19 Pandemic, the next two workshops were held as virtual events. At all workshops, live Spanish interpretation was provided for participants, as well as workshop materials available in Spanish. Members of the public could request ASL or other language interpretation in advance of the meeting. Both workshops were recorded and posted to the Palmdale2045 YouTube channel to be viewed at any time following the events.

General Plan Advisory Committee (GPAC) Meetings

The Palmdale City Council appointed a diverse 13-member General Plan Advisory Committee (GPAC) comprised of residents who meet and collaborate regularly to provide community insight throughout the City's General Plan Update process. Over the course of the General Plan Update, the GPAC has met 17 times to discuss critical topics related to the General Plan, including housing. The GPAC held one meeting focused on housing in December 2019 that provided an overview of existing housing conditions in Palmdale to solicit input on housing needs. Housing Element requirements, Regional Housing Needs Allocation (RHNA), and potential areas of change and stability were also discussed in the meeting. Comments received include:

- Consider funding sources for development in Palmdale
- Consider limitations with infrastructure and utilities
- Desire for more dense development, however Palmdale has existing vacant land that is affordable, but denser development is typically more expensive
- What funding sources are available for new development in Palmdale?
- Interested in programs that support aging in place and first-time home buyers
- Interested in the variety of housing types like mixed-use development, cottage clusters, mobile homes, small lot single family, etc.
- Palmdale has a need for low-income housing, currently a 12-month waiting list for HUD section 8 housing
- Desire for multi-unit complexes with surrounding entertainment, shopping and restaurants
- Interest in inclusionary housing

Areas of stability and change proposed by meeting participants include:

- Areas of stability
    - Preserve residential neighborhoods east of Highway 14 and South of Avenue R
- Areas of proposed change
    - Areas for future multifamily: South of Avenue S; Mixed use West of Highway 14; Higher density off Tierra Subida Avenue near Palmdale Regional Medical Center

- Increase density along Palmdale Boulevard
- Multi dwelling and support services for Plant 42
- Walmart Shopping center off 10th street West could have additional development at higher density
- Southeastern area of intersection of Avenue O and 10th Street West could be developed at higher density
- Higher density residential development north of Palmdale Boulevard at 47th Street East
- Higher density development located at the intersection of Fort Tejon Road and Pearblossom Highway
- Higher density residential east of Lake Palmdale South of Avenue S and off Tierra Subida Avenue west between West Avenue Q8 and Rayburn Road
- Commercial mixed use located at the southern city boundary northwest of Lake Palmdale

In addition to the December 2019 GPAC meeting, housing has been covered as a critical topic in several other GPAC Meetings. Beginning with visioning and priorities (GPAC #2 – September 2019), background to preparing land use alternatives (GPAC #5 – January 2020 and GPAC #5 Part 2 – February 2020), economic and fiscal background (GPAC #6 – May 2020), overview of three land use alternatives (GPAC #7 – July 2020), overview of the preferred land use alternative (GPAC #10 – January 2021), and land use and housing policy framework (GPAC #14 – July 2021).

Planning Commission Workshop

At the May 13, 2021, Planning Commission meeting, the General Plan Update Team presented an overview of Housing Element requirements and their relationship to the General Plan. This presentation included the Regional Housing Needs Assessment (RHNA), the City's preliminary strategy for meeting its RHNA, and the process and tentative schedule for the Housing Element Update.

Surveys

Three surveys have been administered throughout the General Plan Update process, all available in English and Spanish for several weeks. Residents, employees, and other interested parties could participate in the online version or complete a hard copy version. Surveys were available at major city events, City Hall, Libraries, and other city facilities. In addition, social service providers and religious organizations distributed hard copy surveys to residents with limited mobility and those who lacked internet access. In some instances, gift card incentives were provided for residents to fill out surveys while waiting at food distribution days hosted by SAVES and SALVA.

To ensure an all-inclusive campaign, hard-copy versions of the workshop materials were created in both English and Spanish for distribution at strategic points throughout the City. This additional method served to ensure that lack of access to or ability to utilize digital platforms was not a barrier to participation. For example, the City staff promoted the Alternatives survey at nine pop-up booths and allowed stakeholders to take the written survey on-site. Community members could also take a copy home, complete it and return it later to identified repository sites. In addition to the pop-up locations, the print surveys were available at four supplemental sites, Legacy

Commons Senior Center, Palmdale United Methodist Church, SAVES and St. Stephen's Lutheran Church.

Outreach Methods.

In order to raise awareness and promote the various workshops, a comprehensive and targeted citywide notification campaign was undertaken in both English and Spanish, which included print, digital and radio components. The section below provides details on the efforts carried out to notice the engagement activities to the public.

Electronic noticing was a key component in the virtual workshop + survey notification process. The following is a complete list of the electronic notification methods:

- English/Spanish paid and organic social media posts via city social portals
- Digital geotargeting
- Digital press releases in the Antelope Valley Press, Antelope Valley Times and the Antelope Valley Daily News
- Spanish ads via Café Con Leche radio show
- 15-minute interview on Spanish radio
- The Palmdale Minute weekly video segment in English and Spanish
- Palmdale Connections online newsletter
- English/Spanish project e-blasts
- Electronic billboard advertisement in both English and Spanish (two locations)
- Internal and external City and project websites

The project team used print notification as another key component in the survey notification process. This effort was made in an attempt to reach those in the community who have limited or no online/digital access to notification materials. All print materials were distributed in both English and Spanish. The following is a complete list of the print notification methods and repository sites:

- Flyers to Palmdale Aerospace Academy and Palmdale School District for inclusion in school lunch program
- Posters in the Neighbohood House community garden
- Flyers and posters in the City maintenance yard
- Vinyl banners at the Palmdale Library and select City parks
- Flyers, posters and postcards to the AV Hispanic Chamber
- Postcards in the library
- Flyers and surveys at Legacy Commons Senior Center
- Print advertisements in El Sol Magazine, AV Smart Buys and Palmdale Connections Magazine
- Articles in the Antelope Valley Press, Antelope Valley Tines, and Antelope Valley Daily News

Draft Housing Element for Public Review

The City released the Draft Housing Element for public review on September 3, 2021. An email blast was sent to over 1,400 interested parties, including community stakeholders, key property owners and developers. The City also published an announcement on City website and social media.

Appendix B: Sites Inventory

Table B-1: Residential Neighborhood 3 (RN3) Sites

APN	Acres	GP	Zoning	Min. Density	Max. Density	Income Level	Minimum Units	Vacant	In Previous HE
3001027001	2.59	Residential Neighborhood 3	RN3	20	30	Lower	51	Vacant Land	
3001027008	2.53	Residential Neighborhood 3	RN3	20	30	Lower	50	Vacant Land	
3001027009	2.56	Residential Neighborhood 3	RN3	20	30	Lower	51	Vacant Land	
3001027010	2.56	Residential Neighborhood 3	RN3	20	30	Lower	51	Vacant Land	
3001027015	2.55	Residential Neighborhood 3	RN3	20	30	Lower	51	Vacant Land	
3001027016	2.56	Residential Neighborhood 3	RN3	20	30	Lower	51	Vacant Land	
3001027017	2.56	Residential Neighborhood 3	RN3	20	30	Lower	51	Vacant Land	
3001027018	2.56	Residential Neighborhood 3	RN3	20	30	Lower	51	Vacant Land	
3001027023	2.55	Residential Neighborhood 3	RN3	20	30	Lower	51	Vacant Land	
3001027024	2.56	Residential Neighborhood 3	RN3	20	30	Lower	51	Vacant Land	
3001027025	2.52	Residential Neighborhood 3	RN3	20	30	Lower	50	Vacant Land	
3001027026	2.52	Residential Neighborhood 3	RN3	20	30	Lower	50	Vacant Land	
3001027032	2.62	Residential Neighborhood 3	RN3	20	30	Lower	52	Vacant Land	
3005005022	5.26	Residential Neighborhood 3	RN3	20	30	Moderate	105	Vacant Land	
3005005023	5.09	Residential Neighborhood 3	RN3	20	30	Moderate	101	Vacant Land	
3009005034	0.75	Residential Neighborhood 3	RN3	20	30	Moderate	14	Vacant Land	

Table B-1: Residential Neighborhood 3 (RN3) Sites

APN	Acres	GP	Zoning	Min. Density	Max. Density	Income Level	Minimum Units	Vacant	In Previous HE
3009005035	0.78	Residential Neighborhood 3	RN3	20	30	Moderate	15	Vacant Land	
3009006055	2.10	Residential Neighborhood 3	RN3	20	30	Lower	41	Vacant Land	
3009008004	1.18	Residential Neighborhood 3	RN3	20	30	Lower	23	Vacant Land	
3009009012	1.84	Residential Neighborhood 3	RN3	20	30	Lower	36	Vacant Land	
3009011027	1.27	Residential Neighborhood 3	RN3	20	30	Lower	25	Vacant Land	
3010002003	3.59	Residential Neighborhood 3	RN3	20	30	Lower	71	Vacant Land	
3010002004	2.22	Residential Neighborhood 3	RN3	20	30	Lower	44	Vacant Land	
3010002005	1.43	Residential Neighborhood 3	RN3	20	30	Lower	28	Vacant Land	
3010002006	3.53	Residential Neighborhood 3	RN3	20	30	Lower	70	Vacant Land	
3010002007	1.58	Residential Neighborhood 3	RN3	20	30	Lower	31	Vacant Land	
3010002017	2.86	Residential Neighborhood 3	RN3	20	30	Lower	57	Vacant Land	
3010002019	1.09	Residential Neighborhood 3	RN3	20	30	Lower	21	Vacant Land	
3010002021	0.81	Residential Neighborhood 3	RN3	20	30	Lower	16	Vacant Land	
3010002026	1.49	Residential Neighborhood 3	RN3	20	30	Lower	29	Vacant Land	
3010002027	1.10	Residential Neighborhood 3	RN3	20	30	Lower	22	Vacant Land	
3010002028	2.70	Residential Neighborhood 3	RN3	20	30	Lower	54	Vacant Land	
3010019008	1.02	Residential Neighborhood 3	RN3	20	30	Lower	20	Vacant Land	

Table B-1: Residential Neighborhood 3 (RN3) Sites

APN	Acres	GP	Zoning	Min. Density	Max. Density	Income Level	Minimum Units	Vacant	In Previous HE
3010019012	1.56	Residential Neighborhood 3	RN3	20	30	Lower	31	Vacant Land	
3010020007	0.77	Residential Neighborhood 3	RN3	20	30	Moderate	15	Vacant Land	
3010020011	0.58	Residential Neighborhood 3	RN3	20	30	Moderate	11	Vacant Land	
3010020014	0.50	Residential Neighborhood 3	RN3	20	30	Moderate	10	Vacant Land	
3010020015	0.55	Residential Neighborhood 3	RN3	20	30	Moderate	10	Vacant Land	
3010020016	1.19	Residential Neighborhood 3	RN3	20	30	Lower	23	Vacant Land	
3010020020	2.38	Residential Neighborhood 3	RN3	20	30	Lower	47	Vacant Land	
3010020024	1.38	Residential Neighborhood 3	RN3	20	30	Lower	27	Vacant Land	
3010021006	1.48	Residential Neighborhood 3	RN3	20	30	Lower	29	Vacant Land	
3010021007	0.76	Residential Neighborhood 3	RN3	20	30	Moderate	15	Vacant Land	
3010022026	0.58	Residential Neighborhood 3	RN3	20	30	Moderate	11	Vacant Land	
3010024008	1.11	Residential Neighborhood 3	RN3	20	30	Lower	22	Vacant Land	
3010025044	5.12	Residential Neighborhood 3	RN3	20	30	Moderate	102	Vacant Land	
3010025046	0.83	Residential Neighborhood 3	RN3	20	30	Lower	16	Vacant Land	
3012024017	0.63	Residential Neighborhood 3	RN3	20	30	Moderate	12	Vacant Land	
3012025017	1.35	Residential Neighborhood 3	RN3	20	30	Lower	27	Vacant Land	
3012025018	6.23	Residential Neighborhood 3	RN3	20	30	Moderate	124	Vacant Land	

Table B-1: Residential Neighborhood 3 (RN3) Sites

APN	Acres	GP	Zoning	Min. Density	Max. Density	Income Level	Minimum Units	Vacant	In Previous HE
3012025024	3.96	Residential Neighborhood 3	RN3	20	30	Lower	79	Vacant Land	
3012026010	3.86	Residential Neighborhood 3	RN3	20	30	Lower	77	Vacant Land	
3012046001	2.19	Residential Neighborhood 3	RN3	20	30	Lower	43	Vacant Land	
3014002009	1.00	Residential Neighborhood 3	RN3	20	30	Lower	20	Vacant Land	
3014005019	7.85	Residential Neighborhood 3	RN3	20	30	Moderate	156	Vacant Land	Y
3014006017	0.90	Residential Neighborhood 3	RN3	20	30	Lower	18	Vacant Land	
3014006019	0.55	Residential Neighborhood 3	RN3	20	30	Moderate	10	Vacant Land	
3014007018	0.59	Residential Neighborhood 3	RN3	20	30	Moderate	11	Vacant Land	
3014007019	0.61	Residential Neighborhood 3	RN3	20	30	Moderate	12	Vacant Land	
3014007021	0.77	Residential Neighborhood 3	RN3	20	30	Moderate	15	Vacant Land	
3014010007	1.76	Residential Neighborhood 3	RN3	20	30	Lower	35	Vacant Land	
3014011001	0.50	Residential Neighborhood 3	RN3	20	30	Moderate	10	Vacant Land	
3014011003	3.03	Residential Neighborhood 3	RN3	20	30	Lower	60	Vacant Land	
3014011004	0.88	Residential Neighborhood 3	RN3	20	30	Lower	17	Vacant Land	
3014011010	0.86	Residential Neighborhood 3	RN3	20	30	Lower	17	Vacant Land	
3014011011	0.86	Residential Neighborhood 3	RN3	20	30	Lower	17	Vacant Land	
3014011012	0.79	Residential Neighborhood 3	RN3	20	30	Moderate	15	Vacant Land	

Table B-1: Residential Neighborhood 3 (RN3) Sites

APN	Acres	GP	Zoning	Min. Density	Max. Density	Income Level	Minimum Units	Vacant	In Previous HE
3014026004	0.84	Residential Neighborhood 3	RN3	20	30	Lower	16	Vacant Land	
3014026012	0.73	Residential Neighborhood 3	RN3	20	30	Moderate	14	Vacant Land	
3014026014	0.73	Residential Neighborhood 3	RN3	20	30	Moderate	14	Vacant Land	
3014026018	2.66	Residential Neighborhood 3	RN3	20	30	Lower	53	Vacant Land	
3014026019	0.59	Residential Neighborhood 3	RN3	20	30	Moderate	11	Vacant Land	
3014026020	1.33	Residential Neighborhood 3	RN3	20	30	Lower	26	Vacant Land	
3014027003	1.47	Residential Neighborhood 3	RN3	20	30	Lower	29	Vacant Land	
3018015025	1.68	Residential Neighborhood 3	RN3	20	30	Lower	33	Vacant Land	
3018015028	2.81	Residential Neighborhood 3	RN3	20	30	Lower	56	Vacant Land	
3018015033	4.60	Residential Neighborhood 3	RN3	20	30	Lower	91	Vacant Land	
3018015901	4.36	Residential Neighborhood 3	RN3	20	30	Lower	87	Vacant Land	
3018017064	1.77	Residential Neighborhood 3	RN3	20	30	Lower	35	Vacant Land	
3018018005	0.98	Residential Neighborhood 3	RN3	20	30	Lower	19	Vacant Land	
3018018009	1.11	Residential Neighborhood 3	RN3	20	30	Lower	22	Vacant Land	
3018018027	1.26	Residential Neighborhood 3	RN3	20	30	Lower	25	Vacant Land	
3018018029	0.94	Residential Neighborhood 3	RN3	20	30	Lower	18	Vacant Land	
3018021001	1.16	Residential Neighborhood 3	RN3	20	30	Lower	23	Vacant Land	

Table B-1: Residential Neighborhood 3 (RN3) Sites

APN	Acres	GP	Zoning	Min. Density	Max. Density	Income Level	Minimum Units	Vacant	In Previous HE
3018021002	1.17	Residential Neighborhood 3	RN3	20	30	Lower	23	Vacant Land	
3018021003	2.56	Residential Neighborhood 3	RN3	20	30	Lower	51	Vacant Land	
3018021017	1.17	Residential Neighborhood 3	RN3	20	30	Lower	23	Vacant Land	
3018021018	1.39	Residential Neighborhood 3	RN3	20	30	Lower	27	Vacant Land	
3018021020	1.06	Residential Neighborhood 3	RN3	20	30	Lower	21	Vacant Land	
3018022001	1.27	Residential Neighborhood 3	RN3	20	30	Lower	25	Vacant Land	
3018022003	1.39	Residential Neighborhood 3	RN3	20	30	Lower	27	Vacant Land	
3018022028	1.06	Residential Neighborhood 3	RN3	20	30	Lower	21	Vacant Land	
3018022029	0.94	Residential Neighborhood 3	RN3	20	30	Lower	18	Vacant Land	
3018026001	4.67	Residential Neighborhood 3	RN3	20	30	Lower	93	Vacant Land	
3018027036	8.42	Residential Neighborhood 3	RN3	20	30	Moderate	168	Vacant Land	Y
3022011014	2.44	Residential Neighborhood 3	RN3	20	30	Lower	48	Vacant Land	
3022012041	4.98	Residential Neighborhood 3	RN3	20	30	Lower	99	Vacant Land	
3022013013	5.00	Residential Neighborhood 3	RN3	20	30	Lower	99	Vacant Land	
3022013025	2.94	Residential Neighborhood 3	RN3	20	30	Lower	58	Vacant Land	
3022014001	4.14	Residential Neighborhood 3	RN3	20	30	Lower	82	Vacant Land	
3022014002	4.71	Residential Neighborhood 3	RN3	20	30	Lower	94	Vacant Land	

Table B-1: Residential Neighborhood 3 (RN3) Sites									
APN	**Acres**	**GP**	**Zoning**	**Min. Density**	**Max. Density**	**Income Level**	**Minimum Units**	**Vacant**	**In Previous HE**
3022014033	4.71	Residential Neighborhood 3	RN3	20	30	Lower	94	Vacant Land	
3022014035	4.21	Residential Neighborhood 3	RN3	20	30	Lower	84	Vacant Land	
3022015012	9.96	Residential Neighborhood 3	RN3	20	30	Moderate	199	Vacant Land	
3022015013	8.89	Residential Neighborhood 3	RN3	20	30	Moderate	177	Vacant Land	
3022015015	1.08	Residential Neighborhood 3	RN3	20	30	Lower	21	Vacant Land	
3022015016	4.27	Residential Neighborhood 3	RN3	20	30	Lower	85	Vacant Land	
3022015017	5.13	Residential Neighborhood 3	RN3	20	30	Moderate	102	Vacant Land	

Appendix C: Review of Past Accomplishments

This section evaluates the City's overall progress in implementing the 2013-2021 Housing Element. Table C-1 summarizes the quantifiable accomplishments. Table C-2 provides a program-by-program evaluation of accomplishments, effectiveness, and continued appropriateness.

Table C-1: Quantified Objectives 2013-2021

Housing Type	Extremely Low 30% or less of median	Very Low 50% or less of median	Low 51% to 80% of median	Moderate 81% to 120% of median	Above Moderate >120% of median	Total
RHNA	697	698	827	898	2,332	5,452
New Construction Anticipated	0	65	207	0	3,000	3,272
Affordable Housing Anticipated	11	65	207	0	0	283
Total Units Constructed	0	91	70	530	166	857
Affordable Housing Units At-Risk	116	117	0	0	0	231
Units Preserved	142	142	0	0	0	284
Single-Family Rehabilitation	0	6	6	0	0	12
Loans Provided	0	0	0	0	0	0
Mortgage Assistance Program (MAP)	0	1	19	30	0	50
Assistance Provided	0	0	0	0	0	0
Mobile Home First Time Homebuyer	0	0	19	30	0	49
Assistance Provided	0	0	0	0	0	0
Emergency Grant Program	60	0	0	0	0	60
Grants Provided	9	0	0	0	0	9

Table C-2: Review and Revised Policies and Programs 2013 – 2021

Program	Objectives	Result 2014-2021	Evaluation	Continue, Modify, Delete
Goal H1: Promote the Construction of New Housing Affordable to All Income Groups				
H1.A New Housing Development: Provide adequate sites for the development of 5,452 new housing units between October 2013 and October 2021. This is Palmdale's Fair Share of regional housing growth established by SCAG's Regional Housing Needs Assessment (RHNA) adopted in 2012.	▪ Construct 3,272 new units (2013-2021). ▪ Approve residential development applications consistent with the General Plan policies and Zoning Regulations (2013-2021).	As of 2020, 857 new units were built: ▪ 91 very low income ▪ 70 low income ▪ 530 moderate income ▪ 166 above moderate income. Homes 4 Families CalVet REN 56-unit project for Low Income veteran households approved. 6 units completed by 7/2021, 10 units to be completed by 9/2021	During the planning period, a total of 857 of the projected 3,272 new residential units were built. The City continues to approve residential development applications.	Modify to reflect the updated RHNA. Please see 2021-29 HE Program 1.
H1.B Density Bonus Ordinance: Provide a 20% density bonus for housing developers who make 10% of their units affordable to low income households or 5% of units affordable to very-low income households income in accordance with California Government Code 65915.	▪ Administer an ongoing program to grant density bonuses as provided in the Zoning Code (2013-2021).	City staff met with several developers to discuss various projects in 2019. Two density bonus agreements were approved in 2019 and two were approved in 2015. 2 pending projects for September 2021 City Council meeting.	The City continues to meet with developers to approve density bonus agreements. Four density bonus agreements were approved during the planning period.	The City's Density Bonus Ordinance will be updated to be consistent with State law. Implementation of the City's Density Bonus program is combined with the program to facilitate affordable housing development. Please see 2021-29 HE Program 8:
H1.C Second Unit Ordinance: Permit second dwelling units by administrative review in	▪ Administer program to approve second units (2013-2021).	Section 91.03 of the Zoning Ordinance was amended on November 4, 2009 in compliance with the provisions of AB 1866. The	The Zoning Ordinance has been amended to reflect	Pursuant to State law, the 2021-2029 Housing Element includes actions to

Table C-2: Review and Revised Policies and Programs 2013 – 2021

Program	Objectives	Result 2014-2021	Evaluation	Continue, Modify, Delete
compliance with AB 1866**.**		Zoning Ordinance was amended in 2019 (effective January 2020) to comply with State laws, including AB 68, AB 881, SB 13, AB 587, and AB 670. The City continues to amend the Zoning Ordinance as needed. Palmdale issued one ADU building permit in 2019 and one ADU building permit in 2018. Approval of ADU projects in the City is on-going.	State law.	facilitate the development of ADUs. Please see 2021-2029 HE Program 3.
H1.D Mortgage Assistance Program (MAP): Program to provide down payment assistance for qualified first-time homebuyers. To be used with the Transit Village project and for sale of townhomes to low-moderate income families.	▪ Revise program for use with the Transit Village and to help purchasers of townhomes by low and moderate income families (2014). ▪ Provide 46 loans within the Palmdale Transit Village (2013-2021).	The City added an additional Mortgage Assistance Program August 2020 in response to the COVID-19 pandemic for assistance with missed mortgage payments. The CDBG-CV Mortgage Assistance Program will provide up to $6,000 in assistance grants to low and moderate income individuals and families. The Palmdale Transit Area Specific Plan was proposed and an EIR was completed in 2018. The Palmdale Transit Area Specific Plan would replace the Palmdale Transit Village project.	64 loans and 30 grants were allocated during the planning period. 2017 1 loan for 38464 30th Street East SFR Low income household (MAP-GAP) 2013-2019 26 loans for SFR Neighborhood Stabilization Program Low income households (NSP HAP) 2020-2021 Homes for Families CalVet REN development.	City will work to identify funding for this program. Please see 2021-2029 HE Program 9.

Table C-2: Review and Revised Policies and Programs 2013 – 2021

Program	Objectives	Result 2014-2021	Evaluation	Continue, Modify, Delete
			37 approved loans for SFR duplex units. Of these 6 units closed by July 2021 and 10 to close by September 2021 (VPAL) 2020-2021 COVID-CV Mortgage Assistance Program 30 households assisted with missed mortgage payments.	
H1.E Mobile Home First Time Homebuyer Program: Provide down payment assistance to first time homebuyers who wish to purchase a new mobile home to be placed in one of the three City of Palmdale-owned mobile home parks.	▪ Administer an ongoing program for first-time mobile homebuyers (2013-2021). ▪ Administer a program to provide 49 loans (2013-2021).	The City did not allocate any loans during the planning period.	Although there were not any applications during planning period the City believes there will be a need for this program in the future as spaces become available within the City's three mobile home parks.	City will work to identify funding for this program. Please see 2021-2029 HE Program 9:
H1.F Affordable Housing Land Bank: Acquire and assemble parcels of land for the new construction of affordable single and multi-family housing units. The intent of this program is to acquire separate parcels of	▪ Continue to purchase and assemble developable land to accommodate very low and low income units, specifically targeting parcels within the Palmdale Transit Village	There were no land transfers made in 2019 for the purpose of developing transit priority projects, permanent supportive housing, or housing for special needs groups. In 2014, the City acquired one vacant lot in Focus Neighborhood No. 3 for future development.	The City acquired one lot in the Palmdale Transit Village Specific Plan area during the planning period.	City will work to identify funding for this program. Please see 2021-29 HE Program 6.

Table C-2: Review and Revised Policies and Programs 2013 – 2021

Program	Objectives	Result 2014-2021	Evaluation	Continue, Modify, Delete
land in order to create a developable site for affordable housing.	Specific Plan area (2013-2021).	The Palmdale Transit Area Specific Plan was proposed and an Initial Study was completed in 2018. The Palmdale Transit Area Specific Plan would replace the Palmdale Transit Village project.		
H1.G Affordable Housing Construction Program: Provide funding in the form of land and/or low-interest, deferred interest or residual receipts loans to nonprofit affordable housing organizations to construct new affordable units to replace units demolished by public actions and build new affordable. As needed, provide predevelopment grants or loans to these projects.	▪ Administer an ongoing program and develop new guidelines as needed (2013-2021). ▪ Provide assistance to Paving the Way/Youth Build to provide 11 extremely low income units to emancipated youth/students (2013-2014). ▪ Provide funding for 65 very low income family housing units and 207 low income family housing units (2013-2021).	The following affordable housing contracts were approved during the planning period: ▪ Courson Arts Colony – West: Approved June 1, 2016 ▪ Courson Arts Colony – East: Approved June 22, 2015 ▪ 38709 Larkin Avenue: Approved June 1, 2016 Rehab H2B ▪ Valley Oasis: Approved February 4, 2020 507 Q4 Terminated agreement 12/2020 Rehab H2B ▪ 509 and 515 East Ave Q-6: Approved June 4, 2014 Rehab H2B ▪ ACT 10th Place: Approved June 4, 2014. Rehab H2B In 2019, City staff met with several developers to discuss various projects, but no new agreements were signed. The City approved 78 affordable units for very low and low income earners within the Palmdale Transit Village Specific Plan in 2013.	A total of 319 affordable units were completed during this planning period.	Program continued. Construction of new affordable family units planned for 2021-2029. Please see 2021-29 HE Program 7.

Table C-2: Review and Revised Policies and Programs 2013 – 2021

Program	Objectives	Result 2014-2021	Evaluation	Continue, Modify, Delete
		Construction of the Paving the Way/Antelope Valley Youth Build project began in 2014. The rehabilitation project accommodates up to 22 extremely low income students/ emancipated youth.		
H1.H Small Lot Consolidation Program: The City will play an active role in facilitating lot consolidations, particularly as it relates to parcels listed within the sites inventory.	▪ Offer the following incentives for lot consolidation (2013-2021) ▪ Administer an ongoing program to facilitate small lot consolidation (2013-2021).	The City continues to offer incentives for lot consolidation. No applications for lot consolidation were submitted during the planning period. Palmdale approved one application for lot consolidation in 2019.	Program expected to be useful in assembling sites for development of affordable multi-family housing in Transit Village	Program continued.
Program H1.I Large Site Development Program: The City will play an active role in facilitating land divisions and lot line adjustments on larger sites to assist the development of housing for lower income households. Parcel sizes that would facilitate multi-family developments affordable to lower income households in light of federal, State and local financing programs are general between two and ten acres in size. The City will work with property owners and non-profit developers to target and	▪ The City will offer incentives for the division of large sites suitable for multi-family development (2013-2021). ▪ Administer an ongoing program to facilitate the division of sites appropriate for multi-family housing affordable to lower income households (2013-2021).	Rezoning was completed in October 2012. No applications for lot divisions or lot line adjustments were submitted during the planning period.	Though there were no applications for lot division during the planning period, the program continues to be effective in facilitating multi-family development.	Program continued.

Table C-2: Review and Revised Policies and Programs 2013 – 2021

Program	Objectives	Result 2014-2021	Evaluation	Continue, Modify, Delete
market the availability of sites with the best potential for development.				
GOAL H2: PRESERVE AND IMPROVE THE EXISTING SUPPLY OF AFFORDABLE HOUSING				
H2.A Single-Family Rehabilitation Loan Program: The Single-Family Residential Rehabilitation Program is designed for three specific categories of low-income, owner-occupied households. Under some conditions, loans do not have to be repaid.	▪ Administer a program to provide 12 loans over eight years (2013-2021) • 6 very low income loans • 6 low income loans	No single-family rehabilitation loans were allocated during the planning period.	The City continues to identify funding sources for this program.	Continue program. Please see 2021-29 HE Program 10.
H2.B Multi-family and Single-Family Rental Unit Rehabilitation Program: Make low-interest loans from available funds to owners of both single and multi-family rental properties. Owners must agree to rent their properties to eligible low-income households and to maintain the affordability of the assisted units.	▪ Administer an ongoing program (2013-2021). ▪ Provision of loans depends on the availability of funds.	Palmdale administered two multi-family rental unit rehabilitation loans during the planning period. ▪ 38709 Larkin Avenue: Approved June 1, 2016 ▪ Valley Oasis: Approved February 4, 2020 507 Q4 Terminated agreement 12/2020 ▪ 509 and 515 East Ave Q-6: Approved June 4, 2014 ▪ ACT 10th Place: Approved June 4, 2014. ▪ Victory Outreach : Approved February 2, 2021 507 Q4 Construction of the Paving the Way/Antelope Valley YouthBuild project began in 2014. The	The City continues to identify funding sources for this program. 31 units rehabilitated during the planning period.	Continue program. Please see 2021-29 HE Program 10.

Table C-2: Review and Revised Policies and Programs 2013 – 2021

Program	Objectives	Result 2014-2021	Evaluation	Continue, Modify, Delete
		rehabilitation project accommodates up to 22 extremely low income students/emancipated youth.		
H2.C Emergency Grant Program: Provide one-time grants for housing repairs to very low-income (50% or less of median income) owner-occupants of single-family homes.	▪ Administer an ongoing program that provides 60 loans to extremely low income households (2013-2021).	The City assisted 9 very low and low income single-family households in 2014. Assistance comprised of services and repairs to water heaters, swamp coolers, air conditioners, gas liners, and sewer.	Palmdale assisted a total of 9 households during the planning period.	Continue program. Please see 2021-29 HE Program 10.
H2.D Rental Housing Inspection Program: The Palmdale Building and Safety Division will proactively inspect all residential rental properties on a regular schedule. All rental properties required to register. Buildings in compliance re-inspected at 5-year intervals; buildings with violations re-inspected annually. Building and Safety will also continue to respond to code violation complaints.	▪ Inspect all rental housing units on a regular schedule (2013-2021).	Inspections of registered rental units conducted on a regular schedule. Units inspected: 2014 - 1,762 2015 - 1,946 2016 - 2,685 2017 - 2,151 2018 - 3,132 2019 - 2,313 2020 - 1,130 2021 - 202 thru 8/12/2021	The City continues to inspect rental units regularly.	Continue program. Please see 2021-29 HE Program 11.
H2.E Vacant and Abandoned Property Registration Program: Establish and maintain an abandoned and vacant property registration program as a mechanism to	▪ Perform an inspection of every registered vacant property to ensure the property is secure and maintained in an appropriate manner (2013-2021).	Vacant and abandoned properties can be registered on the City's website. Units registered: 2014 – 311 2015 – 263 2016 – 148 2017 – 83	The City continues to inspect and register vacant property regularly.	Continue program. Please see 2021-29 HE Program 12.

Table C-2: Review and Revised Policies and Programs 2013 – 2021

Program	Objectives	Result 2014-2021	Evaluation	Continue, Modify, Delete
protect neighborhoods and commercial areas from becoming blighted through the lack of adequate maintenance and security of abandoned and vacated properties by requiring any beneficiary or any trustee of a Deed of Trust to register the property with the City.		2018 – 64 2019 – 60 2020 – 38 2021 – 18 (to date)		
H2.F Mobile Home Space Rent Control: This ongoing program regulates increases in month-to-month rent costs for mobile home park spaces to ensure that the spaces remain affordable to low and moderate income occupants.	▪ Administer an ongoing program (2013-2021).	Chapter 5.44 of Palmdale's Municipal Code controls mobile home rents to protect citizens from excessive rent prices. In 2014, the City took action for a violation at Joshua View Mobile Home Park and reached a settlement agreement with the property owner. In 2018, the City took action for a violation at Sagetree Mobile Home Park and reached a settlement agreement with the property owner. In 2019 corrected rent for 24 residents of Thousand Elms Mobile Home Park. In 2021 corrected rent for 1 resident at Grecian Isles Mobile Home Park.		Continue program. Please see 2021-29 HE Program 13.
H2.G Enforcement of Mobile Home Park Lease Terms Ordinance: Enforce a City ordinance forbidding owners of mobile home	▪ Process complaints and take corrective action (ongoing).	No enforcement actions were taken during planning period.	Until December 31, 2020 Owners were required to submit per Civil Code	This program is combined with the Mobile Home Rent Control program.

Table C-2: Review and Revised Policies and Programs 2013 – 2021

Program	Objectives	Result 2014-2021	Evaluation	Continue, Modify, Delete
parks to require any resident or prospective resident to sign a lease or rental agreement that exempts the space from local rent control.			Section 798.21 disclosures signed by new residents. This is a disclosure alerting residents that any long-term lease would exempt the space from the local rent control ordinance. AB 2872 in 2021 eliminated long term leases for new residents.	Please see 2021-29 HE Program 13.
H2.H Mobile Home Park Homeownership and Rehabilitation: This program makes loans to eligible households for purchase of mobile homes in three City-owned Mobile Home Parks. Loans limited by available park spaces.	▪ Make loans as spaces become available (2013-2021).	The program was on-going during the planning period.	This program considered very effective in providing affordable housing in City owned Mobile Home Parks.	Continue program and identify funding. Please see 2021-29 HE Program 9:
H2.I Mortgage Revenue Bond Program: The City has the power to issue mortgage revenue bonds for purchase and rehabilitation or new construction. These bonds could be used to preserve the affordability of housing that is at risk of losing local	▪ Administer an ongoing program (2013-2021).	In 2015, the Housing Authority issued $1.4 million in Multi-family Housing Revenue Bonds, Series 2015 (Impressions, La Quinta, Park Vista, and Summerwood Apartments), to rehabilitate 291 rental units (26 very low income and 258 low income).	City will continue to issue bonds as possible to preserve existing affordable housing through purchase and rehab and construct new units as possible.	This is a funding tool and not a housing program. This is incorporated into the Affordable Housing program. Please see 2021-29 HE Program 7:

Table C-2: Review and Revised Policies and Programs 2013 – 2021

Program	Objectives	Result 2014-2021	Evaluation	Continue, Modify, Delete
or federal subsidies.				
H2.J Conversion of At-Risk Units: In order to meet the housing needs of persons of all economic groups, the City must guard against the loss of housing units available to lower-income households. A total of 231 units in six projects are at-risk of conversion to market-rate prior between 2013 and 2021.	▪ Maintain and annually update the inventory of "at-risk" projects. ▪ Take all appropriate steps to ensure that a project remains in or is transferred to an organization capable of maintaining affordability restrictions for the life of the project. ▪ Annually monitor local investment in projects that have been acquired by non-or for-profit entities. ▪ Work with owners, tenants and nonprofit organizations to assist in the nonprofit acquisition of at-risk projects. ▪ Annually identify funding sources for at-risk preservation and acquisition rehabilitation. ▪ Where feasible, provide technical assistance and support to public and non-profit agencies and organizations.	Palmdale continues to monitor for affordable housing at risk of conversion. In 2015, the following four apartment complexes had affordability covenants expiring in 2028, were acquired by the Housing Authority of the City of Palmdale and have ongoing rehabilitation. The recorded bond covenants are through 2045 and Housing Authority covenants are through 2070: ▪ Summerwood Apartments (52 affordable units) ▪ La Quinta Apartments (98 affordable units) ▪ Park Vista Apartments (27 affordable units) ▪ Impressions Apartment (107 affordable units)	City is committed to preserving existing affordable housing.	Continue program. Please see 2021-29 HE Program 14.

Table C-2: Review and Revised Policies and Programs 2013 – 2021

Program	Objectives	Result 2014-2021	Evaluation	Continue, Modify, Delete
	▪ Work with tenants of at-risk units and provide them with education regarding tenant rights and conversion procedures.			
GOAL H.3: REMOVE GOVERNMENT CONSTRAINTS ON HOUSING				
H3.A Housing Impact Review: Pursuant to CEQA requirements, review housing impacts of proposed City policies, programs, and actions for consistency with RHNA fair share projections and prepare an assessment letter for submittal to the California Department of Housing and Community Development when adverse impacts are identified that would preclude meeting RHNA fair share numbers.	▪ Through the CEQA process, consider impacts on housing opportunities for each zone change, General Plan Amendment or Zoning Ordinance Amendment (2013-2021).	All applications are reviewed, and an environmental document prepared in compliance with CEQA and the CEQA Guidelines.	This program is important to identify and prevent unintended impacts on housing cost or affordability due to new or existing City policies.	Compliance with CEQA requirements is not considered a housing program and is not included in the 2021-2029 Housing Element.
H3.B Housing for Agricultural Employees and Employee Housing: Pursuant to the requirements of California Health and Safety Code Section 17021.5 and 17021.6, allow for employee housing for six or fewer persons subject to	▪ Administer an ongoing program (2013-2021).	Zoning Ordinance Amendment completed in October 2012. No applications were submitting during the planning period.	The City will continue to review housing for agricultural employees and employee housing in compliance with applicable regulations.	Program completed and is not included in the 2021-2029 Housing Element.

Table C-2: Review and Revised Policies and Programs 2013 – 2021

Program	Objectives	Result 2014-2021	Evaluation	Continue, Modify, Delete
the same review procedure as any other single-family residence occupied by six or fewer persons and agricultural workers living quarters will be permitted within the A-1 (Light Agriculture) zone subject to Site Plan Review approval and consistent with the requirements of Health and Safety Code Section 17021.6				
GOAL H4: PROMOTE EQUAL HOUSING FOR ALL PERSONS REGARDLESS OF RACE OR COLOR, RELIGION, SEX, FAMILIAL STATUS, ANCESTRY OR HANDICAP				
H4.A Fair Housing Services: Contract with the Housing Rights Center provider to provide fair housing services to Palmdale residents that include a monthly three hour walk-in fair housing clinic at City Hall, intake and investigation of housing discrimination complaints and referrals for other types of issues, periodic public service announcements on fair housing law, and mailings to lenders. The City and the Housing Rights Center will conduct outreach and education activities, distribute	▪ Continue to contract for Fair Housing Services with the Housing Rights Center to provide a monthly fair housing clinic at Palmdale City Hall and related services. The City shall publicize the availability of fair housing services through various media such as the City's website and local TV channel, Palmdale 27 (2013-2021).	The City partners with the Housing Rights Center (HRC) to provide fair housing services to all residents. In 2020, in response to the COVID-19 pandemic, the HRC moved educational services to a virtual platform. Housing Rights Workshops and trainings. Virtual housing clinics are offered three times a week and Q&A sessions are facilitated once a week. Palmdale drafted an Analysis of Impediments to Fair Housing Choice in 2020. From 2014-2019, the HRC received a total of 145 discrimination complaints. Out of the 145 complaints, 14 ended in successful conciliation, one client was referred to the Litigation	Successful program provides information about fair housing programs, education for tenants and landlords and clinics for cases of discrimination. Agency pursues discrimination cases as indicated.	This program is expanded to address the new Affirmatively Furthering Fair Housing (AFFH, AB 686) requirements. Please see 2021-29 HE Program 20.

Table C-2: Review and Revised Policies and Programs 2013 – 2021

Program	Objectives	Result 2014-2021	Evaluation	Continue, Modify, Delete
literature and publicize the availability of fair housing services through various media.		Department, 5 clients withdrew their complaints, 6 complaints were unenforceable, and 12 are pending.		
H4.B Fair Housing Affirmative Marketing Practices: Provide information to managers of rental housing who participate in Partners Against Crime (PAC) landlord training on compliance with affirmative marketing practices. Continue to provide fair housing information in the PAC property management training program for lenders who participate in the mortgage assistance programs.	▪ Administer an ongoing program (2013-2021).	The City continues to facilitate the Partners Against Crime (PAC) program. Property managers/owners who participate in the Landlord Training Class receive up-to-date information on various housing topics and tips to identify and resolve criminal activity.	Palmdale continues to administer the Fair Housing Affirmative Marketing Practices Program.	This program is incorporated into as one of the meaningful actions to address the new Affirmatively Furthering Fair Housing (AFFH, AB 686) requirements. Please see 2021-29 HE Program 20.
GOAL H5: ADEQUATELY HOUSE HOUSEHOLDS WITH SPECIAL NEEDS				
H5.A Senior Housing: Develop housing for households in which one person is age 55 or older. Section 91.04 of the Zoning Ordinance establishes development standards for senior group housing. Congregate care facilities that do not provide individual kitchens for residents are exempt from	▪ Acquire land and provide financing for affordable senior housing. The Housing Division has a long-term project to develop senior housing in the Courson District downtown, which is designated as a Senior Housing Target Area (2013-2021).	The Courson Connection project, including Courson Arts Colony East and West, was completed during the planning period. Courson Arts Colony – East, completed in 2019, contains 81 affordable units for lower income families and families with special needs. Courson Arts Colony – West completed in 2020 includes 80 family units. During the planning period, the	The Courson Connection project and other senior housing projects were completed during the planning period.	Implementation of the Zoning Ordinance is not a housing program. Program modified to focus on City efforts to pursue senior affordable housing projects.

Table C-2: Review and Revised Policies and Programs 2013 – 2021

Program	Objectives	Result 2014-2021	Evaluation	Continue, Modify, Delete
General Plan density provisions applicable to the particular parcel(s). Otherwise, the parcels on which senior group housing is constructed must conform to all standards of the underlying land use district. Senior housing is limited to units occupied by one person over age 55 or married couples of which one spouse is over age 55.		following senior housing projects were completed: ▪ Impressions Senior Apartments (109 units) – Completed 2015.		
H5.B Housing for the Developmentally Disabled: Work with the North Los Angeles County Regional Center (NLARC) to implement an outreach program that informs families within the City on housing and services available for persons with developmental disabilities. The program could include the development of an informational brochure, including information on services on the City's website, and providing housing-related training for individuals/families through workshops.	▪ Develop an outreach program (June 2014). ▪ Conduct ongoing outreach (2013-2021).	As of 2020, there were 57 licensed residential care facilities accommodating 345 residents. This program was on-going throughout the planning period.	The City continues to conduct outreach in accordance with the outreach program.	Continue program. Please see 2021-29 HE Program 16.
H5.C Transitional and	▪ Amend the Zoning	Zoning was revised in compliance	Zoning Ordinance	A modified version

Table C-2: Review and Revised Policies and Programs 2013 – 2021

Program	Objectives	Result 2014-2021	Evaluation	Continue, Modify, Delete
Supportive Housing Facilities: Pursuant to California SB 2, allow both Transitional Housing and Supportive Housing within all zones that permit residential uses. Within the A-1 and R-1 zones, Transitional and Supportive Housing will be a permitted use within a single-family dwelling unit. Within the R-2, R-3 and R-4 zones, Transitional and Supportive Housing with four or fewer units will be permitted with administrative approval and with 5 or more units with Site Plan Review approval. The approval process for Transitional and Supportive Housing is consistent with the requirements for any other type of residential use within the respective zones. The City will ensure that Transitional and Supportive Housing is permitted within the MX (Mixed Use Overlay) Zone consistent with the requirements of other residential uses and will ensure that any future amendments to the Zoning Ordinance are consistent with the requirements of SB	Ordinance to permit Transitional and Supportive Housing within all zones without a Conditional Use Permit and not subject to any distance separation requirement.	with SB 2 in November 2012. Conditional Use Permit (CUP) 12-006 was approved on September 13, 2012 and in the process of receiving a Certificate of Occupancy in 2015. The proposed project approved under CUP 12-006, completed in 2015, established a boarding house that provides affordable transitional housing for up to 22 at-risk young adults. The 22 individuals residing in the boarding house are required to be enrolled in school or college.	was amended.	of this program will be included in the updated Housing Element. Please see 2021-29 HE Program 8:

Table C-2: Review and Revised Policies and Programs 2013 – 2021

Program	Objectives	Result 2014-2021	Evaluation	Continue, Modify, Delete
2.				
H5.D South Antelope Valley Emergency Services Program (SAVES): Provide administrative funding to the South Antelope Valley Emergency Services Program, which provides service referrals, motel vouchers and emergency food and clothing to homeless and very low-income individuals and families in Palmdale. SAVES refers clients to the Antelope Valley Access Center and accepts referrals from the center when appropriate.	▪ Continue to fund and administer existing program (2013-2021).	SAVES continues to serve residents throughout Palmdale. In 2020, SAVES provided food to residents in response to the COVID-19 pandemic. In 2018, the City invested $240,201 of CDBG funds to SAVES to serve an estimated 7,000 people. Funding for this program ongoing 2018-2019. On average, this program provides 4,500 meals per month.	Palmdale continues to provide services through the SAVES program.	Continue program. Please see 2021-29 HE Program 17.
H5.E Homeless Persons Facility Designation: Pursuant to California SB 2, allow Homeless Shelters within the C-2 (Office Commercial) zone without a Conditional Use Permit and allow Homeless Shelters within the R-3 (Multiple Residential) with a Conditional Use Permit. Section 94.04 of the Zoning Ordinance sets the distance between Homeless	▪ Administer an ongoing program (2013-2021).	The Zoning Ordinance was amended in November 2012 to allow Emergency Shelters within the C-2 zone without a Conditional Use Permit and within the R-3, C-3 and PF zones with a CUP. Shelters are no longer permitted within industrial (M-1 and M-2) zones. No new actions were taken during the planning period.	The Zoning Ordinance has been updated to reflect SB 2.	Program is modified in the 2021-2029 Housing Element to comply with AB 139. Please see 2021-29 HE Program 8:

Table C-2: Review and Revised Policies and Programs 2013 – 2021

Program	Objectives	Result 2014-2021	Evaluation	Continue, Modify, Delete
Shelters at a minimum of 300 feet.				
Program H5.F Disabled Access to Housing: A request for reasonable accommodation may be made by any person with a disability when the application of a zoning law or other land use regulation, policy or practice acts as a barrier to fair housing opportunities. Section 26.10 of the Zoning Ordinance, adopted in 2004, establishes a formal procedure for persons with disabilities seeking equal access to housing to request reasonable accommodation in the application of the City's Zoning Ordinance and to establish relevant criteria to be used when considering such requests.	▪ Administer an ongoing program to grant reasonable accommodation requests as provided in the Zoning Ordinance (2013-2021).	In the City of Palmdale, a request for reasonable accommodation may be made by any person with a disability, their representative or any entity, when the application of a zoning law or other land use regulation, policy or practice acts as a barrier to fair housing opportunities. No requests for reasonable accommodations were made during the planning period.	Program mandatory pursuant to state law.	Implementation of the Zoning Ordinance is not a housing program.
H5.H Residential Care Facilities: In the R-2 and R-3 zones, permit Large Residential Care Facilities subject to Site Plan Review approval in the same way that multi-family housing for five or more units within the	▪ Administer an ongoing program (2013-2021).	Zoning Ordinance Amendment completed in 2012 in compliance with State law. Conditional Use Permit (CUP) 14-017 was approved on December 11, 2014, to construct an assisted living facility and a memory care unit totaling 114,760 square feet on	Zoning Ordinance has been amended and the City approved the development of an assisted living facility in 2014.	This program is modified in the 2021-2029 Housing Element. Please see 2021-29 HE Program 8:

Table C-2: Review and Revised Policies and Programs 2013 – 2021

Program	Objectives	Result 2014-2021	Evaluation	Continue, Modify, Delete
R-2 and R-3 is permitted.		6.08 acres.		
GOAL H6: IMPLEMENT ENERGY AND WATER CONSERVATION MEASURES				
Program H6.A Energy and Water Conservation: Enforce the provisions of Title 24 of the California Building Code during building plan check process and the provisions of California GC 65591, the Water Conservation and Landscaping Act, and City Ordinance No. 1262 for water conservation during landscape plan check.	▪ Administer an ongoing program (2013-2021).	The City continues to enforce Title 24, the Water Conservation and Landscaping Act, and Ordinance 1262. Palmdale received a Beacon Spotlight Award for Energy Conservation in 2018 for achieving a 12 percent energy savings. The Palmdale Transit Area Specific Plan is currently being prepared and would encourage transit-oriented development The City provides direct information and links to other sites containing information on energy and water conservation, efficiency and retrofit measures.	The City continues to adhere to objectives.	Implementation of the Building Code is not included in the 2021-2029 Housing Element as a housing program.
GOAL H.7: ENHANCE THE VITALITY AND SAFETY OF EXISTING RESIDENTIAL NEIGHBORHOODS				
H7.A Neighborhood Improvement Program: This is a comprehensive program to improve the quality of selected low and moderate income single-family Palmdale neighborhoods by enforcing compliance with building, safety, health, fire, and other regulations and improving the overall appearance of	▪ Implement new project strategy focusing on homes in poor condition neighborhoods (2013-2021). ▪ Provide infrastructure improvements and make referrals for neighborhood improvement grants for home and property repair (2013-2021).	The City continues to work in Focus Neighborhood Nos. 1 through 5 with small local nonprofits and property owners to rehabilitate and increase the availability of small to medium size affordable housing, one to eleven units. The program includes outreach working with neighborhood houses and community partners to provide low and moderate income residents of the Focus Neighborhood's information regarding fair housing,	City will continue to work in Focus Neighborhoods and identify funding sources.	Continue program as funding permits. Please see 2021-29 HE Program 18.

Table C-2: Review and Revised Policies and Programs 2013 – 2021

Program	Objectives	Result 2014-2021	Evaluation	Continue, Modify, Delete
neighborhoods. The program is implemented by a team made up of officials from the City Departments of Planning, Building and Safety, Public Works and the Redevelopment Agency, the Fire Department, the Sheriff's Department and other agencies.	▪ Provide 100 grants with Focus Neighborhoods 4 and 5 (2013-2021).	the arts, affordable housing, local education opportunities, WorkSource Center job seeking services, South Antelope Valley Emergency Services (SAVES), and neighborhood community events to bring residents together. Four loans were provided to rehabilitate housing units.		

Table C-2: Review and Revised Policies and Programs 2013 – 2021

Program	Objectives	Result 2014-2021	Evaluation	Continue, Modify, Delete
H7.B Partners Against Crime (PAC): Partners Against Crime (PAC) coordinates the activities of the Code Enforcement, Housing, Sheriff's Department, Public Safety, Public Works, LA County Fire Department and Los Angeles County Department of Health Services to address multiple problems of crime and poor property management and maintenance in the City's multi-family housing. PAC offers a Crime Free Multi-family Housing and Mobile Home Park Certification to building owners/managers.	▪ Administer an ongoing program (2013-2021).	The City facilitated the PAC program throughout the planning period, offering training classes for project managers, Crime Prevention Through Environmental Design (CPTED) inspections, and neighborhood watch meetings. On average, one training per year was held for property managers (average of about 30 participants). Also held an average of 18 neighborhood watch meetings (1/3 turnout of those invited to the meeting)	Successful program to address issues of property maintenance and crime.	Continue program. Please see 2021-29 HE Program 19.
H7.C Partners for a Better Palmdale: This program incorporates both strategic planning and programs for public safety and neighborhood development.	▪ Administer an ongoing program (2013-2021).	This program was on-going throughout the planning period. The program incorporates both strategic planning and programs for public safety and neighborhood development; includes youth programs, Neighborhood Houses, Neighborhood Watch program, citizen academy, family-oriented education and mediation programs, centralized volunteer recruitment and coordination program.	Majority of elements deleted when City staff were reduced.	Program removed from the 2021-2029 Housing Element.

Table C-2: Review and Revised Policies and Programs 2013 – 2021

Program	Objectives	Result 2014-2021	Evaluation	Continue, Modify, Delete
GOAL H8: PROMOTE NEIGHBORHOOD VERSATILITY BY ENCOURAGING A MIX OF NEW HOUSING ALTERNATIVES TO INCREASE AFFORDABILITY AND PROMOTE HOME OWNERSHIP				
H8.A Transit Village Specific Plan and New Construction Affordability Program: The Transit Village Specific Plan was developed for a 110-acre area adjacent to the Palmdale Transportation Center, a multimodal transportation hub in downtown Palmdale. The plan provides for a variety of housing types, single, multi-family and mixed-use housing with residential uses above first floor retail. Housing development at 30 du per acre with development standards for a pedestrian oriented village environment. The projected buildout is between 637 and 1,027 homes.	▪ Provide planning services to ensure development of a variety of denser housing types in Transit Village Specific Plan area to meet RHNA objectives (2014-2021). ▪ Provide mortgage assistance to 16 low and 30 moderate income family households to purchase homes in the Transit Village (2021): • Transit Village (Phase 1) – 156 family units (multi-family) (completed Wright Brothers Court 2014) • Transit Village (Phase 1) – 46 family townhomes (2024) • Transit Village (Phase 2) – 75 family townhomes (2024)	The Transit Village has not been completed. Therefore, no mortgage assistance has been provided under this program.	The City will provide mortgage assistance when the project is completed and as funding becomes available.	Continue program. Please see 2021-29 HE Program 9:

Effectiveness in Addressing Special Needs

Overall, delivery of housing programs in Palmdale was severely affected by the elimination of redevelopment, and the City was hard hit by the collapse of the housing market between 2007 and 2012. Recovery of the housing market was slow in Palmdale. Limited loans and grants were made to senior or disabled households to pursue repair and rehabilitation. However, the City was able to extend the affordability covenants on four projects (totaling 284 units) from 2028 to 2070 through acquisition/rehabilitation. The City was also able to continue providing assistance to special needs households, including extremely low income households, through rent control on mobile home parks and a limited number of emergency repair grants.

The City was effective also in addressing housing and neighborhood condition issues that tend to disproportionately impact lower income and renter-households through the Neighborhood Improvement, Rental Inspection Program, Partners Against Crimes, and Vacant and Abandoned Property Registration Program. For the 2021-2029 Housing Element, the City will actively pursue funding in order to reinstate some of the key programs that are unfunded currently.

Appendix D: Assessment of Fair Housing

D.1 Introduction and Overview of AB 686

In January 2017, Assembly Bill 686 (AB 686) introduced an obligation to affirmatively further fair housing (AFFH) into California state law. AB 686 defined "affirmatively further fair housing" to mean "taking meaningful actions, in addition to combat discrimination, that overcome patterns of segregation and foster inclusive communities free from barriers that restrict access to opportunity" for persons of color, persons with disabilities, and other protected classes. The Bill added an assessment of fair housing to the Housing Element which includes the following components:

- A summary of fair housing issues and assessment of the City's fair housing enforcement and outreach capacity;
- An analysis of segregation patterns and disparities in access to opportunities;
- An assessment of contributing factors; and
- An identification of fair housing goals and actions.

The AFFH rule was originally a federal requirement applicable to entitlement jurisdictions (with population over 50,000) that can receive State Department of Housing and Urban Development (HUD) Community Planning and Development (CPD) funds. Before the 2016 federal rule was repealed in 2019, entitlement jurisdictions were required to prepare an Assessment of Fair Housing (AFH) or Analysis of Impediments to Fair Housing Choice (AI). AB 686 states that jurisdictions can incorporate findings from either report into the Housing Element. This AFH analysis includes information from the City's 2020 Analysis of Impediments to Fair Housing Choice (AI).

D.2 Assessment of Fair Housing Issues

D.2.1 Fair Housing Enforcement and Outreach

Los Angeles County jurisdictions including Palmdale, have the option of contracting with the Housing Rights Center (HRC). The Housing Rights Center investigates and resolves discrimination complaints, conducts discrimination auditing and testing, and education and outreach, including the dissemination of fair housing information such as written material, workshops, and seminars. They also provide landlord/tenant counseling, which is another fair housing service that involves informing landlords and tenants of their rights and responsibilities under fair housing law and other consumer protection regulations, as well as mediating disputes between tenants and landlords. The Housing Rights Center has a main office location in downtown Los Angeles. The City of Palmdale provides links to all of the Housing Rights Center's Fair Housing Information on the city web page.

According to the City's Analysis of Impediments (AI), between 2014 and 2018 the HRC received 145 housing discrimination complaints from Palmdale residents (Table D-1). A majority of discrimination complaints were based on physical or mental disability. As well as the HRC, HUD maintains a record of all housing discrimination complaints filed in local jurisdictions. These grievances can be filed on the basis of race, color, national origin, sex, disability, religion, familial status and retaliation. From October 1, 2014 to September 30, 2019, 968 fair housing complaints in Los Angeles County were filed with HUD. In the County and the City of Palmdale, disability-related discrimination was the most commonly reported revealing a lack of understanding and sensitivity of the fair housing rights of the disabled.

Table D-1: Fair Housing Discrimination Complaints by Basis in Palmdale (2014-2019)	
Basis	**#**
Familial Status	**9**
Gender	5
Metal Disability	27
Physical Disability	83
Race	9
Religion	1
General Discrimination Inquiry	11
Total	**145**
Source: The Housing Rights Center, FY 2015-2019.	

The City of Palmdale advertises fair housing services through placement of fair housing service brochures at public counters and provides a link to the HRC and all of the available brochures on the City's website. According to the City's AI a general lack of knowledge, understanding and sensitivity of fair housing rights and responsibilities continues to exist. The City will continue to coordinate with its fair housing provider, HRC, to enhance its outreach efforts in Palmdale and the local region through fair housing education workshops for homebuyers, renters, management companies, independent landlords and real estate agents.

D.2.2 Integration and Segregation

Race and Ethnicity

Ethnic and racial composition of a region is useful in analyzing housing demand and any related fair housing concerns, as it tends to demonstrate a relationship with other characteristics such as household size, locational preferences, and mobility. The City of Palmdale, like most communities throughout the Antelope Valley, has experienced gradual changes in the racial and ethnic composition of its population. Shifts in Palmdale's race and ethnicity profile have continued to occur since 2010. HUD defines Racially or Ethnically Concentrated Areas of Poverty (R/ECAPs) as census tracts with a non-White population over 50 percent and with 40 percent or three times the overall poverty rate. Currently, there are four R/ECAPs located in the City. Figure D-1 shows racial/ethnic concentrated block groups in 2010 and Figure D-2 shows them in 2018. Consistent with the increase in population Citywide, most block groups in Palmdale have seen an increase in racial/ethnic minority populations since 2010. Areas in downtown and along Palmdale Boulevard have grown substantially in racial/ethnic minorities.

According to the 2015-2019 American Community Survey (ACS), in Palmdale Hispanics or Latinos of any race continue to make up the largest racial/ethnic group, accounting for 60 percent, followed by people who identify as White only accounting for 46 percent of the population. Asian-Americans account for five percent of the population and African Americans account for 13 percent. The White population in Palmdale experienced a decrease of about three percent since 2010 while those who identify as Hispanic or Latino has increased about six percent.

Figure D-1: Racial/Ethnic Minority Concentrations (2010)

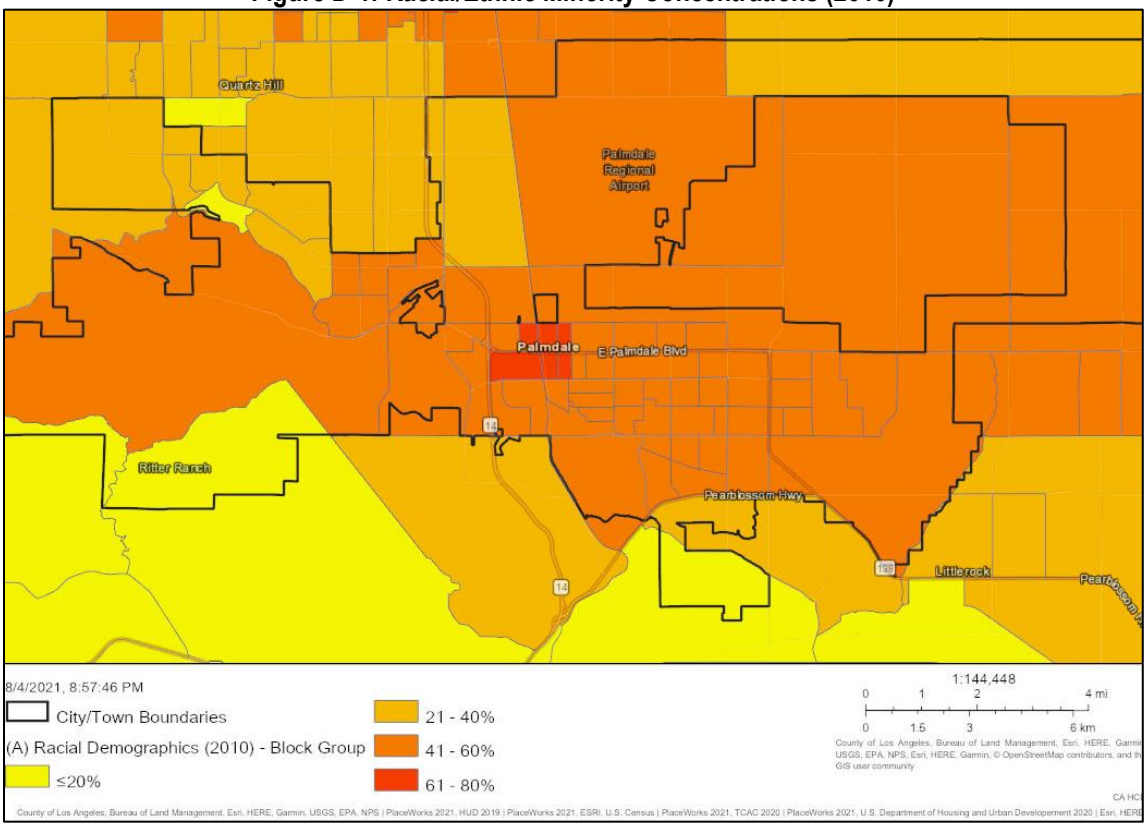
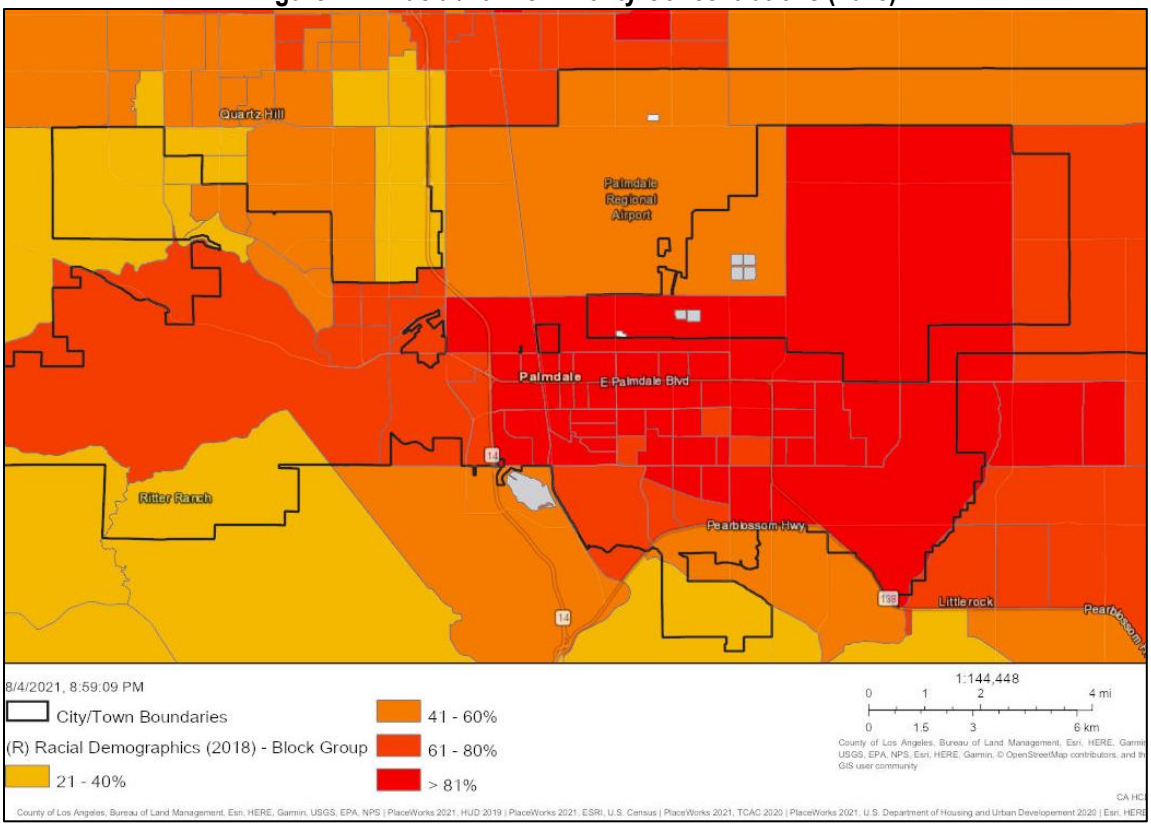
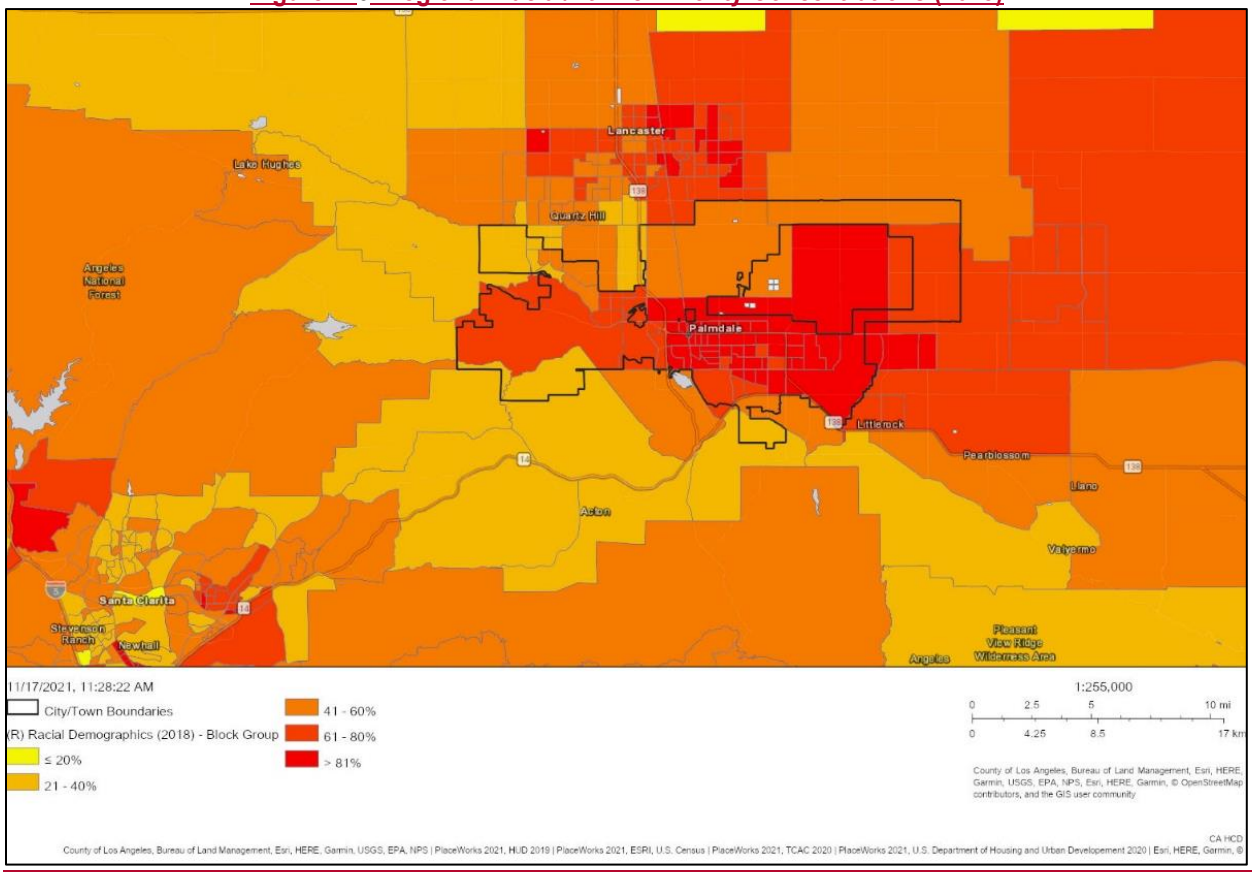


Figure D-2: Racial/Ethnic Minority Concentrations (2018)



Regional Trend. In Los Angeles County, nearly half of the population is Hispanic/Latino (48.5%), 26.2 percent of the population is White, 14.4 percent is Asian, and 7.8 percent is Black/African American (2015-2019 ACS). Figure D-3 illustrates the 2018 racial and ethnic minority concentrations in the Antelope Valley area. Overall, Palmdale has higher minority and ethnic concentrations than other areas in the Valley, although portions of Lancaster and the unincorporated area to the east of Palmdale also have significant concentrations.

Figure D-3: Regional Racial/Ethnic Minority Concentrations (2018)



HUD tracks racial or ethnic dissimilarity[7] trends for jurisdictions and regions. Dissimilarity indices show the extent of distribution between two groups, in this case racial/ethnic groups, across census tracts. The following shows how HUD views various levels of the index:

- <40: Low Segregation
- 40-54: Moderate Segregation
- >55: High Segregation

The indices for Palmdale and the Los Angeles County region from 1990 to 2020 are shown in Table D-2. Dissimilarity between non-White and White communities in Palmdale and throughout the Los Angeles County region has worsened since 1990. In Palmdale, dissimilarity between Black/White, Hispanic/White and Asian or Pacific Islander/White communities has worsened. In the County the dissimilarity between Black/White communities has improved. Based on HUD's index, segregation in Palmdale is low compared to Los Angeles County as a whole.

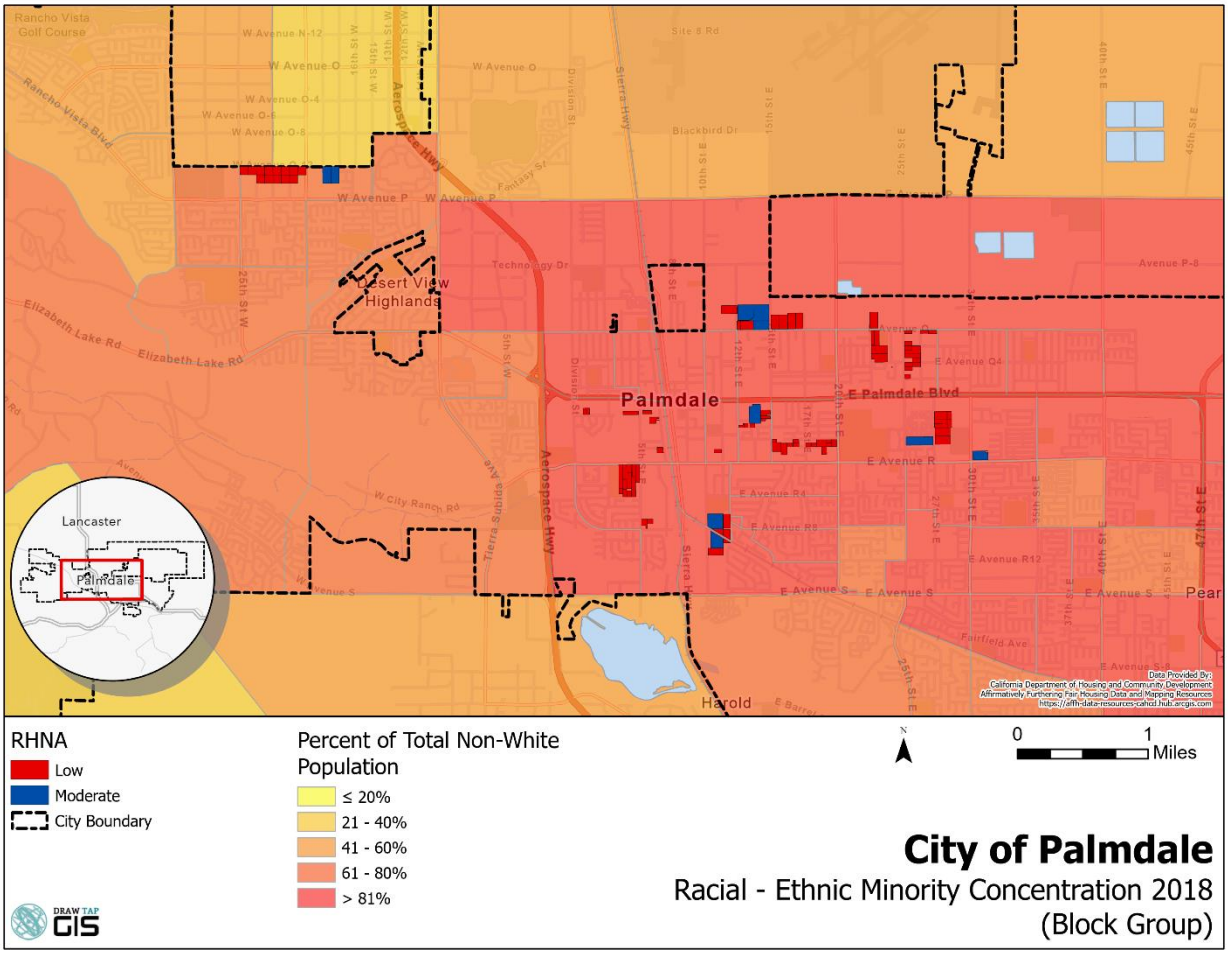
[7] Index of dissimilarity is a demographic measure of the evenness with which two groups are distributed across a geographic area. It is the most commonly used and accepted method of measuring segregation.

Table D-2: Racial/Ethnic Dissimilarity Trends				
	1990 Trend	2000 Trend	2010 Trend	Current
Palmdale, CA				
Non-White/White	13.52	20.77	30.74	31.78
Black/White	17.05	20.47	28.72	30.21
Hispanic/White	14.46	24.21	34.61	35.31
Asian or Pacific Islander/White	10.35	13.43	18.12	22.15
Los Angeles-Long Beach-Anaheim, CA Region (County)				
Non-White/White	55.32	55.50	54.64	56.94
Black/White	72.75	68.12	65.22	68.85
Hispanic/White	60.12	62.44	62.15	63.49
Asian or Pacific Islander/White	43.46	46.02	45.77	49.78
Source: Decennial Census, 1990-2010. HUD AFFH Data, 2020.				

Most of the City's block groups have a minority population from 61 percent to more than 80 percent. The City identified about 83 percent of its Regional Housing Needs Allocation (RHNA) units in block groups with more than 80 percent minority concentration. This happens to be the most prevalent percentage of minority population in the City where there is adequate services to facilitate housing development within City limits. Table D-3 shows that a smaller proportion of the RHNA units are distributed in block groups with a slightly lower minority concentration (61-80 percent). These block groups account for 17 percent of the RHNA. A slightly larger proportion of lower income RHNA units (17.8 percent) are located in block groups with lower minority concentrations compared to moderate income units (14.7 percent). The distribution of the sites for the inventory can be seen in relation to minority concentration by block group in Figure D-4.

Table D-3: RHNA Unit Distribution by % Minority Concentration						
% Minority Concentration (Block Group)	Low		Moderate		Total Units	
	Units	Percent	Units	Percent	Units	Percent
<= 20%	0	0.0%	0	0.0%	0	0.0%
21 - 40%	0	0.0%	0	0.0%	0	0.0%
41 - 60%	0	0.0%	0	0.0%	0	0.0%
61 - 80%	661	17.8%	206	14.7%	867	17.0%
> 81%	3,049	82.2%	1,196	85.3%	4,245	83.0%
Total	3,710	100.0%	1,402	100.0%	5,112	100.0%
All of the City's Above Moderate Income RHNA has been met with entitled projects						

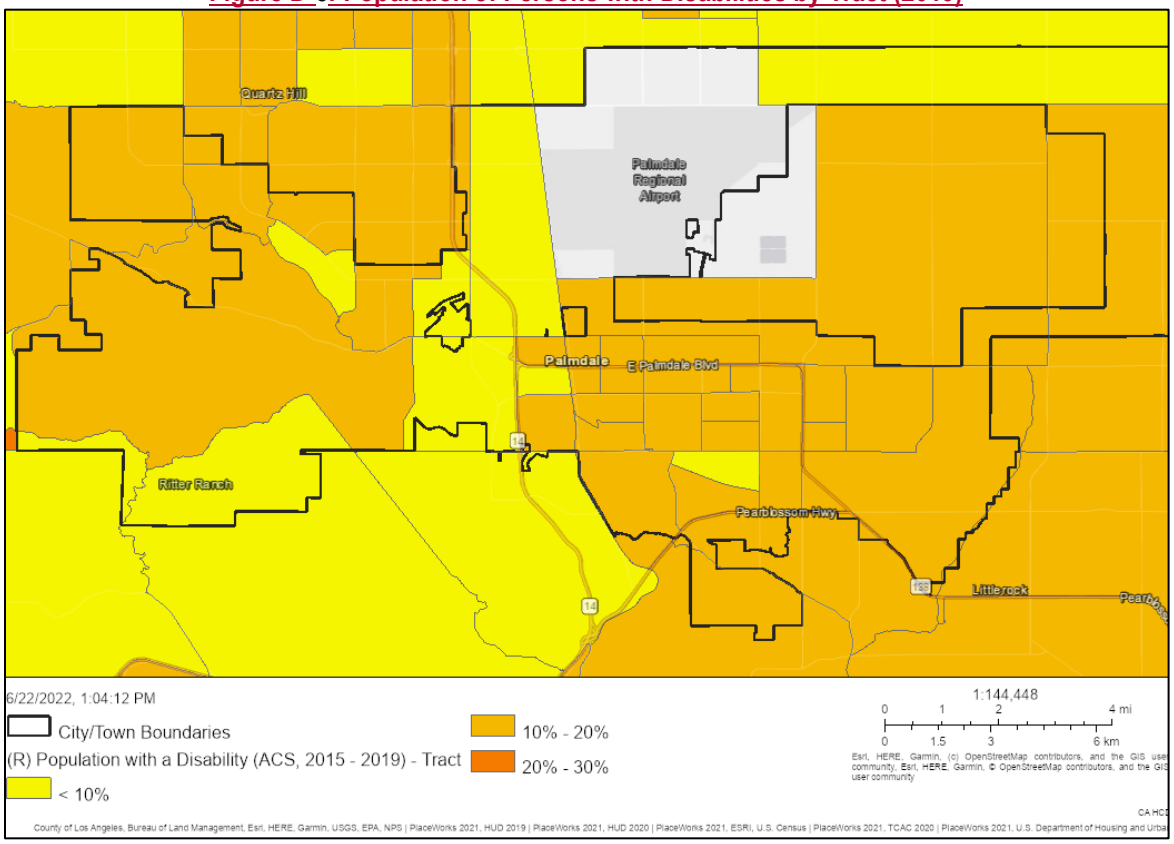
Figure D-4: Distribution of RHNA Units and Racial/Ethnic Minority Concentration by Block Group (2018)



Persons with Disabilities

According to 2015-2019 ACS data, disabled persons make up approximately 12 percent of the population in Palmdale. Between 2015 and 2019, 46 percent of the City's population with disabilities was made up of residents aged 65 and older, 45 percent were aged 18 to 64 and nine percent under the age of 18. Of the residents 65 years and older, ambulatory, hearing and independent living difficulties were prevalent. In Los Angeles County, about 15 percent of the population has a disability. Within Palmdale, there is no concentration of persons with disabilities as all tracts within the City have a population with a disability ranging from 10 to 20 percent or lower (Figure D-5).

Figure D-5: Population of Persons with Disabilities by Tract (2019)



Palmdale's RHNA units are not disproportionately concentrated in areas that have more persons with disabilities as most tracts in the City have 10 to 20 percent of the population being persons with a disability (Table D-4 and Figure D-6). These are also the areas where the City has adequate services to facilitate housing development.

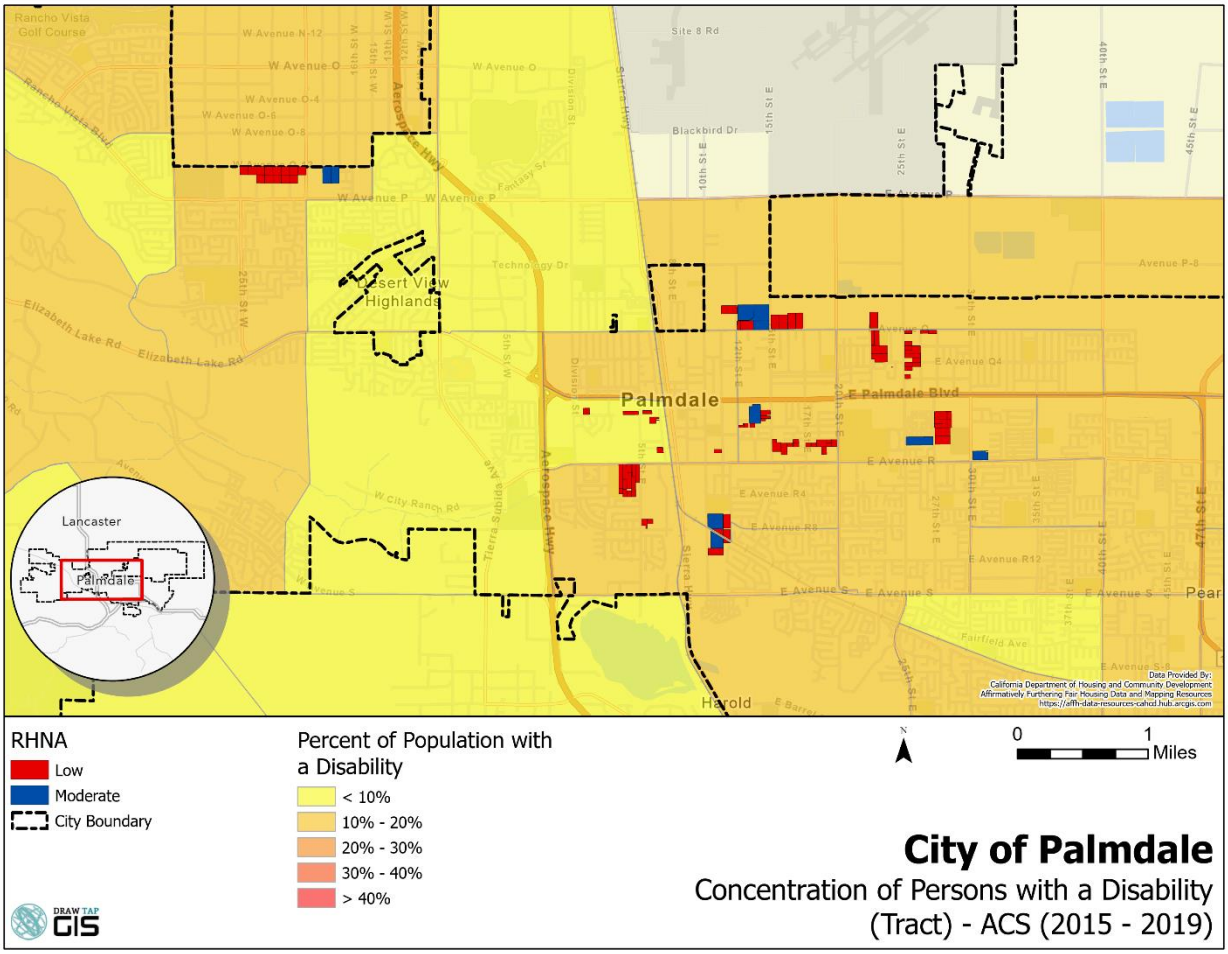
In the City of Palmdale, a request for reasonable accommodation may be made by any person with a disability, their representative or any entity, when the application of a zoning or other land use regulation, policy or practice acts as a barrier to fair housing opportunities.

Table D-4: RHNA Unit Distribution by % Population with Disabilities

% Persons with Disabilities (Tract)	Low		Moderate		Total Units	
	Units	Percent	Units	Percent	Units	Percent
< 10%	154	4.2%	0	0.0%	154	3.0%
10% - 20%	3,556	95.8%	1,402	100.0%	4,958	97.0%
20% - 30%	0	0.0%	0	0.0%	0	0.0%
30% - 40%	0	0.0%	0	0.0%	0	0.0%
> 40%	0	0.0%	0	0.0%	0	0.0%
Total	3,710	100.0%	1,402	100.0%	5,112	100.0%
All of the City's Above Moderate Income RHNA has been met with entitled projects						

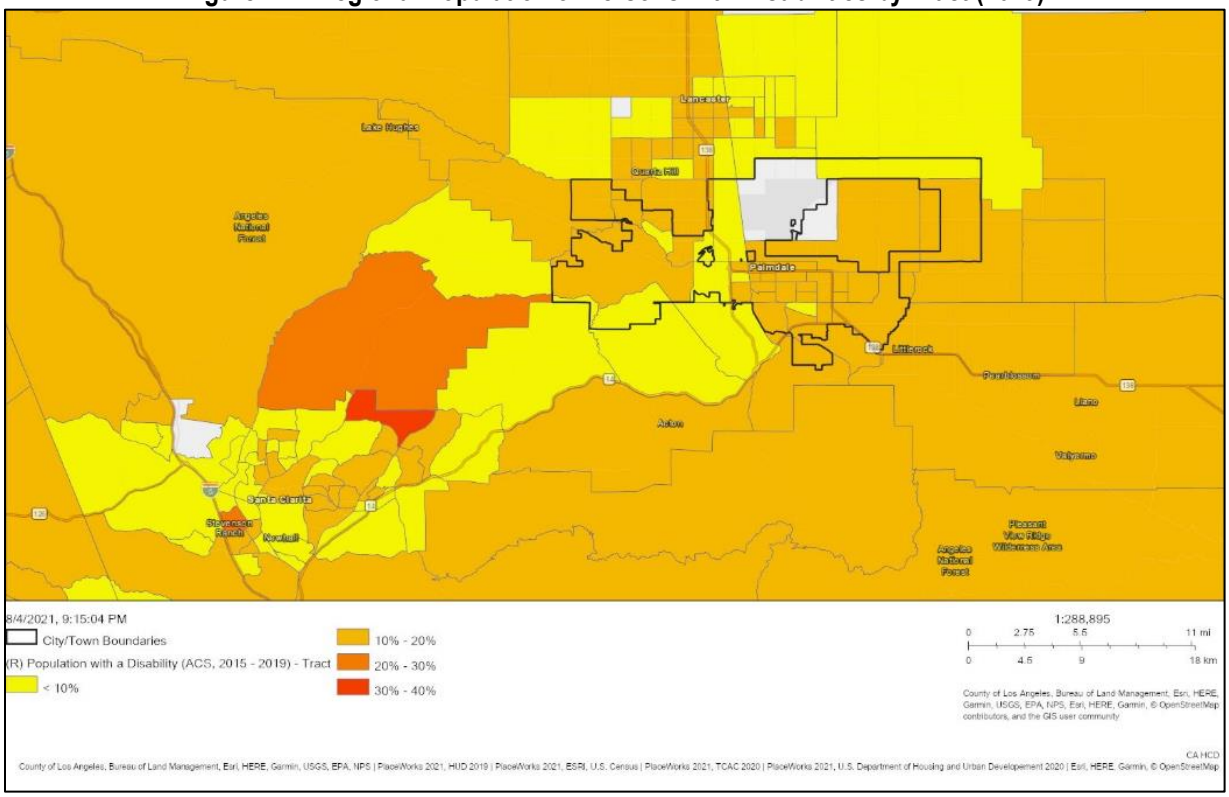
In the City of Palmdale, a request for reasonable accommodation may be made by any person with a disability, their representative or any entity, when the application of a zoning or other land use regulation, policy or practice acts as a barrier to fair housing opportunities.

Figure D-6: Distribution of RHNA Units and Population of Persons with Disabilities by Tract (2019)



Regional Trend. The 2021 County Health Rankings in Figure D-7 shows that the area surrounding Palmdale, such as the City of Lancaster, also has no areas with an increased population of persons with disabilities. In Santa Clarita there are areas with higher numbers of persons with disabilities; however, these areas also have high numbers of persons 65 years of age or older. In the region surrounding the City, concentrations of persons with disabilities range between 10 and 20 percent or below.

Figure D-7: Regional Population of Persons with Disabilities by Tract (2019)



Familial Status

Familial status refers to the presence of any children in the household under the age of 18, regardless of whether or not the child is biologically related to the head of household or the marital status of the head of households. According to the HCD AB686/AFFH data tool maps (Figure D-8), there is one area with a concentration of households of adults living alone in the City. Adults living with their spouse are mainly concentrated between Avenue R and Avenue S. The population of adults living with their spouse is either 20 to 40 or 40 to 60 in all census tracts of the City (Figure D-9).

Families with children may face housing discrimination by landlords who fear that children will cause property damage. Some landlords may have cultural biases against children of the opposite sex sharing a bedroom. Differential treatments such as limiting the number of children in a complex or confining children to a specific location are also fair housing concerns. Single parent households are also protected by fair housing law. As shown in Table D-5, 48 percent of Palmdale households are families with children. The City's share of families with children is higher than the County overall. According to the HCD AFFH map in Figure D-10, children in married households are very spread out through the City. The percent of households with children in most tracts is between 20 and 60 percent, probably due to the housing types available in these areas. Over 60 percent of the City's RHNA units are located in census tracts with 40 to 60 percent of the population being married-couple households with children (Table D-6 and Figure D-12).

Table D-5: Household Characteristics			
Jurisdiction	**% Families**	**% Families with Children**	**% Female-Headed Households with Children**
Palmdale	78%	48%	16%
Los Angeles County	67%	33%	6%
Source: 2015-2019 ACS			

Table D-6: RHNA Unit Distribution by % Children in Married-Couple Households						
% Children in Married-Couple HH (Tract)	Low		Moderate		Total Units	
	Units	Percent	Units	Percent	Units	Percent
< 20%	0	0.0%	0	0.0%	0	0.0%
20% - 40%	567	15.3%	268	19.1%	835	16.3%
40% - 60%	2,249	60.6%	840	59.9%	3,089	60.4%
60% - 80%	894	24.1%	294	21.0%	1,188	23.2%
> 80%	0	0.0%	0	0.0%	0	0.0%
Total	3,710	100.0%	1,402	100.0%	5,112	100.0%
All of the City's Above Moderate Income RHNA has been met with entitled projects						

Female-headed households with children require special consideration and assistance because of their greater need for affordable housing and accessible day care, health care, and other supportive services. In Palmdale, female headed households with children are slightly concentrated in the Center of the City with one area having 40 to 60 percent of its households being female-headed households with children (Figure D-11). An estimated 19 percent of Palmdale households were headed by single persons, with or without children, in 2019. The large majority of the single parent households were headed by females (75 percent). According to the 2015-2019 ACS, 42 percent of the female-headed households with children had incomes below the poverty level. A large proportion of RHNA units (82.6 percent) are in the census tracts with 20 to 40 percent of children residing in single-parent female-headed households and 17 percent are in tracts with less than 20 percent of children residing in female-headed households (Table D-7 and Figure D-13). Only 20 units are in an area where more than 40 percent of children live in female-headed households.

Table D-7: RHNA Unit Distribution by % Children in Female-Headed Households						
% Children in Female-Headed HH (Tract)	Low		Moderate		Total Units	
	Units	Percent	Units	Percent	Units	Percent
< 20%	661	17.8%	206	14.7%	867	17.0%
20% - 40%	3,029	81.6%	1,196	85.3%	4,225	82.6%
40% - 60%	20	0.5%	0	0.0%	20	0.4%
60% - 80%	0	0.0%	0	0.0%	0	0.0%
> 80%	0	0.0%	0	0.0%	0	0.0%
Total	3,710	100.0%	1,402	100.0%	5,112	100.0%
All of the City's Above Moderate Income RHNA has been met with entitled projects						

Figure D-8: Population of Adults Living Alone by Tract (2019)

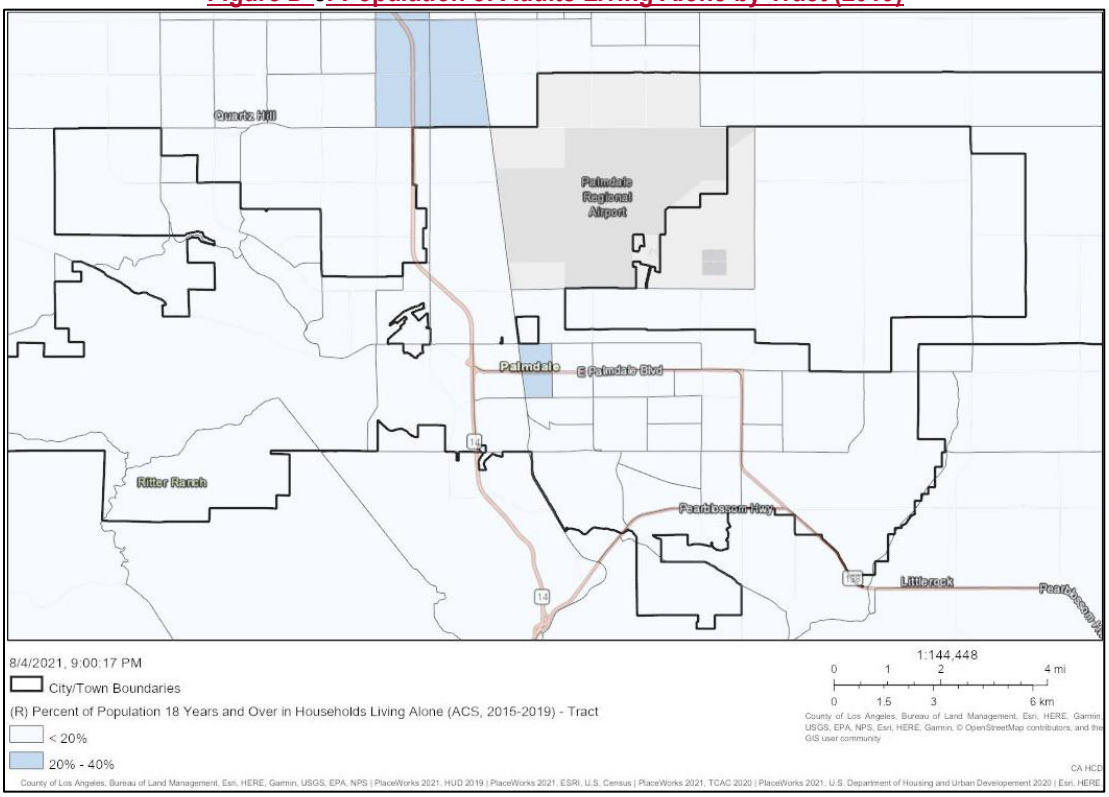


Figure D-9: Population of Adults Living with their Spouse by Tract (2019)

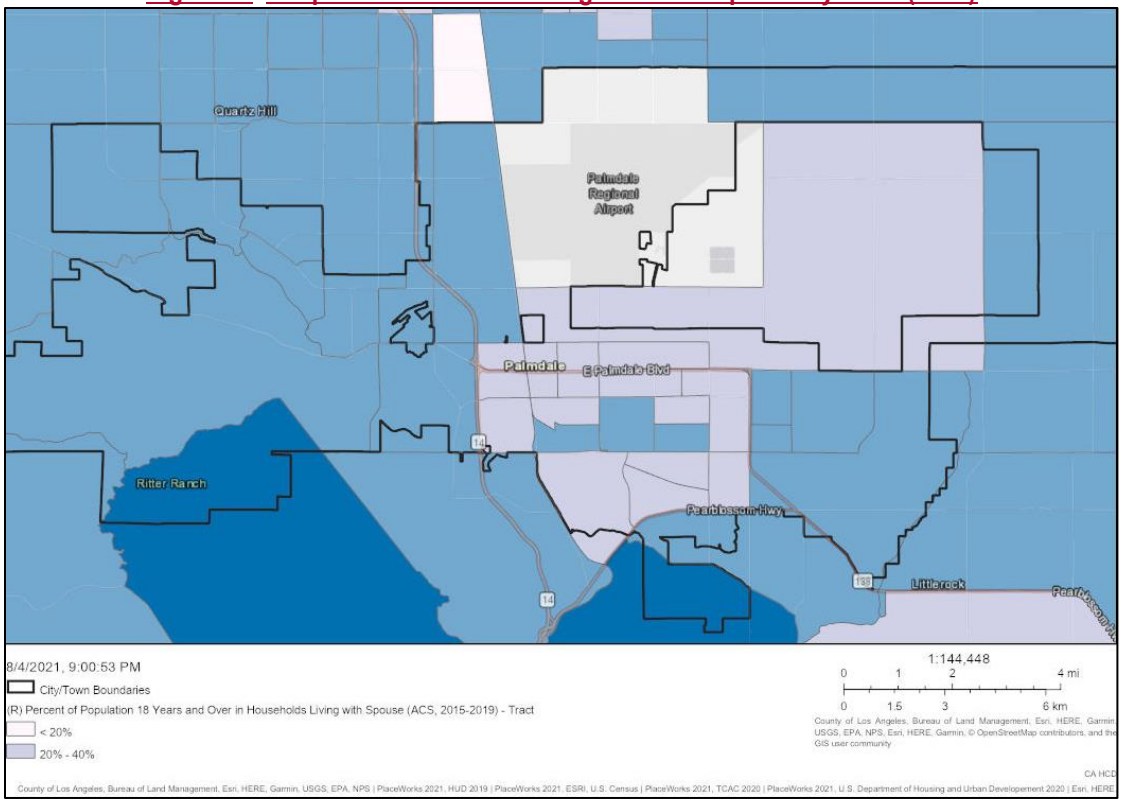


Figure D-10: Percent of Children in Married Couple Households by Tract (2019)

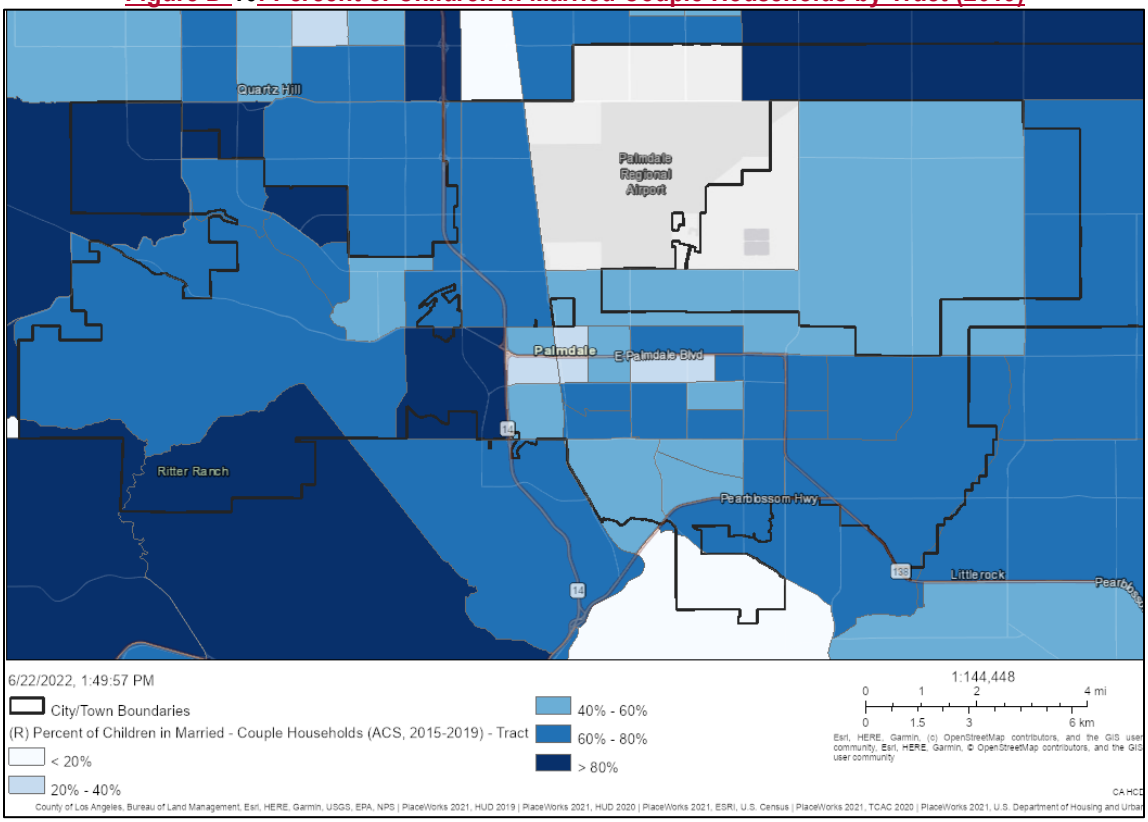


Figure D-11: Percent of Children in Female-Headed Households by Tract (2019)

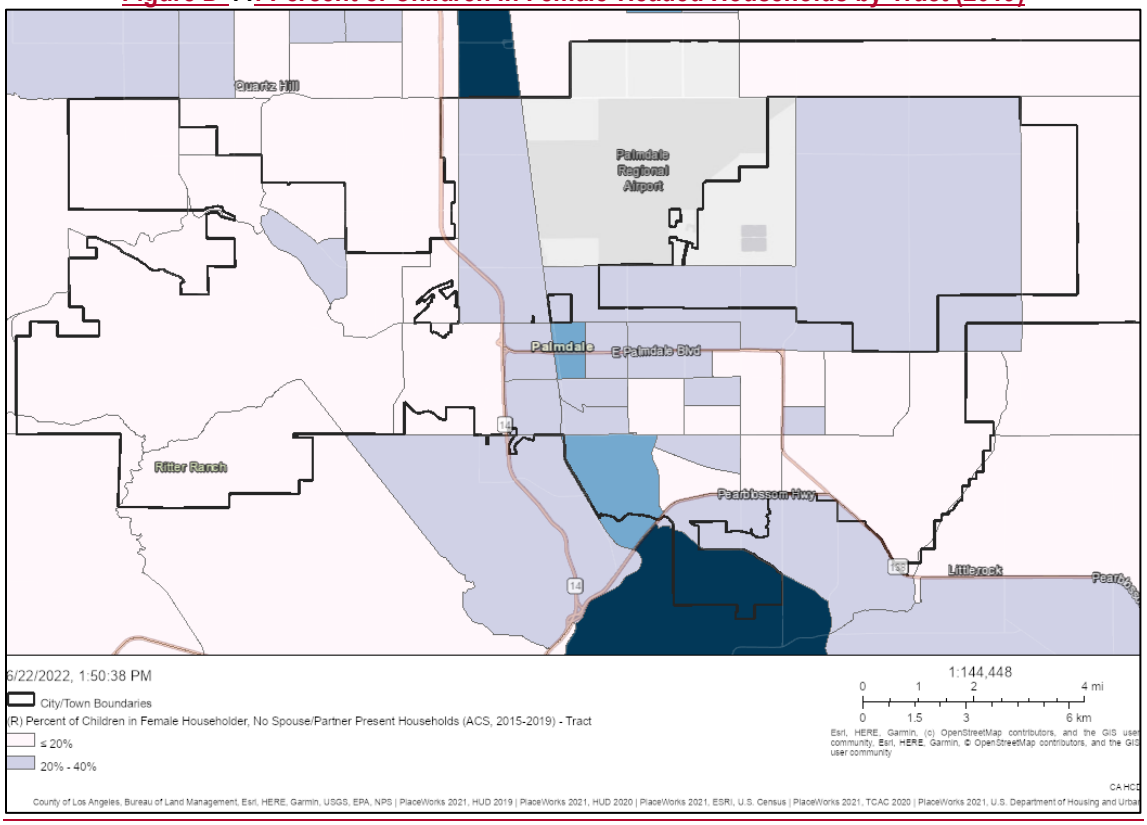


Figure D-12: Distribution of RHNA Units and Children in Married Couple Households by Tract (2019)

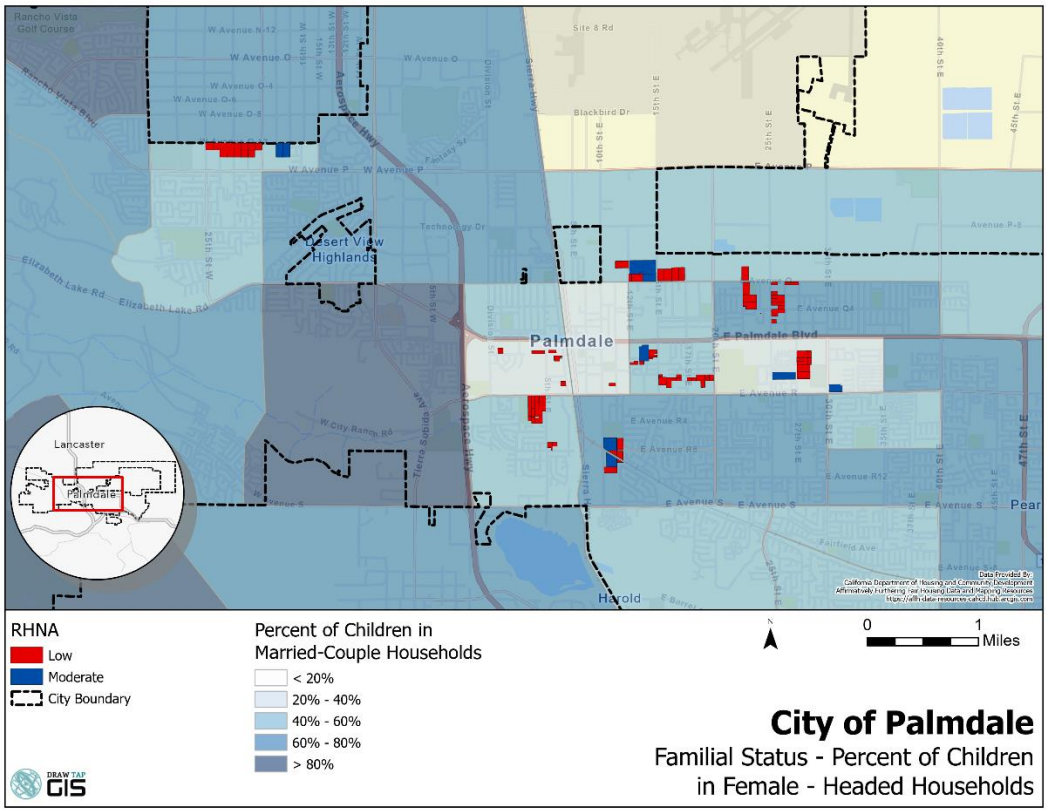
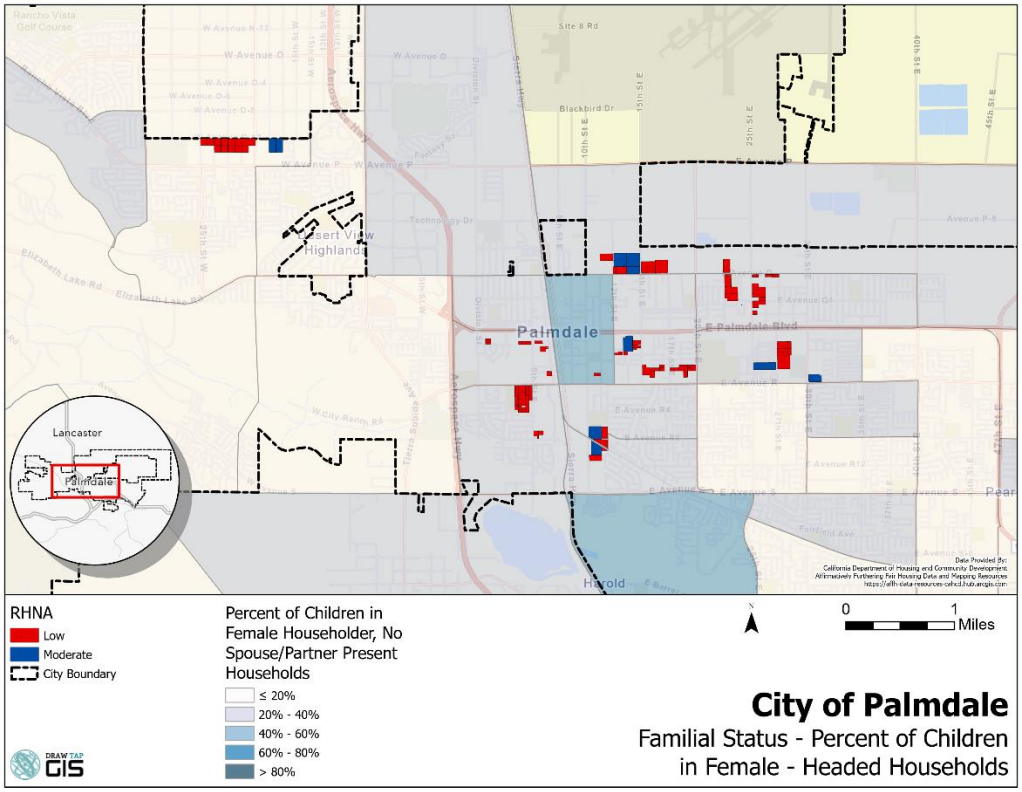


Figure D-13: Distribution of RHNA Units and Children in Female-Headed Households by Tract (2019)



Regional Trend. As shown in Table D-5 above, Palmdale has a higher percentage of families, families with children and female-headed households with children compared to Los Angeles County. The figures below show familial characteristics of the Antelope Valley area.

For adults living alone, the largest concentrations (between 20 -40%) are located to the west and east of Palmdale in the unincorporated County areas. Palmdale has a smaller concentration of adults living alone compared to the cities of Lancaster and Santa Clarita (Figure D-14). In the greater Los Angeles Region, the areas with the greatest numbers of adults living alone are found in downtown Los Angeles, Norwalk and Long Beach (>80% of the population).

Percentages of adults living with their spouse in Palmdale are similar to portions of Lancaster and the unincorporated areas to the east and southeast (Figure D-15). Higher percentages (60-80%) of adults living with their spouse are found south of Palmdale and in the Santa Clarita/Newhall area. Concentrations of married couples similar to Palmdale can be found in the central portion of the Los Angeles Basin as well as the San Fernando Valley,

The number of children in married households in Palmdale is similar Lancaster and lower than the surrounding unincorporated areas and the city of Santa Clarita, as shown on Figure D-16. Moving south in the region, similar percentages are found in the cities of Long Beach and the Inglewood/Downtown Los Angeles areas.

Higher percentages of children living in female-headed households are found in Palmdale and Lancaster compared to the rest of the Antelope Valley (Figure D-17). These higher percentages are also seen in Long Beach and the area around Inglewood.

Figure D-14: Regional Population of Adults Living Alone by Tract (2019)

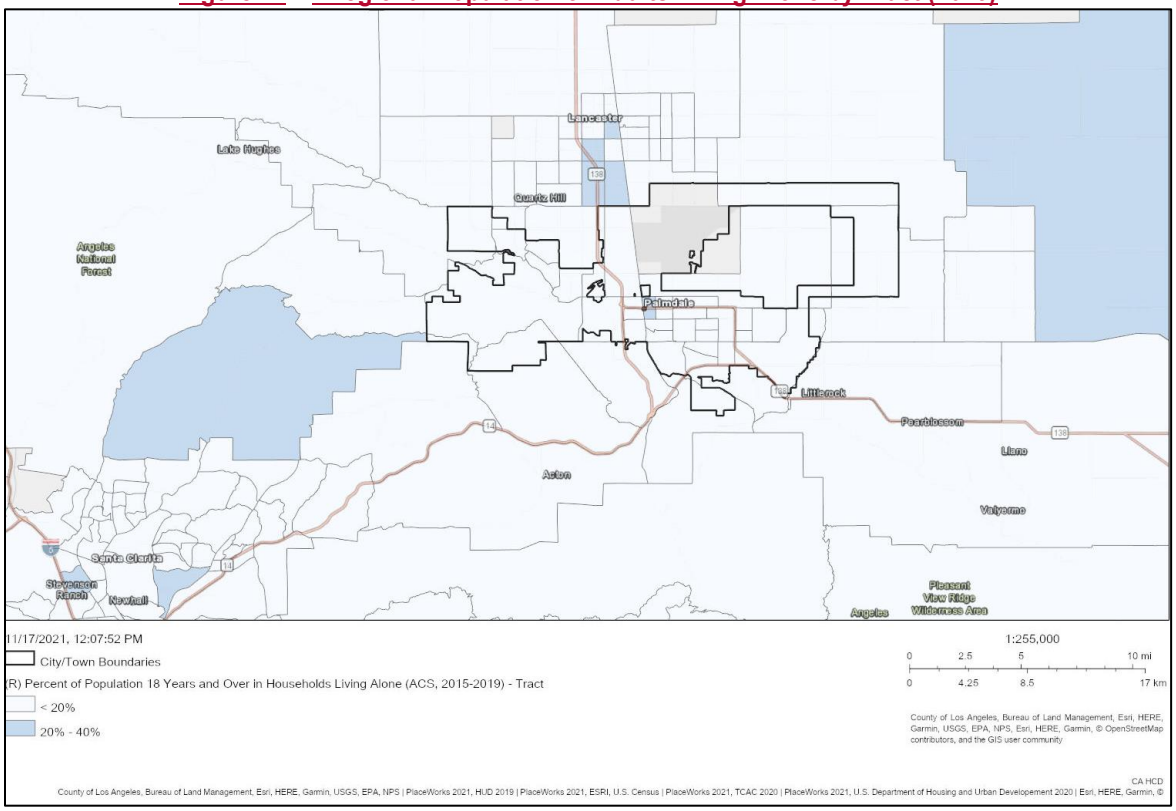


Figure D-15: Regional Population of Adults Living with their Spouse by Tract (2019)

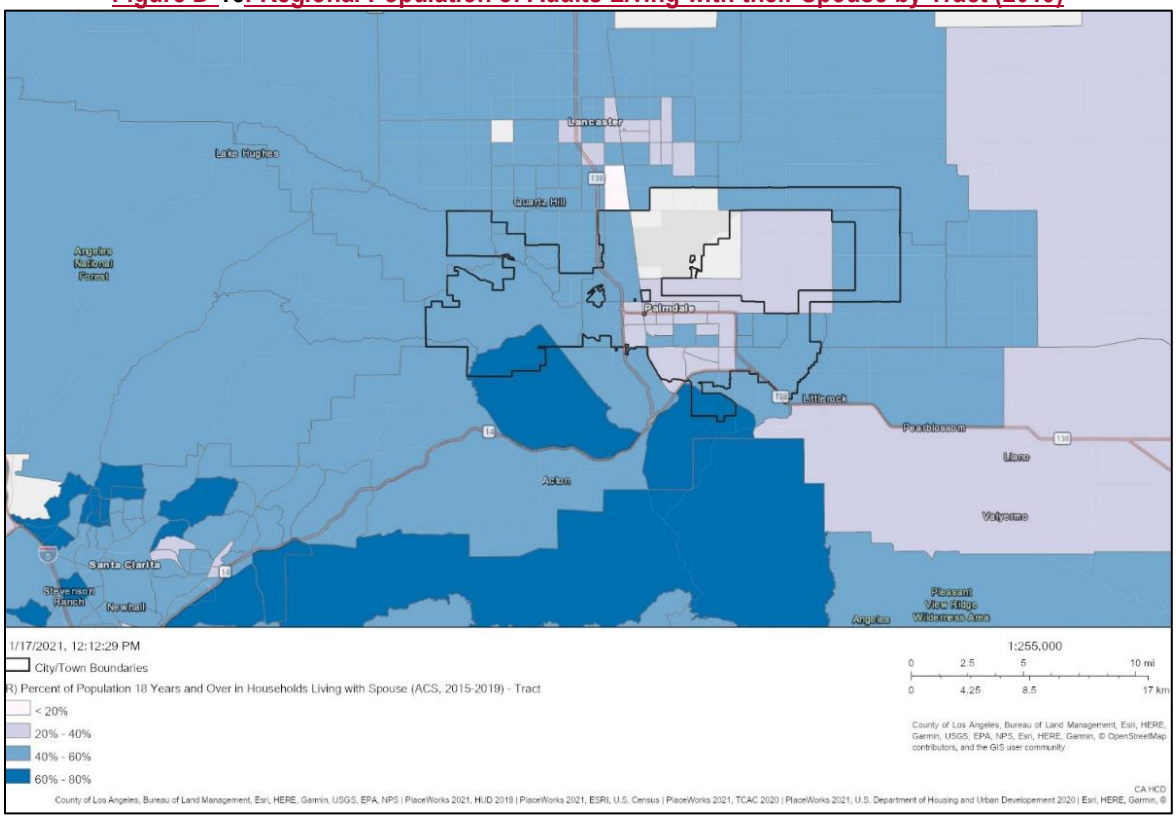


Figure D-16: Regional Percent of Children in Married-Couple Households by Tract (2019)

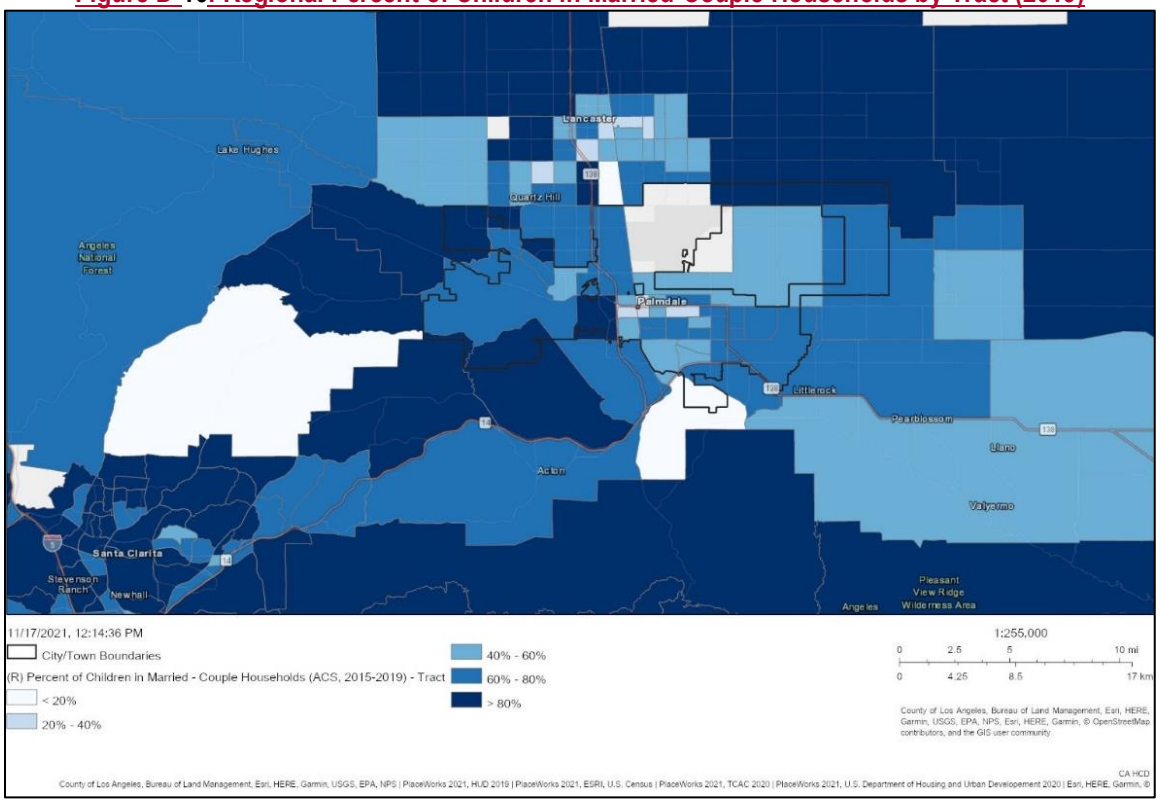
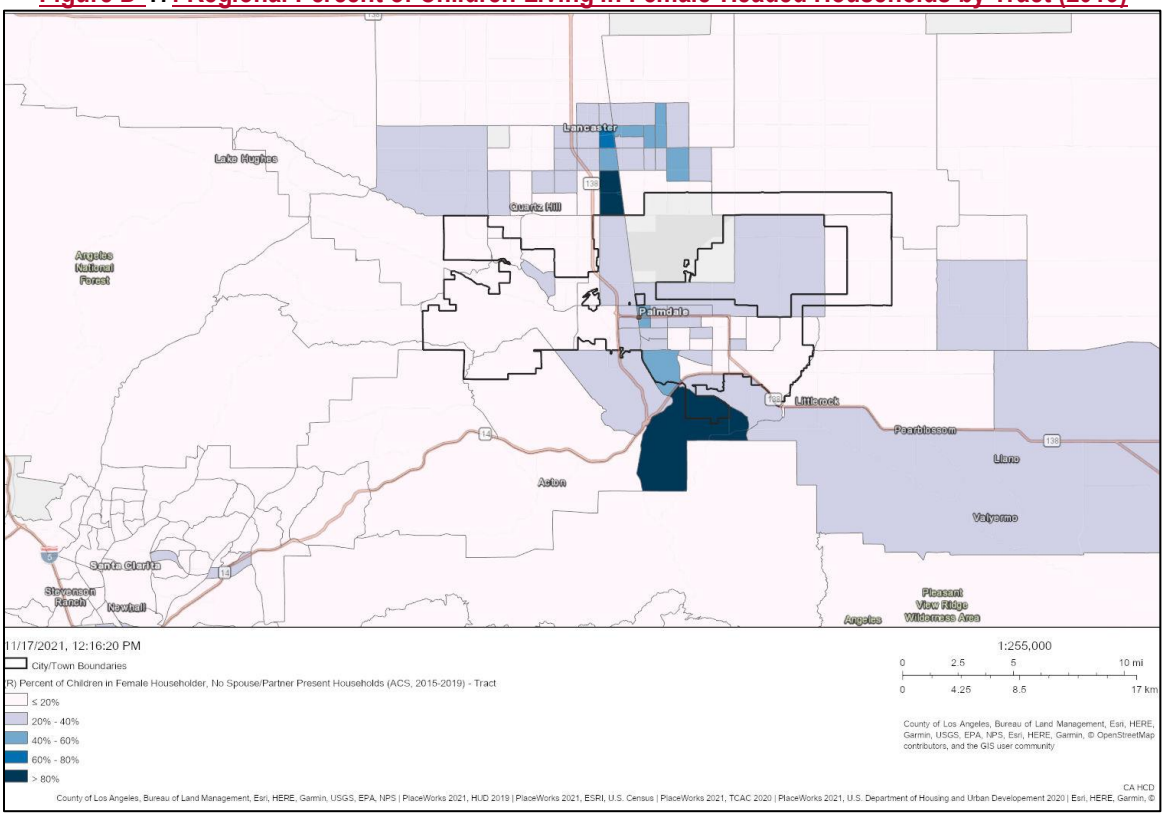


Figure D-17: Regional Percent of Children Living in Female-Headed Households by Tract (2019)



Income Level

Household incomes in Palmdale tend to be substantially higher than many cities in the region as a whole. Median household income in the City was $62,865 according to the 2015-2019 ACS, as compared to the Los Angeles County median household income of $64,251. The City of Lancaster ($55,237) had a lower median income while Santa Clarita ($99,666) and Acton Census Designated Place (CDP) ($97,857) have higher median household incomes.

Identifying Low or Moderate income (LMI) geographies and individuals is important to overcome patterns of segregation. Figure D-18 shows the LMI areas in the surrounding region by census tract. HUD defines a LMI area as a census tract or block group where over 51 percent of the population is LMI (based on HUD income definition of up to 80 percent of the AMI). The majority of the City is considered LMI with the highest concentration of LMI population being 75 to 100 percent, which is most prevalent along Palmdale Boulevard. The City's RHNA is spread out through the three categories most prevalent in the City (Table D-8 and Figure D-19). A larger proportion of lower income units are in non-LMI areas where less than 50 percent of households are low or moderate income compared to moderate income units. A smaller proportion of lower income units are also in tracts where more than 75 percent of households are LMI compared to moderate income units. The City's RHNA strategy ensures units, specifically lower income units, are distributed throughout tracts with various LMI populations.

Table D-8: RHNA Unit Distribution by % LMI Households in Census Tract						
% LMI HH (Tract)	Low		Moderate		Total Units	
	Units	Percent	Units	Percent	Units	Percent
< 25%	0	0.0%	0	0.0%	0	0.0%
25% - 50%	661	17.8%	206	14.7%	867	17.0%
50% - 75%	1,388	37.4%	294	21.0%	1,682	32.9%
75% - 100%	1,661	44.8%	902	64.3%	2,563	50.1%
Total	3,710	100.0%	1,402	100.0%	5,112	100.0%
All of the City's Above Moderate Income RHNA has been met with entitled projects						

Regional Trend. In the surrounding region, LMI areas are concentrated in Lancaster and Palmdale in the north and north of Santa Clarita. Most of these areas also have high environmental scores and high concentrations of minority populations (Figure D-20). The areas around Acton and Santa Clarita generally have lower concentrations of LMI households; however, there are tracts with LMI populations exceeding 50 percent throughout the region.

Figure D-18: LMI Areas by Tract (2020)

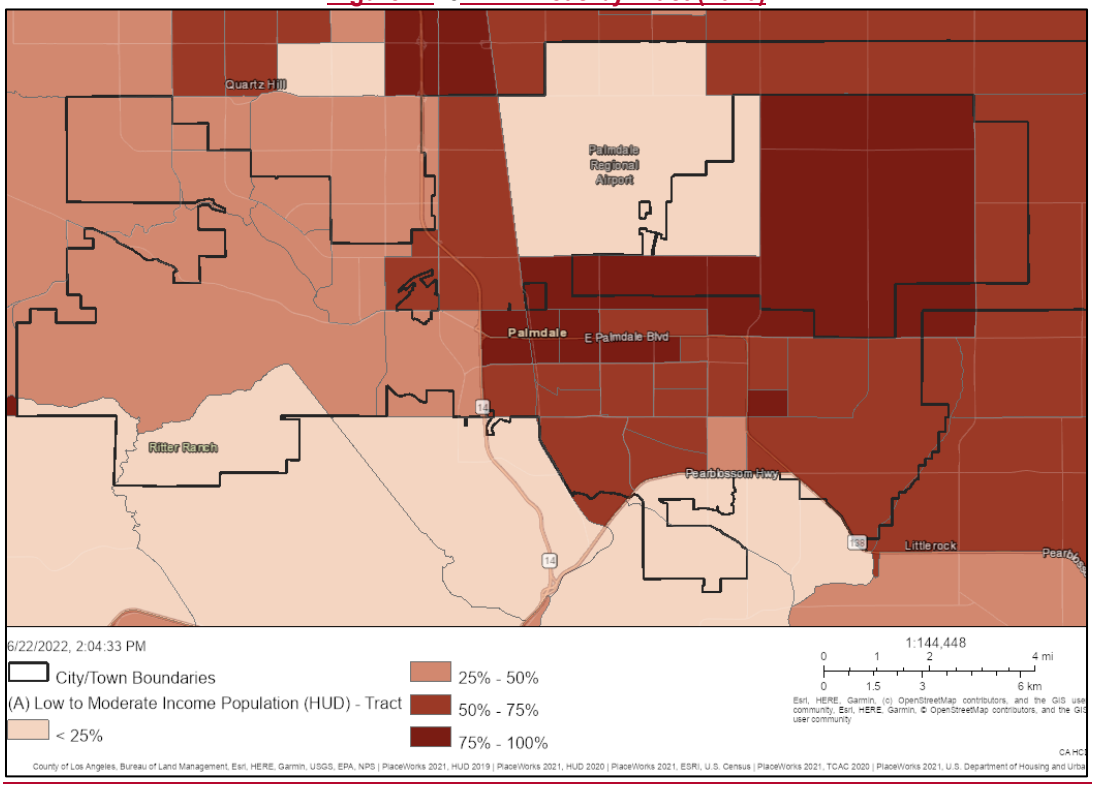


Figure D-19: Distribution of RHNA Units and LMI Areas by Tract (2020)

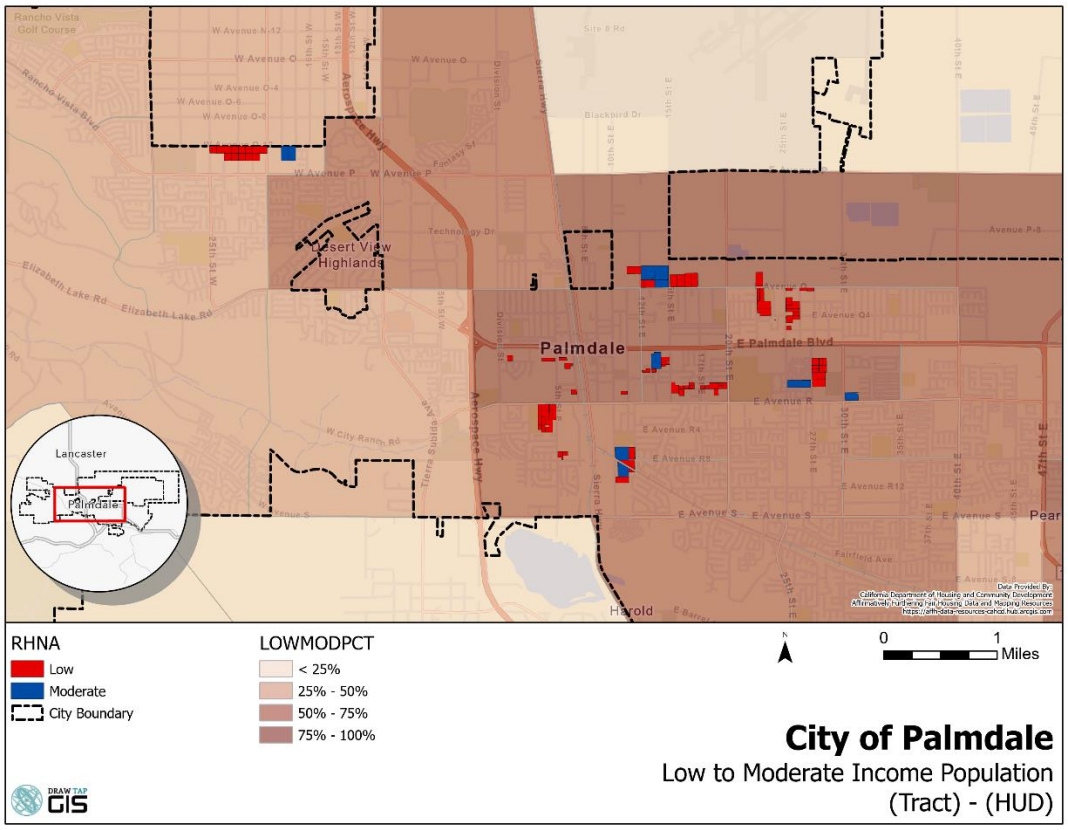
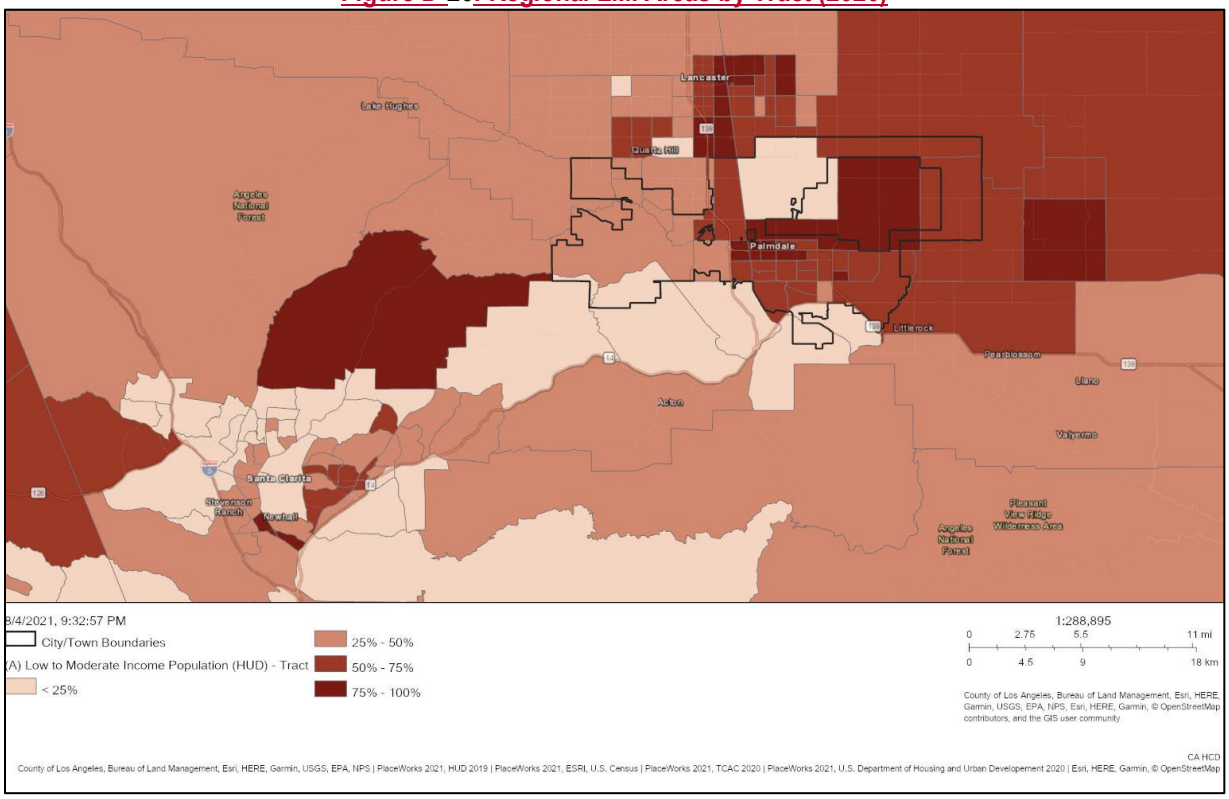


Figure D-20: Regional LMI Areas by Tract (2020)



D.2.3 Racially and Ethnically Concentrated Areas

In an effort to identify R/ECAPs, HUD has identified census tracts with a majority non-White population (greater than 50 percent) and has a poverty rate that exceeds 40 percent or is three times the average tract poverty rate for the metro/micro area, whichever threshold is lower. In Palmdale there are four census tracts designated as R/ECAPs (Figure D-21). One outlier though is the largest census tract in the north of the City, which mainly consists of the Palmdale Regional Airport. The California Tax Credit Allocation Committee (TCAC) and HCD released Opportunity Maps for California Census tracts. TCAC areas of high segregation and poverty are also shown below. Areas of high segregation and poverty are located in the same area of the City as the R/ECAPs.

The majority of the City's RHNA does not fall within a R/ECAP despite the presence of multiple R/ECAP tracts (Table D-9 and Figure D-22).

Table D-9: RHNA Unit Distribution by R/ECAPs

R/ECAP Tract	Low		Moderate		Total Units	
	Units	Percent	Units	Percent	Units	Percent
R/ECAP	174	4.7%	0	0.0%	174	3.4%
Not a R/ECAP	3,536	95.3%	1,402	100.0%	4,938	96.6%
Total	3,710	100.0%	1,402	100.0%	5,112	100.0%
All of the City's Above Moderate Income RHNA has been met with entitled projects						

Figure D-21: R/ECAPs and TCAC Areas of High Segregation and Poverty (2013, 2021)

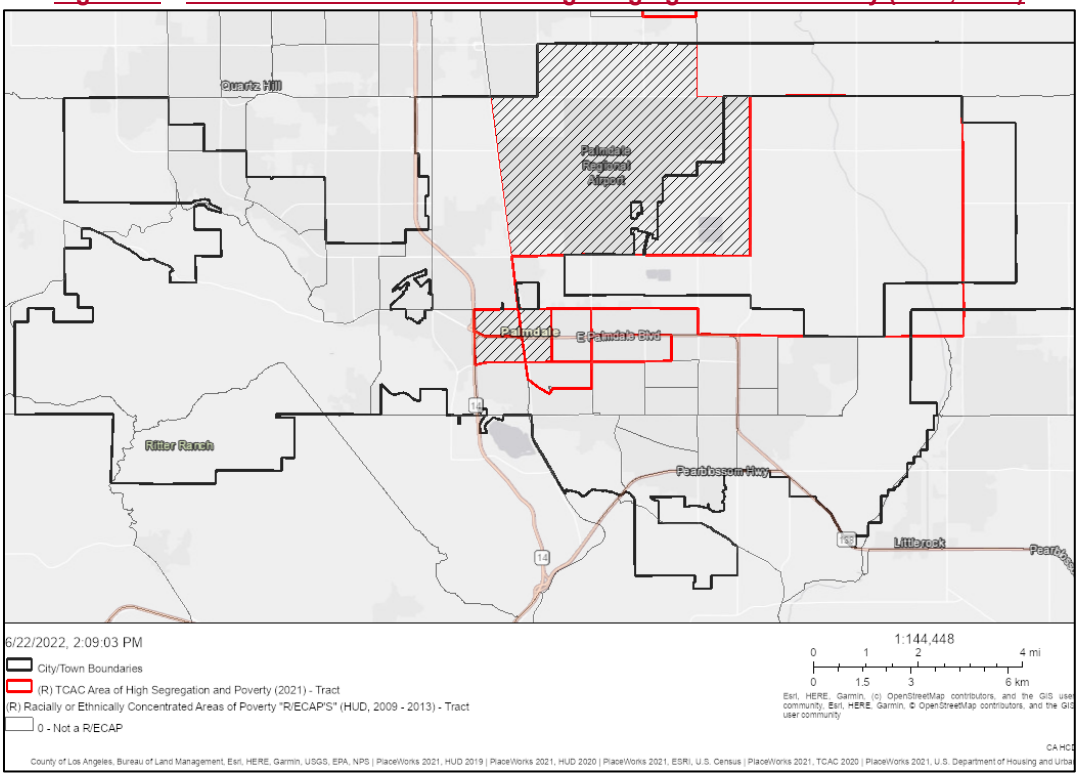
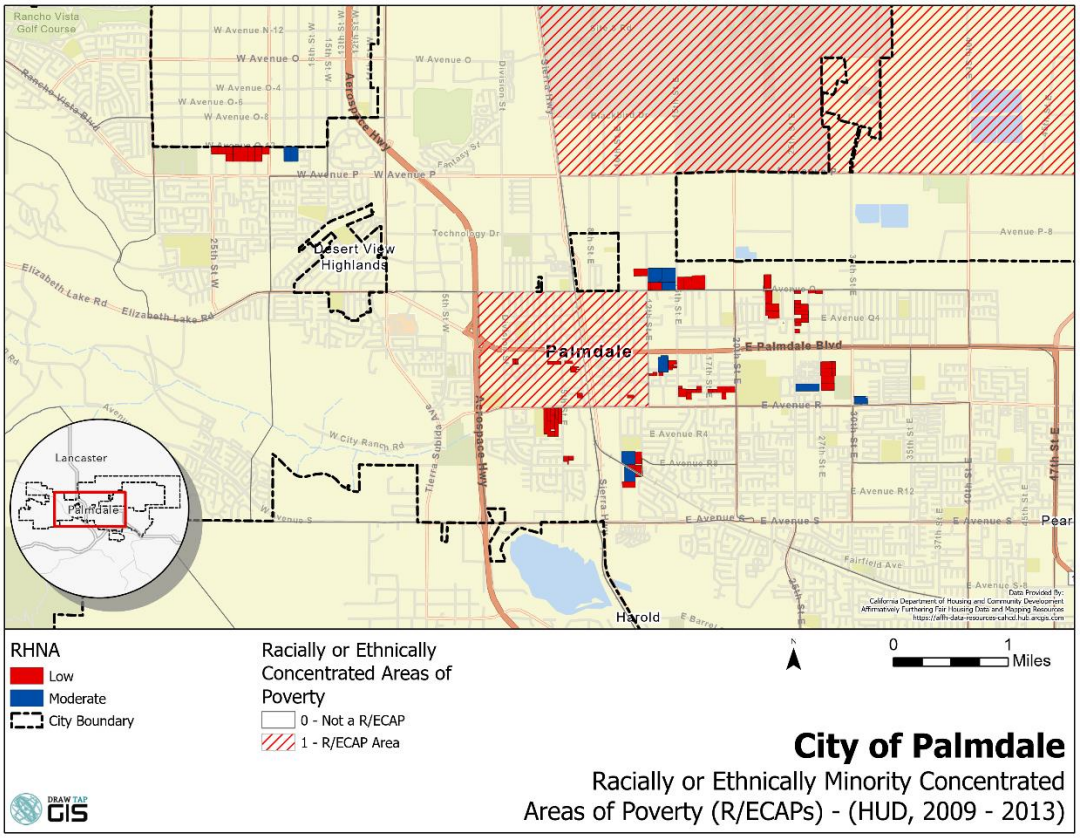
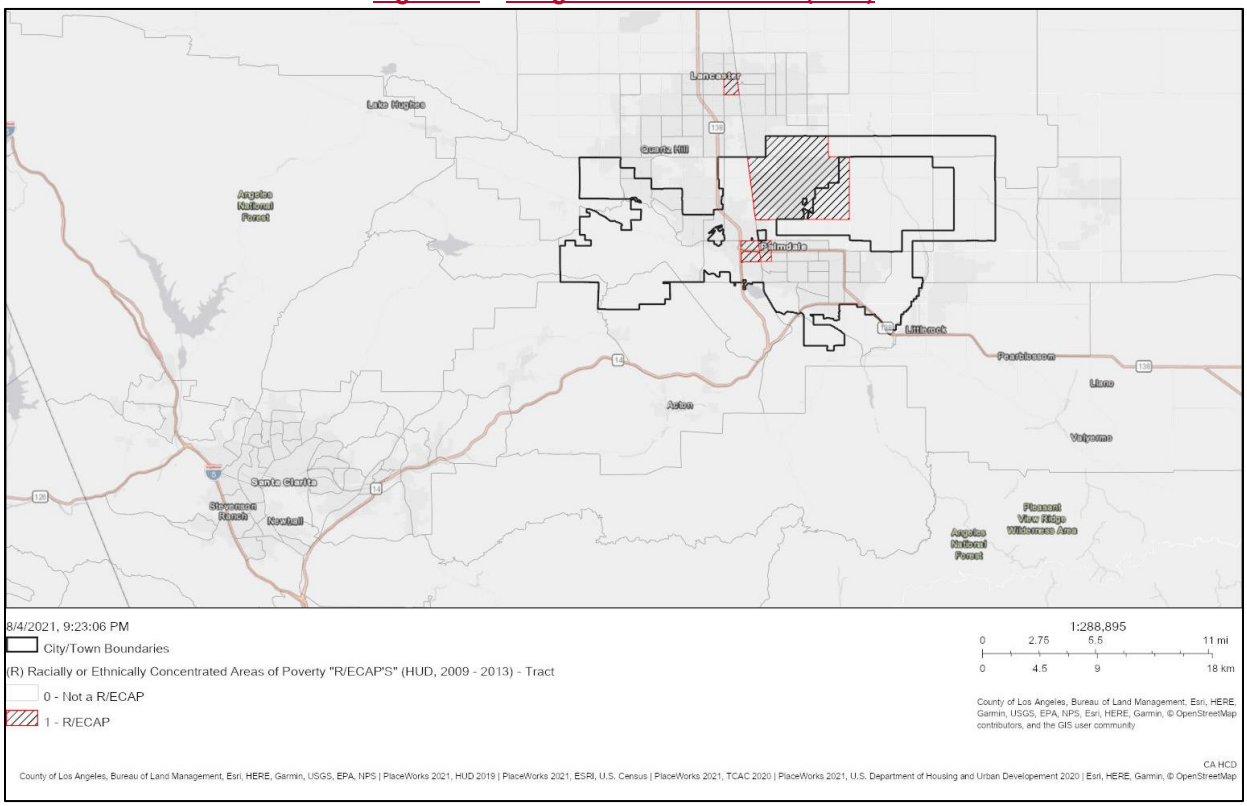


Figure D-22: Distribution of RHNA Units and R/ECAP Tracts (2013)



Regional Trend. In Los Angeles County, there are R/ECAPs scattered in areas of downtown Los Angeles and then in the northern part of the County including Palmdale and nearby Lancaster (Figure D-23). There are no R/ECAPs in the surrounding jurisdictions of Acton, Santa Clarita, or Llano.

Figure D-23: Regional R/ECAP Tracts (2013)



Racially Concentrated Areas of Affluence

While R/ECAPs have long been the focus of fair housing policies, racially concentrated areas of affluence (RCAAs) must also be analyzed to ensure housing is integrated, a key to fair housing choice. According to a policy paper published by HUD, RCAA is defined as affluent, White communities.[8] According to HUD's policy paper, Whites are the most racially segregated group in the United States and in the same way neighborhood disadvantage is associated with concentrated poverty and high concentrations of people of color, conversely, distinct advantages are associated with residence in affluent, White communities."

RCAAs have not been studied extensively nor has a standard definition been published by HCD or HUD, this fair housing assessment uses the percent White population and median household income as proxies to identify potential areas of affluence. As Figure D-24 and Figure D-25 depict, census tracts with a large White population (over 50 percent) and highest median income are more prevalent on the outer edges of the City. The highest populated areas of the City do not have White majority tracts. As Table D-10 shows, White households also tend to have higher median incomes than all households as seen in the County as a whole, except for Santa Clarita.

[8] Goetz, Edward G., Damiano, A., & Williams, R. A. (2019) Racially Concentrated Areas of Affluence: A Preliminary Investigation.' Published by the Office of Policy Development and Research (PD&R) of the U.S. Department of Housing and Urban Development in Cityscape: A Journal of Policy Development and Research (21,1, 99-123).

In Palmdale, White households and all households in the City have higher median incomes than Lancaster. Palmdale has a lower proportion of White only residents compared to the neighboring cities of Lancaster and Santa Clarita.

Table D-10: White Household Income and Percent Population

	Palmdale	Lancaster	Santa Clarita	Los Angeles County
Median HH Income				
All Households	$62,865	$55,237	$99,666	$68,044
White alone	$70,779	$60,183	$98,173	$88,038
White Population	51%	63%	76%	26%

Source: 2015-2019 ACS

Regional Trend. In the surrounding region, the areas with the highest population of White population are also the areas with the highest median incomes, especially the census tracts to the southwest in Santa Clarita (Figure D-26 and Figure D-27). In Santa Clarita this seems to be the most prevalent immediately surrounding the institutions of higher education including College of the Canyons and The Master's University. There are also patterns of higher White population and higher median income immediately surrounding designated open spaces and planned subdivision like Stevenson Ranch on the west side of Interstate 5.

Figure D-24: White Majority Population by Tract

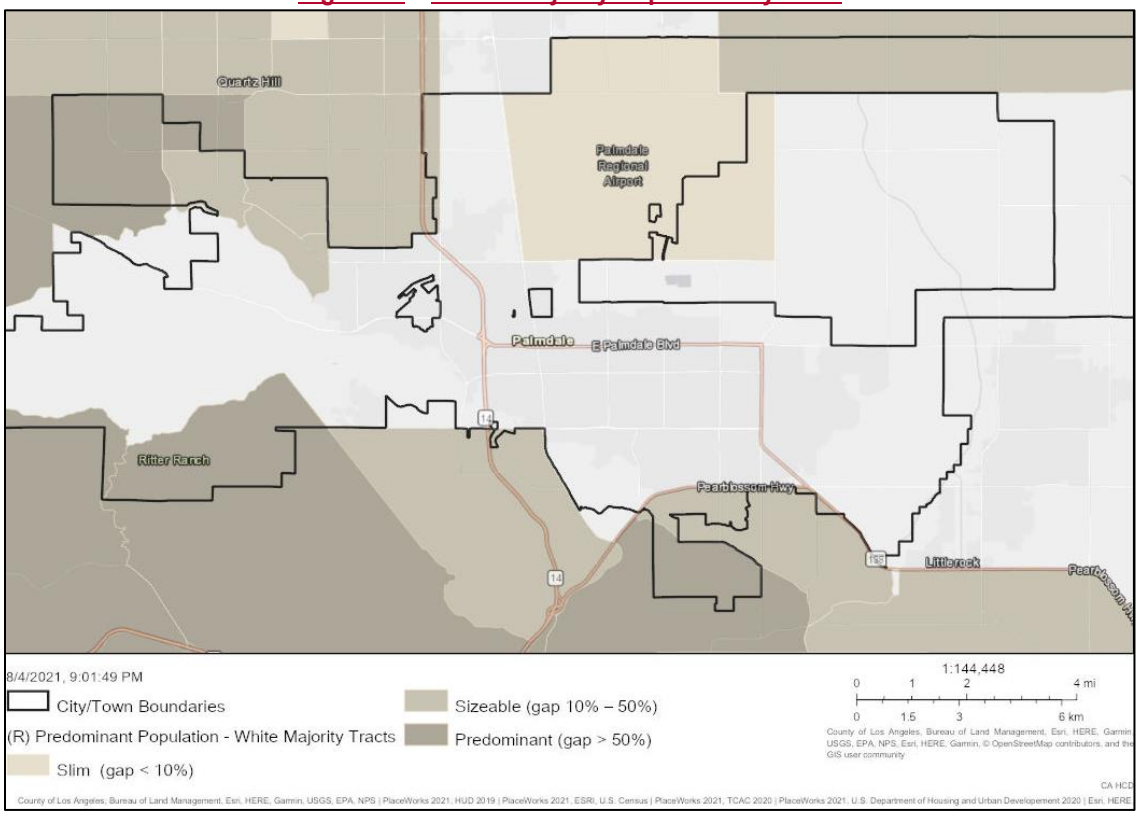


Figure D-25: Median Income by Block Group (2019)

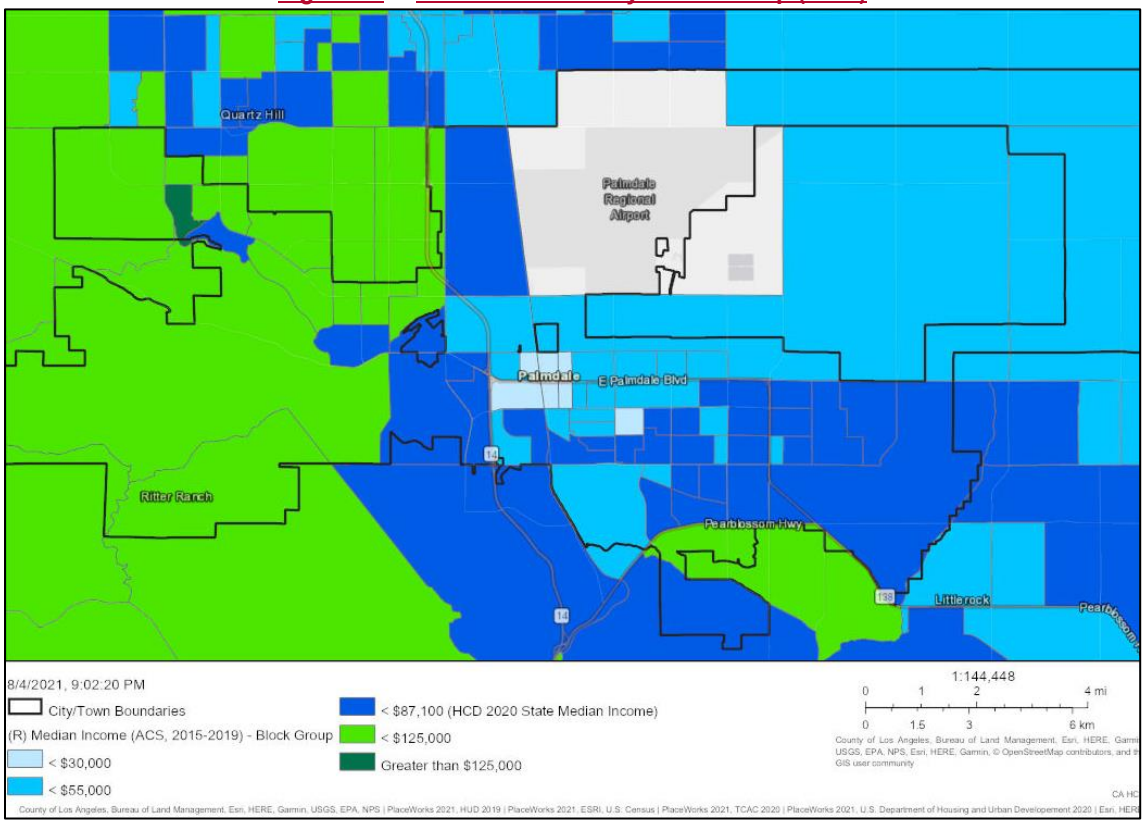


Figure D-26: Regional White Majority Population by Tract

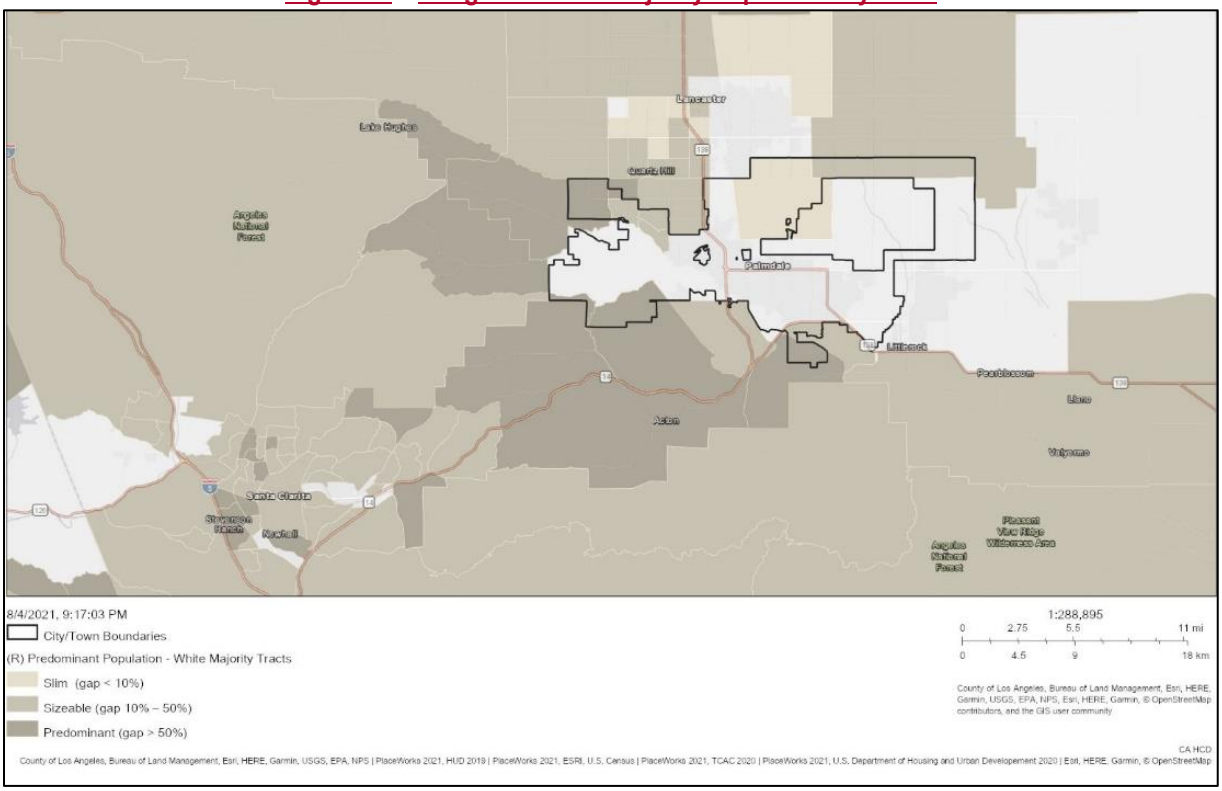
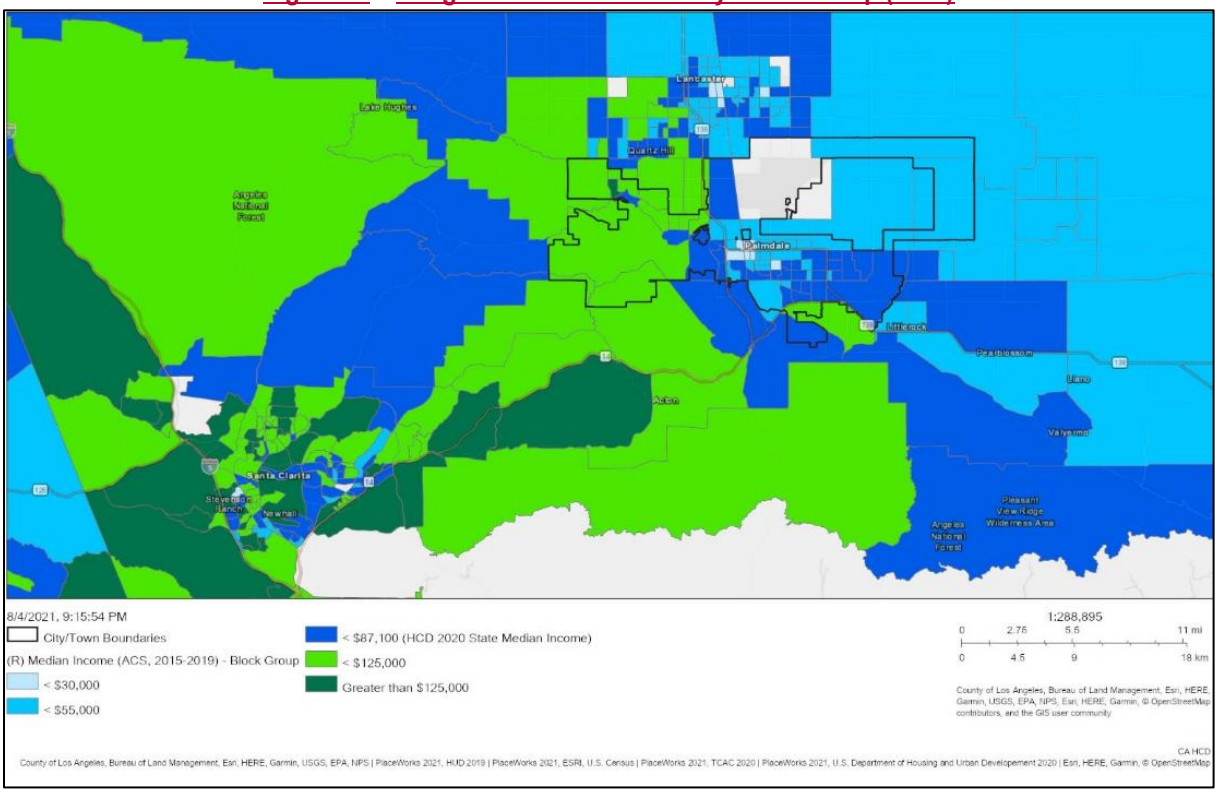


Figure D-27: Regional Median Income by Block Group (2019)



D.2.4 Access to Opportunities

HUD developed an index for assessing fair housing by informing communities about disparities in access to opportunity based on race/ethnicity and poverty status. Table D-11 shows index scores for the following opportunity indicator indices (values range from 0 to 100):

- **Low Poverty Index:** The higher the score, the less exposure to poverty in a neighborhood.
- **School Proficiency Index:** The higher the score, the higher the school system quality is in a neighborhood.
- **Labor Market Engagement Index:** The higher the score, the higher the labor force participation and human capital in a neighborhood.
- **Transit Trips Index:** The higher the trips transit index, the more likely residents in that neighborhood utilize public transit.
- **Low Transportation Cost Index:** The higher the index, the lower the cost of transportation in that neighborhood.
- **Jobs Proximity Index:** The higher the index value, the better access to employment opportunities for residents in a neighborhood.
- **Environmental Health Index:** The higher the value, the better environmental quality of a neighborhood.

In Palmdale, most residents regardless of race/ethnicity have moderate poverty rates, moderate schools, and moderate cost transportation available to them (Table D-11). The jobs proximity scores however are very low indicating that residents regardless of race/ethnicity do not have great access to employment opportunities in their neighborhood.

County residents overall, regardless of race or ethnicity, had better school, poverty and environmental index scores compared to the City.

Table D-11: Opportunity Indicators by Race/Ethnicity							
	Low Poverty Index	School Proficiency Index	Labor Market Index	Transit Index	Low Transportation Cost Index	Jobs Proximity Index	Environmental Health Index
Palmdale							
Total Population							
White, Non-Hispanic	51.38	29.92	26.38	37.97	47.23	4.79	72.43
Black, Non-Hispanic	36.34	21.43	18.50	41.10	51.04	3.30	73.31
Hispanic	33.00	18.66	16.57	40.61	50.86	3.11	73.55
Asian or Pacific Islander, Non-Hispanic	52.45	30.18	27.62	35.30	46.40	5.06	72.58
Native American, Non-Hispanic	44.58	25.60	21.82	39.05	48.54	4.50	72.98
Population below federal poverty line							
White, Non-Hispanic	37.66	22.14	18.88	43.19	52.56	2.97	72.66
Black, Non-Hispanic	22.76	22.14	12.43	47.80	57.78	3.93	71.75
Hispanic	21.89	16.94	11.88	45.54	56.33	5.58	72.69
Asian or Pacific Islander, Non-Hispanic	35.93	24.04	19.51	40.96	51.90	8.14	72.74
Native American, Non-Hispanic	40.42	14.33	15.49	39.31	51.58	10.78	74.24
Los Angeles County							
Total Population							
White, Non-Hispanic	65.19	68.03	67.43	77.63	73.13	54.59	21.35
Black, Non-Hispanic	36.07	33.82	35.34	87.25	79.02	40.72	11.92
Hispanic	35.53	39.72	35.73	86.48	77.78	43.70	12.36
Asian or Pacific Islander, Non-Hispanic	55.03	61.94	57.64	85.13	75.98	51.11	13.13
Native American, Non-Hispanic	48.40	50.70	48.58	81.04	75.36	45.88	17.68
Population below federal poverty line							
White, Non-Hispanic	53.66	60.62	59.62	83.19	78.51	56.98	18.46
Black, Non-Hispanic	24.12	28.03	26.41	88.34	81.07	36.90	11.74
Hispanic	25.05	33.70	29.50	89.09	80.94	44.63	10.63
Asian or Pacific Islander, Non-Hispanic	45.45	57.59	51.41	88.58	80.61	52.88	11.05
Native American, Non-Hispanic	33.63	39.10	36.05	84.43	78.22	47.65	16.22
Source: Affirmatively Furthering Fair Housing (AFFH) Data and Mapping Tool (AFFH-T), 2020							

To assist in this analysis, HCD and the California Tax Credit Allocation Committee (TCAC) convened in the California Fair Housing Task Force (Task Force) to "provide research, evidence-based policy recommendations, and other strategic recommendations to HCD and other related state agencies/departments to further the fair housing goals (as defined by HCD)." The Task force has created Opportunity Maps to identify resources levels across the state "to accompany new policies aimed at increasing access to high opportunity areas for families with children in housing financed with nine percent Low Income Housing Tax Credits (LIHTCs)". These opportunity maps are made from composite scores of three different domains made up of a set of indicators. Higher

composite scores mean higher resources. Table D-12 shows the full list of indicators that go into the calculation of the index scores.

Table D-12: Domains and List of Indicators for Opportunity Maps	
Domain	Indicator
Economic	Poverty Adult education Employment Job proximity Median home value
Environmental	CalEnviroScreen 4.0 pollution Indicators and values
Education	Math proficiency Reading proficiency High School graduation rates Student poverty rates
Source: California Fair Housing Task Force, Methodology for the 2020 TCAC/HCD Opportunity Maps, December 2020	

The following opportunity map scores are for the census tracts that make up Palmdale (Table D-13). Consistent with the HUD's R/ECAP database, there are areas of high segregation and poverty, low resource and moderate resource in the City (Figure D-28). A majority of the City's census tracts are of low resource (53 percent) or high segregation and poverty (19 percent) so a majority of the City's RHNA units are also in these areas, consistent with what is available in the City (Table D-14). The City's RHNA strategy does not allocate lower income units in areas of high segregation and poverty at a rate exceeding the moderate income unit allocation. A larger proportion of lower income (17.8 percent) units are also in moderate resource tracts compared to moderate income units (14.7 percent). The City's RHNA strategy distributes units throughout tracts with various opportunity map scores to the greatest extent possible given the overall composition of Palmdale. Opportunity map scores by census tract and RHNA unit distribution are presented in Figure D-29. Economic, environmental, and education scores for the City and the Antelope Valley region are further detailed below.

Table D-13: Domains and Index Scores Census Tracts					
Census Tract	**Economic Domain Score**	**Environmental Domain Score**	**Education Domain Score**	**Composite Index Score**	**Final Category**
6037910209	0.305	0.967	0.615	0.115	High Resource
6037910210	0.250	0.970	0.745	0.23	High Resource
6037910302	0.429	0.993	0.700	0.341	High Resource
6037910301	0.373	0.984	0.754	0.331	High Resource
6037910403	0.011	0.974	0.124	#N/A	High Segregation & Poverty
6037910504	0.006	0.995	0.086	#N/A	High Segregation & Poverty
6037910602	0.009	0.997	0.081	#N/A	High Segregation & Poverty
6037910502	0.007	0.995	0.086	#N/A	High Segregation & Poverty
6037910501	0.001	0.994	0.065	#N/A	High Segregation & Poverty
6037910402	0.004	0.978	0.124	#N/A	High Segregation & Poverty
6037910712	0.027	0.990	0.175	-0.386	Low Resource
6037910713	0.024	0.999	0.139	-0.399	Low Resource
6037910505	0.036	0.996	0.086	-0.424	Low Resource
6037910605	0.021	0.997	0.109	-0.444	Low Resource
6037910606	0.010	1.000	0.084	-0.564	Low Resource
6037910711	0.024	0.998	0.133	-0.404	Low Resource
6037910714	0.030	0.998	0.145	-0.371	Low Resource
6037910715	0.035	0.999	0.078	-0.42	Low Resource
6037910716	0.043	0.993	0.078	-0.422	Low Resource
6037910201	0.048	0.965	0.154	-0.426	Low Resource
6037910707	0.030	0.996	0.077	-0.437	Low Resource
6037910706	0.015	0.991	0.176	-0.453	Low Resource
6037910705	0.027	0.989	0.096	-0.466	Low Resource
6037910603	0.023	0.996	0.110	-0.433	Low Resource
6037910401	0.063	0.871	0.193	-0.428	Low Resource
6037910404	0.028	0.991	0.135	-0.415	Low Resource
6037910601	0.004	1.000	0.107	-0.679	Low Resource
6037910207	0.109	0.979	0.316	-0.213	Moderate Resource
6037910208	0.119	0.975	0.329	-0.202	Moderate Resource
6037910206	0.337	0.941	0.400	-0.081	Moderate Resource
6037980004	#N/A	#N/A	#N/A	#N/A	#N/A
6037910001	#N/A	#N/A	#N/A	#N/A	#N/A
Source: California Fair Housing Task Force, TCAC/HCD Opportunity Maps, 2021 Statewide Summary Table. December 2020					

Table D-14: RHNA Unit Distribution by Opportunity Score						
TCAC Opportunity Category (Tract)	Low		Moderate		Total Units	
	Units	Percent	Units	Percent	Units	Percent
High Segregation & Poverty	1,808	48.7%	1,072	76.5%	2,880	56.3%
Low Resource	1,241	33.5%	124	8.8%	1,365	26.7%
Moderate Resource	661	17.8%	206	14.7%	867	17.0%
Total	3,710	100.0%	1,402	100.0%	5,112	100.0%
All of the City's Above Moderate Income RHNA has been met with entitled projects						

Figure D-28: TCAC Opportunity Score by Tract (2021)

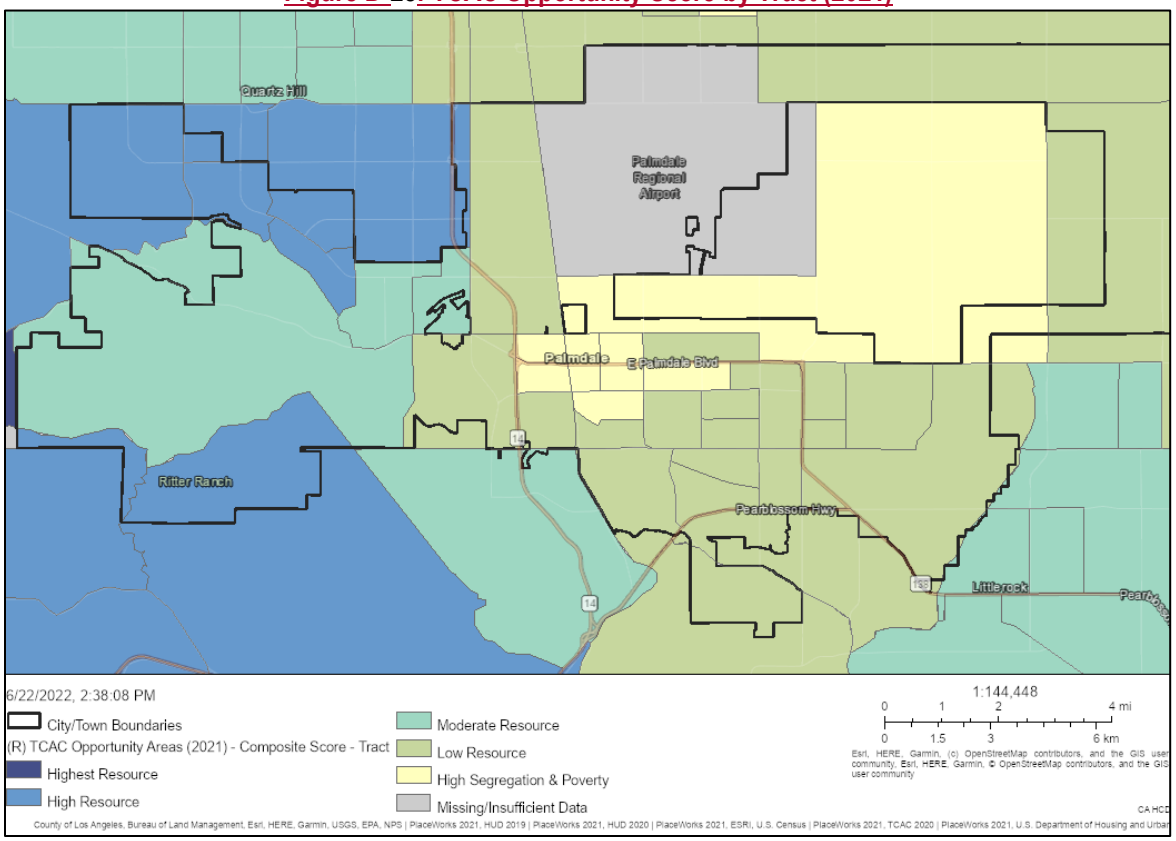
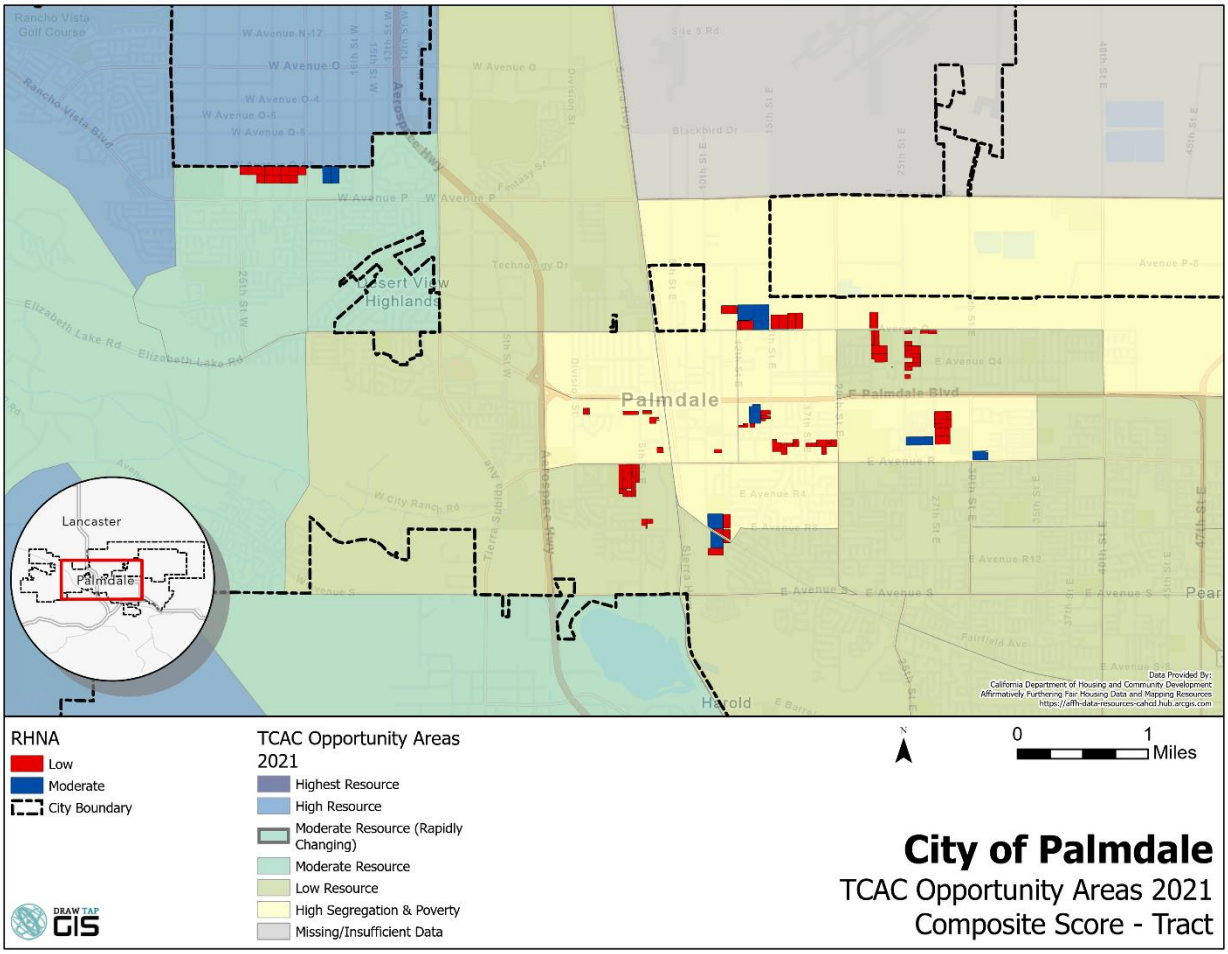


Figure D-29: Distribution of RHNA Units and TCAC Opportunity Score by Tract (2021)



Education

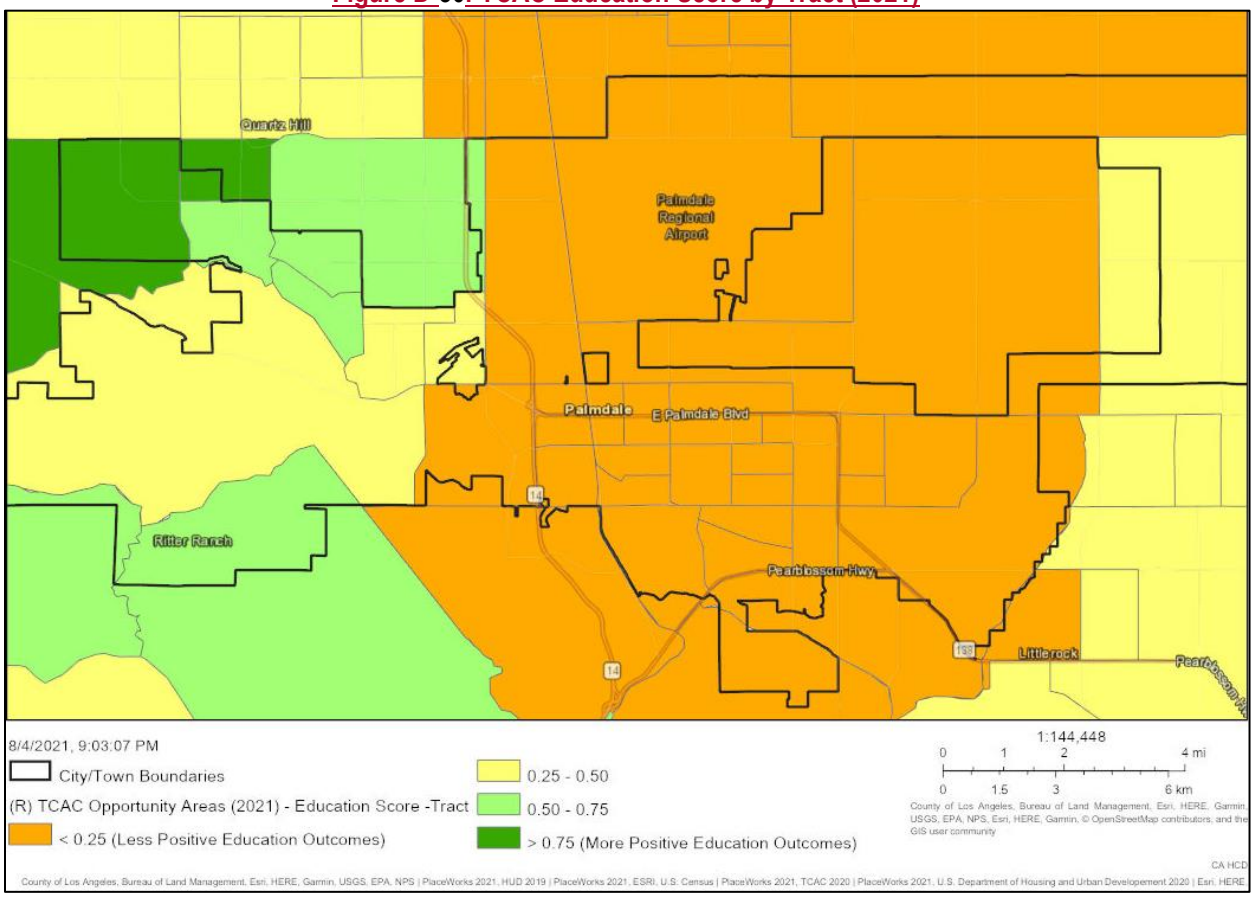
Kidsdata.org, a program of the Lucile Packard Foundation for Children's Health, estimated that only 11 percent of children aged 0-17 in Palmdale were living in low-income working families between 2012 and 2016.[9]

Kidsdata.org also reported that in 2019, 57 percent of students are considered high-need (i.e. those who are eligible for free or reduced price school meals, are English Learners, or are foster youth—as reported in the Unduplicated Pupil Count) compared to 71.2 percent of students in the County.

As described above, the Fair Housing Task Force determines education scores based on math and reading proficiency, high school graduation rates, and student poverty rates. Figure D-30 shows the education scores of each census tract in the City. Education scores in the City have less positive outcomes.

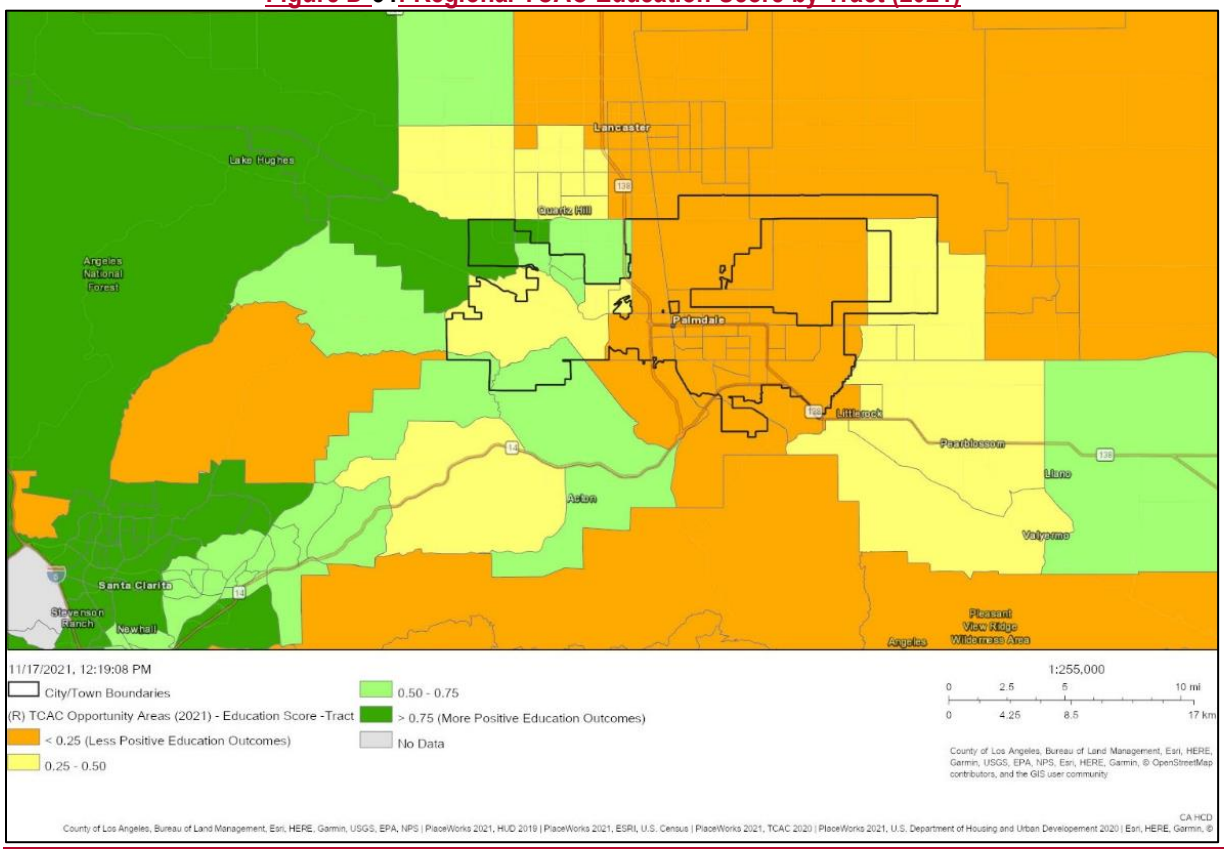
[9] Definition of "low income working family": children ages 0-17 living in families with incomes below 200 percent of their federal poverty threshold and with at least one resident parent who worked at least 50 weeks in the 12 months prior to the survey.

Figure D-30: TCAC Education Score by Tract (2021)



Regional Trend. As shown in Figure D-31 below, large concentrations of less positive education outcomes (<0.25) are found throughout the Antelope Valley area. The education scores in Palmdale are similar to Lancaster while the City of Santa Clarita has better education outcomes. In the Los Angeles Basin, education outcomes are mixed throughout the region.

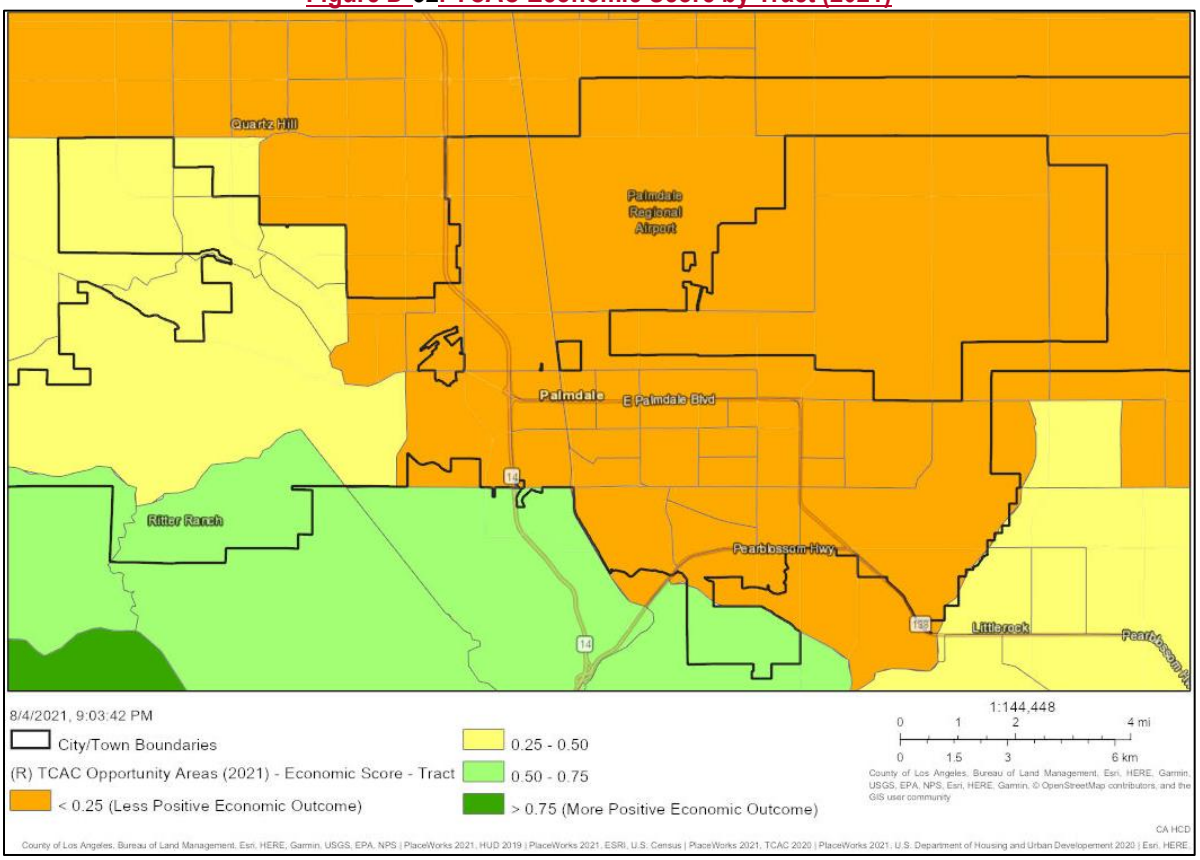
Figure D-31: Regional TCAC Education Score by Tract (2021)



Economic

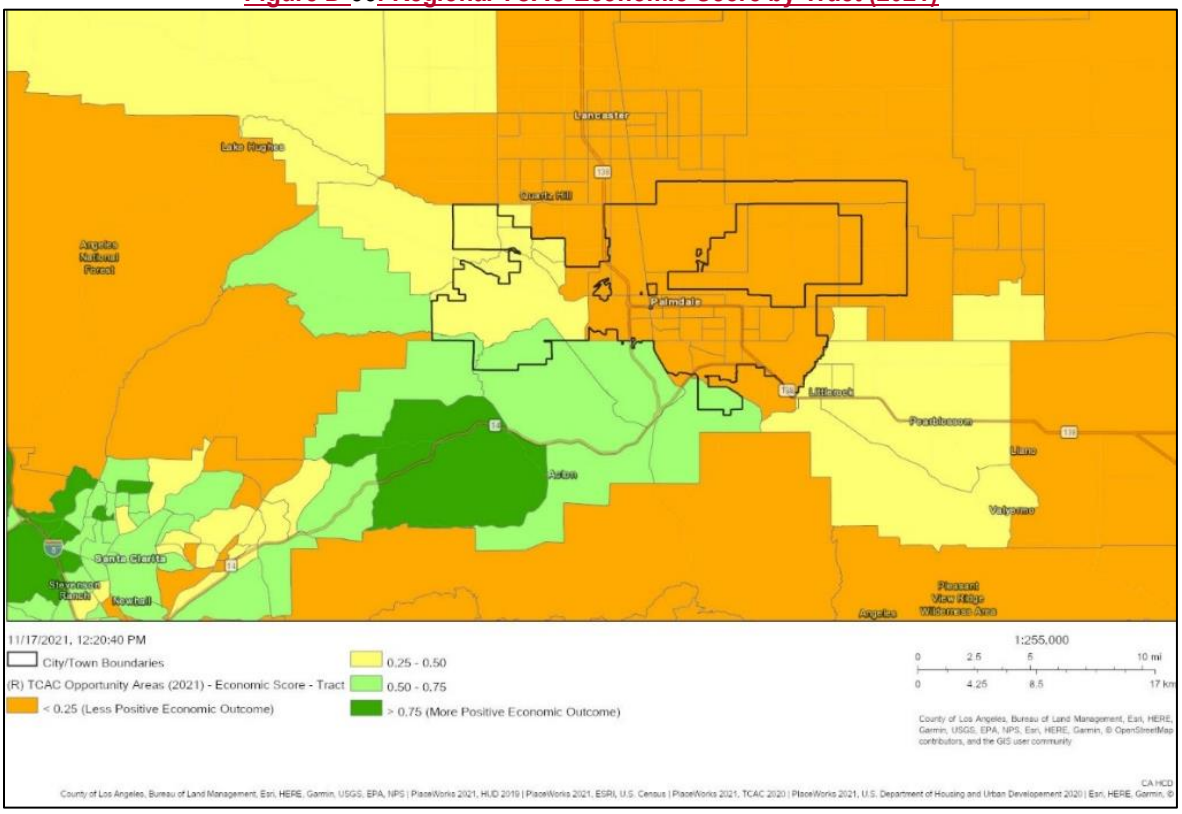
As described previously, the Fair Housing Task Force calculates economic scores based on poverty, adult education, employment, job proximity, and median home values. According to the 2021 Task Force maps presented in Figure D-32, the census tracts in the City are of low economic scores. According to the 2020 Economic Roundtable Report prepared for the Greater Antelope Valley Economic Alliance (GAVEA), Palmdale has competitive advantages that it can utilize for economic growth. Palmdale boasts a large inventory of office space available for lease or purchase, vacant land to build on, and a growing community that desires economic growth. Also, in order to help meet the demand for trained aerospace manufacturing workers, the City continues to partner with Northrop Grumman, Antelope Valley College, LA County Workforce Development, Aging and Community Services, and JVS SoCal to offer customized training through the aircraft fabrication and assembly program.

Figure D-32: TCAC Economic Score by Tract (2021)



Regional Trend. The highest economic scores are generally southwest of Palmdale and near Santa Clarita, while the rest of the Antelope Valley has similar scores to Palmdale (Figure D-33). Similar patterns can be seen in the San Fernando Valley, east San Gabriel Valley and the cities along the 405 and 5 freeways.

Figure D-33: Regional TCAC Economic Score by Tract (2021)



Transportation

All Transit explores metrics that reveal the social and economic impact of transit, specifically looking at connectivity, access to jobs, and frequency of service. According to the data provided by All Transit, Palmdale's All Transit Performance score of 0.3, illustrates a very low combination of trips per week and number of jobs accessible enabling a negligible number of people to take transit to work. In comparison, the County All Transit score is 6.8. Palmdale also has a lower proportion of commuters that use transit (2.10 percent) than the County (6.66 percent).

HUD's Job Proximity Index, described previously, can be used to show transportation need geographically. Block groups with lower jobs proximity indices are located further from employment opportunities and have a higher need for transportation. As shown in Figure D-34, block groups in the City have scores mainly below 20 showing that there is little to no proximity to jobs for most of the City's residents. The jobs proximity index scores are anticipated to improve as the City continues to grow and develop, especially with the new updated General Plan. In the surrounding region, jobs proximity improves moving toward Lancaster and also moving into Santa Clarita and toward the rest of Los Angeles County (Figure D-35).

Investing in the community is a top priority for the Antelope Valley Transit Authority (AVTA) and, according to the 2020 Economic Roundtable Report, six major projects will help to improve infrastructure and mobility in the region. The projects include the Lancaster Metrolink Transit Center Expansion, South Valley Healthcare Clinic Transit Center, Antelope Valley College Transit Center, Shelter and Lighting Improvement, Transfer Center Cameras, and Administration Facility Expansion.

Figure D-34: Jobs Proximity Index by Block Group (2017)

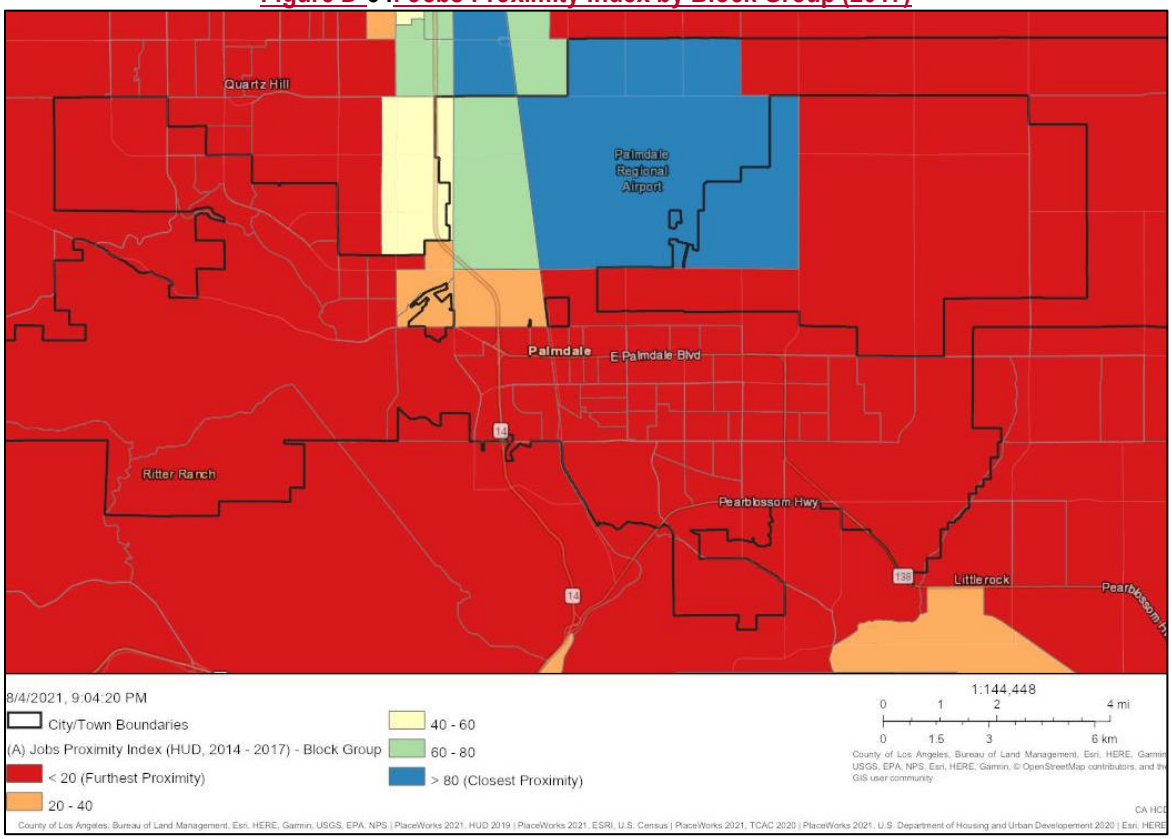
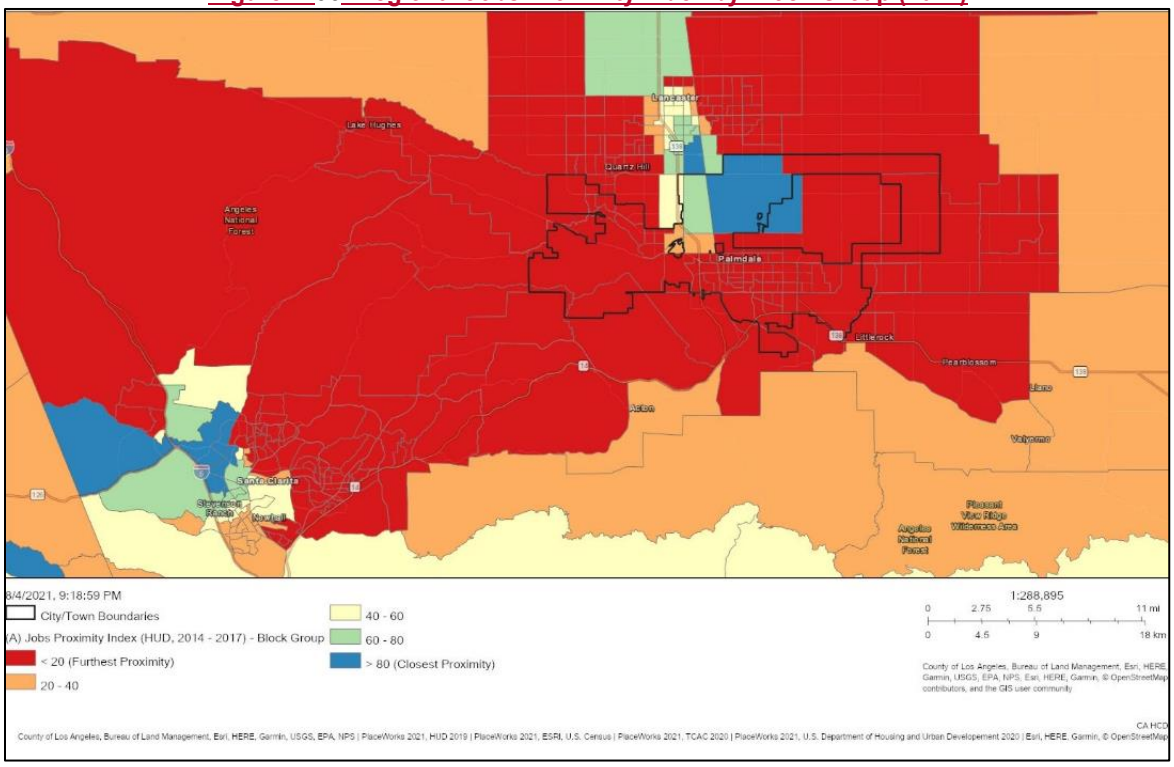


Figure D-35: Regional Jobs Proximity Index by Block Group (2017)



Environmental

Environmental health scores are determined by the Fair Housing Task Force based on CalEnviroScreen 4.0 pollution indicators and values. Figure D-36 shows that there are moderate environmental scores within the City limits. RHNA sites are generally distributed throughout tracts with variable CalEnviroScreen 4.0 percentile scores (Table D-15 and Figure D-37). The City also allocates a larger proportion of lower income units in the tracts with the lowest (best) scores, ensuring lower income units are not exposed to adverse environmental conditions to the greatest extent possible given the character of Palmdale. The largest proportion of the City's lower income RHNA units is also in this range (41.7 percent).

According to the American Lung Association's State of the Air report, Los Angeles County received an Ozone score of "F", which means that the County experienced numerous days of unhealthy air pollution as compared to other counties and regions in the study. Over a three-year period, there were 114 days of unhealthy air that contributed to the Ozone score.

Table D-15: RHNA Unit Distribution by CalEnviroScreen 4.0 Scores

CalEnviroScreen 4.0 Score (Tract)	Low		Moderate		Total Units	
	Units	Percent	Units	Percent	Units	Percent
1 - 10% (Lowest Score)	0	0.0%	0	0.0%	0	0.0%
11 - 20%	0	0.0%	0	0.0%	0	0.0%
21 - 30%	0	0.0%	0	0.0%	0	0.0%
31 - 40%	661	17.8%	206	14.7%	867	17.0%
41 - 50%	91	2.5%	124	8.8%	215	4.2%
51 - 60%	393	10.6%	268	19.1%	661	12.9%
61 - 70%	1,297	35.0%	170	12.1%	1,467	28.7%
71 - 80%	458	12.3%	156	11.1%	614	12.0%
81 - 90%	810	21.8%	478	34.1%	1,288	25.2%
91 - 100% (Highest Score)	0	0.0%	0	0.0%	0	0.0%
Total	3,710	100.0%	1,402	100.0%	5,112	100.0%
All of the City's Above Moderate Income RHNA has been met with entitled projects						

Figure D-36: CalEnviroScreen 4.0 Score by Tract (2021)

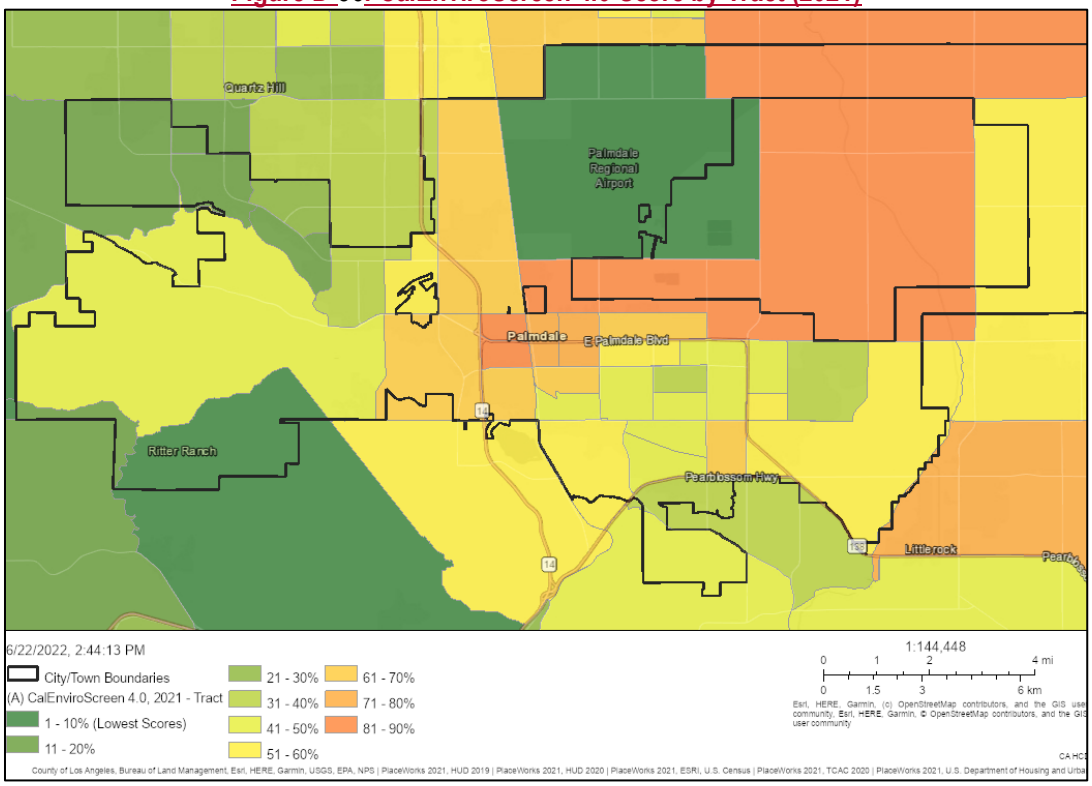
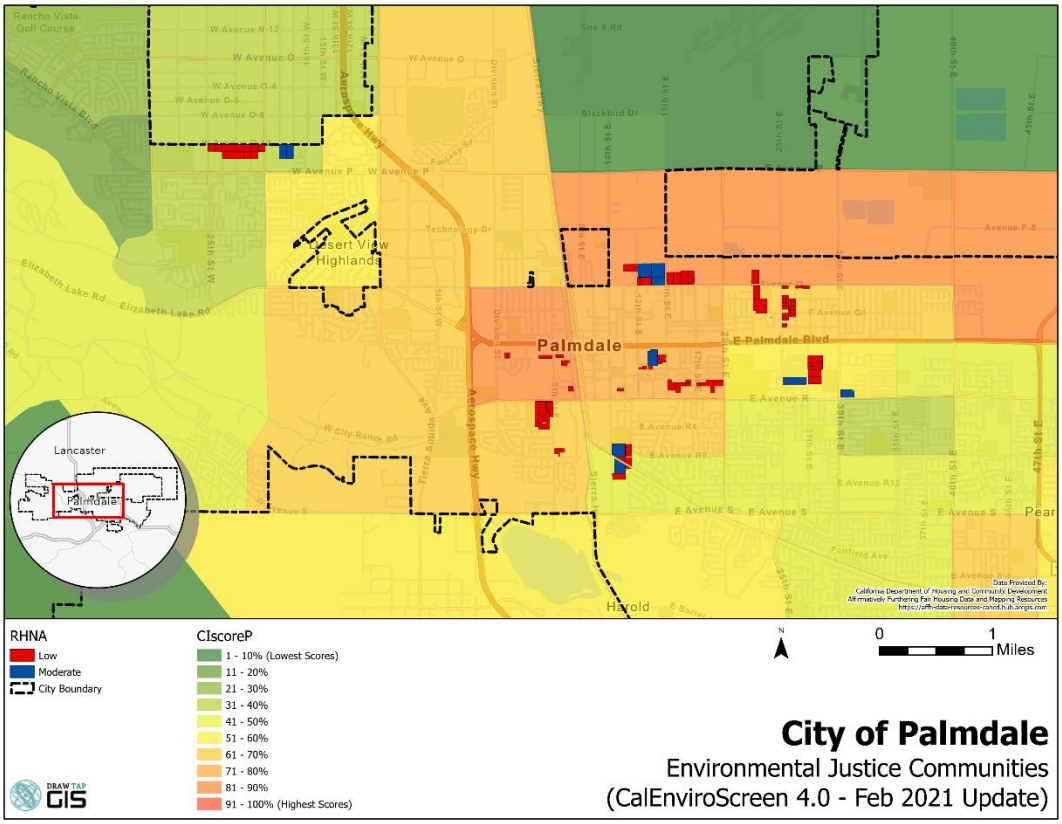
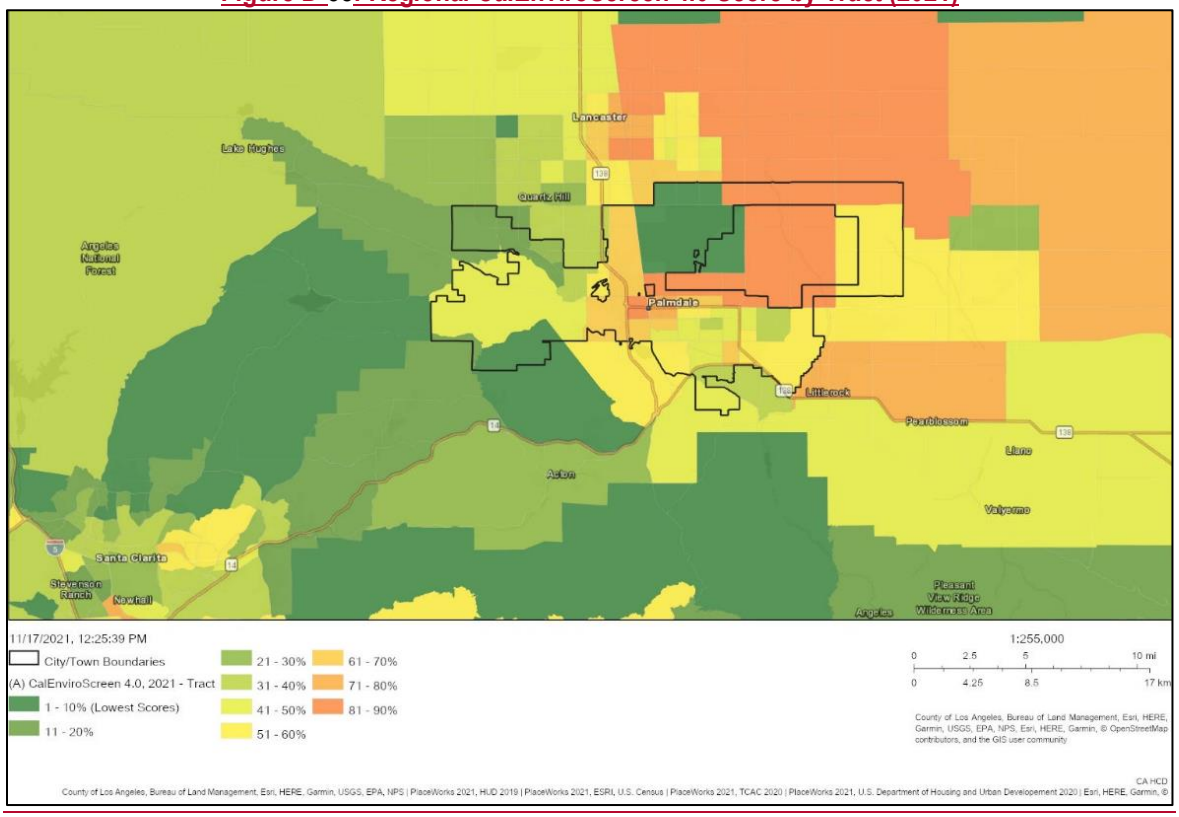


Figure D-37: Distribution of RHNA Units and CalEnviroScreen 4.0 Score by Tract (2021)



Regional Trend. As shown in Figure D-38 below, the highest CalEnviroScreen 4.0 pollution indicators in the Antelope Valley are in portions of Palmdale, Lancaster and the unincorporated County areas to the north and east. High indicators are also found throughout the Los Angeles Basin, primarily near major freeways and transportation corridors.

Figure D-38: Regional CalEnviroScreen 4.0 Score by Tract (2021)



D.2.5 Disproportionate Housing Needs

The AFFH Rule Guidebook defines 'disproportionate housing needs' as 'a condition in which there are significant disparities in the proportion of members of a protected class experiencing a category of housing needs when compared to the proportion of a member of any other relevant groups or the total population experiencing the category of housing need in the applicable geographic area' (24 C.F.R. § 5.152). The analysis is completed by assessing cost burden, severe cost burden, overcrowding, and substandard housing.

The Comprehensive Housing Affordability Strategy (CHAS) developed by the Census for HUD provides detailed information on housing needs by income level for different types of households in Palmdale. Housing problems considered by CHAS include:

- Housing cost burden, including utilities, exceeding 30 percent of gross income;
- Severe housing cost burden, including utilities, exceeding 50 percent of gross income;
- Overcrowded conditions (housing units with more than one person per room); and/or
- Units with physical defects (lacking complete kitchen or bathroom)

Cost Burden

Measuring the portion of a household's gross income that is spent for housing is an indicator of the dynamics of demand and supply. This measurement is often expressed in terms of "over payers": households paying an excessive amount of their income for housing, therefore decreasing the amount of disposable income available for other needs. This indicator is an important measurement of local housing market conditions as it reflects the affordability of housing in the community. Federal and state agencies use overpayment indicators to determine the extent and level of funding and support that should be allocated to a community. State and federal programs typically define over-payers as those lower income households paying over 30 percent of household income for housing costs. A household is considered experiencing a severe cost burden if it spends more than 50 percent of its gross income on housing.

Table D-16 provides overpayment detail by income group and household type for Palmdale between 2013 and 2017. In general, renter-households had a higher level of housing problems (58 percent) compared to owner-households (38 percent). Elderly renter-families experienced the highest level of cost burden (35 percent) and approximately 77 percent of the extremely low income (households earning up to 30 percent of the AMI) and 77 percent very low-income households (households earning between 31 percent and 50 percent of the AMI) experienced housing problems.

Table D-16: Housing Type and Cost Burden									
Household by Type, Income, and Housing Problem	Renters				Owners				Total HHs
	Elderly	Small Families	Large Families	Total Renters	Elderly	Small Families	Large Families	Total Owners	
Extremely Low Income (0-30% AMI)	1,075	2,775	1,120	6,120	955	1,240	570	3,230	9,350
With cost burden >30%	79.5%	87.7%	96.0%	84.9%	61.8%	80.2%	82.5%	73.8%	81.1%
With cost burden > 50%	54.4%	72.6%	76.8%	67.9%	42.9%	72.6%	67.5%	59.0%	64.8%
Very Low Income (31-50% AMI)	495	1,695	725	3,295	1,105	1,725	1,090	4,145	7,440
With cost burden >30%	71.7%	79.4%	79.3%	77.7%	56.6%	84.1%	78.9%	75.4%	76.4%
With cost burden > 50%	25.3%	29.8%	26.9%	28.2%	27.1%	50.4%	27.5%	37.5%	33.4%
Low Income (51-80% AMI)	205	1,295	840	2,810	1,040	2,700	2,020	6,255	9,065
With cost burden >30%	61.0%	54.1%	14.3%	44.3%	42.8%	45.9%	35.1%	42.8%	43.3%
With cost burden > 50%	4.9%	2.3%	1.8%	2.3%	7.2%	7.2%	1.7%	6.0%	4.9%
Moderate Income (81-100% AMI)	380	1,770	785	3,640	2,275	8,040	2,445	14,575	18,215
With cost burden >30%	34.2%	6.5%	3.8%	8.7%	11.4%	8.1%	9.0%	10.3%	10.0%
With cost burden > 50%	10.5%	0.0%	0.0%	1.1%	0.4%	1.0%	0.0%	1.1%	1.1%
Total Households	2,155	7,535	3,470	15,865	5,375	13,705	6,125	28,205	44,070
With cost burden >30%	68.0%	61.0%	51.9%	58.7%	35.7%	31.7%	36.9%	34.4%	43.1%
% With cost burden >30%	35.3%	33.8%	30.8%	32.7%	14.8%	14.9%	11.8%	14.1%	20.8%
Source: HUD CHAS 2013-2017.									

Figure D-39 shows the census tracts in the City and the percent of households in renter-occupied housing units that have a cost burden. The census tracts in the City have a range from 20 to 60 percent of the renter households overpaying for their housing unit. Figure D-40 shows the percent of owner households that have a mortgage or mortgages with monthly owner costs that are 30 percent or more of household income. All census tracts in the City have 20 to 40 or 40 to 60 percent of households that pay more than 30 percent of their household income to their monthly housing costs with only one area with less than 20 percent of households overpaying.

The distribution of units selected to meet the RHNA by population of cost burdened renters at the tract-level is presented in Table D-17 and Figure D-41. Consistent with the Citywide trend, most RHNA units are in tracts where 40 to 80 percent of renters overpay for housing. A larger proportion of lower income units (51.9 percent) are in tracts where more than 60 percent of renters overpay compared to moderate income units (45.2 percent). However, a larger proportion of lower income units (17.8 percent) are also in tracts where fewer than 40 percent of renters are cost burdened compared to moderate income units (14.7 percent). The City's RHNA strategy ensures RHNA units, specifically lower income units, are distributed throughout tracts with various proportions of cost burdened renters to the extent possible given the trend Citywide.

Table D-18 and Figure D-42 show the distribution of RHNA units by population of cost burdened owner-occupied households. As shown in the map provided, tracts where 40 to 60 percent of owners are cost burdened are the most prevalent. Consistent with this trend, 71 percent of RHNA units are in tracts with cost burdened owner populations in this range. A smaller proportion of lower income units are in these tracts compared to moderate income units. The City's RHNA strategy also places 20 lower income units in the tract where less than 20 percent of owners overpay for housing. To the extent possible given the Citywide composition, Palmdale's RHNA strategy does not concentrate units in tracts where cost burden is more prevalent.

Table D-17: RHNA Unit Distribution by Cost Burdened Renters

Percent Cost Burdened Renters (Tract)	Low		Moderate		Total Units	
	Units	Percent	Units	Percent	Units	Percent
<20%	0	0.0%	0	0.0%	0	0.0%
20-40%	661	17.8%	206	14.7%	867	17.0%
40-60%	1,125	30.3%	562	40.1%	1,687	33.0%
60-80%	1,924	51.9%	634	45.2%	2,558	50.0%
>80%	0	0.0%	0	0.0%	0	0.0%
Total	3,710	100.0%	1,402	100.0%	5,112	100.0%
All of the City's Above Moderate Income RHNA has been met with entitled projects						

Table D-18: RHNA Unit Distribution by Cost Burdened Owners

Percent Cost Burdened Owners (Tract)	Low		Moderate		Total Units	
	Units	Percent	Units	Percent	Units	Percent
<20%	20	0.5%	0	0.0%	20	0.4%
20-40%	1,099	29.6%	362	25.8%	1,461	28.6%
40-60%	2,591	69.8%	1,040	74.2%	3,631	71.0%
60-80%	0	0.0%	0	0.0%	0	0.0%
>80%	0	0.0%	0	0.0%	0	0.0%
Total	3,710	100.0%	1,402	100.0%	5,112	100.0%
Note: Percent of cost burdened owners reflects the population of owner-occupied households with a mortgage. All of the City's Above Moderate Income RHNA has been met with entitled projects						

Figure D-39: Percent of Overpaying Renters by Tract (2019)

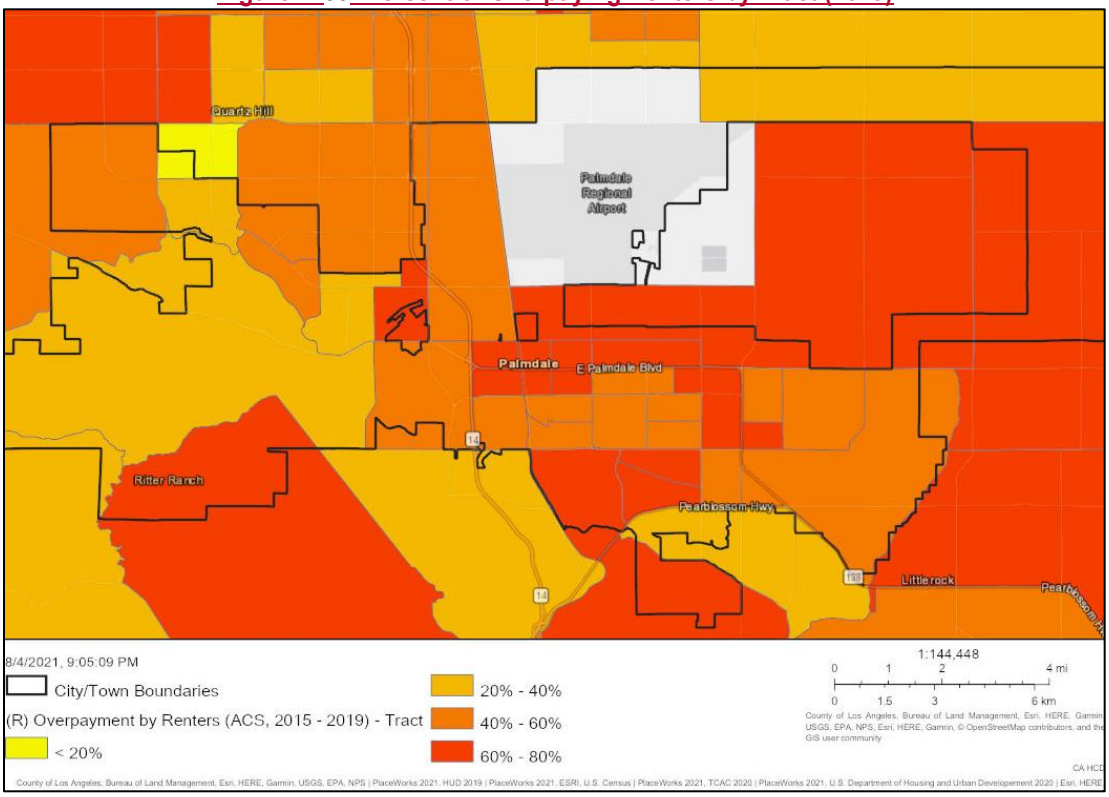


Figure D-40: Percent of Overpaying Owners by Tract (2019)

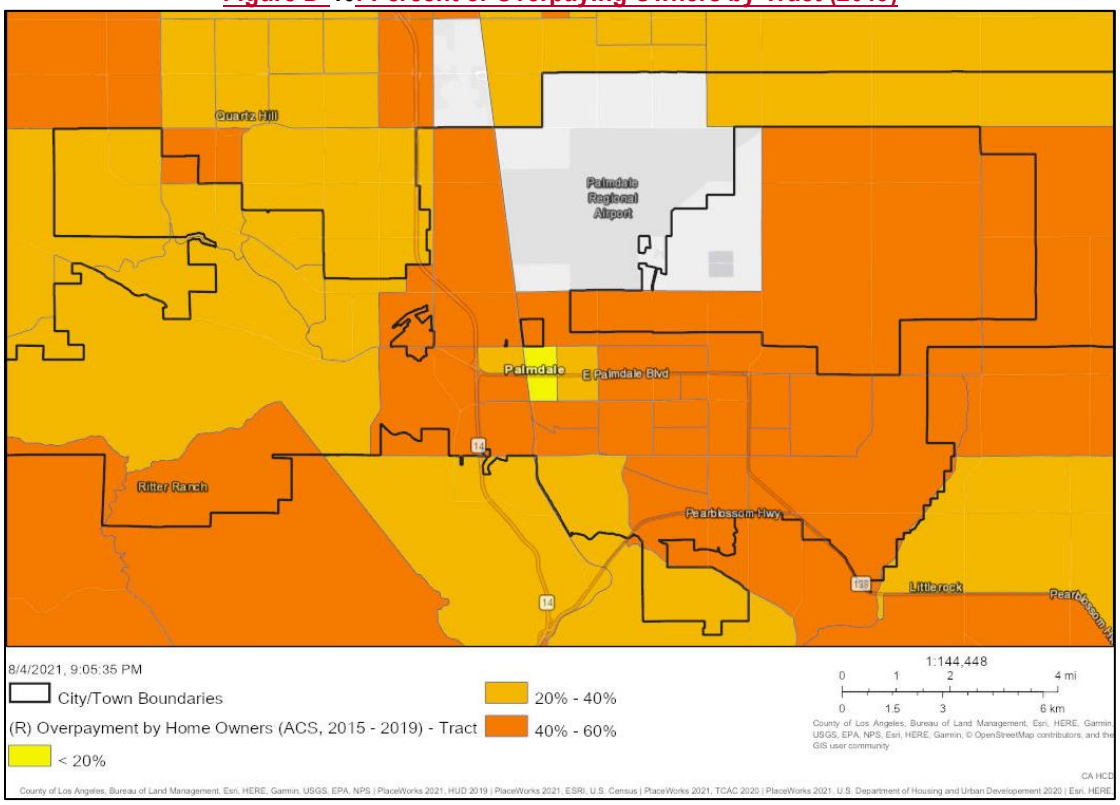


Figure D-41: Distribution of RHNA Units and Overpaying Renters by Tract (2019)

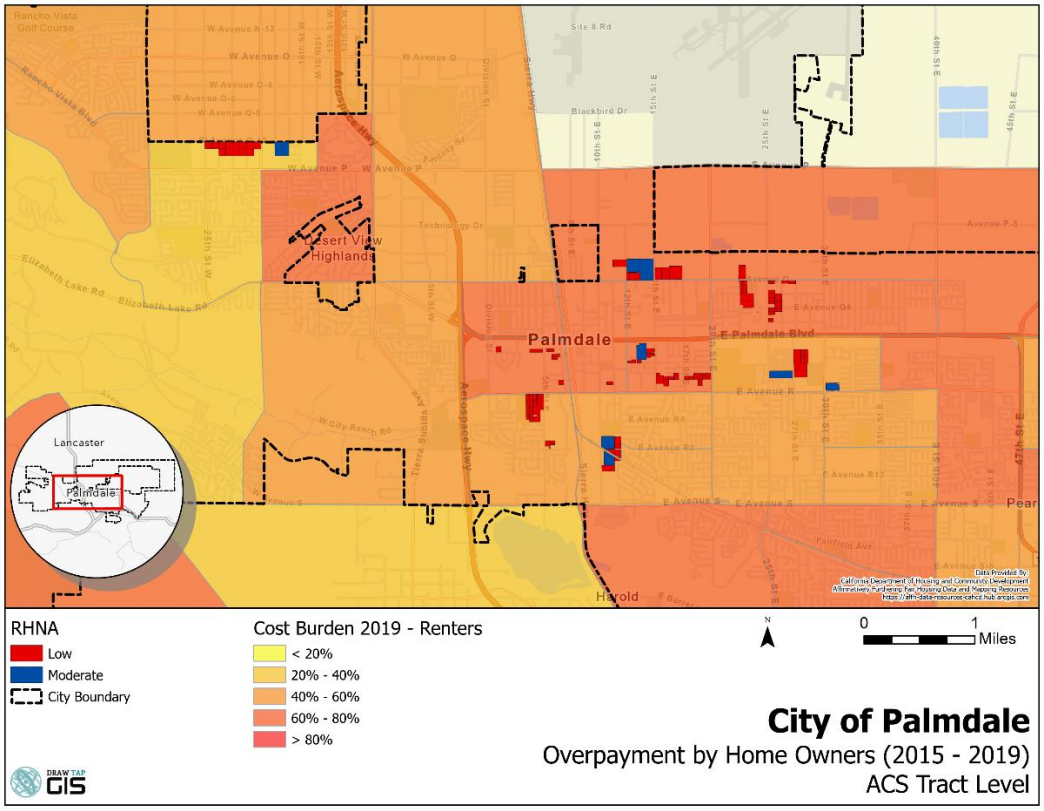


Figure D-42: Distribution of RHNA Units and Overpaying Owners by Tract (2019)

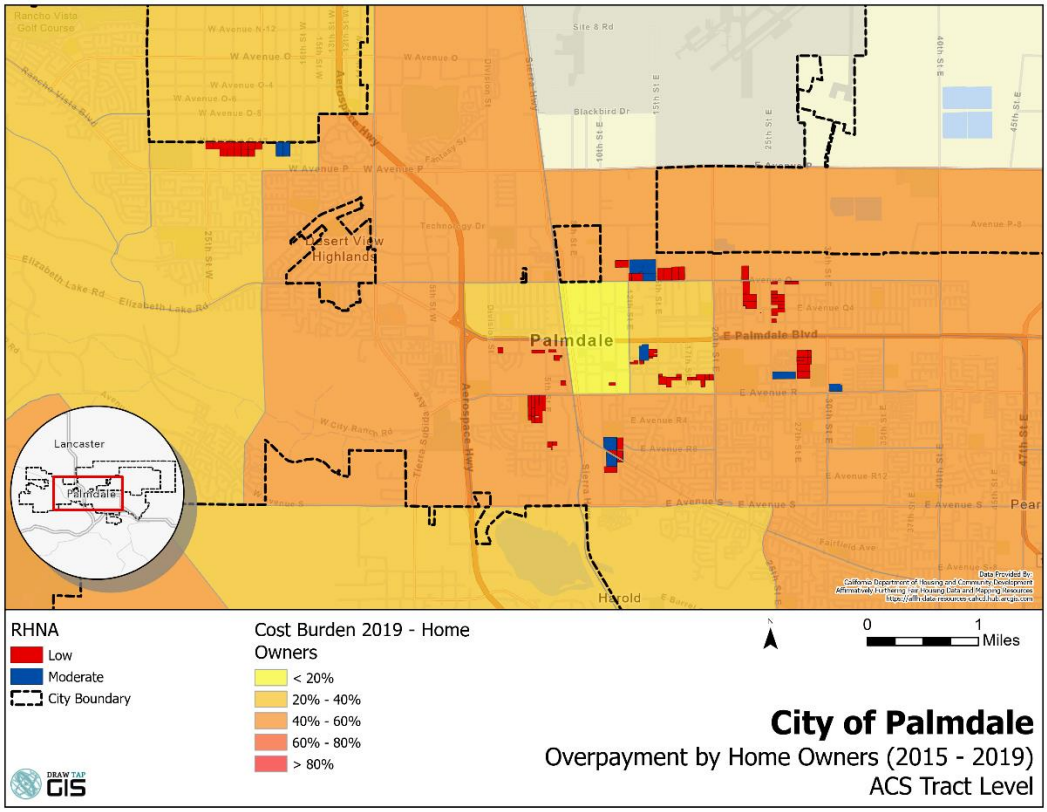


Table D-19: Severe Cost Burden by Race/Ethnicity		
Race/Ethnicity	**# of Households**	**% with Severe Cost Burden**
Palmdale		
White, Non-Hispanic	13,245	15.21%
Black, Non-Hispanic	6,507	34.39%
Hispanic	20,610	22.25%
Asian or Pacific Islander, Non-Hispanic	1,995	21.00%
Native American, Non-Hispanic	199	7.54%
Other, Non-Hispanic	934	24.09%
Total	43,475	21.84%
Los Angeles County		
White, Non-Hispanic	1,741,265	19.73%
Black, Non-Hispanic	332,330	29.60%
Hispanic	1,458,220	26.22%
Asian or Pacific Islander, Non-Hispanic	666,628	20.34%
Native American, Non-Hispanic	9,535	20.82%
Other, Non-Hispanic	90,895	23.73%
Total	4,298,855	22.87%
Source: HUD CHAS 2013-2017.		

Regional Trend. In Los Angeles County approximately 23 percent of all households experience a severe housing cost burden similar to Palmdale (22 percent) (Table D-19). Among all races/ethnicities, the rate of severe housing cost burden is comparable between the City and the County with the exception of Native American, Non-Hispanics in the County. Figure D-43 and Figure D-44 show renter and owner households in the surrounding region that overpay for housing. Among renters over payment is more concentrated on outskirts of City centers with some of the highest overpayments concentrated north of Santa Clarita. This area north of Santa Clarita also has a concentration of owner households that overpay.

Figure D-43: Regional Percent of Overpaying Renters by Tract (2019)

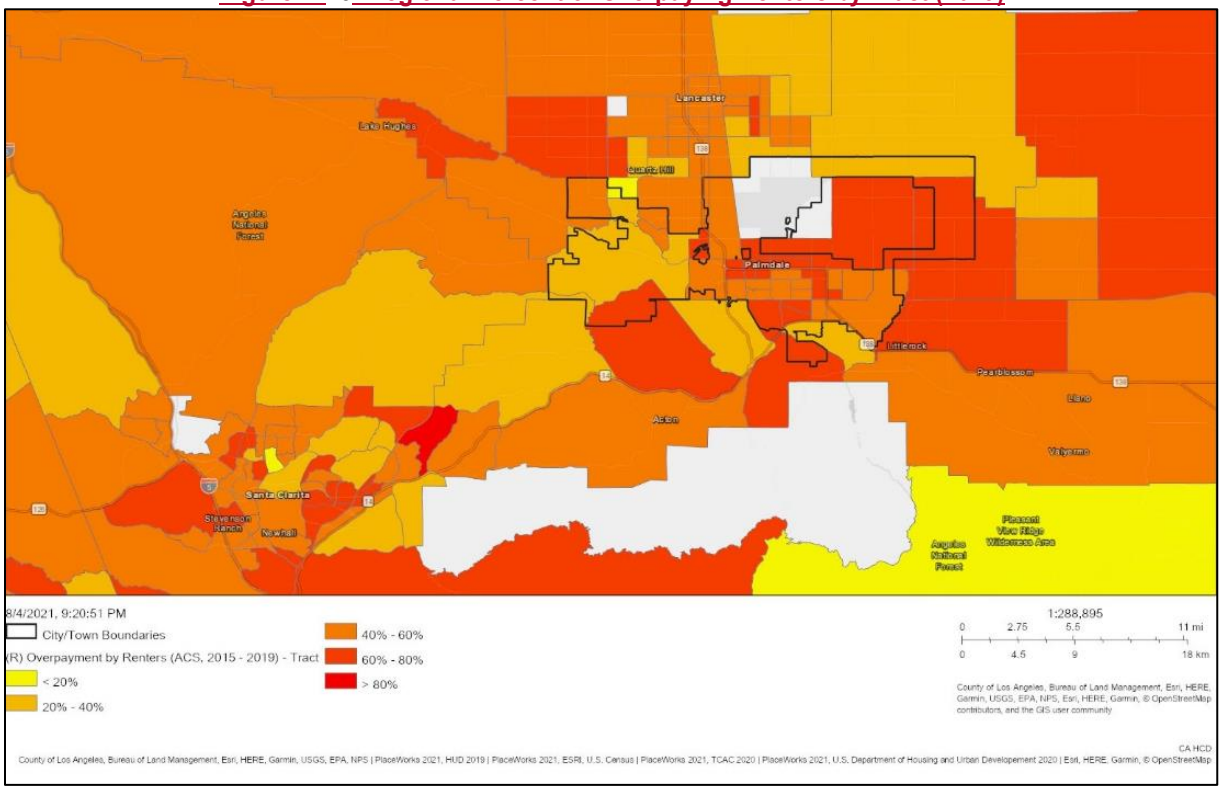
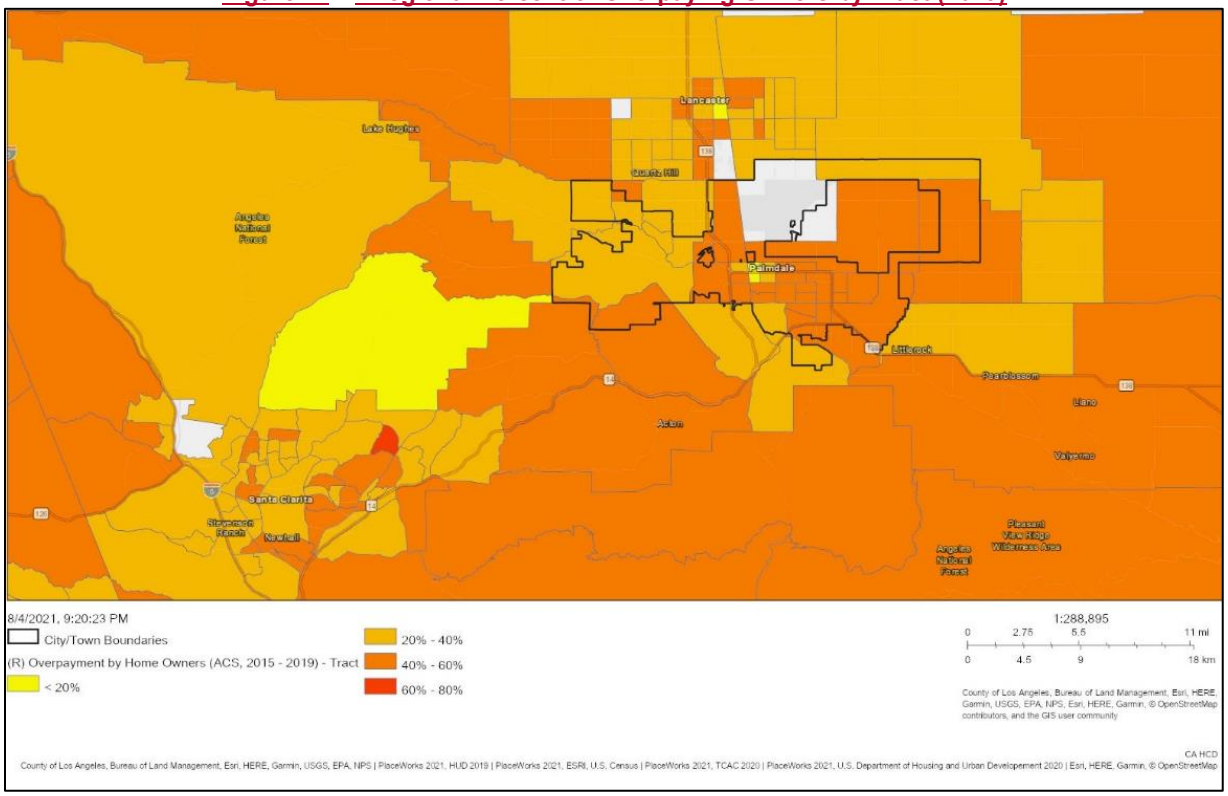


Figure D-44: Regional Percent of Overpaying Owners by Tract (2019)



Overcrowding

Overcrowding is defined as housing units with more than one person per room (including dining and living rooms but excluding bathrooms and kitchen). The 2011-2015 ACS reported that about two percent of Palmdale households lived in overcrowded conditions (Table D-20). Overcrowding disproportionately affected renters (98 percent of renters versus just two percent of owners); indicating overcrowding may be the result of an inadequate supply of larger sized rental units. In comparison, the 2015-2019 ACS reported that overcrowding increased to almost four percent of all households. Similarly, renter-households were more prone to overcrowding (54 percent) compared to owner-households (45 percent), but not to the extent of 2011.

Table D-20: Overcrowded Housing Units

Category	2011-2015		2015-2019	
	Number	%	Number	%
Occupied Housing Units	16,568	100.0%	16,984	100.0%
Overcrowded Units	403	2.4%	665	3.9%
Owner-occupied	8	2.0%	303	45.6%
Renter-occupied	395	98.0%	362	54.4%
Units with 1.01-1.50 persons/room	337	83.6%	482	72.5%
Units with 1.51-2.00 persons/room	43	10.7%	108	16.2%
Units with 2.01 or more persons/room	23	5.7%	75	11.3%

Source: 2011-2015 and 2015-2019 ACS

Overcrowded households are most prevalent in the central and eastern areas of the City (Figure D-45). There is one tract in the center of the City where more than 20 percent of households experience overcrowding. R/ECAPs and TCAC areas of high segregation and poverty are also concentrated in this area of the City (see Figure D-21 and Figure D-28). More than five percent of households in several of these tracts are also severely overcrowded, where there are more than 1.5 persons per room (Figure D-46).

The distribution of RHNA units by population of overcrowded households at the tract-level is shown in Table D-21 and Figure D-47. Due to the presence of several tracts with larger proportions of overcrowded households, there are a significant number of units in these tracts. Approximately 53 percent of units are in tracts where 12 to 20 percent of households are overcrowded. There are also 154 lower income units allocated in the area where more than 20 percent of households are overcrowded. Despite the density of tracts in the City with proportions of overcrowded households exceeding the Statewide average of 8.2 percent, 39.6 percent of RHNA units are in tracts where fewer than 8.2 percent of households are overcrowded. A larger proportion of lower income units (41.7 percent) are in these tracts compared to moderate income units (33.8 percent).

Table D-21: RHNA Unit Distribution by Overcrowded Households						
Percent Overcrowded Households (Tract)	Low		Moderate		Total Units	
	Units	Percent	Units	Percent	Units	Percent
<8.2% (Statewide Average)	1,548	41.7%	474	33.8%	2,022	39.6%
8.3-12%	91	2.5%	124	8.8%	215	4.2%
12.01-15%	1,094	29.5%	156	11.1%	1,250	24.5%
15.01-20%	823	22.2%	648	46.2%	1,470	28.8%
>20%	154	4.2%	0	154.0%	154	3.0%
Total	3,710	100.0%	1,402	100.0%	5,112	100.0%
All of the City's Above Moderate Income RHNA has been met with entitled projects						

Figure D-45: Overcrowded Households by Tract

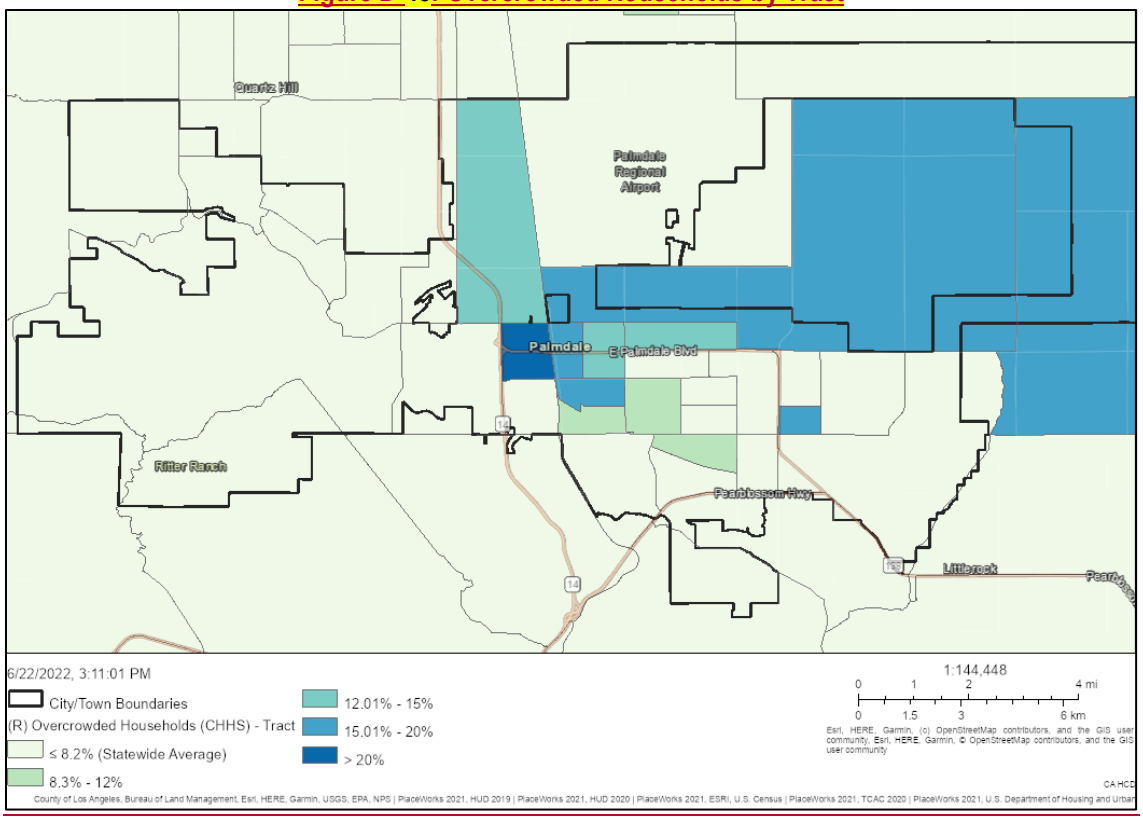


Figure D-46: Severely Overcrowded Households by Tract

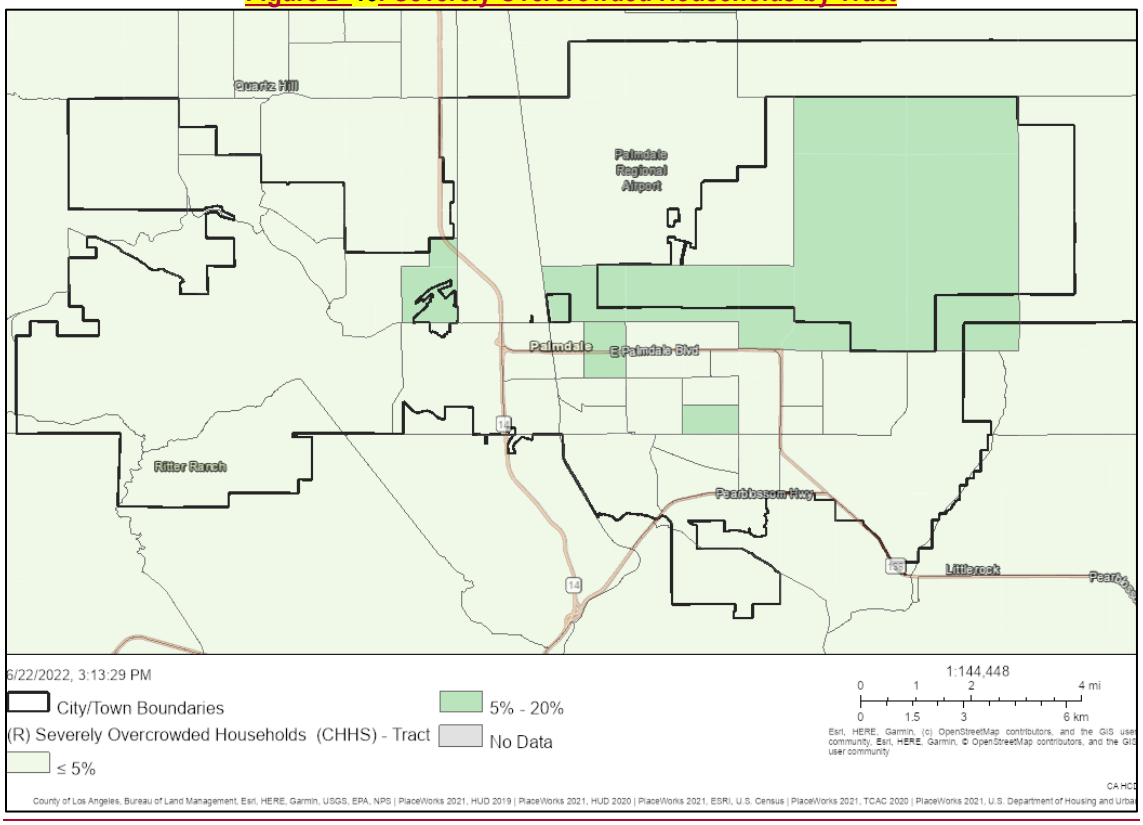
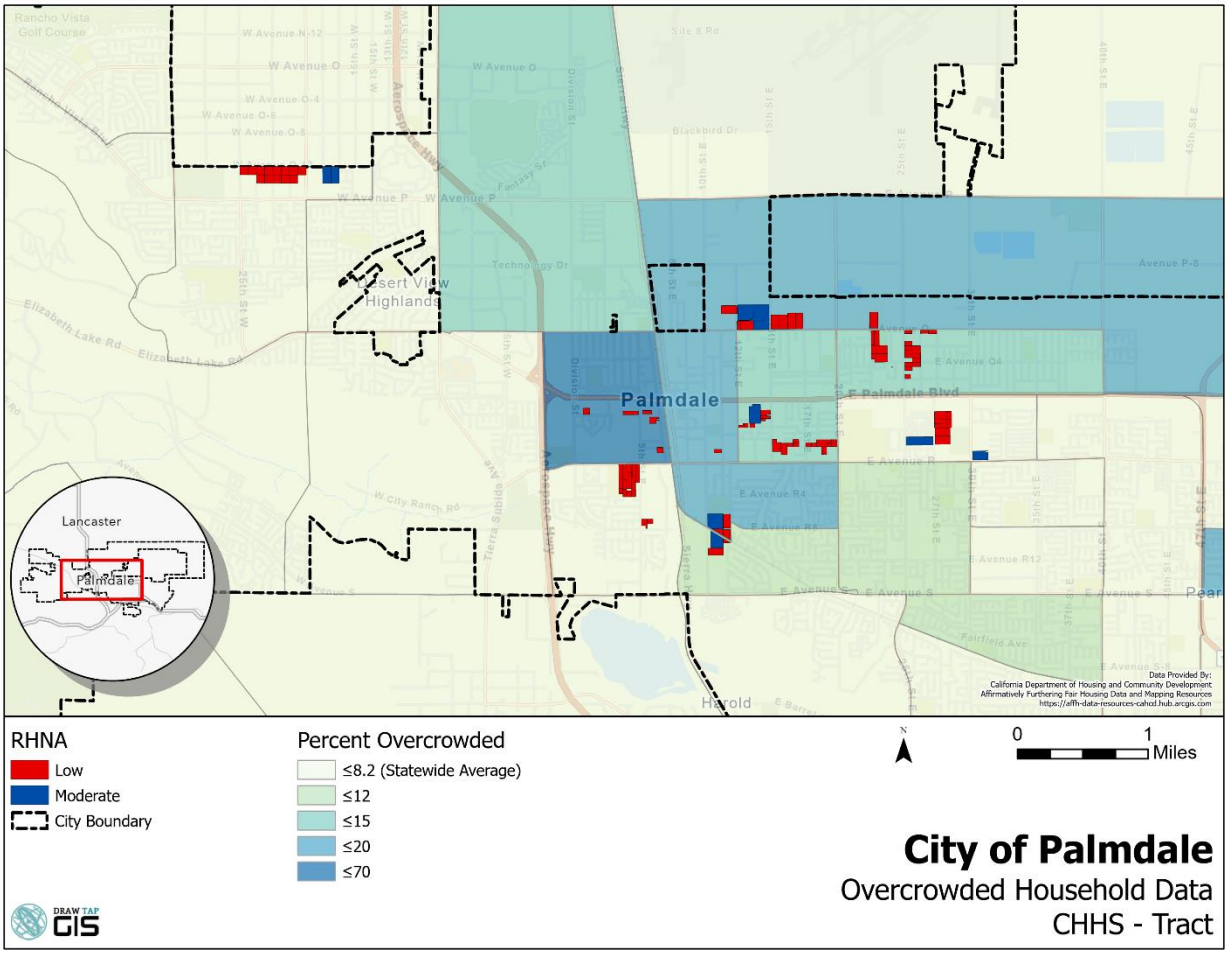
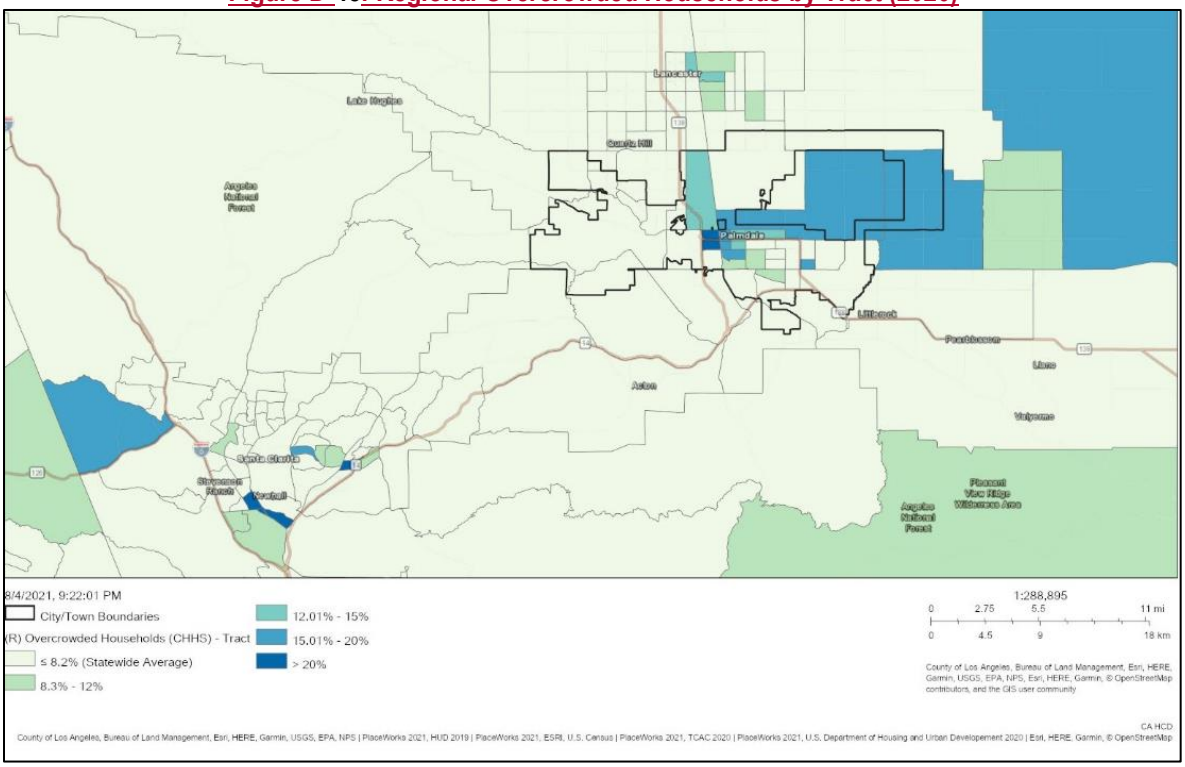


Figure D-47: Distribution of RHNA Units and Overcrowded Households by Tract



Regional Trend. In the surrounding region overcrowded households are the most prevalent in the City of Palmdale followed by Santa Clarita (Figure D-48). In Santa Clarita, two census tracts in Newhall have a high concentration of overcrowded households with 44 and 35 percent of the tract households being overcrowded.

Figure D-48: Regional Overcrowded Households by Tract (2020)



Substandard Conditions

The City has serious concerns about the condition and appearance of the approximately 9,578 dwelling units built in 1979 and earlier. Therefore, many of the City's housing programs focus on improving housing condition and neighborhood infrastructure in older Palmdale neighborhoods. Palmdale regards housing condition as a matrix of issues and has designed several City programs that coordinate the activities of key public agencies to improve older neighborhoods plagued by inadequate infrastructure, deteriorating housing, and poor maintenance and management practices. According to Code Compliance records, the City receives about 200 complaints per year regarding substandard housing units. With these numbers and the number of units built in 1979 or earlier, the City has projected approximately 4,800 substandard units in the City.

Housing age is frequently used as an indicator of housing condition. In general, residential structures over 30 years of age require minor repairs and modernization improvements, while units over 50 years of age are likely to require major rehabilitation such as roofing, plumbing, and electrical system repairs. Approximately 13 percent of the City's housing units are over 50 years old according the 2015-2019 ACS.

Displacement Risk

Cost of housing within the City has become high and unattainable for a lot of residents. In 2020 the median sales price for a single-family home in Palmdale was $350,000 and increasing 28.3 percent to $449,000 in 2021. With a lower median income compared to other parts of the County, the average home sale prices could lead to residents moving out of the City because of the economic pressures of home ownership as the prices have kept increasing.

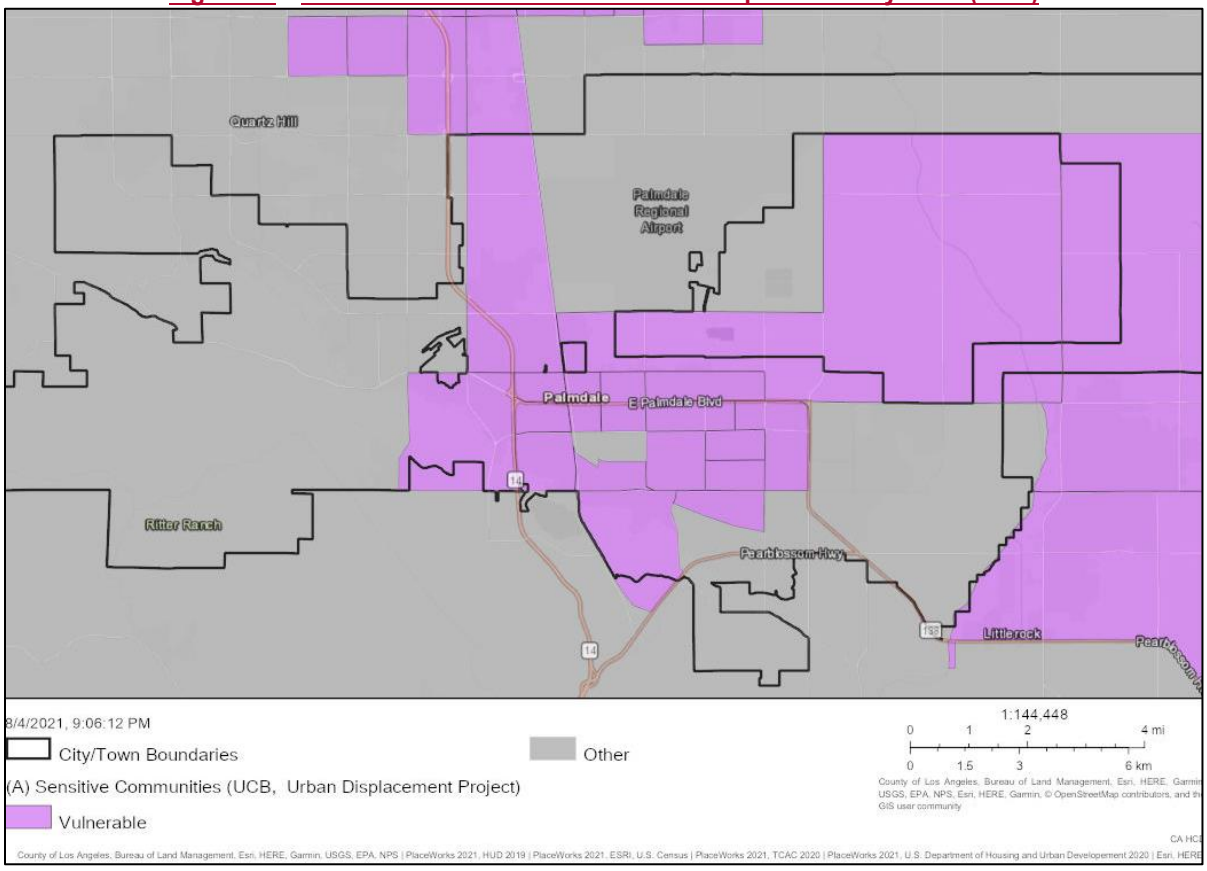
HCD defines sensitive communities as "communities [that] currently have populations vulnerable to displacement in the event of increased development or drastic shifts in housing cost." The following characteristics define a vulnerable community:

- The share of very low-income residents is above 20 percent; and
- The tract meets two of the following criteria:
    - Share of renters is above 40 percent,
    - Share of people of color is above 50 percent,
    - Share of very low-income households (50 percent AMI or below) that are severely rent burdened households is above the county median,
    - They or areas in close proximity have been experiencing displacement pressures (percent change in rent above County median for rent increases), or
    - Difference between tract median rent and median rent for surrounding tracts above median for all tracts in the County (rent gap).

Figure D-49 identifies that there are many census tracts that are considered to be vulnerable to urban displacement in the City. These communities are areas that have a higher concentration of low- and moderate-income persons, high minority concentrations, and higher rates of overpayments by renters.

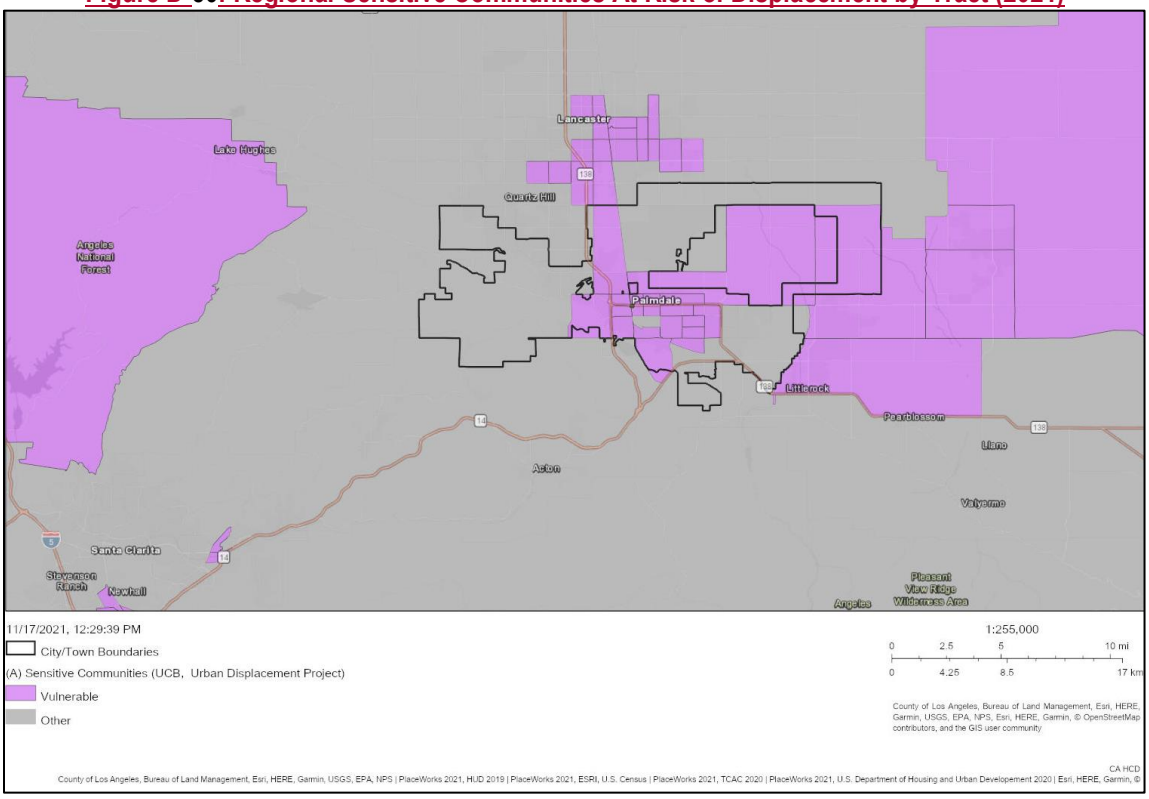
The areas identified as being at risk for displacement are also shown to be at risk of becoming exclusive neighborhoods. Increasing housing costs, particularly rents, and the presence of LMI households in these areas (Figure D-19) is making these communities vulnerable to displacement.

Figure D-49: Sensitive Communities At Risk of Displacement by Tract (2021)



Regional Trend. Figure D-50 shows urban displacement in the Antelope Valley. Several areas are subject to displacement, including along the Antelope Valley Freeway (14). In the Los Angeles Basin, vulnerable communities can be seen throughout the County, particularly near the major freeways and transportation corridors.

Figure D-50: Regional Sensitive Communities At Risk of Displacement by Tract (2021)



Homelessness

As described in the Needs Assessment of this Element, the 2020 Greater Los Angeles Homeless Count conducted a one-night survey to collect data on the number of homeless persons in the County at a point in time. The 2020 Homeless Count Report also provided an estimate for the number of persons homeless over the period of a year. Results from the 2020 Los Angeles County Homeless Count indicate that while the total number of people experiencing homelessness has increased overall in the County, the number of homeless individuals has decreased in Palmdale, reporting 289 people experiencing homelessness, down from 325 reported in 2016. Overall Los Angeles County numbers increased from 39,587 in 2016 to 54,291 in 2020.

When compared with the other Service Planning Areas (SPAs), the homeless population of Antelope Valley had the second highest proportion of unaccompanied minors being homeless with 23 individuals being unaccompanied minors.

Palmdale does not have an emergency shelter or any transitional housing programs. Homeless families and individuals call 211 to obtain motel vouchers for a night or weekend and then must go to the Valley Oasis Access Center in Palmdale to obtain assistance with additional motel vouchers, and/or placement in emergency, transitional or permanent housing, as well as case management to obtain supportive services, help applying for public benefits and a range of other needs. There is an emergency shelter in Lancaster, the High Desert MACC, operated by Volunteers of America.

The City of Palmdale funds and operates the South Antelope Valley Emergency Services program (SAVES), which provides a food bank, motel vouchers and clothing distribution for extremely low-income and homeless individuals and families and makes referrals to 211 and the homeless

services available in Lancaster. SAVES does not keep records of the number of inquiries, requests for assistance or referrals provided to homeless families and individuals.

Although the Antelope Valley is only one of eight SPAs in Los Angeles County, that could share resources it is a two-hour drive from the major centers of service provision in the City of Los Angeles and other major cities such as Pasadena and Long Beach and coordinates through the Los Angeles County continuum of care. This includes emergency shelter, transitional housing, supportive services and case management along with motel vouchers, and a range of special housing and services for the mentally ill, victims of domestic violence, and emancipated foster youth.

Emergency shelter for adult men and women is provided at the High Desert MACC, operated by Volunteers of America and located in the City of Lancaster. The High Desert MACC is the only emergency shelter in the Antelope Valley serving the general population of homeless single adults. This all-year emergency shelter facility can accommodate 93 people each night. Valley Oasis operates a 56-bed emergency shelter for victims of domestic violence. The location of this shelter is confidential.

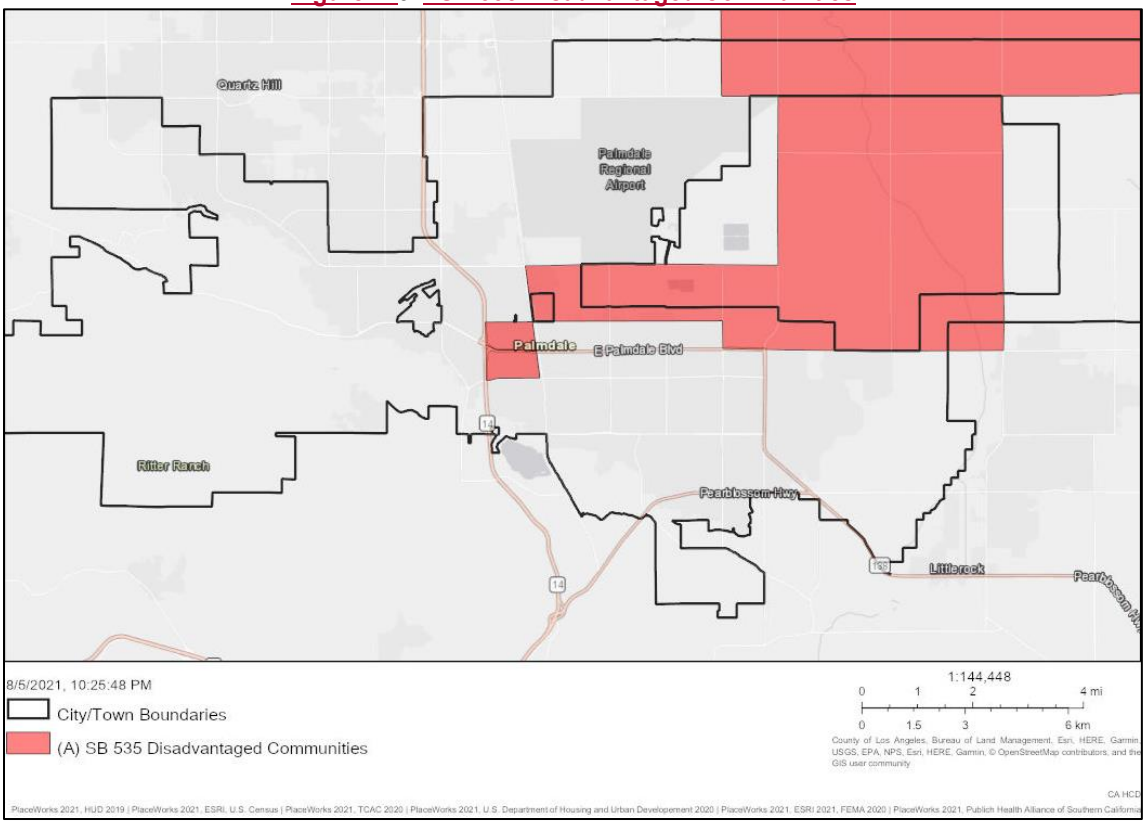
The Valley Oasis Access Center, located in Palmdale, provides case management, service referrals, motel vouchers, and placement in transitional and permanent housing. The Access Center, which is operated by the Valley Oasis, has improved coordination and continuity of services to homeless persons in the Antelope Valley. The Antelope Valley Transit Authority provides bus service throughout the Antelope Valley, allowing referrals from SAVES to the Department of Public Social Services, the Access Center and the High Desert MACC in Lancaster. However, according to Valley Oasis staff, transportation can be a significant barrier for homeless and very low-income individuals and families without cars whose travel to Lancaster for services means a trip that may require a long walk to bus stops and an hour and a half or more of travel time in each direction. The City of Palmdale has offered space within the SAVES building to the Access Center and other service providers, so that staff from these organizations may process clients from the Palmdale area to minimize the need to travel to receive services.

D.2.6 Other Relevant Factors

SB 535 Disadvantage Communities

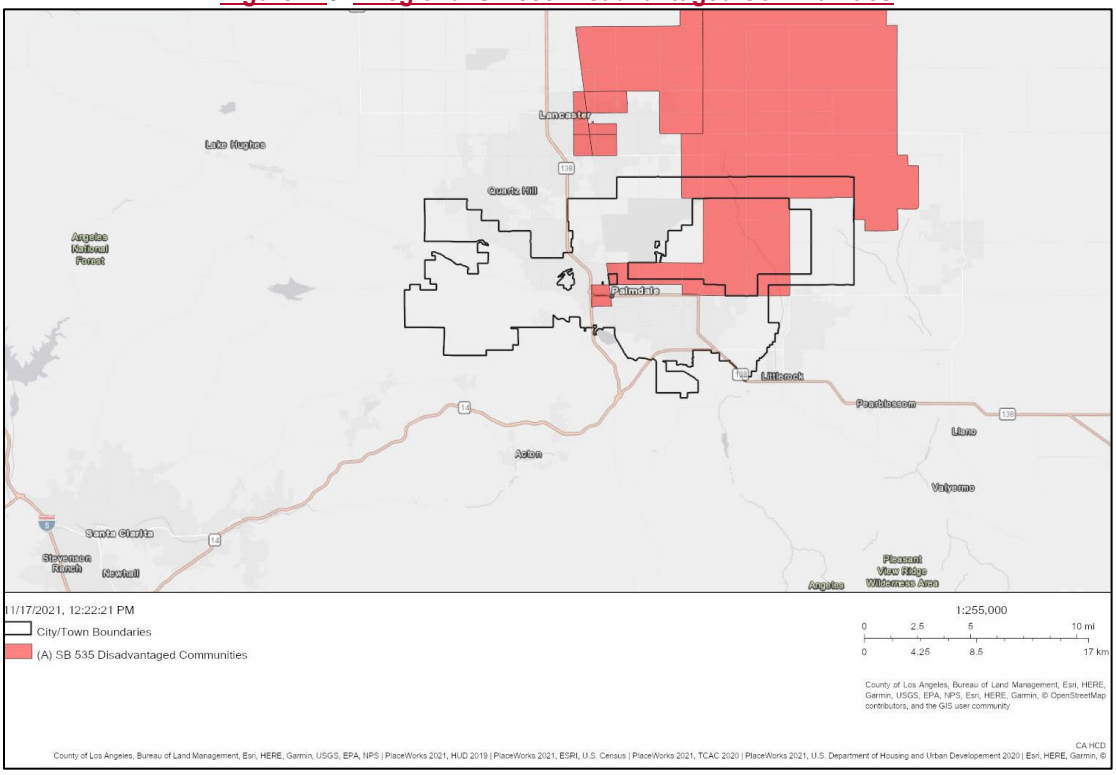
Disadvantaged communities in California are specifically targeted for investment of proceeds from the State's cap-and-trade program. Known as California Climate Investments (CCI), these funds are aimed at improving public health, quality of life and economic opportunity in California's most burdened communities at the same time they're reducing pollution that causes climate change. The HCD AFFH tool has identified some "disadvantaged communities" in downtown Palmdale and northeast of City center (Figure D-51).

Figure D-51: SB 535 Disadvantaged Communities



Regional Trend. The AFFH Data Tool identified disadvantaged communities in Palmdale, Lancaster and the unincorporated areas to the north and east of those cities. Disadvantaged communities are also found throughout the San Fernando Valley, southern San Gabriel Valley and in the central portion of the Los Angeles Basin (Figure D-52).

Figure D-52: Regional SB 535 Disadvantaged Communities



Housing Choice Vouchers

Trends related to housing choice vouchers (HCV) can show patterns of concentration and integration. As of December 2020, 1,894 households in Palmdale received Section 8 assistance. Figure D-53 shows that HCV use is concentrated in downtown as well as areas moving toward Lancaster and to the east and west of downtown. In these tracts, between 15 and 30 percent of the renter households are HCV users. This may be because these areas have the lowest "affordability index" or median gross rents (Figure D-54). Despite low rents, over 40 percent of renter households in these areas are considered cost-burdened (Figure D-39).

Figure D-53: Regional Housing Choice Voucher Utilization by Tract

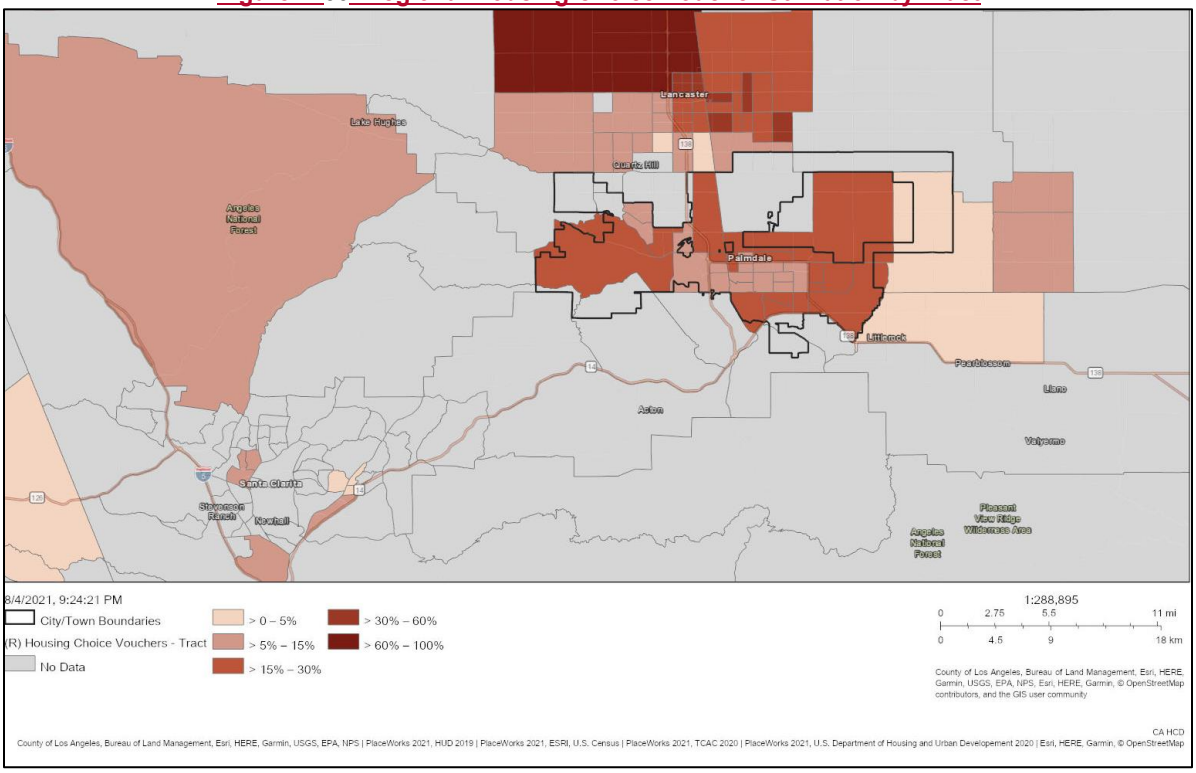
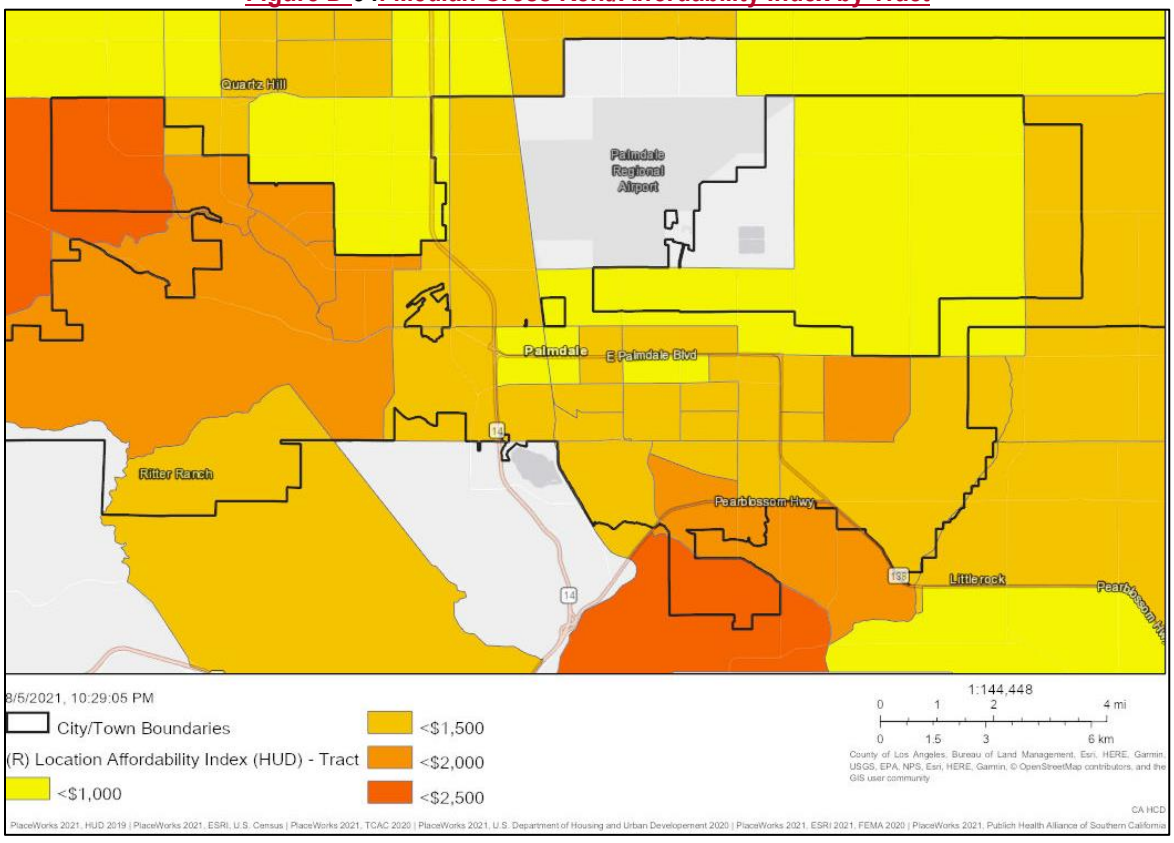


Figure D-54: Median Gross Rent/Affordability Index by Tract



D.2.7 Local Knowledge

Incorporated in 1962, Palmdale has its roots in two small, early communities: Harold (Alpine Station) and Palmenthal.10 Harold Was at the crossroads of two major routes on the Valley floor: the Southern Pacific Railroad tracks and Fort Tejon Road (now Barrel Springs Road). Palmenthal was established in the late 1800s when families moved westward to California from Nebraska and Illinois. When they arrived in the Antelope Valley, they mistook the Joshua trees for palm trees (a sign they were close to the Pacific Ocean) and settled in the area. New irrigation methods and electricity at the turn of the twentieth century helped to revive the area's farming economy. While Palmdale still has portions of its agricultural past, after World War II, Palmdale's economic base shifted to aerospace and defense industry with construction of Air Force Plant 42 and the Federal Aviation Administration's Air Route Traffic Control.11

Neighborhood Development and Housing

As described in the Needs Assessment, Palmdale experienced significant population growth since 1980, Over 80 percent of Palmdale's housing stock has been constructed since 1980 and nearly all new units in Palmdale since 2000 have been single-family units. This can be accounted for by several factors: 1) there was a moratorium imposed on new multi-family housing construction in place between 1999 and 2001; 2) there was substantial public opposition to any new multi-family housing and 3) until October 2012, Palmdale's highest residential density, R-3, allowed a maximum of only 16 units per acre and imposed very restrictive and inflexible development standards, pushing the price of development up. Currently, the housing stock for the City is comprised of: 78 percent detached single-family, 12 percent larger multi-family complexes (5+ units), five percent mobile homes, three percent small multi-family complexes and two percent condominiums. Multi-family development is mainly located along Palmdale Boulevard in the central portion of the city.

The Palmdale General Plan update will provide new opportunities for increased housing production, especially affordable housing, as it will accommodate a larger variety of densities and housing types. More explanation about this.

The City approved the following residential projects in September 2021:

- A request to construct a 151-unit affordable housing development located at the southeast corner of 25th Street East and East Avenue Q-12.
- A request to construct a 56-unit affordable multiple-family residential development located on the northeast corner of East Avenue R and 30th Street East.

Infrastructure Improvements

The City is undertaking the following infrastructure improvements, including in locations designated as low opportunity resource areas and disadvantaged communities:

- Avenue Q Complete Streets Project: located on Avenue Q from Sierra Highway to 20th Street East, the Complete Streets Project is a multimodal corridor plan with recommendations that will improve walking and biking conditions for all ages and abilities; improving the comfort and safety of active transportation in high desert weather. The project will also develop recommendations for land use and zoning along Avenue Q as

[10] City of Palmdale website: www.palmdale.org
[11] Los Angeles County website: https://lacountylibrary.org

part of the comprehensive General Plan and Zoning Updates. Avenue Q is an important east-west connection for Palmdale and is anticipated to link the city's major destinations and activity centers. With a vision for a main street for everyone, the planning process has included virtual meetings, pop-up events and an online survey.

- Palmdale Regional Recreation Complex- located next to CA-14, the City recently received approval to purchase the property. The City's ownership of this site will help to spur redevelopment along Avenue Q.

D.2.8 Summary of Fair Housing Issues from the AI

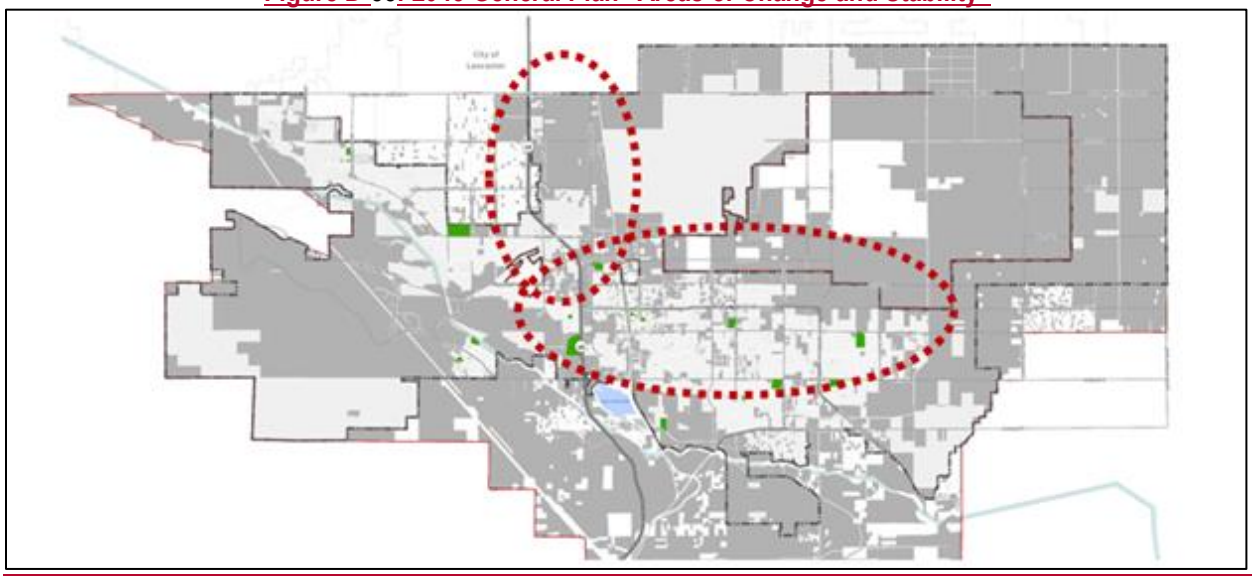
- **Discrimination against Persons with Disabilities:** Housing Rights Center (HRC) Fair Housing Discrimination Complaint data indicates that a majority of discrimination complaints from 2006-2014 and from 2015-2019 were based on physical or mental disability. The high number of disability-related complaints in Palmdale was consistent with data from other cities at that time and revealed a lack of understanding and sensitivity of the fair housing rights of the disabled.
- **Lack of Awareness of Fair Housing Laws:** A general lack of knowledge of fair housing rights and responsibilities continues to exist. Increased fair housing complaint intake by HRC and interaction with housing providers and housing seekers during workshops demonstrates a lack of understanding of both Federal and State fair housing law.
- **Race/Ethnic Relations:** Race/ethnic relations may contribute to bias or stereotypes that have an impact on Fair Housing Choice. Fair housing complaint data from 2006-2009 indicated that race/ethnicity was the second-leading cause of housing discrimination in the City. Further, 33 hate crimes were reported to the Federal Bureau of Investigation (FBI) from 2006-2008—most on the basis of race/ethnicity. The 2015 AI analyzed data from 2008-2012, showing between six and 17 hate crimes per year during that period. For the 2020 AI, data for Palmdale from the FBI revealed 14 hate crimes total for the last four years, with 12 of those hate crimes on the basis of race, ethnicity, or ancestry and two on the basis of religion.

D.3 Sites Inventory

D.3.1 Proposed Sites

in the Housing Plan of this Element shows the sites inventory for the 6th Cycle. Given that the City of Palmdale is over 100 square miles in size, through a SWOT analysis, public input and direction from decisionmakers, the 2045 General Plan Update identified "Areas of Change and Stability" in the central portion of the City, where development should be prioritized in the next 25 years, as shown in Figure D-55. These areas are located away from natural hazards such as the San Andreas Fault and areas prone to wildfires (Very High and High Fire Severity Zones); are located near existing infrastructure (water and sewer); have access to transit along the major arterials and at the Palmdale Transportation Center; and near amenities such as the Palmdale Library and other public services.

Figure D-55: 2045 General Plan "Areas of Change and Stability"



As a means of providing much-needed housing and incentivizing private investment in the City of Palmdale, Housing Element sites are strategically located within these "Areas of Change" where existing water and sewer infrastructure is available. The lack of available infrastructure has been expressed as a financial deterrent and barrier to new development by the Palmdale development community in interviews conducted by the General Plan team. The 6th Cycle housing sites have access to existing and planned public transit, goods, and services within walking distance, and are located near future employment, healthcare, and education centers, as well as future park priority locations, as identified in the General Plan Land Use Map. The existing and planned amenities will support future residents of all ages, abilities, and life stages – a major guiding principle for the Palmdale 2045 General Plan Update.

The areas rezoned for high density residential off Avenue Q and 10th Street East (which accommodate the RHNA for lower-income units) are near the future downtown which was outlined in the recently adopted Palmdale Transit Area Specific Plan. This area will also be home to the future High Speed Rail station and new Palmdale Transit Center which will support local and regional transit use, and enhanced walking and biking for residents. The City of Palmdale is working on a Complete Streets Plan to enhance pedestrian and bicycle circulation and safety along Avenue Q between Sierra Highway and 20th Street East. In addition to the high density residential and RHNA housing sites, this area will also be home to mixed-use districts in varying densities.

D.3.2 Analysis of Sites and AFFH Data

The following is a summary of comparing the proposed site locations with the data in this Appendix. Overall, the sites inventory helps to expand housing options and promotes a pattern of interspersed multi-family residential uses rather than in concentrated locations.

Segregation and Integration. As discussed previously, a majority of Palmdale has high concentrations of racial or ethnic minorities. While most RHNA units are located in block groups with non-White populations exceeding 80 percent, lower income units are not disproportionately located in high racial/ethnic minority population areas when compared to moderate income units.

Approximately 82 percent of lower income units and 85 percent of moderate income units are in block groups where more than 80 percent of the population belongs to a racial or ethnic minority group.

There are no tracts in Palmdale where more than 20 percent of the population experiences a disability. In most tracts, between 10 and 20 percent of the population has one or more disability. This trend is reflected in the City's RHNA sites where approximately 96 percent of lower income units and 100 percent of moderate income units are in tracts with populations of persons with disabilities in the same range.

Children living in female-headed households tend to be most concentrated in the central areas of the City. Sites selected to meet the RHNA are also located in this area due to environmental constraints and access to opportunities described in Section D.31 *Proposed Sites*, above. Only 0.5 percent of lower income units are in the tract where more than 40 percent of children live in female-headed households. Most RHNA units, including 82 percent of lower income units and 85 percent of moderate income units, are in tracts where 20 to 40 percent of children live in female-headed households.

Palmdale also has a high concentration of LMI areas where more than 50 percent of the population is low or moderate income. Due to the high rate of LMI households Citywide, most RHNA units are also in LMI areas, including 82 percent of lower income units and 85 percent of moderate income units.

Racially or Ethnically Concentrated Areas of Poverty. There are four R/ECAPs identified in Palmdale, three of which are concentrated in the center of the City. Despite the presence of R/ECAPs in the City, 96.6 percent of RHNA units, including 95 percent of lower income units and 100 percent of moderate income units, are not located within a R/ECAP tract. Further, the sites selected for high density residential uses are located adjacent to the planned downtown area and adopted Palmdale Transit Area Specific Plan which will further enhance the opportunities in the area.

Areas of Opportunity. Most of the City is considered a low resource area with several areas of high segregation and poverty. However, lower income units are not disproportionately located in areas of high segregation and poverty when compared to moderate income units (49 percent vs. 77 percent, respectively). A larger proportion of lower income units are also located in moderate resource tracts in comparison to moderate income units (18 percent vs. 15 percent, respectively). Of the sites to be zoned RN3, more than 800 units will be located in moderate resource areas, thereby promoting housing mobility. As discussed previously, services and opportunities in this area are to be expanded per the General Plan Update described in section D.3.1 *Proposed Sites*.

Disproportionate Housing Needs and Displacement Risk. The central areas of the City, where most RHNA sites are located, have higher concentrations of overpaying renters, and contain several tracts that are considered sensitive communities at risk of displacement. The largest proportion of RHNA units (71 percent) are in tracts where 40 to 60 percent of owners are cost burdened. However, this is consistent with the trend Citywide where most tracts have a proportion of cost burdened owners within that range. Half of units selected to meet the RHNA are also in tracts where 60 to 80 percent of renters overpay for housing. A larger proportion of lower income units are in tracts with proportions of cost burdened renters in this range (51.9 percent) compared to moderate income units (45.2 percent). However, the City's RHNA strategy ensures lower income units are distributed throughout tracts with various levels of cost burdened renters,

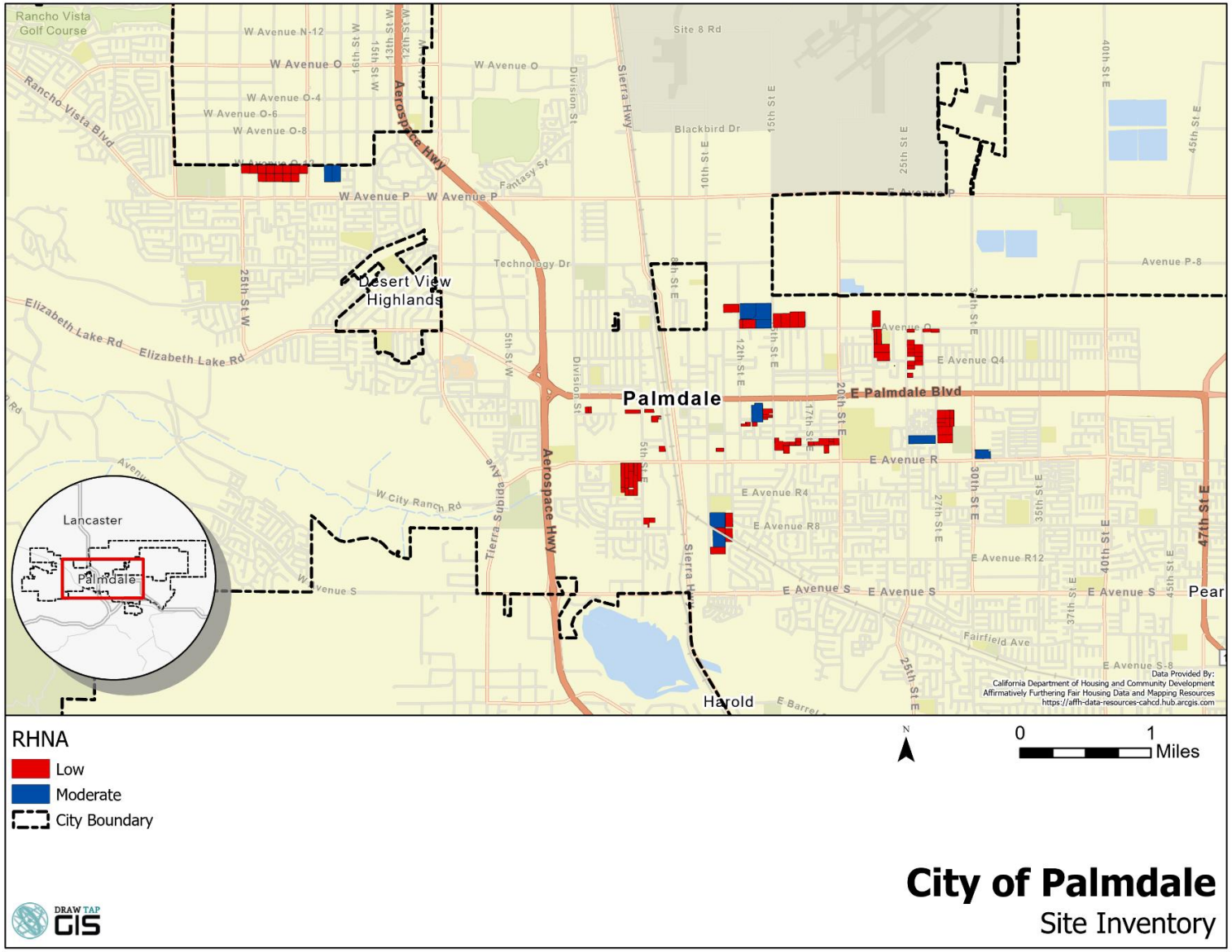
including 30.3 percent in tracts where 40 to 60 percent of renters overpay and 17.8 percent in tracts where 20 to 40 percent of renters overpay. Tracts with proportions of overcrowded households exceeding the Statewide average of 8.2 percent are prevalent in the City. However, 41.7 percent of lower income units and 33.8 percent of moderate income units are in tracts where fewer than 8.2 percent of households are overcrowded. Approximately half of units are in tracts where 12 to 20 percent of households are overcrowded. Sites were selected based on environmental suitability, infrastructure availability, access to transit opportunities, and access to services. The planned amenities, described in section D.3.1 *Proposed Sites*, will further expand the opportunities and services accessible in these areas of the City.

The City's RHNA strategy is further described by subarea and tract in Table D-22. The sites inventory is shown in Figure D-56. Of the 10 tracts containing RHNA units, six are areas of high segregation and poverty, two are low resource areas, and one is a moderate resource area. Eight of the 10 tracts are also classified as sensitive communities at risk of displacement. It is relevant to note that a significant proportion of Palmdale tracts are areas of high segregation and poverty or low resource tracts, and sensitive communities at risk of displacement. All tracts have racial/ethnic minority populations exceeding 80 percent and all but one tract is considered an LMI area. Fair housing issues are generally present throughout the City. However, the City does not concentrate RHNA units, specifically lower income units, in a single tract. Additionally, 661 lower income units have been allocated in the moderate resource tract. While there are several overlapping fair housing issues where RHNA sites have been identified, as discussed previously, various improvement projects have been proposed in these areas. Projects such as the Transit Area Specific Plan, Complete Streets Plan, and various capital improvement projects proposed in the area will serve existing and future households. The City's RHNA strategy along with actions outlined in Chapter 6, *Housing Plan*, of this Housing Element will ensure fair housing issues are not exacerbated.

Table D-22: Distribution of RHNA Units by Tract												
Tract	# of HHs in Tract	Total Capacity (Units)	Income Distribution		TCAC Opp. Category	% Non-White*	% LMI Pop.	R/ECAP?	% Over-crowded	% Overpay Renter	% Overpay Owner	At Risk of Displace-ment?
			Lower	Moderate								
Northeast *(East of 20th Street E. and North of E. Palmdale Boulevard)*												
9101.01	446	1,134	656	478	High Segregation & Poverty	90.9%	82.5%	No	16.3%	60.2%	47.1%	Yes
9106.01	1,564	656	656	0	Low	85.5%	72.3%	No	12.6%	73.1%	52.3%	Yes
9106.02	1,357	661	393	268	High Segregation & Poverty	83.9%	78.4%	No	5.9%	53.4%	41.2%	Yes
Central *(Bound by E. Palmdale Boulevard to the North, CA State Route 14 to the West, E. Avenue S. to the South, and 20th Street E. to the East)*												
9104.03	562	154	154	0	High Segregation & Poverty	92.1%	94.8%	Yes	25.6%	65.2%	50.0%	Yes
9104.04	1,075	494	494	0	Low	84.9%	69.2%	No	4.7%	54.2%	44.1%	Yes
9105.01	2,004	20	20	0	High Segregation & Poverty	92.5%	96.4%	Yes	16.7%	66.2%	10.0%	Yes
9105.02	1,181	594	438	156	High Segregation & Poverty	85.4% - 85.9%	80.7%	No	14.0%	62.8%	35.3%	Yes
9105.04	1,186	317	147	170	High Segregation & Poverty	85.9%	72.4%	No	18.8%	59.9%	45.3%	No
9105.05	814	215	91	124	Low	84.5%	64.5%	No	9.0%	51.2%	41.4%	Yes
Northwest *(West of Tierra Subida Avenue, East of 30th Street W., and North of W. Avenue P.)*												
9102.07	1,695	867	661	206	Moderate	66.5%	30.3%	No	1.5%	25.1%	38.6%	No
Total		**5,112**	**3,710**	**1,402**								

* Some non-White populations are presented as a range as racial/ethnic minority populations were analyzed at the block group level. Multiple block groups may be located within a single tract.
All of the City's Above Moderate Income RHNA has been met with entitled projects

Figure D-56: Sites Inventory



D.4 Identification and Prioritization of Contributing Factors

The following are contributing factors that affect fair housing choice in Palmdale.

D.4.1 Insufficient and Inaccessible Outreach and Enforcement

Although the City is improving on the variety of media it uses for outreach, there are limitations to what the City is able to accomplish especially marketing to the specific targeted areas in the City. Outreaching to all populations in the City is challenging especially with being able to provide information and assistance to special needs households. The City also has limited funds that it can provide to support fair housing enforcement and or to help combat discrimination toward persons with disabilities.

Contributing Factors:

- Lack of marketing community meetings
- Lack of targeted outreach
- Lack of local public fair housing enforcement
- Lack of resources for fair housing agencies and organizations

D.4.2 Segregation and Integration

The analysis found that the cost of home ownership within the City could be unattainable for a lot of residents and could cause a lot of economic pressure especially for low and moderate income households. Also, within communities finding and accessing affordable rental housing can be difficult even with lower median rents. In addition, the downtown area of Palmdale shows patterns of segregation, with concentrated population of single female-headed households with children and low- and moderate-income households. As discussed previously, a majority of the units selected to meet the City's RHNA are located in block groups where more than 80 percent of the population belongs to a racial or ethnic minority group, including 81 percent of lower income units and 85.9 percent of moderate income units. Most RHNA units are also located in tracts that are considered LMI areas and tracts where more than 20 percent of children live in female-headed households. The City's RHNA strategy, however, does not disproportionately place lower income units in LMI areas when compared to moderate income units. It is important to note that most areas in the City have higher concentrations of racial/ethnic minority and LMI populations. There are also census tracts that are R/ECAPs and coincide with the tracts that have a concentration of HCV users.

Contributing Factors:

- Lack of private investments in specific neighborhoods
- Lack of public investments in specific neighborhoods, including services or amenities
- Location and type of affordable housing

D.4.3 Access to Opportunities

TCAC composite scores identified several areas of high segregation and poverty within the City. The majority of the areas in the City not of high segregation and poverty were classified as low resource. The majority of these areas also have very low access to job opportunities resulting in low economic outcomes. The tracts of high segregation and poverty were also identified as an SB 535 "disadvantaged community."

Because a majority of the City is categorized as low resource and high segregation and poverty, a majority of units selected to meet the City's RHNA are also in tracts with these designations. RHNA units are generally located in the central areas of the City where high segregation and poverty tracts are more concentrated. More than 50 percent of all RHNA units are in areas of high segregation and poverty including 42.4 percent of lower income units and 71.6 percent of moderate income units.

Contributing Factors:

- Lack of private investments
- Lack of public investments in specific neighborhoods, including services or amenities
- Lack of access to local jobs

D.4.4 Racially and Ethnically Concentrated Areas of Poverty

Following the patterns found in regards to other issues, residents in Palmdale, specifically central Palmdale near downtown, are likely to experience housing problems. Cost burdened renter and owner households are concentrated in these areas. Older housing and overcrowded households are also most concentrated in the downtown area which are areas that are racially and ethnically concentrated areas of poverty. These areas are also identified as sensitive communities at risk of displacement.

Contributing Factors:

- Location and type of affordable housing
- Displacement of residents due to economic pressures
- Lack of private investments in specific neighborhoods

D.4.5 Prioritizing Contributing Factors

While the above factors all contribute to fair housing concerns in Palmdale, for the purpose of the Housing Element, some factors are prioritized over others as shown in Table 42: Summary Matrix of Fair Housing Issues and Actions for Mitigation.

City Council Staff Report

DATE: **SEPTEMBER 21, 2022**

TO: **HONORABLE MAYOR AND CITY COUNCIL**

FROM: **CITY MANAGER'S OFFICE**
CITY ATTORNEY

DISTRICT: **ALL**

SUBJECT: **ADOPT RESOLUTION NO. CC 2022-103, A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF PALMDALE, CALIFORNIA, ESTABLISHING THE NORMS AND PROCEDURES FOR THE COUNCIL'S CONDUCT OF PUBLIC BUSINESS**

ISSUE

Adopt Resolution No. CC 2022-103, a Resolution of the City Council of the City of Palmdale, California, establishing the norms and procedure for the Council's conduct of public business.

RECOMMENDATION

Staff recommends that the City Council adopt Resolution No. CC 2022-103.

BACKGROUND

In 2021, the City Manager directed staff to prepare a draft Code of Conduct for City Council public business. Staff surveyed several cities to obtain their rules and standards for the operation of their City Council meetings. It is recognized that establishing norms and procedures for the Council's conduct of public business is essential to local government. It strengthens the faith and confidence of the people of the city in their governing body and ensures efficient City Council meetings.

DISCUSSION

Staff recommends Council discussion and adoption of the norms and procedures provided in attached Resolution No. CC 2022-103. The purpose of these Norms and Procedures is to promote communication, understanding, fairness, and trust among the members of the City Council and staff concerning their roles, responsibilities, and expectations for management of the business of the City of Palmdale.

FISCAL IMPACT

There is no fiscal impact.

STRATEGIC PLAN

Goal II: Ensure long-term fiscal health of the City and maintain funding for services.

C. Involve and expand engagement to enhance public oversight and transparency.

Prepared by:	Ronda Perez, Interim City Manager
Certified as to availability of Funds:	Janelle Samson, Director of Finance
Approved by:	Ronda Perez, Interim City Manager
Approved as to form:	Scott E. Porter, Interim City Attorney

ATTACHMENTS

1. Resolution No. CC 2022-103

CITY COUNCIL
CITY OF PALMDALE, CALIFORNIA
RESOLUTION NO. CC 2022-103

A RESOLUTION OF THE CITY COUNCIL OF THE CITY OF PALMDALE, CALIFORNIA, ESTABLISHING THE NORMS AND PROCEDURES FOR THE COUNCIL'S CONDUCT OF PUBLIC BUSINESS

RECITALS

A. It is the intent of the City Council to conduct its business in an orderly and fair manner.

B. There are basic rights of due process and opportunity to address issues with equity, fairness and equal protection of the law.

C. Certain parliamentary procedures have been found to be useful in order to assure that the communication and process of government are fair, reasonable and just.

D. The City has a duty to proceed with the business of government in an efficient and orderly fashion.

E. The Council desires to establish uniform norms and procedures in order to accomplish these goals.

F. The Council recognizes that these norms and procedures are guidelines intended to reflect common sense.

G. City Council is defined to include City Council Members, the Mayor Pro Tem and the Mayor.

NOW, THEREFORE, THE CITY COUNCIL OF THE CITY OF PALMDALE, CALIFORNIA, DOES RESOLVE AS FOLLOWS:

SECTION 1. The above recitals are true and correct and are a substantial part of this resolution.

SECTION 2. Act in the Public Interest

A. Council Members and staff recognize that stewardship of the public interest must be the primary concern and shall work for the common good of the entire Palmdale community.

B. Council Members strive to assure fair and equal treatment of all persons, claims, and transactions coming before the City Council, Commissions and Boards.

SECTION 3. Advocacy

A. Council Members shall represent the official policies or positions of the City Council when designated as delegates for this purpose.

B. As officials elected to nonpartisan office, when representing an individual opinion or position, Council Members will explicitly state they do not represent the City Council of the City, nor should allow the inference that they do.

SECTION 4. Role of the Mayor

A. Authority of the Chair

1. The Mayor, subject to the appeal of the majority of the City Council, shall have the authority to streamline the business of the Council by either seeking clarification of motions that appear to be out of order or by ruling any such motions out of order. In so ruling, the Mayor should be courteous and fair, and should presume that the moving party is acting in good faith. Any Council Member may bring forward an appeal on the procedural process of conducting the City Council meeting.

2. The Mayor's position is as a leader among equals; the City Manager goes to the Mayor as the duly selected representative leader of the City Council.

B. Mayor to Facilitate Council Meetings

1. The Mayor is the presiding officer at all City Council meetings. In the Mayor's absence, the Mayor Pro Tem shall be the presiding officer.

2. All questions and remarks from the Council should be addressed to the Mayor.

3. The Mayor shall decide all questions of order, subject, however, to an appeal to the Council.

4. The Mayor shall recognize the Council Members, City Manager, and speakers desiring to provide public comment. The Mayor should allow other Council Members to speak first on items before the Council and then the Mayor shall comment.

5. The Mayor should not permit unauthorized remarks from the audience including applause, stamping of feet, whistles, yells or shouting, and/or similar demonstrations.

6. The Mayor shall designate a time limit for public comment based after considering the number of speakers desiring to speak on a particular matter. Upon expiration of that time limit, the Mayor should inform the speaker that time has expired and promptly move on to the next speaker or issue on the agenda.

7. Mayor should not engage in back-and-forth conversation with speakers.

8. If a speaker becomes abusive, boisterous, or discourteous, an immediate declaration may be made by the Mayor that the Council is in recess. Upon reconvening the meeting, if the prior speaker attempts to resume, the speaker can either be informed that the speaking opportunity has expired or be allowed to complete the balance of the time remaining for the speaking opportunity.

9. The Mayor should manage the agenda in a manner that seeks to move the meeting along. The Mayor may call for a short recess during a Council meeting when deemed necessary.

10. The Mayor will represent the City and the majority opinion of the Council on all actions/positions taken by the Council.

SECTION 5. Role of the Mayor and City Council and Council Ad Hoc Committees

A. City Council Conduct in General

1. Council Members should treat everyone with courtesy. Council Members should allow room for dialogue with each other. When discussing an agenda item, Council Members should allow the opportunity to dialogue with each other to build consensus on an item. Any Council Member shall have the right to express dissent from, or protest to, or comment upon, any action of the Council, and have the option to enter the reason into the minutes, such as "I would like the minutes to show that I am opposed to this action for the following reasons..."

2. Once a vote is taken on an issue, Council Members should support the decision made by the Council. If a Council Member who voted in favor of the decision, whether the decision was to approve or deny, wants it to be reconsidered, that Council Member should make a motion at the meeting where the decision is made or at the next regular meeting request agendizing the matter for reconsideration. A Council Member voting in the minority is not entitled to make a motion to reconsider. When possible, the Council should attempt to reach consensus on an issue. When this is not possible, the majority vote shall prevail. However, the Council should respect the opinion of the minority.

3. During a vote by acclamation, in the event a Council Member does not verbally indicate their position and do not vocalize their abstention, the vote shall be recorded as if they acquiesced to the motion.

4. Council Members should publicly share substantive information, which they may have received from sources outside the public decision-making process, which is relevant to a matter under consideration by the Council and Commissions.

B. City Council Conduct with Staff

1. Council Members should always feel free to speak directly with the City Manager on matters of interest or concern.

2. Council Members should respect and adhere to the City's form of government, which is a Charter City operating under a Council-Manager form of government, with the City Council acting as the legislative body of the City. Council is the visionary policy maker; the City Manager is responsible for implementation of Council majority policies.

3. Council directs the City Manager to implement Council policy decisions through the administrative functions of the City.

4. When possible, Council Members should seek answers to questions on an item on the agenda from the City Manager prior to the meeting. Council Members are also encouraged to let the City Manager know of questions that will be asked publicly or during the Council Meeting to allow staff an opportunity to be prepared to give a response.

5. With the exception of closed session discussions permitted by the Brown Act, Council Members will not get involved in personnel issues. This includes hiring, firing, promoting, disciplining; and all other forms of personnel matters, which are the responsibility of the City Manager. If a Council Member is unhappy about a department or an employee, the Council Member may discuss the situation with the City Manager. Council Members should treat staff professionally, refrain from public criticism of an individual employee, and avoid involvement in administrative functions.

6. To be consistent with requirements of the California Fair Political Practices Commission (FPPC), individual Council Members must not use their influence to impact a decision on a matter or project for which they have a conflict of interest. Individual Council Members must not discuss or meet with the City Manager, staff, or Commissioners about projects or issues in which the Council Member has a conflict of interest.

7. To preserve the highest degree of public trust and consistent with the requirements of California State Law, including Assembly Bill 1234 (2005) regarding ethics training, individual council members will adhere to laws and guidelines regarding ethical use of public resources, particularly pertaining to personal, political or other purposes not authorized by state law, and to transparency, disclosure and reporting requirements.

C. City Council Conduct with the Public

1. Council Members should make the public feel welcome and should listen courteously and attentively to all public comments before the Council without partiality, prejudice or disrespect.

2. Council Members should make no promises to the public on behalf of the City Council and avoid debating issues with members of the public.

D. City Council Conduct with Other Agencies, Entities and the Public

1. Council Members should project a positive image of the City when dealing with other agencies, entities and the public at large.

2. Council Members should be clear about representing the City or personal interests to members of other agencies. Individual Council Members can lobby or discuss with other legislators, government officials, or developers, issues that have been adopted by the Council or are Council policy; they should not represent themselves as the City if it is only an individual issue.

3. Council Members should show tolerance and respect for other agencies' opinions and issues, and agree to disagree with them when necessary.

E. City Council Conduct with Boards & Commissions

1. Council should treat all members of the Boards & Commissions with appreciation and respect.

2. Commissioners or Committee members may address the Council on items discussed by their respective bodies, but this should be limited to the chair or a representative appointed by the Commission or Committee, and should be done only when asked by the majority of the Commission or Committee. This will not take precedence over any individual's first amendment right to address the Council as an individual.

F. City Council Conduct with the Media and on Social Media

1. Council Members will refrain from providing "off the record" information (discussing inside information). Providing background information is acceptable.

2. Council Members shall represent the City's official position when speaking on behalf of the City to the media. Individual Council Members should indicate if they are making comments that represents their own opinion and not of the Council majority, particularly on Social Media platforms.

3. Council Members are encouraged to inform the Mayor or City Manager of interviews or comments made to the media about City projects or issues so the City Manager can inform the rest of the City Council of issues that could be of interest.

4. Council Members shall not publicly make false statements, circulate unsubstantiated rumors, or otherwise make statements which, though technically accurate, may be misleading to the public.

G. Obtaining the Floor

1. Any member of the Council wishing to speak must first obtain the floor by being recognized by the Mayor. The Mayor must recognize any Council Member who seeks the floor when appropriately entitled to do so.

2. With the concurrence of the Mayor, a Council Member holding the floor may address a question to another Council Member, and that Council Member may respond while the floor is still held by the Council Member asking the question. A Council Member may opt to not answer a question while another Council Member has the floor.

3. Before the question is called, there shall be an opportunity for all Council Members to speak. Council Members are encouraged to allow room for dialogue in order to build consensus on an item or agree to disagree. When the question is called, no further debate shall occur. A motion is required in the event of an objection to ending the debate.

H. City Council Ad Hoc Committees

1. Council Ad Hoc Committees are temporary committees of fewer than a majority of the Council formed for a specific task or objective. Ad Hoc Committees dissolve upon completion of the task or objective. The role of Council Ad Hoc Committees is to develop program and policy recommendations for the full Council's consideration at meetings of the City Council. The scope of work to be studied by Council Ad Hoc Committees

shall be established by the full Council. Expansion of the scope of work shall return to the full Council for concurrence.

2. Council Ad Hoc Committees will not make final and binding decisions on behalf of the City, nor will they commit the City's financial resources, nor direct staff.

SECTION 6. Role of City Staff

A. City staff will provide written analysis and information on all agenda items prior to the meetings. Additionally, a copy of the materials, including technical reports, will be available to the public.

B. The City Manager and staff will be available to answer questions of individual Council Members prior to and during Council meetings. Staff will respond to questions from the public during City Council meetings when requested to do so by the City Manager. Staff will not debate issues with the public or the Council.

C. Council Members and staff who participate in meetings with other agencies outside the City should be apprised of any follow up correspondence to that party; City Manager and all Council Members should receive a copy of that correspondence.

D. It is staff's role to make recommendations to the City Council based on professional judgment and analysis of issues. The City Manager will implement Council majority direction.

E. The City Manager should inform Council as soon as possible of upcoming issues, particularly issues that will impact the City significantly and may be coming before the Council on short notice.

F. The City Manager should advise management to become aware of, and sensitive to, potentially political or controversial issues coming before the Council.

G. City staff will implement all Council majority policies as directed by the City Manager.

SECTION 7. Role of the Public

A. Members of the public attending the Council meetings should observe the same rules and decorum applicable to the Council and staff.

B. Members of the public wishing to speak during the public participation portion of the City Council meeting shall be limited to the comment time posted on the agenda, or as adjusted by the Mayor before the public comment period. Comments should be completed by the time has expired.

C. All speakers must approach the podium when recognized by the Mayor. Members of the public shall only speak from the podium and shall address comments to the Mayor and not to staff or to members of the audience.

D. Applause, stamping of feet, whistles, yells, or shouting, and/ or similar demonstrations are unacceptable public behavior, and impede speakers' ability to be heard during their limited speaking time. Applause is allowed during the Presentation section of the agenda.

E. Members of the public should not make any defamatory and/or slanderous remarks regarding public officials or City staff, or become boisterous while addressing the Council or while attending the Council meeting in a manner that impedes the City Council's ability to conduct an orderly meeting. However, the public is not prohibited from criticizing policies, procedures, programs and/or services of the City or acts or omissions of the Council Members in carrying out their respective responsibilities as public officials.

F. Members of the public should turn off or switch to silent mode any electronic equipment, pagers and cellular telephones while attending a City Council meeting

G. Members of the public shall not approach individual Council Members while the meeting is in progress.

H. If a member of the public desires to provide written materials (10 copies recommended) to the Council during a Council meeting, all such materials shall be given directly to the City Clerk. At no time shall the public provide the materials directly to members of the Council during a Council meeting.

SECTION 8. Council Requests

A. All Council requests dealing with policy issues, and those requests which may be construed as direction, go through the City Manager. Council should not direct employees. Council Members can make general inquiries for information of staff and should copy or notify the City Manager of such inquiries. If the City Manager determines that a request by an individual Council Member of City Manager or staff requires creation of reports or undertaking of analysis that will involve a significant amount of time, the individual Council Member shall be advised to make the request of the entire Council at an agendized meeting.

B. Any request from City Council requiring financing must go through the City Manager.

C. The City Attorney undertakes legal work at the request of a majority of the City Council, the City Manager, and Department Heads or their designees. Individual

Council Members may contact the City Attorney concerning conflicts of interest. Individual Council Members may also request legal opinions and advice of the City Attorney, provided that such work does not require more than 1/2 hour to complete. The results of such work will be shared with all Council Members, only if applicable to the City Council or future item to be considered by the City Council. If the work is anticipated to require more than 1/2 hour to complete, the City Attorney will so advise and the Council Member can make the request of the entire Council at an agendized meeting.

SECTION 9. Presentations and Events

A. Council Member presentations during a Council meeting are limited to the item or issue being deliberated, with the exception of Council Comments. To ensure that the appropriate presentation equipment is available and time is provided on the agenda, Council Members shall inform the Mayor and provide the City Manager advance notice of the intent to make a presentation. Presentations by individual Council Members regarding an item on the agenda that include a video, PowerPoint, or other visual aids are limited to the same time frame as public comments. Individual Council Members will provide a copy of the presentation to the full City Council at least twenty-four hours in advance of the meeting.

B. All Council Members will be informed and invited to events, activities, groundbreakings, ribbon cuttings, etc., that acknowledge a Citywide accomplishment. The Mayor should preside at each event on behalf of the City Council and should work with the City Manager to determine who should speak at each event. If the Mayor is not available, to preside at an event, the Mayor Pro Tem should preside. Council Members may preside at an event if the Mayor and Mayor Pro Tem are not available.

C. During public presentations, the Mayor, and, if the Mayor deems appropriate, a Council Member who was highly involved in the project, should represent the City.

SECTION 10. Council Agenda

A. The City Manager is responsible for setting the agenda for Council Meetings. The City Manager will consult with the Mayor and council members on a draft agenda prior to posting. Additionally, during a Council meeting, any Council Member or the Mayor can put items on a future agenda, with a verbal majority of the Council.

B. Consistent with requirements of the Brown Act, the Mayor or majority of the Council may call a special meeting. A council member may request the City Manager determine if a majority of the Council would like a special meeting called.

C. Either the City Manager, staff or Council Members can present agenda topics.

D. The City Manager should try to research ahead of time any controversial agenda item, what the issues might be, and try to avoid any "surprise" conflicts. In a democratic process it should be recognized that sometimes this is unavoidable.

E. Council Members will be given sufficient lead and preparation time for reviewing agendas. If an individual Council Member feels that they have not been given sufficient time to review the agenda and materials, the Council Member can ask the Council to continue the item. An item can be continued with a majority vote.

F. Correspondence received by a Council Member or City staff regarding an agenda item should be forwarded to the City Clerk and City Manager to be retained as part of the record and for distribution to the Council and public.

G. Direction provided at Council meetings should be in the form of a motion or by consensus. Individual direction provided by a Council Member during a meeting will be evaluated by the City Manager.

H. If Council members request additional information on an agenda item after the agenda is posted, Staff will include the information in its presentation during the Council meeting and provide copies to the Council and the public.

SECTION 11. Public Correspondence

A. City letterhead with all Council Member names should be used for responses to policy issues.

B. The Mayor may use City letterhead to sign a letter on behalf of the City if such correspondence is authorized by the City Council.

C. City letterhead with City seal only should be used by individual Council Members for responses to constituent letters, so long as it is not a policy issue, or as long as the Council Member indicates it is an individual opinion not the policy of the Council.

D. Council Members should respond to an e-mail inquiry if they are comfortable with the Council's policy and stand on the issue; if not, Council Members are free to refer an email inquiry to the City Manager.

E. Council Members are encouraged to forward email correspondence, and phone calls and their responses, to the City Manager or designee who will monitor responses and track the request, suggestion, issue, etc.

SECTION 12. Closed Session Confidentiality

A. All matters discussed and information presented during closed sessions shall be private and confidential, and the disclosure by any person of the topics or details of such matters is expressly prohibited unless approved in advance by a majority of the City Council.

B. Although the City Attorney may take minutes of the meeting, other notes in closed session should not be taken; however, if a Council Member feels it is necessary, then only cursory notes should be permitted. Council Members will return written documents to staff at the end of each closed session.

SECTION 13. Compliance and Enforcement

A. Council Members have the primary responsibility to ensure that ethical standards are understood and met by the Council, and that the public can continue to have full confidence in the integrity of government.

B. It is the role of the Mayor and the Council to intervene when actions of members are in violation of the standard norms and procedures.

SECTION 14. Administration

A. The Council may review and revise the City Council norms and procedures as needed by amendment of this resolution.

B. During City Council discussions, deliberations, and proceedings, the Mayor, Mayor Pro Tem, and council members have been equally designated to ensure checks and balances with the primary responsibility to ensure that Council Members, staff and members of the public adhere to the Council's norms and procedures.

SECTION 15. Certification. The City Clerk shall certify to the passage and adoption hereof. The City Clerk shall provide a copy of this resolution to all newly elected Council Members.

/
/
/
/
/
/
/
/

PASSED, APPROVED and **ADOPTED** this 21st day of September, 2022.

Approved as to form:

Steven D. Hofbauer, Mayor

ATTEST:

Scott E. Porter
Acting City Attorney

Shanae S. Smith, City Clerk

I, Shanae S. Smith, City Clerk of Palmdale, California, do hereby certify that the foregoing resolution was duly passed, approved, and adopted by the City Council of the City of Palmdale at a regular meeting of said Council held on the 21st day of September 2022 by the following roll call vote:

AYES: _____

NOES: _____

ABSTAIN: _____ ABSENT: _____

Date: _____ _____

Shanae S. Smith, City Clerk