City of Winters Planning Commission
Teleconference Meeting
Tuesday, August 23, 2022, 6:30 PM

AGENDA

Community Development Department
Contact Phone Number (530) 794-6714
Email: kirk.skierski@cityofwinters.org

Chairperson: Gregory Contreras
Vice Chair: Lisa Baker
Commissioners: Ramon Altamirano, Judith Arce
Nancy Northrup
Chris Rose
Jessica Smith

Kathleen S. Trepa, City Manager
Senior Planner, Kirk Skierski
Ellena Branson, Deputy City Clerk

PLEASE NOTE – The numerical order of items on this agenda is for convenience of reference. Items may be taken out of order upon request of the Planning Commission Chair, Commissioners, or City staff. Public comment is limited to 3 minutes, and speakers will be asked to state their name and address.

Meeting Information:

https://us02web.zoom.us/j/88184650967?pwd=WktNZXZEdHNuQlVXYkFETTBoVUtxQT09
Meeting ID: 881 8465 0967
Passcode: 892134

1. Call to Order: City of Winters Planning Commission Meeting

2. ROLL CALL

3. PLEDGE OF ALLEGIANCE

4. PUBLIC COMMENTS
   At this time, any member of the public may address the Planning Commission on matters, which are not listed on this agenda. Citizens should reserve their comments for matters listed on this agenda at the time the item is considered by the Planning Commission. An exception is made for members of the public for whom it would create a hardship to stay until their item is heard. Those individuals may address the item after the public has spoken on issues that are not listed on the agenda. Presentations may be limited to accommodate all speakers within the time available. Public comments may also be continued to later in the meeting should the time allotted for public comment expire.

5. APPROVAL OF AGENDA

5.1 Minutes from the Regular Meeting of the Winters Planning Commission from July 26,

2022
20220726 Minutes.docx

6. PUBLIC HEARINGS

6.1 Site Plan/Design Review Grocery Outlet Project (APN 038-070-035)
Staff_Report_Design_Review_Grocery_Outlet
Att1_Resolution_2022_09
Att2_Plan_Set
Att3_Transportation_Study

6.2 128 Hall & Kitchen Patio Addition (DR-2022-02)
Staff_Report_DR_128Hall
Att1_Resolution_2022_12
Att2_Plan_Set

6.3 Public Hearing 966 Culton Street Vacation Rental Property (STR-2022-03)
Applicant withdrew application, no action needed.

6.4 Public Hearing 972 Culton Street Vacation Rental (STR-2022-04)
Applicant withdrew application, no action needed.

6.5 Site Coverage – Public Hearing and Consideration by the Winters Planning Commission of Proposed Amendments to the Definition of Site Coverage
Staff_Report_Site_Coverage_Definition_Amendment
Resolution2022_08

7. PRESENTATIONS

8. STAFF COMMENTS/INFORMATION ITEMS

9. COMMISSION COMMENTS/REPORTS
Under Government Code Section 54952.2, may include: (1) a brief announcement; (2) a question for clarification; (3) a brief report on his or her own activities; (4) request staff to report back to the body at a subsequent meeting concerning any matter, or (5) take action to direct staff to place a matter of business (or issue) on a future agenda.

10. ADJOURNMENT
I declare under penalty of perjury that the foregoing agenda for the regular meeting of the Planning Comission was posted on the City of Winters website at www.cityofwinters.org and Commission Members were notified via e-mail of its' availability. A copy of the foregoing agenda was also posted on the outside public bulletin board at City Hall, 318 First Street , and made available to the public during normal business hours.

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APPEALS: Any person dissatisfied with the decision of the Planning Commission may appeal this decision by filing a written Notice of Appeal with the City Clerk including payment of the applicable Appeal fee, no later than ten (10) calendar days after the day on which the decision is made.

Pursuant to Section 65009 (b) (2), of the State Government Code "If you challenge any of the above projects in court, you may be limited to raising only those issues you or someone else raised at the public hearing(s) described in this notice, or in written correspondence delivered to the City Planning Commission at, or prior to, this public hearing".

MINUTES: The City does not transcribe its proceedings. Anyone who desires a verbatim record of this meeting should arrange for attendance by a court reporter or for other acceptable means of recordation. Such arrangements will be at the sole expense of the individual requesting the recordation.

PUBLIC REVIEW OF AGENDA, AGENDA REPORTS, AND MATERIALS: Prior to the Planning Commission meetings, copies of the Agenda, Agenda Reports, and other material are available during normal working hours for public review at the Community Development Department. In addition, a limited supply of copies of the Agenda will be available for the public at the meeting. Copies of Agenda, Reports and other material will be provided upon request submitted to the Community Development Department. A copy fee of 25 cents per page will be charged.

Any member of the public may submit a written request for a copy of Planning Commission Agendas to be mailed to them. Requests must be accompanied by a check in the amount of $25.00 for a single packet and $250.00 for a yearly subscription.

OPPORTUNITY TO SPEAK, AGENDA ITEMS: The Planning Commission will provide an opportunity for members of the public to address the Commission on items of business on the Agenda; however, comments are limited to three minutes.

REVIEW OF TAPE RECORDING OF MEETING: Planning Commission Meetings are recorded. Recordings are available for public review on the City of Winters website.

GENERAL NOTES: Meeting facilities are accessible to persons with disabilities. To arrange aid or services to modify or accommodate persons with a disability to participate in a public meeting, contact the City Clerk.

Minutes of the Regular Meeting of the Planning Commission
Held July 26, 2022, 6:30pm Via ZOOM

Chairman Gregory Contreras called the meeting to order at 6:30pm.

Roll Call

Present:	Commission Members Altamirano, Arce, Northrup, Rose, Chair Contreras
Absent:	Commissioner Smith and Vice Chair Baker

Staff: Senior Planner Kirk Skierski, Deputy City Clerk Ellena Branson, City Manager Kathleen Salguero Trepa, Assistant City Attorney Martin de los Angeles

PLEDGE OF ALLEGIANCE:
Led by Commissioner Northrup

PUBLIC COMMENTS:
None

APPROVAL OF AGENDA:
5.1. June 28,2022 Minutes
5.2. Minutes from the regular meeting of May 24, 2022

Motion by Altamirano to approve the agenda, second by Commission Member Northrup. The motion carried with the following roll call vote:

AYES: Commission Members Altamirano, Arce, Rose, Northrup, Chair Contreras
NOES: None
ABSENT: Vice Chair Baker, Commission Members Smith
ABSTAIN: None

Motion to accept minutes by commissioner Altamirano, second by Commissioner.
AYES: Commission Members Altamirano, Arce, Rose, Northrup, Chair Contreras
NOES: None
ABSENT: Vice Chair Baker, Commission Members Smith
ABSTAIN: None

PUBLIC HEARINGS:

Commissioner Arce recused from the item due to a conflict of proximity within 500ft of the project.

6.1. Winters Highlands – Public Hearing and Consideration by the Winters Planning Commission of the Proposed First Amendment to Amended and Restated Development Agreement between the City of Winters, HBT of Winters Highlands LLC and Meritage Homes of California, Inc.

Item introduced by Senior Planner Skierski
Public hearing opened at 6:38pm
Kate Laddish inquired about the development agreement potentially increasing the affordable housing incorporated.
Public hearing closed at 6:40pm

Senior Planner Skierski provided more information on the public comment provided by Kate Laddish.

Commissioner Altamirano inquired about the allocation of flood fees.

Motion by Commissioner Altamirano to Adopt Planning Commission Resolution No. PC 2022-07 recommending that the Winters City Council adopt an ordinance approving the First Amendment to Amended and Restated Development Agreement for development of the property commonly known as the Winters Highlands property between the City of Winters and HBT of Winters Highlands, LLC and Meritage Homes of California, Inc. pursuant to Government Code sections 65864 through 65869.5., second by Commission Member Northrup. The motion carried with the following roll call vote:

AYES:	Commission Members Altamirano, Rose, Smith, Vice Chair Baker, Chair Contreras
NOES:	None
ABSENT:	Vice Chair Baker, Commissioner Smith
ABSTAIN:	Commissioner Arce

MISCELLANEOUS
None

PRESENTATIONS
None

STAFF COMMENTS/INFORMATION ITEMS
None

COMMISSION COMMENTS/ REPORTS

ADJOURNMENT
Meeting end time 6:50pm

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Ellena Branson, Secretary

Planning Commission
Staff Report

To: Chair and Planning Commissioners

Date: August 23, 2022

From: Kirk Skierski, Senior Planner

Subject: Site Plan/Design Review Grocery Outlet Project (APN 038-070-035)

Recommendation:

That the Planning Commission conduct a public hearing on the Grocery Outlet project and adopt Resolution 2022-09 thereby taking the following actions:

1. Determine the proposed Grocery Outlet project to be categorically exempt from the California Environmental Quality Act (CEQA) pursuant to Section 15332 of the CEQA Guidelines; and

2. Approve the Site Plan/Design Review and Sign Permit for the Grocery Outlet project based on the recommended findings and subject to the draft conditions of approval.

Project Description

The applicant is requesting site plan and design review approval for the construction of a 16,000 square foot grocery store with 64 onsite parking spaces. In addition, the applicant is requesting approval of a sign permit for two wall signs totaling no more than 102 square feet (combined).

Location

The project site is an undeveloped parcel directly southeast of the E. Main Street and Grant Avenue intersection. The project is located at APN 038-070-035 (no assigned address), see Figure-1 below for a “Vicinity Map”.

Project Site Information

General Plan Designation:	Neighborhood Commercial (NC)
Zoning District:	Neighborhood Commercial (C-1)
Parcel Size:	~4.4 acres

Discussion/Analysis

Background:

The project site is undeveloped and located on the southeast corner of the E. Main Street and Grant Avenue intersection. The project site is located within the planning areas for the Grant Avenue Design Guidelines and the Grant Avenue Complete Streets Concept Plan. The surrounding properties consists of the following uses:

- North: Vacant
  - City is currently processing a project proposing residential and commercial uses (Farmstead Subdivision Project)

- East: Vacant;
  - Zoned B-P (Business Park)
  - Formerly residential, residential dwelling has been removed

- South: Residential subdivision

- West: Vacant
  - Zoned C-1 (Neighborhood Commercial)

Figure-1 Vicinity Map



Project Description

The applicant is requesting Site Plan and Design Review approval for the construction of a 16,000 square foot grocery store with 64 onsite parking spaces, and a Sign Permit for two wall signs totaling 102 square feet located at APN 038-070-035. The applicant has identified that the building tenant is anticipated to be Grocery Outlet. The Grocery Outlet building would occupy the northerly 2.29 acres of the 4.44-acre parcel directly adjacent to Grant Avenue, or State Route 128 (SR-128), on the north.

The Grocery Outlet building would consist of a 16,000 square foot box store with a flat roof varying in height. The proposed roof heights are 30' to the top of the entry tower, 26' to the top of the brick parapet, and 24' to the top of the parapet. The building materials include stucco, horizontal wood cladding, brick veneer, split-face CMU, and galvanized corrugated metal siding. The building would also include metal canopy and awnings for window treatment and decorative metal grid framing for additional siding treatment. The Grocery Outlet building would include a loading dock and trash and recycling enclosure on the east elevation facing McClish Lane, windows with awnings and a wall sign on the north elevation facing Grant Avenue, and a prominent entry feature into the building on the west elevation facing E. Main Street. The project would construct driveways and be accessed via Grant Avenue and E. Main Street. In addition, staff is recommending an additional site access driveway be constructed via East Baker Street to allow for patrons to travel southwest on E. Main Street. The project would include frontage improvements, roadway upgrades including pedestrian and bicycle improvements, landscaping, and a trash and recycling enclosure. Figures 2-6 below show the proposed site plan and building elevations. Please see Attachment #2 for further details relating to the Grocery Outlet project plan set.

Figure-2 Proposed Site Plan

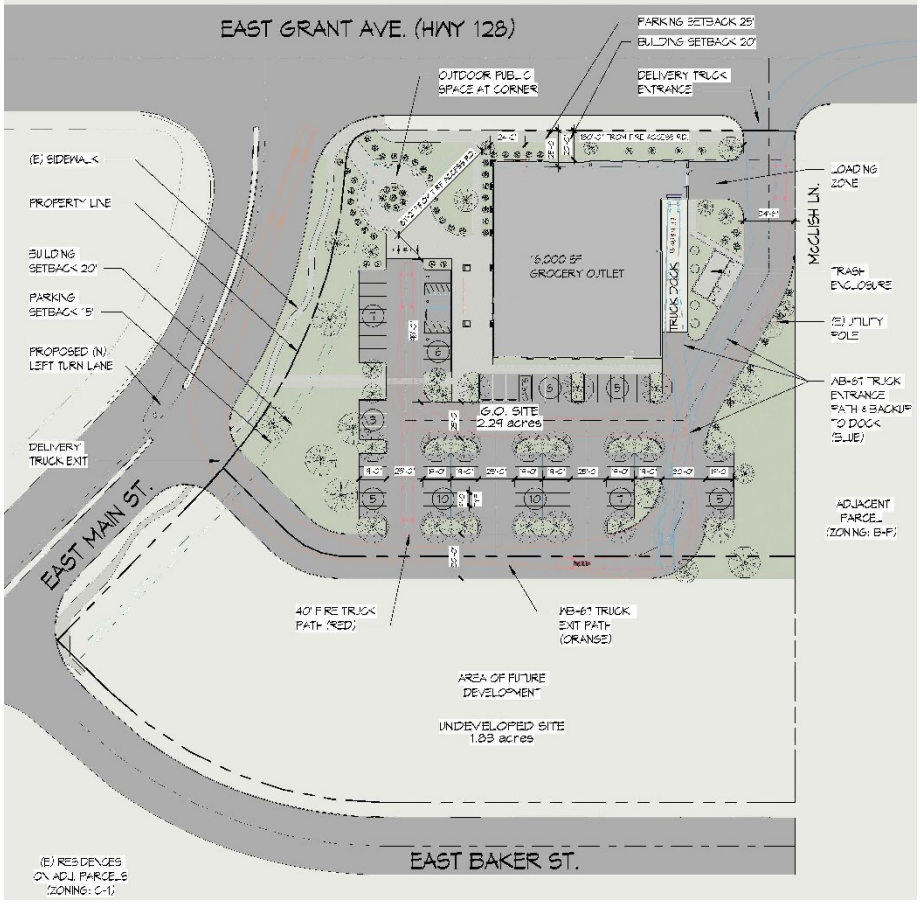


Figure-3 South Elevation (top) and West Elevation (bottom)



Figure-4 North Elevation (top) and East Elevation (bottom)



Figure-5 Southeast View from Grant Ave/E. Main St



Figure-6 Southwest View from McClish Lane



Design Review

In evaluating a Design Review request, the primary focus is the overall design including location, screening, quality of building materials, compliance with the City's design guidelines, and compatibility of the proposed project with the site and surroundings to maintain and enhance the visual character of the area. Design Review does include analysis of onsite circulation and the adjacent public right-of-way. The Planning Commission may approve a Design Review application, with or without conditions, only if findings of compliance with the requirements of Section 17.36.040 of the Winters Municipal Code can be made, which are outlined below:

- The overall visible mass of the structure, which includes height, roofline profiles and overall scale of a building;

- The proposed use and quality of exterior construction materials striving for long-term compatibility with the general setting of the subject property and visual character of the general neighborhood;

- Avoidance of buildings which are characterized by large, blank, or unbroken wall planes, as well as buildings which exhibit general lack of architectural detailing, shadow lines, etc. which generally lack interest;

- Effective screening of ground – and – roof mounted equipment;

- The use of landscaping decorative site paving, etc. which provides effective visual screening or softening of the development, as necessary; and

- Achieve conformity with the Winters Design Guidelines, Form-Based Code for Downtown (Chapter 17.58), and the Grant Avenue Design Guidelines, as applicable.

Design Guidelines and Grant Avenue Design Guidelines

The City's Design Guidelines are intended to provide direction for future development to retain Winters small-town character and enhance the overall visual aesthetic of the community. The design guidelines are intended to encourage high-quality architectural and development design. The guidelines encourage small-scale buildings with a strong architectural orientation. In addition, the Grant Avenue Design Guidelines places an emphasis on quality design along Grant Avenue because it is the gateway into Winters, essentially setting the standard of visual aesthetic for Winters. The guidelines are not intended to be a rigid set of regulations; rather, they are intended to help interpret current policy documents and to provide an overview of the small-town character the community wished to maintain, and which makes Winters a wonderful place to live.

In addition, the City's Design Guidelines and the Grant Avenue Design Guidelines provide focused design and aesthetic goals for the Grant Avenue corridor directly adjacent to the project site. Both the Design Guidelines and the Grant Avenue Design Guidelines put an emphasis on building location and orientation to ensure structures adjacent to Grant Avenue to reinforce the street as a focus of pedestrian-oriented activity. The design guidelines encourage commercial and office land uses that incorporate pedestrian and bicycle infrastructure in the adjacent public right-of-way. Furthermore, the design guidelines encourage architecture to be human-scaled including variation in facades, architectural details, roof lines, and finishes. The Grant Avenue Design Guidelines places an emphasis on development to create attractive public spaces and visual elements that represent Winters' heritage and character.

The proposed building design includes elements of the Blue Mountain Terrace Senior apartments, the Yolo Federal Credit Union building, and the Winters Healthcare building. The use of brick, stucco and metal veneers reflect both the history of the downtown and the city's agricultural heritage. The proposed building materials, colors, and design of the Grocery Outlet building would maintain the existing character of the

Grant Avenue gateway corridor.

It is staff's opinion that the proposed Grocery Outlet project is consistent with the City's Design Guidelines and Grant Avenue Design Guidelines for the following reasons:

- Building location and orientation directly adjacent to Grant Avenue engages the street and appropriately screens the onsite parking area;

- The proposed building materials and colors are similar to previously approved development projects (e.g. Blue Mountain Terrace apartments, YFCU building, and Winters Healthcare) to ensure aesthetic consistency of the Grant Avenue gateway corridor;

- The project is proposing a publicly-accessed courtyard with paved walkways and landscaping on the corner of Grant Avenue and E. Main Street to assist with massing of the building and create a community gathering space;

- The project would include pedestrian and bicycle infrastructure upgrades to ensure connectivity and alternative modes of travel; and

- The project would include landscaping and sidewalks consistent with the City's adopted standards.

Therefore, staff is recommending that the Planning Commission approve the Grocery Outlet project based on the recommended findings and subject to the recommended conditions of approval. Additional analysis of the site plan design and orientation relating to vehicle traffic, onsite circulation, parking, landscaping, and lighting is provided below.

Traffic

The previous City Engineer contracted with Fehr & Peers to complete a Transportation Study for the Grocery Outlet project. The purpose of the Study was to evaluate the project effects on vehicle miles traveled, and a traffic operations analysis on roadway facilities within the vicinity of the project site. The Transportation Study is included as Attachment #3.

SB 743 was signed into law in 2013 and was intended to update the way transportation impacts are measured in California for new development projects. Beginning on July 1, 2020, agencies analyzing the transportation impacts of new projects must now look at a metric known as vehicle miles traveled (VMT) instead of level-of-service (LOS). To aid in SB 743 implementation, the Governor's Office of Planning and Research (OPR) released a Technical Advisory on Evaluating Transportation Impacts in CEQA (Technical Advisory) in December 2018. The Technical Advisory provides advice and recommendations to CEQA lead agencies on how to implement SB 743 changes. This includes technical recommendations regarding the assessment of VMT, thresholds of significance, VMT mitigation measures, and screening thresholds for certain land use projects.

State CEQA Guidelines Section 15064.3, subdivision (b) outlines criteria for analyzing transportation impacts using VMT. For land use projects, VMT exceeding an applicable threshold of significance may indicate a significant impact. The City of Winters has not formally adopted guidance or thresholds related to VMT impact analysis (i.e., tailored screening criteria, preferred metrics and calculation methods, and use-specific thresholds). Due to this, the Transportation Analysis relied on guidance from the Technical Advisory. Per the Technical Advisory, the project would result in a significant transportation impact if it would do any of the following:

- Generate vehicle travel exceeding 15 percent below existing regional household VMT per capita for residential uses;

- Generate vehicle travel exceeding 15 percent below existing regional work VMT per employee for employment uses; or

- Include retail development that would result in a net increase in total VMT.

The Technical Advisory identifies “screening thresholds” to quickly identify, without conducting a detailed study, when a project should be expected to cause a less-than-significant transportation impact. As described in the Regulatory Setting section, the Technical Advisory suggests the following projects should be expected to have a less-than-significant impact on VMT:

- Small projects

- Projects near major transit stops

- Affordable residential development

- Local-serving retail

- Projects in low-VMT areas

The Technical Advisory describes new retail development as typically redistributing shopping trips rather than creating new trips. By improving retail destination proximity, local-serving retail tends to shorten trips and thereby reduce VMT. Conversely, regional-serving retail (generally stores larger than 50,000 square feet) can lead to a substitution of longer trips for shorter ones. A review of the project and study area indicates that the project would meet the local-serving retail screening criteria identified in the Technical Advisory. Therefore, a quantitative VMT analysis is not required.

The Transportation Study also included a traffic operations analysis on roadway facilities within the vicinity of the project site, which resulted in recommended revisions relating to onsite circulation and adjacent roadway improvements. These recommendations are discussed further below.

Onsite Circulation and Roadway Improvements

As previously identified, a Transportation Study was completed for the Grocery Outlet project and included analysis of traffic operations on roadway facilities within the vicinity of the project site. The Study included several recommendations to ensure the Grocery Outlet project meets the requirements of the City's adopted standards and requirements, including Caltrans requirements for frontage improvements on State Route 128 (Grant Avenue). The Study's traffic operations analysis recommendations have been incorporated into the recommended conditions of approval and are as follows:

1) Install a high-quality bicycle/pedestrian shared-use-path crossing on the south leg of the Grant Avenue/E. Main Street intersection, including but not limited to, wider ramps and aligning ADA ramps directionally with crosswalks rather than installing diagonal ramps (Condition of Approval #28);

2) An improved shared-use-path crossing shall be installed at the new driveway at Grant Avenue and McClish Lane (Condition of Approval #28);

3) Add bike lane conflict markings where the existing Class II bike lane on East Main Street will cross the new driveway entrance to the Grocery Outlet (Condition of Approval #32);

4) Applicant shall either

    a) 1). Install a new traffic signal at the intersection of Grant Avenue and E. Main Street; or

    b) 2). Extend E. Baker Street to PG&E Way. To address conflicts between westbound left turn vehicles and pedestrians and bicyclists crossing in the proposed south leg crosswalk, the future signal design should include either a leading pedestrian interval phase for the south leg crossing or alternatively install westbound protected left turn phasing (Condition of Approval #25);

5) Applicant shall provide plans showing an additional site access driveway on E. Baker Street to allow vehicles to travel southwest on E. Main Street (Condition of Approval #27);

6) The Grant Avenue project driveway shall be restricted to right-in and right-out access only (Condition of Approval #29; Caltrans requirement);

7) The existing width of E. Main Street is approximately 25 feet between the west curb and raised center median, which would be insufficient to fit the proposed two southbound travel lanes and a bicycle lane based on the City of Winters' standards of 12 feet wide lanes for collector streets and five feet wide bicycle lanes. The report highlights this issue but does not give a specific recommendation on how to address. The Engineering Division is providing the following options to address this issue and at least one option should be selected and included in the Project.

a. The entire width of the existing roadway is approximately 66 feet. If the median is reconstructed and shifted there would be enough width to fit two travel lanes in each direction along with Class II bike lanes. If this option is pursued the recommendation would be to increase the width of the bicycle lanes to either six feet or seven feet with the remaining width being allocated to the reconstructed median. Current bicycle design best practice recommends at least six feet wide Class II bicycle lanes when space is available, to account for gutter pan width along curbs.

b. Widen the East Main Street roadway to accommodate the new southbound left turn lane. Widening the roadway would add significant cost to the project. If the widening option is pursued the recommendation would be to use the opportunity to increase the width of bike lane to six feet. Five feet is considered a minimum and current best practice is to provide at least a six feet bike lane width when practical.

c. Rather than maintain the five feet on street Class II bike lane, the existing sidewalk on either the west or east side could be expanded to between eight to 12 feet to create a shared use pedestrian and bicycle path that would create an alternative safer bike route. This mitigation would require creation of a transition from the Class II on street bike lane to the new Class I bicycle and pedestrian shared-use-path. By transitioning the bike path to sidewalk level this would allow for sufficient space to fit in both the southbound thru and left turn lanes recommended without adjusting the median. This improvement would also provide a safer and more comfortable bicycle facility that connects well with the Class I bicycle and pedestrian share-use-path on East Grant Avenue. This option would also be significantly less expensive than widening the roadway and moving the curb edge.

Zoning Consistency

Staff has conducted a detailed analysis of applicable development standards of the City's Zoning Ordinance. This analysis includes requirements for parking, landscaping, lighting, and bicycle parking. Staff has found the proposed project to be in compliance with the City's Zoning Ordinance. Staff is recommending several conditions of approval relating to final landscaping and lighting plans to be submitted and approved prior to building permit issuance to ensure the City's development standards are adhered to. In addition, bicycle parking requirements is reflected in Condition of Approval #31.

Sign Plan

Winters Municipal Code Section 17.80.045 (Signs permitted in commercial, office, and industrial districts) outlines the requirements for signs in the City's Commercial, Business Park, and Industrial zoning districts. Commercial businesses are permitted one wall sign per building frontage. The project site is a corner lot and adjacent to Grant

Avenue and E. Main Street road frontages, which would allow for two wall signs. Municipal Code Section 17.80.045.B provides the following calculation for determining the maximum allowable square footage for wall signs:

- For buildings with multiple building frontages: one-half square foot of sign area for each ground-level linear foot of primary building frontage and one-quarter square foot of sign area for each linear foot of additional frontage.

The Grocery Outlet building is 135 lineal feet adjacent to the Grant Avenue frontage and 135 lineal feet adjacent to the E. Main Street frontage. This would allow for the following allowances relating to wall signs:

- 0.5 square feet of sign area x 136' building frontage = 68 square feet
- 0.25 square feet of additional sign area x 136' building frontage = 34 square feet
- Total Wall Signs square footage = 102 square feet maximum for combination of both wall signs

The Grocery Outlet project's sign requirements are included as Condition of Approval #18.

The Planning Commission may approve a Sign Plan, with or without conditions, only if findings of compliance with the requirements of Section 17.80.090.D of the Winters Municipal Code can be made, which are outlined below:

- The sign conforms to city ordinance requirements;

- The design conforms to the Winters design guidelines or the Grant Avenue design guidelines;

- The design is compatible with the character and design of the exterior architecture of the building(s) on the property where the sign is to be located;

- The sign will not create a visual or safety hazard; and

- The sign location will not impair use of the subject property, adjacent property, or public right-of-way.

Winters Municipal Code Chapter 17.80 (Signs) provides the provisions and regulations for signage in Winters. It should be noted that there are additional sign requirements within the City's Design Guidelines, Grant Avenue Design Guidelines, and the Downtown Form Based Code. However, the project site it outside of the planning areas of the Design Guidelines, and the Downtown Form Based Code, which means the proposed sign is subject to the provisions of Winters Municipal Code Chapter 17.80 and the Grant Avenue Design Guidelines. The proposed Grocery Outlet signage is consistent with the requirements of Winters Municipal Code Chapter 17.80. Furthermore, the City's Grant Avenue Design Guidelines outlines that internally illuminated plastic box "canned" signs are prohibited, but individually illuminated channel

letters are acceptable. The Grocery Outlet signage is proposed to be illuminated channel letters and would maintain the visual aesthetic of signage throughout Winters and the Grant Avenue corridor.

Environment Analysis:
Staff recommends that the Planning Commission find the project exempt from the California Environmental Quality Act (CEQA) Guidelines pursuant to Section 15332, which applies to projects characterized as in-fill development that meets the following criteria:

- The project is consistent with the applicable general plan designation and all applicable general plan policies as well as with applicable zoning designation and regulations.

- The proposed development occurs within city limits on a project site of no more than five acres substantially surrounded by urban uses.

- The project site has no value as habitat for endangered, rare, or threatened species.

- Approval the project would not result in any significant effects relating to traffic, noise, air quality, or water quality.

- The site can be adequately served by all required utilities and public services.

As discussed within this staff report, it is staff's opinion that the proposed project meets all the in-fill criteria, and therefore, is exempt from CEQA pursuant to CEQA Guidelines Section 15332 (In-fill Development Projects). The proposed project is consistent with the City's General Plan and Zoning Ordinance requirements. The project site is 4.4 acres and has no value as habitat for endangered, rare, or threatened species. Furthermore, the Transportation Study found the Grocery Outlet project to be in compliance with SB 743 relating to vehicle miles traveled and analysis of transportation impacts. The project site can be adequately served by all required utilities and public services and includes conditions of approval to ensure the project includes appropriate public improvements and onsite utilities.

The Planning Commission must consider the proposed CEQA exemption together with any comments received during the public review process. Further, the exemption can only be approved if the Planning Commission finds, based on the whole record before it, that there is not substantial evidence that there are unusual circumstances (including future activities), which might reasonably result in the project having a significant effect on the environment.

Public Communication:
The public hearing notice was published in the *Winters Express* on August 10, 2022. An affected property owner notice was mailed to properties within 300 feet of the project site on August 11, 2022. No public comments have been received at the time this staff

report was published.

Staff Recommendation:
Staff is recommending that the Planning Commission conduct a public hearing on the Grocery Outlet project and adopt Resolution 2022-09 thereby taking the following actions:

1. Determine the proposed Grocery Outlet project to be categorically exempt from the California Environmental Quality Act (CEQA) pursuant to Section 15332 of the CEQA Guidelines; and

2. Approve the Site Plan/Design Review and Sign Permit for the Grocery Outlet project based on the recommended findings and subject to the draft conditions of approval.

Recommended Motion: I move to adopt PC Resolution 2022-09 determining the Grocery Outlet project to be categorically exempt from CEQA pursuant to Section 15332 of the CEQA Guidelines and approving the Site Plan/Design Review and Sign Permit for the Grocery Outlet project based on the recommended findings and subject to the draft conditions of approval.

Alternatives:
Actions that the Planning Commission may take as an alternative to the recommended action include the following:

1. Continue the public hearing to a time and date certain.
    a. The Planning Commission may request additional information from the applicant and/or staff (if new information is presented at the next meeting, the public portion of the hearing must be reopened on the new information submitted)

2. Land Use Permits
    a. Add, delete, or modify the proposed conditions of approval.
    b. Deny the project on the basis that one or more of the required findings cannot be made.

3. Require additional environmental review.
    a. The Planning Commission could find that the recommended CEQA exemption is not suitable and require the preparation of an Initial Study in accordance with CEQA.

Attachments:
1. Resolution No. 2022-09
    a. Exhibit A: Recommended Findings
    b. Exhibit B: Draft Conditions of Approval
2. Grocery Outlet Plan Set
3. Transportation Study dated December 2021

Planning Commission Resolution No. 2022 – 09

A Resolution of the Planning Commission of the City of Winters Approving a Design Review Permit and Sign Permit for the Construction of Grocery Outlet Located at APN: 038-070-035 Within the C-1 Zoning District and Making Findings of CEQA Exemption

Whereas, on May 20, 2021, the City received an application requesting design review and sign permit approval to construct a 16,000 square foot grocery store with 64 onsite parking spaces and two wall signs located at APN 038-070-035 within the C-1 zoning district (the "Grocery Outlet Project"); and

Whereas, Winters Municipal Code Section 17.36.020.A requires design review approval for the construction of nonresidential buildings or structures 500 square feet or larger; and

Whereas, a notice of public hearing for the project was published in the *Winters Express* on August 10, 2022; and

Whereas, in accordance with Winters Municipal Code Section 17.36.030.B and Section 17.16.040, an affected property owners notice was mailed to adjacent property owners within 300 feet of the project location on August 11, 2022; and

Whereas, the City of Winters Planning Commission held a duly noticed public hearing on August 23, 2022, to consider the proposed project; and

Whereas, the Planning Division presented its oral and written staff report on the proposed project at a regular meeting of the Planning Commission on August 23, 2022; and

Whereas, the Planning Division recommended approval of the proposed project based on the findings provided in Exhibit A attached hereto and incorporated herein, and subject to the conditions of approval provided in Exhibit B to this resolution attached hereto and incorporated herein; and

Whereas, on August 23, 2022, the Planning Commission held a public hearing on the project to receive oral and written testimony and written prior to reaching its decision.

Now, Therefore Be It Resolved that the Planning Commission adopts the recommended findings set forth in Exhibit A and approves the Grocery Outlet Project subject to the draft conditions of approval contained in Exhibit B; and

Be it Further Resolved that the Planning Commission, based on the evidence in the record and findings set forth in Exhibit A, determines the project to be categorically

exempt from the California Environmental Quality Act (CEQA) pursuant to Section 15332 (In-fill Development Projects) of the CEQA Guidelines.

It is hereby certified that the foregoing Planning Commission Resolution No. 2022-09 was duly adopted on a motion by Commissioner _____ and seconded by Commissioner _____, at a regular meeting of the City of Winters Planning Commission held on the 23rd day of August 2022, by the following vote:

Ayes:
Noes:
Absent:
Abstain:

_____
Gregory Contreras, Chairperson

Attest:

_____
Ellena Branson, Planning Commission Secretary

Planning Commission Resolution No. 2022 – 09
Exhibit "A"

Recommended Findings

Design Review Findings

In order to approve or deny a Design Review permit, the review authority shall first make the findings required by Winters Municipal Code Section 17.36.040 (Criteria for Review):

1. The overall visible mass of the structure, which includes height, roofline profiles and overall scale of a building;

   The project is proposing to construct a 16,000 square foot grocery store. The project site is a corner lot adjacent to the Grant Avenue and E. Main Street intersection. The project is proposing to place the building directly adjacent to Grant Avenue, which is encouraged in the Winters Design Guidelines and the Grant Avenue Design Guidelines. The buildings orientation helps screen the onsite parking. In addition, the proposed Grocery Outlet building includes varying roof heights, while only a slight variation, the corresponding change in building materials and colors provide for visual relief of the overall building. The Grocery Outlet building would have roof heights of 30', 26' and 24'. In addition, there are several large buildings directly adjacent to Grant Avenue (e.g. Winters Healthcare and Yolo County Federal Credit Union). The proposed project would maintain visual and aesthetic consistency in the Grant Avenue corridor. This finding is supported by the discussion contained in the "Discussion/Analysis" section of the Planning Commission staff report dated August 23, 2022.

2. The proposed use and quality of exterior construction materials striving for long-term compatibility with the general setting of the subject property and visual character of the general neighborhood;

   The Grocery Outlet building would consist of a 16,000 square foot box store with a flat roof varying in height. The building materials include stucco, horizontal wood cladding, brick veneer, split-face CMU, and galvanized corrugated metal siding. The building would also include metal canopy and awnings for window treatment and decorative metal grid framing for additional siding treatment. The proposed building design includes elements also found in the Blue Mountain Terrace Senior apartments, the Yolo Federal Credit Union building, and the Winters Healthcare building. The use of brick, stucco and metal veneers reflect both the history of the downtown and the city's agricultural heritage. The proposed building materials, colors, and design of the Grocery Outlet building would maintain the existing character of the Grant Avenue gateway corridor. This finding is supported by the discussion contained in the "Discussion/Analysis" section of the Planning Commission staff report dated August 23, 2022.

3. Avoidance of buildings which are characterized by large, blank, or unbroken wall planes, as well as buildings which exhibit general lack of architectural detailing, shadow lines, etc. which generally lack interest;

The proposed Grocery Outlet building includes varying building materials and colors along the Grant Avenue and E. Main Street frontages. In addition, the building includes window and awning treatments to engage the pedestrian realm along with decorative metal grid framing for additional siding treatment. This finding is supported by the discussion contained in the "Discussion/Analysis" section of the Planning Commission staff report dated August 23, 2022.

4. Effective screening of ground – and – roof mounted equipment;

   The project is proposing to locate the grocery store loading dock and trash enclosure on the east elevation. The loading dock is approximately 45' feet from Grant Avenue and the trash enclosure is approximately 65' feet from Grant Avenue. Staff has incorporated a condition of approval requiring the trash enclosure to be of similar design and building materials as the primary building. Future development relating to ground and roof mounted equipment would be reviewed and conditioned to ensure adequate screening. This finding is supported by the discussion contained in the "Discussion/Analysis" section of the Planning Commission staff report dated August 23, 2022.

5. The use of landscaping decorative site paving, etc., which provides effective visual screening or softening of the development, as necessary; and

   The proposed project includes a publicly-accessed courtyard with paved walkways and landscaping on the corner of Grant Avenue and E. Main Street to assist with massing of the building and create a community gathering space. Furthermore, the project includes landscaping along the Grant Avenue frontage and parking lot landscaping. Staff has incorporated a condition of approval requiring the submittal of final landscaping and lighting plans prior to building permit issuance to ensure the project is consistent with the Winters Municipal Code requirements. This finding is supported by the discussion contained in the "Discussion/Analysis" section of the Planning Commission staff report dated August 23, 2022.

6. Achieve conformity with the Winters Design Guidelines, Form-Based Code for Downtown (Chapter 17.58), and the Grant Avenue Design Guidelines, as applicable.

   It is staff's opinion that the proposed Grocery Outlet Project is consistent with the City's Design Guidelines and Grant Avenue Design Guidelines for the following reasons:

   1. *Building location and orientation directly adjacent to Grant Avenue engages the street and appropriately screens the onsite parking area;*
   2. *The proposed building materials and colors are similar to previously approved development projects (e.g. Blue Mountain Terrace apartments, YFCU building, and Winters Healthcare) to ensure aesthetic consistency of the Grant Avenue gateway corridor;*
   3. *The project is proposing a publicly-accessed courtyard with paved walkways and landscaping on the corner of Grant Avenue and E. Main Street to assist with massing of the building and create a community gathering space;*
   4. *The project would include pedestrian and bicycle infrastructure upgrades to ensure connectivity and alternative modes of travel; and*

5. *The project would include landscaping and sidewalks consistent with the City's adopted standards.*

This finding is supported by the discussion contained in the "Discussion/Analysis" section of the Planning Commission staff report dated August 23, 2022.

Sign Permit Findings

In order to approve or deny a Sign Permit, the review authority shall first make the findings required by Winters Municipal Code Section 17.80.090.D:

1. The sign conforms to city ordinance requirements;

   The proposed wall signs would include illuminated channel letters, which is consistent with the City's sign requirements. In addition, the project includes a condition of approval to ensure that the size of the proposed wall signs comply with Winters Municipal Code Section 17.80.045.B. This finding is supported by the discussion contained in the "Discussion/Analysis" section of the Planning Commission staff report dated August 23, 2022.

2. The design conforms to the Winters design guidelines or the Grant Avenue design guidelines;

   The project site is located within the Grant Avenue Design Guidelines planning area. The Guidelines discourage individual pole signs and that internally illuminated plastic box "canned" signs. The project is proposing individually illuminated channel letters, which is acceptable per the Grant Avenue Design Guidelines. This finding is supported by the discussion contained in the "Discussion/Analysis" section of the Planning Commission staff report dated August 23, 2022.

3. The design is compatible with the character and design of the exterior architecture of the building(s) on the property where the sign is to be located;

   The Grocery Outlet signage is proposing two wall signs that would be integrated into the west and north elevations. The proposed wall signs are appropriately sized and do not impact the visual aesthetic of the building or surrounding areas. The proposed red and yellow colors help tie the sign into the proposed brick façade but would also create contrast that makes other building elements (e.g. decorator metal framing) stand out. This finding is supported by the discussion contained in the "Discussion/Analysis" section of the Planning Commission staff report dated August 23, 2022.

4. The sign will not create a visual or safety hazard; and

   The proposed wall signs are approximately 24' above the ground and are internally illuminated. The proposal would not create any visual or safety concerns. This finding is supported by the discussion contained in the "Discussion/Analysis" section of the Planning Commission staff report dated August 23, 2022.

5. The sign location will not impair use of the subject property, adjacent property, or public right-of-way.

   The proposed wall signs would be integrated into the proposed Grocery Outlet building and is designed to be consistent with the City's sign regulations and design requirements. The proposed signage would not impair the use of the property, surrounding properties, or adjacent public right-of-way. This finding is supported by the discussion contained in the "Discussion/Analysis" section of the Planning Commission staff report dated August 23, 2022

California Environmental Quality Act Findings

- Staff recommends that the proposed project be determined to be categorically exempt from the California Environmental Quality Act (CEQA) pursuant to CEQA Guidelines Section 15332, which applies to projects characterized as in-fill development that meets the following criteria:

  - The project is consistent with the applicable general plan designation and all applicable general plan policies as well as with applicable zoning designation and regulations.
  - The proposed development occurs within city limits on a project site of no more than five acres substantially surrounded by urban uses.
  - The project site has no value as habitat for endangered, rare, or threatened species.
  - Approval of the project would not result in any significant effects relating to traffic, noise, air quality, or water quality.
  - The site can be adequately served by all required utilities and public services

  The proposed project is consistent with the City's General Plan and Zoning Ordinance requirements. The project site is 4.4 acres and has no value as habitat for endangered, rare, or threatened species. Furthermore, the Transportation Study found the Grocery Outlet Project to be in compliance with SB 743 relating to vehicles miles traveled and analysis of transportation impacts. The project site can be adequately served by all required utilities and public services and includes conditions of approval to ensure the project includes appropriate public improvements and onsite utilities.

- The Planning Commission has reviewed and considered the proposed project and all comments submitted and has determined that the record, as a whole, demonstrates that there is no evidence that the proposed project will have an individually or cumulatively significant effect.

- The Planning Commission has determined that the custodian of all documents and material which constitute the record of proceedings shall rest with the City of Winters Community Development Department.

Planning Commission Resolution No. 2022 – 09
Exhibit "B"

Draft Conditions of Approval

General Conditions of Approval

1. A Design Review permit for the construction of a 16,000 square foot grocery store and 64 onsite parking spaces, and a Sign Permit for two wall signs totaling no more than 102 square feet (combined total) located at APN: 038-070-035 (no assign address) as shown on the plan set as approved by the Planning Commission on August 23, 2022, shall be on file in the Community Development Department. The applicant is responsible for complying with all conditions of approval and providing evidence to the Community Development Director of compliance with each condition.

2. The effective date of approval shall be September 3, 2022, unless the approval is appealed to the City Council by 5:00pm on September 2, 2022. Design Review approval shall be valid for one year after its effective date unless the applicant begins construction prior to the expiration, or the applicant applies for a Time Extension permit pursuant to Municipal Code Section 17.24.080.

3. The Community Development Director may authorize minor alterations to the approved plans and conditions of approval in accordance with Municipal Code Section 17.24.090. Major changes and alterations to the approved plans and conditions of approval shall be reviewed and approved by the Planning Commission.

4. The project shall comply with all applicable provisions and standards of the Winters Municipal Code and Standard Construction Specifications, except where specifically modified by these conditions of approval. It is the applicant's responsibility to demonstrate compliance to the Planning Division prior to issuance of any grading or building permits.

5. Prior to building permit issuance, the applicant shall provide verification of compliance with all conditions of approval, applicable City of Winters Municipal Code requirements, and any applicable state or federal requirements.

6. The applicant shall pay all applicable impact fees and charges at the rate and amount in effect at the time such fees and charges become due and payable.

7. Any fees due to the City of Winters for processing this project shall be paid to the City within thirty (30) calendar days of final action by the approval authority. Failure to pay such outstanding fees within the time specified shall invalidate any approval or conditional approval granted by this action. No permits, site work, or

other actions authorized by this approval shall be permitted, authorized, of commenced until all outstanding fees are paid to the City.

8. Prior to issuance of any grading or building permits, the applicant shall provide performance guarantees with sufficient legal commitments and financial sureties to guarantee the faithful performance of any and all conditions of approval and completion of the project or to guarantee the restoration of the site if the project is not completed. The form, manner, and amount of the guarantee shall comply with the requirements of the Community Development Director and the City Attorney and shall be reviewed and approved by the Community Development Director prior to the issuance of permits.

9. The applicant shall comply with all adopted rules and regulations of the City of Winters Public Works Department, Fire Department, Community Development Department, and all other local and state regulatory agencies.

10. The applicant shall provide verification of payment for Winters Joint Unified School District fees and Yolo County facilities and services authorization fees prior to building or grading permit issuance.

11. The applicant shall report to the City's Public Works Division building materials diverted from land filling during the course of the project pursuant to the provisions of City Council Ordinance No. 2002-03.

12. In the event any claim, action or proceeding is commenced naming the City or its agents, officers, and employees as defendant, respondent or cross defendant arising or alleged to arise from the City's approval of this project, the project applicant shall defend, indemnify, and hold harmless the City or its agents, officers and employees, from liability, damages, penalties, costs or expenses in any such claim, action, or proceeding to attach, set aside, void, or annul an approval of the City of Winters, the Winters Planning Commission, any advisory agency to the City and local district, or the Winters City Council. Project applicant shall defend such action at applicant's sole cost and expense which includes court costs and attorney fees. The City shall promptly notify the applicant of any such claim, action, or proceeding and shall cooperate fully in the defense. Nothing in this condition shall be construed to prohibit the City of Winters from participating in the defense of any claim, action, or proceeding, if City bears its own attorney fees and cost, and defends the action in good faith. Applicant shall not be required to pay or perform any settlement unless the applicant in good faith approves the settlement, and the settlement imposes direct or indirect cost on the City of Winters, or its agents, officers, and employees, the Winters Planning Commission, any advisory agency to the City, local district, and the City Council

Planning Conditions of Approval

13. If artifacts, paleontological or cultural, or unusual amounts of stone, bone, or shells are uncovered during construction activity, all construction activities shall cease within a 200-foot radius of the find unless a lesser distance is approved by the Community Development Director. The Community Development Director shall be notified of the find, and an archaeologist shall investigate the find and determine the extent and location of the discovered materials. The Community Development Director shall be notified so that the extent and location of discovered materials may be recorded in a written report prepared by a qualified archaeologist, and disposition of discovered materials may occur in compliance with State and Federal law. Construction shall not recommence until the Community Development Director authorizes construction to begin.

14. Pursuant to General Plan Policy II.C.1 and VI.F.2, energy efficient design shall be used. Energy efficient design shall include but not limited to automated control system for heating and air conditioning system and energy efficiency beyond Title 24 requirements, lighting controls and energy efficient lighting in buildings, and increased insulation beyond Title 24 requirements.

15. Pursuant to General Plan Policy VIII.D.7 and Winters Municipal Code Section 17.72.050.F, parking lot pole lights shall be a maximum of 16 feet in height (including base pedestal) with full cutoff box fixtures. Wall pack lighting shall be fully shielded and directed downward. On-site parking lot lighting shall match lighting already installed on southern portion of the site.

16. The applicant shall notify residents within 300 feet of the project site at least 72 hours prior to the commencement of any construction activities.

17. Construction Hours: Hours of operation of construction activities shall be limited to Monday through Friday from 8:00am to 5:00pm. The Community Development Director may authorize an extension of the time limitations based on the finding that the noise levels from the construction activities will not negatively affect the residential uses in the surrounding area. If a noise complaint is received after the construction time limits are extended, the Community Development Director may render the extended time limits null and void, and the applicant shall revert to the aforementioned hours of operation and time limitations. Interior construction activities may occur after these hours provided such activities will not result in exterior noise audible at property lines. Improvement, grading, and building plans shall note these limited hours of construction.

18. Sign Plan: Two wall signs are permitted totaling no more than 102 square feet (combined total). The applicant shall submit final sign plans showing the location, size (dimensions), materials, and colors to the Community Development Director for review prior to building permit issuance.

19. Final Landscaping Plan: The project shall provide landscaping in accordance with Winters Municipal Code Chapter 17.76 (Landscaping and Irrigation). All landscaping shall comply with the state Model Water Efficient Landscape Ordinance (23 California Code of Regulations Section 490 et seq.). Prior to building permit issuance, the applicant shall submit a final landscaping plan to the Planning Division for approval.

20. Design Review Committee: The applicant shall add awnings to the three windows on the far left of the east elevation. Prior to building permit issuance, the applicant shall show the three awnings on the elevations and submit the plans to the Community Development Director for review.

21. Light standards and building attached fixtures need to be a decorative and of superior design quality. All outdoor lighting shall be fully shielded and pointed downwards so that no light goes beyond the property boundaries.

22. The applicant shall ensure that any grocery store tenant complies with SB 1383 and AB 1826 Mandatory Commercial Organics Recycling law requirements. This may be accomplished by the following examples, but not limited to: a subscription to food waste collection carts with the waste hauler, food banking or a food waste backhauling program.

23. Payment of City of Winters's utility services shall commence following issuance of Final Certificate of Occupancy. The applicant shall pay the City of Winters monthly utility charges at the metered rate for water and sewer.

24. The building tenant(s) shall provide electronic wheel locks on all shopping carts so that the wheels lock up if taken beyond the property line. The applicant/owner shall be responsible for any shopping carts that go beyond the property boundaries.

25. The applicant shall ensure that there is space sufficient for mixed waste, cardboard, recycling, and food waste collection containers. All refuse shall be fully enclosed and constructed with similar building materials and colors as the primary building. The applicant shall submit plans of the enclosure including a building material and color list to the Community Development Director prior to building permit issuance.

Engineering and Public Works Conditions of Approval

26. Prior to building permit issuance, applicant shall either 1). Install a new traffic signal at the intersection of Grant Avenue and E. Main Street; or 2). Extend E. Baker Street to PG&E Way with a full access driveway to E. Baker Street and right-in and right-out driveway access at other driveways. If the new traffic signal is installed and to address conflicts between westbound left turn vehicles and pedestrians and bicyclists crossing in the proposed south leg crosswalk, the

future signal design should include either a leading pedestrian interval phase for the south leg crossing or alternatively install westbound protected left turn phasing. Project site access shall be in a form acceptable to the City Engineer.

27. Applicant and City shall enter into a reimbursement agreement for recovery of costs associated with the installation of the traffic signal at Main Street and Grant Avenue (SR128). The full scope and cost of the work will be determined by the City Engineer and in additional to the traffic signal may include items such a utility work, curb ramp upgrades, and new signage and striping. Reimbursement payments will be made on annual basis as a percentage of the revenue collected from the transportation facility impact fees collected citywide.

28. Prior to building permit issuance, applicant shall provide plans showing an additional site access driveway on E. Baker Street to allow vehicles to travel southwest on E. Main Street to the Community Development Director for approval. Prior to issuance of certificate of occupancy, temporary or final, applicant shall construct a site access driveway on E. Baker Street in a form acceptable to the City Engineer.

29. Prior to issuance of certificate of occupancy, temporary or final, applicant shall install a high-quality bicycle/pedestrian shared-use-path crossing on the south leg of the Grant Avenue/E. Main Street intersection, including but not limited to, wider ramps and aligning ADA ramps directionally with crosswalks rather than installing diagonal ramps. An improved shared-use-path crossing shall also be installed at the new driveway at Grant Avenue and McClish Lane. The high-quality bicycle/pedestrian shared-use-path shall be designed in a manner acceptable to the City Engineer.

30. The Grant Avenue project driveway shall be restricted to right-in and right-out access only. The plans, including the improvement plans, shall show the restricted turning movements.

31. Driveway crossings need to be designed to facilitate a safe shared-use-path crossing. Features to include at this crossing to facilitate bicyclist and pedestrian access include wider ramps and aligning ADA ramps directionally with crosswalks rather than installing diagonal ramps. Additionally, the right-in right-out treatment driveway accessing E. Grant Avenue shall be complemented with a raised median to physically prevent vehicles from making a left turn into or out of this entrance in a form acceptable to the City Engineer.

32. Prior to issuance of certificate of occupancy, temporary or final, applicant shall install six bicycle parking spaces.

33. Prior to issuance of certificate of occupancy, temporary or final, applicant shall add bike lane conflict markings where the existing Class II bike lane on East Main Street will cross the new driveway entrance to the Grocery Outlet. Similar to crosswalks bike conflict markings improve safety by highlighting conflict areas. There are several different conflict marking options that include dashed lines or highlighting the bikeway driveway crossing with green paint. The final design of the bike lane conflict markings shall be approved by the City Engineer.

34. Applicant shall be responsible for obtaining all required permits within Caltrans right-of-way. Improvement Plans will not be accepted until encroachment permits are obtained. This includes driveways, intersections, streetlights and/or drainage improvements.

35. Prior to building permit issuance, applicant shall submit supporting documentation showing project meets state and local stormwater treatment requirements.

36. A drainage plan shall be prepared by a registered civil engineer for project watershed(s), including the plan area. The plan shall identify specific storm drainage design features to control increased runoff from the project site. The drainage plan shall demonstrate the effectiveness of the proposed storm drainage system to prevent negative impacts to Grant Ave and existing downstream facilities and to prevent additional flooding at off-site downstream locations. All necessary calculations and assumptions and design details shall be submitted to the City Engineer for review and approval. The design features proposed by the applicant shall be consistent with the most recent version of the City's Storm Drainage Master Plan criteria, Yolo County City/County Drainage Manual and City’s Public Improvement Standards. The plan shall incorporate secondary flood routing analysis and shall include final sizing and location of on-site and off-site storm conduit channels, structures and detention and retention basins. The applicant shall pay the cost associated with all improvements required by the plan.

37. Prior to building permit issuance, applicant shall provide details for the proposed project stormwater collection and treatment including the safe release of overflow. Applicant shall provide calculations and sizing of stormwater treatment locations and shall submit drainage report with storm drain design supporting calculations to meet all applicable City, local and state requirements

38. Parking stall layout and drive aisle widths shall meet City of Winters Municipal Code Chapter 17.72 Off-Street Parking and Load standards.

39. Prior to building permit issuance, applicant shall provide documentation that proposed improvements are not located in FEMA flood zone as applicable. Applicant shall meet all FEMA requirements and be required to coordinate with FEMA through the City's Floodplain Administrator to determine if a CLOMR or LOMR is needed for the project as a result of possible impacts to Dry Putah Creek Floodplain. Applicant shall obtain all necessary permits and CLOMRs/LOMRs as required prior to improvement plan approval.

40. Applicant shall receive approval from City of Winters Fire Department for fire access to proposed project site.

41. Proposed accessible parking and path of travel shall comply with the requirements of California Building Code Chapter 11B.

42. Improvements shall meet City of Winters Improvement Standards, as applicable, including Circulation Master Plan.

43. The existing width of E. Main Street is approximately 25 feet between the west curb and raised center median, which would be insufficient to fit the proposed two southbound travel lanes and a bicycle lane based on the City of Winters' standards of 12 feet wide lanes for collector streets and five feet wide bicycle lanes. The Engineering Division is providing the following options to address this issue and at least one option shall be selected and included in the Project.

    a. The entire width of the existing roadway is approximately 66 feet. If the median is reconstructed and shifted there would be enough width to fit two travel lanes in each direction along with Class II bike lanes. If this option is pursued the recommendation would be to increase the width of the bicycle lanes to either six feet or seven feet with the remaining width being allocated to the reconstructed median. Current bicycle path design best practice recommends at least six feet wide Class II bicycle lanes when space is available, to account for gutter pan width along curbs.

    b. Widen the East Main Street roadway to accommodate the new southbound left turn lane. Widening the roadway would add significant cost to the project. If the widening option is pursued the recommendation would be to use the opportunity to increase the width of bike lane to six feet. Five feet is considered a minimum and current best practice is to provide at least a six feet bike lane width when practical.

    c. Rather than maintain the five feet on street Class II bike lane, the existing sidewalk on either the west or east side could be expanded to between eight to 12 feet to create a shared use pedestrian and bicycle path that

would create an alternative safer bike route. This mitigation would require creation of a transition from the Class II on street bike lane to the new Class I bicycle and pedestrian shared-use-path. By transitioning the bike path to sidewalk level this would allow for sufficient space to fit in both the southbound thru and left turn lanes recommended without adjusting the median. This improvement would also provide a safer and more comfortable bicycle facility that connects well with the Class I bicycle and pedestrian share-use-path on East Grant Avenue. This option would also be significantly less expensive than widening the roadway and moving the curb edge.

44. Frontage improvements are required along Grant Avenue and E. Main Street. All proposed frontage improvements shall be reviewed and approved by the City Engineer. The limits of the proposed improvements will be reviewed and approved by the City Engineer as part of the improvement plan review prior to building (grading) permit issuance. All frontage improvement shall be installed in the City right-of-way or a public access easement shall be granted for the frontage improvements if they are located on private property. Prior to building permit issuance, an Encroachment Permit and a Maintenance and Hold Harmless Agreement will be required for all frontage improvements located in the City right-of-way. All frontage improvements shall be constructed prior to issuance of Certificate of Final Occupancy.

45. Prior to issuance of Final Occupancy, all roadway, drainage, frontage, and utility improvements shall be constructed and approved by the respective responsible agencies or a financial surety in the amount of 125% of the remaining improvements shall be provided to the satisfaction of the City Engineer. All utilities shall be placed underground, including any existing aboveground utility lines. The existing utility poles shall be removed following utility undergrounding.

46. A Soils/Geotechnical Report shall be prepared by a qualified engineer to confirm onsite soil capabilities and geological conditions and make recommendations to be followed for development. Grading of the site, design of foundations for proposed structures and construction of other related facilities on the property shall follow the criteria identified in the report. The applicant shall submit the report with the initial improvement plans package. The improvement plans shall be approved and signed by the geotechnical engineer prior to approval by the City.

47. All public landscape areas shall include water laterals with meters and PG&E power service points for CalSense controllers. The landscape water meter shall be installed to the satisfaction of the City Engineer.

48. If relocation of existing infrastructure is deemed necessary, the applicant shall perform the relocation, at the applicant's expense unless otherwise provided for through a reimbursement agreement. All public utility standards for public easements shall apply.

49. Project proponents shall enter into the Citywide Landscape and Lighting Maintenance District, in order to maintain and provide for the future needs of street lighting and landscaping, and other related aspects of development. The applicant is responsible for all costs associated with this condition. The applicant shall fulfill this condition prior to issuance of final occupancy.

50. If improvements are constructed and/or installed by a party or parties other than the Applicant, which improvements benefit Applicant's property, prior to issuance of a building permit on Applicants property, Applicant shall pay a proportionate share of the costs of said improvements, including interest, prior to the issuance of building permit(s) to Applicant. Applicant shall pay fair share costs for the benefiting use of the existing sewer collection system, pump station, and water system existing on the Jordan and McClish properties, and traffic signal improvements, that were advance funded and constructed by City.

51. The applicant shall submit joint trench/utility/composite plans to the City Engineer for review prior to approval of improvement plans.

52. The applicant shall install decorative LED lights along the frontage of East Grant Avenue between the Class 1 path and the street, subject to the approval of the City and/or Caltrans. Streetlights shall match the existing lights adjacent to the PG&E facility.

53. Applicant shall develop and implement a construction traffic management plan to the satisfaction of the City of Winters Department of Public Works. The plan shall be submitted to the City of Winters Public Works Department and Caltrans for review prior to initiation of site disturbance.

54. A signage and striping plan for the public roadways is required and shall be approved by the City Engineer. All striping shall be thermoplastic.

55. All projects shall include implementation of post-construction best management practices (BMPs), in accordance with the provisions of the General Construction Activity Storm Water Permit adopted by SWRCB in 2009 and amended in 2012 (2009-009-DWQ).

56. Post construction BMPs shall be identified on improvement plans and approved by the City Engineer. Construction of projects disturbing more than one acre of

soil shall require a National Pollution Discharge Elimination System (NPDES) construction permit, or a WPCP.

57. A Water System Plan shall be submitted for approval by the City Engineer as part of the submittal of the construction drawings for checking. A registered civil engineer for project shall prepare the water system plan. The plan shall include final sizing and location of conveyance facilities, structures, and engineering calculations.

58. A registered civil engineer shall prepare the sewer collection system plan for approval by the City Engineer. The plan shall include final sizing and location of conveyance facilities, structures, and engineering calculations. The applicant shall pay the cost associated with all improvements required by the plan. Reference the City's Standard Construction Specifications for additional requirements.

59. At the time the Building Permit is issued, the applicant will be required to pay the appropriate City connection fees. All domestic water services will be metered prior to construction activities. Water meters shall be installed on all water services to the satisfaction of the City Engineer.

60. Per the City of Winters Cross Connection Control Program, all types of commercial buildings and landscape irrigation services are required to maintain an approved backflow prevention assembly, at the applicant's expense. Service size and flow-rate for the backflow prevention assembly must be submitted. Location of the backflow prevention assembly shall be per the City of Winters Public Improvements Standards and Construction Standards. Prior to the installation of any backflow prevention assembly between the public water system and the owner's facility, the owner or contractor shall make application and receive approval from the City Engineer or his designated agent.

61. Per the City of Winters Cross Connection Control Program, fire protection systems are required to maintain approved backflow prevention, at the applicant's expense. Required location, service size and flow-rate for the fire protection system must be submitted. Actual location is subject to the review and approval of the Public Works Department, Fire Department, and Community Development Department.

62. The number and location of the water meters and sewer cleanouts shall be approved by the Public Works Director. All cleanouts for connection to the City lateral(s) shall be two-way cleanouts, if applicable. The water meters and sewer cleanouts shall comply with the specifications of the City of Winter's Engineering

Design and Construction Standards. The applicant shall obtain approval from the Public Works Director on the type, number, and location of the devices.

63. All street and other required public improvements shall be constructed concurrently, in a sign phase operation.

64. Construction materials for storm drain pipes within the water table shall be pre-cast rubber-gasket reinforced concrete pipe (RGRCP).

65. The applicant shall facilitate, with City cooperation, the abandonment of all City easements and dedications currently held but no longer necessary as determined by the Public Works and Engineering Departments.

66. Pedestrian circulation shall be coordinated and align with adjacent pedestrian facilities, including but not limited to Grant Avenue and E. Main Street sidewalks. Pedestrian circulation shall comply with the requirements of the City's Standard Construction Specifications.

67. Applicant shall conform to Yolo County Health regulations and requirements for the abandonment of any septic tanks and water wells.

68. Landscaping material shall not be located such that, at maturity, it interferes with safe distances for vehicular, bicycle, or pedestrian traffic, conflicts with overhead lights or walkway lights, or blocks pedestrian or bicycle path of travel.

69. Applicant shall show compliance with the City's Grading Ordinance requirements on the Improvement Plans prior to issuance of a grading permit.

70. Appropriate easements shall be required for City maintained facilities outside of City owned property or the public right-of-way.

Fire Department Conditions of Approval

71. FINAL PLANS, PERIODIC TESTS FOR FIRE HYDRANTS: All final plans for fire hydrant systems and private water mains supplying a fire hydrant system shall be submitted to the City of Winters Fire Department for approval prior to construction of the system. All fire protection systems and appurtenances thereto shall be subject to such periodic tests as required by the City of Winters Fire Department.

72. WATER PRESSURE: All water lines and fire hydrant systems must be approved by the Fire Chief and operating prior to any construction taking place on the site.

Prior to issuance of building permits, water flow must be measured and certified for adequacy by the Winters Fire Department.

73. REFLECTORS FOR FIRE HYDRANTS: Any fire hydrant installed will require, in addition to the blue reflector noted in Standard Drawings, an additional blue reflector and glue kit that is to be supplied to the Winters Fire Department for replacement purposes.

74. All construction, new or remodeling, shall conform to the most current Uniform Fire Codes, the Winters Fire Prevention Code, and section of the National Fire Codes that the Winters Fire Chief or his/her agent may find necessary to apply.

75. Forty-eight hours notice shall be given to the Winters Fire Department prior to any site inspections.

76. A hydrant use permit shall be obtained from the Public Works Department, for water used in the course of construction.

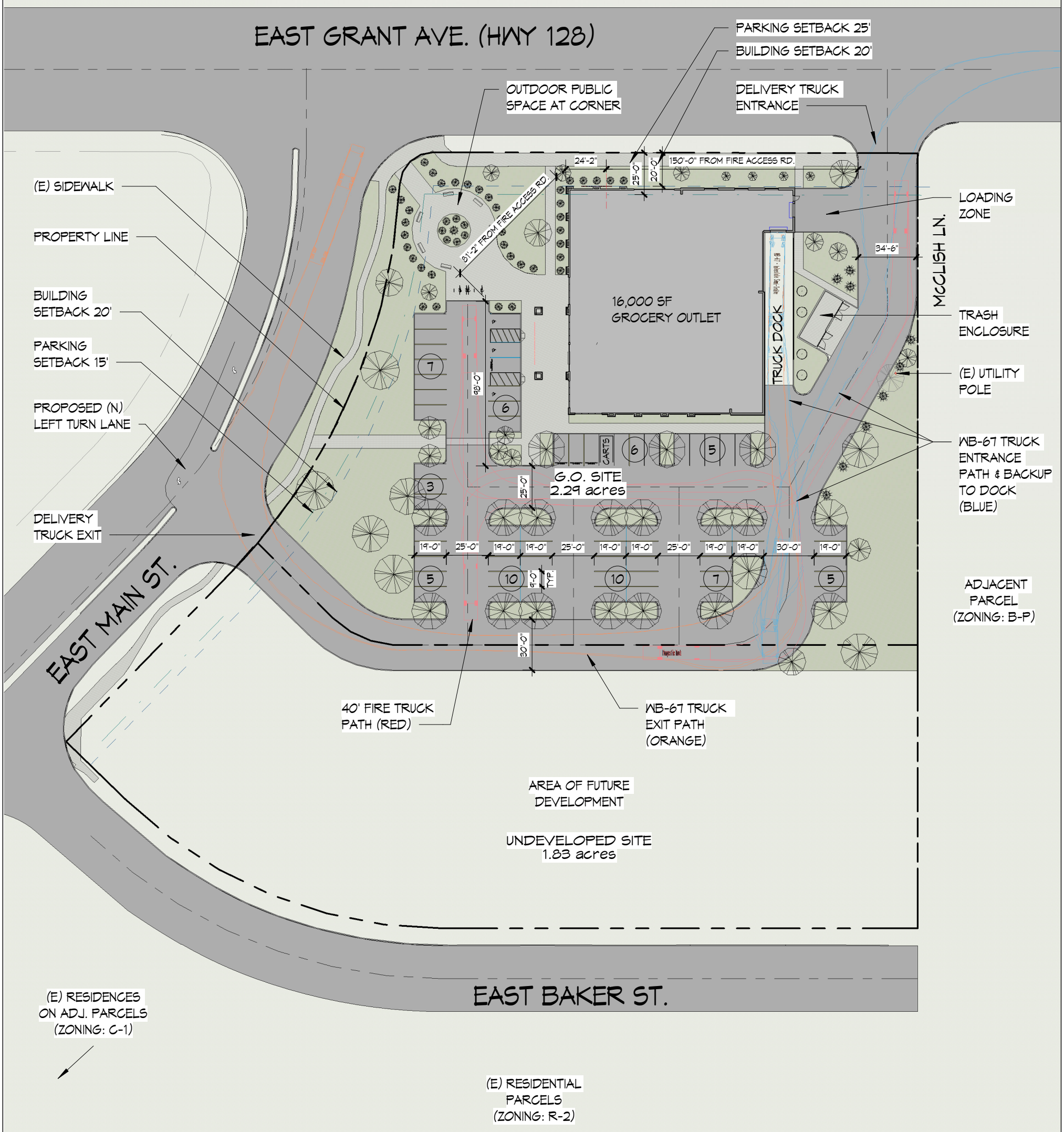
77. A new hydrant shall be placed along the frontage of development. Actual location is subject to the review and approval of the Public Works Department and Fire Department.

78. The Applicant shall contact the Winters Fire Department Chief or his/or agent prior to construction for a pre-construction meeting.

79. All required fire accesses that are to be locked shall be locked with a system that is approved by the Fire Chief or his/her agent.

80. Before framing of the building begins, if necessary, a compacted gravel drive access will be put in place to allow fire equipment to access the site in the case of an emergency.

81. The FDC, OS&Y, and fire hydrants shall be shown on the project plans and submitted to the Fire Department for review prior to issuance of any grading or building permits.



PROPOSED SITE PLAN

1" = 60'-0"

PROJECT NORTH

PARKING ANALYSIS
GROCERY OUTLET: 1 SP/250 SF = 16,000/250 = 64 REQUIRED SPACES PARKING PROVIDED = 64 SPACES

McCANDLESS & ASSOCIATES ARCHITECTS, INC.

428 1/2 FIRST STREET
WOODLAND ▲ CA 95695
www.mccandlessarch.com

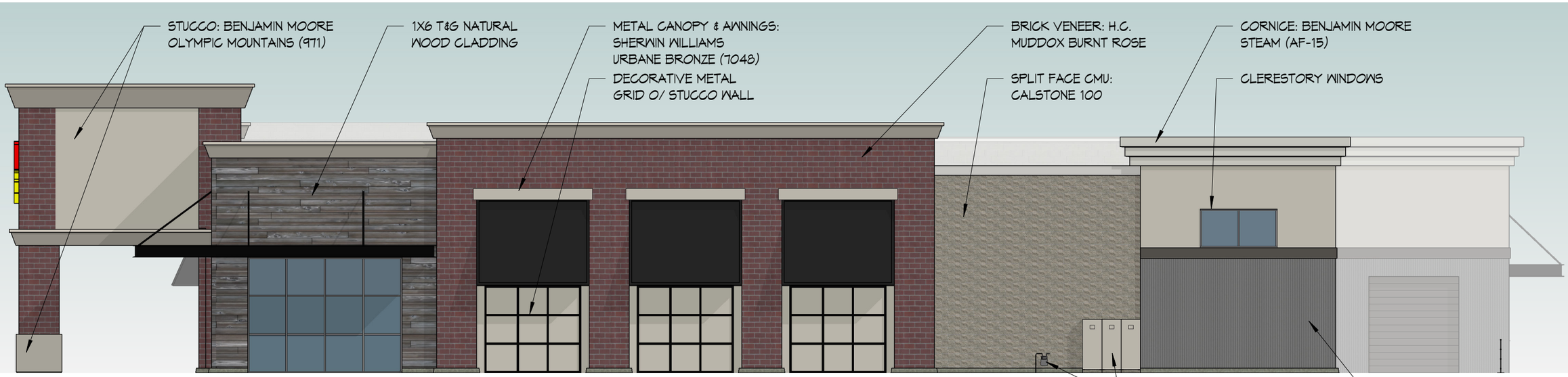
PH ▲ (530) 662-9146

E GRANT AVE G.O. WINTERS

WINTERS, CA

12/03/21

19-193



Elevation-SOUTH

3/32" = 1'-0"



Elevation-WEST

3/32" = 1'-0"

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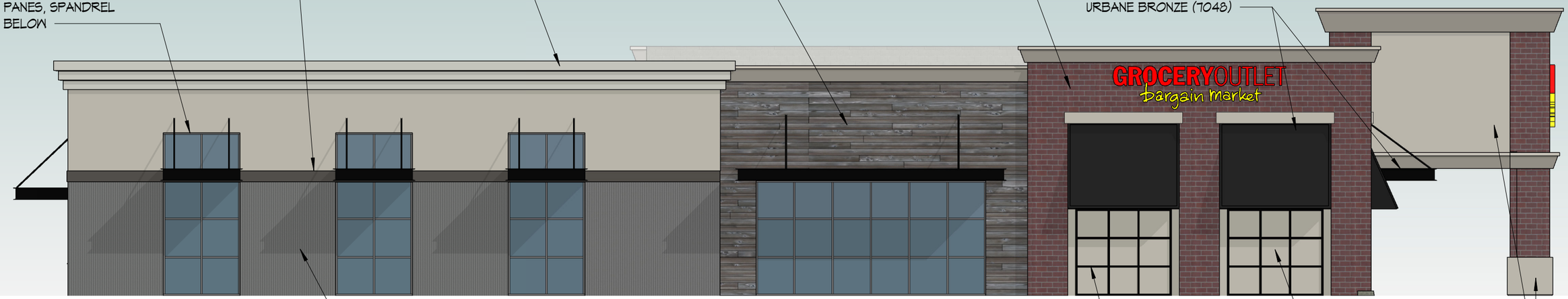
E MAIN ST & E GRANT AVE
WINTERS, CA

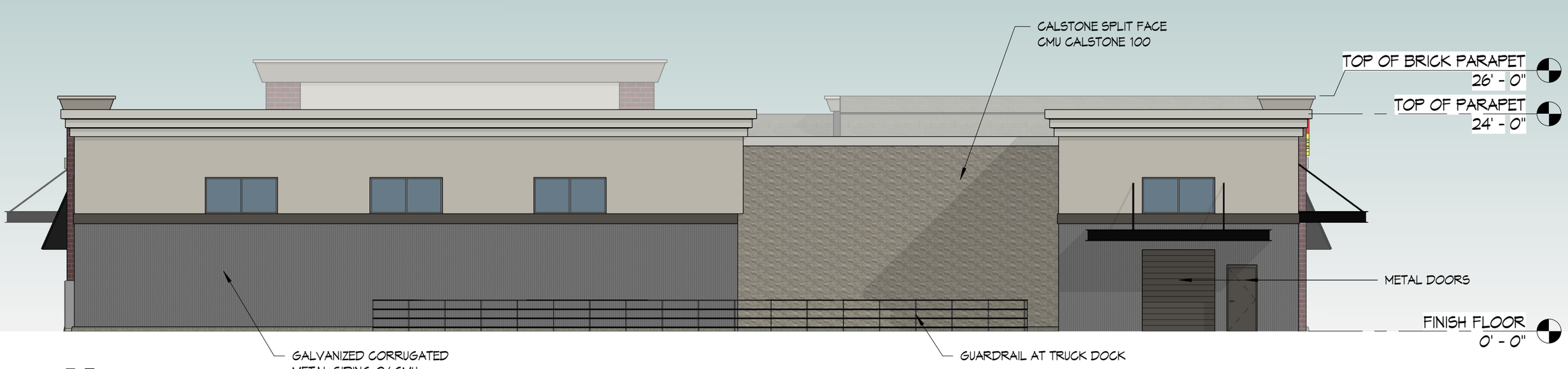
12/03/21

19-193



Elevation-NORTH

3/32" = 1'-0"



Elevation-EAST

3/32" = 1'-0"

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E GRANT GO WINTERS

E MAIN ST & E GRANT AVE
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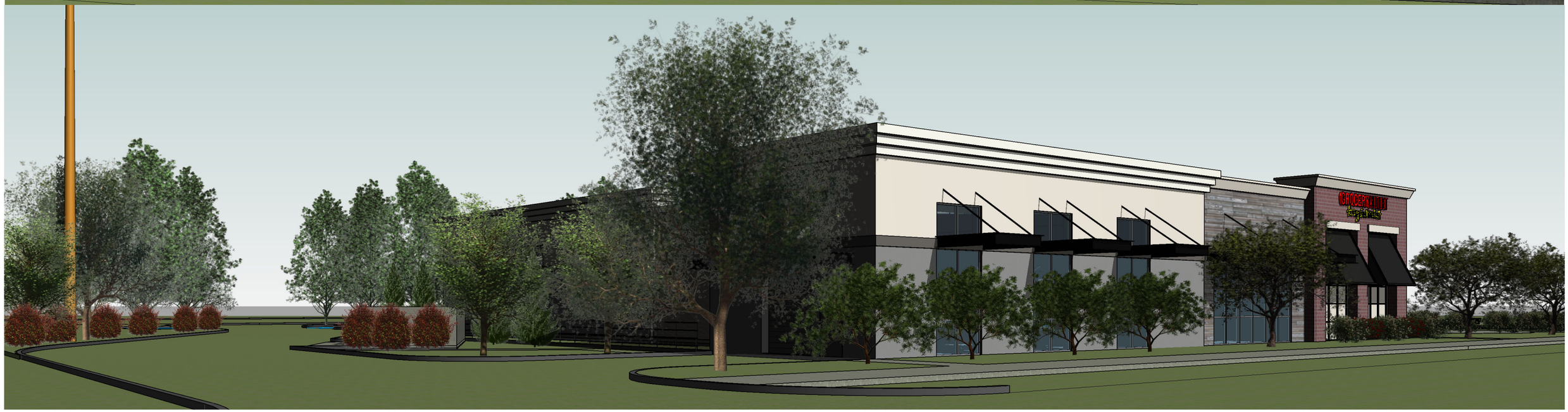

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WINTERS, CA

12/03/21

19-193



VIEW FROM E GRANT & E MAIN INTERSECTION

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WINTERS, CA

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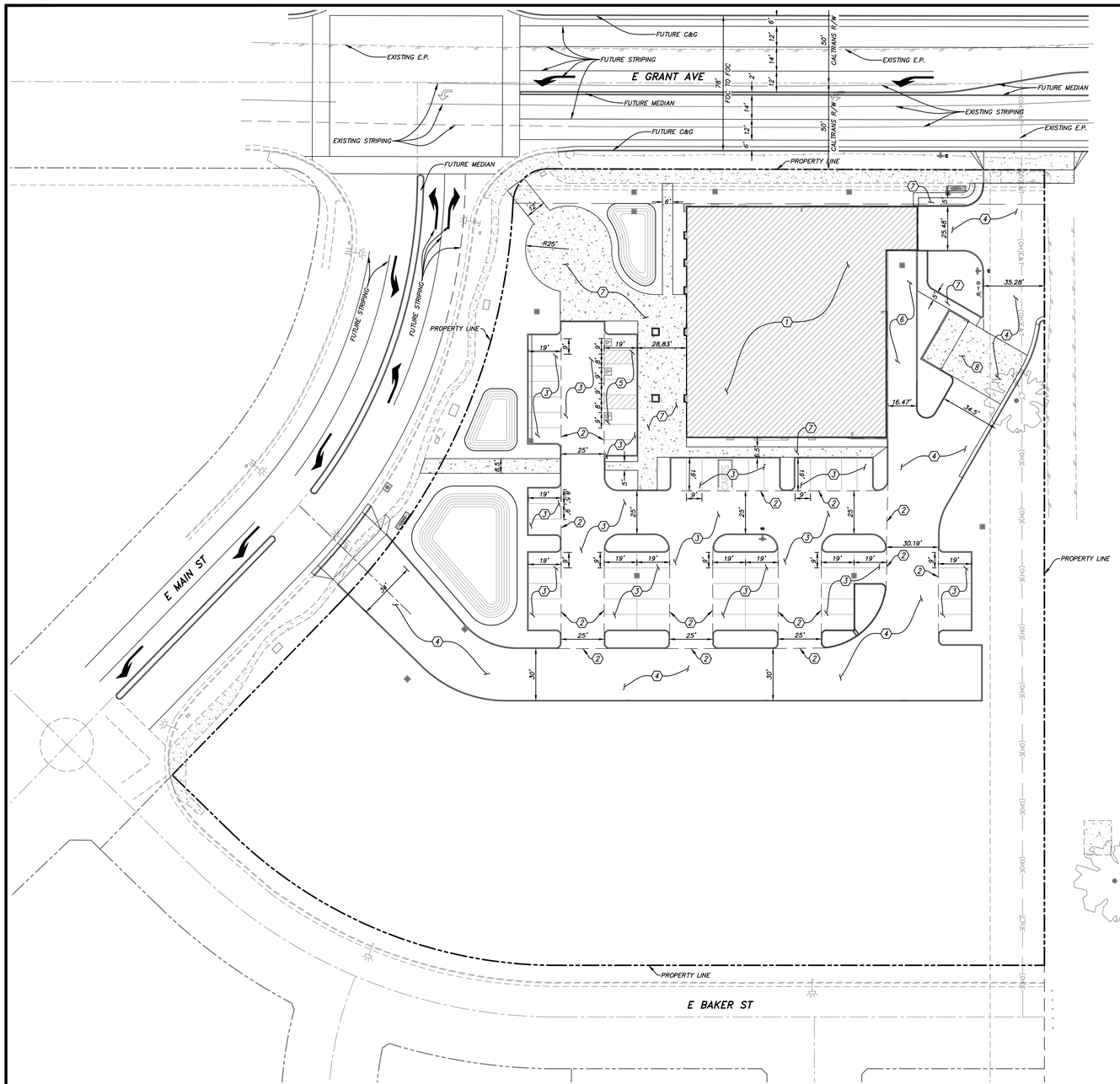
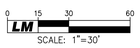
19-193







GENERAL NOTES:

A. SEE ARCHITECTURAL PLANS FOR PARKING DETAILS AND COUNTS.

B. SEE ARCHITECTURAL PLANS FOR ACCESSIBLE PARKING STALL STRIPING AND SIGNAGE DETAILS.

C. PARKING STALL STRIPING SHALL BE 4" WIDE WHITE STANDARD PAINT (TYPICAL). VERIFY WITH ARCHITECTURAL PLANS.

D. SEE ARCHITECUTRAL PLANS FOR FIRE LANE MARKINGS. FIELD VERIFY FIRE LANES WITH FIRE MARSHALL PRIOR TO SIGNING AND STRIPING.

E. SEE CALTRANS PLANS FOR GRANT AVENUE FRONTAGE IMPROVEMENTS.

F. SEE OFFSITE PLANS FOR E. MAIN STREET AND E. BAKER STREET FRONTAGE IMPROVEMENTS.

CONSTRUCTION NOTES

1. HATCHING DENOTES COMPACTED BUILDING PAD PER GEOTECHNICAL REPORT. VERIFY OVER BUILD, FOOTING EXCAVATION, SLAB REINFORCING & COMPACTION REQUIREMENTS WITH GEOTECHNICAL REPORT AND STRUCTURAL PLANS. VERIFY PAD SECTION PRIOR TO STAKING/GRADING. (6" P.C.C. SLAB-ON-GRADE, AND 6" A.B.)
2. STRUCTURAL SECTION CHANGE LINE (— — — — — —).
3. INSTALL 3" A.C. & 8" A.B. OVER COMPACTED SUBGRADE PER GEOTECHNICAL REPORT IN AUTO PARKING AREAS AND AUTO DRIVE AISLES.
4. INSTALL 3" A.C. & 18" A.B. OVER COMPACTED SUBGRADE PER GEOTECHNICAL REPORT IN TRUCK ACCESSIBLE DRIVE AISLES.
5. INSTALL 4" P.C.C. & 6" A.B. OVER COMPACTED SUBGRADE PER GEOTECHNICAL REPORT IN ADA ACCESSIBLE STALLS. SEE GEOTECHNICAL REPORT FOR COMPACTION, CONCRETE REINFORCEMENT, AND CONTROL JOINT REQUIREMENTS.
6. INSTALL 7" P.C.C. & 8" A.B. OVER COMPACTED SUBGRADE PER GEOTECHNICAL REPORT IN DOCK AREA. SEE GEOTECHNICAL REPORT FOR COMPACTION, CONCRETE REINFORCEMENT, AND CONTROL JOINT REQUIREMENTS.
7. INSTALL 4" P.C.C. & 4" A.B. OVER COMPACTED SUBGRADE FOR SIDEWALK PER DETAIL 2, SHEET C-601. SEE ARCHITECTURAL PLANS FOR SIDEWALK SURFACE TREATMENTS (MEDIUM BROOM FINISH AS MINIMUM). SEE GEOTECHNICAL REPORT FOR COMPACTION AND CONTROL JOINT REQUIREMENTS.
8. INSTALL 6" P.C.C. SLAB WITH #4 BARS AT 12" ON CENTER, EACH WAY OVER 6" A.B. OVER COMPACTED SUBGRADE PER GEOTECHNICAL REPORT IN TRASH ENCLOSURE AREAS. SEE GEOTECHNICAL REPORT FOR COMPACTION, CONCRETE REINFORCEMENT, AND CONTROL JOINT REQUIREMENTS. SEE ARCHITECTURAL PLANS FOR ADDITIONAL REQUIREMENTS.

REV.	DATE	DESCRIPTION	BY	APP'D

NOT FOR CONSTRUCTION

REGISTERED PROFESSIONAL ENGINEER — BRYAN P. BONNO — No. 41804 — CIVIL — STATE OF CALIFORNIA

LM LAUGENOUR AND MEIKLE
CIVIL ENGINEERING · LAND SURVEYING · PLANNING
608 COURT STREET, WOODLAND, CALIFORNIA 95695 · PHONE: (530) 662-7755
P.O. BOX 4253, WOODLAND, CALIFORNIA 95776 · FAX: (530) 662-4402

BY _____ DATE 03/27/2018

BRYAN P. BONNO P.E. 41804

CIVIL SITE PLAN

IMPROVEMENT PLANS FOR

E.GRANT G.O. WINTERS

CALIFORNIA

CITY OF WINTERS

JOB NO.	2005-18
DESIGNED	BPB
DRAWN	
FILE	
CHECKED	
DATE	06/15/2022
SCALE	1"=30'

C201

SHEET 1 OF 3

X:\Land Projects\2005-18\dwg\2005-18_C201.dwg

E GRANT AVE

E MAIN ST

E BAKER ST

PROPERTY LINE

PHASE 1 LIMITS

BUILDING
130.50 FM.FL.
129.43 BFE

CARTS

BREAK

12"SD

10"SD

GENERAL GRADING NOTES:

A. ALL EARTHWORK ACTIVITIES, INCLUDING EXCAVATION, GRADING, SCARIFYING, MOISTURIZING, FILL PLACEMENT, COMPACTION, ETC., SHALL BE PERFORMED IN ACCORDANCE WITH THE RECOMMENDATIONS CONTAINED IN THE PROJECT GEOTECHNICAL ENGINEERING REPORT AND IN CONFORMANCE WITH THE CITY STANDARD SPECIFICATIONS, C.U.B.C., AND WITH THE GRADING PLAN.

B. THE GEOTECHNICAL ENGINEER SHALL OBSERVE THE GRADING ACTIVITIES AND PERFORM COMPACTION TESTING FOR THIS PROJECT. THE CONTRACTOR SHALL PROVIDE AT LEAST 24 HOURS NOTICE TO THE GEOTECHNICAL ENGINEER OF THE NEED FOR OBSERVATION AND TESTING SERVICES. THE PROJECT OWNER WILL PAY FOR THE COST OF PROVIDING THESE SERVICES; HOWEVER, IF SAMPLES OF MATERIALS ARE SUBMITTED WHICH FAIL TO PASS THE SPECIFIED TESTS OR IF WORK IS PERFORMED WHICH FAILS TO MEET THESE SPECIFICATIONS, THE CONTRACTOR SHALL PAY FOR ALL SUBSEQUENT RE-TESTS AND RE-INSPECTIONS.

C. EARTHWORK SHALL INCLUDE ALL LABOR, MATERIALS AND EQUIPMENT NECESSARY TO CONSTRUCT THE SITE TO THE GRADES SHOWN. NO ADDITIONAL COMPENSATION WILL BE ALLOWED FOR THE DISPOSAL OF EXCESS EXCAVATION OR FOR THE IMPORT OF MATERIAL.

D. TO ACCOMMODATE TRENCH AND FOUNDATION SPOILS, THE CONTRACTOR'S GRADING SHALL INCLUDE UNDERCUTTING OF PAVED AREAS AS APPROPRIATE, OR SOME OTHER METHOD APPROVED BY THE ENGINEER. NO ADDITIONAL COMPENSATION WILL BE ALLOWED FOR THE DISPOSAL OF EXCESS EXCAVATION OR FOR THE IMPORT OF MATERIAL.

E. ALL CUT SLOPES SHALL BE ROUNDED AT THE "BREAK" SO THAT THEY BLEND WITH THE NATURAL GROUND CONTOUR.

F. WHERE NEW IMPROVEMENTS (CURB, GUTTER, SIDEWALK, PAVEMENT, ASPHALT, ETC.) ARE DESIGNATED TO MATCH GRADE (@) AT EXISTING IMPROVEMENTS, THE CONTRACTOR SHALL VERIFY THE MATCH POINT GRADES, REPORT ANY DISCREPANCIES AND ADJUST GRADES TO MATCH EXISTING.

G. GRADE GUTTER/SWALE TO DRAIN, TYPICAL (——→- - ——).

H. STRAIGHT GRADE TO DRAIN TO FLOWLINE, BACK EDGE OF WALK OR DRAIN INLET, TYPICAL (———→).

0 10 20 40
LM SCALE: 1"=20'

REV.	DATE	DESCRIPTION	BY APP'D

NOT FOR CONSTRUCTION

REGISTERED PROFESSIONAL ENGINEER · BRYAN P. BONINO · No. 41804 · CIVIL · STATE OF CALIFORNIA

LM LAUGENOUR AND MEIKLE
CIVIL ENGINEERING · LAND SURVEYING · PLANNING
808 COURT STREET, WOODLAND, CALIFORNIA 95695 · PHONE: (530) 662-7755
P.O. BOX 2435, WOODLAND, CALIFORNIA 95776 · FAX: (530) 662-4602

BY _____ DATE 03/27/2018 P.E. 41804

BRYAN P. BONINO

GRADING & DRAINAGE PLAN

IMPROVEMENT PLANS FOR
E.GRANT G.O. WINTERS

CITY OF WINTERS CALIFORNIA

JOB NO.	2005-18
DESIGNED	BPB
DRAWN	
FILE	
CHECKED	
DATE	06/15/2022
SCALE	1"=20'

C301

SHEET 2 OF 3

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REV.	DATE	DESCRIPTION	BY	APP'D.

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LM LAUGENOUR AND MEIKLE
CIVIL ENGINEERING · LAND SURVEYING · PLANNING
608 COURT STREET, WOODLAND, CALIFORNIA 95776 -PHONE: (530) 662-1755
P.O. BOX 828, WOODLAND, CALIFORNIA 95776 · FAX: (530) 662-4602

BY _____ DATE 03/27/2018 P.E. 41804
BRYAN P. BONINO

CITY OF WINTERS CALIFORNIA

UTILITIES PLAN

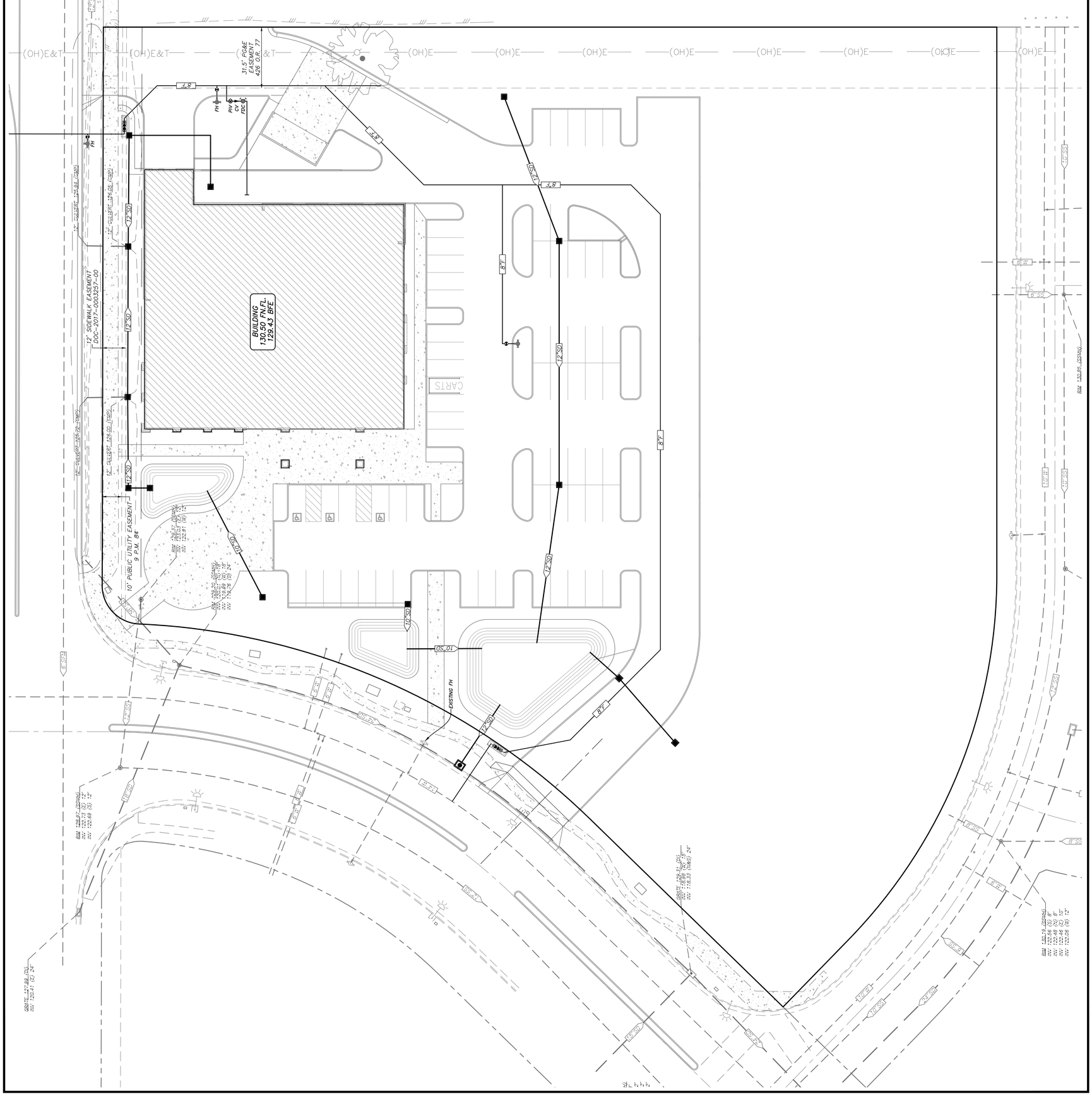
IMPROVEMENT PLANS
FOR
E.GRANT G.O. WINTERS

JOB NO.	2005-18
DESIGNED	BPB
DRAWN	
FILE	
CHECKED	
DATE	06/15/2022
SCALE	1"=20'

C401

SHEET 3 OF 3

SCALE: 1"=20'



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REV.	DATE	DESCRIPTION	BY	APP'D.

NOT FOR CONSTRUCTION

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CIVIL ENGINEERING · LAND SURVEYING · PLANNING
608 COURT STREET, WOODLAND, CALIFORNIA 95695 -PHONE: (530) 662-1755
P.O. BOX 828, WOODLAND, CALIFORNIA 95776 -FAX: (530) 662-4602

BY _____ BRYAN P. BONINO

DATE 03/27/2018 P.E. 41804

CIVIL ENGINEER BRYAN P. BONINO No. 41804 REGISTERED PROFESSIONAL ENGINEER STATE OF CALIFORNIA

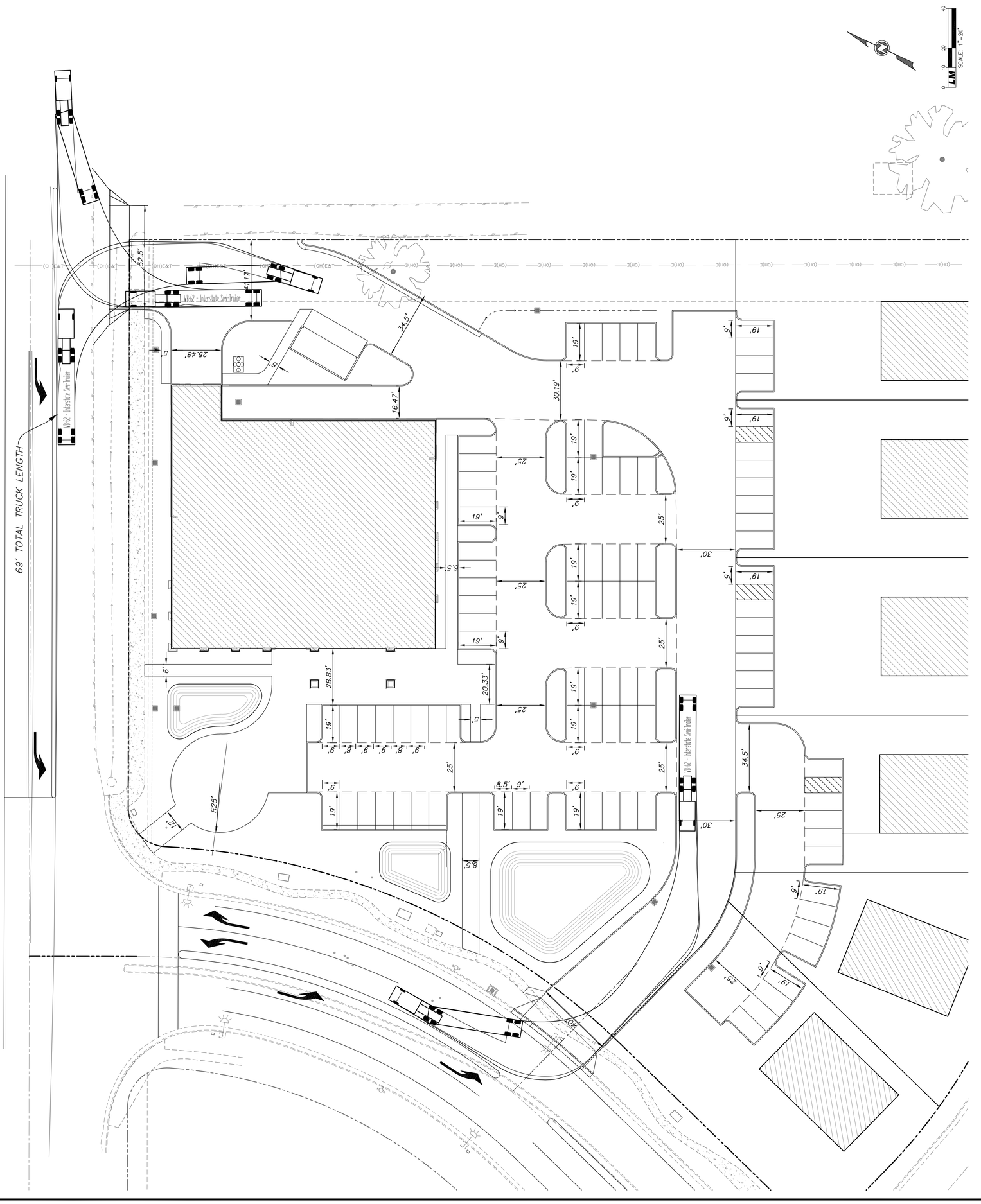
TRUCK EXHIBIT

IMPROVEMENT PLANS
FOR
E.GRANT G.O. WINTERS

CITY OF WINTERS CALIFORNIA

JOB NO.	2005-18
DESIGNED	BPB
DRAWN	
FILE	
CHECKED	
DATE	01/21/2022
SCALE	1"=20'

SHEET 1 OF 1



Winters Grocery Outlet Project

Transportation Study

FINAL ADMINISTRATIVE DRAFT

Prepared for:
City of Winters

December 2021

RS21-4108

FEHR PEERS

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1. Introduction

This study summarizes the results of the transportation analysis prepared for the proposed Grocery Outlet project (the project) described below. This study is divided into two primary components. First, a transportation impact analysis (Chapter 3), which evaluates potential project impacts to vehicle miles traveled (VMT), impacts to transit, bicycle, and pedestrian components of the transportation system, and impacts to transportation system safety in accordance with the current CEQA Guidelines. Second, a traffic operations analysis (Chapter 4), which evaluates the potential effects of the project with respect to traffic operations (i.e., vehicle delay) on roadway facilities within the vicinity of the project site.

The traffic operations analysis is deliberately separate from the transportation impact analysis in accordance with changes to the CEQA Guidelines resulting from the passage of Senate Bill (SB) 743, which eliminated the use of vehicle delay or level of service (LOS) for the purposes of identifying environmental impacts for land use projects. Instead, the traffic operations analysis addresses the project's consistency with City of Winters General Plan policies related to vehicle traffic operations and LOS.

Proposed Project

The Grocery Outlet project would occupy the northerly 2.29 acres of the 4.12-acre parcel bounded by Grant Avenue, or State Route 128 (SR 128), on the north, East Main Street on the west, East Baker Street on the south, and McClish Lane on the east. The project land use would be comprised of a 16,000 square foot Grocery Outlet store and 64 adjacent parking spaces. Vehicular access would be provided as follows:

- Full access on Grant Avenue at McClish Lane, approximately 300 feet east of East Main Street
- Left-in, right-in, and right-out access from a new driveway on East Main Street approximately 210 feet south of Grant Avenue.

Note that the driveway spacing measurements above are provided between the proposed driveway centerline and the near curb return of the adjacent intersection.

Figure 1 shows the project site and study area, which includes eight study intersections in the project vicinity.

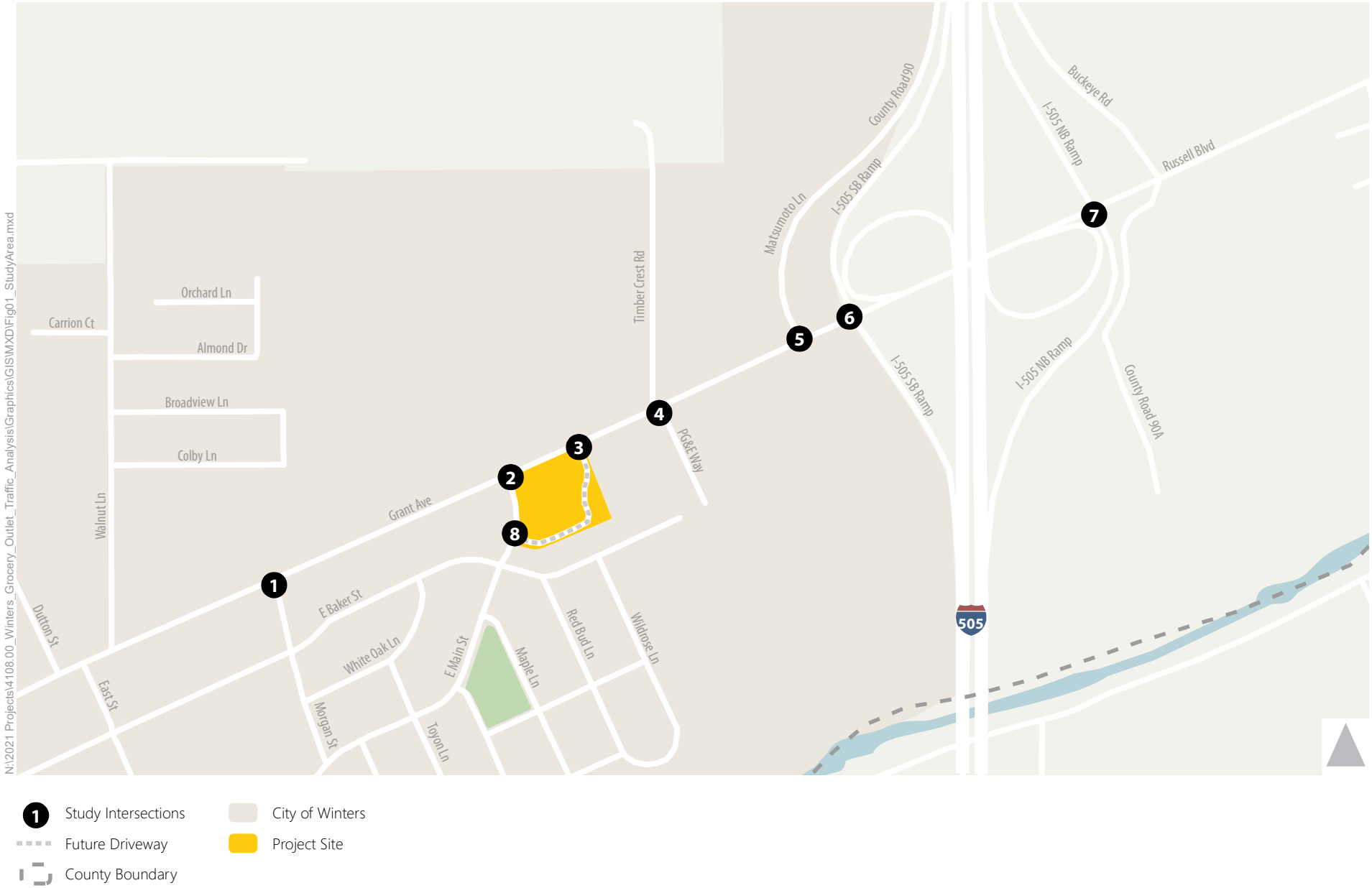


Figure 1

Study Area

2. Existing Conditions

This section describes existing conditions for roadway, transit, bicycle, and pedestrian components of the transportation system.

Existing Roadway System

I-505 is a north-south highway that provides the primary regional access to the City from Vacaville and central Solano County to the south, and from Woodland and I-5 to the north. Through the City, it is a four-lane, divided facility. According to Caltrans average daily traffic (ADT) data from 2017, I-505 carries approximately 24,500 daily trips within the vicinity of the East Grant Avenue interchange. I-505 has a flat alignment through Winters with a grade-separated, partial cloverleaf interchange at East Grant Avenue. The Grant Avenue/I-505 Southbound Ramps intersection is side-street stop-controlled and the Grant Avenue/I-505 Northbound Ramps intersection is signalized. The City of Winters Circulation Master Plan identifies a future traffic signal at the Grant Avenue/I-505 Southbound Ramps intersection (this improvement is also included in the City's impact fee program).

SR-128 (Grant Avenue) is a two-lane arterial running east-west through Winters. Within the City of Winters, SR-128 is referred to as Grant Avenue. Local motorists utilize Grant Avenue as the primary route to I-505, as well as Davis and other regional destinations along the I-80 corridor. SR-128 transitions into Russell Boulevard as it runs east of Winters towards Davis. West of Winters, SR-128 travels past Lake Berryessa and eventually into the Napa Valley. SR-128 is owned, operated, and maintained by Caltrans. The City of Winters Circulation Master Plan plans for East Grant Avenue to be widened to four lanes from East Main Street to I-505 (this improvement is also included in the City's impact fee program).

East Main Street is a two-lane collector utilized for local access to downtown Winters and the adjacent residential neighborhoods. Currently a 'half-loop' through the southern and northwestern portions of the City, Main Street has long been planned to provide a complete loop through Winters. The Grant Avenue/East Main Street intersection is side-street stop-controlled. The City of Winters Circulation Master Plan identifies a future traffic signal at this intersection (this improvement is also included in the City's impact fee program).

Morgan Street is a two-lane local road serving residential uses south of Grant Avenue. The Grant Avenue/Morgan Street intersection is currently side-street stop-controlled. The City of Winters Circulation Master Plan identifies a future roundabout at this intersection (this improvement is also included in the City's impact fee program) and envisions the extension of Morgan Street north of Grant Avenue.

Timber Crest Road/PG&E Way is a two-lane collector road serving the PG&E Gas Safety Academy. The Grant Avenue/Timber Crest Road/PG&E Way intersection is controlled by a traffic signal. The City of Winters Circulation Master Plan envisions extending Timber Crest Road north of Grant Avenue.

Matsumoto Lane/County Road 90 (CR 90) is a two-lane collector road that serves highway commercial uses north of Grant Avenue. The Grant Avenue/Matsumoto Lane/County Road 90 intersection is controlled by a traffic signal.

McClish Lane is a driveway south of Grant Avenue and east of East Main Street. It serves an existing residential parcel and has no outlet.

Transit System

The Yolo County Transportation District (YCTD) provides public transit service (Yolobus) in the City of Winters. No transit stops are located immediately adjacent to the project site. The closest bus stops to the project site are located on Grant Avenue east of Timber Crest Road/PG&E Way and on East Main Street north of Blue Oak Lane. Two Yolobus routes currently serve Winters as described below.

- **Yolobus Route 220** provides three daily round trips that link Winters with the City of Davis, UC Davis, and Vacaville. Service is provided Monday through Saturday. The bus stops located closest to the project site are at the Town & Country Market (Grant Avenue at Morgan Street) and at the intersection of East Main Street/Blue Oak Lane. The westbound bus arrives at Town & Country Market at 8:15 a.m., 10:56 a.m., and 2:56 p.m. The eastbound bus arrives at 9:42 a.m., 12:27 p.m., and 4:27 p.m. The bus line connects to the Memorial Union Terminal at UC Davis, the Vacaville Kaiser Medical Center, and the Vacaville Transportation Center.
- **Yolobus Route 220C** is a commuter route that connects Winters with the City of Davis and UC Davis with one round-trip per weekday. The bus stop located closest to the project site is at the intersection of East Main Street/Blue Oak Lane. The morning trip departs Winters at 7:15 a.m. while the evening trip returns to Winters at 5:44 p.m. The bus line connects to several UC Davis destinations including the Silo and Memorial Union bus terminals as well as the Sutter Davis Hospital on Covell Boulevard.

Note that as of November 2021, both routes are suspended due to COVID-19-related service disruptions. In lieu of fixed-route transit service, Yolobus is offering free on-demand curb-to-curb rides for Winters passengers traveling to parts of Davis and Vacaville.

YoloGO, the future service plan for Yolobus service throughout Yolo County, recommends the discontinuation of Route 220 and the implementation of on-demand microtransit service to serve local transit trips within Winters in its place. YoloGO additionally recommends the reinstatement of Route 220C.

Bicycle System

Caltrans recognizes four classifications of bikeway facilities, as described below:

- **Class I – Shared-Use Paths** provide a separate right-of-way for the exclusive use of people walking and bicycling. They tend to have minimal intersecting vehicle traffic and are often considered the lowest-stress facilities for people walking and bicycling.
- **Class II – Bike Lanes** designate an exclusive space for bicyclists through the use of pavement markings and signage. Bike lanes are located adjacent to motor vehicle travel lanes and flow in the same direction as motor vehicle traffic. Bike lanes are typically on the right side of the street, between the adjacent travel lane and curb, road edge, or parking lane.
- **Class III – Bike Routes** are designated streets where bicyclists and automobile drivers are encouraged to share the road. The routes are typically designated with signage, but some streets also use sharrows to indicate where bicyclists should position themselves on the road.
- **Class IV – Separated Bikeways** are often referred to as "cycle tracks" and are a relatively new class of bicycle facility. They have different forms but all share common elements—they provide space that is intended to be exclusively or primarily used for bicycles, and are separated from motor vehicle travel lanes, parking lanes, and sidewalks. Separated bikeways are typically situated between the motor vehicle travel lane/parking lane and the sidewalk.

Along the project frontage, the following bicycle facilities are provided:

- Class II bike lanes on both sides of East Main Street
- Class I shared-use path on the south side of Grant Avenue between East Main Street and McClish Lane. The path has a width of eight feet. No shoulders are provided for the path.

The City of Winters Bikeway System Master Plan (City of Winters, 2013) identifies future bicycle facility improvements throughout the City. This plan identifies the construction of both Class I shared-use paths and Class II bike lanes on Grant Avenue between Railroad Avenue and I-505.

Pedestrian System

Sidewalks are provided on both sides of East Main Street between Grant Avenue and East Baker Street along the project frontage. Additionally, a shared-use path is provided on the Grant Avenue project frontage.

Sidewalk gaps exist on both sides of Grant Avenue between Morgan Street and East Main Street and on the north side of Grant Avenue between East Main Street and Matsumoto Lane/County Road 90. Sidewalk

gaps also exist on both sides of East Baker Street between Morgan Street and the eastern East Baker Street terminus.

An unmarked crosswalk across East Main Street is provided at the south leg of the Grant Avenue/East Main Street intersection. Additionally, marked crosswalks are provided at the East Main Street/East Baker Street intersection southwest of the project site. Along Grant Avenue, there is a lack of marked crosswalks for an approximately one-half mile stretch between Walnut Lane and Timber Crest Road/PG&E Way.

The City of Winters Bikeway System Master Plan identifies future bicycle/pedestrian upgrades on Grant Avenue between Railroad Avenue and I-505, including the construction of Class I shared-use paths.

3. Transportation Impact Analysis

Regulatory Setting

Federal

No federal plans, policies, regulations, or laws related to transportation and circulation apply to the project. However, federal regulations relating to the Americans with Disabilities Act, Title VI, and environmental justice relate to transit service.

State

The State of California has enacted several pieces of legislation that outline the state's commitment to encourage land use and transportation planning decisions and investments that reduce vehicle miles traveled (VMT) and contribute to reductions in greenhouse gas (GHG) emissions in line with state climate goals. This legislation includes the following.

- Assembly Bill (AB) 32 (2006)
- Senate Bill (SB) 375 (2008)
- SB 226 (2011)
- SB 743 (2013)

Assembly Bill 32

AB 32 establishes regulatory, reporting, and market mechanisms to achieve quantifiable reductions in GHG emissions and a cap on statewide GHG emissions. AB 32 requires that statewide GHG emissions be reduced to 1990 levels by 2020. AB 32 also requires the following.

(a) the statewide GHG emissions limit shall remain in effect unless otherwise amended or repealed.

(b) it is the intent of the Legislature that the statewide GHG emissions limit continues in existence and be used to maintain and continue reductions in emissions of GHGs beyond 2020.

(c) the CARB shall make recommendations to the Governor and the Legislature on how to continue reductions of GHG emissions beyond 2020.

Senate Bill 375

SB 375 requires metropolitan planning organizations (MPOs) to prepare a sustainable communities strategy (SCS) as part of their regional transportation plans (RTPs). The SCS demonstrates how the region will meet its GHG reduction targets through integrated land use, housing, and transportation planning.

Specifically, the SCS must identify a transportation network that is integrated with the forecasted development pattern for the plan area and will reduce GHG emissions from automobiles and light trucks in accordance with targets set by the California Air Resources Board (CARB).

In 2017, the State Legislature passed SB 150, which requires CARB to prepare a report beginning in 2018 and every 4 years thereafter analyzing the progress made by each MPO in meeting regional GHG emission reduction targets.

The Sacramento Area Council of Governments (SACOG) serves as the MPO for Sacramento, Placer, El Dorado, Yuba, Sutter, and Yolo Counties, excluding those lands in the Lake Tahoe Basin. The Sacramento Campus is in Sacramento County and therefore is within the SACOG MPO.

SB 375 also provides streamlining (i.e., limited CEQA review) for certain transit priority projects that are consistent with the SCS.

Senate Bill 226

SB 226 revises the State CEQA Guidelines to set forth a streamlined review process for infill projects, including performance standards to determine an infill project's eligibility for that streamlined review. One of the requirements for streamlined review is that the project be consistent with the general use designation, density, building intensity, and applicable policies specified for the project area in either a SCS or an alternative planning strategy.

Senate Bill 743

SB 743 creates or encourages several statewide changes to the evaluation of transportation and traffic impacts under CEQA. First, it directs the Governor's Office of Planning and Research (OPR) to amend the State CEQA Guidelines to establish new metrics for determining the significance of transportation impacts of projects within transit priority areas (TPAs) and allows OPR to extend use of the new metrics beyond TPAs. In the amended State CEQA Guidelines, OPR selected VMT as the preferred transportation impact metric and applied its discretion to recommend the use of VMT statewide. The California Natural Resources Agency certified and adopted the amended State CEQA Guidelines in December 2018. The amended State CEQA Guidelines state that "generally, VMT is the most appropriate measure of transportation impacts" and the provisions requiring the use of VMT shall apply statewide as of July 1, 2020. The amended State CEQA Guidelines further state that land use "projects within 0.5 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."

Second, SB 743 establishes that aesthetic and parking impacts of a residential, mixed-use residential, or employment center projects on an infill site within a TPA shall not be considered significant impacts on the environment.

Third, SB 743 added Section 21099 to the Public Resources Code, which states that automobile delay, as described by level of service (LOS) or similar measures of vehicular capacity or traffic congestion, shall not be considered a significant impact on the environment upon certification of the State CEQA Guidelines by the California Natural Resources Agency. Since the amended State CEQA Guidelines were certified in December 2018, changes in LOS or similar measures of vehicular capacity or traffic congestion are not considered a significant impact on the environment.

Lastly, SB 743 establishes a new CEQA exemption for a residential, mixed-use, and employment center project (a) within a TPA, (b) consistent with a specific plan for which an EIR has been certified, and (c) consistent with an SCS. This exemption requires further review if the project or circumstances changes significantly.

Technical Advisory on Evaluating Transportation Impacts in CEQA

To aid in SB 743 implementation, OPR released a Technical Advisory on Evaluating Transportation Impacts in CEQA (Technical Advisory) in December 2018. The Technical Advisory provides advice and recommendations to CEQA lead agencies on how to implement SB 743 changes. This includes technical recommendations regarding the assessment of VMT, thresholds of significance, VMT mitigation measures, and screening thresholds for certain land use projects. Lead agencies may consider and use these recommendations at their discretion.

The Technical Advisory identifies screening thresholds to quickly identify when a project should be expected to cause a less-than-significant impact without conducting a detailed study. The Technical Advisory suggests that projects meeting one or more of the following criteria should be expected to have a less-than-significant impact on VMT.

- Small projects—projects consistent with a SCS and local general plan that generate or attract fewer than 110 trips per day.
- Projects near major transit stops—certain projects (residential, retail, office, or a mix of these uses) proposed within 0.5 mile of an existing major transit stop or an existing stop along a high-quality transit corridor.
- Affordable residential development—a project consisting of a high percentage of affordable housing may be a basis to find a less-than-significant impact on VMT.

- Local-serving retail—local-serving retail development tends to shorten trips and reduce VMT. The Technical Advisory encourages lead agencies to decide when a project will likely be local-serving, but generally acknowledges that retail development including stores larger than 50,000 square feet might be considered regional-serving. The Technical Advisory suggests lead agencies analyze whether regional-serving retail would increase or decrease VMT (i.e., not presume a less-than-significant impact).
- Projects in low-VMT areas—residential and office projects that incorporate similar features (i.e., density, mix of uses, transit accessibility) as existing development in areas with low VMT will tend to exhibit similarly low VMT.

The Technical Advisory also identifies recommended numeric VMT thresholds for residential, office, and retail projects, as described below.

- Residential development that would generate vehicle travel exceeding 15 percent below existing residential VMT per capita may indicate a significant transportation impact. Existing VMT per capita may be measured as a regional VMT per capita or as city VMT per capita.
- Office projects that would generate vehicle travel exceeding 15 percent below existing regional VMT per employee may indicate a significant transportation impact.
- Retail projects that result in a net increase in total VMT may indicate a significant transportation impact.

For mixed-use projects, the Technical Advisory suggests evaluating each component independently and applying the significance threshold for each project type included. Alternatively, the lead agency may consider only the project's dominant use.

The Technical Advisory also provides guidance on impacts to transit. Specifically, the Technical Advisory suggests that lead agencies generally should not treat the addition of new transit users as an adverse impact. As an example, the Technical Advisory suggests the following.

> [An] infill development may add riders to transit systems and the additional boarding and alighting may slow transit vehicles, but it also adds destinations, improving proximity and accessibility. Such development also improves regional vehicle flow by adding less vehicle travel onto the regional network. (Governor's Office of Planning and Research 2018)

California Department of Transportation

The California Department of Transportation (Caltrans) is responsible for planning, designing, constructing, operating, and maintaining the State Highway System (SHS). Within the study area, Grant Avenue (SR 128) and I-505 are components of the SHS. Federal highway standards are implemented in

California by Caltrans. Any improvements or modifications to the SHS within the project vicinity would need to be approved by Caltrans. The following Caltrans planning documents emphasize the State of California's focus on transportation infrastructure that supports mobility choice through multimodal options, smart growth, and efficient development.

- Smart Mobility 2010: A Call to Action for the New Decade (Smart Mobility Framework) (California Department of Transportation 2010a).
- Complete Streets Implementation Action Plan (California Department of Transportation 2010b).
- California Transportation Plan 2040 (California Department of Transportation 2016a).
- Strategic Management Plan 2015-2020—2019 Update (California Department of Transportation 2019a).

VMT-Focused Transportation Impact Study Guide

On May 20, 2020, Caltrans adopted the VMT-Focused Transportation Impact Study Guide (TISG) to provide updated guidance to Caltrans Districts, lead agencies, tribal governments, developers, and consultants based on changes to the agency's review process for transportation analysis of land use projects and plans under the updated State CEQA Guidelines. The TISG outlines how Caltrans will review land use projects with a focus on supporting state land use goals, state planning priorities, and GHG emission reduction goals; the TISG identifies land use projects' possible transportation impacts on the SHS and potential non-capacity increasing mitigation measures. The TISG emphasizes that VMT analysis is the primary review focus of Caltrans and references OPR's Technical Advisory as a basis for the guidance in the TISG. Notably, the TISG recommends use of the recommended thresholds in the Technical Advisory for land use projects. The TISG also references the Technical Advisory for screening thresholds that would identify projects and areas presumed to have a less-than-significant transportation impact. Caltrans supports streamlining for projects that meet these screening thresholds because they help achieve VMT reduction and mode shift goals.

Interim Local Development Intergovernmental Review Safety Review Practitioners Guidance

On December 18, 2020, Caltrans released the Interim Local Development Intergovernmental Review Safety Review Practitioners Guidance (Safety Guidance) to provide updated guidance to Caltrans Districts, lead agencies, developers, and consultants conducting safety review for proposed land use projects and plans that would affect the State Highway System. The interim guidance recommends that safety analyses include a review of three primary elements related to transportation safety—design standard compliance, collision history, and collision risk (consistent with the Federal Highway Administration's Systemic Approach to Safety). The interim guidance does not establish specific analysis methods or significance

thresholds for determining safety impacts under CEQA. Additionally, Caltrans notes that local agencies may use the interim guidance at their own discretion as a guide for review of local facilities.

Grant Avenue/SR 128/Russell Boulevard Complete Streets Concept Plan

Caltrans prepared the Grant Avenue/SR 128/Russell Boulevard Complete Streets Concept Plan (2010) to identify multi-modal transportation improvements along the Grant Avenue corridor. The plan was prepared for Caltrans and the City of Winters and adopted by the Winters City Council in February 2011. The plan includes the following future transportation improvements within the study area:

- Widening of Grant Avenue from two to four lanes between East Main Street and I-505
- Construction of Class I shared-use paths and Class II bike lanes on both side of Grant Avenue
- Construction of new roundabouts at Grant Avenue intersections with Dutton Street, Walnut Lane (since constructed), and Morgan Street
- Installation of new traffic signals at Grant Avenue intersections with East Main Street, Timber Crest Road (since constructed) and I-505 Southbound Ramps

Regional and Local

Sacramento Area Council of Governments

SACOG is the MPO governing the six-county Sacramento region consisting of El Dorado, Placer, Sacramento, Sutter, Yolo, and Yuba Counties and their 22 cities. SACOG is responsible for the preparation of, and updates to, the Metropolitan Transportation Plan/Sustainable Communities Strategy (MTP/SCS) (Sacramento Area Council of Governments 2019) and the associated Metropolitan Transportation Improvement Program (MTIP) for the six-county region. The SACOG 2020 MTP/SCS provides a 20-year transportation vision and corresponding list of transportation projects. The MTIP identifies short-term projects (i.e., projects with a 7-year horizon) in more detail. The current SACOG 2020 MTP/SCS was adopted by the SACOG board on November 18, 2019.

The SACOG 2020 MTP/SCS (Sacramento Area Council of Governments 2019) provides the basis for air quality conformity findings related to the national Clean Air Act and determinations of whether the region is complying with GHG reduction targets for automobiles and light trucks established under SB 375. Major projects that are inconsistent with the plan could jeopardize the plan's effectiveness for air pollution and GHG reduction. Consequently, consistency with the MTP/SCS is a potential basis for determining adverse impacts related to these environmental topics.

The SACOG 2020 MTP/SCS acknowledges the following.

> A more compact land development pattern and providing alternatives to driving alone are critical strategies for reducing the amount of driving we do in our daily lives. Location within the region is likely the most important variable in determining how much time people spend in their vehicles. Communities within existing urban areas, and with a mix and density of uses, tend to produce less VMT per resident than places that are farther away and spread out. These "lower VMT" areas also tend to have the density and mix of uses to support better transit service and are friendlier to biking and walking for some trips. (Sacramento Area Council of Governments 2019)

To this end, the SACOG 2020 MTP/SCS includes figures showing the distribution of VMT generation in the SACOG region presented in VMT per capita. One figure presents the VMT generation for the base year (2016), and one presents the VMT generation in the horizon year of the MTP/SCS (2040).

City of Winters General Plan

The City of Winters General Plan was adopted in 1992 and sets forth overarching goals and objectives related to transportation and circulation in the context of planned land use within the City. The General Plan guides the development of new roads and roadway modifications to serve long-term needs of Winters. The General Plan also provides direction for multimodal implementation.

All of the study intersections and roadway segments are subject to the City of Winters' level of service (LOS) standards. The City of Winters General Plan identifies LOS D conditions as the threshold service level throughout the City. The Yolo County Congestion Management Plan identifies LOS D conditions as the threshold service level for Intersections located along Grant Avenue (State Route 128).

Relevant transportation policy statements from the General Plan are provided below.

- Goal III.A. To create and maintain a roadway network that will ensure the safe and efficient movement of people and goods throughout the city.
- Goal III.G. To promote pedestrian and bicycle travel as alternatives to automobile use.
- Policy III.A.9. The City shall require street designs consistent with principles of interconnected network path design. The City shall insure that there are multiple, local street access points to all developments throughout the city. The City shall insure that direct access to all local streets from primary and secondary collectors is maintained. At the discretion of the City, alleys may be used in conjunction with the overall street layout.
- Policy III.A.10. Street designs should promote pedestrian and bicycle travel and should emphasize safety over travel speed and capacity. Collector streets should not be used as separators of neighborhoods.

- Policy III.B.3. The City shall require bus turnouts and shelters in higher density residential and commercial areas and other areas deemed appropriate.
- Policy III.G.1. The City shall create and maintain a safe and convenient system of pedestrian and bicycle routes that encourages walking or bicycling as an alternative to driving. The pedestrian and bicycle system shall connect all residential areas, schools, and shopping and employment areas in the city. The bicycle system shall favor on-street bike lanes over separated bike paths. New development shall be required to pay its share of the costs for development and maintenance of this system.
- Policy III.G.2. The City shall require installation of sidewalks along all streets in all newly developing areas.
- Policy III.G.6. The City shall require inclusion of bicycle parking facilities at all new major public and quasi-public facilities and commercial and employment sites. Major employers shall be encouraged to provide showers and lockers in their facilities to encourage biking.

- Policy V.A.15. The City shall pursue the development of a citywide network of pedestrian and bicycle pathways and equestrian trails. The pedestrian and bicycle pathway and trail system should be designed to link parks, schools, civic and major shopping and employment centers. The City's bicycle pathway system should be integrated with the countywide bikeway system.

City of Winters Circulation Master Plan

The City of Winters Circulation Master Plan (2017) identifies several roadway network modifications within the study area:

- Extension of East Main Street and Timber Crest Road north of Grant Avenue
- Extension of East Baker Street to Timber Crest Road/PG&E Way
- Construction of Moody Slough Road between County Road 88 and Matsumoto Road
- Widening of Grant Avenue from two to four lanes between East Main Street and I-505
- Installation of new traffic signals at the following intersections:
    - Grant Avenue/East Main Street
    - Grant Avenue/I-505 Southbound Ramps
    - East Main Street/Moody Slough Road
    - Timber Crest Road/Moody Slough Road
- Installation of new roundabouts at the following intersections:
    - Grant Avenue/Dutton Street
    - Grant Avenue/Morgan Street

City of Winters Design Guidelines

The City of Winters Design Guidelines (1999) provide the community design expectations for the development of commercial and residential areas in Winters. The Design Guidelines include the following transportation-related guidance and requirements for the Grant Avenue corridor between Dutton Street and I-505 (i.e., within the immediate project site vicinity):

- Vision Statement: A transition from highway commercial to pedestrian commercial is envisioned as one moves towards the western sections of the corridor from I-505.
- Circulation Access: To keep traffic flowing freely, ingress and egress to adjacent properties on Grant Avenue shall be carefully planned. Individual driveways will be allowed only where previously existing or where they represent the only feasible access and are consistent with Caltrans regulations. Joint driveways may be permitted if necessary, but should be kept to a minimum. The preference is for Grant Avenue frontage parcels to get their access via the adjacent cross streets which run perpendicular to Grant Avenue. Median left turn lanes will be provided to ensure easy access and maximum circulation efficiency.
- Street Standards: Grant Avenue will be a 4-lane arterial,[1] with pavement from 66 to 84 feet, and a 106 to 124 foot wide right-of-way. A landscaped center median with left turn pockets will be provided along the corridor
- Bicycles: Grant Avenue is a significant street for bicycle traffic. Bicycle lanes will be clearly marked adjacent to the sidewalk curb in each direction
- Pedestrians: Pedestrians will be provided with a sidewalk on each side of Grant Avenue. Crosswalks will be paved with contrasting materials in order to alert motorists to pedestrian safety and to provide architectural texture and community character. Crosswalk signalization will be provided at all through cross streets. Attention to pedestrian access shall be emphasized in the western sections of the corridor.

City of Winters Grant Avenue Design Guidelines

The City of Winters Grant Avenue Design Guidelines (2011) establish guidance to property owners and design professionals in planning and designing new building and remodeling existing structures within the Grant Avenue Economic Development Advisory Project Area. This area generally covers the Grant Avenue corridor between Railroad Avenue and I-505 and includes the project site.

[1] Note that this standard is based on the City's Circulation Master Plan at the time of the publication of the Design Standards. Recent medications to the Circulation Master Plan now plan for the widening of Grant Avenue to four lanes between East Main Street and I-505.

The City of Winters Grant Avenue Design Guidelines include the following transportation-related elements that pertain to the project:

- Connectivity
    - Provide for pedestrian, bicycle, and vehicle travel within the Grant Avenue corridor.
    - In proposing a project, applicants shall consider and demonstrate how the development will connect with the Grant Avenue Complete Streets Concept Plan, Class I and II bikeways, pedestrian/bicycle facilities within the project and with bordering facilities, and the Putah Creek Park Master Plan and Trail System.
    - As a priority, developments should provide direct connection with bicycle/pedestrian facilities that border the project site, minimize bicycle/pedestrian and vehicular conflicts within and external to the project, reduce vehicular ingress/egress from the project, and create effective circulation/flow within the project.
- Vehicular Circulation
    - Provide separate vehicular and pedestrian circulation systems with a strong emphasis on pedestrian linkages between uses.
    - The City of Winters wishes to minimize conflicts for excessive ingress/egress locations along Grant Avenue. Projects shall consider alternatives to Grant Avenue such as arterials (East Main Street, Timber Crest Road, or Walnut Lane).
    - Locate additional site access points as far as possible from street intersections to minimize conflicts. More than one access to a site from a public street may be permitted when the additional access will not be hazardous to the safety and operation of the street or pedestrians and when it facilitates the integration of commercial development into the community.
- Bicycle Circulation and Parking
    - Bicycle paths and routes shall be designed to provide continuous circulation through the site separated from vehicle travel ways, wherever feasible.
- Pedestrian Circulation
    - Continuous pedestrian walkways shall be provided to connect the public sidewalk to the principal customer entrances at each tenant space. Drive aisles should not be uses as pedestrian walkways.
    - Sidewalks and pedestrian ways shall be scaled to the use and expectations of pedestrian volumes in any given location with the minimum width of the sidewalk and pedestrian ways no less than 5 feet, and no less than 8 feet where multi-use is proposed.

City of Winters Bikeway System Master Plan

The current version of the Bikeway System Master Plan was approved by the City of Winters City Council in 2013. The applicable transportation policy statements from this document are described below.

- Goal 3. Encourage a community culture that supports the use of bicycling as a major mode of transportation throughout the city.
- Goal 4. Establish a well-connected bikeways system that is well-integrated with other modes of transportation and other alternative modes of transportation.
- Goal 6. Create a convenient and safe bikeway system that aims to reduce vehicle congestion, improve air quality and improve individual physical fitness.

The 2013 Bikeway System Master Plan identifies five priority projects as follows. A portion of the first two projects described below are located along the project frontage on Grant Avenue.

- Grant Avenue (SR 128) from East Main Street to I-505 – Class I/II bike lanes and pedestrian facilities
- Grant Avenue (SR 128) from Railroad Avenue to East Main Street – Bike/pedestrian upgrade
- Grant Avenue (SR 128) from I-505 to El Rio Villa-Yolo Housing – Class I trail
- Putah Creek Pedestrian and Bike Bridge – Class I trail
- West Section of Main Street – Class I trail

Yolo County Transportation District

The YCTD provides public transit service (Yolobus) in the City of Winters. YCTD recently prepared YoloGO (2021), the future service plan for Yolobus service throughout Yolo County. YoloGO recommends the discontinuation of Route 220 and the implementation of on-demand microtransit service to serve local transit trips within Winters in its place.

Thresholds of Significance

In accordance with CEQA, the effects of a project are evaluated to determine if they will result in a significant adverse impact on the environment. For the purposes of this analysis, an impact is considered significant if implementation of the project would have any of the effects described below.

The standards of significance in this analysis are based upon the current practice of the appropriate regulatory agencies as described in the Regulatory Setting section. For most areas related to transportation and circulation, policies from the City of Winters' General Plan have been used. For the State Highway System, Caltrans' standards were used.

Vehicle Miles Traveled Impacts

State CEQA Guidelines Section 15064.3, subdivision (b) outlines criteria for analyzing transportation impacts using VMT. For land use projects, VMT exceeding an applicable threshold of significance may indicate a significant impact.

The City of Winters has not formally adopted guidance or thresholds related to VMT impact analysis (i.e., tailored screening criteria, preferred metrics and calculation methods, and use-specific thresholds). Therefore, this analysis relies on guidance from the Technical Advisory. Per the Technical Advisory, the project would result in a significant impact if it would do any of the following.

- Generate vehicle travel exceeding 15 percent below existing regional household VMT per capita for residential uses.
- Generate vehicle travel exceeding 15 percent below existing regional work VMT per employee for employment uses.
- Include retail development that would result in a net increase in total VMT.

Transit System Impacts

The project would result in a significant transportation impact if it would do any of the following.

- Physically disrupt an existing transit service/facility.
- Interfere with the implementation of a planned transit service/facility.
- Create an inconsistency with the transit policies or standards of plans adopted by the City of Winters, YCTD, or Caltrans.

Bicycle and Pedestrian System Impacts

The project would result in a significant transportation impact if it would do any of the following.

- Physically disrupt an existing bicycle or pedestrian facility.
- Interfere with the implementation of a planned bicycle or pedestrian facility.
- Create an inconsistency with the bicycle or pedestrian policies or standards of plans adopted by the City of Winters, YCTD, or Caltrans.

Transportation System Safety Impacts

The project would result in a significant transportation impact if it would do any of the following.

- Result in a geometric design feature that is inconsistent with applicable design standards.
- Result in a change to the volume, mix, or speed of traffic that is not compatible with the existing facility design.

Methods of Analysis

The transportation impact analysis methodology includes a combination of quantitative and qualitative evaluations of the transportation system. The specific analysis methods are described below.

Project Description

The Grocery Outlet project would occupy the northerly 2.29 acres of the 4.12-acre parcel bounded by Grant Avenue, or State Route 128 (SR 128), on the north, East Main Street on the west, East Baker Street on the south, and McClish Lane on the east. The project land use would be comprised of a 16,000 square foot Grocery Outlet store and 64 adjacent parking spaces. Vehicular access would be provided as follows:

- Full access on Grant Avenue at McClish Lane, approximately 300 feet east of East Main Street
- Left-in, right-in, and right-out access from a new driveway on East Main Street approximately 210 feet south of Grant Avenue.

Note that the driveway spacing measurements above are provided between the proposed driveway centerline and the near curb return of the adjacent intersection.

Project Travel Characteristics

Project trip generation was estimated using the City of Winters local travel demand model. At buildout, the project would generate 1,430 daily, 81 a.m. peak hour, and 167 p.m. peak hour gross vehicle trips. Accounting for pass-by trips to and from the project commercial uses (estimated to be 41 percent of gross vehicle trips for supermarket land uses less than 50,000 square feet in size per the *ITE Trip Generation Handbook, 3rd Edition*), at buildout, the project would generate 844 daily, 48 a.m. peak hour, and 99 p.m. peak hour net new vehicle trips on the surrounding roadway system.

Bicycle and Pedestrian Facilities

The impact assessment for bicycle and pedestrian travel considers existing and planned bicycle and pedestrian facilities and reviews the project to determine whether it would physically disrupt an existing facility or prevent the implementation of a planned facility. This assessment also considers whether the project would substantially increase conflicts between bicyclists and pedestrians and other modes of travel.

Transit Services and Facilities

The impact assessment for transit considers existing and planned transit facilities and services and reviews the project to determine whether it would physically disrupt an existing service or facility or prevent the implementation of a planned service or facility. This assessment also considers whether the project could conflict with applicable transit policies.

Vehicle Miles Traveled

As discussed above, LOS can no longer be used for evaluating project traffic impacts under CEQA with the passage of SB 743 and adoption of the amended CEQA Guidelines implementing SB 743 (see State CEQA Guidelines Section 15064.3). Per State CEQA Guidelines Section 15064.3, subdivision (c), the provisions in Section 15064.3 recommending VMT as the primary metric for analyzing traffic impacts applies as of July 1, 2020.

This analysis relies on guidance provided in the Technical Advisory to assess the project's VMT impact. Specifically, this analysis considers the following.

- Does the project meet one or more of the screening thresholds identified in the Technical Advisory such that a detailed analysis is not necessary?
    - If so, what information or data are available to support the conclusion that the project meets the screening threshold and should be considered to have a less-than-significant transportation impact?
- If the project does not meet one or more of the "screening thresholds," this analysis would proceed to a detailed analysis of the project's VMT impact. This includes quantifying the project's VMT generation and determining whether this VMT generation would exceed the recommended thresholds of significance in the Technical Advisory (i.e., 15 percent below existing regional VMT per capita/employee).

Vehicle Miles Traveled Screening Analysis

The Technical Advisory identifies "screening thresholds" to quickly identify, without conducting a detailed study, when a project should be expected to cause a less-than-significant transportation impact. As described in the Regulatory Setting section, the Technical Advisory suggests the following projects should be expected to have a less-than-significant impact on VMT.

- Small projects.
- Projects near major transit stops.
- Affordable residential development.

- Local-serving retail.
- Projects in low-VMT areas.

Of these project types, only the criterion for projects near major transit stops are codified in the updated State CEQA Guidelines. The remaining criteria for small projects, affordable residential development, local-serving retail, or projects in low-VMT areas are not codified in the State CEQA Guidelines but are suggested by OPR based on research cited in the Technical Advisory.

The Technical Advisory describes new retail development as typically redistributing shopping trips rather than creating new trips. By improving retail destination proximity, local-serving retail tends to shorten trips and thereby reduce VMT. Conversely, regional-serving retail (generally stores larger than 50,000 square feet) can lead to a substitution of longer trips for shorter ones. A review of the project and study area indicates that the project would meet the local-serving retail screening criteria identified in the Technical Advisory. Therefore, a quantitative VMT analysis is not required (refer to Impact 3 for additional information).

Impacts and Mitigation Measures

This section describes the evaluation of potential transportation impacts associated with the implementation of the project and, in instances where the project would cause a significant impact, identifies potential mitigation measures that would lessen the severity of the impact.

Impact 1. Impacts to bicycle and pedestrian facilities.

Along the project frontage, sidewalks and Class II bike lanes are provided on both sides of East Main Street and there is a shared-use path (Class I bike lane) on the south side of Grant Avenue between East Main Street and McClish Lane.

The project would not modify existing off-site pedestrian facilities and would not cause a physical disruption to existing pedestrian facilities. Additionally, the project would construct new pedestrian connections between the Grocery Outlet store entry/exit points and existing off-site pedestrian facilities.

The project would not modify existing off-site bicycle facilities, with the possible exception of the southbound Class II bike lane on East Main Street. The project would include the construction of a new southbound left-turn pocket at the East Main Street project driveway. The City of Winters' *Improvement Standards and Standard Drawings* provides standard approved design widths in Section 4-3. For primary collectors (such as East Main Street in the project vicinity), vehicular travel lanes should be 12 feet wide and bike lanes should be 5 feet wide (including 2 feet of curb and gutter). The project site plan does not provide sufficient details regarding proposed lane configurations, geometrics, etc. necessary to evaluate the effects of the proposed southbound left-turn pocket on the existing southbound Class II bike lane on East Main Street. A preliminary measurement of southbound East Main Street at this location indicates that there is approximately 25 feet of width between the westerly curb and the raised center median. Based on this preliminary measurement, it is possible that there is insufficient width to accommodate the proposed southbound left-turn pocket alongside a southbound through travel lane and the existing southbound Class II bike lane. Therefore, the project could cause a physical disruption to the existing Class II bike lane on East Main Street.

Considering the project's land use and location within the City of Winters, the project would generate new demand for bicycle and pedestrian travel, especially from residential neighborhoods in the vicinity. New bicycle and pedestrian demand could be served by existing facilities south of the project site (e.g., along East Main Street or East Baker Street) or to the northeast of the project site via the shared use path on the south side of Grant Avenue. Some pedestrians traveling to or from the south would travel on the west side of East Main Street and cross the south leg of the Grant Avenue/East Main Street intersection to access the project site. This location currently has an unmarked crosswalk, which reduces the visibility of

the crosswalk to oncoming vehicular traffic and increases the potential for conflicts involving pedestrians. Moreover, given the length of this crossing (approximately 105 feet), pedestrians experience considerable exposure to conflicting vehicle traffic while utilizing the crossing. The existing unmarked crosswalk together with increased pedestrian activity generated by the project could increase the potential for conflicts involving pedestrians at the south leg of the Grant Avenue/East Main Street intersection.

Given these conditions, the project could cause a physical disruption to existing bicycle facilities and increase the potential for bicycle and pedestrian conflicts with vehicles. The project-related adverse effects on bicycle and pedestrian travel and safety would be inconsistent with City and Caltrans plans and policies that promote bicycle and pedestrian travel, including City of Winters General Plan Goal III.G and Policies III.A.10/III.G.1, the City of Winters Bikeway System Master Plan, the Grant Avenue/SR 128/Russell Boulevard Complete Streets Concept Plan, and the City of Winters Design Guidelines.

Altogether, this impact would be **significant**.

Mitigation Measure 1.1. Install a high-quality pedestrian crossing on the south leg of the Grant Avenue/East Main Street intersection.

The installation of a high-quality pedestrian crossing across the south leg of the Grant Avenue/East Main Street intersection would reduce this impact by a) decreasing the number and severity of pedestrian-vehicle conflicts and the potential for collisions involving pedestrians and by b) accommodating pedestrian travel in a manner consistent with City and Caltrans plans, policies, and standards that promote bicycle and pedestrian travel. Potential improvement options include the installation of a marked crosswalk with high visibility striping/markings and accompanying signage, or an improvement of equal effectiveness as determined by the City of Winters City Engineer. The crossing improvements should be constructed prior to occupancy of the project site.

Mitigation Measure 1.2. Modify East Main Street between Grant Avenue and East Baker Street to comply with applicable design standards.

The proposed East Main Street project driveway and accompanying southbound left-turn pocket would require modifications to East Main Street between Grant Avenue and East Baker Street in order to comply with applicable design standards, including those related to the existing Class II bike lanes. Given the proximity of the East Main Street project driveway to the Grant Avenue/East Main Street and East Main Street/East Baker Street intersections, modifications to this segment of East Main Street should also consider existing and future geometric and operational needs at

these adjacent intersections (e.g., the planned signalization of the Grant Avenue/East Main Street intersection).

This segment of East Main Street should be modified to accommodate the following:

1. Southbound East Main Street – A Class II bike lane, a southbound through travel lane, and a southbound left-turn lane. The southbound left-turn lane should extend between Grant Avenue and the East Main Street project driveway and be designed to prohibit left-turn egress at the project driveway.
2. Northbound East Main Street – A Class II bike lane plus a left-turn pocket and a right-turn lane at the northbound approach of the Grant Avenue/East Main Street intersection. Once East Main Street is extended north of Grant Avenue, the northbound approach would need to be modified to accommodate either a shared through-right turn lane or a through lane and a right-turn pocket.

The northbound left-turn pocket at the Grant Avenue/East Main Street intersection and the southbound left-turn lane at the East Main Street project driveway should be constructed side-by-side to accommodate anticipated vehicle queueing for each movement.

These proposed lane configurations would require modifications to the existing raised center median along this segment of East Main Street, particularly the portion of the median located north of the project driveway.

Additionally, the East Main Street project driveway should be designed to ensure that adequate sight distance is provided for ingress/egress maneuvers. In particular, adequate sight distance should be provided for southbound left-turning vehicles (i.e., those waiting to enter the project site) looking for approaching northbound through vehicles. Based on the current project site plan, it is possible that this sight line would be obstructed by queued vehicles waiting to complete a southbound left-turn at the East Main Street/East Baker Street intersection.

These modifications should be constructed prior to occupancy of the project site.

With the implementation of Mitigation Measures 1.1 and 1.2, this impact would be **less than significant with mitigation**.

Impact 2. Impacts to transit services and facilities.

Yolobus Routes 220 and 220C provide transit service between the City of Winters, Vacaville, the City of Davis, and UC Davis. As described previously, these services are currently suspended due to the COVID-19 pandemic. During pre-COVID-19 conditions, Route 220 provided three daily round-trips between Winters, Vacaville, Davis, and UC Davis and Route 220C provided one daily round-trip between Winters and UC Davis. The closest bus stops to the project site are located on Grant Avenue east of Timber Crest Road/PG&E Way and on East Main Street north of Blue Oak Lane.

The YoloGO transit service plan recommends the discontinuation of Route 220 and the implementation of a new on-demand microtransit service to serve local transit trips within Winters. YoloGO additionally recommends that Route 220C be restored to pre-COVID-19 service levels.

Based on May 2019 ridership levels reported by Yolobus, Routes 220 and 220C generated 34 and 16 weekday passenger boardings, respectively. These low ridership levels are typical of suburban and rural transit markets where dispersed development patterns and fast, convenient, and inexpensive vehicle travel options result in relatively low demand for transit services.

The project would create additional demand for public transit services. The project would be expected to generate transit demand at a rate commensurate with existing development within the City of Winters. Therefore, demand for local transit service between the project site and locations within the City of Winters would be adequately served by the new on-demand microtransit service recommended in the YoloGO transit service plan.

The project would not physically disrupt existing transit services or facilities. Moreover, the project would not interfere with the implementation of planned future transit services or facilities.

City of Winters General Plan Policy III.B.3 requires that bus turnouts and shelters in higher density residential and commercial areas and other areas as deemed appropriate. While the project would include a commercial use, it would not include the provision of new bus turnouts or shelters. This could represent an inconsistency with General Plan Policy III.B.3.

Altogether, this impact would be **significant**.

Mitigation Measure 2.1. Coordinate with YCTD to determine transit stop infrastructure needs and construct new transit stop infrastructure as necessary.

City of Winters General Plan Policy III.B.3 requires that bus turnouts and shelters in higher density residential and commercial areas and other areas as deemed appropriate. The policy does not clarify specific thresholds (e.g., density thresholds) where bus turnouts and shelters are warranted by new development. It is recommended that the City of Winters and the project applicant coordinate with YCTD to determine a) the extent to which existing bus stops along Grant Avenue and East Main Street would provide adequate access for Yolobus passengers generated by the project and b) if new bus turnouts and shelters on Grant Avenue or elsewhere within the vicinity of the project site are warranted per General Plan Policy III.B.3. This coordination should consider the infrastructure needs of Yolobus' proposed Winters microtransit service. Microtransit services typically provide curb-to-curb service and, in most instances, can be less reliant on traditional bus infrastructure such as designated stops, turnouts, etc. Depending on the outcome of this coordination, it may be determined that new bus turnouts and shelters on Grant Avenue, East Main Street, or elsewhere within the vicinity of the project site are desirable to enhance transit access to and from the project site. If determined desirable by YCTD, the new bus turnout(s) and shelter(s) should be constructed prior to occupancy of the project site.

With the implementation of Mitigation Measure 2.1, this impact would be **less than significant with mitigation**.

Impact 3. Impacts to vehicle miles traveled (VMT) on the roadway system.

As described previously, the project would qualify for the local-serving retail screening criteria identified in the Technical Advisory, and thus would be presumed to have a less-than-significant impact to VMT. This conclusion is supported by the information presented below.

The project would include a 16,000 square-foot Grocery Outlet store, which is a limited assortment supermarket brand oriented toward bargain shoppers. Aside from several convenience stores located within Winters, grocery store options are generally limited, especially bargain stores. These include the following:

- Lorenzo's Market – the City's only conventional supermarket, an approximately 16,500 square-foot store with multiple service departments including a deli and bakery; located on the north side of Grant Avenue between Walnut Lane and Morgan Street.

- Dollar General – an approximately 9,500 square-foot bargain general store that includes a limited assortment of food items; located across Lorenzo's Market, on the south side of Grant Avenue.
- Winters Market – an approximately 2,500 square-foot convenience store with a limited assortment of food items; located on the northwest corner of the Grant Avenue/Railroad Avenue intersection.

Nearby population centers such as Davis, Dixon, Vacaville, and Woodland are served by one or more bargain grocery stores, including other Grocery Outlet stores. Therefore, the proposed project is not likely to attract regional shopping trips and is more likely to attract local shopping trips generated within Winters. The project is expected to redistribute local and regional shopping trips as follows:

- Local Trips – The project would cater to a clientele of bargain shoppers. To the extent that the proposed Grocery Outlet would draw customers away from existing grocery options within the City, a redistribution of local trips would generally increase the average grocery shopping trip length within the City of Winters. This is because the project site is located towards the eastern periphery of the City and about 0.25 mile east of current grocery store options on Grant Avenue (e.g., Lorenzo's Market), which in turn would place the project further away from the current center of population relative to other local grocery options. Therefore, redistribution of local shopping trips would tend to increase the existing grocery shopping trip length within the City by roughly 0.5 mile for most trips that shift to the proposed Grocery Outlet. VMT within the City would increase accordingly by approximately 0.5 VMT per such trip.
- Regional Trips – Due to the general lack of grocery stores in Winters, especially bargain grocery store options, the proposed project would result in increased internalization of trips within Winters. In other words, rather than traveling outside the City for bargain grocery shopping (e.g., to a Grocery Outlet, Walmart, Food-4-Less, etc. in other communities), bargain shoppers would be provided with an option internal to the City of Winters. This would result in a substantial decrease in shopping trip length (and VMT) for such trips, as the nearest bargain grocery stores to Winters are in Davis, Dixon, and Vacaville, over 10 miles away. Therefore, the conversion of some regional shopping trips to local shopping trips would reduce VMT in the region by over 20 VMT per such trip.

Altogether, while the project would result in a slight increase in the City's internal VMT, this increase would be more than offset by a decrease in VMT resulting from long regional shopping trips converting to short local shopping trips. This is consistent with the Technical Advisory, which states that "[by] adding retail opportunities into the urban fabric and thereby improving retail destination proximity, local-serving retail development tends to shorten trips and reduce VMT. Thus, lead agencies generally may presume such development creates a less-than-significant transportation impact."

Based on the qualitative analysis above and the guidance provided in the Technical Advisory, the proposed Grocery Outlet project's impact to VMT would be **less-than-significant**.

Impact 4. Transportation system safety impacts.

The project would result in increased travel activity in the study area, including bicycle, pedestrian, and vehicle trips. Please refer to Impact 1 for a discussion of existing and planned bicycle and pedestrian facilities within the project site vicinity, the project's effect on bicycle and pedestrian travel activity, and adverse effects to bicycle and pedestrian safety that would result from the project. Impact 1 additionally describes the extent to which the project would result in inconsistencies with City and Caltrans plans, policies, and design standards related to bicycle and pedestrian facilities.

The project would result in increased vehicle trips on local roadways and a decrease in trips using regional roadways (see Impact 3 for details). Increases to vehicle trips associated with the project would be concentrated at the Grant Avenue/East Main Street intersection and the proposed Grant Avenue and East Main Street project driveways.

The project would construct two vehicular access points on its Grant Avenue and East Main Street frontages. The Grant Avenue project driveway would be located approximately 300 feet east of the Grant Avenue/East Main Street intersection and would be a full access driveway without restrictions on any ingress/egress maneuvers. The East Main Street project driveway would be located approximately 210 feet south of the Grant Avenue/East Main Street intersection and would restrict left-turn egress maneuvers but accommodate all other ingress/egress maneuvers, including left-turn ingress maneuvers.

Caltrans does not have standards regarding the specific spacing of driveways or intersections on highways such as Grant Avenue. Caltrans does have standards for the design elements of right- and left-turn channelization, which affect the placement of driveways and intersections. Moreover, the American Association of State Highway and Transportation Officials (AASHTO) A Policy on the Geometric Design of Highways and Streets (the Green Book) states that driveways should not be located within the functional area of an intersection or in the influence area of an adjacent driveway. Key factors for both the Caltrans standards and the AASHTO guidance include vehicle queues, deceleration distance, tapers, and perception-reaction times.

The Grant Avenue project driveway would be located between East Main Street and PG&E Way, which are spaced approximately 700 feet apart (as measured from the near curb returns). Left turn pockets on this roadway segment are currently provided for the westbound approach to Grant Avenue/East Main Street (400-foot left turn pocket including bay and taper length) and the eastbound approach to Grant Avenue/PG&E Way (200-foot left turn pocket including bay and taper length). The proposed Grant

Avenue project driveway would result in conflicts with applicable design standards/policies and/or adverse safety effects as follows:

- The driveway would be located within the functional area of the Grant Avenue/East Main Street intersection. The driveway would be located approximately 300 feet east of this intersection and would physically disrupt the existing westbound left-turn pocket at the Grant Avenue/East Main Street intersection (which extends approximately 400 feet east of the intersection). Moreover, left-turn access at this driveway would conflict with operations of the planned future traffic signal at Grant Avenue/East Main Street, where westbound queues would spill back and block the proposed project driveway.
- Vehicles exiting the driveway to merge into the westbound travel lane on Grant Avenue would interfere with approaching westbound vehicles. The speed differential between westbound vehicles and vehicles entering westbound traffic from the Grant Avenue project driveway would increase the potential for rear-end collisions.
- The spacing between the driveway and the adjacent Grant Avenue/PG&E Way intersection (approximately 400 feet) would require that left-turn ingress maneuvers be completed from the westbound travel lane on Grant Avenue, which in turn would increase the potential for rear-end collisions. A westbound left-turn lane into the project driveway would reduce this conflict potential, however, there is insufficient spacing between the driveway and the Grant Avenue/PG&E Way intersection to accommodate such a left-turn lane based on Highway Design Manual standards. The required left-turn lane length per the Highway Design Manual would exceed the available distance between the driveway and the Grant Avenue/PG&E Way intersection when considering anticipated left-turn ingress vehicle queues and the required deceleration length for the 45 mile-per-hour posted speed limit.
- The construction of a project driveway on Grant Avenue would be inconsistent with the City of Winters Design Guidelines and the Grant Avenue Design Guidelines, which state a preference to minimize project access points on Grant Avenue and to instead provide project access via Grant Avenue cross streets such as East Main Street.

The East Main Street project driveway would be located approximately 210 feet south of the Grant Avenue/East Main Street intersection. The project would include the construction of a new southbound left-turn pocket at this driveway. The City of Winters' *Improvement Standards and Standard Drawings* provides standard approved design widths in Section 4-3. For primary collectors (such as East Main Street in the project vicinity), vehicular travel lanes should be 12 feet wide and bike lanes should be 5 feet wide (including 2 feet of curb and gutter). The project site plan does not provide sufficient details regarding proposed lane configurations, geometrics, etc. necessary to evaluate the effects of the proposed southbound left-turn pocket on the existing southbound travel lane or Class II bike lane on East Main

Street. A preliminary measurement of southbound East Main Street at this location indicates that there is approximately 25 feet of width between the westerly curb and the raised center median. Based on this preliminary measurement, it is possible that there is insufficient width to accommodate the proposed southbound left-turn pocket alongside a southbound through travel lane and the existing southbound Class II bike lane. Therefore, the project could cause a physical disruption to the existing southbound travel lane and Class II bike lane on East Main Street.

The project site plan also does not provide sufficient detail (e.g., adjacent street lane configurations, geometrics, etc.) to evaluate potential sight distance issues associated with either of the two proposed project driveways. Therefore, sight distance-related safety issues at the project driveways cannot be fully evaluated at this time.

The Caltrans Interim Local Development Intergovernmental Review Safety Review Practitioners Guidance recommends that CEQA safety reviews for land use projects include freeway queueing analysis to evaluate the potential for land use projects to result in safety-related queueing issues on the State Highway System freeway mainline. A peak hour traffic operations analysis was conducted for the I-505 ramp terminal intersections at Grant Avenue (refer to the EPAP Plus Project Conditions section), including an evaluation of changes to off-ramp queue lengths that would result from the project during the a.m. and p.m. peak hours. This analysis indicated that off-ramp queues would not extend back to the I-505 mainline under Existing Plus Approved Projects Plus Project conditions. Therefore, the project would not cause safety-related queueing issues on the State Highway System freeway mainline.

Altogether, the project would result in changes to the transportation system for bikes, pedestrians, and vehicles that would conflict with applicable standards and that would increase the potential for collisions. Altogether, this impact would be **significant**.

Mitigation Measure 4.1. Install a high-quality pedestrian crossing on the south leg of the Grant Avenue/East Main Street intersection.

Implement Mitigation Measure 1.1.

Mitigation Measure 4.2. Modify East Main Street between Grant Avenue and East Baker Street to comply with applicable design standards.

Implement Mitigation Measure 1.2.

Mitigation Measure 4.3. Construct the Grant Avenue project driveway to provide right-in/right-out access only.

The Grant Avenue project driveway should be constructed to accommodate right-in/right-out (RIRO) access only. This mitigation measure would lessen the project's impact to safety by reducing the potential for multi-modal conflicts on Grant Avenue at the proposed project driveway, particularly those associated with left-turn ingress and egress maneuvers. This modification would also lessen the project's effects on geometrics and operations at the adjacent Grant Avenue/East Main Street and Grant Avenue/PG&E Way intersections and on Grant Avenue in a manner that is consistent with Caltrans and City of Winters design standards and policies.

This mitigation measure would affect ingress into the project site for vehicles traveling from the I-505 interchange to the east. As such, modifications to the project site plan may be necessary alongside this mitigation measure, particularly to accommodate truck access to and from the project's loading dock (e.g., to accommodate truck ingress via the East Main Street driveway instead of the Grant Avenue driveway as identified in the project site plan).

With the implementation of Mitigation Measures 4.1, 4.2 and 4.3, this impact would be **less than significant with mitigation**.

4. Traffic Operations Analysis

The purpose of this traffic operations analysis is to identify the timing and type of operational improvements necessary to accommodate the project in accordance with City of Winters General Plan policies related to vehicle delay and LOS. In addition to changes to travel demand associated with the project, the analysis also considers the operational effects of other approved Winters development projects that are currently pending or under construction.

Analysis Scenarios and Time Periods

The need for transportation improvements is determined by examining peak hour operations and traffic signal warrants and key intersections. The weekday morning and evening peak hours are evaluated since they represent the time periods when travel demand throughout the City is at its highest. An evaluation of intersection performance is provided for the following conditions:

- Existing Plus Approved Projects (EPAP) No Project (Grocery Outlet Project)
- EPAP Plus Project

Study Intersections

This analysis addresses conditions at the following study intersections near the project site (see **Figure 3**):

1. Grant Avenue/Morgan Street
2. Grant Avenue/East Main Street
3. Grant Avenue/McClish Lane
4. Grant Avenue/Timber Crest Road/PG&E Way
5. Grant Avenue/Matsumoto Lane/County Road 90
6. Grant Avenue/I-505 Southbound Ramps
7. Grant Avenue/I-505 Northbound Ramps
8. East Main Street/Project Driveway

Analysis Methodologies

Travel Forecasts

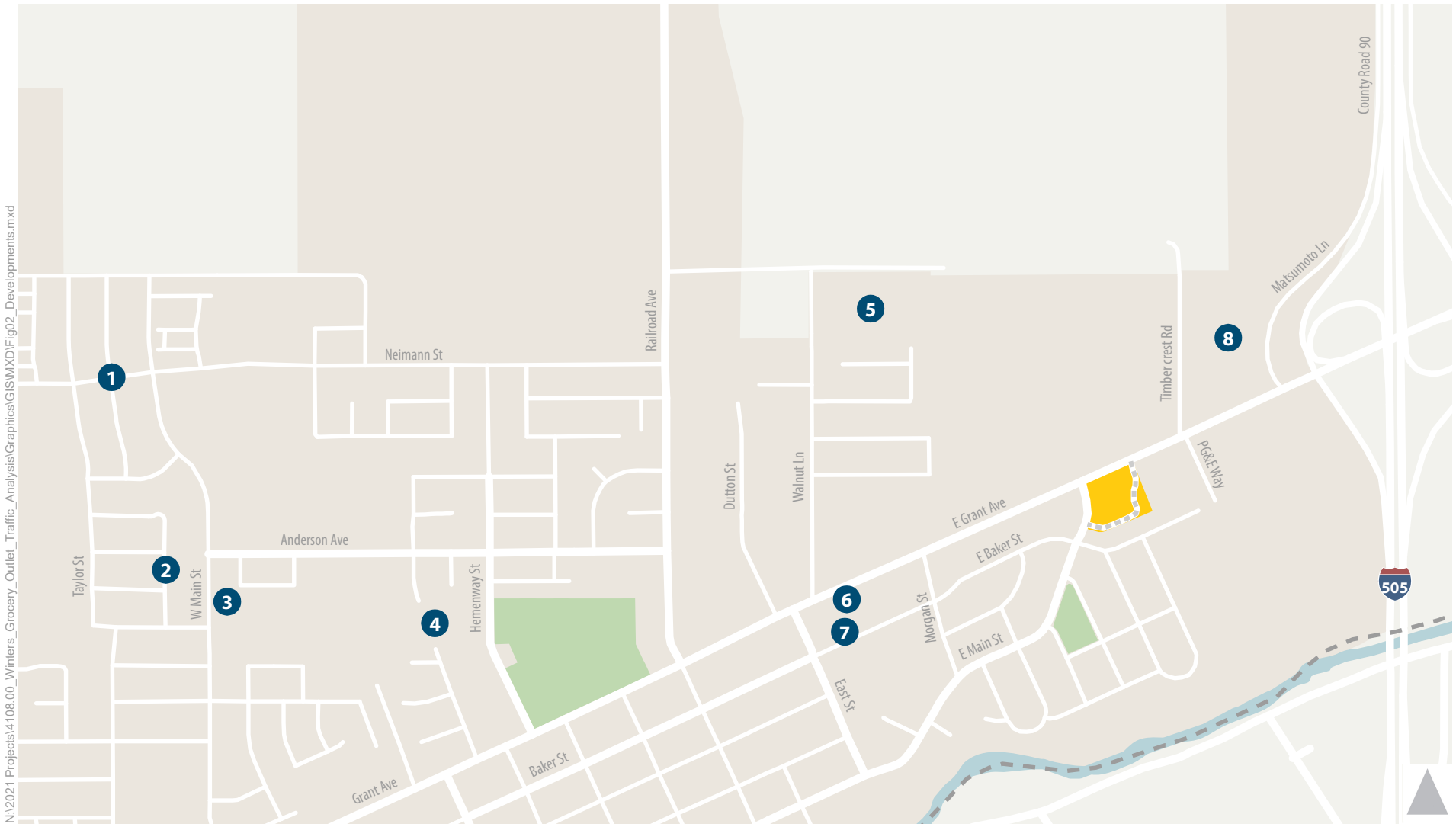
Under the EPAP analysis scenarios, 2019 traffic data was adjusted to account for the addition of trips associated with approved and pending development elsewhere in the City. These projects are identified in consultation with City of Winters staff and are summarized in Table 1. Note that some of these projects have been completed since the collection of traffic data in 2019 (e.g., Winters Healthcare). The projects are also shown in **Figure 2**.

The City of Winters local travel demand model was utilized to forecast peak hour traffic volumes on the local and regional transportation system under each analysis scenario. The trip generation rates utilized in the local travel demand model are based on trip rates published from the ITE *Trip Generation Manual* and adjusted to match locally observed data.

Table 1: Local Approved Development Projects

Project	Land Use Type	Quantity
Blue Mountain Terrace	Multi-Family Residential	62 DU
Heartland (Phases 1 & 2)	Single Family Residential	109 DU
Olive Grove	Single Family Residential	21 DU
Corbett	Single Family Residential	53 DU
Winters Healthcare	Medical Office	14,750 sf
Stones Throw (Phases 1A, 1, 2, 3, 4, and 5)	Single Family Residential	458 DU
	Multi-Family Residential	30 DU
Fairfield Inn	Hotel	72 rooms
Cottages at Carter Ranch (Phase 2)	Single Family Residential	6 DU

Source: City of Winters, 2021.



1 Stones Throw
2 Heartland
3 Cottages at Carter Ranch
4 Olive Grove
5 Corbett
6 Winters Healthcare
7 Blue Mountain Terrace
8 Fairfield Inn

Grocery Outlet Project Site

Figure 2

Approved Development Projects

Intersection Analysis Methodology

This study analyzes roadway operating conditions using intersection level of service (LOS) as a primary measure of operational performance. Motorized vehicle LOS is a qualitative measure of traffic flow from the perspective of motorists and is an indication of the comfort and convenience associated with driving. Typical factors that affect motorized vehicle LOS include speed, travel time, traffic interruptions, and freedom to maneuver. Empirical LOS criteria and methods of calculation have been documented in the *Highway Capacity Manual, 6th Edition* (HCM) published by the Transportation Research Board of the National Academies of Science (Transportation Research Board, 2016). The HCM defines six levels of service ranging from LOS A (representing free-flow vehicular traffic conditions with little to no congestion) to LOS F (oversaturated conditions where traffic demand exceeds capacity resulting in long queues and delays). The LOS definitions and calculations contained in the HCM are the prevailing measurement standard used throughout the United States and are used in this study. Motorized vehicle LOS definitions for signalized and unsignalized intersection are discussed below.

The LOS at signalized intersections is based on the average control delay (i.e., delay resulting from initial deceleration, queue move-up time, time stopped on an intersection approach, and final acceleration) experienced per vehicle traveling through the intersection. Table 2 summarizes the relationship between delay and LOS for signalized intersections.

Table 2: Signalized Intersection LOS Criteria

Level of Service	Description	Average Control Delay[1]
A	Volume-to-capacity ratio is low and either progression is exceptionally favorable or cycle length is very short.	≤ 10
B	Volume-to-capacity ratio is low and either progression is highly favorable or the cycle length is short. More vehicles stop than with LOS A.	>10 to 20
C	Progression is favorable or the cycle length is moderate. Individual cycle failures (i.e., one or more queued vehicles are not able to depart as a result of insufficient capacity during the cycle) may begin to appear at this level. The number of vehicles stopping is significant, although many vehicles still pass through the intersection without stopping.	>20 to 35
D	Volume-to-capacity ratio is high and either progression is ineffective or the cycle length is long. Many vehicles stop and individual cycle failures are noticeable.	>35 to 55
E	Volume-to-capacity ratio is high, progression is unfavorable, and the cycle length is long. Individual cycle failures are frequent.	>55 to 80
F	Volume-to-capacity ratio is very high, progression is very poor, and the cycle length is long. Most cycles fail to clear the queue.	>80

Note: [1] Average control delay presented in seconds per vehicle. Delay values are rounded to the nearest second and evaluated for LOS based on the above thresholds (i.e., 10 seconds per vehicle = LOS A).
Source: *Highway Capacity Manual, 6th Edition,* Transportation Research Board, 2016.

Similar to signalized intersections, the HCM 6th Edition methodology for stop-controlled intersections reports the LOS based on the control delay experienced by motorists traveling through the intersection. As shown in Table 3, the delay ranges for stop-controlled intersections are lower than for signalized intersections. The HCM anticipates that motorists expect signalized intersections to carry higher traffic volume that results in greater delay than a stop-controlled intersection. Stop controls are associated with more uncertainty as delays are less predictable, which can reduce users' delay tolerance.

Table 3: Stop-Controlled Intersection LOS Criteria

Level of Service	Average Control Delay[1]
A	≤ 10
B	>10 to 15
C	>15 to 25
D	>25 to 35
E	>35 to 50
F	>50

Note: [1] Average control delay presented in seconds per vehicle. Delay values are rounded to the nearest second and evaluated for LOS based on the above thresholds (i.e., 10 seconds per vehicle = LOS A).
Source: *Highway Capacity Manual, 6th Edition,* Transportation Research Board, 2016.

As described in Chapter 21 of the HCM 6th Edition, the LOS for all-way stop controlled intersections is based on the average control delay for the entire intersection. For side-street stop-controlled intersections, the LOS is determined separately for each minor-street movement (or shared movement) and may also be basis on major-street left-turn movements, per Chapter 20 of the HCM 6th Edition.

Intersection Performance Thresholds

City of Winters

This analysis applies the LOS threshold established in the City of Winters Circulation Master Plan (October 2018) to evaluate the operational performance of the study intersections. The Circulation Master Plan includes the following performance thresholds:

Policy III.A.I The City shall endeavor to maintain a Level of Service "D" or better, as defined by the Highway Capacity Manual 2010 or subsequent revisions, on all streets and intersections within the City.

Caltrans

Caltrans' *Draft Transportation Corridor Concept Report State Route 128* (Caltrans, June 2017) identifies future roadway improvements and LOS targets for SR-128 over a 20-year planning horizon. For SR-128 within the limits of the City of Winters, the 20-Year Future LOS is specified as LOS E and the 20-Year Concept LOS is specified as LOS D.

LOS Criteria

Based on the LOS thresholds identified above, operational deficiencies for the purposes of this analysis are identified under the following conditions:

- On City of Winters roadway facilities and on Grant Avenue (SR 128):
    - For signalized and all-way stop-controlled intersections, locations with peak hour intersection operations of LOS E or worse.
    - For side-street stop-controlled intersections, locations where the worst-case movement (or shared movement) operates at LOS E or worse and that meet the California Manual on Uniform Traffic Control Devices (CAMUTCD) peak hour signal warrant.
    - For roadway segments, locations with peak hour roadway segment operations of LOS E or worse (except where superseded by intersection LOS).

Signal Warrant Analysis

This analysis is intended to examine the general correlation between the planned level of future development and the need to construct transportation system improvements, including the potential installation of new traffic signals. It estimates future development-generated traffic compared against a sub-set of the standard traffic signal warrants recommended in the Federal Highway Administration Manual on Uniform Traffic Control Devices (MUTCD) and associated State guidelines. In instances where this analysis identifies that a signal warrant has been met, any future traffic signal shall be constructed when warranted, subject to review and approval of the City Traffic Engineer.

EPAP No Project Conditions

The following section provides a description of near-term transportation conditions without the project. This scenario assesses transportation conditions with the addition of trips generated by development projects that have received formal entitlement approvals from the City of Winters. **Figure 3** shows peak hour turning movement volumes and lane configurations under EPAP No Project conditions.

Land Use Changes

Table 1 summarizes the approved and pending or under construction developments included in the EPAP No Project scenario. Trips generated by these developments were added to the existing traffic volumes, as these projects are expected to be constructed and occupied in the near future.

Transportation System Changes

No modifications to the existing roadway network in the study area are assumed.

EPAP No Project Traffic Operations

Table 4 summarizes the a.m. and p.m. peak hour levels of service at each of the study intersections under EPAP No Project conditions. All but one of the study intersections would operate acceptably at LOS D or better during both the a.m. and p.m. peak hours under EPAP No Project conditions.

During the p.m. peak hour, the Grant Avenue/East Main Street intersection would operate with an unacceptable worst-case movement of LOS E. However, this intersection would not meet the peak hour signal warrant (Warrant 3A or 3B), so an operational deficiency at this intersection would not be present based on the established intersection performance thresholds.

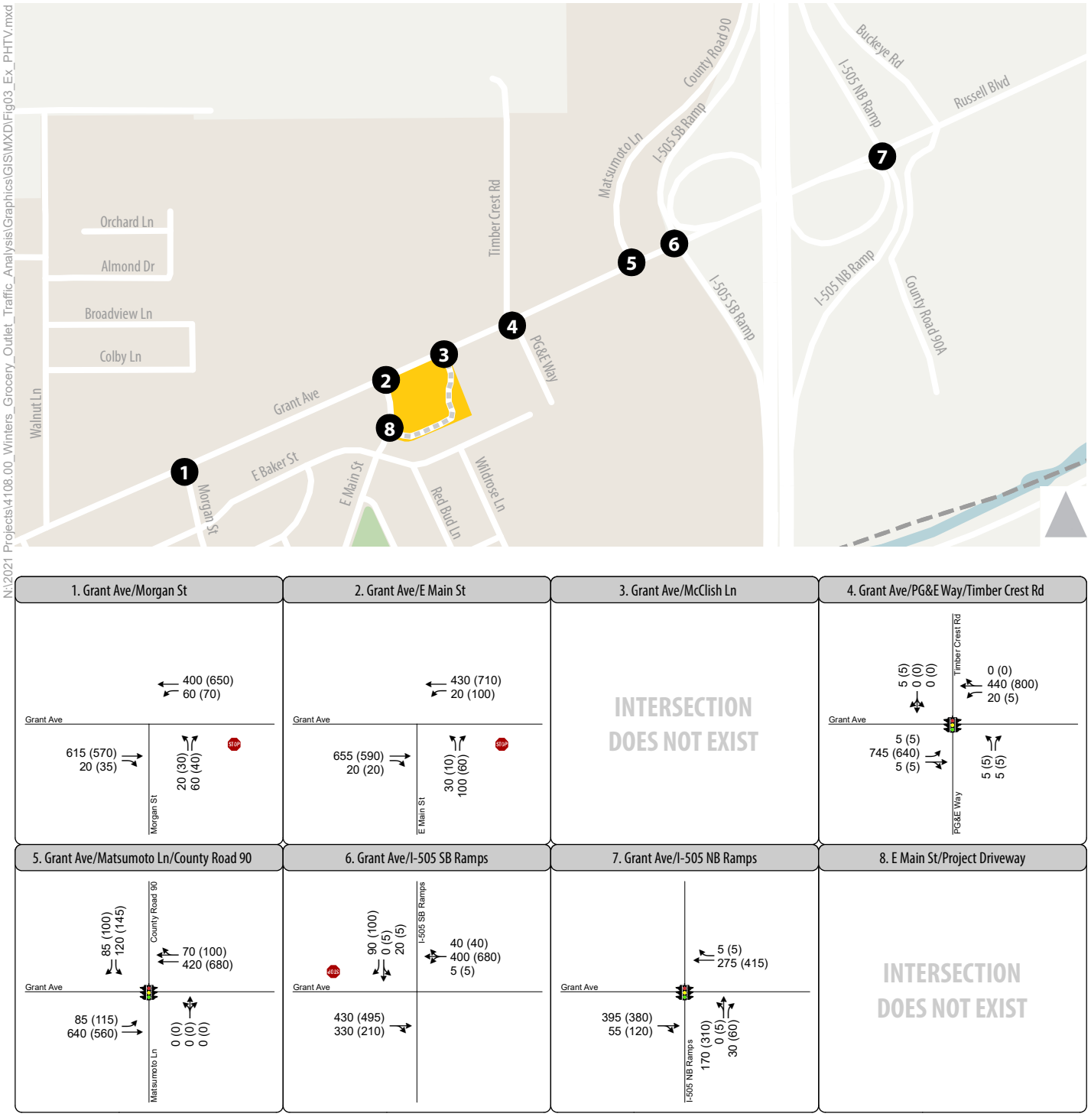


Figure 3

Peak Hour Traffic Volumes and Lane Configurations - Existing Plus Approved Projects Conditions

EPAP Plus Project Conditions

This scenario considers the operational effects of the buildout of the project when added to the EPAP No Project scenario. **Figure 4** shows peak hour turning movement volumes and lane configurations under EPAP Plus Project conditions.

EPAP Plus Project Traffic Operations

Table 4 summarizes the a.m. and p.m. peak hour levels of service at each of the study intersections under EPAP Plus Project conditions. As shown, the proposed project would only nominally increase peak hour vehicle delay at most study intersections. All study intersections would operate acceptably during both the a.m. and p.m. peak hours under EPAP Plus Project conditions, with the following exception:

- **Grant Avenue/East Main Street** – During the p.m. peak hour, this intersection would operate with an unacceptable worst-case movement of LOS F and would meet the peak hour signal warrant (Warrant 3B).

The project would exacerbate unacceptable operations at the Grant Avenue/East Main Street intersection and would cause the intersection to meet the peak hour signal warrant during the p.m. peak hour. Therefore, the project would be considered to cause an operational deficiency at this intersection based on the established intersection performance thresholds.

A new traffic signal should be installed at the Grant Avenue/East Main Street intersection to improve peak hour traffic operations to acceptable levels. This improvement is included as a City-wide improvement project in the City's Traffic Impact Fee program. Accordingly, payment of the requisite impact fee to the City's fee program would fulfill the project's obligation for this improvement. The traffic signal should be installed and operational prior to the opening of the Grocery Outlet store.

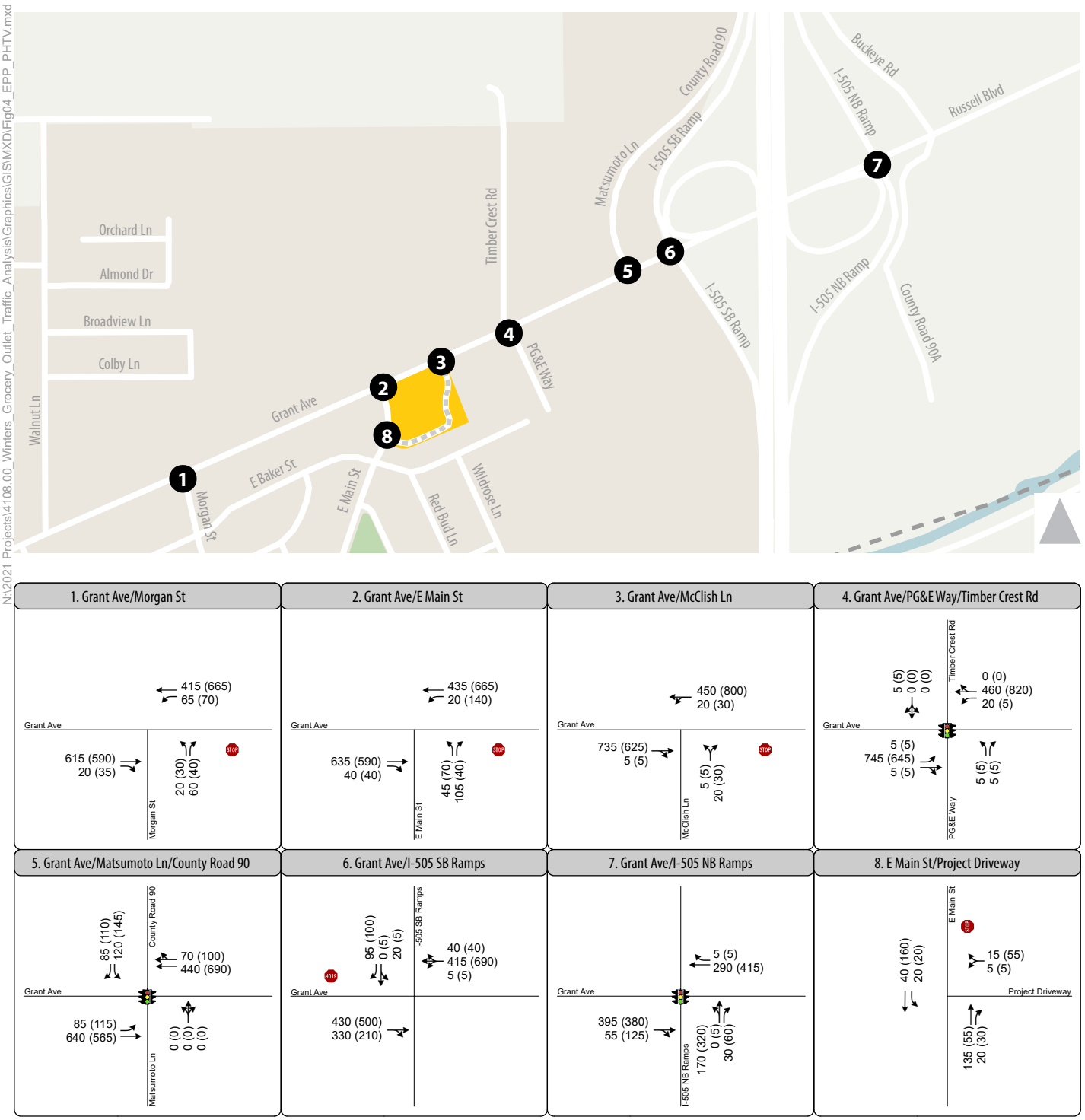


Figure 4

Peak Hour Traffic Volumes and Lane Configurations - Existing Plus Approved Projects Plus Project Conditions

Table 4: Peak Hour Intersection Operations – EPAP No Project and EPAP Plus Project Conditions

Intersection	Traffic Control	Jurisdiction	Peak Hour	EPAP Conditions		EPAP Plus Project Conditions	
				Delay	LOS	Delay	LOS
1. Grant Avenue/Morgan Street	SSSC	Caltrans	A.M.	2 (18)	A (C)	2 (19)	A (C)
			P.M.	1 (21)	A (C)	1 (21)	A (C)
2. Grant Avenue/East Main Street	SSSC	Caltrans	A.M.	2 (31)	A (D)	3 (33)	A (D)
			P.M.	**2 (46)**	**A (E)**	**8 (140)**	**A (F)**
3. Grant Avenue/McClish Lane	SSSC	Caltrans	A.M.	Does Not Exist in this Scenario		1 (20)	A (C)
			P.M.			1 (18)	A (C)
4. Grant Avenue/Timber Crest Road/PG&E Way	Signal	Caltrans	A.M.	10	B	10	B
			P.M.	9	A	10	A
5. Matsumoto Lane/County Road 90/Grant Avenue	Signal	Caltrans	A.M.	10	A	10	A
			P.M.	11	B	11	B
6. Grant Avenue/I-505 Southbound Ramps	SSSC	Caltrans	A.M.	1 (24)	A (C)	1 (24)	A (C)
			P.M.	1 (30)	A (D)	1 (31)	A (D)
7. Grant Avenue/I-505 Northbound Ramps	Signal	Caltrans	A.M.	7	A	7	A
			P.M.	8	A	8	A
8. East Main Street/Project Driveway	SSSC	City of Winters	A.M.	Does Not Exist in this Scenario		2 (9)	A (B)
			P.M.			2 (9)	A (B)

Notes: For signalized intersections, average intersection delay is reported in seconds per vehicle for all approaches. For side-street stop-controlled (SSSC) intersections, intersection delay is reported in seconds per vehicle for all approaches and for the worst-case movement (in parentheses).
Bold text indicates study intersections that exceed acceptable LOS thresholds.
Bold and grey text indicates study intersections that exceed acceptable LOS thresholds and meet the peak hour signal warrant.

Source: Fehr & Peers, 2021.

EPAP Plus Project Ramp Terminal Queues

Table 5 summarizes the 95th percentile queues that would occur at the I-505/Grant Avenue interchange off-ramps under EPAP Plus Project conditions. As shown, the off-ramp queues would not spill back onto the I-505 mainline.

Table 5: Freeway Off-Ramp Queueing – EPAP Plus Project Conditions

Off-Ramp	Off-Ramp Distance[1]	Peak Hour	95th Percentile Queue Length[2]
Grant Ave./I-505 Southbound Off-Ramp	1,990 feet	A.M.	25 feet
		P.M.	25 feet
Grant Ave./ I-505 Northbound Off-Ramp	2,020 feet	A.M.	100 feet
		P.M.	200 feet

Note: [1] Measured from the intersection stop bar to the gore point of the freeway off-ramp.
[2] Based on results from Synchro traffic operations analysis software.
Queues are maximum per lane, rounded to the nearest 25 feet.
Source: Fehr & Peers, 2021.

Site Access and Circulation

Project access was analyzed to evaluate throat depth, vehicle storage, driveway placement and permitted turning movements, and driveway width at project driveways.

Project access would be comprised of a full access driveway on Grant Avenue at McClish Lane, approximately 300 feet east of East Main Street, and a left-in, right-in, and right-out driveway on East Main Street approximately 210 feet south of Grant Avenue (measured from the driveway centerline to the near curb return of the adjacent intersection).

Potential access to and from the project site is heavily influenced by the existing roadway network within the immediate project site vicinity, which provides relatively few routing options to and from the project site. This is particularly the case for motorists traveling to the project site from the east (e.g., the I-505 interchange), whose only option is to utilize Grant Avenue for left-turn ingress into the project site. The City of Winters Circulation Master Plan identifies the extension of East Baker Street to PG&E Way to improve access and connectivity for undeveloped parcels in southeast Winters (including the project site), however, this roadway extension is not proposed as part of the project.

Driveway Width

The site plan shows that the project driveways would be 34.5 feet and 30 feet wide at the Grant Avenue and East Main Street project driveways, respectively. The City of Winters' *Improvement Standards and Standard Drawings* (2016) states that all commercial developments shall install medium driveways with a minimum width of 24 feet. The design of major driveways, which will serve significant traffic volume, as determined by the City Engineer, shall be based on the width, cross section, and geometrics of a secondary collector street. As presently constituted in the site plan, the project driveways would have sufficient width.

Driveway Throat Depth

Table 6 shows estimated vehicle queues for key movements at project driveways under EPAP Plus Project conditions. As shown, the northbound approach at the Grant Avenue driveway would experience a maximum queue of 3 exiting vehicles. The westbound approach at the East Main Street driveway would a maximum queue of 1 exiting vehicle. A review of the project site plan shows that adequate throat depth is provided at both driveways to prevent exiting vehicles from blocking inbound traffic. Therefore, no changes are recommended.

Table 6: Estimated Maximum Queues at Project Driveways

Project Access	Movement/Approach	Estimated Maximum Queue	
		A.M. Peak Hour	P.M. Peak Hour
Grant Avenue/McClish Lane	Westbound Left-Turn	3 vehicles	3 vehicles
	Northbound Approach	1 vehicle	3 vehicles
East Main Street/Project Driveway	Southbound Left-Turn	2 vehicles	2 vehicles
	Westbound Approach	1 vehicle	1 vehicle

Note: Calculations are based on formulas in Estimation of Maximum Queue Lengths at Unsignalized Intersections (ITE Journal, November 2001)
Source: Fehr & Peers, 2021.

Inbound Vehicle Storage

As shown in Table 6, the westbound left-turn movement at the Grant Avenue project driveway (Grant Avenue/McClish Lane) would experience a maximum queue of 3 vehicles, while the southbound left-turn movement at the East Main Street project driveway would experience a maximum queue of 2 vehicles.

The site plan does not provide sufficient information regarding accommodations for left-turn ingress at the Grant Avenue project driveway. However, it is anticipated that this movement would occur from the westbound through travel lane on Grant Avenue due to the presence of existing nearby left-turn pockets

at the westbound approach of the Grant Avenue/East Main Street intersection and at the eastbound approach of the Grant Avenue/PG&E Way intersection. The inbound left-turn vehicle queue at the Grant Avenue project driveway would impede the flow of westbound vehicle traffic on Grant Avenue and increase the potential for rear-end conflicts.

A southbound left-turn pocket with a storage length of approximately 90 feet would be provided at the East Main Street project driveway. This would be sufficient to accommodate the anticipated vehicle queue of 2 vehicles.

Driveway Placement and Permitted Turning Movements

Grant Avenue Project Driveway. The full access Grant Avenue project driveway would be located only 300 feet east of the Grant Avenue/East Main Street intersection and 400 feet west of the Grant Avenue/PG&E Way intersection. Left-turn pockets are already provided for the Grant Ave approaches at both of these intersections. Westbound left turn access at the Grant Avenue project driveway would conflict with operations at the future traffic signal at Grant Avenue/East Main Street, where westbound queues would spill back and block the proposed project driveway. Therefore, right-in/right-out (RIRO) access is recommended at this driveway. Note that modification would alter truck access into the project's loading dock, which is currently shown to occur at the Grant Avenue project driveway.

East Main Street Project Driveway. The site plan indicates the construction of a new left-turn pocket at the East Main Street project driveway. With its current configuration, southbound East Main Street narrows to a width of approximately 25 feet from the westerly curb the raised center median and includes a single travel lane and a bike lane. The City of Winters' *Improvement Standards and Standard Drawings* provides standard approved design widths in Section 4-3. For primary collectors (such as East Main Street in the project vicinity), vehicular travel lanes should be 12 feet wide and bike lanes should be 5 feet wide (including 2 feet of curb and gutter). The site plan is not clear as to how a left turn pocket could be accommodated without widening the roadway or impacting the existing bike lane/travel lane.

The East Main Street driveway would be located approximately 210 feet from the Grant Avenue/East Main Street intersection and there is a 140-foot left-turn pocket on the northbound approach. Proximity to the intersection and anticipated vehicle queues would preclude the proposed southbound left-turn pocket at the project driveway from aligning "back-to-back" with the northbound left turn lane at the Grant Avenue/East Main Street intersection.

Modifications to the southbound left-turn pocket are recommended to address these issues, as summarized in Mitigation Measure 1.2 and in the EPAP Plus Project Circulation/Operational Improvements section on the following pages.

EPAP Plus Project Circulation/Operational Improvements

This section provides circulation and improvement recommendations to address the operational deficiencies caused by the project and to improve site access and circulation, as described in the EPAP Plus Project traffic operations analysis and the review of site access and circulation. In summary, three potential recommendation options are presented.

Option 1: RIRO Access at Grant Avenue Driveway, Modifications to East Main Street

With Option 1, the Grant Avenue project driveway would be constructed as RIRO. In addition, East Main Street would be modified to meet applicable design standards and to accommodate vehicle lanes, bike lanes, and the proposed southbound left-turn lane:

- Grant Avenue Project Driveway – Construct to accommodate RIRO access only.
- East Main Street Project Driveway – Modify East Main Street between Grant Avenue and East Baker Street to accommodate the following:
    - Southbound East Main Street – A Class II bike lane, a southbound through travel lane, and a southbound left-turn lane. The southbound left-turn lane should extend between Grant Avenue and the East Main Street project driveway and be designed to prohibit left-turn egress at the project driveway.
    - Northbound East Main Street – A Class II bike lane plus a left-turn pocket and a right-turn lane at the northbound approach of the Grant Avenue/East Main Street intersection. Once East Main Street is extended north of Grant Avenue, the northbound approach would need to be modified to accommodate either a shared through-right turn lane or a through lane and a right-turn pocket.

  The northbound left-turn pocket at the Grant Avenue/East Main Street intersection and the southbound left-turn lane at the East Main Street project driveway should be constructed side-by-side to accommodate anticipated vehicle queueing for each movement.

  These proposed lane configurations would require modifications to the existing raised center median along this segment of East Main Street, particularly the portion of the median located north of the project driveway.

  Additionally, the East Main Street project driveway should be designed to ensure that adequate sight distance is provided for ingress/egress maneuvers. In particular, adequate sight distance should be provided for southbound left-turning vehicles (i.e., those waiting to enter the project site) looking for approaching northbound through vehicles. Based on the current project site plan,

it is possible that this sight line would be obstructed by queued vehicles waiting to complete a southbound left-turn at the East Main Street/East Baker Street intersection.

With Option 1, traffic in the project vicinity would be rerouted. Table 7 shows peak hour intersection operations for EPAP Plus Project conditions with Option 1 at study intersections where traffic volumes would change. As shown in Table 7, Grant Avenue/East Main Street would operate at an unacceptable LOS E or worse and meet the peak hour signal warrant during both peak hours.

Additionally, Table 8 shows the estimated maximum queue lengths at the East Main Street project driveway. The project traffic using this driveway would increase with the RIRO restriction at the Grant Avenue project driveway. Accordingly, the estimated maximum queue of the southbound left turn would increase to 3 vehicles during both the AM and PM peak hours.

Table 7: Peak Hour Intersection Operations – EPAP Plus Project & Option 1 Conditions

Intersection	Traffic Control	Jurisdiction	Peak Hour	EPAP Plus Project		EPAP Plus Project (w/ Option 1)	
				Delay	LOS	Delay	LOS
2. Grant Avenue/East Main Street	SSSC	Caltrans	A.M.	3 (33)	A (D)	**3 (39)**	**A (E)**
			P.M.	**8 (140)**	**A (F)**	**11 (206)**	**B (F)**
3. Grant Avenue/McClish Lane	SSSC	Caltrans	A.M.	1 (20)	A (C)	<1 (16)	A (C)
			P.M.	1 (18)	A (C)	<1 (14)	A (B)
8. East Main Street/Project Driveway	SSSC	City of Winters	A.M.	2 (9)	A (B)	2 (10)	A (A)
			P.M.	2 (9)	A (B)	3 (9)	A (A)

Notes: For signalized intersections, average intersection delay is reported in seconds per vehicle for all approaches. For side-street stop-controlled (SSSC) intersections, intersection delay is reported in seconds per vehicle for all approaches and for the worst-case movement (in parentheses).
Bold text indicates study intersections that exceed acceptable LOS thresholds. **Bold and grey** text indicates study intersections that exceed acceptable LOS thresholds and meet the peak hour signal warrant.
Source: Fehr & Peers, 2021.

Table 8: Estimated Maximum Queues at East Main Street Project Driveway (Option 1)

Project Access	Movement/Approach	Estimated Maximum Queue	
		A.M. Peak Hour	P.M. Peak Hour
East Main Street/Project Driveway	Southbound Left-Turn	3 vehicles	3 vehicles
	Westbound Approach	1 vehicle	1 vehicle

Note: Calculations are based on formulas in Estimation of Maximum Queue Lengths at Unsignalized Intersections (ITE Journal, November 2001)
Source: Fehr & Peers, 2021.

Option 2: RIRO Access at Grant Avenue and East Main Street Driveways, Full Access Driveway on East Baker Street

With Option 2, both the Grant Avenue and East Main Street project driveways would be constructed as RIRO and a new full access driveway would be constructed on East Baker Street. This would eliminate the need to modify East Main Street to accommodate the proposed southbound left-turn lane at the project driveway and eliminate associated safety and operational issues that could result from this movement.

With Option 2, inbound traffic from Grant Avenue east of the project site would circulate to the new East Baker Street project driveway via East Main Street. Table 9 shows peak hour intersection operations for EPAP Plus Project conditions with Option 2 at study intersections where traffic volumes would change. As shown in Table 9, Grant Avenue/East Main Street would operate at an unacceptable LOS E or worse and meet the peak hour signal warrant during both peak hours.

Table 9: Peak Hour Intersection Operations – EPAP Plus Project & Option 2 Conditions

	Intersection	Traffic Control	Jurisdiction	Peak Hour	EPAP Plus Project		EPAP Plus Project (w/ Option 2)	
					Delay	LOS	Delay	LOS
2.	Grant Avenue/East Main Street	SSSC	Caltrans	A.M.	3 (33)	A (D)	**3 (41)**	**A (E)**
				P.M.	**8 (140)**	**A (F)**	**13 (227)**	**B (F)**
3.	Grant Avenue/McClish Lane	SSSC	Caltrans	A.M.	1 (20)	A (C)	<1 (16)	A (C)
				P.M.	1 (18)	A (C)	<1 (14)	A (B)
8.	East Main Street/Project Driveway	SSSC	City of Winters	A.M.	2 (9)	A (B)	1 (9)	A (A)
				P.M.	2 (9)	A (B)	2 (9)	A (A)

Notes: For signalized intersections, average intersection delay is reported in seconds per vehicle for all approaches. For side-street stop-controlled (SSSC) intersections, intersection delay is reported in seconds per vehicle for all approaches and for the worst-case movement (in parentheses).
Bold text indicates study intersections that exceed acceptable LOS thresholds. **Bold and grey** text indicates study intersections that exceed acceptable LOS thresholds and meet the peak hour signal warrant.
Source: Fehr & Peers, 2021.

Option 3: RIRO Access at Grant Avenue and East Main Street Driveways, Full Access Driveway on East Baker Street, Extension of East Baker Street to PG&E Way

Option 3 is identical to Option 2 but would include the extension of East Baker Street to PG&E Way. This would enable westbound motorists from Grant Avenue to utilize the existing traffic signal at Grant Avenue/PG&E Way to access the project site vicinity. This would shift travel patterns within the study area, as both project and non-project trips would shift to use the new East Baker Street connection.

Table 10 shows peak hour intersection operations for EPAP Plus Project conditions with Option 3. As shown in Table 10, Grant Avenue/East Main Street would operate at unacceptable LOS F. However, unlike the EPAP

Plus Project scenario, the intersection would not meet the peak hour signal warrant during the PM peak hour. Therefore, the project would not cause an operational deficiency at this or any other study intersection based on the established intersection performance thresholds. In other words, the extension of East Baker Street to PG&E Way and the opportunity for inbound project trips from westbound Grant Avenue to utilize the existing traffic signal at Grant Avenue/PG&E Way could defer the need for the signalization of the Grant Avenue/East Main Street intersection.

Table 10: Peak Hour Intersection Operations – EPAP Plus Project & Option 3 Conditions

Intersection	Traffic Control	Jurisdiction	Peak Hour	EPAP Plus Project		EPAP Plus Project (w/ Option 3)	
				Delay	LOS	Delay	LOS
1. Grant Avenue/Morgan Street	SSSC	Caltrans	A.M.	2 (19)	A (C)	2 (18)	A (C)
			P.M.	1 (21)	A (C)	2 (21)	A (C)
2. Grant Avenue/East Main Street	SSSC	Caltrans	A.M.	3 (33)	A (D)	2 (34)	A (D)
			P.M.	**8 (140)**	**A (F)**	**3 (70)**	**A (F)**
3. Grant Avenue/McClish Lane	SSSC	Caltrans	A.M.	1 (20)	A (C)	<1 (15)	A (C)
			P.M.	1 (18)	A (C)	<1 (14)	A (B)
4. Grant Avenue/Timber Crest Road/PG&E Way	Signal	Caltrans	A.M.	10	B	8	A
			P.M.	10	A	11	B
5. Matsumoto Lane/County Road 90/Grant Avenue	Signal	Caltrans	A.M.	10	A	10	A
			P.M.	11	B	11	B
6. Grant Avenue/I-505 Southbound Ramps	SSSC	Caltrans	A.M.	1 (24)	A (C)	1 (24)	A (C)
			P.M.	1 (31)	A (D)	1 (32)	A (D)
7. Grant Avenue/I-505 Northbound Ramps	Signal	Caltrans	A.M.	7	A	7	A
			P.M.	8	A	8	A
8. East Main Street/Project Driveway	SSSC	City of Winters	A.M.	2 (9)	A (B)	1 (9)	A (B)
			P.M.	2 (9)	A (B)	2 (9)	A (B)

Notes: For signalized intersections, average intersection delay is reported in seconds per vehicle for all approaches. For side-street stop-controlled (SSSC) intersections, intersection delay is reported in seconds per vehicle for all approaches and for the worst-case movement (in parentheses).
Bold text indicates study intersections that exceed acceptable LOS thresholds. **Bold and grey** text indicates study intersections that exceed acceptable LOS thresholds and meet the peak hour signal warrant.
Source: Fehr & Peers, 2021.

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Winters Grocery Outlet Transportation Study: Technical Appendix

FEHR PEERS

Major Street	SR 128/Grant Avenue	Project	Grocery Outlet Transportation Study
Minor Street	East Main Street	Scenario	EPAP No Project
		Peak Hour	AM

Turn Movement Volumes

	NB	SB	EB	WB
Left	30	0	0	20
Through	0	0	655	430
Right	100	0	20	0
Total	130	0	675	450

Major Street Direction

	North/South
x	East/West

Intersection Geometry

Number of Approach Lanes for Minor Street	2
Total Approaches	3

Worst Case Delay for Minor Street

Stopped Delay (seconds per vehicle)	20.5
Approach with Worst Case Delay	NB
Total Vehicles on Approach	130

Warrant 3A, Peak Hour			
	Peak Hour Delay on Minor Approach (vehicle-hours)	**Peak Hour Volume on Minor Approach (vph)**	**Peak Hour Entering Volume Serviced (vph)**
EPAP No Project	**0.7**	**130**	**1,255**
Limiting Value	**5**	**150**	**800**
Condition Satisfied?	**Not Met**	**Not Met**	**Met**
Warrant Met	**NO**		

FEHR PEERS

Major Street	SR 128/Grant Avenue	Project	Grocery Outlet Transportation Study
Minor Street	East Main Street	Scenario	EPAP No Project
		Peak Hour	AM

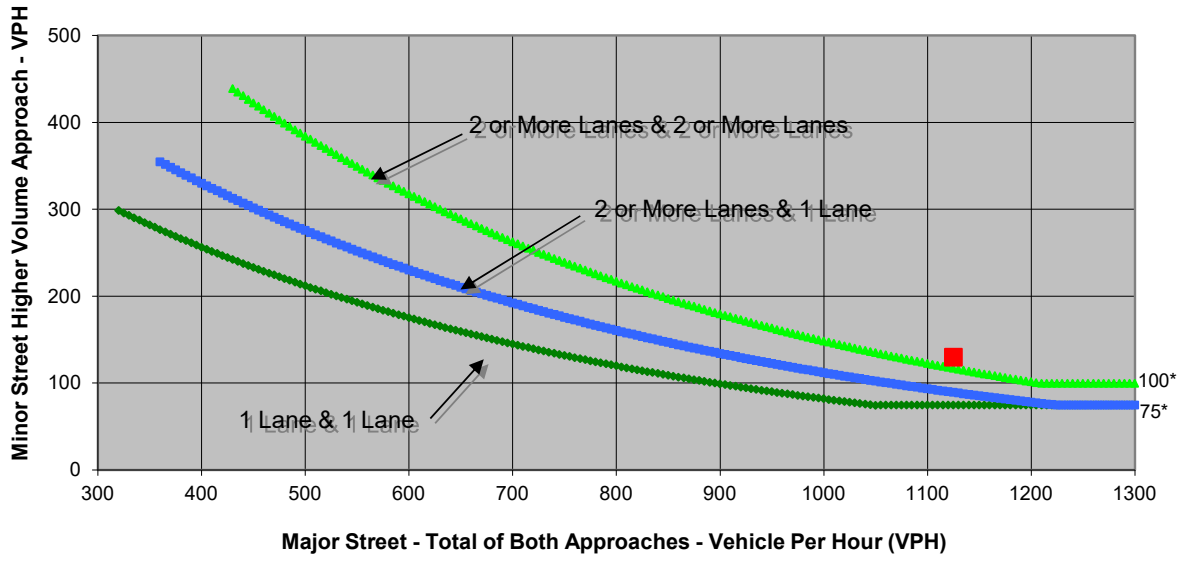
Turn Movement Volumes

	NB	SB	EB	WB
Left	30			20
Through			655	430
Right	100		20	
Total	130	0	675	450

Major Street Direction

	North/South
x	East/West

Figure 4C-4. Warrant 3B, Peak Hour (70% Factor)
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET



* Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

	Major Street	Minor Street	Warrant Met
	SR 128/Grant Avenue	East Main Street	
Number of Approach Lanes	**2**	**2**	**YES**
Traffic Volume (VPH) *	**1,125**	**130**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Major Street	SR 128/Grant Avenue	Project	Grocery Outlet Transportation Study
Minor Street	East Main Street	Scenario	EPAP No Project
		Peak Hour	PM

Turn Movement Volumes

	NB	SB	EB	WB
Left	10	0	0	100
Through	0	0	590	710
Right	60	0	20	0
Total	70	0	610	810

Major Street Direction

	North/South
x	East/West

Intersection Geometry

Number of Approach Lanes for Minor Street	2
Total Approaches	3

Worst Case Delay for Minor Street

Stopped Delay (seconds per vehicle)	18.4
Approach with Worst Case Delay	NB
Total Vehicles on Approach	70

Warrant 3A, Peak Hour			
	Peak Hour Delay on Minor Approach (vehicle-hours)	**Peak Hour Volume on Minor Approach (vph)**	**Peak Hour Entering Volume Serviced (vph)**
EPAP No Project	**0.4**	**70**	**1,490**
Limiting Value	**5**	**150**	**800**
Condition Satisfied?	**Not Met**	**Not Met**	**Met**
Warrant Met	**NO**		

FEHR PEERS

Major Street	SR 128/Grant Avenue	Project	Grocery Outlet Transportation Study
Minor Street	East Main Street	Scenario	EPAP No Project
		Peak Hour	PM

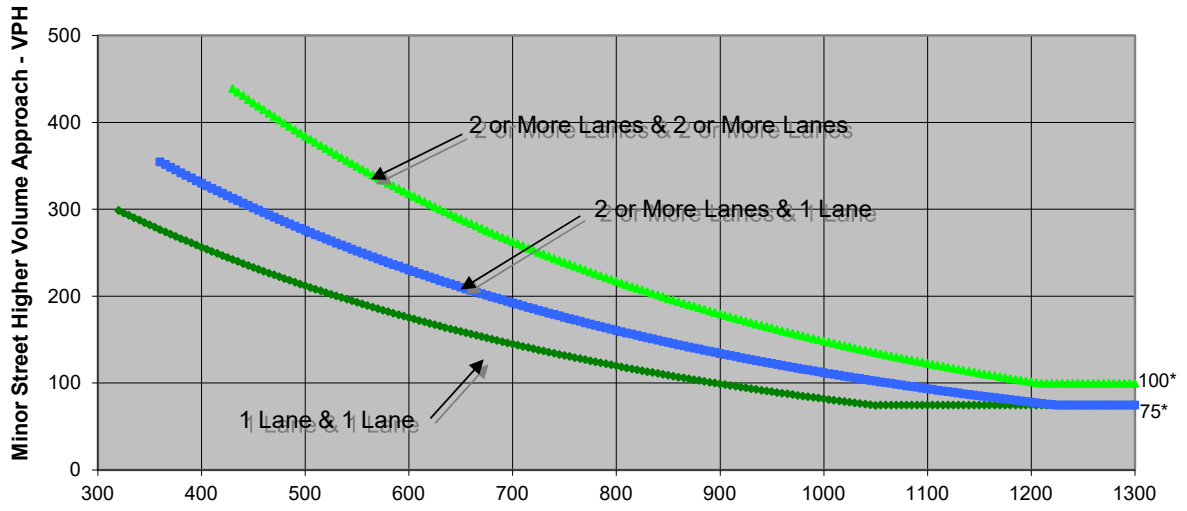
Turn Movement Volumes

	NB	SB	EB	WB
Left	10			100
Through			590	710
Right	60		20	
Total	70	0	610	810

Major Street Direction

	North/South
x	East/West

Figure 4C-4. Warrant 3B, Peak Hour (70% Factor)
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET



* Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

	Major Street	Minor Street	Warrant Met
	SR 128/Grant Avenue	East Main Street	
Number of Approach Lanes	**2**	**2**	**NO**
Traffic Volume (VPH) *	**1,420**	**70**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Major Street	SR 128/Grant Avenue	Project	Grocery Outlet Transportation Study
Minor Street	East Main Street	Scenario	EPAP Plus Project
		Peak Hour	AM

Turn Movement Volumes

	NB	SB	EB	WB
Left	45	0	0	20
Through	0	0	635	435
Right	105	0	40	0
Total	150	0	675	455

Major Street Direction

	North/South
x	East/West

Intersection Geometry

Number of Approach Lanes for Minor Street	2
Total Approaches	3

Worst Case Delay for Minor Street

Stopped Delay (seconds per vehicle)	22
Approach with Worst Case Delay	NB
Total Vehicles on Approach	150

Warrant 3A, Peak Hour			
	Peak Hour Delay on Minor Approach (vehicle-hours)	**Peak Hour Volume on Minor Approach (vph)**	**Peak Hour Entering Volume Serviced (vph)**
EPAP Plus Project	**0.9**	**150**	**1,280**
Limiting Value	**5**	**150**	**800**
Condition Satisfied?	**Not Met**	**Not Met**	**Met**
Warrant Met	**NO**		

FEHR PEERS

Major Street	SR 128/Grant Avenue	Project	Grocery Outlet Transportation Study
Minor Street	East Main Street	Scenario	EPAP Plus Project
		Peak Hour	AM

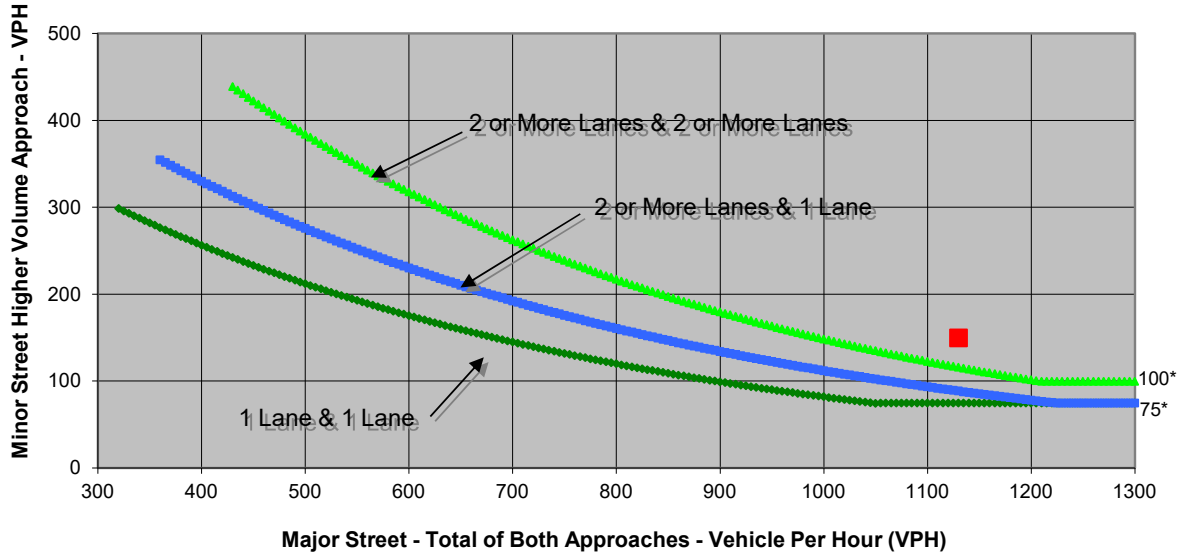
Turn Movement Volumes

	NB	SB	EB	WB
Left	45			20
Through			635	435
Right	105		40	
Total	150	0	675	455

Major Street Direction

	North/South
x	East/West

Figure 4C-4. Warrant 3B, Peak Hour (70% Factor)
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET



* Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

	Major Street	Minor Street	Warrant Met
	SR 128/Grant Avenue	East Main Street	
Number of Approach Lanes	**2**	**2**	**YES**
Traffic Volume (VPH) *	**1,130**	**150**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

FEHR PEERS

Major Street	SR 128/Grant Avenue	Project	Grocery Outlet Transportation Study
Minor Street	East Main Street	Scenario	EPAP Plus Project
		Peak Hour	PM

Turn Movement Volumes

	NB	SB	EB	WB
Left	70	0	0	140
Through	0	0	590	665
Right	40	0	40	0
Total	110	0	630	805

Major Street Direction

	North/South
x	East/West

Intersection Geometry

Number of Approach Lanes for Minor Street	2
Total Approaches	3

Worst Case Delay for Minor Street

Stopped Delay (seconds per vehicle)	93.7
Approach with Worst Case Delay	NB
Total Vehicles on Approach	110

Warrant 3A, Peak Hour			
	Peak Hour Delay on Minor Approach (vehicle-hours)	**Peak Hour Volume on Minor Approach (vph)**	**Peak Hour Entering Volume Serviced (vph)**
EPAP Plus Project	**2.9**	**110**	**1,545**
Limiting Value	**5**	**150**	**800**
Condition Satisfied?	**Not Met**	**Not Met**	**Met**
Warrant Met	**NO**		

FEHR PEERS

Major Street	SR 128/Grant Avenue	Project	Grocery Outlet Transportation Study
Minor Street	East Main Street	Scenario	EPAP Plus Project
		Peak Hour	PM

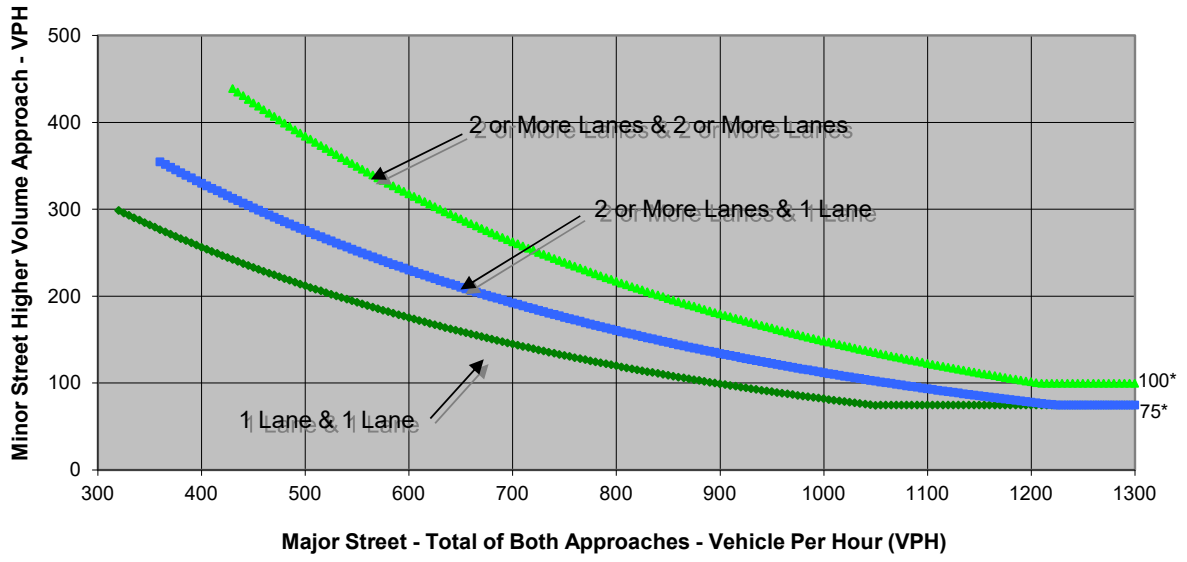
Turn Movement Volumes

	NB	SB	EB	WB
Left	70			140
Through			590	665
Right	40		40	
Total	110	0	630	805

Major Street Direction

	North/South
x	East/West

Figure 4C-4. Warrant 3B, Peak Hour (70% Factor)
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET



* Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

Source: *California Manual on Uniform Traffic Control Devices*, Caltrans, 2014

	Major Street	Minor Street	Warrant Met
	SR 128/Grant Avenue	East Main Street	
Number of Approach Lanes	**2**	**2**	**YES**
Traffic Volume (VPH) *	**1,435**	**110**	

* Note: Traffic Volume for Major Street is Total Volume of Both Approches.
Traffic Volume for Minor Street is the Volume of High Volume Approach.

Intersection	
Int Delay, s/veh	1.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	615	20	60	400	20	60
Future Vol, veh/h	615	20	60	400	20	60
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	Free	-	None	-	None
Storage Length	-	195	135	-	0	50
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	8	8	8	8	8	8
Mvmt Flow	699	23	68	455	23	68

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	-	699	0	1290	699
Stage 1	-	-	-	-	699	-
Stage 2	-	-	-	-	591	-
Critical Hdwy	-	-	4.18	-	6.48	6.28
Critical Hdwy Stg 1	-	-	-	-	5.48	-
Critical Hdwy Stg 2	-	-	-	-	5.48	-
Follow-up Hdwy	-	-	2.272	-	3.572	3.372
Pot Cap-1 Maneuver	-	0	870	-	175	430
Stage 1	-	0	-	-	482	-
Stage 2	-	0	-	-	542	-
Platoon blocked, %	-			-		
Mov Cap-1 Maneuver	-	-	870	-	161	430
Mov Cap-2 Maneuver	-	-	-	-	297	-
Stage 1	-	-	-	-	482	-
Stage 2	-	-	-	-	500	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.2	15.7
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	WBL	WBT
Capacity (veh/h)	297	430	-	870	-
HCM Lane V/C Ratio	0.077	0.159	-	0.078	-
HCM Control Delay (s)	18.1	14.9	-	9.5	-
HCM Lane LOS	C	B	-	A	-
HCM 95th %tile Q(veh)	0.2	0.6	-	0.3	-

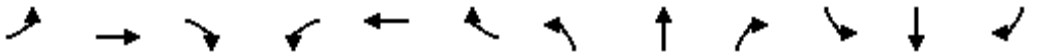
Intersection	
Int Delay, s/veh	2.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	655	20	20	430	30	100
Future Vol, veh/h	655	20	20	430	30	100
Conflicting Peds, #/hr	0	1	1	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	100	325	-	175	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	8	8	8	8	8	8
Mvmt Flow	744	23	23	489	34	114

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	768	0	1280	745
Stage 1	-	-	-	-	745	-
Stage 2	-	-	-	-	535	-
Critical Hdwy	-	-	4.18	-	6.48	6.28
Critical Hdwy Stg 1	-	-	-	-	5.48	-
Critical Hdwy Stg 2	-	-	-	-	5.48	-
Follow-up Hdwy	-	-	2.272	-	3.572	3.372
Pot Cap-1 Maneuver	-	-	820	-	178	404
Stage 1	-	-	-	-	459	-
Stage 2	-	-	-	-	575	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	819	-	173	404
Mov Cap-2 Maneuver	-	-	-	-	173	-
Stage 1	-	-	-	-	459	-
Stage 2	-	-	-	-	559	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.4	20.5
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	173	404	-	-	819	-
HCM Lane V/C Ratio	0.197	0.281	-	-	0.028	-
HCM Control Delay (s)	30.8	17.4	-	-	9.5	-
HCM Lane LOS	D	C	-	-	A	-
HCM 95th %tile Q(veh)	0.7	1.1	-	-	0.1	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	745	5	20	440	0	5	0	5	0	0	5
Future Volume (veh/h)	5	745	5	20	440	0	5	0	5	0	0	5
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1781	1781	1781	1781	1781	1781	1781	0	1781	1781	1781	1781
Adj Flow Rate, veh/h	6	847	6	23	500	0	6	0	1	0	0	1
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	8	8	8	8	8	8	8	0	8	8	8	8
Cap, veh/h	16	1034	7	64	1093	0	19	0	0	0	0	2
Arrive On Green	0.01	0.59	0.59	0.04	0.61	0.00	0.01	0.00	0.00	0.00	0.00	0.00
Sat Flow, veh/h	1697	1767	13	1697	1781	0	1697	6		0	0	1365
Grp Volume(v), veh/h	6	0	853	23	500	0	6	30.3		0	0	1
Grp Sat Flow(s),veh/h/ln	1697	0	1779	1697	1781	0	1697	C		0	0	1365
Q Serve(g_s), s	0.2	0.0	20.9	0.7	8.2	0.0	0.2			0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.2	0.0	20.9	0.7	8.2	0.0	0.2			0.0	0.0	0.0
Prop In Lane	1.00		0.01	1.00		0.00	1.00			0.00		1.00
Lane Grp Cap(c), veh/h	16	0	1042	64	1093	0	19			0	0	2
V/C Ratio(X)	0.37	0.00	0.82	0.36	0.46	0.00	0.32			0.00	0.00	0.40
Avail Cap(c_a), veh/h	652	0	1562	1148	1564	0	1148			0	0	524
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00			1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	0.00	1.00			0.00	0.00	1.00
Uniform Delay (d), s/veh	26.9	0.0	9.0	25.7	5.7	0.0	26.8			0.0	0.0	27.3
Incr Delay (d2), s/veh	5.1	0.0	2.8	4.8	0.4	0.0	3.5			0.0	0.0	34.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0			0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.0	5.3	0.3	1.7	0.0	0.1			0.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	32.1	0.0	11.8	30.4	6.1	0.0	30.3			0.0	0.0	61.5
LnGrp LOS	C	A	B	C	A	A	C			A	A	E
Approach Vol, veh/h		859			523						1	
Approach Delay, s/veh		12.0			7.2						61.5	
Approach LOS		B			A						E	

Timer - Assigned Phs	1	2	3	4	5	6
Phs Duration (G+Y+Rc), s	6.8	37.8	5.3	4.8	5.2	39.4
Change Period (Y+Rc), s	* 4.7	5.8	* 4.7	* 4.7	* 4.7	5.8
Max Green Setting (Gmax), s	* 37	48.0	* 37	* 21	* 21	48.0
Max Q Clear Time (g_c+I1), s	2.7	22.9	2.2	2.0	2.2	10.2
Green Ext Time (p_c), s	0.1	9.1	0.0	0.0	0.0	4.8

Intersection Summary	
HCM 6th Ctrl Delay	10.3
HCM 6th LOS	B

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	85	640	0	0	420	70	0	0	0	120	0	85
Future Volume (veh/h)	85	640	0	0	420	70	0	0	0	120	0	85
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1781	1781	0	0	1781	1781	1781	1781	1781	1781	0	1781
Adj Flow Rate, veh/h	97	727	0	0	477	78	0	0	0	136	0	15
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	8	8	0	0	8	8	8	8	8	8	0	8
Cap, veh/h	175	1078	0	0	863	141	0	5	0	209	0	0
Arrive On Green	0.10	0.61	0.00	0.00	0.37	0.37	0.00	0.00	0.00	0.12	0.00	0.00
Sat Flow, veh/h	1697	1781	0	0	3112	382	0	-81946	0	1697	136	
Grp Volume(v), veh/h	97	727	0	0	206	349	0	0	0	136	16.5	
Grp Sat Flow(s),veh/h/ln	1697	1781	0	0	1015	1713	0	1781	0	1697	B	
Q Serve(g_s), s	2.0	9.9	0.0	0.0	5.9	5.9	0.0	0.0	0.0	2.8		
Cycle Q Clear(g_c), s	2.0	9.9	0.0	0.0	5.9	5.9	0.0	0.0	0.0	2.8		
Prop In Lane	1.00		0.00	0.00		0.22	0.00		0.00	1.00		
Lane Grp Cap(c), veh/h	175	1078	0	0	374	630	0	5	0	209		
V/C Ratio(X)	0.56	0.67	0.00	0.00	0.55	0.55	0.00	0.00	0.00	0.65		
Avail Cap(c_a), veh/h	1210	2737	0	0	1560	2631	0	2835	0	1210		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00		
Uniform Delay (d), s/veh	15.6	4.8	0.0	0.0	9.1	9.1	0.0	0.0	0.0	15.2		
Incr Delay (d2), s/veh	1.0	1.6	0.0	0.0	2.7	1.6	0.0	0.0	0.0	1.3		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	0.6	1.0	0.0	0.0	1.0	1.5	0.0	0.0	0.0	0.9		
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	16.6	6.4	0.0	0.0	11.8	10.8	0.0	0.0	0.0	16.5		
LnGrp LOS	B	A	A	A	B	B	A	A	A	B		
Approach Vol, veh/h		824			555			0				
Approach Delay, s/veh		7.6			11.2			0.0				
Approach LOS		A			B							

Timer - Assigned Phs	2			5	6	7	8					
Phs Duration (G+Y+Rc), s	27.4			8.7	18.7	9.1	0.0					
Change Period (Y+Rc), s	5.3			4.9	5.3	4.6	4.6					
Max Green Setting (Gmax), s	56.0			26.0	56.0	26.0	58.0					
Max Q Clear Time (g_c+I1), s	11.9			4.0	7.9	4.8	0.0					
Green Ext Time (p_c), s	9.0			0.1	5.5	0.2	0.0					

Intersection Summary												
HCM 6th Ctrl Delay			9.7									
HCM 6th LOS			A									

Intersection	
Int Delay, s/veh	1.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	430	330	5	400	40	0	0	0	20	0	90
Future Vol, veh/h	0	430	330	5	400	40	0	0	0	20	0	90
Conflicting Peds, #/hr	0	0	1	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	Free	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	250
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	8	8	8	8	8	8	8	8	8	8	8	8
Mvmt Flow	0	489	375	6	455	45	0	0	0	23	0	102

Major/Minor	Major1			Major2			Minor2		
Conflicting Flow All	-	0	0	865	0	0	1144	1332	455
Stage 1	-	-	-	-	-	-	467	467	-
Stage 2	-	-	-	-	-	-	677	865	-
Critical Hdwy	-	-	-	4.18	-	-	6.48	6.58	6.28
Critical Hdwy Stg 1	-	-	-	-	-	-	5.48	5.58	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.48	5.58	-
Follow-up Hdwy	-	-	-	2.272	-	-	3.572	4.072	3.372
Pot Cap-1 Maneuver	0	-	-	753	-	0	215	150	593
Stage 1	0	-	-	-	-	0	619	552	-
Stage 2	0	-	-	-	-	0	494	363	-
Platoon blocked, %		-	-		-				
Mov Cap-1 Maneuver	-	-	-	753	-	-	213	0	593
Mov Cap-2 Maneuver	-	-	-	-	-	-	213	0	-
Stage 1	-	-	-	-	-	-	619	0	-
Stage 2	-	-	-	-	-	-	489	0	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0.1	14.4
HCM LOS			B

Minor Lane/Major Mvmt	EBT	EBR	WBL	WBT	SBLn1	SBLn2
Capacity (veh/h)	-	-	753	-	213	593
HCM Lane V/C Ratio	-	-	0.008	-	0.107	0.172
HCM Control Delay (s)	-	-	9.8	-	23.9	12.3
HCM Lane LOS	-	-	A	-	C	B
HCM 95th %tile Q(veh)	-	-	0	-	0.4	0.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	395	55	0	275	5	170	0	30	0	0	0
Future Volume (veh/h)	0	395	55	0	275	5	170	0	30	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	0	1781	1781	0	1781	1781	1781	1781	1781			
Adj Flow Rate, veh/h	0	449	0	0	312	4	193	0	9			
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88			
Percent Heavy Veh, %	0	8	8	0	8	8	8	8	8			
Cap, veh/h	0	677		0	677	573	327	0	291			
Arrive On Green	0.00	0.38	0.00	0.00	0.38	0.38	0.19	0.00	0.19			
Sat Flow, veh/h	0	1781	0	0	1781	1510	1697	0	1510			
Grp Volume(v), veh/h	0	449	0	0	312	4	193	0	9			
Grp Sat Flow(s),veh/h/ln	0	1781	0	0	1781	1510	1697	0	1510			
Q Serve(g_s), s	0.0	4.6	0.0	0.0	2.9	0.0	2.3	0.0	0.1			
Cycle Q Clear(g_c), s	0.0	4.6	0.0	0.0	2.9	0.0	2.3	0.0	0.1			
Prop In Lane	0.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	0	677		0	677	573	327	0	291			
V/C Ratio(X)	0.00	0.66		0.00	0.46	0.01	0.59	0.00	0.03			
Avail Cap(c_a), veh/h	0	3690		0	3690	3127	2750	0	2447			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	0.0	5.7	0.0	0.0	5.2	4.3	8.2	0.0	7.3			
Incr Delay (d2), s/veh	0.0	1.1	0.0	0.0	0.5	0.0	0.6	0.0	0.0			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	0.0	0.4	0.0	0.0	0.2	0.0	0.3	0.0	0.0			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	6.8	0.0	0.0	5.7	4.3	8.8	0.0	7.3			
LnGrp LOS	A	A		A	A	A	A	A	A			
Approach Vol, veh/h		449	A		316			202				
Approach Delay, s/veh		6.8			5.7			8.7				
Approach LOS		A			A			A				
Timer - Assigned Phs		2				6		8				
Phs Duration (G+Y+Rc), s		13.7				13.7		8.5				
Change Period (Y+Rc), s		5.3				5.3		4.2				
Max Green Setting (Gmax), s		46.0				46.0		36.0				
Max Q Clear Time (g_c+I1), s		6.6				4.9		4.3				
Green Ext Time (p_c), s		1.8				1.2		0.4				

Intersection Summary	
HCM 6th Ctrl Delay	6.8
HCM 6th LOS	A

Notes

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Int Delay, s/veh	1.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	570	35	70	650	30	40
Future Vol, veh/h	570	35	70	650	30	40
Conflicting Peds, #/hr	0	2	2	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	Free	-	None	-	None
Storage Length	-	195	135	-	0	50
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	4	4	4	4	4	4
Mvmt Flow	613	38	75	699	32	43

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	-	615	0	1464	615
Stage 1	-	-	-	-	615	-
Stage 2	-	-	-	-	849	-
Critical Hdwy	-	-	4.14	-	6.44	6.24
Critical Hdwy Stg 1	-	-	-	-	5.44	-
Critical Hdwy Stg 2	-	-	-	-	5.44	-
Follow-up Hdwy	-	-	2.236	-	3.536	3.336
Pot Cap-1 Maneuver	-	0	955	-	140	488
Stage 1	-	0	-	-	536	-
Stage 2	-	0	-	-	416	-
Platoon blocked, %	-			-		
Mov Cap-1 Maneuver	-	-	953	-	129	487
Mov Cap-2 Maneuver	-	-	-	-	260	-
Stage 1	-	-	-	-	535	-
Stage 2	-	-	-	-	383	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.9	16.4
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	WBL	WBT
Capacity (veh/h)	260	487	-	953	-
HCM Lane V/C Ratio	0.124	0.088	-	0.079	-
HCM Control Delay (s)	20.8	13.1	-	9.1	-
HCM Lane LOS	C	B	-	A	-
HCM 95th %tile Q(veh)	0.4	0.3	-	0.3	-

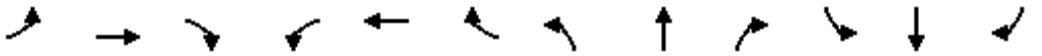
Intersection	
Int Delay, s/veh	1.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	590	20	100	710	10	60
Future Vol, veh/h	590	20	100	710	10	60
Conflicting Peds, #/hr	0	2	2	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	100	325	-	175	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	4	4	4	4	4	4
Mvmt Flow	634	22	108	763	11	65

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	658	0	1615	636
Stage 1	-	-	-	-	636	-
Stage 2	-	-	-	-	979	-
Critical Hdwy	-	-	4.14	-	6.44	6.24
Critical Hdwy Stg 1	-	-	-	-	5.44	-
Critical Hdwy Stg 2	-	-	-	-	5.44	-
Follow-up Hdwy	-	-	2.236	-	3.536	3.336
Pot Cap-1 Maneuver	-	-	920	-	113	474
Stage 1	-	-	-	-	524	-
Stage 2	-	-	-	-	361	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	918	-	99	473
Mov Cap-2 Maneuver	-	-	-	-	99	-
Stage 1	-	-	-	-	523	-
Stage 2	-	-	-	-	318	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.2	18.4
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	99	473	-	-	918	-
HCM Lane V/C Ratio	0.109	0.136	-	-	0.117	-
HCM Control Delay (s)	45.7	13.8	-	-	9.4	-
HCM Lane LOS	E	B	-	-	A	-
HCM 95th %tile Q(veh)	0.4	0.5	-	-	0.4	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	640	5	5	800	0	5	0	5	0	0	5
Future Volume (veh/h)	5	640	5	5	800	0	5	0	5	0	0	5
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1841	1841	1841	1841	1841	1841	1841	0	1841	1841	1841	1841
Adj Flow Rate, veh/h	5	688	5	5	860	0	5	0	1	0	0	1
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	4	4	4	4	4	4	4	0	4	4	4	4
Cap, veh/h	14	1072	8	16	1084	0	16	0	0	0	0	3
Arrive On Green	0.01	0.59	0.59	0.01	0.59	0.00	0.01	0.00	0.00	0.00	0.00	0.00
Sat Flow, veh/h	1753	1825	13	1753	1841	0	1753	5		0	0	1311
Grp Volume(v), veh/h	5	0	693	5	860	0	5	28.8		0	0	1
Grp Sat Flow(s),veh/h/ln	1753	0	1838	1753	1841	0	1753	C		0	0	1311
Q Serve(g_s), s	0.1	0.0	12.7	0.1	18.3	0.0	0.1			0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.1	0.0	12.7	0.1	18.3	0.0	0.1			0.0	0.0	0.0
Prop In Lane	1.00		0.01	1.00		0.00	1.00			0.00		1.00
Lane Grp Cap(c), veh/h	14	0	1080	16	1084	0	16			0	0	3
V/C Ratio(X)	0.35	0.00	0.64	0.30	0.79	0.00	0.30			0.00	0.00	0.39
Avail Cap(c_a), veh/h	725	0	1738	1278	1740	0	1278			0	0	542
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00			1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	0.00	1.00			0.00	0.00	1.00
Uniform Delay (d), s/veh	25.0	0.0	6.9	25.0	8.1	0.0	25.0			0.0	0.0	25.3
Incr Delay (d2), s/veh	5.5	0.0	0.9	14.1	1.9	0.0	3.8			0.0	0.0	31.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0			0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.0	2.8	0.1	4.2	0.0	0.1			0.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	30.6	0.0	7.8	39.0	10.0	0.0	28.8			0.0	0.0	57.0
LnGrp LOS	C	A	A	D	A	A	C			A	A	E
Approach Vol, veh/h		698			865						1	
Approach Delay, s/veh		8.0			10.1						57.0	
Approach LOS		A			B						E	

Timer - Assigned Phs	1	2	3	4	5	6
Phs Duration (G+Y+Rc), s	5.2	35.6	5.2	4.8	5.1	35.7
Change Period (Y+Rc), s	* 4.7	5.8	* 4.7	* 4.7	* 4.7	5.8
Max Green Setting (Gmax), s	* 37	48.0	* 37	* 21	* 21	48.0
Max Q Clear Time (g_c+I1), s	2.1	14.7	2.1	2.0	2.1	20.3
Green Ext Time (p_c), s	0.0	7.3	0.0	0.0	0.0	9.6

Intersection Summary	
HCM 6th Ctrl Delay	9.3
HCM 6th LOS	A

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	115	560	0	0	680	100	0	0	0	145	0	100
Future Volume (veh/h)	115	560	0	0	680	100	0	0	0	145	0	100
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1841	1841	0	0	1841	1841	1841	1841	1841	1841	0	1841
Adj Flow Rate, veh/h	124	602	0	0	731	107	0	0	0	156	0	14
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	4	4	0	0	4	4	4	4	4	4	0	4
Cap, veh/h	179	1238	0	0	1148	168	0	4	0	205	0	0
Arrive On Green	0.10	0.67	0.00	0.00	0.47	0.47	0.00	0.00	0.00	0.12	0.00	0.00
Sat Flow, veh/h	1753	1841	0	0	3256	361	0	-84673	0	1753	156	
Grp Volume(v), veh/h	124	602	0	0	311	527	0	0	0	156	22.3	
Grp Sat Flow(s),veh/h/ln	1753	1841	0	0	1049	1776	0	1841	0	1753	C	
Q Serve(g_s), s	3.2	7.5	0.0	0.0	10.6	10.6	0.0	0.0	0.0	4.1		
Cycle Q Clear(g_c), s	3.2	7.5	0.0	0.0	10.6	10.6	0.0	0.0	0.0	4.1		
Prop In Lane	1.00		0.00	0.00		0.20	0.00		0.00	1.00		
Lane Grp Cap(c), veh/h	179	1238	0	0	489	827	0	4	0	205		
V/C Ratio(X)	0.69	0.49	0.00	0.00	0.64	0.64	0.00	0.00	0.00	0.76		
Avail Cap(c_a), veh/h	969	2191	0	0	1249	2114	0	2270	0	969		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00		
Uniform Delay (d), s/veh	20.4	3.8	0.0	0.0	9.5	9.5	0.0	0.0	0.0	20.1		
Incr Delay (d2), s/veh	1.8	0.6	0.0	0.0	2.9	1.7	0.0	0.0	0.0	2.2		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	1.2	0.9	0.0	0.0	1.9	3.0	0.0	0.0	0.0	1.6		
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	22.2	4.4	0.0	0.0	12.5	11.3	0.0	0.0	0.0	22.3		
LnGrp LOS	C	A	A	A	B	B	A	A	A	C		
Approach Vol, veh/h		726			838			0				
Approach Delay, s/veh		7.4			11.7			0.0				
Approach LOS		A			B							

Timer - Assigned Phs	2			5	6	7	8					
Phs Duration (G+Y+Rc), s	36.9			9.7	27.2	10.1	0.0					
Change Period (Y+Rc), s	5.3			4.9	5.3	4.6	4.6					
Max Green Setting (Gmax), s	56.0			26.0	56.0	26.0	58.0					
Max Q Clear Time (g_c+I1), s	9.5			5.2	12.6	6.1	0.0					
Green Ext Time (p_c), s	6.7			0.2	9.3	0.3	0.0					

Intersection Summary												
HCM 6th Ctrl Delay			10.9									
HCM 6th LOS			B									

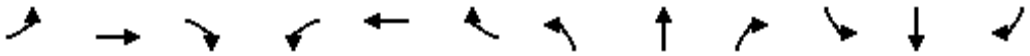
Intersection	
Int Delay, s/veh	1.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	495	210	5	680	40	0	0	0	5	5	100
Future Vol, veh/h	0	495	210	5	680	40	0	0	0	5	5	100
Conflicting Peds, #/hr	0	0	2	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	Free	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	250
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	4	4	4	4	4	4	4	4	4	4	4	4
Mvmt Flow	0	532	226	5	731	43	0	0	0	5	5	108

Major/Minor	Major1			Major2			Minor2		
Conflicting Flow All	-	0	0	760	0	0	1386	1501	731
Stage 1	-	-	-	-	-	-	741	741	-
Stage 2	-	-	-	-	-	-	645	760	-
Critical Hdwy	-	-	-	4.14	-	-	6.44	6.54	6.24
Critical Hdwy Stg 1	-	-	-	-	-	-	5.44	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.44	5.54	-
Follow-up Hdwy	-	-	-	2.236	-	-	3.536	4.036	3.336
Pot Cap-1 Maneuver	0	-	-	843	-	0	156	121	418
Stage 1	0	-	-	-	-	0	468	420	-
Stage 2	0	-	-	-	-	0	519	412	-
Platoon blocked, %		-	-		-				
Mov Cap-1 Maneuver	-	-	-	843	-	-	154	0	418
Mov Cap-2 Maneuver	-	-	-	-	-	-	154	0	-
Stage 1	-	-	-	-	-	-	468	0	-
Stage 2	-	-	-	-	-	-	514	0	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0.1	17.8
HCM LOS			C

Minor Lane/Major Mvmt	EBT	EBR	WBL	WBT	SBLn1	SBLn2
Capacity (veh/h)	-	-	843	-	154	418
HCM Lane V/C Ratio	-	-	0.006	-	0.07	0.257
HCM Control Delay (s)	-	-	9.3	-	30.1	16.6
HCM Lane LOS	-	-	A	-	D	C
HCM 95th %tile Q(veh)	-	-	0	-	0.2	1



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	380	120	0	415	5	310	5	60	0	0	0
Future Volume (veh/h)	0	380	120	0	415	5	310	5	60	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	0	1841	1841	0	1841	1841	1841	1841	1841			
Adj Flow Rate, veh/h	0	409	0	0	446	3	333	5	22			
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93			
Percent Heavy Veh, %	0	4	4	0	4	4	4	4	4			
Cap, veh/h	0	658		0	658	558	450	7	406			
Arrive On Green	0.00	0.36	0.00	0.00	0.36	0.36	0.26	0.26	0.26			
Sat Flow, veh/h	0	1841	0	0	1841	1560	1728	26	1560			
Grp Volume(v), veh/h	0	409	0	0	446	3	338	0	22			
Grp Sat Flow(s),veh/h/ln	0	1841	0	0	1841	1560	1754	0	1560			
Q Serve(g_s), s	0.0	4.6	0.0	0.0	5.1	0.0	4.4	0.0	0.3			
Cycle Q Clear(g_c), s	0.0	4.6	0.0	0.0	5.1	0.0	4.4	0.0	0.3			
Prop In Lane	0.00		0.00	0.00		1.00	0.99		1.00			
Lane Grp Cap(c), veh/h	0	658		0	658	558	457	0	406			
V/C Ratio(X)	0.00	0.62		0.00	0.68	0.01	0.74	0.00	0.05			
Avail Cap(c_a), veh/h	0	3406		0	3406	2886	2540	0	2259			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	0.0	6.6	0.0	0.0	6.8	5.1	8.4	0.0	6.9			
Incr Delay (d2), s/veh	0.0	1.0	0.0	0.0	1.2	0.0	0.9	0.0	0.0			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	0.0	0.6	0.0	0.0	0.7	0.0	0.6	0.0	0.0			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	7.6	0.0	0.0	8.0	5.1	9.3	0.0	6.9			
LnGrp LOS	A	A		A	A	A	A	A	A			
Approach Vol, veh/h		409	A		449			360				
Approach Delay, s/veh		7.6			8.0			9.2				
Approach LOS		A			A			A				
Timer - Assigned Phs		2				6		8				
Phs Duration (G+Y+Rc), s		14.2				14.2		10.7				
Change Period (Y+Rc), s		5.3				5.3		4.2				
Max Green Setting (Gmax), s		46.0				46.0		36.0				
Max Q Clear Time (g_c+I1), s		6.6				7.1		6.4				
Green Ext Time (p_c), s		1.6				1.8		0.7				

Intersection Summary	
HCM 6th Ctrl Delay	8.2
HCM 6th LOS	A

Notes

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Int Delay, s/veh	1.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	615	20	65	415	20	60
Future Vol, veh/h	615	20	65	415	20	60
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	Free	-	None	-	None
Storage Length	-	195	135	-	0	50
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	8	8	8	8	8	8
Mvmt Flow	699	23	74	472	23	68

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	-	699	0	1319	699
Stage 1	-	-	-	-	699	-
Stage 2	-	-	-	-	620	-
Critical Hdwy	-	-	4.18	-	6.48	6.28
Critical Hdwy Stg 1	-	-	-	-	5.48	-
Critical Hdwy Stg 2	-	-	-	-	5.48	-
Follow-up Hdwy	-	-	2.272	-	3.572	3.372
Pot Cap-1 Maneuver	-	0	870	-	168	430
Stage 1	-	0	-	-	482	-
Stage 2	-	0	-	-	525	-
Platoon blocked, %	-			-		
Mov Cap-1 Maneuver	-	-	870	-	154	430
Mov Cap-2 Maneuver	-	-	-	-	290	-
Stage 1	-	-	-	-	482	-
Stage 2	-	-	-	-	480	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.3	15.8
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	WBL	WBT
Capacity (veh/h)	290	430	-	870	-
HCM Lane V/C Ratio	0.078	0.159	-	0.085	-
HCM Control Delay (s)	18.5	14.9	-	9.5	-
HCM Lane LOS	C	B	-	A	-
HCM 95th %tile Q(veh)	0.3	0.6	-	0.3	-

Intersection	
Int Delay, s/veh	2.7

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	635	40	20	435	45	105
Future Vol, veh/h	635	40	20	435	45	105
Conflicting Peds, #/hr	0	1	1	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	100	200	-	55	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	8	8	8	8	8	8
Mvmt Flow	722	45	23	494	51	119

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	768	0	1263	723
Stage 1	-	-	-	-	723	-
Stage 2	-	-	-	-	540	-
Critical Hdwy	-	-	4.18	-	6.48	6.28
Critical Hdwy Stg 1	-	-	-	-	5.48	-
Critical Hdwy Stg 2	-	-	-	-	5.48	-
Follow-up Hdwy	-	-	2.272	-	3.572	3.372
Pot Cap-1 Maneuver	-	-	820	-	182	416
Stage 1	-	-	-	-	470	-
Stage 2	-	-	-	-	572	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	819	-	177	416
Mov Cap-2 Maneuver	-	-	-	-	177	-
Stage 1	-	-	-	-	470	-
Stage 2	-	-	-	-	556	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.4	22
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	177	416	-	-	819	-
HCM Lane V/C Ratio	0.289	0.287	-	-	0.028	-
HCM Control Delay (s)	33.4	17.1	-	-	9.5	-
HCM Lane LOS	D	C	-	-	A	-
HCM 95th %tile Q(veh)	1.1	1.2	-	-	0.1	-

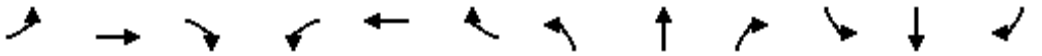
Intersection	
Int Delay, s/veh	0.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	735	5	20	450	5	20
Future Vol, veh/h	735	5	20	450	5	20
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	100	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	8	8	8	8	8	8
Mvmt Flow	835	6	23	511	6	23

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	841	0	1395	838
Stage 1	-	-	-	-	838	-
Stage 2	-	-	-	-	557	-
Critical Hdwy	-	-	4.18	-	6.48	6.28
Critical Hdwy Stg 1	-	-	-	-	5.48	-
Critical Hdwy Stg 2	-	-	-	-	5.48	-
Follow-up Hdwy	-	-	2.272	-	3.572	3.372
Pot Cap-1 Maneuver	-	-	769	-	151	357
Stage 1	-	-	-	-	414	-
Stage 2	-	-	-	-	562	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	769	-	146	357
Mov Cap-2 Maneuver	-	-	-	-	146	-
Stage 1	-	-	-	-	414	-
Stage 2	-	-	-	-	545	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.4	19.5
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	277	-	-	769	-
HCM Lane V/C Ratio	0.103	-	-	0.03	-
HCM Control Delay (s)	19.5	-	-	9.8	-
HCM Lane LOS	C	-	-	A	-
HCM 95th %tile Q(veh)	0.3	-	-	0.1	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	745	5	20	460	0	5	0	5	0	0	5
Future Volume (veh/h)	5	745	5	20	460	0	5	0	5	0	0	5
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1781	1781	1781	1781	1781	1781	1781	0	1781	1781	1781	1781
Adj Flow Rate, veh/h	6	847	6	23	523	0	6	0	1	0	0	1
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	8	8	8	8	8	8	8	0	8	8	8	8
Cap, veh/h	16	1034	7	64	1093	0	19	0	0	0	0	2
Arrive On Green	0.01	0.59	0.59	0.04	0.61	0.00	0.01	0.00	0.00	0.00	0.00	0.00
Sat Flow, veh/h	1697	1767	13	1697	1781	0	1697	6		0	0	1365
Grp Volume(v), veh/h	6	0	853	23	523	0	6	30.3		0	0	1
Grp Sat Flow(s),veh/h/ln	1697	0	1779	1697	1781	0	1697	C		0	0	1365
Q Serve(g_s), s	0.2	0.0	20.9	0.7	8.8	0.0	0.2			0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.2	0.0	20.9	0.7	8.8	0.0	0.2			0.0	0.0	0.0
Prop In Lane	1.00		0.01	1.00		0.00	1.00			0.00		1.00
Lane Grp Cap(c), veh/h	16	0	1042	64	1093	0	19			0	0	2
V/C Ratio(X)	0.37	0.00	0.82	0.36	0.48	0.00	0.32			0.00	0.00	0.40
Avail Cap(c_a), veh/h	652	0	1562	1148	1564	0	1148			0	0	524
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00			1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	0.00	1.00			0.00	0.00	1.00
Uniform Delay (d), s/veh	26.9	0.0	9.0	25.7	5.8	0.0	26.8			0.0	0.0	27.3
Incr Delay (d2), s/veh	5.1	0.0	2.8	4.8	0.5	0.0	3.5			0.0	0.0	34.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0			0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.0	5.3	0.3	1.9	0.0	0.1			0.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	32.1	0.0	11.8	30.4	6.2	0.0	30.3			0.0	0.0	61.5
LnGrp LOS	C	A	B	C	A	A	C			A	A	E
Approach Vol, veh/h		859			546						1	
Approach Delay, s/veh		12.0			7.3						61.5	
Approach LOS		B			A						E	

Timer - Assigned Phs	1	2	3	4	5	6
Phs Duration (G+Y+Rc), s	6.8	37.8	5.3	4.8	5.2	39.4
Change Period (Y+Rc), s	* 4.7	5.8	* 4.7	* 4.7	* 4.7	5.8
Max Green Setting (Gmax), s	* 37	48.0	* 37	* 21	* 21	48.0
Max Q Clear Time (g_c+I1), s	2.7	22.9	2.2	2.0	2.2	10.8
Green Ext Time (p_c), s	0.1	9.1	0.0	0.0	0.0	5.0

Intersection Summary	
HCM 6th Ctrl Delay	10.3
HCM 6th LOS	B

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	85	640	0	0	440	70	0	0	0	120	0	85
Future Volume (veh/h)	85	640	0	0	440	70	0	0	0	120	0	85
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1781	1781	0	0	1781	1781	1781	1781	1781	1781	0	1781
Adj Flow Rate, veh/h	97	727	0	0	500	78	0	0	0	136	0	15
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	8	8	0	0	8	8	8	8	8	8	0	8
Cap, veh/h	173	1089	0	0	892	139	0	5	0	207	0	0
Arrive On Green	0.10	0.61	0.00	0.00	0.38	0.38	0.00	0.00	0.00	0.12	0.00	0.00
Sat Flow, veh/h	1697	1781	0	0	3129	368	0	-81946	0	1697	136	
Grp Volume(v), veh/h	97	727	0	0	214	364	0	0	0	136	16.9	
Grp Sat Flow(s),veh/h/ln	1697	1781	0	0	1015	1715	0	1781	0	1697	B	
Q Serve(g_s), s	2.0	9.9	0.0	0.0	6.2	6.2	0.0	0.0	0.0	2.8		
Cycle Q Clear(g_c), s	2.0	9.9	0.0	0.0	6.2	6.2	0.0	0.0	0.0	2.8		
Prop In Lane	1.00		0.00	0.00		0.21	0.00		0.00	1.00		
Lane Grp Cap(c), veh/h	173	1089	0	0	383	647	0	5	0	207		
V/C Ratio(X)	0.56	0.67	0.00	0.00	0.56	0.56	0.00	0.00	0.00	0.66		
Avail Cap(c_a), veh/h	1188	2687	0	0	1532	2587	0	2783	0	1188		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00		
Uniform Delay (d), s/veh	15.9	4.7	0.0	0.0	9.1	9.1	0.0	0.0	0.0	15.6		
Incr Delay (d2), s/veh	1.1	1.5	0.0	0.0	2.7	1.6	0.0	0.0	0.0	1.3		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	0.6	1.0	0.0	0.0	1.1	1.6	0.0	0.0	0.0	1.0		
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	16.9	6.3	0.0	0.0	11.8	10.8	0.0	0.0	0.0	16.9		
LnGrp LOS	B	A	A	A	B	B	A	A	A	B		
Approach Vol, veh/h		824			578			0				
Approach Delay, s/veh		7.5			11.2			0.0				
Approach LOS		A			B							

Timer - Assigned Phs	2			5	6	7	8					
Phs Duration (G+Y+Rc), s	28.0			8.7	19.3	9.1	0.0					
Change Period (Y+Rc), s	5.3			4.9	5.3	4.6	4.6					
Max Green Setting (Gmax), s	56.0			26.0	56.0	26.0	58.0					
Max Q Clear Time (g_c+I1), s	11.9			4.0	8.2	4.8	0.0					
Green Ext Time (p_c), s	9.0			0.1	5.8	0.2	0.0					

Intersection Summary												
HCM 6th Ctrl Delay			9.7									
HCM 6th LOS			A									

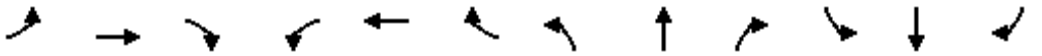
Intersection	
Int Delay, s/veh	1.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	430	330	5	415	40	0	0	0	20	0	95
Future Vol, veh/h	0	430	330	5	415	40	0	0	0	20	0	95
Conflicting Peds, #/hr	0	0	1	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	Free	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	250
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	8	8	8	8	8	8	8	8	8	8	8	8
Mvmt Flow	0	489	375	6	472	45	0	0	0	23	0	108

Major/Minor	Major1			Major2			Minor2		
Conflicting Flow All	-	0	0	865	0	0	1161	1349	472
Stage 1	-	-	-	-	-	-	484	484	-
Stage 2	-	-	-	-	-	-	677	865	-
Critical Hdwy	-	-	-	4.18	-	-	6.48	6.58	6.28
Critical Hdwy Stg 1	-	-	-	-	-	-	5.48	5.58	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.48	5.58	-
Follow-up Hdwy	-	-	-	2.272	-	-	3.572	4.072	3.372
Pot Cap-1 Maneuver	0	-	-	753	-	0	210	146	580
Stage 1	0	-	-	-	-	0	607	542	-
Stage 2	0	-	-	-	-	0	494	363	-
Platoon blocked, %		-	-		-				
Mov Cap-1 Maneuver	-	-	-	753	-	-	208	0	580
Mov Cap-2 Maneuver	-	-	-	-	-	-	208	0	-
Stage 1	-	-	-	-	-	-	607	0	-
Stage 2	-	-	-	-	-	-	489	0	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0.1	14.7
HCM LOS			B

Minor Lane/Major Mvmt	EBT	EBR	WBL	WBT	SBLn1	SBLn2
Capacity (veh/h)	-	-	753	-	208	580
HCM Lane V/C Ratio	-	-	0.008	-	0.109	0.186
HCM Control Delay (s)	-	-	9.8	-	24.4	12.6
HCM Lane LOS	-	-	A	-	C	B
HCM 95th %tile Q(veh)	-	-	0	-	0.4	0.7



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	395	55	0	290	5	170	0	30	0	0	0
Future Volume (veh/h)	0	395	55	0	290	5	170	0	30	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	0	1781	1781	0	1781	1781	1781	1781	1781			
Adj Flow Rate, veh/h	0	449	0	0	330	4	193	0	9			
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88			
Percent Heavy Veh, %	0	8	8	0	8	8	8	8	8			
Cap, veh/h	0	677		0	677	573	327	0	291			
Arrive On Green	0.00	0.38	0.00	0.00	0.38	0.38	0.19	0.00	0.19			
Sat Flow, veh/h	0	1781	0	0	1781	1510	1697	0	1510			
Grp Volume(v), veh/h	0	449	0	0	330	4	193	0	9			
Grp Sat Flow(s),veh/h/ln	0	1781	0	0	1781	1510	1697	0	1510			
Q Serve(g_s), s	0.0	4.6	0.0	0.0	3.1	0.0	2.3	0.0	0.1			
Cycle Q Clear(g_c), s	0.0	4.6	0.0	0.0	3.1	0.0	2.3	0.0	0.1			
Prop In Lane	0.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	0	677		0	677	573	327	0	291			
V/C Ratio(X)	0.00	0.66		0.00	0.49	0.01	0.59	0.00	0.03			
Avail Cap(c_a), veh/h	0	3690		0	3690	3127	2750	0	2447			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	0.0	5.7	0.0	0.0	5.2	4.3	8.2	0.0	7.3			
Incr Delay (d2), s/veh	0.0	1.1	0.0	0.0	0.5	0.0	0.6	0.0	0.0			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	0.0	0.4	0.0	0.0	0.2	0.0	0.3	0.0	0.0			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	6.8	0.0	0.0	5.8	4.3	8.8	0.0	7.3			
LnGrp LOS	A	A		A	A	A	A	A	A			
Approach Vol, veh/h		449	A		334			202				
Approach Delay, s/veh		6.8			5.8			8.7				
Approach LOS		A			A			A				
Timer - Assigned Phs		2				6		8				
Phs Duration (G+Y+Rc), s		13.7				13.7		8.5				
Change Period (Y+Rc), s		5.3				5.3		4.2				
Max Green Setting (Gmax), s		46.0				46.0		36.0				
Max Q Clear Time (g_c+I1), s		6.6				5.1		4.3				
Green Ext Time (p_c), s		1.8				1.3		0.4				

Intersection Summary	
HCM 6th Ctrl Delay	6.9
HCM 6th LOS	A

Notes

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.



Lane Group	EBT	WBT	WBR	NBT	NBR
Lane Group Flow (vph)	512	330	6	193	34
v/c Ratio	0.58	0.37	0.01	0.46	0.08
Control Delay	10.8	8.2	2.6	16.1	5.9
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	10.8	8.2	2.6	16.1	5.9
Queue Length 50th (ft)	63	36	0	29	0
Queue Length 95th (ft)	162	95	3	85	14
Internal Link Dist (ft)	1218	678		749	
Turn Bay Length (ft)			50		125
Base Capacity (vph)	1703	1732	1472	1507	1352
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.30	0.19	0.00	0.13	0.03

Intersection Summary

Intersection	
Int Delay, s/veh	1.5

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	5	15	135	20	20	40
Future Vol, veh/h	5	15	135	20	20	40
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	40	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	8	8	8	8	8	8
Mvmt Flow	6	17	153	23	23	45

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	256	165	0	0	176	0
Stage 1	165	-	-	-	-	-
Stage 2	91	-	-	-	-	-
Critical Hdwy	6.48	6.28	-	-	4.18	-
Critical Hdwy Stg 1	5.48	-	-	-	-	-
Critical Hdwy Stg 2	5.48	-	-	-	-	-
Follow-up Hdwy	3.572	3.372	-	-	2.272	-
Pot Cap-1 Maneuver	720	864	-	-	1365	-
Stage 1	850	-	-	-	-	-
Stage 2	918	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	708	864	-	-	1365	-
Mov Cap-2 Maneuver	708	-	-	-	-	-
Stage 1	850	-	-	-	-	-
Stage 2	902	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.5	0	2.6
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	819	1365	-
HCM Lane V/C Ratio	-	-	0.028	0.017	-
HCM Control Delay (s)	-	-	9.5	7.7	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	0.1	0.1	-

Intersection	
Int Delay, s/veh	1.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	590	35	70	665	30	40
Future Vol, veh/h	590	35	70	665	30	40
Conflicting Peds, #/hr	0	2	2	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	Free	-	None	-	None
Storage Length	-	195	135	-	0	50
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	4	4	4	4	4	4
Mvmt Flow	634	38	75	715	32	43

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	-	636	0	1501	636
Stage 1	-	-	-	-	636	-
Stage 2	-	-	-	-	865	-
Critical Hdwy	-	-	4.14	-	6.44	6.24
Critical Hdwy Stg 1	-	-	-	-	5.44	-
Critical Hdwy Stg 2	-	-	-	-	5.44	-
Follow-up Hdwy	-	-	2.236	-	3.536	3.336
Pot Cap-1 Maneuver	-	0	938	-	133	474
Stage 1	-	0	-	-	524	-
Stage 2	-	0	-	-	409	-
Platoon blocked, %	-			-		
Mov Cap-1 Maneuver	-	-	936	-	122	473
Mov Cap-2 Maneuver	-	-	-	-	253	-
Stage 1	-	-	-	-	523	-
Stage 2	-	-	-	-	376	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.9	16.8
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	WBL	WBT
Capacity (veh/h)	253	473	-	936	-
HCM Lane V/C Ratio	0.128	0.091	-	0.08	-
HCM Control Delay (s)	21.3	13.4	-	9.2	-
HCM Lane LOS	C	B	-	A	-
HCM 95th %tile Q(veh)	0.4	0.3	-	0.3	-

Intersection	
Int Delay, s/veh	7.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	590	40	140	665	70	40
Future Vol, veh/h	590	40	140	665	70	40
Conflicting Peds, #/hr	0	2	2	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	100	200	-	55	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	4	4	4	4	4	4
Mvmt Flow	634	43	151	715	75	43

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	679	0	1653	636
Stage 1	-	-	-	-	636	-
Stage 2	-	-	-	-	1017	-
Critical Hdwy	-	-	4.14	-	6.44	6.24
Critical Hdwy Stg 1	-	-	-	-	5.44	-
Critical Hdwy Stg 2	-	-	-	-	5.44	-
Follow-up Hdwy	-	-	2.236	-	3.536	3.336
Pot Cap-1 Maneuver	-	-	904	-	107	474
Stage 1	-	-	-	-	524	-
Stage 2	-	-	-	-	346	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	902	-	89	473
Mov Cap-2 Maneuver	-	-	-	-	89	-
Stage 1	-	-	-	-	523	-
Stage 2	-	-	-	-	288	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1.7	93.7
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	89	473	-	-	902	-
HCM Lane V/C Ratio	0.846	0.091	-	-	0.167	-
HCM Control Delay (s)	139.6	13.4	-	-	9.8	-
HCM Lane LOS	F	B	-	-	A	-
HCM 95th %tile Q(veh)	4.5	0.3	-	-	0.6	-

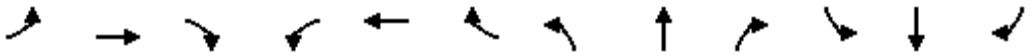
Intersection	
Int Delay, s/veh	0.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	625	5	30	800	5	30
Future Vol, veh/h	625	5	30	800	5	30
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	100	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	4	4	4	4	4	4
Mvmt Flow	672	5	32	860	5	32

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	677	0	1599	675
Stage 1	-	-	-	-	675	-
Stage 2	-	-	-	-	924	-
Critical Hdwy	-	-	4.14	-	6.44	6.24
Critical Hdwy Stg 1	-	-	-	-	5.44	-
Critical Hdwy Stg 2	-	-	-	-	5.44	-
Follow-up Hdwy	-	-	2.236	-	3.536	3.336
Pot Cap-1 Maneuver	-	-	905	-	116	451
Stage 1	-	-	-	-	502	-
Stage 2	-	-	-	-	383	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	905	-	112	451
Mov Cap-2 Maneuver	-	-	-	-	112	-
Stage 1	-	-	-	-	502	-
Stage 2	-	-	-	-	370	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.3	18
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	315	-	-	905	-
HCM Lane V/C Ratio	0.119	-	-	0.036	-
HCM Control Delay (s)	18	-	-	9.1	-
HCM Lane LOS	C	-	-	A	-
HCM 95th %tile Q(veh)	0.4	-	-	0.1	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	645	5	5	820	0	5	0	5	0	0	5
Future Volume (veh/h)	5	645	5	5	820	0	5	0	5	0	0	5
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1841	1841	1841	1841	1841	1841	1841	0	1841	1841	1841	1841
Adj Flow Rate, veh/h	5	694	5	5	882	0	5	0	2	0	0	4
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	4	4	4	4	4	4	4	0	4	4	4	4
Cap, veh/h	14	1086	8	16	1098	0	16	0	0	0	0	10
Arrive On Green	0.01	0.60	0.60	0.01	0.60	0.00	0.01	0.00	0.00	0.00	0.00	0.01
Sat Flow, veh/h	1753	1825	13	1753	1841	0	1753	5		0	0	1560
Grp Volume(v), veh/h	5	0	699	5	882	0	5	29.6		0	0	4
Grp Sat Flow(s),veh/h/ln	1753	0	1838	1753	1841	0	1753	C		0	0	1560
Q Serve(g_s), s	0.1	0.0	13.0	0.1	19.5	0.0	0.1			0.0	0.0	0.1
Cycle Q Clear(g_c), s	0.1	0.0	13.0	0.1	19.5	0.0	0.1			0.0	0.0	0.1
Prop In Lane	1.00		0.01	1.00		0.00	1.00			0.00		1.00
Lane Grp Cap(c), veh/h	14	0	1094	16	1098	0	16			0	0	10
V/C Ratio(X)	0.35	0.00	0.64	0.30	0.80	0.00	0.30			0.00	0.00	0.40
Avail Cap(c_a), veh/h	702	0	1683	1237	1685	0	1237			0	0	625
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00			1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	0.00	1.00			0.00	0.00	1.00
Uniform Delay (d), s/veh	25.9	0.0	6.9	25.8	8.2	0.0	25.8			0.0	0.0	25.9
Incr Delay (d2), s/veh	5.5	0.0	0.9	14.1	2.2	0.0	3.8			0.0	0.0	9.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0			0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.0	2.9	0.1	4.6	0.0	0.1			0.0	0.0	0.1
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	31.4	0.0	7.8	39.9	10.4	0.0	29.6			0.0	0.0	35.0
LnGrp LOS	C	A	A	D	B	A	C			A	A	D
Approach Vol, veh/h		704			887						4	
Approach Delay, s/veh		8.0			10.6						35.0	
Approach LOS		A			B						D	

Timer - Assigned Phs	1	2	3	4	5	6
Phs Duration (G+Y+Rc), s	5.2	37.0	5.2	5.0	5.1	37.1
Change Period (Y+Rc), s	* 4.7	5.8	* 4.7	* 4.7	* 4.7	5.8
Max Green Setting (Gmax), s	* 37	48.0	* 37	* 21	* 21	48.0
Max Q Clear Time (g_c+I1), s	2.1	15.0	2.1	2.1	2.1	21.5
Green Ext Time (p_c), s	0.0	7.4	0.0	0.0	0.0	9.8

Intersection Summary	
HCM 6th Ctrl Delay	9.6
HCM 6th LOS	A

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	115	565	0	0	690	100	0	0	0	145	0	110
Future Volume (veh/h)	115	565	0	0	690	100	0	0	0	145	0	110
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1841	1841	0	0	1841	1841	1841	1841	1841	1841	0	1841
Adj Flow Rate, veh/h	124	608	0	0	742	107	0	0	0	156	0	49
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	4	4	0	0	4	4	4	4	4	4	0	4
Cap, veh/h	178	1241	0	0	1160	167	0	4	0	205	0	0
Arrive On Green	0.10	0.67	0.00	0.00	0.47	0.47	0.00	0.00	0.00	0.12	0.00	0.00
Sat Flow, veh/h	1753	1841	0	0	3261	356	0	-84673	0	1753	156	
Grp Volume(v), veh/h	124	608	0	0	315	534	0	0	0	156	22.5	
Grp Sat Flow(s),veh/h/ln	1753	1841	0	0	1049	1777	0	1841	0	1753	C	
Q Serve(g_s), s	3.2	7.6	0.0	0.0	10.8	10.8	0.0	0.0	0.0	4.1		
Cycle Q Clear(g_c), s	3.2	7.6	0.0	0.0	10.8	10.8	0.0	0.0	0.0	4.1		
Prop In Lane	1.00		0.00	0.00		0.20	0.00		0.00	1.00		
Lane Grp Cap(c), veh/h	178	1241	0	0	493	834	0	4	0	205		
V/C Ratio(X)	0.70	0.49	0.00	0.00	0.64	0.64	0.00	0.00	0.00	0.76		
Avail Cap(c_a), veh/h	960	2170	0	0	1237	2095	0	2248	0	960		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00		
Uniform Delay (d), s/veh	20.6	3.8	0.0	0.0	9.6	9.6	0.0	0.0	0.0	20.3		
Incr Delay (d2), s/veh	1.8	0.6	0.0	0.0	2.9	1.8	0.0	0.0	0.0	2.2		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	1.2	0.9	0.0	0.0	2.0	3.0	0.0	0.0	0.0	1.6		
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	22.4	4.4	0.0	0.0	12.5	11.3	0.0	0.0	0.0	22.5		
LnGrp LOS	C	A	A	A	B	B	A	A	A	C		
Approach Vol, veh/h		732			849			0				
Approach Delay, s/veh		7.5			11.7			0.0				
Approach LOS		A			B							

Timer - Assigned Phs	2			5	6	7	8					
Phs Duration (G+Y+Rc), s	37.3			9.7	27.6	10.2	0.0					
Change Period (Y+Rc), s	5.3			4.9	5.3	4.6	4.6					
Max Green Setting (Gmax), s	56.0			26.0	56.0	26.0	58.0					
Max Q Clear Time (g_c+I1), s	9.6			5.2	12.8	6.1	0.0					
Green Ext Time (p_c), s	6.8			0.2	9.5	0.3	0.0					

Intersection Summary												
HCM 6th Ctrl Delay		10.9										
HCM 6th LOS		B										

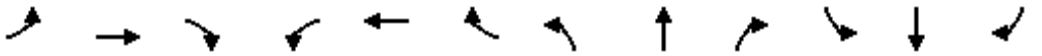
Intersection	
Int Delay, s/veh	1.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	500	210	5	690	40	0	0	0	5	5	100
Future Vol, veh/h	0	500	210	5	690	40	0	0	0	5	5	100
Conflicting Peds, #/hr	0	0	2	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	Free	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	250
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	4	4	4	4	4	4	4	4	4	4	4	4
Mvmt Flow	0	538	226	5	742	43	0	0	0	5	5	108

Major/Minor	Major1			Major2			Minor2		
Conflicting Flow All	-	0	0	766	0	0	1403	1518	742
Stage 1	-	-	-	-	-	-	752	752	-
Stage 2	-	-	-	-	-	-	651	766	-
Critical Hdwy	-	-	-	4.14	-	-	6.44	6.54	6.24
Critical Hdwy Stg 1	-	-	-	-	-	-	5.44	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.44	5.54	-
Follow-up Hdwy	-	-	-	2.236	-	-	3.536	4.036	3.336
Pot Cap-1 Maneuver	0	-	-	838	-	0	152	118	412
Stage 1	0	-	-	-	-	0	462	415	-
Stage 2	0	-	-	-	-	0	515	409	-
Platoon blocked, %		-	-		-				
Mov Cap-1 Maneuver	-	-	-	838	-	-	150	0	412
Mov Cap-2 Maneuver	-	-	-	-	-	-	150	0	-
Stage 1	-	-	-	-	-	-	462	0	-
Stage 2	-	-	-	-	-	-	510	0	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0.1	18.1
HCM LOS			C

Minor Lane/Major Mvmt	EBT	EBR	WBL	WBT	SBLn1	SBLn2
Capacity (veh/h)	-	-	838	-	150	412
HCM Lane V/C Ratio	-	-	0.006	-	0.072	0.261
HCM Control Delay (s)	-	-	9.3	-	30.8	16.8
HCM Lane LOS	-	-	A	-	D	C
HCM 95th %tile Q(veh)	-	-	0	-	0.2	1



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	380	125	0	415	5	320	5	60	0	0	0
Future Volume (veh/h)	0	380	125	0	415	5	320	5	60	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	0	1841	1841	0	1841	1841	1841	1841	1841			
Adj Flow Rate, veh/h	0	409	0	0	446	4	344	5	32			
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93			
Percent Heavy Veh, %	0	4	4	0	4	4	4	4	4			
Cap, veh/h	0	654		0	654	555	465	7	420			
Arrive On Green	0.00	0.36	0.00	0.00	0.36	0.36	0.27	0.27	0.27			
Sat Flow, veh/h	0	1841	0	0	1841	1560	1729	25	1560			
Grp Volume(v), veh/h	0	409	0	0	446	4	349	0	32			
Grp Sat Flow(s),veh/h/ln	0	1841	0	0	1841	1560	1754	0	1560			
Q Serve(g_s), s	0.0	4.7	0.0	0.0	5.2	0.0	4.6	0.0	0.4			
Cycle Q Clear(g_c), s	0.0	4.7	0.0	0.0	5.2	0.0	4.6	0.0	0.4			
Prop In Lane	0.00		0.00	0.00		1.00	0.99		1.00			
Lane Grp Cap(c), veh/h	0	654		0	654	555	472	0	420			
V/C Ratio(X)	0.00	0.63		0.00	0.68	0.01	0.74	0.00	0.08			
Avail Cap(c_a), veh/h	0	3345		0	3345	2835	2495	0	2219			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	0.0	6.8	0.0	0.0	6.9	5.3	8.4	0.0	6.9			
Incr Delay (d2), s/veh	0.0	1.0	0.0	0.0	1.3	0.0	0.9	0.0	0.0			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	0.0	0.7	0.0	0.0	0.8	0.0	0.6	0.0	0.0			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	7.7	0.0	0.0	8.2	5.3	9.3	0.0	6.9			
LnGrp LOS	A	A		A	A	A	A	A	A			
Approach Vol, veh/h		409	A		450			381				
Approach Delay, s/veh		7.7			8.2			9.1				
Approach LOS		A			A			A				
Timer - Assigned Phs		2				6		8				
Phs Duration (G+Y+Rc), s		14.3				14.3		11.0				
Change Period (Y+Rc), s		5.3				5.3		4.2				
Max Green Setting (Gmax), s		46.0				46.0		36.0				
Max Q Clear Time (g_c+I1), s		6.7				7.2		6.6				
Green Ext Time (p_c), s		1.6				1.8		0.7				

Intersection Summary	
HCM 6th Ctrl Delay	8.3
HCM 6th LOS	A

Notes

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.



Lane Group	EBT	WBT	WBR	NBT	NBR
Lane Group Flow (vph)	543	446	5	349	65
v/c Ratio	0.68	0.55	0.01	0.61	0.12
Control Delay	15.1	12.7	2.4	19.1	4.8
Queue Delay	0.0	0.0	0.0	0.0	0.0
Total Delay	15.1	12.7	2.4	19.1	4.8
Queue Length 50th (ft)	90	72	0	67	0
Queue Length 95th (ft)	241	189	3	185	22
Internal Link Dist (ft)	1218	678		749	
Turn Bay Length (ft)			50		125
Base Capacity (vph)	1616	1680	1429	1429	1286
Starvation Cap Reductn	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0
Reduced v/c Ratio	0.34	0.27	0.00	0.24	0.05

Intersection Summary

Intersection	
Int Delay, s/veh	2.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	5	55	55	30	20	160
Future Vol, veh/h	5	55	55	30	20	160
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	40	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	4	4	4	4	4	4
Mvmt Flow	5	59	59	32	22	172

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	291	75	0	0	91	0
Stage 1	75	-	-	-	-	-
Stage 2	216	-	-	-	-	-
Critical Hdwy	6.44	6.24	-	-	4.14	-
Critical Hdwy Stg 1	5.44	-	-	-	-	-
Critical Hdwy Stg 2	5.44	-	-	-	-	-
Follow-up Hdwy	3.536	3.336	-	-	2.236	-
Pot Cap-1 Maneuver	696	981	-	-	1491	-
Stage 1	943	-	-	-	-	-
Stage 2	815	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	686	981	-	-	1491	-
Mov Cap-2 Maneuver	686	-	-	-	-	-
Stage 1	943	-	-	-	-	-
Stage 2	803	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.1	0	0.8
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	947	1491	-
HCM Lane V/C Ratio	-	-	0.068	0.014	-
HCM Control Delay (s)	-	-	9.1	7.5	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	0.2	0	-

Intersection	
Int Delay, s/veh	3.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	635	40	40	430	50	105
Future Vol, veh/h	635	40	40	430	50	105
Conflicting Peds, #/hr	0	1	1	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	100	200	-	55	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	8	8	8	8	8	8
Mvmt Flow	722	45	45	489	57	119

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	768	0	1302	723
Stage 1	-	-	-	-	723	-
Stage 2	-	-	-	-	579	-
Critical Hdwy	-	-	4.18	-	6.48	6.28
Critical Hdwy Stg 1	-	-	-	-	5.48	-
Critical Hdwy Stg 2	-	-	-	-	5.48	-
Follow-up Hdwy	-	-	2.272	-	3.572	3.372
Pot Cap-1 Maneuver	-	-	820	-	172	416
Stage 1	-	-	-	-	470	-
Stage 2	-	-	-	-	549	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	819	-	162	416
Mov Cap-2 Maneuver	-	-	-	-	162	-
Stage 1	-	-	-	-	470	-
Stage 2	-	-	-	-	519	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.8	24.1
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	162	416	-	-	819	-
HCM Lane V/C Ratio	0.351	0.287	-	-	0.056	-
HCM Control Delay (s)	38.8	17.1	-	-	9.7	-
HCM Lane LOS	E	C	-	-	A	-
HCM 95th %tile Q(veh)	1.5	1.2	-	-	0.2	-

Intersection	
Int Delay, s/veh	0.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	735	5	0	470	0	20
Future Vol, veh/h	735	5	0	470	0	20
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	100	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	8	8	8	8	8	8
Mvmt Flow	835	6	0	534	0	23

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	841	0	1372	838
Stage 1	-	-	-	-	838	-
Stage 2	-	-	-	-	534	-
Critical Hdwy	-	-	4.18	-	6.48	6.28
Critical Hdwy Stg 1	-	-	-	-	5.48	-
Critical Hdwy Stg 2	-	-	-	-	5.48	-
Follow-up Hdwy	-	-	2.272	-	3.572	3.372
Pot Cap-1 Maneuver	-	-	769	-	156	357
Stage 1	-	-	-	-	414	-
Stage 2	-	-	-	-	576	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	769	-	156	357
Mov Cap-2 Maneuver	-	-	-	-	156	-
Stage 1	-	-	-	-	414	-
Stage 2	-	-	-	-	576	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	15.8
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	357	-	-	769	-
HCM Lane V/C Ratio	0.064	-	-	-	-
HCM Control Delay (s)	15.8	-	-	0	-
HCM Lane LOS	C	-	-	A	-
HCM 95th %tile Q(veh)	0.2	-	-	0	-

Intersection	
Int Delay, s/veh	2.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	5	20	135	20	40	40
Future Vol, veh/h	5	20	135	20	40	40
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	40	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	8	8	8	8	8	8
Mvmt Flow	6	23	153	23	45	45

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	300	165	0	0	176	0
Stage 1	165	-	-	-	-	-
Stage 2	135	-	-	-	-	-
Critical Hdwy	6.48	6.28	-	-	4.18	-
Critical Hdwy Stg 1	5.48	-	-	-	-	-
Critical Hdwy Stg 2	5.48	-	-	-	-	-
Follow-up Hdwy	3.572	3.372	-	-	2.272	-
Pot Cap-1 Maneuver	679	864	-	-	1365	-
Stage 1	850	-	-	-	-	-
Stage 2	877	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	657	864	-	-	1365	-
Mov Cap-2 Maneuver	657	-	-	-	-	-
Stage 1	850	-	-	-	-	-
Stage 2	848	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.6	0	3.9
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	813	1365	-
HCM Lane V/C Ratio	-	-	0.035	0.033	-
HCM Control Delay (s)	-	-	9.6	7.7	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	0.1	0.1	-

Intersection	
Int Delay, s/veh	11.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	590	40	170	660	75	40
Future Vol, veh/h	590	40	170	660	75	40
Conflicting Peds, #/hr	0	2	2	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	100	200	-	55	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	4	4	4	4	4	4
Mvmt Flow	634	43	183	710	81	43

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	679	0	1712	636
Stage 1	-	-	-	-	636	-
Stage 2	-	-	-	-	1076	-
Critical Hdwy	-	-	4.14	-	6.44	6.24
Critical Hdwy Stg 1	-	-	-	-	5.44	-
Critical Hdwy Stg 2	-	-	-	-	5.44	-
Follow-up Hdwy	-	-	2.236	-	3.536	3.336
Pot Cap-1 Maneuver	-	-	904	-	98	474
Stage 1	-	-	-	-	524	-
Stage 2	-	-	-	-	324	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	902	-	~ 78	473
Mov Cap-2 Maneuver	-	-	-	-	~ 78	-
Stage 1	-	-	-	-	523	-
Stage 2	-	-	-	-	258	-

Approach	EB	WB	NB
HCM Control Delay, s	0	2	138.7
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	78	473	-	-	902	-
HCM Lane V/C Ratio	1.034	0.091	-	-	0.203	-
HCM Control Delay (s)	205.5	13.4	-	-	10	-
HCM Lane LOS	F	B	-	-	B	-
HCM 95th %tile Q(veh)	5.7	0.3	-	-	0.8	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	0.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	625	5	0	830	0	30
Future Vol, veh/h	625	5	0	830	0	30
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	100	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	4	4	4	4	4	4
Mvmt Flow	672	5	0	892	0	32

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	677	0	1567	675
Stage 1	-	-	-	-	675	-
Stage 2	-	-	-	-	892	-
Critical Hdwy	-	-	4.14	-	6.44	6.24
Critical Hdwy Stg 1	-	-	-	-	5.44	-
Critical Hdwy Stg 2	-	-	-	-	5.44	-
Follow-up Hdwy	-	-	2.236	-	3.536	3.336
Pot Cap-1 Maneuver	-	-	905	-	121	451
Stage 1	-	-	-	-	502	-
Stage 2	-	-	-	-	397	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	905	-	121	451
Mov Cap-2 Maneuver	-	-	-	-	121	-
Stage 1	-	-	-	-	502	-
Stage 2	-	-	-	-	397	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	13.6
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	451	-	-	905	-
HCM Lane V/C Ratio	0.072	-	-	-	-
HCM Control Delay (s)	13.6	-	-	0	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.2	-	-	0	-

Intersection	
Int Delay, s/veh	2.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	5	60	55	30	50	160
Future Vol, veh/h	5	60	55	30	50	160
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	40	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	4	4	4	4	4	4
Mvmt Flow	5	65	59	32	54	172

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	355	75	0	0	91	0
Stage 1	75	-	-	-	-	-
Stage 2	280	-	-	-	-	-
Critical Hdwy	6.44	6.24	-	-	4.14	-
Critical Hdwy Stg 1	5.44	-	-	-	-	-
Critical Hdwy Stg 2	5.44	-	-	-	-	-
Follow-up Hdwy	3.536	3.336	-	-	2.236	-
Pot Cap-1 Maneuver	639	981	-	-	1491	-
Stage 1	943	-	-	-	-	-
Stage 2	763	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	616	981	-	-	1491	-
Mov Cap-2 Maneuver	616	-	-	-	-	-
Stage 1	943	-	-	-	-	-
Stage 2	736	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.1	0	1.8
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	938	1491	-
HCM Lane V/C Ratio	-	-	0.075	0.036	-
HCM Control Delay (s)	-	-	9.1	7.5	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	0.2	0.1	-

Intersection	
Int Delay, s/veh	3.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	635	40	40	430	55	105
Future Vol, veh/h	635	40	40	430	55	105
Conflicting Peds, #/hr	0	1	1	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	100	200	-	55	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	8	8	8	8	8	8
Mvmt Flow	722	45	45	489	63	119

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	768	0	1302	723
Stage 1	-	-	-	-	723	-
Stage 2	-	-	-	-	579	-
Critical Hdwy	-	-	4.18	-	6.48	6.28
Critical Hdwy Stg 1	-	-	-	-	5.48	-
Critical Hdwy Stg 2	-	-	-	-	5.48	-
Follow-up Hdwy	-	-	2.272	-	3.572	3.372
Pot Cap-1 Maneuver	-	-	820	-	172	416
Stage 1	-	-	-	-	470	-
Stage 2	-	-	-	-	549	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	819	-	162	416
Mov Cap-2 Maneuver	-	-	-	-	162	-
Stage 1	-	-	-	-	470	-
Stage 2	-	-	-	-	519	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.8	25.1
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	162	416	-	-	819	-
HCM Lane V/C Ratio	0.386	0.287	-	-	0.056	-
HCM Control Delay (s)	40.5	17.1	-	-	9.7	-
HCM Lane LOS	E	C	-	-	A	-
HCM 95th %tile Q(veh)	1.7	1.2	-	-	0.2	-

Intersection	
Int Delay, s/veh	0.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	735	5	0	470	0	20
Future Vol, veh/h	735	5	0	470	0	20
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	100	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	8	8	8	8	8	8
Mvmt Flow	835	6	0	534	0	23

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	841	0	1372	838
Stage 1	-	-	-	-	838	-
Stage 2	-	-	-	-	534	-
Critical Hdwy	-	-	4.18	-	6.48	6.28
Critical Hdwy Stg 1	-	-	-	-	5.48	-
Critical Hdwy Stg 2	-	-	-	-	5.48	-
Follow-up Hdwy	-	-	2.272	-	3.572	3.372
Pot Cap-1 Maneuver	-	-	769	-	156	357
Stage 1	-	-	-	-	414	-
Stage 2	-	-	-	-	576	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	769	-	156	357
Mov Cap-2 Maneuver	-	-	-	-	156	-
Stage 1	-	-	-	-	414	-
Stage 2	-	-	-	-	576	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	15.8
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	357	-	-	769	-
HCM Lane V/C Ratio	0.064	-	-	-	-
HCM Control Delay (s)	15.8	-	-	0	-
HCM Lane LOS	C	-	-	A	-
HCM 95th %tile Q(veh)	0.2	-	-	0	-

Intersection	
Int Delay, s/veh	0.9

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	25	135	20	0	80
Future Vol, veh/h	0	25	135	20	0	80
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	40	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	8	8	8	8	8	8
Mvmt Flow	0	28	153	23	0	91

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	256	165	0	0	176	0
Stage 1	165	-	-	-	-	-
Stage 2	91	-	-	-	-	-
Critical Hdwy	6.48	6.28	-	-	4.18	-
Critical Hdwy Stg 1	5.48	-	-	-	-	-
Critical Hdwy Stg 2	5.48	-	-	-	-	-
Follow-up Hdwy	3.572	3.372	-	-	2.272	-
Pot Cap-1 Maneuver	720	864	-	-	1365	-
Stage 1	850	-	-	-	-	-
Stage 2	918	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	720	864	-	-	1365	-
Mov Cap-2 Maneuver	720	-	-	-	-	-
Stage 1	850	-	-	-	-	-
Stage 2	918	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9.3	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	864	1365	-
HCM Lane V/C Ratio	-	-	0.033	-	-
HCM Control Delay (s)	-	-	9.3	0	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Intersection	
Int Delay, s/veh	12.9

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	590	40	170	660	80	40
Future Vol, veh/h	590	40	170	660	80	40
Conflicting Peds, #/hr	0	2	2	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	100	200	-	55	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	4	4	4	4	4	4
Mvmt Flow	634	43	183	710	86	43

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	679	0	1712	636
Stage 1	-	-	-	-	636	-
Stage 2	-	-	-	-	1076	-
Critical Hdwy	-	-	4.14	-	6.44	6.24
Critical Hdwy Stg 1	-	-	-	-	5.44	-
Critical Hdwy Stg 2	-	-	-	-	5.44	-
Follow-up Hdwy	-	-	2.236	-	3.536	3.336
Pot Cap-1 Maneuver	-	-	904	-	98	474
Stage 1	-	-	-	-	524	-
Stage 2	-	-	-	-	324	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	902	-	~ 78	473
Mov Cap-2 Maneuver	-	-	-	-	~ 78	-
Stage 1	-	-	-	-	523	-
Stage 2	-	-	-	-	258	-

Approach	EB	WB	NB
HCM Control Delay, s	0	2	156.1
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	78	473	-	-	902	-
HCM Lane V/C Ratio	1.103	0.091	-	-	0.203	-
HCM Control Delay (s)	227.4	13.4	-	-	10	-
HCM Lane LOS	F	B	-	-	B	-
HCM 95th %tile Q(veh)	6.2	0.3	-	-	0.8	-

Notes			
~: Volume exceeds capacity	$: Delay exceeds 300s	+: Computation Not Defined	*: All major volume in platoon

Intersection	
Int Delay, s/veh	0.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	625	5	0	830	0	30
Future Vol, veh/h	625	5	0	830	0	30
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	100	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	4	4	4	4	4	4
Mvmt Flow	672	5	0	892	0	32

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	677	0	1567	675
Stage 1	-	-	-	-	675	-
Stage 2	-	-	-	-	892	-
Critical Hdwy	-	-	4.14	-	6.44	6.24
Critical Hdwy Stg 1	-	-	-	-	5.44	-
Critical Hdwy Stg 2	-	-	-	-	5.44	-
Follow-up Hdwy	-	-	2.236	-	3.536	3.336
Pot Cap-1 Maneuver	-	-	905	-	121	451
Stage 1	-	-	-	-	502	-
Stage 2	-	-	-	-	397	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	905	-	121	451
Mov Cap-2 Maneuver	-	-	-	-	121	-
Stage 1	-	-	-	-	502	-
Stage 2	-	-	-	-	397	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	13.6
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	451	-	-	905	-
HCM Lane V/C Ratio	0.072	-	-	-	-
HCM Control Delay (s)	13.6	-	-	0	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.2	-	-	0	-

Intersection	
Int Delay, s/veh	1.6

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	65	55	30	0	210
Future Vol, veh/h	0	65	55	30	0	210
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	40	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	4	4	4	4	4	4
Mvmt Flow	0	70	59	32	0	226

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	301	75	0	0	91	0
Stage 1	75	-	-	-	-	-
Stage 2	226	-	-	-	-	-
Critical Hdwy	6.44	6.24	-	-	4.14	-
Critical Hdwy Stg 1	5.44	-	-	-	-	-
Critical Hdwy Stg 2	5.44	-	-	-	-	-
Follow-up Hdwy	3.536	3.336	-	-	2.236	-
Pot Cap-1 Maneuver	686	981	-	-	1491	-
Stage 1	943	-	-	-	-	-
Stage 2	807	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	686	981	-	-	1491	-
Mov Cap-2 Maneuver	686	-	-	-	-	-
Stage 1	943	-	-	-	-	-
Stage 2	807	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	981	1491	-
HCM Lane V/C Ratio	-	-	0.071	-	-
HCM Control Delay (s)	-	-	9	0	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	0.2	0	-

Intersection	
Int Delay, s/veh	1.5

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	615	20	50	415	20	60
Future Vol, veh/h	615	20	50	415	20	60
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	Free	-	None	-	None
Storage Length	-	195	135	-	0	50
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	8	8	8	8	8	8
Mvmt Flow	699	23	57	472	23	68

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	-	699	0	1285	699
Stage 1	-	-	-	-	699	-
Stage 2	-	-	-	-	586	-
Critical Hdwy	-	-	4.18	-	6.48	6.28
Critical Hdwy Stg 1	-	-	-	-	5.48	-
Critical Hdwy Stg 2	-	-	-	-	5.48	-
Follow-up Hdwy	-	-	2.272	-	3.572	3.372
Pot Cap-1 Maneuver	-	0	870	-	176	430
Stage 1	-	0	-	-	482	-
Stage 2	-	0	-	-	545	-
Platoon blocked, %	-			-		
Mov Cap-1 Maneuver	-	-	870	-	164	430
Mov Cap-2 Maneuver	-	-	-	-	301	-
Stage 1	-	-	-	-	482	-
Stage 2	-	-	-	-	509	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1	15.7
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	WBL	WBT
Capacity (veh/h)	301	430	-	870	-
HCM Lane V/C Ratio	0.076	0.159	-	0.065	-
HCM Control Delay (s)	17.9	14.9	-	9.4	-
HCM Lane LOS	C	B	-	A	-
HCM 95th %tile Q(veh)	0.2	0.6	-	0.2	-

Intersection	
Int Delay, s/veh	2.2

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	655	20	20	420	45	65
Future Vol, veh/h	655	20	20	420	45	65
Conflicting Peds, #/hr	0	1	1	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	100	200	-	55	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	8	8	8	8	8	8
Mvmt Flow	744	23	23	477	51	74

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	768	0	1268	745
Stage 1	-	-	-	-	745	-
Stage 2	-	-	-	-	523	-
Critical Hdwy	-	-	4.18	-	6.48	6.28
Critical Hdwy Stg 1	-	-	-	-	5.48	-
Critical Hdwy Stg 2	-	-	-	-	5.48	-
Follow-up Hdwy	-	-	2.272	-	3.572	3.372
Pot Cap-1 Maneuver	-	-	820	-	181	404
Stage 1	-	-	-	-	459	-
Stage 2	-	-	-	-	583	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	819	-	176	404
Mov Cap-2 Maneuver	-	-	-	-	176	-
Stage 1	-	-	-	-	459	-
Stage 2	-	-	-	-	567	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.4	23.1
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	176	404	-	-	819	-
HCM Lane V/C Ratio	0.291	0.183	-	-	0.028	-
HCM Control Delay (s)	33.6	15.9	-	-	9.5	-
HCM Lane LOS	D	C	-	-	A	-
HCM 95th %tile Q(veh)	1.1	0.7	-	-	0.1	-

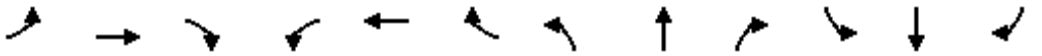
Intersection	
Int Delay, s/veh	0.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	700	20	0	440	0	20
Future Vol, veh/h	700	20	0	440	0	20
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	100	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	8	8	8	8	8	8
Mvmt Flow	795	23	0	500	0	23

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	818	0	1307	807
Stage 1	-	-	-	-	807	-
Stage 2	-	-	-	-	500	-
Critical Hdwy	-	-	4.18	-	6.48	6.28
Critical Hdwy Stg 1	-	-	-	-	5.48	-
Critical Hdwy Stg 2	-	-	-	-	5.48	-
Follow-up Hdwy	-	-	2.272	-	3.572	3.372
Pot Cap-1 Maneuver	-	-	785	-	171	372
Stage 1	-	-	-	-	429	-
Stage 2	-	-	-	-	597	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	785	-	171	372
Mov Cap-2 Maneuver	-	-	-	-	171	-
Stage 1	-	-	-	-	429	-
Stage 2	-	-	-	-	597	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	15.3
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	372	-	-	785	-
HCM Lane V/C Ratio	0.061	-	-	-	-
HCM Control Delay (s)	15.3	-	-	0	-
HCM Lane LOS	C	-	-	A	-
HCM 95th %tile Q(veh)	0.2	-	-	0	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	710	5	40	430	0	5	0	40	0	0	5
Future Volume (veh/h)	5	710	5	40	430	0	5	0	40	0	0	5
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1781	1781	1781	1781	1781	1781	1781	0	1781	1781	1781	1781
Adj Flow Rate, veh/h	6	807	6	45	489	0	6	0	3	0	0	0
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	8	8	8	8	8	8	8	0	8	8	8	8
Cap, veh/h	16	1041	8	113	1151	0	19	0	0	0	4	0
Arrive On Green	0.01	0.59	0.59	0.07	0.65	0.00	0.01	0.00	0.00	0.00	0.00	0.00
Sat Flow, veh/h	1697	1766	13	1697	1781	0	1697	6		0	-83728	0
Grp Volume(v), veh/h	6	0	813	45	489	0	6	25.8		0	0	0
Grp Sat Flow(s),veh/h/ln	1697	0	1779	1697	1781	0	1697	C		0	1781	0
Q Serve(g_s), s	0.2	0.0	15.8	1.2	6.1	0.0	0.2			0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.2	0.0	15.8	1.2	6.1	0.0	0.2			0.0	0.0	0.0
Prop In Lane	1.00		0.01	1.00		0.00	1.00			0.00		0.00
Lane Grp Cap(c), veh/h	16	0	1048	113	1151	0	19			0	4	0
V/C Ratio(X)	0.37	0.00	0.78	0.40	0.42	0.00	0.31			0.00	0.00	0.00
Avail Cap(c_a), veh/h	780	0	1870	1375	1872	0	1375			0	819	0
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00			1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	0.00	1.00			0.00	0.00	0.00
Uniform Delay (d), s/veh	22.5	0.0	7.1	20.4	3.9	0.0	22.4			0.0	0.0	0.0
Incr Delay (d2), s/veh	5.0	0.0	1.8	3.2	0.4	0.0	3.4			0.0	0.0	0.0
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0			0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.0	3.0	0.5	0.7	0.0	0.1			0.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	27.5	0.0	8.9	23.6	4.3	0.0	25.8			0.0	0.0	0.0
LnGrp LOS	C	A	A	C	A	A	C			A	A	A
Approach Vol, veh/h		819			534						0	
Approach Delay, s/veh		9.0			5.9						0.0	
Approach LOS		A			A							

Timer - Assigned Phs	1	2	3	4	5	6
Phs Duration (G+Y+Rc), s	7.7	32.7	5.2	0.0	5.1	35.3
Change Period (Y+Rc), s	* 4.7	5.8	* 4.7	* 4.7	* 4.7	5.8
Max Green Setting (Gmax), s	* 37	48.0	* 37	* 21	* 21	48.0
Max Q Clear Time (g_c+I1), s	3.2	17.8	2.2	0.0	2.2	8.1
Green Ext Time (p_c), s	0.2	9.1	0.0	0.0	0.0	4.7

Intersection Summary	
HCM 6th Ctrl Delay	7.9
HCM 6th LOS	A

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	85	640	0	0	430	70	0	0	0	120	0	85
Future Volume (veh/h)	85	640	0	0	430	70	0	0	0	120	0	85
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1781	1781	0	0	1781	1781	1781	1781	1781	1781	0	1781
Adj Flow Rate, veh/h	97	727	0	0	489	78	0	0	0	136	0	15
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88
Percent Heavy Veh, %	8	8	0	0	8	8	8	8	8	8	0	8
Cap, veh/h	174	1084	0	0	878	140	0	5	0	208	0	0
Arrive On Green	0.10	0.61	0.00	0.00	0.37	0.37	0.00	0.00	0.00	0.12	0.00	0.00
Sat Flow, veh/h	1697	1781	0	0	3121	375	0	-81946	0	1697	136	
Grp Volume(v), veh/h	97	727	0	0	210	357	0	0	0	136	16.7	
Grp Sat Flow(s),veh/h/ln	1697	1781	0	0	1015	1714	0	1781	0	1697	B	
Q Serve(g_s), s	2.0	9.9	0.0	0.0	6.0	6.1	0.0	0.0	0.0	2.8		
Cycle Q Clear(g_c), s	2.0	9.9	0.0	0.0	6.0	6.1	0.0	0.0	0.0	2.8		
Prop In Lane	1.00		0.00	0.00		0.22	0.00		0.00	1.00		
Lane Grp Cap(c), veh/h	174	1084	0	0	379	639	0	5	0	208		
V/C Ratio(X)	0.56	0.67	0.00	0.00	0.55	0.56	0.00	0.00	0.00	0.65		
Avail Cap(c_a), veh/h	1199	2711	0	0	1545	2608	0	2808	0	1199		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00		
Uniform Delay (d), s/veh	15.7	4.8	0.0	0.0	9.1	9.1	0.0	0.0	0.0	15.4		
Incr Delay (d2), s/veh	1.0	1.5	0.0	0.0	2.7	1.6	0.0	0.0	0.0	1.3		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	0.6	1.0	0.0	0.0	1.0	1.6	0.0	0.0	0.0	0.9		
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	16.8	6.3	0.0	0.0	11.8	10.8	0.0	0.0	0.0	16.7		
LnGrp LOS	B	A	A	A	B	B	A	A	A	B		
Approach Vol, veh/h		824			567			0				
Approach Delay, s/veh		7.5			11.2			0.0				
Approach LOS		A			B							

Timer - Assigned Phs	2			5	6	7	8					
Phs Duration (G+Y+Rc), s	27.7			8.7	19.0	9.1	0.0					
Change Period (Y+Rc), s	5.3			4.9	5.3	4.6	4.6					
Max Green Setting (Gmax), s	56.0			26.0	56.0	26.0	58.0					
Max Q Clear Time (g_c+I1), s	11.9			4.0	8.1	4.8	0.0					
Green Ext Time (p_c), s	9.0			0.1	5.6	0.2	0.0					

Intersection Summary												
HCM 6th Ctrl Delay			9.7									
HCM 6th LOS			A									

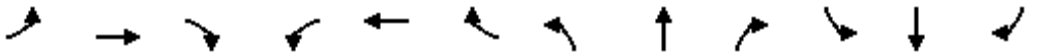
Intersection	
Int Delay, s/veh	1.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	430	330	5	410	40	0	0	0	20	0	90
Future Vol, veh/h	0	430	330	5	410	40	0	0	0	20	0	90
Conflicting Peds, #/hr	0	0	1	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	Free	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	250
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	88	88	88	88	88	88	88	88	88	88	88	88
Heavy Vehicles, %	8	8	8	8	8	8	8	8	8	8	8	8
Mvmt Flow	0	489	375	6	466	45	0	0	0	23	0	102

Major/Minor	Major1			Major2			Minor2		
Conflicting Flow All	-	0	0	865	0	0	1155	1343	466
Stage 1	-	-	-	-	-	-	478	478	-
Stage 2	-	-	-	-	-	-	677	865	-
Critical Hdwy	-	-	-	4.18	-	-	6.48	6.58	6.28
Critical Hdwy Stg 1	-	-	-	-	-	-	5.48	5.58	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.48	5.58	-
Follow-up Hdwy	-	-	-	2.272	-	-	3.572	4.072	3.372
Pot Cap-1 Maneuver	0	-	-	753	-	0	212	148	584
Stage 1	0	-	-	-	-	0	611	546	-
Stage 2	0	-	-	-	-	0	494	363	-
Platoon blocked, %		-	-		-				
Mov Cap-1 Maneuver	-	-	-	753	-	-	210	0	584
Mov Cap-2 Maneuver	-	-	-	-	-	-	210	0	-
Stage 1	-	-	-	-	-	-	611	0	-
Stage 2	-	-	-	-	-	-	489	0	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0.1	14.6
HCM LOS			B

Minor Lane/Major Mvmt	EBT	EBR	WBL	WBT	SBLn1	SBLn2
Capacity (veh/h)	-	-	753	-	210	584
HCM Lane V/C Ratio	-	-	0.008	-	0.108	0.175
HCM Control Delay (s)	-	-	9.8	-	24.2	12.5
HCM Lane LOS	-	-	A	-	C	B
HCM 95th %tile Q(veh)	-	-	0	-	0.4	0.6



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	395	55	0	285	5	170	0	30	0	0	0
Future Volume (veh/h)	0	395	55	0	285	5	170	0	30	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	0	1781	1781	0	1781	1781	1781	1781	1781			
Adj Flow Rate, veh/h	0	449	0	0	324	4	193	0	9			
Peak Hour Factor	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88	0.88			
Percent Heavy Veh, %	0	8	8	0	8	8	8	8	8			
Cap, veh/h	0	677		0	677	573	327	0	291			
Arrive On Green	0.00	0.38	0.00	0.00	0.38	0.38	0.19	0.00	0.19			
Sat Flow, veh/h	0	1781	0	0	1781	1510	1697	0	1510			
Grp Volume(v), veh/h	0	449	0	0	324	4	193	0	9			
Grp Sat Flow(s),veh/h/ln	0	1781	0	0	1781	1510	1697	0	1510			
Q Serve(g_s), s	0.0	4.6	0.0	0.0	3.1	0.0	2.3	0.0	0.1			
Cycle Q Clear(g_c), s	0.0	4.6	0.0	0.0	3.1	0.0	2.3	0.0	0.1			
Prop In Lane	0.00		0.00	0.00		1.00	1.00		1.00			
Lane Grp Cap(c), veh/h	0	677		0	677	573	327	0	291			
V/C Ratio(X)	0.00	0.66		0.00	0.48	0.01	0.59	0.00	0.03			
Avail Cap(c_a), veh/h	0	3690		0	3690	3127	2750	0	2447			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	0.0	5.7	0.0	0.0	5.2	4.3	8.2	0.0	7.3			
Incr Delay (d2), s/veh	0.0	1.1	0.0	0.0	0.5	0.0	0.6	0.0	0.0			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	0.0	0.4	0.0	0.0	0.2	0.0	0.3	0.0	0.0			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	6.8	0.0	0.0	5.7	4.3	8.8	0.0	7.3			
LnGrp LOS	A	A		A	A	A	A	A	A			
Approach Vol, veh/h		449	A		328			202				
Approach Delay, s/veh		6.8			5.7			8.7				
Approach LOS		A			A			A				
Timer - Assigned Phs		2				6		8				
Phs Duration (G+Y+Rc), s		13.7				13.7		8.5				
Change Period (Y+Rc), s		5.3				5.3		4.2				
Max Green Setting (Gmax), s		46.0				46.0		36.0				
Max Q Clear Time (g_c+I1), s		6.6				5.1		4.3				
Green Ext Time (p_c), s		1.8				1.2		0.4				

Intersection Summary	
HCM 6th Ctrl Delay	6.9
HCM 6th LOS	A

Notes

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Int Delay, s/veh	1.1

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	20	90	20	0	40
Future Vol, veh/h	0	20	90	20	0	40
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	40	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	8	8	8	8	8	8
Mvmt Flow	0	23	102	23	0	45

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	159	114	0	0	125	0
Stage 1	114	-	-	-	-	-
Stage 2	45	-	-	-	-	-
Critical Hdwy	6.48	6.28	-	-	4.18	-
Critical Hdwy Stg 1	5.48	-	-	-	-	-
Critical Hdwy Stg 2	5.48	-	-	-	-	-
Follow-up Hdwy	3.572	3.372	-	-	2.272	-
Pot Cap-1 Maneuver	818	923	-	-	1425	-
Stage 1	896	-	-	-	-	-
Stage 2	962	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	818	923	-	-	1425	-
Mov Cap-2 Maneuver	818	-	-	-	-	-
Stage 1	896	-	-	-	-	-
Stage 2	962	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	9	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	923	1425	-
HCM Lane V/C Ratio	-	-	0.025	-	-
HCM Control Delay (s)	-	-	9	0	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Intersection	
Int Delay, s/veh	1.6

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	570	45	70	675	30	70
Future Vol, veh/h	570	45	70	675	30	70
Conflicting Peds, #/hr	0	2	2	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	Free	-	None	-	None
Storage Length	-	195	135	-	0	50
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	4	4	4	4	4	4
Mvmt Flow	613	48	75	726	32	75

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	-	615	0	1491	615
Stage 1	-	-	-	-	615	-
Stage 2	-	-	-	-	876	-
Critical Hdwy	-	-	4.14	-	6.44	6.24
Critical Hdwy Stg 1	-	-	-	-	5.44	-
Critical Hdwy Stg 2	-	-	-	-	5.44	-
Follow-up Hdwy	-	-	2.236	-	3.536	3.336
Pot Cap-1 Maneuver	-	0	955	-	135	488
Stage 1	-	0	-	-	536	-
Stage 2	-	0	-	-	404	-
Platoon blocked, %	-			-		
Mov Cap-1 Maneuver	-	-	953	-	124	487
Mov Cap-2 Maneuver	-	-	-	-	254	-
Stage 1	-	-	-	-	535	-
Stage 2	-	-	-	-	372	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.9	16
HCM LOS			C

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	WBL	WBT
Capacity (veh/h)	254	487	-	953	-
HCM Lane V/C Ratio	0.127	0.155	-	0.079	-
HCM Control Delay (s)	21.2	13.7	-	9.1	-
HCM Lane LOS	C	B	-	A	-
HCM 95th %tile Q(veh)	0.4	0.5	-	0.3	-

Intersection	
Int Delay, s/veh	2.9

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	620	20	80	695	50	5
Future Vol, veh/h	620	20	80	695	50	5
Conflicting Peds, #/hr	0	2	2	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	100	200	-	55	0
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	4	4	4	4	4	4
Mvmt Flow	667	22	86	747	54	5

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	691	0	1588	669
Stage 1	-	-	-	-	669	-
Stage 2	-	-	-	-	919	-
Critical Hdwy	-	-	4.14	-	6.44	6.24
Critical Hdwy Stg 1	-	-	-	-	5.44	-
Critical Hdwy Stg 2	-	-	-	-	5.44	-
Follow-up Hdwy	-	-	2.236	-	3.536	3.336
Pot Cap-1 Maneuver	-	-	895	-	117	454
Stage 1	-	-	-	-	505	-
Stage 2	-	-	-	-	386	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	893	-	106	453
Mov Cap-2 Maneuver	-	-	-	-	106	-
Stage 1	-	-	-	-	504	-
Stage 2	-	-	-	-	349	-

Approach	EB	WB	NB
HCM Control Delay, s	0	1	64.5
HCM LOS			F

Minor Lane/Major Mvmt	NBLn1	NBLn2	EBT	EBR	WBL	WBT
Capacity (veh/h)	106	453	-	-	893	-
HCM Lane V/C Ratio	0.507	0.012	-	-	0.096	-
HCM Control Delay (s)	69.7	13	-	-	9.5	-
HCM Lane LOS	F	B	-	-	A	-
HCM 95th %tile Q(veh)	2.3	0	-	-	0.3	-

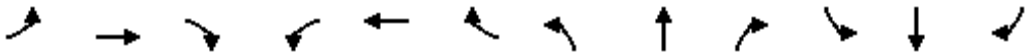
Intersection	
Int Delay, s/veh	0.3

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	620	5	0	775	0	30
Future Vol, veh/h	620	5	0	775	0	30
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	100	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	4	4	4	4	4	4
Mvmt Flow	667	5	0	833	0	32

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	672	0	1503	670
Stage 1	-	-	-	-	670	-
Stage 2	-	-	-	-	833	-
Critical Hdwy	-	-	4.14	-	6.44	6.24
Critical Hdwy Stg 1	-	-	-	-	5.44	-
Critical Hdwy Stg 2	-	-	-	-	5.44	-
Follow-up Hdwy	-	-	2.236	-	3.536	3.336
Pot Cap-1 Maneuver	-	-	909	-	132	454
Stage 1	-	-	-	-	505	-
Stage 2	-	-	-	-	423	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	909	-	132	454
Mov Cap-2 Maneuver	-	-	-	-	132	-
Stage 1	-	-	-	-	505	-
Stage 2	-	-	-	-	423	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0	13.5
HCM LOS			B

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	454	-	-	909	-
HCM Lane V/C Ratio	0.071	-	-	-	-
HCM Control Delay (s)	13.5	-	-	0	-
HCM Lane LOS	B	-	-	A	-
HCM 95th %tile Q(veh)	0.2	-	-	0	-



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	640	5	60	765	0	5	0	60	0	0	5
Future Volume (veh/h)	5	640	5	60	765	0	5	0	60	0	0	5
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1841	1841	1841	1841	1841	1841	1841	0	1841	1841	1841	1841
Adj Flow Rate, veh/h	5	688	5	65	823	0	5	0	5	0	0	1
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	4	4	4	4	4	4	4	0	4	4	4	4
Cap, veh/h	14	908	7	147	1055	0	16	0	0	0	0	3
Arrive On Green	0.01	0.50	0.50	0.08	0.57	0.00	0.01	0.00	0.00	0.00	0.00	0.00
Sat Flow, veh/h	1753	1825	13	1753	1841	0	1753	5		0	0	1260
Grp Volume(v), veh/h	5	0	693	65	823	0	5	27.8		0	0	1
Grp Sat Flow(s),veh/h/ln	1753	0	1838	1753	1841	0	1753	C		0	0	1261
Q Serve(g_s), s	0.1	0.0	14.8	1.7	16.8	0.0	0.1			0.0	0.0	0.0
Cycle Q Clear(g_c), s	0.1	0.0	14.8	1.7	16.8	0.0	0.1			0.0	0.0	0.0
Prop In Lane	1.00		0.01	1.00		0.00	1.00			0.00		1.00
Lane Grp Cap(c), veh/h	14	0	914	147	1055	0	16			0	0	3
V/C Ratio(X)	0.35	0.00	0.76	0.44	0.78	0.00	0.30			0.00	0.00	0.39
Avail Cap(c_a), veh/h	754	0	1808	1329	1810	0	1329			0	0	542
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00			1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	1.00	1.00	1.00	0.00	1.00			0.00	0.00	1.00
Uniform Delay (d), s/veh	24.1	0.0	9.9	21.3	8.0	0.0	24.0			0.0	0.0	24.3
Incr Delay (d2), s/veh	5.5	0.0	1.9	2.9	1.8	0.0	3.8			0.0	0.0	31.7
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0			0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.1	0.0	4.1	0.7	3.9	0.0	0.1			0.0	0.0	0.0
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	29.6	0.0	11.8	24.2	9.9	0.0	27.8			0.0	0.0	56.0
LnGrp LOS	C	A	B	C	A	A	C			A	A	E
Approach Vol, veh/h		698			888						1	
Approach Delay, s/veh		11.9			10.9						56.0	
Approach LOS		B			B						E	

Timer - Assigned Phs	1	2	3	4	5	6
Phs Duration (G+Y+Rc), s	8.8	30.1	5.2	4.8	5.1	33.8
Change Period (Y+Rc), s	* 4.7	5.8	* 4.7	* 4.7	* 4.7	5.8
Max Green Setting (Gmax), s	* 37	48.0	* 37	* 21	* 21	48.0
Max Q Clear Time (g_c+I1), s	3.7	16.8	2.1	2.0	2.1	18.8
Green Ext Time (p_c), s	0.2	7.2	0.0	0.0	0.0	9.1

Intersection Summary	
HCM 6th Ctrl Delay	11.4
HCM 6th LOS	B

Notes

User approved pedestrian interval to be less than phase max green.

* HCM 6th computational engine requires equal clearance times for the phases crossing the barrier.



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	125	605	0	0	690	100	0	0	0	145	0	110
Future Volume (veh/h)	125	605	0	0	690	100	0	0	0	145	0	110
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00	1.00		1.00
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Work Zone On Approach		No			No			No			No	
Adj Sat Flow, veh/h/ln	1841	1841	0	0	1841	1841	1841	1841	1841	1841	0	1841
Adj Flow Rate, veh/h	134	651	0	0	742	107	0	0	0	156	0	17
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93
Percent Heavy Veh, %	4	4	0	0	4	4	4	4	4	4	0	4
Cap, veh/h	183	1244	0	0	1157	167	0	4	0	205	0	0
Arrive On Green	0.10	0.68	0.00	0.00	0.47	0.47	0.00	0.00	0.00	0.12	0.00	0.00
Sat Flow, veh/h	1753	1841	0	0	3261	356	0	-84673	0	1753	156	
Grp Volume(v), veh/h	134	651	0	0	315	534	0	0	0	156	22.6	
Grp Sat Flow(s),veh/h/ln	1753	1841	0	0	1049	1777	0	1841	0	1753	C	
Q Serve(g_s), s	3.5	8.5	0.0	0.0	10.9	10.9	0.0	0.0	0.0	4.1		
Cycle Q Clear(g_c), s	3.5	8.5	0.0	0.0	10.9	10.9	0.0	0.0	0.0	4.1		
Prop In Lane	1.00		0.00	0.00		0.20	0.00		0.00	1.00		
Lane Grp Cap(c), veh/h	183	1244	0	0	492	832	0	4	0	205		
V/C Ratio(X)	0.73	0.52	0.00	0.00	0.64	0.64	0.00	0.00	0.00	0.76		
Avail Cap(c_a), veh/h	954	2159	0	0	1230	2083	0	2236	0	954		
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00		
Upstream Filter(I)	1.00	1.00	0.00	0.00	1.00	1.00	0.00	0.00	0.00	1.00		
Uniform Delay (d), s/veh	20.7	3.9	0.0	0.0	9.6	9.6	0.0	0.0	0.0	20.4		
Incr Delay (d2), s/veh	2.1	0.7	0.0	0.0	3.0	1.8	0.0	0.0	0.0	2.2		
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0		
%ile BackOfQ(50%),veh/ln	1.3	1.0	0.0	0.0	2.0	3.1	0.0	0.0	0.0	1.6		
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	22.9	4.6	0.0	0.0	12.6	11.4	0.0	0.0	0.0	22.6		
LnGrp LOS	C	A	A	A	B	B	A	A	A	C		
Approach Vol, veh/h		785			849			0				
Approach Delay, s/veh		7.7			11.9			0.0				
Approach LOS		A			B							

Timer - Assigned Phs	2			5	6	7	8					
Phs Duration (G+Y+Rc), s	37.6			9.9	27.7	10.2	0.0					
Change Period (Y+Rc), s	5.3			4.9	5.3	4.6	4.6					
Max Green Setting (Gmax), s	56.0			26.0	56.0	26.0	58.0					
Max Q Clear Time (g_c+I1), s	10.5			5.5	12.9	6.1	0.0					
Green Ext Time (p_c), s	7.6			0.2	9.5	0.3	0.0					

Intersection Summary												
HCM 6th Ctrl Delay			11.0									
HCM 6th LOS			B									

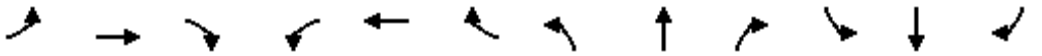
Intersection	
Int Delay, s/veh	1.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	0	525	225	5	690	40	0	0	0	5	5	100
Future Vol, veh/h	0	525	225	5	690	40	0	0	0	5	5	100
Conflicting Peds, #/hr	0	0	2	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	Free	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	250
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	93	93	93	93	93	93	93	93	93	93	93	93
Heavy Vehicles, %	4	4	4	4	4	4	4	4	4	4	4	4
Mvmt Flow	0	565	242	5	742	43	0	0	0	5	5	108

Major/Minor	Major1			Major2			Minor2		
Conflicting Flow All	-	0	0	809	0	0	1438	1561	742
Stage 1	-	-	-	-	-	-	752	752	-
Stage 2	-	-	-	-	-	-	686	809	-
Critical Hdwy	-	-	-	4.14	-	-	6.44	6.54	6.24
Critical Hdwy Stg 1	-	-	-	-	-	-	5.44	5.54	-
Critical Hdwy Stg 2	-	-	-	-	-	-	5.44	5.54	-
Follow-up Hdwy	-	-	-	2.236	-	-	3.536	4.036	3.336
Pot Cap-1 Maneuver	0	-	-	808	-	0	145	111	412
Stage 1	0	-	-	-	-	0	462	415	-
Stage 2	0	-	-	-	-	0	496	391	-
Platoon blocked, %		-	-		-				
Mov Cap-1 Maneuver	-	-	-	808	-	-	143	0	412
Mov Cap-2 Maneuver	-	-	-	-	-	-	143	0	-
Stage 1	-	-	-	-	-	-	462	0	-
Stage 2	-	-	-	-	-	-	491	0	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0.1	18.2
HCM LOS			C

Minor Lane/Major Mvmt	EBT	EBR	WBL	WBT	SBLn1	SBLn2
Capacity (veh/h)	-	-	808	-	143	412
HCM Lane V/C Ratio	-	-	0.007	-	0.075	0.261
HCM Control Delay (s)	-	-	9.5	-	32.2	16.8
HCM Lane LOS	-	-	A	-	D	C
HCM 95th %tile Q(veh)	-	-	0	-	0.2	1



Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	0	400	130	0	415	5	320	5	60	0	0	0
Future Volume (veh/h)	0	400	130	0	415	5	320	5	60	0	0	0
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0			
Ped-Bike Adj(A_pbT)	1.00		1.00	1.00		1.00	1.00		1.00			
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Work Zone On Approach		No			No			No				
Adj Sat Flow, veh/h/ln	0	1841	1841	0	1841	1841	1841	1841	1841			
Adj Flow Rate, veh/h	0	430	0	0	446	3	344	5	22			
Peak Hour Factor	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93	0.93			
Percent Heavy Veh, %	0	4	4	0	4	4	4	4	4			
Cap, veh/h	0	655		0	655	555	463	7	417			
Arrive On Green	0.00	0.36	0.00	0.00	0.36	0.36	0.27	0.27	0.27			
Sat Flow, veh/h	0	1841	0	0	1841	1560	1729	25	1560			
Grp Volume(v), veh/h	0	430	0	0	446	3	349	0	22			
Grp Sat Flow(s),veh/h/ln	0	1841	0	0	1841	1560	1754	0	1560			
Q Serve(g_s), s	0.0	5.0	0.0	0.0	5.2	0.0	4.6	0.0	0.3			
Cycle Q Clear(g_c), s	0.0	5.0	0.0	0.0	5.2	0.0	4.6	0.0	0.3			
Prop In Lane	0.00		0.00	0.00		1.00	0.99		1.00			
Lane Grp Cap(c), veh/h	0	655		0	655	555	469	0	417			
V/C Ratio(X)	0.00	0.66		0.00	0.68	0.01	0.74	0.00	0.05			
Avail Cap(c_a), veh/h	0	3358		0	3358	2846	2504	0	2227			
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00			
Upstream Filter(I)	0.00	1.00	0.00	0.00	1.00	1.00	1.00	0.00	1.00			
Uniform Delay (d), s/veh	0.0	6.8	0.0	0.0	6.9	5.2	8.4	0.0	6.9			
Incr Delay (d2), s/veh	0.0	1.1	0.0	0.0	1.3	0.0	0.9	0.0	0.0			
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0			
%ile BackOfQ(50%),veh/ln	0.0	0.7	0.0	0.0	0.8	0.0	0.6	0.0	0.0			
Unsig. Movement Delay, s/veh												
LnGrp Delay(d),s/veh	0.0	8.0	0.0	0.0	8.2	5.2	9.3	0.0	6.9			
LnGrp LOS	A	A		A	A	A	A	A	A			
Approach Vol, veh/h		430	A		449			371				
Approach Delay, s/veh		8.0			8.1			9.2				
Approach LOS		A			A			A				
Timer - Assigned Phs		2				6		8				
Phs Duration (G+Y+Rc), s		14.3				14.3		10.9				
Change Period (Y+Rc), s		5.3				5.3		4.2				
Max Green Setting (Gmax), s		46.0				46.0		36.0				
Max Q Clear Time (g_c+I1), s		7.0				7.2		6.6				
Green Ext Time (p_c), s		1.7				1.8		0.7				

Intersection Summary	
HCM 6th Ctrl Delay	8.4
HCM 6th LOS	A

Notes

Unsignalized Delay for [EBR] is excluded from calculations of the approach delay and intersection delay.

Intersection	
Int Delay, s/veh	1.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	0	40	15	50	0	100
Future Vol, veh/h	0	40	15	50	0	100
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	-	-	-	40	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	4	4	4	4	4	4
Mvmt Flow	0	43	16	54	0	108

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	151	43	0	0	70	0
Stage 1	43	-	-	-	-	-
Stage 2	108	-	-	-	-	-
Critical Hdwy	6.44	6.24	-	-	4.14	-
Critical Hdwy Stg 1	5.44	-	-	-	-	-
Critical Hdwy Stg 2	5.44	-	-	-	-	-
Follow-up Hdwy	3.536	3.336	-	-	2.236	-
Pot Cap-1 Maneuver	836	1022	-	-	1518	-
Stage 1	974	-	-	-	-	-
Stage 2	911	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	836	1022	-	-	1518	-
Mov Cap-2 Maneuver	836	-	-	-	-	-
Stage 1	974	-	-	-	-	-
Stage 2	911	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	8.7	0	0
HCM LOS	A		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	SBL	SBT
Capacity (veh/h)	-	-	1022	1518	-
HCM Lane V/C Ratio	-	-	0.042	-	-
HCM Control Delay (s)	-	-	8.7	0	-
HCM Lane LOS	-	-	A	A	-
HCM 95th %tile Q(veh)	-	-	0.1	0	-

Planning Commission
Staff Report

To: Chair and Planning Commissioners

Date: August 23, 2022

From: Kirk Skierski, Senior Planner

Subject: 128 Hall & Kitchen Patio Addition (DR-2022-02)

Recommendation:
That the Planning Commission conduct a public hearing on the 128 Hall & Kitchen Patio Addition design review project (DR-2022-02) and adopt Resolution 2022-12 thereby taking the following actions:

1. Determine the proposed 128 Hall & Kitchen Patio Addition project (DR-2022-02) to be categorically exempt from the California Environmental Quality Act (CEQA) pursuant to Section 15303 of the CEQA Guidelines; and

2. Approve the 128 Hall & Kitchen project (DR-2022-02) based on the recommended findings and subject to the draft conditions of approval.

Project Description:
The applicant is requesting Site Plan and Design Review approval for a new covered patio approximately 50' x 35' (1,750 square feet) for 128 Hall & Kitchen located at 1123 Grant Avenue (APN 003-450-014) in the C-1 (Neighborhood Commercial) zoning district. The proposed covered patio would consist of metal framing and supports and is open on all sides. The proposed covered patio would be located directly in front of the 128 Hall & Kitchen building adjacent to Grant Avenue. The proposed project also includes the construction of a carport and installation of a propane tank to support the commissary use and food truck operation of the property.

Location:
The project site is located at 1123 Grant Avenue, approximately 280 feet east of the Grant Avenue and Valley Oak Drive intersection (APN: 003-450-014). See Figure-1 below for a "Vicinity Map".

Project Site Information:

General Plan Designation:	Neighborhood Commercial (NCR)
Zoning District:	Neighborhood Commercial (C-1)
Parcel Size:	0.68 acres (~29,621 square feet)

Discussion/Analysis

Background:

The subject parcel is located at 1123 Grant Avenue (APN: 003-450-014). The former Tomat's Restaurant operated at this location for a number of years. The applicant, along with some other partners, purchased the property back in 2020. Currently, the project site is being primarily used for the Buckhorn BBQ Food Truck's commissary. In addition, the project site is occasionally used for public and private events similar to the events held by Tomat's Restaurant.

Back in 2020, the property obtained Design Review approval for a remodel of the façade of the existing restaurant by modifying the existing flat roof to add a pitched roof. The applicant also proposed to add corrugated metal wainscot to the front and east elevations. The west and rear elevations are not visible from the street. Corrugated metal siding was added to the ends (front and rear) of the new gabled roof. The roof color is a light gray, the body/stucco color is "white metal" (light greenish gray, almost an off-white) and the window trim and wainscot are "welded iron" (dark greenish gray). The subject parcel is located at 1123 Grant Avenue. The surrounding properties along Grant Avenue are zoned C-1 and the properties adjacent to the project site are currently vacant. The properties to the north are developed with residential uses and are zoned R-2.

It should be noted that this is an after-the-fact review of the covered metal patio. The covered metal patio was previously constructed and installed back on March 15, 2021. The covered patio was permitted through a temporary building permit and allowed on a temporary basis due to the Covid-19 pandemic. The temporary building permit has since expired, but the applicant and property owners have identified that this wish to permanently permit the covered patio. Initially, the covered patio was installed within the 20' foot front yard setback, but under this project, the applicant is proposing to reduce the existing covered patio to meet the front yard setback. There are no side or rear yard setbacks for the C-1 zoning district.

Figure-1 Vicinity Map



Project Description:

The applicant is requesting site plan and design review approval for a new covered patio approximately 50' x 35', a carport for the food trucks, and a propane tank located at 1123 Grant Avenue within the C-1 zoning district. The property is developed with a 2,934 square foot restaurant with 23 onsite parking spaces. The proposed carport would allow for space to locate the food trucks and would create two additional parking spaces.

The proposed covered patio would consist of metal framing and supports and is open on all sides. The proposed covered patio would be located directly in front of the 128 Hall & Kitchen building adjacent to Grant Avenue. Please see Figures 2-3 for a site plan and pictures of the covered patio.

Figure-2 Site Plan

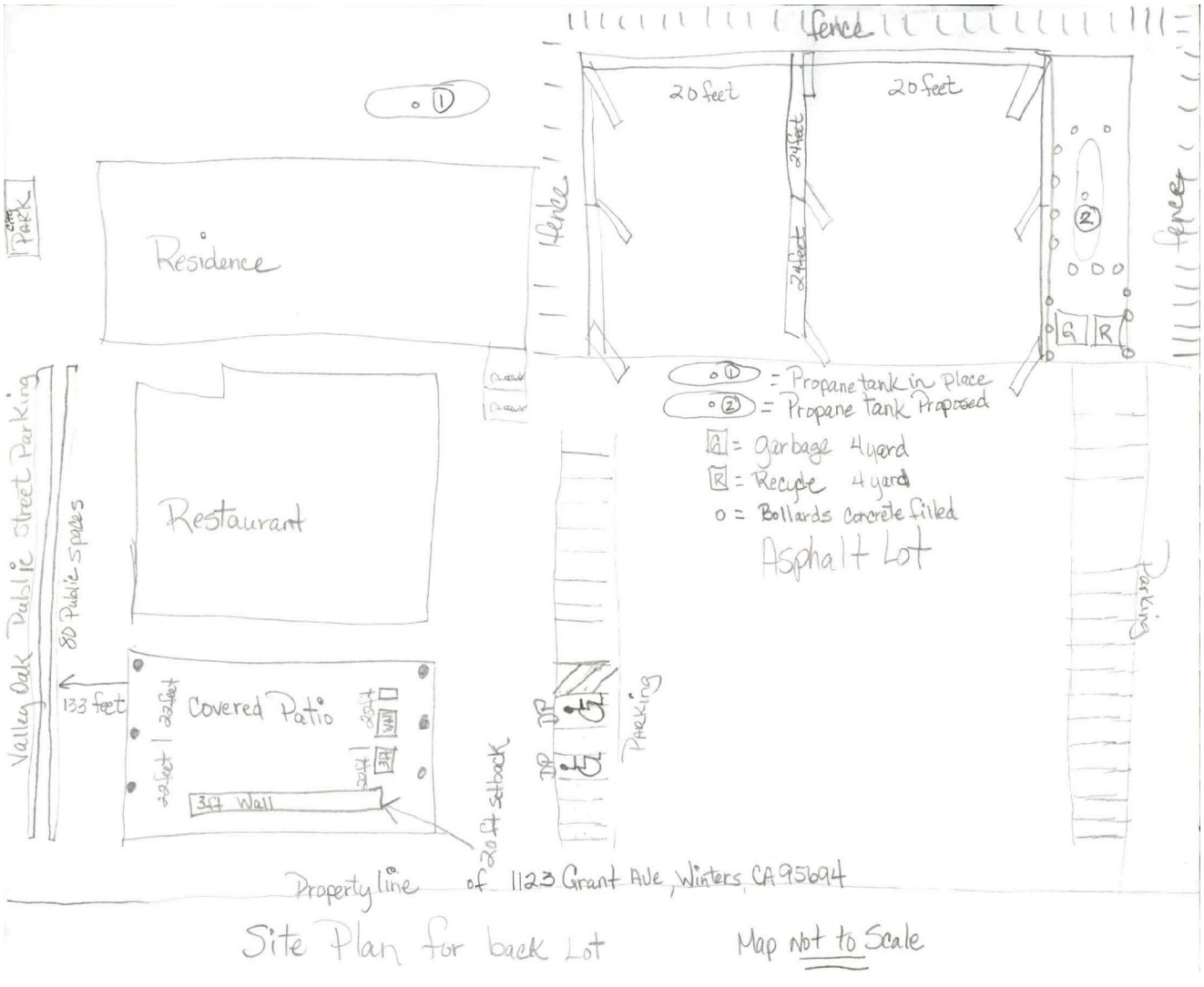


Figure-3 Patio Picture



Design Review

In evaluating a Design Review request, the primary focus is the overall design including location, screening, quality of building materials, compliance with the City's design guidelines, and compatibility of the proposed project with the site and surroundings to maintain and enhance the visual character of the area. Design Review does include analysis of onsite circulation and the adjacent public right-of-way. The Planning Commission may approve a Design Review application, with or without conditions, only if findings of compliance with the requirements of Section 17.36.040 of the Winters Municipal Code can be made, which are outlined below:

- The overall visible mass of the structure, which includes height, roofline profiles and overall scale of a building;

- The proposed use and quality of exterior construction materials striving for long-term compatibility with the general setting of the subject property and visual character of the general neighborhood;

- Avoidance of buildings which are characterized by large, blank, or unbroken wall planes, as well as buildings which exhibit general lack of architectural detailing, shadow lines, etc. which generally lack interest;

- Effective screening of ground – and – roof mounted equipment;

- The use of landscaping decorative site paving, etc. which provides effective visual screening or softening of the development, as necessary; and

- Achieve conformity with the Winters Design Guidelines, Form-Based Code for Downtown (Chapter 17.58), and the Grant Avenue Design Guidelines, as applicable.

The proposed covered patio would include metal framing and supports consistent with the existing building materials, which include corrugated metal wainscot on the front and east elevations. It is staff's opinion that the proposed project is consistent with the City's design guidelines and the proposed materials would build upon the existing aesthetic of the property and surrounding areas.

Parking

Winters Municipal Chapter 17.72 (Off-Street Parking and Loading) outlines parking requirements for land uses within the City of Winters. Municipal Code Section 17.72.040.A requires that at the time of initial occupancy of a site, off-street parking facilities are required in accordance with the provisions of Municipal Code Chapter 17.72. Furthermore, the City's parking requirements are based on gross square footage of building area unless noted otherwise. Table 6 (Off-Street Parking Requirements) of Municipal Code Section 17.72.020 provides parking requirements for restaurant uses. However, there are no identified parking requirements for outdoor seating/patio areas, which means that patio and outdoor seating additions are not subject to additional parking requirements under the current Municipal Code. This interpretation is supported by downtown businesses adding outdoor/patio seating without the need to add increased parking or pay a parking in-lieu fee. In addition, the previous Design Review staff report for 128 Hall & Kitchen dated June 23, 2020, identifies that additional parking is not required because the existing gross floor area of the restaurant building is not being enlarged. Therefore, it is staff's opinion that the proposed project is consistent with the City's Zoning Ordinance, including parking requirements.

Environment Analysis:

Staff recommends that the proposed project be determined to be categorically exempt from the California Environmental Quality Act (CEQA) pursuant to CEQA Guidelines Section 15303, Class 3, New Construction or Conversion of Small Structures. This exemption consists of construction and location of limited numbers of new, small facilities or structures; installation of small new equipment and facilities in small

structures; and the conversion of existing small structures from one use to another where only minor modifications are made in the exterior of the structure.

The Planning Commission must consider the proposed CEQA exemption together with any comments received during the public review process. Further, the exemption can only be approved if the Commission finds, based on the whole record before it, that there is not substantial evidence that there are unusual circumstances (including future activities), which might reasonably result in the project having a significant effect on the environment.

Public Communication:
The public hearing notice was published in the *Winters Express* on August 10, 2022. An affected property owner notice was mailed to properties within 300 feet of the project site on August 11, 2022. No public comments have been received at the time this staff report was published.

Staff Recommendation:
Staff is recommending that the Planning Commission conduct a public hearing on the 128 Hall & Kitchen Patio Addition project (DR-2022-02) and adopt Resolution 2022-12 thereby taking the following actions:

1. Determine the proposed 128 Hall & Kitchen Patio Addition project (DR-2022-02) to be categorically exempt from the California Environmental Quality Act (CEQA) pursuant to Section 15303 of the CEQA Guidelines; and

2. Approve the 128 Hall & Kitchen Patio Addition project (DR-2022-02) based on the recommended findings and subject to the draft conditions of approval.

Recommended Motion:
I move to adopt PC Resolution 2022-12, a Resolution of the Planning Commission of the City of Winters, approving the 128 Hall & Kitchen Patio Addition project (DR-2022-02) and determining the project exempt from CEQA.

Alternatives:
Actions that the Planning Commission may take as an alternative to staff's recommendation include:

1. Land Use Permits
    a. Add, delete, or modify the proposed conditions of approval.

    b. Deny the project on the basis that one or more of the required findings cannot be made.

2. Environmental Review
    a. Require additional environmental review. The Planning Commission could find the recommended CEQA exemption to not be suitable and require the preparation of an Initial Study in accordance with CEQA.

Attachments:

1. Resolution No. 2022-12
    a. Exhibit A: Recommended Findings
    b. Exhibit B: Draft Conditions of Approval
2. 128 Hall & Kitchen Patio Addition Plan Set and Application Materials

Planning Commission Resolution No. 2022 – 12

A Resolution of the Planning Commission of the City of Winters Approving a Design Review Permit for the Construction of an Outdoor Covered Patio, Carport, and Propane Tank for 128 Hall & Kitchen Located at 1123 Grant Avenue (APN: 003-450-014) Within the C-1 Zoning District and Making Findings of CEQA Exemption

Whereas, on April 18, 2022, the City received an application requesting design review approval for the construction of an outdoor covered patio, carport, and propane tank for 128 Hall & Kitchen located at 1123 Grant Avenue (APN 003-450-014) within the C-1 zoning district; and

Whereas, Winters Municipal Code Section 17.36.020.A requires design review approval for the construction of nonresidential buildings or structures 500 square feet or larger; and

Whereas, a notice of public hearing for the project was published in the *Winters Express* on August 10, 2022; and

Whereas, in accordance with Winters Municipal Code Section 17.36.030.B and Section 17.16.040, an affected property owners notice was mailed to adjacent property owners within 300 feet of the project location on August 11, 2022; and

Whereas, the City of Winters Planning Commission held a duly noticed public hearing on August 23, 2022, to consider the proposed project; and

Whereas, the Planning Division presented its oral and written staff report on the proposed project at a regular meeting of the Planning Commission on August 23, 2022; and

Whereas, the Planning Division recommended approval of the proposed project based on the findings provided in Exhibit A attached hereto and incorporated herein, and subject to the conditions of approval provided in Exhibit B to this resolution attached hereto and incorporated herein; and

Whereas, on August 23, 2022, the Planning Commission held a public hearing on the project to receive oral and written testimony and written prior to reaching its decision.

Now, Therefore Be It Resolved that the Planning Commission adopts the recommended findings set forth in Exhibit A and approves the design review permit (DR-2022-02) for the construction of an outdoor covered patio, carport, and propane tank for 128 Hall & Kitchen located at 1123 Grant Avenue (APN: 003-450-014) within the C-1 zoning district subject to the draft conditions of approval contained in Exhibit B; and

Be it Further Resolved that the Planning Commission, based on the evidence in the record and findings set forth in Exhibit A, determines the project to be categorically exempt from the California Environmental Quality Act (CEQA) pursuant to Section 15303 (New Construction or Conversion of Small Structures) of the CEQA Guidelines.

It is hereby certified that the foregoing Planning Commission Resolution No. 2022-12 was duly adopted on a motion by Commissioner _____ and seconded by Commissioner _____, at a regular meeting of the City of Winters Planning Commission held on the 23rd day of August 2022, by the following vote:

Ayes:
Noes:
Absent:
Abstain:

_____
Gregory Contreras, Chairperson

Attest:

_____
Ellena Branson, Planning Commission Secretary

Planning Commission Resolution No. 2022 – 12
Exhibit "A"

Recommended Findings

Design Review Findings

In order to approve or deny a Design Review permit, the review authority shall first make the findings required by Winters Municipal Code Section 17.36.040 (Criteria for Review):

1. The overall visible mass of the structure, which includes height, roofline profiles and overall scale of a building;

   The project is proposing to construct a new covered patio, carport, and propane tank for 128 Hall & Kitchen. The proposed patio would be located in front of the existing restaurant building and would be directly adjacent to Grant Avenue. The proposed covered patio is approximately 10 feet in height and is adequately screened by the existing street landscaping. The existing street landscaping along the property frontage includes serval mature trees that provide adequate screening of the site. The proposed carport and propane tank would also be screened from view but would be visible when directly in front of the project site. The proposed project would maintain visual and aesthetic consistency of the site and surrounding areas. This finding is supported by the discussion contained in the "Discussion/Analysis" section of the Planning Commission staff report dated August 23, 2022.

2. The proposed use and quality of exterior construction materials striving for long-term compatibility with the general setting of the subject property and visual character of the general neighborhood;

   The proposed building materials, colors, and design of the 128 Hall & Kitchen project would maintain the existing character of the property and surrounding areas. The proposed metal covered patio is consistent with the existing metal façade treatments of the existing restaurant building. This finding is supported by the discussion contained in the "Discussion/Analysis" section of the Planning Commission staff report dated August 23, 2022.

3. Avoidance of buildings which are characterized by large, blank, or unbroken wall planes, as well as buildings which exhibit general lack of architectural detailing, shadow lines, etc. which generally lack interest;

   The proposed project would add a covered patio directly in front of the existing restaurant building, which helps engage the street and adds visual interest of the property. The covered patio would include existing building materials and colors to tie the covered patio with the existing visual aesthetic of the property. This finding is supported by the discussion contained in the "Discussion/Analysis" section of the Planning Commission staff report dated August 23, 2022.

4. Effective screening of ground – and – roof mounted equipment;

   The project is proposing to include a carport and propane tank located at the rear of the property. The carport and propane tank are adequately screened from public view but would be visible when directly in front of the property. Future ground and roof mounted equipment would be reviewed at the time any such improvements are proposed to ensure adequate screening. This finding is supported by the discussion contained in the "Discussion/Analysis" section of the Planning Commission staff report dated August 23, 2022.

5. The use of landscaping decorative site paving, etc., which provides effective visual screening or softening of the development, as necessary; and

   The street frontage directly adjacent to the project site includes several mature trees, which provide screening and a landscaping element to the property. The project includes a metal covered patio that matches existing building materials and colors found onsite, which would provide visual continuity and relief. This finding is supported by the discussion contained in the "Discussion/Analysis" section of the Planning Commission staff report dated August 23, 2022.

6. Achieve conformity with the Winters Design Guidelines, Form-Based Code for Downtown (Chapter 17.58), and the Grant Avenue Design Guidelines, as applicable.

   It is staff's opinion that the proposed 128 Hall & Kitchen Patio Addition project is consistent with the City's Design Guidelines. The project is proposing a new metal covered patio that would match the existing building materials and colors. In addition, the proposed carport and propane tank would be located near the rear of the property to ensure adequate screening. This finding is supported by the discussion contained in the "Discussion/Analysis" section of the Planning Commission staff report dated August 23, 2022.

California Environmental Quality Act Findings

1. Staff recommends that the proposed project be determined to be categorically exempt from the California Environmental Quality Act (CEQA) pursuant to CEQA Guidelines, Section 15303, Class 3, which consists of construction and location of limited numbers of new, small facilities or structures; installation of small new equipment and facilities in small structures; and the conversion of existing small structures from one use to another where only minor modifications are made in the exterior of the structure. The 128 Hall & Kitchen Patio Addition project (DR-2022-02) proposes to construct a new metal covered patio, carport, and propane tank. The project would not change or alter the property's existing land uses, and only includes accessory structures to assist in the existing restaurant operation of the site. There is no substantial evidence demonstrating that there are unusual circumstances which would result in significant impacts that threaten the

environment. Therefore, the project is categorically exempt from CEQA pursuant to CEQA Guidelines Section 15303.

2. The Planning Commission has reviewed and considered the proposed project and all comments submitted and has determined that the record, as a whole, demonstrates that there is no evidence that the proposed project will have an individually or cumulatively significant effect on the environment.

3. The Planning Commission has determined that the custodian of all documents and material which constitute the record of proceedings shall rest with the City of Winters Community Development Department.

Planning Commission Resolution No. 2022 – 12
Exhibit "B"

Draft Conditions of Approval

General Conditions of Approval

1. A Design Review permit for the construction of a new metal covered patio, carport, and propane tank for 128 Hall & Kitchen located at 1123 Grant Avenue (APN: 003-450-014) as shown on the plan set as approved by the Planning Commission on August 23, 2022, shall be on file in the Community Development Department. The applicant is responsible for complying with all conditions of approval and providing evidence to the Community Development Director of compliance with each condition.

2. The effective date of approval shall be September 3, 2022, unless the approval is appealed to the City Council by 5:00pm on September 2, 2022. Design Review approval shall be valid for one year after its effective date unless the applicant begins construction prior to the expiration, or the applicant applies for a Time Extension permit pursuant to Municipal Code Section 17.24.080.

3. The Community Development Director may authorize minor alterations to the approved plans and conditions of approval in accordance with Municipal Code Section 17.24.090. Major changes and alterations to the approved plans and conditions of approval shall be reviewed and approved by the Planning Commission.

4. The project shall comply with all applicable provisions and standards of the Winters Municipal Code and Standard Construction Specification, except where specifically modified by these conditions of approval. It is the applicant's responsibility to demonstrate compliance to the Planning Division prior to issuance of any grading or building permits.

5. Prior to building permit issuance, the applicant shall provide verification of compliance with all conditions of approval, applicable City of Winters Municipal Code requirements, and any applicable state or federal requirements.

6. The applicant shall pay all applicable impact fees and charges at the rate and amount in effect at the time such fees and charges become due and payable.

7. Any fees due to the City of Winters for processing this project shall be paid to the City within thirty (30) calendar days of final action by the approval authority. Failure to pay such outstanding fees within the time specified shall invalidate any approval or conditional approval granted by this action. No permits, site work, or other actions authorized by this approval shall be permitted, authorized, of commenced until all outstanding fees are paid to the City.

8. The applicant shall comply with all adopted rules and regulations of the City of Winters Public Works Department, Fire Department, Community Development Department, and all other local and state regulatory agencies.

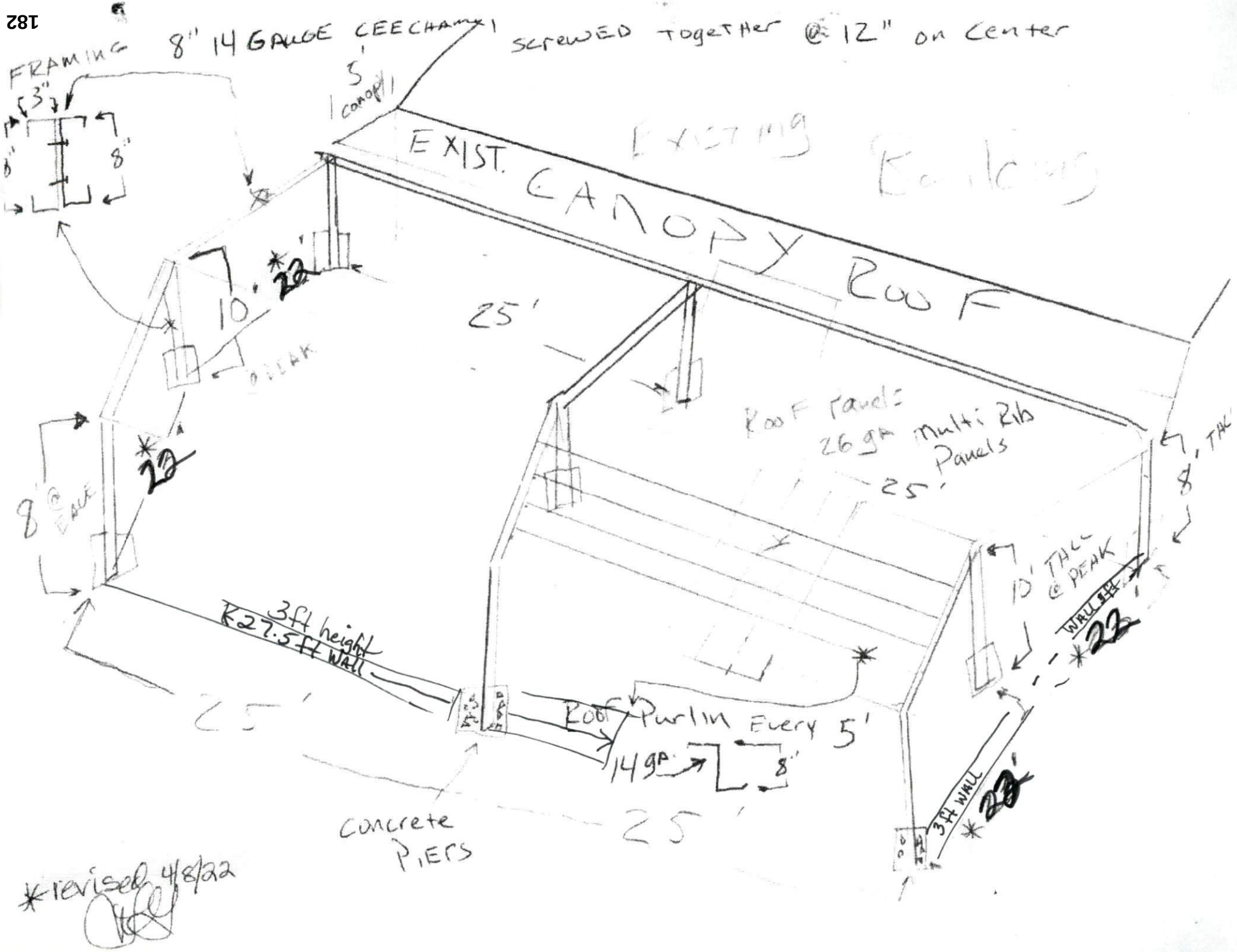
9. The applicant shall report to the City's Public Works Division building materials diverted from land filling during the course of the project pursuant to the provisions of City Council Ordinance No. 2002-03.

10. In the event any claim, action or proceeding is commenced naming the City or its agents, officers, and employees as defendant, respondent or cross defendant arising or alleged to arise from the City's approval of this project, the project applicant shall defend, indemnify, and hold harmless the City or its agents, officers and employees, from liability, damages, penalties, costs or expenses in any such claim, action, or proceeding to attach, set aside, void, or annul an approval of the City of Winters, the Winters Planning Commission, any advisory agency to the City and local district, or the Winters City Council. Project applicant shall defend such action at applicant's sole cost and expense which includes court costs and attorney fees. The City shall promptly notify the applicant of any such claim, action, or proceeding and shall cooperate fully in the defense. Nothing in this condition shall be construed to prohibit the City of Winters from participating in the defense of any claim, action, or proceeding, if City bears its own attorney fees and cost, and defends the action in good faith. Applicant shall not be required to pay or perform any settlement unless the applicant in good faith approves the settlement, and the settlement imposes direct or indirect cost on the City of Winters, or its agents, officers, and employees, the Winters Planning Commission, any advisory agency to the City, local district, and the City Council.



Site Plan for back Lot

Map not to Scale


FRAMING
8" 14 GAUGE CEECHAMEL
SCREWED TOGETHER @ 12" on Center
3"
8"
8"
5' canopy
EXIST. CANOPY ROOF
Existing Building
10'
22'
25'
PEAK
8' @ EAVE
22'
Roof Panels
26 GA Multi Rib Panels
25'
8' TALL
10' TALL @ PEAK
WALL 8 ft
22'
3ft height
27.5 ft WALL
25'
Roof Purlin Every 5'
14 GA
8"
3 ft WALL
22'
Concrete Piers
25'
*revised 4/8/22

THE 128 HALL & KITCHEN &THE BUCKHORN BBQ TRUCKS

1123 Grant Ave, Winters, CA 95694

City Of Winters (Kirk Skierski)

318 First Street

KIRK, **APRIL 18, 2022**

This brief note addresses the proposed changes to our business The 128 Hall & Kitchen.

We are currently open for business as a commissary, event hall for public & private events. We plan on opening again as a restaurant once we have more staffing or find a licensed business wanting to lease from us. Our property is also used to store our foodtrucks and company van when not at an event. We currently operate 7 days a week 7am-10pm.Our staff parks in the place of the foodtrucks when at an event offsite.

We cater on site for scheduled events, bar food for restaurant customers as well as alcohol with 47 liquor license. We do not have events, guests or staff on site after 10pm.

We have seating for 89 inside the hall. (89 chairs & 15 tables) We have seating outside for 144. (144 chairs & 18 tables in 2 sizes) The number of tables & chairs may be less after the engineers plans are received. We have no plans to increase seating beyond our current space.

We have 23 parking spaces for guests on site.(Including 2 disabled parking spaces with 1 van access)We are planning to increase our parking to 25 spaces by the proposed trash relocation to the back concrete. We also are 133 feet from our property line to public parking on Valley Oak Drive. There is approximately 80 public street parking spaces at either side of the road.

In our proposed design review plan we are adding a carport like structure to cover a large portion of our back concrete to weather protection for our company vehicles, guest parking & staff. Adjacent to the carport we are planning a propane tank to be installed by Chevron for our foodtrucks. The propane tank would be surrounded by bollards as proposed for protection. If front of the bollards we could store our current garbage (4 yard), recycles(4 yard) food waste (55 gallon) bins. There would be bollards also on the left & right sides of the refuse bins. The proposed area for the refuse would open up 2 more parking spaces for guests.

The 128 Hall & Kitchen &THe Buckhorn BBQ Trucks
We have invested quite a bit of money to open & renovate our location. Unfortunately due to the Covid 19 pandemic we were unable to stay open as a full time restaurant outside or inside. Lack of business, outdoor weather protection, lack of staffing, our location are just a few of the factors challenging us as well as many businesses. We continue to work forward with serving our community with venue space for private parties, memorials, fundraisers, group meetings & food location pickups for special events such as holidays. Hopefully as a restaurant in the near future. Some events both public & private require a city sound permit. We require those organizing these type of events to apply for sound permits directly with the city when renting our space.

We look forward to working with the city to grow as a company giving our cooperation in doing so.

SINCERELY,

Maria Rojo, Silverio Arteaga & Noe Cuevas

1123 Grant Ave, Winters, CA 95694

Planning Commission
Staff Report

To: Chair and Planning Commissioners

Date: August 23, 2022

From: Kirk Skierski, Senior Planner

Subject: Site Coverage – Public Hearing and Consideration by the Winters Planning Commission of Proposed Amendments to the Definition of Site Coverage

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Recommendation:
That the Planning Commission conduct a public hearing on proposed amendments to the "site coverage" definition in the Winters Municipal Code and adopt Resolution 2022-08 thereby taking the following actions:

1. Determine the proposed amendments to the "site coverage" definition to be categorically exempt from the California Environmental Quality Act (CEQA) pursuant to Section 15061(b)(3) and, as a separate and independent basis, Section 15301 (Class 1, Existing Facilities) of the CEQA Guidelines; and

2. Recommend the City Council approve the proposed amendments to the "site coverage" definition under Winters Municipal Code Section 17.04.140.B.

Background
Since 2021, City Administration has focused on improving development services provided by the City, including the hiring of new Building and Planning Division staff and the onboarding of a new consulting engineering firm. It has been over a decade since the City has had a full-time professional planner on staff. These new staff members have brought their experiences with them from other agencies. As a result of newly implemented planning review of building permits, it has become apparent that there may not have been consistent enforcement of the City's Zoning Ordinance and lot development standards through the years. More specifically, the City's site coverage requirements do not appear to have been enforced. In addition, certain residential subdivisions such as Heartland (Callahan Estates) and LDS were approved with specific site coverage allowances that excluded driveways from the site coverage calculation, which is not consistent with the Municipal Code definition of site coverage.

The issue with site coverage came to the forefront when a new resident in Winters Highland wanted to have a pool installed and there was insufficient space available within the site coverage limit.

Discussion

Site coverage is a development standard intended to regulate **residential** development. There are no site coverage requirements for commercial or industrial zoning districts. Winters Municipal Code Section 17.04.140.B (Definitions) defines "site coverage" as follows:

> *"Site coverage" means the percentage of a lot or site collectively covered by a roof, solid-surfaced deck or patio, paved driveway and parking areas, sports court/swimming pool or similar impervious improvements.*

Site coverage is generally reviewed by Planning as part of the building permit process, when the planner double checks permits against the City's Zoning Ordinance. The Zoning Ordinance establishes the City's development standards such as setbacks, height limitations, and site coverage requirements.

The City's residential zoning districts have the following site coverage requirements:

R-1	50% for single story 45% two or more stories
R-2	50% for single story 45% two or more stories
R-3	60%
R-4	70%

It is important to note that there are several subdivisions within Winters that were approved with special development standards. Subdivisions such has Stone's Throw (Winters Highlands), Heartland (Callahan Estates), LDS, Creekside, and Winters Ranch included Planned Development (P-D) approval allowing for reduced setbacks and increased site coverage from the standards outline above. Planned Development approvals are specific to each subdivision.

Site coverage standards are typically adopted by cities to regulate the amount of impervious surface on residential properties for various reasons. Green space allows for percolation of water into the soil; and trees help provide shade to reduce "heat island effect" which results in a reduction in the need for air conditioning. Trees and landscaping also improve property values and help beautify residential areas. For aesthetic and environmental reasons, cities adopt minimum site coverage standards as part of their zoning codes.

At the July 5, 2022, City Council meeting, the Council discussed the City's definition and regulation of "site coverage", which is attached for the Commission's information. During the Council meeting, staff presented site coverage definitions and regulations from adjacent cities and noted that several cities did not include driveways or pools in their definitions. The City Council directed staff to bring forward amendments to the City's definition of "site coverage". The City Council directed staff to make the following

changes:

- Remove swimming pools from the definition; and
- 50% of residential driveways to count towards site coverage.

The City Council also directed staff to develop a site coverage mitigation program that would allow certain improvements, such as planting trees, to count toward a reduction in a site's coverage. Staff will develop this programming separately. However, to accommodate requests for various pools, the change in definition is being considered at this time.

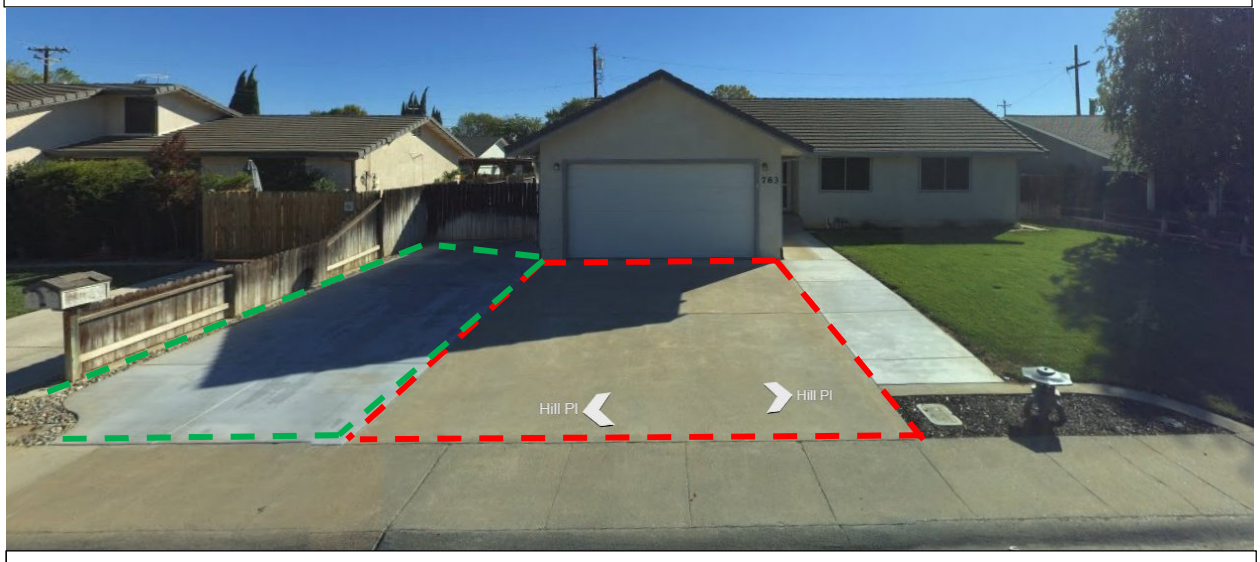
Project Description:

The Planning Commission is considering the proposed amendments to the City's definition of "site coverage" and forwarding a recommendation to the City Council. Staff is proposing the following amendments to Winters Municipal Code Section 17.04.140.B (Definitions):

- "Site coverage" means the percentage of a lot or site collectively covered by a roof, solid-surfaced deck or patio, *50% of the* paved driveway *directly serving a garage*, ~~and~~ *additional* parking areas, sports court/~~*swimming pool*~~ or similar impervious improvements.

The proposed amendments to the City's definition of site coverage would remove 50% of the paved driveway directly serving a garage and would remove swimming pools from site coverage calculations. It should be noted that the proposed amendments to the "site coverage" definition for 50% of the paved driveway directly serving a garage would only deduct the paved areas directly serving the garage. Paving and additional parking areas adjacent to the driveway area will still be wholly counted towards site coverage. Figure-1 below shows areas directly serving a garage outlined in **red** and an additional parking area adjacent to the driveway serving the garage in **green**. For site coverage purposes, 50% percent of the **red** area and 100% percent of the **green** area would be included in the site coverage calculations.

Figure-1 Site Coverage Breakdown for Driveways and Additional Parking Areas



Red Area: 50% of driveway serving a garage
Green Area: 100% of additional paving and parking areas outside of driveway serving garage

possibility that the activity in question may have a significant effect on the environment. The proposed amendments to the City's definition of site coverage would establish development regulations in line with adjacent jurisdictions and allow property owners on smaller lots to utilize their property consistent with larger lot owners. As a separate and independent basis, the project is exempt from environmental review pursuant to CEQA Guidelines Section 15301 (Class 1, Existing Facilities). Class 1 involves "the operation, repair, maintenance, permitting, leasing, licensing, or minor alteration of [an] existing … private structure[] … involving negligible or no expansion of existing or former use." The key consideration is whether the project involves negligible or no expansion of an existing use.

The Planning Commission must consider the proposed CEQA exemptions together with any comments received during the public review process. Further, the exemptions can only be approved if the Commission finds, based on the whole record before it, that there is not substantial evidence that there are unusual circumstances (including future activities), which might reasonably result in the project having a significant effect on the environment.

Public Communication:
The public hearing notice was published in the *Winters Express* on August 10, 2022. No public comments have been received at the time this staff report was published.

Alternatives
None recommended by staff.

Staff Recommendation:
Staff is recommending that the Planning Commission conduct a public hearing on the proposed amendments to the City's definition of "site coverage" and adopt Planning Commission Resolution 2022-08 thereby taking the following actions:

1. Determine the proposed amendments to the City's definition of "site coverage" to be categorically exempt from the California Environmental Quality Act (CEQA) pursuant to Section 15061(b)(3) and, as a separate and independent basis, Section 15301 (Class 1, Existing Facilities) of the CEQA Guidelines; and

2. Recommend the City Council approve the proposed amendments to the City's definition of "site coverage" under Winters Municipal Code Section 17.04.140.B.

Recommended Motion: I move to adopt Planning Commission Resolution 2022-08, a Resolution of the Planning Commission of the City of Winters, recommending the City Council determine the proposed amendments to the City's definition of "site coverage" to be categorically exempt from the California Environmental Quality Act (CEQA) pursuant to Section 15061(b)(3) and, as a separate and independent basis, Section 15301 (Class 1, Existing Facilities) of the CEQA Guidelines and recommending the City Council approve the proposed amendments to the City's definition of "site coverage" under Winters Municipal Code Section 17.04.140.B.

Attachments:
1. Resolution No. 2022-08

Planning Commission Resolution No. 2022 – 08

A Resolution of the Planning Commission of the City of Winters Recommending that the City Council Approve Proposed Amendments to the City's Definition of "Site Coverage" under Winters Municipal Code Section 17.04.140.B

Whereas, the City Council of the City of Winters adopted revisions to the City's General Plan on May 19, 1992: and

Whereas, a number of actions and programs are to be implemented through the City's Zoning Ordinance; and

Whereas, the Zoning Ordinance serves as one of the pivotal tools used to implement General Plan land use and development policies; and

Whereas, on September 16, 1997, the City Council adopted Ordinance 1997-03, which comprehensively updated the City of Winters Zoning Ordinance; and

Whereas, on April 19, 2022, members of the Winters community expressed concerns relating to the City's definition and regulation of "site coverage"; and

Whereas, on April 19, 2022, the City Council directed staff to return to a future City Council meeting with a discussion on the City's definition and regulation of "site coverage"; and

Whereas, on July 5, 2022, City staff presented site coverage definitions and regulations from adjacent cities, and the City Council deliberated on potential amendments to the City's "site coverage" definition under Winters Municipal Code Section 17.04.140.B; and

Whereas, on July 5, 2022, the City Council directed staff to bring forward amendments to the City's definition of "site coverage" to remove swimming pools and 50% percent of driveways from the site coverage definition; and

Whereas, a notice of public hearing was published in the *Winters Express* on August 10, 2022; and

Whereas, the City of Winters Planning Commission held a duly noticed public hearing on August 23, 2022, to consider the proposed amendments to the City's "site coverage" definition under Winters Municipal Code Section 17.04.140.B; and

Whereas, the Planning Division presented its oral and written staff report on the proposed amendments to the City's "site coverage" definition at a regular meeting of the Planning Commission on August 23, 2022; and

Whereas, the Planning Division recommended that the project be determined exempt from the California Environmental Quality Act (CEQA) based on the "common sense" exemption that CEQA only applies to projects with the potential to result in a significant impact on the environment in accordance with CEQA Guidelines Section 15061(b)(3) and, as a separate and independent basis, CEQA Guidelines Section 15301 (Class 1, Existing Facilities); and

Whereas, on August 23, 2022, the chair of the Planning Commission opened the duly noticed public hearing on the proposed amendments to the City's "site coverage" definition to receive testimony both oral and written, following which the Chair closed the public hearing and the Commission discussed the project prior to reaching its decision; and

Whereas, there is no substantial evidence, in light of the whole record before the City that the proposed revisions amending the City's "site coverage" definition would have a significant effect on the environment; and

Now, Therefore Be It Resolved that the Planning Commission of the City of Winters hereby takes the following actions:

1. Recommend the City Council determine the proposed amendments to the City's "site coverage" definition to be categorically exempt from the California Environmental Quality Act (CEQA) pursuant to Section 15061(b)(3) and, as a separate and independent basis, Section 15301 (Class 1, Existing Facilities) of the CEQA Guidelines; and

2. Recommend the City Council approve the proposed amendments to Winters Municipal Code Section 17.04.140.B (Definitions) as follows:

   "Site coverage" means the percentage of a lot or site collectively covered by a roof, solid-surfaced deck or patio, *50% of the* paved driveway *directly serving a garage*, ~~and~~ *additional* parking areas, sports court/~~*swimming pool*~~ or similar impervious improvements.

Be it Further Resolved, the Planning Commission hereby recommends to the City Council that the Council adopt the following findings in support of approval of the amendments:

1. The proposed amendments directly implement and are internally consistent with the goals, policies, and actions of all elements of the General Plan.

2. The proposed amendments would not be determinantal to the public interest, health, safety, convenience, or welfare of the City.

3. The proposed amendments ensure and maintain internal consistency with other applicable provisions of the Zoning Ordinance, California law, and Federal law.

Passed And Adopted by the Planning Commission of the City of Winters, on the 23rd day of August 2022 by the following vote:

Ayes:
Noes:
Absent:
Abstain:

Greg Contreras, Chairperson

Attest:

Ellena Branson, Planning Commission Secretary