BUCKEYE, AZ

PLEASE SILENCE ALL ELECTRONIC COMMUNICATION DEVICES. THANK YOU.

NOTICE OF POSSIBLE QUORUM OF THE CITY OF BUCKEYE PLANNING AND ZONING COMMISSION OR OTHER COUNCIL APPOINTED BOARD: PLEASE NOTE THAT THERE MAY BE A QUORUM PRESENT BUT THERE WILL BE NO VOTING TAKING PLACE BY THE CITY PLANNING AND ZONING COMMISSION OR OTHER COUNCIL APPOINTED BOARD AT THIS MEETING.

CITY OF BUCKEYE
PLANNING AND ZONING COMMISSION
AUGUST 24, 2021
AGENDA

City Council Chambers
530 E. Monroe Ave.
Buckeye, AZ 85326
6:00 PM
Live streaming of this meeting will be available via You Tube

Accessibility for all persons with disabilities will be provided upon request. Please telephone your accommodation request (623) 349-6911, 72 hours in advance if you need a sign language interpreter or alternate materials for a visual or hearing impairment.

Voting Members will either attend in person or by telephone conference call or video presentation. Items listed may be considered in any order

IMPORTANT NOTICE REGARDING PUBLIC PARTICIPATION

This meeting will be open to the public. Adherence to COVID-19 safety measures are recommended. If you would like to make a public comment, either in person or remotely, please review the information on the City's website and complete and submit the comment form found here: https://www.buckeyeaz.gov/government/city-clerk/meeting-agendas-minutes/meetings-agendas-minutes

Planning and Zoning Commission Board Members

At Large	District 1	District 2	District 3	District 4	District 5	District 6
Thomas Marcinko	Alan Ladd	Preston Hundley	Deanna Kupcik Vice Chair	Anthony DiMascio	Ed Sumner	Charles Trullinger Chair
Ted Burton *(Alternate)*	Rebecca Puppe *(Alternate)*	Jennie Ragsdale *(Alternate)*	Christopher Thurlby *(Alternate)*	Douglas McDonald *(Alternate)*	Larry Draves *(Alternate)*	Nick Hudec *(Alternate)*
Council Liaison: Craig Heustis						

1. CALL TO ORDER/PLEDGE OF ALLEGIANCE/ROLL CALL

2. MINUTES

2.A Approval of minutes from the July 27, 2021 Planning and Zoning Commission regular meeting.

3. REGULAR AGENDA

3.A **Sun City Festival Parcel AA1 Preliminary Plat (PLZS-21-00105).**
Recommendation to approve a Preliminary Plat for 246 age-restricted, single-family residential lots in the Planned Community (PC) Zoning District and Festival Ranch (CMP) Zoning Overlay District.

Staff Liaison: Robert Busick, Planner II, rbusick@buckeyeaz.gov, (623) 349-6242

3.B **Festival Ranch Planning Area 3 Parcels 33 and 35 Preliminary Plat (PLZS-20-00093)**
Recommendation to approve a Preliminary Plat for 325 single-family residential lots in the Planned Community (PC) Zoning District and Festival Ranch (CMP) Zoning Overlay District.

Staff Liaison: Robert Busick, Planner II, rbusick@buckeyeaz.gov, (623) 349-6242

3.C **Verrado Marketside PB Bell Apartments-Site Plan (PLZV-21-00030)**
Recommendation to approve a Site Plan for a 150-unit single-story bungalow multi-family rental development in the Planned Community (PC) Zoning District and Verrado Community Master Plan (CMP) Zoning Overlay District.

Staff Liaison: Sean Banda, Senior Planner, sbanda@buckeyeaz.gov, (623) 349-6215

3.D **Buckeye Wildlife Corridors Best Practices Guide**
Recommend approval of the Buckeye Wildlife Corridors Best Practices Guide to the City Council.

Staff Liaison: Adam Copeland, Deputy Director of Planning, acopeland@buckeyeaz.gov, 623-349-6210

4. **COMMENTS FROM THE PUBLIC**
Any members of the audience may comment on non-agenda items. However, State Open Meeting Law does not permit the Commission to discuss items not specifically on the agenda. The Commission may direct inquiries to City staff.
Action Required: *None*

5. **DEPUTY DIRECTOR OF PLANNING REPORT AND SUMMARY OF CURRENT EVENTS**

6. **PLANNING AND ZONING COMMISSION SUMMARY OF CURRENT EVENTS**
Any regular or alternate Commissioner or Council Liaison may present a brief summary on current events
Action Required: *None; there will be no discussion, deliberation, proposals, or legal action.*

7. **ADJOURNMENT**

CITY OF BUCKEYE
Regular Planning & Zoning Commission
PLANNING ACTION REPORT

MEETING DATE: 08/24/21	**AGENDA ITEM:** 2.A. Approval of Minutes
DATE PREPARED: 08/19/21	**DISTRICT NO.:**
STAFF LIAISON:	
DEPARTMENT: Development Services	**AGENDA ITEM TYPE:** Minutes

ACTION/MOTION: (This language identifies the formal motion to be made by the Voting Members) Approval of minutes from the July 27, 2021 Planning and Zoning Commission regular meeting.

SUMMARY

Items related to a project or facility location must include an attached vicinity map for Council Review.

ATTACHMENTS:

07.27.2021.PZC.MinutesDRAFT.pdf

City of Buckeye
530 East Monroe Avenue
Buckeye, AZ 85326

1. CALL TO ORDER/PLEDGE OF ALLEGIANCE/ROLL CALL

Chairperson Trullinger called the meeting to order at 6:00 p.m.

Members present: Commissioner Alan Ladd, Vice Chairperson Deanna Kupcik, Chairperson Charles Trullinger, Alternate Ted Burton seated for At Large District, Alternate Jennie Ragsdale seated for District 2, Alternate Christopher Thurlby, Alternate Douglas McDonald seated for District 4, Alternate Larry Draves seated for District 5, Alternate Nick Hudec

Members absent: Commissioner Thomas Marcinko, Commissioner Preston Hundley, Commissioner Anthony DiMascio, Commissioner Ed Sumner, Alternate Rebecca Puppe

Staff present: Deputy Director of Planning Adam Copeland, Management Assistant Keri Hernandez, Senior Planner Sean Banda, Development Services Director Brian Craig, Fire Marshall Nate Ryan, City Attorney Shiela Schmidt, Council Liaison Craig Heustis

2. APPROVAL OF MINUTES FROM THE JULY 13, 2021 PLANNING AND ZONING COMMISSION REGULAR MEETING.
A motion was made by Alternate McDonald and seconded by Vice Chairperson Kupcik to approve minutes as presented. Approval 7-0. Motion carried.

Chairperson Trullinger recused himself from agenda item 3A, due to conflict of interest, and turned the meeting over to Vice Chairperson Deanna Kupcik.

3. REGULAR AGENDA
3A. VERRADO HERITAGE DISTRICT PARCEL 4.805 PRELIMINARY PLAT (PLZV-20-00029)
Senior Planner Sean Banda presented and was available to answer questions from the Commission.
Vice Chair Kupcik asked what would be on the corner presented as opposed to a park. Mr. Banda informed the Commission that the corner is planned drainage, landscape and used as a buffer to the units. Ms. Kupcik asked how many units would be on each lot. Mr. Banda indicated that one duplex unit will be on each lot.
The applicant was in agreement with the conditions a-x as presented.
Mr. Draves requested clarification on the access points to exit this development. Mr. Banda indicated that there are four planned exit points for this development. Mr. Draves asked who would maintain the alleyways throughout this neighborhood. Mr. Banda informed the Commission the maintenance of the alleyways will be responsibility of the community members within those 90 units.
Ms. Kupcik asked how residents would access the units. Mr. Banda confirmed that vehicles would access their garages through the alley.
Council Liaison Heustis asked if the Fire Department has reviewed the plans, and what the comments are on fire access. Mr. Banda indicated that Fire Department has reviewed and approved the plan, and informed the Commission that each unit would be required to have fire sprinklers installed. Mr.

Heustis asked what the proposed width of the streets are. Mr. Banda indicated that the private drives within the community is thirty-four (34) feet in width from garage to garage.
Fire Marshal, Nate Ryan, informed the Commission that the Fire Department has specific requirements for this type of product, confirming that all residential structures are required to have an automatic fire sprinkler system. Mr. Ryan informed the Commission that Dry Horizontal Stand Pipes, which are underground piping that connect to the main water lines for hose connections, is required throughout the community. Mr. Ryan indicated also, that the fire apparatus would not be accessing the private drives due to the close proximity of the homes, thus the requirement for the sprinkler systems and the underground piping to supply water in emergency fire situations in otherwise tight areas.
A motion was made by Alternate Ragsdale and seconded by Alternate Burton to approve as presented with conditions 'a-x'. Approval 6-0. Motion carried.

4. COMMENTS FROM THE PUBLIC
None

5. DEPUTY DIRECTOR OF PLANNING REPORT AND SUMMARY OF CURRENT EVENTS
Deputy Director of Planning Adam Copeland reminded the Commissioners, that in-person attendance is an option for the meetings, as well as the virtual option.
The new Development Services Director, Brian Craig, introduced himself to the Commission.

6. PLANNING AND ZONING COMMISSION SUMMARY OF CURRENT EVENTS
Vice Chair Kupcik informed the public and Commission that the first Tuesday of the month at 8:00 a.m., ADOT (Arizona Department of Transportation) will be presenting updates on the I-10 widening project in the Buckeye City Hall Council Chambers. Those meetings will be accessible via a Zoom link and in-person. September and November are exceptions to those scheduled dates: September update will take place on the 2nd Tuesday and November update will take place on the 2nd Tuesday. The meetings will be recorded on zoom and posted on the Chamber of Commerce website I-10 Widening project page.
Chair Trullinger welcomed Brian Craig and invited Commissioners to attend in-person if they choose.

7. ADJOURNMENT
A motion was made by Vice Chairperson Kupcik and seconded by Alternate Ragsdale to adjourn at 6:53 p.m. Motion carried.

_____
Charles Trullinger, Chairperson

ATTEST:

_____
Keri Hernandez, Management Assistant

I hereby certify that the foregoing is a true and correct copy of the Planning and Zoning Commission Regular Meeting held on the 27th day of July, 2021. I further certify that a quorum was present.

_____
Keri Hernandez, Management Assistant

CITY OF BUCKEYE
Regular Planning & Zoning Commission
PLANNING ACTION REPORT

MEETING DATE: 08/24/21	**AGENDA ITEM:** 3.A. PLZS-21-00105 Sun City Festival Parcel AA1 Preliminary Plat
DATE PREPARED: 08/19/21	**DISTRICT NO.:** 4
STAFF LIAISON: Robert Busick, Planner II, rbusick@buckeyeaz.gov, (623) 349-6242	
DEPARTMENT: Development Services	**AGENDA ITEM TYPE:** Public Meeting / Non Consent - New Business

ACTION/MOTION: (This language identifies the formal motion to be made by the Voting Members)
Sun City Festival Parcel AA1 Preliminary Plat (PLZS-21-00105).
Recommendation to approve a Preliminary Plat for 246 age-restricted, single-family residential lots in the Planned Community (PC) Zoning District and Festival Ranch (CMP) Zoning Overlay District.

SUMMARY

Items related to a project or facility location must include an attached vicinity map for Council Review.

ATTACHMENTS:

PLZS-21-00105 SCF Parcel AA1 Pre Plat PZ Staff Report.pdf
Vicinity Map.pdf
Narrative.pdf
SCF PARCEL AA1 PRELIMINARY PLAT.pdf
SCF PARCEL AA1 Conceptual Landscape Plan.pdf

PRELIMINARY PLAT

Report to the Planning and Zoning Commission

CASE NUMBER:	**PLZS-21-00105**
TITLE:	**Sun City Festival Parcel AA1 Preliminary Plat**
MEETING DATE:	**August 24, 2021**

Applicant:	Cardno, Inc.
Owner:	Pulte Corporation
Request:	A Preliminary Plat for 246 lots in two (2) phases within the Festival Ranch Community Master Plan (CMP) zoning district overlay and Planned Community (PC) zoning district.
District	District 4
Location:	NWC Sun Valley Parkway and Desert Oasis Boulevard
Site size:	89.15 acres
Density:	2.76 dwelling units per acre
Public input:	None
Recommendation:	**Approve** with conditions

PROJECT DESCRIPTION

1. Pulte Homes is requesting a preliminary plat approval for 246 age-restricted single-family residential lots to be developed in two phases on 89.15 acres generally located north of Sun Valley Parkway and west of Desert Oasis Boulevard within Sun City Festival. The project contains lots with landscaped open space between the rear yards of lots within the same block, as well as trails that connect through to adjacent parcels of Sun City Festival.

2. The area within this preliminary plat is surrounded on the south, north, and east by developed portions of Sun City Festival. To the west is undeveloped phases of the Festival Ranch community, as well as undeveloped State Trust Land.

3. This request is for a preliminary plat only and, if approved, a final plat demonstrating compliance with the Development Code standards will be required.

AREA CONTEXT

Table 1: *Existing Land Use, General Plan Designation, and Zoning District*

	LAND USE	GENERAL PLAN	ZONING
Subject Property	**Vacant**	**Master Planned Community**	**Planned Community (PC), Festival Ranch CMP**
North	Sun City Festival	Master Planned Community	Planned Community (PC), Festival Ranch CMP
South	Vacant	Master Planned Community	Planned Community (PC), Sun Valley Villages I & II CMP
East	Sun City Festival	Master Planned Community	Planned Community (PC), Festival Ranch CMP
West	Sun City Festival (undeveloped)	Master Planned Community	Planned Community (PC), Festival Ranch CMP
West	State Trust Land (undeveloped)	Neighborhood	None

PUBLIC PARTICIPATION

4. Legal notice is not required for preliminary plats; however, the applicant has advertised in accordance with Section 8 of the Development Code via mailed notice to those property owners within 300 feet of the subject site, including the Homeowners' Association for Sun City Festival. The notice of application was mailed on February 24,

2021, and any public input received will be shared at this project's Planning and Zoning Commission hearing.

Table 2: *Public Notice*

Notification Element	Date
Mailing to Property Owners w/in 300'	February 24, 2021

BACKGROUND

5. 1991: Annexation 7-91: Approximately 14,276 acres were annexed.
6. 2000: 84-00: Festival Ranch Community Master Plan (CMP) established encompassing approximately 10,105 acres.
7. 2008: Most recent Festival Ranch CMP amendment.
8. October 2016: Festival Ranch Planning Unit Plan (PUP) E approved.
9. December 2020: Festival Ranch PUP E Amendment, incorporating 197 acres of land formerly designated part of a separate Planning Unit and refining land uses for miscellaneous development parcels yet to develop.

ANALYSIS

Land Use Allocations

10. The preliminary plat contains 246 detached, age-restricted single-family lots contained in two (2) phases: Phase 1 and Phase 2. The project density (2.76 du/ac) is consistent with the densities throughout Sun City Festival and the approved CMP and Planning Unit Plan.

Table 2: *Residential Lot Mix*

Lot Size (min)	Lot Count	Lot Mix (Percentage)
52' x 115'	77	31.30%
64' x 115'	137	55.69%
75' x 115'	32	13.01%
Total	**246**	**100%**

Table 3: *Lot Setbacks*

Lot Type	Development Option	Front*	Interior Side / Corner	Rear
52' x 115'	R1-4.5	18-ft garage 10-ft living space or side-load garage	5-ft and 5-ft / 10-ft	20-ft
64' x 115'	R1-4.5	18-ft garage 10-ft living space or side-load garage	5-ft and 5-ft / 10-ft	20-ft
75' x 115'	R1-4.5	18-ft garage 10-ft living space or side-load garage	5-ft and 5-ft / 10-ft	20-ft

**Setback to the front face of a garage to the nearest sidewalk edge is 20-feet.*

Schools

11. The project is age-restricted and no school site allocation is necessary for this proposal.

Circulation

12. Primary access to the project site is obtained from Desert Oasis Boulevard, an existing arterial that forms the eastern boundary of Parcel AA1. Desert Oasis Boulevard leads to Sun Valley Parkway along the southern boundary of the parcel; Parcel AA1 will not connect directly to Sun Valley Parkway. Bowen Avenue, a collector, forms the northern boundary of the parcel, connecting to Desert Oasis Boulevard as well as existing adjacent development parcels of Sun City Festival. Bowen Avenue is planned to eventually connect through the state trust land to the west once that land is developed, continuing to Beardsley Parkway northwest of the parcel.

Open Space / Trails

13. HOA-maintained landscaped tracts are proposed throughout the development which provide open space. The parcel is employing a unique design concept of lots with open space separating lots within the same block which would otherwise back each other. Open space landscaped with vegetation and ground cover typical of Sun City Festival accounts for 27.99 acres (31.4%) of Parcel AA1.

14. Sidewalks and paths are located throughout the open spaces in the parcel connecting to an 8-ft-wide concrete trail running through the middle of the parcel, connecting Parcel AA1 to existing adjacent parcels in Sun City Festival. The parcel is part of Sun City Festival and will have access to regional trails, the dog park, and other recreational facilities provided for the community.

15. A major form of transportation within the Sun City Festival community, golf carts, will have access along the public local streets within the development parcel.

Site Design Details, Theming

16. The CMP and the Planning Unit Plan outline the wall, site, and other theme details that will be used throughout Sun City Festival Parcel AA1. The conceptual landscape and wall plan shows the design and location of theme walls, view walls, entry features and other amenities. Specifics will be finalized with the final landscaping plans.

Infrastructure

17. Water, Sewer, and effluent will be provided by the City and constructed by the developer as per the terms of the CMP, master reports, and development agreement.

Emergency Access

18. The project will utilize existing and planned local streets to provide adequate emergency access. The Fire Department will continue to work with Pulte to ensure that any non-street emergency access meets minimum safety standards

19. The following City of Buckeye departments have reviewed and have found no outstanding issues with the application for this Preliminary Plat:
    a. Engineering
    b. Fire
    c. Public Works
    d. Community Services
    e. Police
    f. Water Resources
    g. Development Services (both Planning Division and Building Safety Division)

RECOMMENDATION

20. Staff recommends the Planning and Zoning Commission motion for **approval** with conditions a - xx of **PLZS-21-00105** for the following reasons:

- Conformance with General Plan
- Conformance with Development Code
- Conformance with Community Master Plan
- No outstanding issues for reviewing departments (Engineering, Fire, Public Works, Community Services, Police, Water Resources, and Development Services).

a. Development of the property shall be in general conformance with the Preliminary Plat entitled “Preliminary Plat for Sun City Festival - Parcel AA1” consisting of five (5) pages, dated May 2021, and stamped received July 12, 2021, except as modified by the following conditions.
b. Development of the property shall be in general conformance to the project narrative report entitled “Sun City Festival Planning Unit 1 Parcel AA1 Preliminary Plat Narrative” consisting of four (4) pages, dated July 12, 2021, and stamped received July 12, 2021, except as modified by the following conditions.
c. Development of the site shall be in general conformance with the Conceptual Landscape Plan entitled “Festival Ranch – AA1 Overall Landscape Plan” consisting of 5 pages, dated July 8, 2021, and stamped received July 12, 2021, except as modified by the following conditions.
d. Preliminary plat approval is valid for a period of two (2) years. For a preliminary plat that identifies phases, the preliminary plat shall remain valid for a period not to exceed two (2) years from the date of recording of any final plat that conforms to the approved preliminary plat. The Development Services Director or Designee may grant a one-time extension of 12 months, if in the opinion of the Director, satisfactory progress has been made towards completion of the final plat or for the next phase of subdivision development. Additional extensions may be approved through the discretion of the Planning and Zoning Commission.
e. The property owner/s and their successor waive any and all claims for diminution in value of the property with regard to any action taken by City of Buckeye as result of this approval.
f. This subdivision is subject to a Parkway Maintenance Improvement District (MID) and in accordance with City of Buckeye Ordinance 42-06. The MID shall be established prior to the recordation of the first Final Plat as determined in the MID guidelines.
g. This subdivision is subject to a Street Light Improvement District (SLID) in accordance with City of Buckeye Ordinance 43-05. The SLID shall be established prior to the recordation of the first Final Plat as determined in the SLID guidelines.
h. All landscaped areas within the public rights of way, whether to be maintained by the City of Buckeye or if delegated to the adjacent property owner, homeowners’ association or other property maintenance association, shall be designed and sealed by a landscape architect licensed by the Arizona Board of Technical Registration. (The above described MID requirement ensures protection of the city in case maintenance of the ROW landscaping is not kept up or is abandoned by the responsible owner.) The City Public Works Department shall review all irrigation plans for material selection only; therefore, the landscape architect shall coordinate with the Public

Works Department early in the design to ensure the most efficient means of landscape irrigation that will reduce both long term maintenance costs and keep watering to the absolute minimum required for healthy growth of landscaping along the roadways of the City of Buckeye.

i. Artificial or synthetic turf shall be allowed on all surfaces where turf can be used. No individual or association may impose private covenants, conditions, restrictions, deed clauses or other agreements between parties which prevent individuals from utilizing artificial or synthetic turf as an alternative to any landscaping where turf can be used. The quality of the artificial or synthetic turf may be subject to the requirements of individuals or associations.

j. No new natural turf shall be installed in a public right-of-way or median. Areas with up to 10,000 square feet of turf within a public right-of-way at gateways, entrances to major communities, or special landscaping designs approved by the city's development services department are exempt from the restrictions of this stipulation.

k. Shrubbery in the right of way shall not obstruct any regulatory signage or sight distance triangle as defined in the Engineering Development Standards; therefore, shall be trimmed to less than 2’-0”.

l. Landscaping within the public-right-of-way will require:
    a. All landscaped areas, except those intentionally maintained with native plants, shall include an automatic irrigation system.
    b. All native plant landscaping plans shall include an establishment maintenance plan that ensures long term growth of all plantings.
    c. Establishment maintenance plan shall be sealed by a registered Landscape Architect.
    d. Water-efficient systems (e.g., drip, mini-spray, bubbler-type, or similar drip systems) shall be used whenever feasible. Low-flow sprinkler heads with matched precipitation rates shall be used when spray or rotor-type heads are specified for watering shrubs and ground cover areas.
    e. Multi-program weather sensing controllers with separated valves and circuits shall be used when the project contains more than one type of landscape treatment (e.g., lawn, ground cover, shrub, tree areas), or a variety of solar aspects.
    f. Soil moisture-sensing devices and rain sensors shall be used on all projects within public rights of way and in landscape tracts. The use of satellite based controllers is encouraged.

g. Root barriers shall be designed and incorporated for all trees that are in the public right of way to ensure vertical root growth and avoid adjacent curb, sidewalk or pavement upheaval due to tree roots.
h. Linear Root barriers shall be used along public improvements that are only on one side of a tree.
i. Surround Root barriers shall be used when a tree is within the sidewalk or within a median.
j. Tree canopies extending into the right of way shall be trimmed to the following minimum standards: 18'-0" over any public roadway, 7'-0" over any public sidewalk.

m. All trash shall be collected through a City of Buckeye licensed trash hauler, including construction debris. Trash enclosures shall be in accordance with City of Buckeye standards.
n. Prohibited Trees: The following trees are prohibited from any landscaping plans in accordance with Chapter 9 of City Code (Section 9-10):
    a. Male Mulberry Tree (Morus Alba).
    b. Olive Tree (Olea Europea).
    c. Additionally, North Indian Rosewood Trees (Dalbergia Sissoo) shall not be planted within the rights of way (and are suggested not be planted within the property) due to their destructive and invasive root structure
o. Storm Drainage: The City of Buckeye is permitted as a Phase 2 MS4 and is now subject to more stringent standards for stormwater discharge. All stormwater plans must now meet the requirements of the City of Buckeye's MS4 permit as issued by ADEQ (Permit Number AZG2016-002).
p. The Buckeye Fire Chief and City Engineer shall determine the number, location, and types of all fire hydrants.
q. Prior to delivery of any combustible materials to the site, the fire protection system shall be completely operational, with proper fire flow, and in accordance with the plans approved by the Buckeye Fire Chief and City Engineer.
r. All buildings shall be equipped with a fire protection system as required by City of Buckeye Ordinance 20-13.
s. Where two fire apparatus access roads are required, they shall be placed a distance apart equal to not less than one half of the length of the maximum overall diagonal dimension of the lot or area to be served, measured in a straight line between accesses.
t. All streets must conform to the Maricopa County/Phoenix street name and hundred block grid system.

u. Residential developments where the number of dwelling units exceeds 10 shall be provided with two separate and approved fire apparatus access roads.
v. Phasing of public infrastructure shall be subject to a phasing plan as approved by the Development Services Director and City Engineer.
w. Prior to Final Plat recordation, final landscaping and irrigation plans, including all lighting improvements, shall be reviewed and approved by the City of Buckeye.
x. The Property Owner/Developer shall provide for channelization of off-site storm water that will be intercepted by this project in accordance with a Final Drainage Report as approved by the City Engineer, which shall be submitted along with the first submittal of the improvements plans. In the case where work related to interception of off-site storm water is required on adjacent parcels of land not controlled by the Property Owner/Developer, the Property Owner/Developer shall first obtain a drainage easement from the adjacent parcel owners. When required, said easement shall include an acknowledgment by the adjacent parcel owner(s) that historic drainage discharge points may be altered. Said drainage easements shall be executed and submitted to the City prior to approval of the Grading Plans and shall be recorded prior to approval of the Final Plat for this project.
y. Prior to Final Plat approval, the Property Owner/Developer shall obtain approval from the applicable utility interests for easement location and width as required for utility purposes.
z. At the time of improvement plan submittal, the Property Owner/Developer shall provide a comprehensive Drainage Master Plan, which addresses all on-site and off-site drainage requirements and issues. The Drainage Master Plan shall also identify the method by which existing 100-year floodplains will be mitigated.
aa. The Buckeye Fire Chief and City Engineer shall determine the number, location, and types of all fire hydrants.
bb. Prior to delivery of any combustible materials to the site, the fire protection system shall be completely operational, with proper fire flow, and in accordance with the plans approved by the Buckeye Fire Chief and City Engineer.
cc. The Applicant will submit an electronic CAD and GIS file with full construction documents of the development to the City Engineer, Public Works Department, and GIS Administrator upon Final Plat approval in order to maintain current street records and assist in emergency dispatch and response.
dd. All streets (local, collector, and arterial), sidewalks, parks, and other common areas, as determined by the City Engineer, shall be sufficiently illuminated to ensure the safety and security of persons and property. The City Engineer shall approve all lighting improvements.

ee. All street names shall be subject to final approval by the City of Buckeye and shall conform to the City of Phoenix grid alignment.

ff. Pavement sections for all streets shall be determined in accordance with a City Engineer-approved geotechnical analysis, but shall not be less than the City's minimum requirements.

gg. Collector streets shall have a raised, landscaped median except at intersections where left-turn lanes are provided.

hh. Prior to the issuance of a Building Permit, the Property Owner/Developer shall pay a pro rata share, based on acreage, of the cost of up to nine (9) future traffic signals to be installed within this section of land. The sectional contribution is to be based on the following allocation of costs: (i) 25 percent share of four (4) possible signals at arterial street intersections; (ii) 50 percent share of four (4) possible signals at half-mile collector street intersections or project entries; and (iii) 100 percent share of one (1) possible signal internal to this project. The cost shall be based on an anticipated signal cost as determined by the City Engineer.

ii. Street signs and sign posts shall be placed at all street intersections, with stop signs where applicable, by the Property Owner/Developer and shall be in place when street paving is completed. Specification for design, construction, location, and installation shall be in accordance with City roadway standards and shall be approved by the City Engineer.

jj. The paved portion of all cul-de-sacs shall have a minimum radius of 43 feet.

kk. Any traffic signals that are required due to traffic generated by this project shall be installed by the Property Owner/Developer when warranted.

ll. All irrigation ditches to remain on-site shall be installed underground. Irrigation pipe crossings of the streets shall be constructed to the City's standards.

mm. All existing irrigation facilities located on the site shall be abandoned, relocated off the property, or installed underground. Any District-owned facilities to be located within the right-of-way shall be located near the rear of the right-of-way and the right-of-way shall be extended at lease five (5) feet. Any additional right-of-way for District-owned facilities (not to exceed five feet) can de deducted from the depth of the perimeter landscape tracts.

nn. At the time of Improvement Plan submittal, the Property Owner/Developer shall submit for review and approval a Sewer Master Plan, which provides sizing calculations for all on-site and off-site sewers.

oo. Prior to Final Plat approval, an effluent irrigation pipe (Purple Pipe) system shall be designed by the Property Owner/Developer and approved by the City Engineer in order to service all association maintained landscaping. At such time as an effluent

delivery system is designed and developed by the City, the Property Owner/Developer is required to install and bring the development's system into full operation by connecting into the City's system.

pp. The Property Owner/Developer is responsible for providing, at their sole cost and expense, all public infrastructure necessary to serve the project including, without limitation, water and wastewater service in accordance with Ordinance No. 86-06. This includes water supply, infrastructure, and capacity for the production, treatments and delivery of water to the project and the collection, treatment and disposal, including recharge and/or reuse, of wastewater generated at the project. Notwithstanding any authority of the City to create a special district for purposes of funding infrastructure in the City, to meet its obligations under this Stipulation and under Ordinance No. 86-06, the Property Owner/Developer may participate jointly with other property owners/developers in the provision of the necessary regional public infrastructure to serve the subject Property and, in such event, shall pay its pro-rata share of the costs of providing such infrastructure and shall provide documentation satisfactory to the City of such participation and payment of its pro rata share.

qq. Prior to Final Plat/Site Plan approval, the Property Owner/Developer shall submit to the City for review and approval Water and Wastewater Master Plans. In order to provide for water production and treatment, the Property Owner/Developer may be required to provide additional sites for production wells and water production site on the Final Plat/Site Plan or at off-site locations.

rr. The Property Owner/Developer is responsible for providing water at the project for construction purposes including obtaining the necessary water rights for the water supply to be used for construction purposes.

ss. If the property is location with the City's water service area, to the extent allowed by law, all Type-I Non-irrigation and Irrigation Grandfathered Rights associated with the property shall be properly extinguished and the resulting extinguishment credits conveyed to the City of Buckeye or pledged to the City of Buckeye account at the Arizona Department of Water Resources prior to the issuance of any building permits.

tt. If the property is located within the City's water service area, the Property Owner/Developer shall allocate any surface water rights to the City prior to the issuance of any building permits

uu. If the Development is within the City of Buckeye's Water Service Area, the Property Owner/Developer shall notify the City's Water Resources Department of the location of any registered and unregistered wells on the property and the Property Owner/Developer and the City's Water Resources Department shall meet and confer

to determine if the wells are beneficial or whether they shall be abandoned. Wells shall be abandoned by the Property Owner/Developer if the City's Water Resources Department determines that they present a health and safety hazard or are contributing to groundwater contamination and are not able to be rehabilitated, modified, or re-drilled to prevent the health and safety hazard or groundwater contamination.

vv. Abandonment of wells shall be performed pursuant to and in compliance with State law and shall be completed prior to the issuance of any building permits.

ww. In the event the City has been designated by the Arizona Department of Water Resources (ADWR) as having an assured water supply, the Property Owner/Developer has, prior to Final Plat approval and if requested by the City, reduced the volume of its analysis of assured water supply for the subdivision to allow the City to include the relinquished water supply in the City's designation in order that the City may provide water service to the subdivision; provided, however, the Property Owner/Developer may relinquish a portion(s) of its analysis for assured water supply in connection with water service by the City to a Phase or Phases of development of the subdivision if ADWR approves such partial relinquishment and reduction in the analysis volume without negatively impacting the priority of the remaining reserved groundwater under the Property Owner/Developer's analysis of assured water supply. The Property Owner/Developer acknowledges that the City is preparing to submit to ADWR its application for designation as an assured water provider and the Property Owner/Developer agrees to cooperate with and support the City's efforts in processing its designation application. The Property Owner/Developer further agrees that it shall submit to ADWR its request to reduce its analysis, by the volume required to meet the demand of the development included in the designation, as applicable and as requested by the City, upon (1) ADWR's administrative determination that the City's designation application is complete; and (2) written notice from ADWR to the City that ADWR is prepared to issue its order designating the City as an assured water provider upon submission of any applicable requests to reduce analyses of assured water supply as evidence of physical availability (the foregoing requirements collectively referred to as "Analysis Reduction Requirements"). If prior to the date on which ADWR issues its order designating the City as an assured water provider, the law or ADWR policy and procedure change that affect the above Analysis Reduction Requirements for the Property Owner/Developer, the Property Owner/Developer specifically acknowledges and agrees that the City shall have the right to require the Property Owner/Developer's compliance with the new law or ADWR policy or

procedure and the Property Owner/Developer agrees that is shall perform its obligations in such regard at its sole cost and expense.

xx. Prior to Final Plat approval, the Development Services Director shall require the Property Owner/Developer to produce a Certificate of Assured Water Supply issued by the Arizona Department of Water Resources (ADWR), covering all lots and parcels created, defined, or depicted on said plat. The certificate must be consistent with all Arizona Department of Water Resources ADWR rules and regulations. In the event the City has been designated an assured water provided prior to Final Plat approval, and the ADWR has not yet issued a Certificate or Certificates of Assured Water Supply for the subdivision, a Certificate or Certificates of Assured Water Supply will not be required by the City. The City may instead require as a condition to Final Plat approval that the Property Owner/Developer provide the City with other evidence demonstrating that there is sufficient volume and quality of water necessary to serve the demands at the subdivision such as a physical availability determination issued by the ADWR along with supporting documentation or that the Property Owner/Developer provide the City with a copy of an analysis of assured water supply, with supporting documentation, issued by the ADWR for the subdivision.

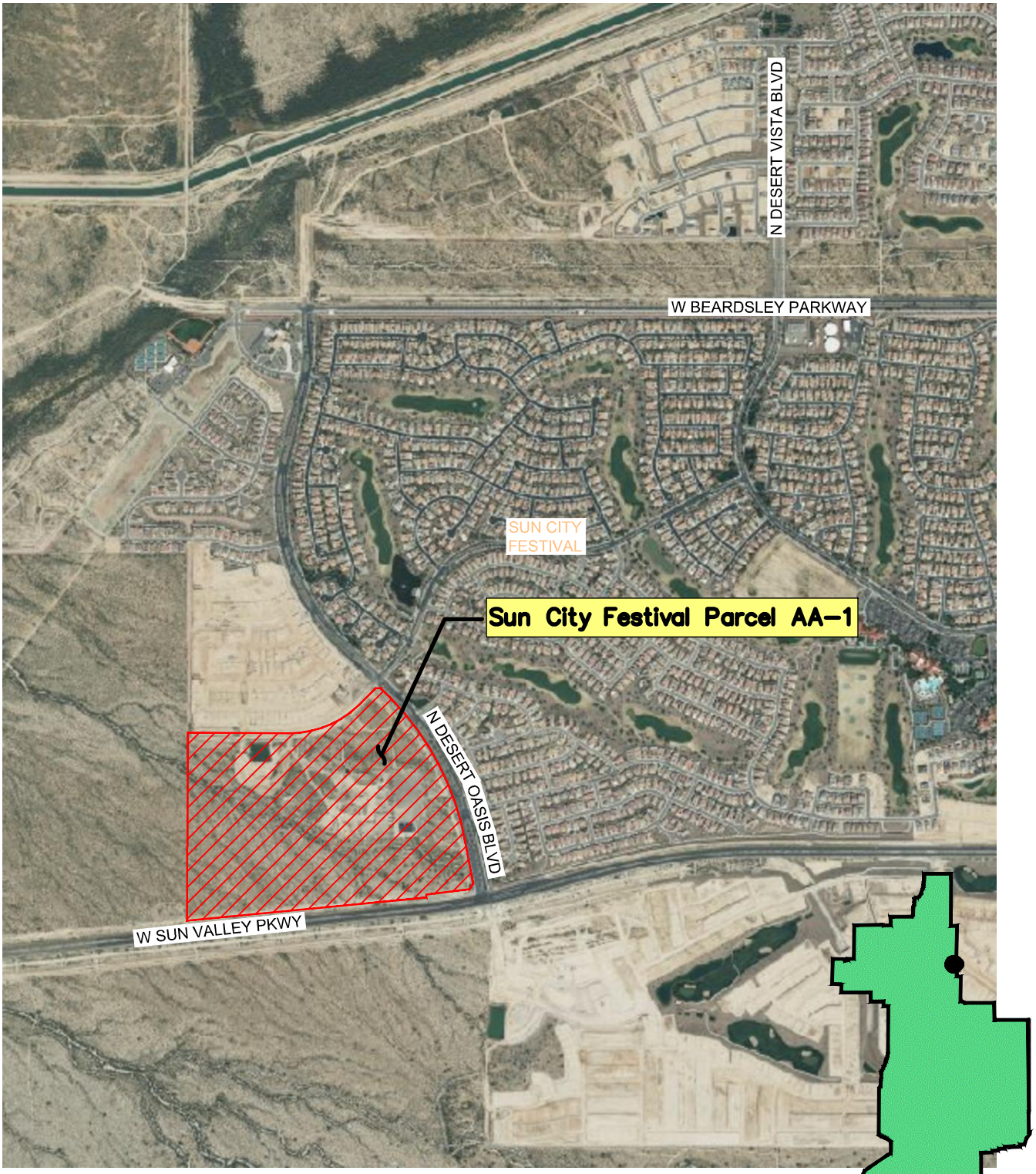
ATTACHMENTS

- Vicinity Map
- Narrative
- Preliminary Plat
- Conceptual Landscape & Wall Plan

Prepared By:
Robert Busick, Planner II

Reviewed By:
Adam Copeland, Deputy Director of Planning

Vicinity Map



BUCKEYE, AZ

SUBJECT SITE

0 0.25 0.5 Miles

N

3rd Submittal
PLZS-21-00105
RECEIVED
JULY 12 2021
CITY OF BUCKEYE by: WD

SUN CITY FESTIVAL
PLANNING UNIT 1 PARCEL AA-1
PRELIMINARY PLAT NARRATIVE

July 12, 2021

Prepared for:

16767 North Perimeter Drive, Suite 100
Scottsdale, Arizona 85260
(480) 391-6000

Prepared by:

19621 N. 23rd Drive, Suite 150
Phoenix, Arizona 85027
(602) 977-8075

Cardno Project No. 4151097000

Application Request

This application requests the approval of a preliminary plat for Sun City Festival Parcel AA-1, a portion of the Festival Ranch Master Plan. The preliminary plat for Sun City Festival Parcel AA-1 contains a total of 246 lots and 89.15 acres.

Introduction

The Festival Ranch Community Master Plan (CMP) is comprised of approximately 10,105 acres. The property is located in the northern portion of the City of Buckeye. It is bounded on the west by the Hassayampa River and by State Lands on the north and east. The south edge of the property is partially bisected by the Sun Valley Parkway and is bounded by a small portion of the White Tank Mountains, State Lands, and private landowners.

The original Festival Ranch CMP consisted of six Planning Units, identified as Planning Units A through F. Portions of the original Planning Units E and F are presently identified as Planning Unit One of the Sun City Festival Development. This preliminary plat is a portion of Sun City Festival Planning Unit One. The majority of residential development, approximately 820 acres, for Sun City Festival Planning Unit One, is proposed as an active adult community.

Within Planning Unit One there are numerous parcels identified with residential, recreation, retail, mixed use, worship and school designations. This preliminary plat submittal includes Parcel AA-1 of Planning Unit One. This parcel will be developed as a detached, single-family residential parcel with a net density of 2.76 du/ac. The remaining parcels within Planning Unit One will be subsequently submitted, under separate submittal packages, as they are developed per the City of Buckeye requirements.

Location

This preliminary plat consists of a portion of Section 26 of Township 4 North, Range 4 West of the Gila and Salt River Base and Meridian, Maricopa County, Arizona. The site is located within the City of Buckeye north of Sun Valley Parkway, and west of Desert Oasis Boulevard.

Zoning

The property is zoned Planned Community per the Festival Ranch CMP as approved by City Council in September of 2000.

Proposed Development

The portion of Sun City Festival Planning Unit One covered in this preliminary plat will be developed in two phases identified as Parcels AA-1 Phase 1 and AA-1 Phase 2. These parcels contain a total of 246 lots with three typical residential lot widths of 52, 64, and 75 feet. All lots will have a minimum depth of a 115 feet. Parcel AA-1 is planned with various walking trails and open spaces spread throughout the development. Residents will also have access to the numerous amenities provided throughout Sun City Festival.

Preliminary Plat for Sun City Festival Parcels AA-1

The net area of the site is 89.15 acres. Landscaped open space totals 27.99 acres, which represents 31.4% of the net area.

Street Improvements

Parcel AA-1 is bordered to the south by Sun Valley Parkway. Desert Oasis Boulevard borders the site to the east. Bowen Avenue is currently under construction and is located to the north of Parcel AA-1. All residential streets have a 44-foot right of way. The local streets will be 32 ft wide from back-of-curb to back-of-curb as approved in the Festival Ranch CMP on September of 2000.

Utilities

There is an existing 15-inch trunk sewer main stubbed out to Parcel AA-1 at the intersection of Bowen Ave and 274th Ave. A connection to this 15-inch trunk sewer has been design as part of the Parcel F-2 plans. The 15-inch trunk sewer will be extended through Parcel AA-1 and connected with a 15-inch dry sewer located at the intersection of Desert Oasis Boulevard and Kristal Way.

Within Bowen Avenue, there is an existing 12-inch water line. This water line is a pressure zone 6 water line and will be the point of connection for Parcel AA-1. There is another 12-inch water line in Desert Oasis Boulevard. This water line is a a pressure zone 7 water line and cannot be used to serve the site.

An existing 12" reclaimed water line is located within Sun Valley Parkway and Desert Oasis Boulevard. The reclaimed water line conveys treated effluent to the golf course lakes located to the east of Desert Oasis Boulevard.

There are no other existing utilities in this portion of Planning Unit One within this preliminary plat.

Communications

Cox Communications will provide video, high-speed data and telephone services to Sun City Festival. Cox is currently constructing or has facilities within Sun City Festival to serve this project. Cox is aware of the development timeline for Sun City Festival and they have both expressed their ability to provide communications services in accordance with the project's needs.

Natural Gas

Pulte Homes has negotiated an agreement with Southwest Gas to provide natural gas service to Sun City Festival.

Electricity

Pulte Homes has worked with Arizona Public Service (APS) to provide electrical service to Sun City Festival. APS has installed a 69-kV, overhead transmission line that runs from approximately Bell Road and Cotton Lane west along the Salt River Project corridor to service the project. Pulte Homes and APS have also constructed a substation on the Sun City Festival property to service the project. The delivery of electrical service will be timed to meet the project's needs.

Open Space and Recreation

Sun City Festival residents have access to the amenities located throughout the community. These amenities include a 31,000 sq. ft. recreation center, a 25,000 sq. ft. recreation center, the ASU Lifelong Learning Academy, an 27 hole golf course, fitness center, pickle ball, bocce ball, basketball, tennis, softball, wood shop, dog park, and crafts studio.

Offsite & Onsite Stormwater Control

A master study of the storm water system was developed by Coe & Van Loo Consultants, Inc. The study has been recently updated as part of a regional master storm water system by Erie & Associates and excerpts from the report are included as part of the Preliminary Drainage Report. Parcel AA-1 has been designed in accordance with the updated study. (Dated September 30, 2014)

Water Supply and Distribution

A study of the water distribution system to serve the area was prepared by Wilson Engineers dated September of 2016).

The Sun City Festival potable water infrastructure consists of a system of water distribution mains, booster pump stations, pressure control valves, wells and storage tanks.

The number of wells has been determined based on the maximum day demand and coincident irrigation and construction water use demands. Well production rates have been assumed to be 1,200 gpm, based on information from Errol Montgomery and Associates, Inc. Initially three groundwater wells will be in operation. Two of the wells currently serving Sun City Festival are located south of Beardsley Parkway and one is located north of Beardsley Parkway. The three wells are of sufficient size and capacity to serve Parcel AA-1. Well #1 is in Parcel E1, Well #2 is within the confines of the water campus and Well #3 is located in Parcel N1. There are three additional well sites proposed within Sun City Festival for future development.

The booster pump stations have been designed to meet the greater of the maximum day demand plus fire flow or the peak hour demand. The storage tanks will supplement the source supply when demands exceed maximum day demand (i.e. peak hour and fire flow). Initial storage requirements are based on a four-hour commercial fire flow of maximum intensity and 50% maximum day demand equalization and emergency reserve.

The parcels currently being developed are located within the City of Buckeye pressure zone 6 and have been found to have adequate pressure and supply to serve the associated parcels.

Wastewater Collection and Treatment

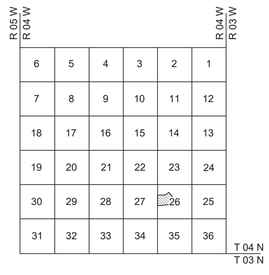
A study of the wastewater collection and treatment system to serve this area was prepared by Wilson Engineers (dated September 2016).

Based on the natural topography, the wastewater collection infrastructure consists of an existing gravity trunk sewer line located at the intersection of Bowen Avenue and 274th Avenue. The trunk sewer follows street alignments and/or sewer easements, and has been internalized in the residential streets where possible. The trunk sewer discharges to the Festival Ranch Water Reclamation Facility (WRF), located at the southwest corner of the development, south of Sun Valley Parkway.

Public Services

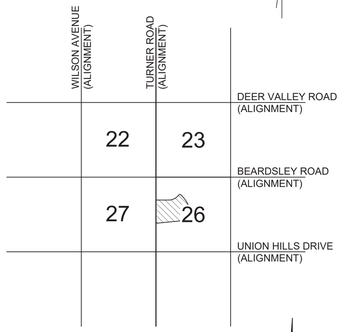
Police and fire services will be provided for the community by the City of Buckeye. Emergency staff will be stationed at Buckeye Fire House No. 704. The Fire House is located near the intersection of Beardsley Parkway and Desert Oasis Boulevard.

Sun City Festival Parcel AA-1 is an active adult community and will not have an impact to the public schools in the area.



VICINITY MAP

NOT TO SCALE



LOCATION MAP

NOT TO SCALE

FEMA FLOOD ZONE INFORMATION

COMMUNITY NUMBER	PANEL NUMBER	MAP NUMBER	DATE OF FIRM	FIRM ZONE	BASE FLOOD ELEVATION (IN AO USE DEPTH)
040039	1170L	04013C1170L	10/16/13	X	-

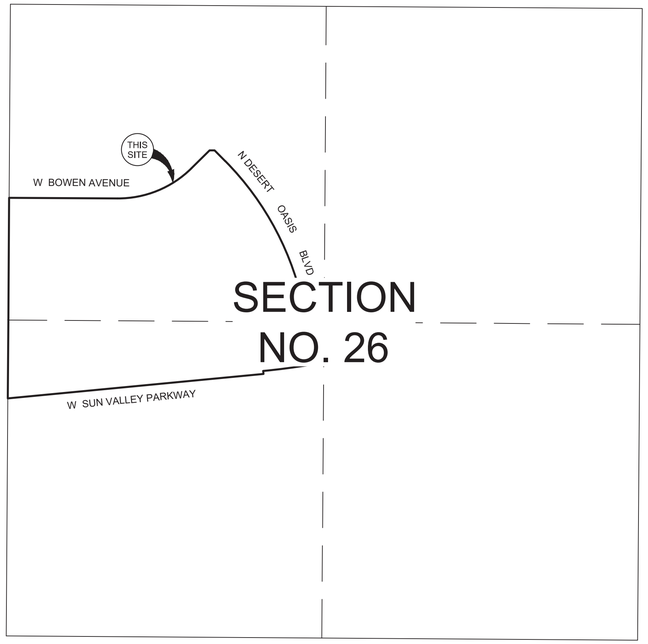
ALL FLOOD ZONES ARE SHOWN IN THIS PLAN SET

GENERAL NOTES

1. THE INTENT OF THIS PRELIMINARY PLAT IS TO MEET THE REQUIREMENTS OF THE FESTIVAL RANCH COMMUNITY MASTER PLAN (CMP) APPROVED BY THE CITY OF BUCKEYE SEPTEMBER 2000 AND ALL AMENDMENTS THERETO.
2. THIS PRELIMINARY PLAT IS INTENDED TO COVER THE FOLLOWING PARCEL: AA1. ALL OTHER PARCELS WILL HAVE TO BE SUBMITTED UNDER SEPARATE PRELIMINARY PLAT OR SITE PLAN SUBMITTALS AS REQUIRED BY THE CITY OF BUCKEYE.
3. STREET NAMES WILL BE PROVIDED BY THE DEVELOPER IN CONJUNCTION WITH THE FINAL PLAT AND APPROVED BY THE FIRE CHIEF.
4. ALL SETBACKS SHALL CONFORM WITH THE FESTIVAL RANCH COMMUNITY MASTER PLAN (CMP) APPROVED BY THE CITY OF BUCKEYE SEPTEMBER 2000 AND ALL AMENDMENTS THERETO OR AS APPLICABLE TO THE CITY OF BUCKEYE, DEVELOPMENT CODE.
5. THE PROPERTY IS ZONED PLANNED COMMUNITY (PC) PER THE FESTIVAL RANCH COMMUNITY MASTER PLAN (CMP) AS APPROVED BY THE CITY COUNCIL IN SEPTEMBER, 2000
6. THE DECLARATION OF COVENANTS, CONDITIONS AND RESTRICTIONS FOR SUN CITY FESTIVAL, DOCUMENT #20051720347 WAS RECORDED 11/14/05.
7. ALL RESIDENTIAL LOTS SHALL CONFORM TO THE FESTIVAL RANCH COMMUNITY MASTERPLAN (CMP), DEVELOPMENT OPTION 2, R1-4.5 ZONING CATEGORY.
8. THIS PLAT IS WITHIN CMP PLANNING UNIT E AND PULTE'S PLANNING AREA.
9. THIS PLAT LIES WITHIN FEMA FLOOD INSURANCE RATE MAP (FIRM) PANEL NUMBERS C1170L, DATED OCTOBER 16, 2013. THIS PROJECT FALLS UNDER ZONE "X", DEFINED AS "AREAS OF 0.2% ANNUAL CHANCE FLOOD; AREAS OF 1% ANNUAL CHANCE FLOOD WITH AVERAGE DEPTHS OF LESS THAN 1 FOOT OR WITH DRAINAGE AREAS LESS THAN 1 SQUARE MILE; AND AREAS PROTECTED BY LEVEES FROM 1% ANNUAL CHANCE FLOOD."
10. THIS PLAT FALLS WITH IN THE WICKENBURG UNIFIED SCHOOL DISTRICT.

3rd Submittal
PLZ5-21-00105
RECEIVED
JULY 12 2021
CITY OF BUCKEYE by: WD

PRELIMINARY PLAT
FOR
SUN CITY FESTIVAL - PARCEL AA1
A PARCEL OF LAND SITUATED IN A PORTION OF SECTION 26, TOWNSHIP 4 NORTH, RANGE 4 WEST OF THE GILA AND SALT RIVER BASE AND MERIDIAN, CITY OF BUCKEYE, MARICOPA COUNTY, ARIZONA



OVERALL DEVELOPMENT

NOT TO SCALE

SCALE: NTS

ENGINEER
CARDNO INC.
DANIEL J. POTTINGER, P.E.
19621 N. 23RD DRIVE, SUITE 150
PHOENIX, AZ 85027
PHONE: (602) 977-8000
FAX: (602) 997-8099

DEVELOPER
PULTE HOME COMPANY, LLC
LAURA MEYERS
16767 NORTH PERIMETER DRIVE, SUITE 100
SCOTTSDALE, AZ 85260
PHONE: (480) 391-6000
FAX: (480) 391-6100

SHEET INDEX

1 COVER SHEET
2 CROSS SECTIONS & DETAILS
3 PRELIMINARY PLAT
4 PRELIMINARY WATER & SEWER
5 STREET NAME EXHIBIT

BENCHMARK

ALUMINUM CAP IN A 5 INCH PVC PIPE WITH A COUNTY LOGO ACCESS COVER STAMPED 4HH2, 1999, SURROUNDED WITH A CONCRETE COLLAR FLUSH WITH THE GROUND, WITNESSED BY A WHITE CARSONITE MARKER, ELEVATION - 1566.565' (NAVD 88) LOCATED WITHIN SECTION 15, TOWNSHIP 4N, RANGE 4W.

BASIS OF BEARING

ARIZONA STATE PLANE COORDINATES SYSTEM, CENTRAL ZONE, BASED ON THE NORTH AMERICAN DATUM OF 1983 (NATIONAL SPATIAL REFERENCE SYSTEM OF 2007) [NAD83(NSRS2007)]. NO ROTATION APPLIED.

UTILITY COMPANIES

SEWER	CITY OF BUCKEYE
WATER	CITY OF BUCKEYE
ELECTRIC	APS/SRP
TELEPHONE	COX
CATV	COX
GAS	SOUTHWEST GAS
GAS	TRANSWESTERN
INTERNET	ZONA COMMUNICATIONS

Call at least two full working days before you begin excavation. ARIZONA811 Arizona Blue Stake, Inc. Dial 8-1-1 or 1-800-STAKE-IT (782-5348) In Maricopa County: (602) 263-1100

MANAGING ENGINEERING / SURVEYOR: DANIEL J. POTTINGER, P.E.
PROJECT COORDINATOR: DANIEL J. POTTINGER, P.E.
DESIGN LAYOUT: DLP | DRAFTED: LPJ | CHECKED: DJP
FIELD SURVEY: | DRAFTED: | CHECKED:
DRAWING SCALES: NTS

PLAN TYPE: PRELIMINARY PLAT

ENGINEER INFORMATION:
Cardno
PHOENIX
19621 N. 23RD DR. STE 150 PHOENIX, AZ 85027
TEL (602) 977-8000 FAX (602) 977-8089
www.cardno.com

PROJECT: SUN CITY FESTIVAL PARCEL AA1

PROJECT PLAN STICKER

REVISIONS:
1
2
3

COB PERMITTING APPROVED STAMP | COB ENGINEERING APPROVED STAMP

(POSSIBLE AS-BUILT SEAL) | DESIGN SEAL

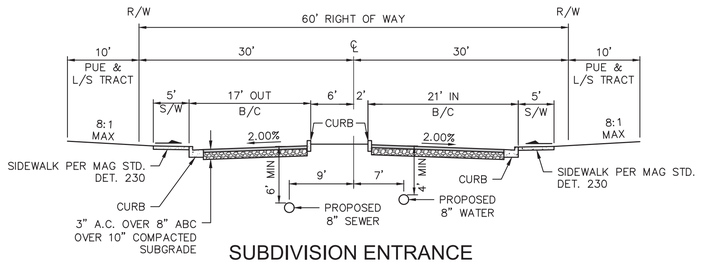
Registered Professional Engineer (Civil) CERTIFICATE NO. 36384 DANIEL J. POTTINGER Date Signed 6/7/21 ARIZONA, U.S.A. Expires 6/30/22

SUBMITTAL

ORIGINAL PLAN DATE: MAY/2021
LATEST REVISION DATE:
PROJECT NUMBER: 4151097000
SHEET NUMBER: 1 of 5

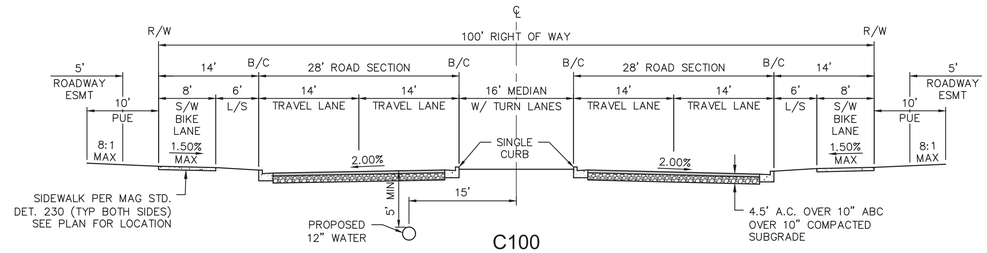
COB PLAN TRACKING #
COB PERMIT #: PLZ-21-00105

W:\4151097000\Civil_CD\TIM\1097-TTM-001.dwg Dan Pottinger 7/8/21 8:00:28 AM



SUBDIVISION ENTRANCE

(PER APPROVED FESTIVAL RANCH CMP DATED SEPTEMBER 2000)
21' IN & 17' OUT B/C TO B/C WITH 60' R/W
NTS



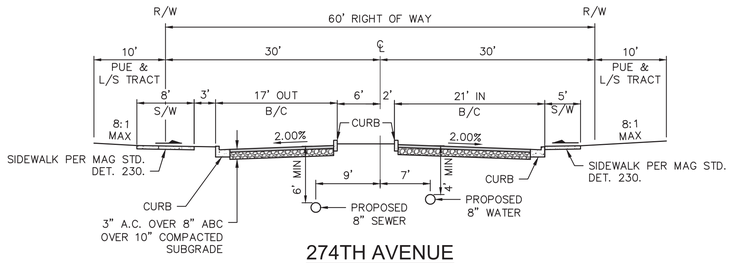
C100

MAJOR COLLECTOR (BIKE OFF ROAD) BOWEN AVENUE

(PER APPROVED FESTIVAL RANCH CMP DATED SEPTEMBER 2000)
NTS

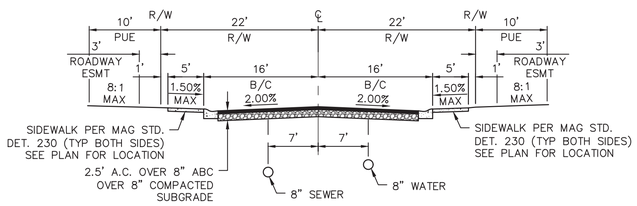
LEGEND

8"W	PROPOSED WATER
	PROPOSED FIRE HYDRANT
⊗	PROPOSED WATER VALVE
8"S	PROPOSED SEWER
	PROPOSED SEWER MANHOLE
	PROPOSED SEWER CLEANOUT
EX 8"W	EXISTING WATER
⊗	EXISTING WATER VALVE
	EXISTING FIRE HYDRANT
EX 12"RW	EXISTING RECLAIMED WATER
EX 8"S	EXISTING SEWER
	EXISTING SEWER MANHOLE
1002	EXISTING CONTOURS
VNAE	VEHICLE NON-ACCESS EASEMENT
	PARCEL BOUNDARY
	SHEET BOUNDARY
	STREET DRAINAGE
	PROPOSED SEWER FLOW
PUE	PUBLIC UTILITY EASEMENT
RDWY ESMT	ROADWAY EASEMENT
WS	WATER SAMPLING STATION



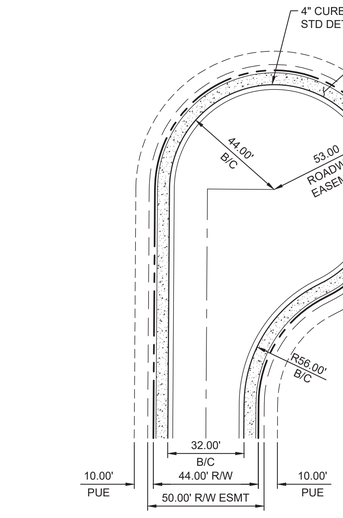
274TH AVENUE

(PER APPROVED FESTIVAL RANCH CMP DATED SEPTEMBER 2000)
21' IN & 17' OUT B/C TO B/C WITH 60' R/W
(LOOKING SOUTH)
NTS



TYPICAL LOCAL STREET

(PER APPROVED FESTIVAL RANCH CMP DATED SEPTEMBER 2000)
FACING NORTH AND EAST
NTS



TYPICAL CUL-DE-SAC

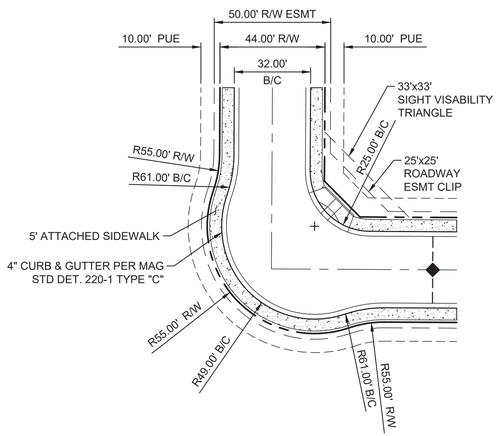
N.T.S.

SITE DATA

AREA			
PARCEL	NET AREA		
AA1	3,883,171.27 SF	89.15 AC	
DENSITY			
NET DENSITY	2.77 UNITS/AC		
LOT SIZE 52'x115', 64'X115', 75'X125'			
ZONING: PLANNED COMMUNITY			
LOTTING			
PARCEL	LOTS		
PHASE 1	52'=55	64'=56	
PHASE 2	52'=22	64'=81	75'=32
TOTAL	246 LOTS		

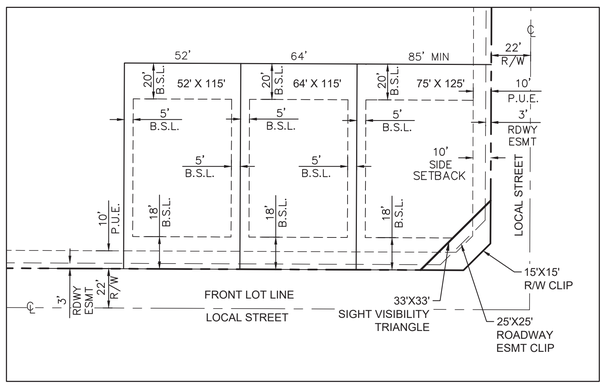
TRACT TABLE

TRACT	AREA		USE
A	427,874 SF	9.82 AC	LANDSCAPE/DETENTION
B	316,769 SF	7.27 AC	LANDSCAPE/DETENTION
C	198,179 SF	4.55 AC	LANDSCAPE/DETENTION
D	163,704 SF	3.76 AC	UTILITY/LANDSCAPE/DETENTION
E	105,192 SF	2.41 AC	LANDSCAPE/DETENTION
F	3,750 SF	0.09 AC	LANDSCAPE/DETENTION
G	3,753 SF	0.09 AC	LANDSCAPE/DETENTION
TOTAL	1,219,221 SF	27.99 AC	



TYPICAL KNUCKLE

N.T.S.



CMP DEVELOPMENT OPTION R1-4.5

NOTES:
1. NO OBJECT, WALL, STRUCTURE, MOUND, OR MATURE LANDSCAPING OVER 24" IN HEIGHT SHALL BE ALLOWED WITHIN THE SIGHT VISIBILITY TRIANGLES. TREE CANOPIES THAT OVERHANG THE SVT'S SHALL BE KEPT TRIMMED NO LOWER THAN SEVEN (7) FEET ABOVE THE BACK OF CURB. CANOPIES THAT OVERHANG ROADWAYS SHALL BE KEPT TRIMMED NO LONGER THAN 18 FEET ABOVETHE ROADWAY

NOTES

1. PUE/LANDSCAPE 8:1 MAX SLOPE.
2. CURB AND GUTTER PER MAG STANDARDS. DETERMINED WITH FINAL CONSTRUCTION DOCUMENTS.
3. SANITARY SEWER MAINS SHALL BE PLACED SOUTH OR WEST OF CENTER LINE UNLESS EXISTING SEWER LINES REQUIRE ALTERNATE LOCATION.
4. WATER MAINS SHALL BE PLACED NORTH OR EAST OF CENTERLINE UNLESS EXISTING SEWER LINES REQUIRE ALTERNATE LOCATION.
5. PAVEMENT AND BASE REQUIREMENTS: TO BE PER C.O.B. REQUIREMENTS AND GEOTECHNICAL REPORT RECOMMENDATIONS.
6. ALL ROADWAY SECTIONS, CUL-DE-SAC, KNUCKLE AND TYPICAL LOTTING DETAILS PER APPROVED FESTIVAL RANCH CMP DATED SEPTEMBER 2000.

Call at least two full working days before you begin excavation.
ARIZONA 811
Arizona Blue Stake, Inc.
Dial 8-1-1 or 1-800-STAKE-IT (782-5348)
In Maricopa County: (602) 263-1100

TITLE
SUN CITY FESTIVAL
PARCEL AA1
PRELIMINARY PLAT

ENGINEER INFORMATION
Cardno Shaping the Future
PHOENIX
19621 N. 23RD DR. STE 150
PHOENIX, AZ 85027
TEL: (602) 977-8000 FAX: (602) 977-8099
www.cardno.com

COB PERMITTING APPROVED SEAL
COB ENGINEERING APPROVED SEAL
(POSSIBLE AS-BUILT SEAL)
DESIGN SEAL

ORIGINAL PLAN DATE: JULY/2021
LATEST REVISION DATE: -
PROJECT NUMBER: 4151097000
SHEET NUMBER: 2 of 5

SUBMITTAL: -
COB PLAN TRACKING #:
COB PERMIT #: PLZ-21-00105

7/8/21 7:22:03 AM Dan Pottinger W:\4151097000\Civil_CD\TM\1097-TTM-002.dwg

LINE/CURVE DATA TABLE				
NO.	BEARING/DELTA	RADIUS	LENGTH	TANGENT
C1	45°03'01"	870.00	684.06	360.81
C2	34°01'56"	2435.00	1446.33	745.20
C3	4°08'16"	5400.01	389.99	195.08
L1	S89°41'59.00"E	--	42.43	--
L2	S44°41'59.17"E	--	125.93	--
L3	S34°53'22.02"W	--	55.98	--
L4	S5°31'54.00"E	--	25.00	--

TITLE

SUN CITY FESTIVAL
PARCEL AA1
PRELIMINARY PLAT

ENGINEER INFORMATION

Cardno
Shaping the Future

PHOENIX
19621 N. 23RD DR, STE 150
PHOENIX, AZ 85027
TEL: (602) 977-8000 FAX: (602) 977-8099
www.cardno.com

COB PERMITTING APPROVED SEAL

COB ENGINEERING APPROVED SEAL

(POSSIBLE AS-BUILT SEAL)

DESIGN SEAL

Registered Professional Engineer (Civil)
CERTIFICATE NO. 36384
DANIEL J. POTTINGER
Date Signed 07/08/21
ARIZONA, U.S.A.
Expires 6/30/22

SUBMITTAL:

ORIGINAL PLAN DATE: JULY/2021

LATEST REVISION DATE: -

PROJECT NUMBER: 4151097000

SHEET NUMBER: 3 of 5

COB PLAN TRACKING #: -

COB PERMIT #: PLZ-21-00105

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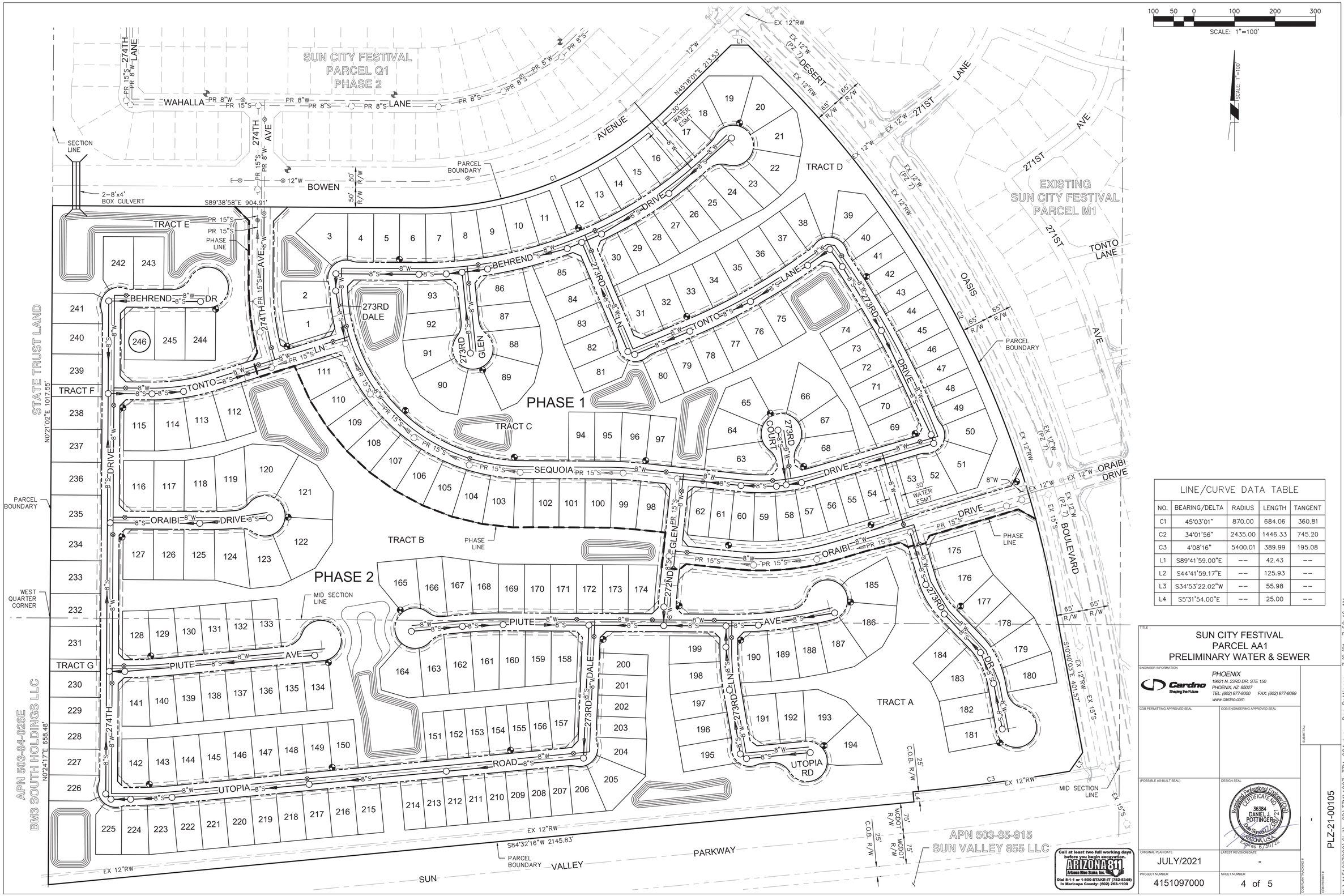
Call at least two full working days before you begin excavation.
ARIZONA 811
Arizona Blue Stake, Inc.
Dial 8-1-1 or 1-800-STAKE-IT (782-5348)
In Maricopa County: (602) 263-1100



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C3	4°08'16"	5400.01	389.99	195.08
L1	S89°41'59.00"E	--	42.43	--
L2	S44°41'59.17"E	--	125.93	--
L3	S34°53'22.02"W	--	55.98	--
L4	S5°31'54.00"E	--	25.00	--

TITLE

SUN CITY FESTIVAL
PARCEL AA1
PRELIMINARY WATER & SEWER

ENGINEER INFORMATION

Cardno
Shaping the Future

PHOENIX
19621 N. 23RD DR, STE 150
PHOENIX, AZ 85027
TEL: (602) 977-8000 FAX: (602) 977-8099
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COB PERMITTING APPROVED SEAL

COB ENGINEERING APPROVED SEAL

SUBMITTAL:

(POSSIBLE AS-BUILT SEAL)

DESIGN SEAL

Registered Professional Engineer (Civil)
CERTIFICATE NO. 36384
DANIEL J. POTTINGER
Date Signed 7/08/21
ARIZONA, U.S.A.
Expires 6/30/22

ORIGINAL PLAN DATE: JULY/2021

LATEST REVISION DATE: -

PROJECT NUMBER: 4151097000

SHEET NUMBER: 4 of 5

COB PLAN TRACKING #: -

COB PERMIT #: PLZ-21-00105

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SCALE: 1"=100'

SCALE: 1"=100'

LINE/CURVE DATA TABLE				
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TITLE
SUN CITY FESTIVAL
PARCEL AA1
STREET NAME EXHIBIT

ENGINEER INFORMATION
Cardno Shaping the Future
PHOENIX
19621 N. 23RD DR, STE 150
PHOENIX, AZ 85027
TEL: (602) 977-8000 FAX: (602) 977-8099
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COB PERMITTING APPROVED SEAL

COB ENGINEERING APPROVED SEAL

(POSSIBLE AS-BUILT SEAL)

DESIGN SEAL
Registered Professional Engineer (Civil)
CERTIFICATE NO.
36384
DANIEL J. POTTINGER
Date Signed 7/8/21
ARIZONA, U.S.A.
Expires 6/30/22

ORIGINAL PLAN DATE	LATEST REVISION DATE
JULY/2021	-
PROJECT NUMBER	SHEET NUMBER
4151097000	5 of 5

SUBMITTAL: -

COB PERMIT #: PLZ-21-00105

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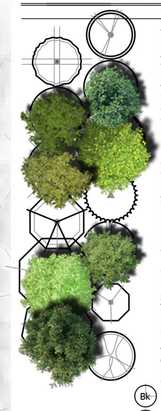
Call at least two full working days before you begin excavation.
ARIZONA 811 Arizona Blue Stake, Inc.
Dial 8-1-1 or 1-800-STAKE-IT (782-5348)
In Maricopa County: (602) 263-1100

PLANT MATERIALS LEGEND



Trees	Size
Acacia aneura Mulga Acacia	24" Box
Acacia salicina Willow Acacia	24" Box
Acacia smallii Sweet Acacia	24" Box
Caeselpinia cacalaco Cascalote	24" Box
Parkinsonia hyb. 'Desert Museum' Palo Verde	24" Box
Chitalpa tashkinensis Chitalpa	24" Box
Fraxinus velutina Velvet Ash	24" Box
Prosopis galndulosa Honey Mesquite	24" Box
Prosopis hybrid Thornless Mesquite	24" Box
Quercus virginiana Heritage Oak	24" Box
Sophora secundiflora Texas Mountain Laurel	24" Box
Ulmus parvifolia 'Allee' Elm	24" Box
Vitex agnus-castus Chaste Tree	24" Box

Extra Large Shrubs	Size
Bougainvillea 'Barbara Karst' Bougainvillea	5 gal.
Caeselpinia mexicana Mexican Bird of Paradise	5 gal.
Caeselpinia pulcherrima Red Bird of Paradise	5 gal.
Dodonea viscosa Hopbush	5 gal.
Tecoma alata 'Orange Jubilee' Orange Jubilee	15 gal.
Vaquelina californica Arizona Rosewood	15 gal.

Large Shrubs	Size
Calliandra californica Red Fairy Duster	5 gal.
Cassia artemesoides 'Silver' Silver Cassia	5 gal.
Larrea tridentata Creosote	5 gal.
Leucophyllum frutescens 'Green Cloud' Green Cloud Sage	5 gal.
Leucophyllum langmaniae 'Lynn's Legacy' Lynn's Legacy Sage	5 gal.
Leucophyllum langmaniae 'Rio Bravo' Rio Bravo Sage	5 gal.
Simmondsia Chinensis Jojoba	15 gal.
Viguira deltoidea Goldeneye	1 gal.

Medium Shrubs	Size
Eremophila glabra spp. caranosa-Winter Blaze Winter Blaze	5 gal.
Eremophila hygrophana Blue Bells Blue Bells	5 gal.
Leucophyllum candidum 'Thunder Cloud' Thunder Cloud Sage	5 gal.
Rosmarinus officinalis Rosemary	5 gal.
Ruellia brittoniana Ruellia	5 gal.
Ruellia peninsularis Desert Ruellia	5 gal.

Small Shrubs	Size
Ambrosia deltoidea Triangle Leaf Bursage	1 gal.

Groundcovers	Size
Acacia redolens Prostrate Acacia	1 gal.
Eremophila prostrata 'Outback Sunrise' Outback Sunrise Eremophila	1 gal
Lantana sp. 'New Red' Lantana	1 gal.
Lantana sp. 'New Gold' Lantana	1 gal.
Rosmarinus officinalis 'Prostratus' Trailing Rosemary	1 gal.
Trachleospermum jasminoides Asiatic Jasmine	1 gal.
Verbena goodingii Gooding's Verbena	1 gal.

Cacti/ Accents	Size
Agave americana 'Marginata' Century Plant	5 gal.
Agave deserti Desert Agave	5 gal.
Agave geminiflora Twin Flowered Agave	5 gal.
Agave murpheyi Murphey's Agave	5 gal.
Aloe barbadensis Medicinal Aloe	5 Gal.
Asclepias subulata Desert Milkweed	5 gal.
Carnegeia gigantea Saugauro	6' spear
Dasylirion quadrangulatum Mexican Grass Tree	5 gal.
Dasylirion wheeleri Desert Spoon	5 gal.
Fouquieria splendens Ocotillo	8 cane min.
Hesperaloe funifera Giant Hesperaloe	5 gal
Hesperaloe parviflora Yellow Yucca	5 gal.
Muhlenbergia capillaris 'Regal Mist'	5 gal.
Muhlenbergia lindheimeri 'Autumn Glow'	5 gal.
Muhlenbergia rigens Deer Grass	1 gal.
Nolina bigelovii Beargrass	5 gal.
Opuntia basilaris Bevertail Prickly Pear	5 gal.
Opuntia englemannii Engelmann's Prickly Pear	5 gal.
Yucca baccata Banana Yucca	5 Gal.
Yucca pallida Pale Leaf Yucca	5 gal
Yucca rupicola Twisted Leaf Yucca	5 Gal.

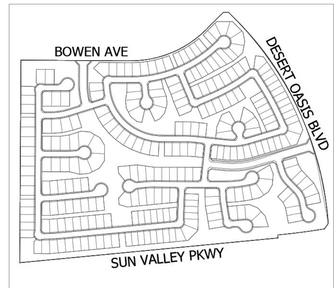
Vines	Size
Bougainvillea 'Barbara Karst' Bougainvillea	5 gal
Bougainvillea 'San Diego Red' Bougainvillea	5 gal
Gelsemium sempevirens Carolina Jessamine	5 gal

TYPICAL NOTES:

*ADDITIONAL PLANT MATERIAL SELECTIONS MAY BE ADDED TO FUTURE CONSTRUCTION PLANS AS SELECTED FROM THE ADWR LOW WATER PLANT LIST OR THE APPROVED PUP E AMENDMENT AREA PLANT PALETTE.

- ALL INTERSECTIONS HAVE SIGHT VISIBILITY TRIANGLES PER CITY OF BUCKEYE EDS 6-3.307, ALL TREES SHALL BE 20' FROM STREET LIGHTS AND ALL VEGETATION SHALL BE 6' CLEAR FROM FIRE HYDRANTS
- LOW WATER USE AND LOW MAINTENANCE LANDSCAPE IN OPEN SPACE TRACTS
- ALL LANDSCAPE FEATURES TO BE MAINTAINED BY A PRIVATE HOME OWNERS ASSOCIATION (ESTABLISHED BY THE DEVELOPER)
- 2" DEEP GRANITE TO BE APPLIED TO ALL LANDSCAPE AREAS, COLOR AND SIZE TO BE CONSISTENT WITH EXISTING PLANNING AREA 1.
- ALL LANDSCAPE TO BE WATERED BY BELOW-GRADE AUTOMATED IRRIGATION SYSTEM.

3rd Submittal
PLZS-21-00105
RECEIVED
JULY 12 2021
CITY OF BUCKEYE by: WD



KEY MAP

NOT TO SCALE

PulteGroup
Del Webb

FESTIVAL RANCH - AA1

Overall Landscape Plan

Plan Scale: 1:100' (100' 200' 300')

Date: 07-08-2021

Sheet 1 of 5

ABLASTUDIO.COM

ABLA

WALL LEGEND

SYMBOL	DESCRIPTION
	PERIMETER THEME WALL
	PILASTER WALL
	PILASTER
	ENTRY MONUMENT

TYPICAL NOTES:

- ALL INTERSECTIONS HAVE SIGHT VISIBILITY TRIANGLES PER CITY OF BUCKEYE EDS 6-3.307, ALL TREES SHALL BE 20' FROM STREET LIGHTS AND ALL VEGETATION SHALL BE 6' CLEAR FROM FIRE HYDRANTS
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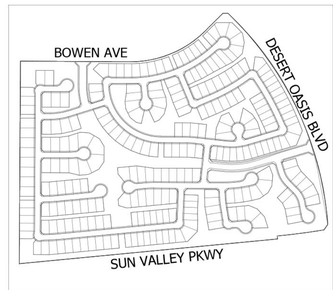
- ALL LANDSCAPE TO BE WATERED BY BELOW-GRADE AUTOMATED IRRIGATION SYSTEM
- WALL ELEVATIONS SHOWN ARE CONCEPTUAL AND MAY CHANGE. ANY DEVIATIONS WILL BE SUBMITTED WITH FINAL CONSTRUCTION DOCUMENTS FOR APPROVAL.



KEY MAP NOT TO SCALE

PulteGroup
Del Webb

FESTIVAL RANCH - AA1

Wall Plan

Plan Scale: 1:150' 150' 300' 450' Date: 07-08-2021

Sheet 2 of 5

ABLASTUDIO.COM

ABLA

LEGEND

SYMBOL	DESCRIPTION
	5' WIDE CONCRETE TRAIL
	ATTACHED SIDEWALK ALONG STREET
	8' WIDE CONCRETE TRAIL

TYPICAL NOTES:

- ALL INTERSECTIONS HAVE SIGHT VISIBILITY TRIANGLES PER CITY OF BUCKEYE EDS 6-3.307, ALL TREES SHALL BE 20' FROM STREET LIGHTS AND ALL VEGETATION SHALL BE 6' CLEAR FROM FIRE HYDRANTS
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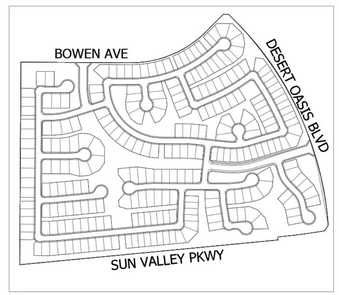

KEY MAP

NOT TO SCALE

PulteGroup
Del Webb

FESTIVAL RANCH - AA1

Circulation Plan

Plan Scale: 1:100' (100' 200' 300')

Date: 07-08-2021

Sheet 3 of 5

ABLASTUDIO.COM

ABLA

LEGEND

SYMBOL	DESCRIPTION
	5' WIDE CONCRETE TRAIL
	ATTACHED SIDEWALK ALONG STREET
	8' WIDE CONCRETE TRAIL

TYPICAL NOTES:

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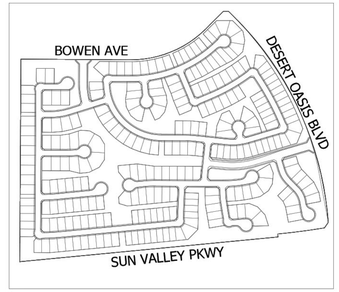
Open Space Data		
	Acres	Percent
Gross Acerage	89.19	100.00%
Open Space Required	17.84	20.00%
Open Space Provided	29.81	33.27%
Active Open Space	5.98	6.70%

*Trails are included as the width x length of the trail.



KEY MAP NOT TO SCALE

PulteGroup
Del Webb

FESTIVAL RANCH - AA1

Open Space Plan

Plan Scale: 1:100' 100' 200' 300' Date: 07-08-2021

Sheet 4 of 5

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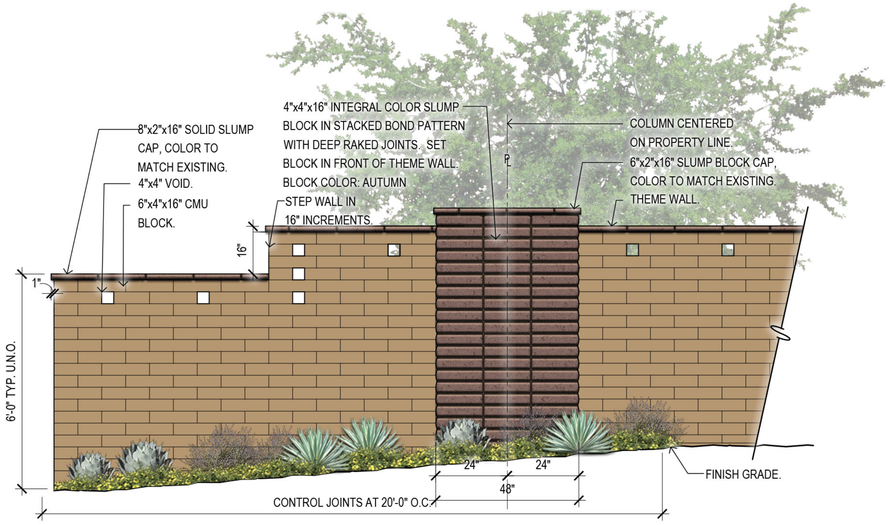
AB LA

Open Space

Mailbox

Entry Monument

Parcel Entry Monument



Primary Theme Wall with Pilaster

PulteGroup
Del Webb

FESTIVAL RANCH - AA1

Character Board

Date: 07-08-2021

Sheet 5 of 5

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ABLA

CITY OF BUCKEYE
Regular Planning & Zoning Commission
PLANNING ACTION REPORT

MEETING DATE: 08/24/21	**AGENDA ITEM:** 3.B. PLZS-20-00093 Festival Ranch Planning Area 3 Parcels 33 and 35 Preliminary Plat
DATE PREPARED: 08/19/21	**DISTRICT NO.:** 4
STAFF LIAISON: Robert Busick, Planner II, rbusick@buckeyeaz.gov, (623) 349-6242	
DEPARTMENT: Development Services	**AGENDA ITEM TYPE:** Public Meeting / Non Consent - New Business

ACTION/MOTION: (This language identifies the formal motion to be made by the Voting Members)
Festival Ranch Planning Area 3 Parcels 33 and 35 Preliminary Plat (PLZS-20-00093)
Recommendation to approve a Preliminary Plat for 325 single-family residential lots in the Planned Community (PC) Zoning District and Festival Ranch (CMP) Zoning Overlay District.

SUMMARY

Items related to a project or facility location must include an attached vicinity map for Council Review.

ATTACHMENTS:
PLZS-20-00093 Staff Report.pdf
Vicinity Map.pdf
Narrative.pdf
Preliminary Plat.pdf
Conceptual Landscape Plan.pdf

PRELIMINARY PLAT

Report to the Planning and Zoning Commission

CASE NUMBER:	**PLZS-20-00093**
TITLE:	**Festival Ranch Planning Area 3 Parcels 33 & 35 Preliminary Plat**
MEETING DATE:	**August 24, 2021**

Applicant:	Cardno, Inc.
Owner:	Pulte Corporation
Request:	A Preliminary Plat for 325 lots in two (2) development parcels within the Festival Ranch Community Master Plan (CMP) zoning district overlay and Planned Community (PC) zoning district.
District	District 4
Location:	NW of Beardsley Parkway and Desert Oasis Boulevard
Site size:	101.60 acres
Density:	3.20 dwelling units per acre
Public input:	None
Recommendation:	**Approve** with conditions

PROJECT DESCRIPTION

1. Pulte Homes is requesting a preliminary plat approval for 325 conventional single-family residential lots to be developed in two development parcels on 101.6 acres generally located northwest of Beardsley Parkway and Desert Oasis Boulevard within the Festival Ranch community.

2. The area within this preliminary plat is adjacent to developed portions of Sun City Festival to the east and the Central Arizona Project canal to the north. To the west and south are undeveloped phases of the Festival Ranch community.

3. This request is for a preliminary plat only and, if approved, a final plat demonstrating compliance with the Development Code standards will be required.

AREA CONTEXT

Table 1: *Existing Land Use, General Plan Designation, and Zoning District*

	LAND USE	GENERAL PLAN	ZONING
Subject Property	**Vacant**	**Master Planned Community**	**Planned Community (PC), Festival Ranch CMP**
North	Central Arizona Project canal	Open Space	Planned Community (PC), no CMP
South	Sun City Festival	Master Planned Community	Planned Community (PC), Festival Ranch CMP
East	Sun City Festival	Master Planned Community	Planned Community (PC), Festival Ranch CMP
West	Festival Ranch (undeveloped)	Master Planned Community	Planned Community (PC), Festival Ranch CMP

PUBLIC PARTICIPATION

4. Legal notice is not required for preliminary plats; however, the applicant has advertised in accordance with Section 8 of the Development Code via mailed notice to those property owners within 300 feet of the subject site, including the Homeowners' Associations for both Festival Foothills and Sun City Festival. The notice of application was mailed on March 9, 2021, and any public input received will be shared at this project's Planning and Zoning Commission hearing.

Table 2: *Public Notice*

Notification Element	Date
Mailing to Property Owners w/in 300'	March 9, 2021

BACKGROUND

5. 1991: Annexation 7-91: Approximately 14,276 acres were annexed.
6. 2000: 84-00: Festival Ranch Community Master Plan (CMP) established encompassing approximately 10,105 acres.
7. 2008: Most recent Festival Ranch CMP amendment.
8. October 2016: Festival Ranch Planning Unit Plan (PUP) E approved.
9. December 2020: Festival Ranch PUP E Amendment, incorporating 197 acres of land formerly designated part of a separate Planning Unit and refining land uses for miscellaneous development parcels yet to develop.

ANALYSIS

Land Use Allocations

10. The preliminary plat contains 325 detached, conventional single-family lots contained in two (2) development parcels: Parcel 33 and Parcel 35. The project density (3.20 du/ac) is consistent with the densities throughout Festival Ranch and the approved CMP and Planning Unit Plan.

Table 2: *Residential Lot Mix*

Lot Size (min)	Lot Count	Lot Mix (Percentage)
45' x 115'	147	45.23%
50' x 115'	118	36.31%
55' x 115'	60	18.46%
Total	**325**	**100%**

Table 3: *Lot Setbacks*

Lot Type	Development Option	Front*	Interior Side / Corner	Rear
45' x 115'	R1-3.5	18-ft garage 10-ft living space or side-load garage	5-ft and 5-ft / 10-ft	15-ft
50' x 115'	R1-3.5	18-ft garage 10-ft living space or side-load garage	5-ft and 5-ft / 10-ft	15-ft
55' x 115'	R1-3.5	18-ft garage 10-ft living space or side-load garage	5-ft and 5-ft / 10-ft	15-ft

**Setback to the front face of a garage to the nearest sidewalk edge is 20-feet.*

Schools

11. The project is within the Wickenburg Unified School District and the developer will submit a letter from the district stating there are adequate school facilities for the proposed development with each final plat submitted for review.

Circulation

12. Primary access to the project site is obtained from Beardsley Parkway, an arterial that forms the southern boundary of Parcels 33 and 35. A significant portion of the area included in this preliminary plat will eventually be dedicated as right-of-way for Beardsley Parkway to continue west. Beardsley Parkway connects to Desert Oasis Boulevard to the east; Desert Oasis Boulevard will provide access to Sun Valley Parkway. Local roads are planned to eventually connect to the west once future phases of Festival Ranch Planning Area 3 are developed.

Open Space / Trails

13. HOA-maintained landscaped tracts are proposed throughout the development which provide open space. Open space landscaped with vegetation and ground cover typical of the rest of Festival Ranch accounts for 20.28 acres (19.96%) of Parcels 33 and 35.

14. Sidewalks and paths are located throughout the open spaces in the parcel connecting to an 8-ft-wide concrete trail which runs along the northern boundary of the parcels, along the Central Arizona Project canal, connecting Parcels 33 and 35 to existing adjacent parcels in Festival Ranch. The parcel is part of Festival Foothills and will have access to regional trails, park, and other recreational facilities provided for the community.

15. A large tract central to the lots contained within this preliminary plat (Tract E) is being set aside as a community park area for the residents of this section of Festival Ranch. Proposals at this time include a swimming pool, restroom facilities, sunbathing deck, play structure, and active turf area. This amenity will be further analyzed through a separate Site Plan application to the City of Buckeye.

Site Design Details, Theming

16. The CMP and the Planning Unit Plan outline the wall, site, and other theme details that will be used throughout Festival Ranch Planning Area 3 Parcels 33 and 35. The conceptual landscape and wall plan shows the design of and where theme walls, view walls, entry features and other amenities will be located. Specifics will be finalized with the final landscaping plans.

Infrastructure

17. Water, Sewer, and effluent will be provided by the City and constructed by the developer as per the terms of the CMP, master reports, and development agreement.

Emergency Access

18. The project will utilize existing and planned local streets to provide adequate emergency access. The Fire Department will continue to work with Pulte to ensure that any non-street emergency access meets minimum safety standards

19. The following City of Buckeye departments have reviewed and have found no outstanding issues with the application for this Preliminary Plat:
    a. Engineering
    b. Fire
    c. Public Works
    d. Community Services
    e. Police
    f. Water Resources
    g. Development Services (both Planning Division and Building Safety Division)

RECOMMENDATION

20. Staff recommends the Planning and Zoning Commission motion for **approval** with conditions a - xx of **PLZS-20-00093** for the following reasons:

    - Conformance with General Plan

- Conformance with Development Code
- Conformance with Community Master Plan
- No outstanding issues for reviewing departments (Engineering, Fire, Public Works, Community Services, Police, Water Resources, and Development Services).

a. Development of the property shall be in general conformance with the Preliminary Plat entitled "Preliminary Plat for Festival Ranch Planning Area 3 – PUP E Parcels 33 & 35" consisting of nine (9) pages, dated June 2021, and stamped received July 21, 2021, except as modified by the following conditions.
b. Development of the property shall be in general conformance to the project narrative report entitled "Festival Ranch Planning Area 3 Parcels 33 & 35 Preliminary Plat Narrative" consisting of five (5) pages, dated August 3, 2021, and stamped received August 3, 2021, except as modified by the following conditions.
c. Development of the site shall be in general conformance with the Conceptual Landscape Plan entitled "Festival Ranch – PUP E Conceptual Landscape Plan" consisting of five (5) pages, dated June 21, 2021, and stamped received July 1, 2021, except as modified by the following conditions.
d. Preliminary plat approval is valid for a period of two (2) years. For a preliminary plat that identifies phases, the preliminary plat shall remain valid for a period not to exceed two (2) years from the date of recording of any final plat that conforms to the approved preliminary plat. The Development Services Director or Designee may grant a one-time extension of 12 months, if in the opinion of the Director, satisfactory progress has been made towards completion of the final plat or for the next phase of subdivision development. Additional extensions may be approved through the discretion of the Planning and Zoning Commission.
e. The property owner/s and their successor waive any and all claims for diminution in value of the property with regard to any action taken by City of Buckeye as result of this approval.
f. This subdivision is subject to a Parkway Maintenance Improvement District (MID) and in accordance with City of Buckeye Ordinance 42-06. The MID shall be established prior to the recordation of the first Final Plat as determined in the MID guidelines.
g. This subdivision is subject to a Street Light Improvement District (SLID) in accordance with City of Buckeye Ordinance 43-05. The SLID shall be established prior to the recordation of the first Final Plat as determined in the SLID guidelines.
h. All landscaped areas within the public rights of way, whether to be maintained by the City of Buckeye or if delegated to the adjacent property owner, homeowners' association or other property maintenance association, shall be designed and sealed by a landscape architect licensed by the Arizona Board of Technical Registration. (The

above described MID requirement ensures protection of the city in case maintenance of the ROW landscaping is not kept up or is abandoned by the responsible owner.) The City Public Works Department shall review all irrigation plans for material selection only; therefore, the landscape architect shall coordinate with the Public Works Department early in the design to ensure the most efficient means of landscape irrigation that will reduce both long term maintenance costs and keep watering to the absolute minimum required for healthy growth of landscaping along the roadways of the City of Buckeye.

i. Artificial or synthetic turf shall be allowed on all surfaces where turf can be used. No individual or association may impose private covenants, conditions, restrictions, deed clauses or other agreements between parties which prevent individuals from utilizing artificial or synthetic turf as an alternative to any landscaping where turf can be used. The quality of the artificial or synthetic turf may be subject to the requirements of individuals or associations.
j. No new natural turf shall be installed in a public right-of-way or median. Areas with up to 10,000 square feet of turf within a public right-of-way at gateways, entrances to major communities, or special landscaping designs approved by the city's development services department are exempt from the restrictions of this stipulation.
k. Shrubbery in the right of way shall not obstruct any regulatory signage or sight distance triangle as defined in the Engineering Development Standards; therefore, shall be trimmed to less than 2’-0”.
l. Landscaping within the public-right-of-way will require:
    a. All landscaped areas, except those intentionally maintained with native plants, shall include an automatic irrigation system.
    b. All native plant landscaping plans shall include an establishment maintenance plan that ensures long term growth of all plantings.
    c. Establishment maintenance plan shall be sealed by a registered Landscape Architect.
    d. Water-efficient systems (e.g., drip, mini-spray, bubbler-type, or similar drip systems) shall be used whenever feasible. Low-flow sprinkler heads with matched precipitation rates shall be used when spray or rotor-type heads are specified for watering shrubs and ground cover areas.
    e. Multi-program weather sensing controllers with separated valves and circuits shall be used when the project contains more than one type of landscape treatment (e.g., lawn, ground cover, shrub, tree areas), or a variety of solar aspects.

f. Soil moisture-sensing devices and rain sensors shall be used on all projects within public rights of way and in landscape tracts. The use of satellite based controllers is encouraged.
g. Root barriers shall be designed and incorporated for all trees that are in the public right of way to ensure vertical root growth and avoid adjacent curb, sidewalk or pavement upheaval due to tree roots.
h. Linear Root barriers shall be used along public improvements that are only on one side of a tree.
i. Surround Root barriers shall be used when a tree is within the sidewalk or within a median.
j. Tree canopies extending into the right of way shall be trimmed to the following minimum standards: 18'-0" over any public roadway, 7'-0" over any public sidewalk.

m. All trash shall be collected through a City of Buckeye licensed trash hauler, including construction debris. Trash enclosures shall be in accordance with City of Buckeye standards.
n. Prohibited Trees: The following trees are prohibited from any landscaping plans in accordance with Chapter 9 of City Code (Section 9-10):
    a. Male Mulberry Tree (Morus Alba).
    b. Olive Tree (Olea Europea).
    c. Additionally, North Indian Rosewood Trees (Dalbergia Sissoo) shall not be planted within the rights of way (and are suggested not be planted within the property) due to their destructive and invasive root structure
o. Storm Drainage: The City of Buckeye is permitted as a Phase 2 MS4 and is now subject to more stringent standards for stormwater discharge. All stormwater plans must now meet the requirements of the City of Buckeye's MS4 permit as issued by ADEQ (Permit Number AZG2016-002).
p. The Buckeye Fire Chief and City Engineer shall determine the number, location, and types of all fire hydrants.
q. Prior to delivery of any combustible materials to the site, the fire protection system shall be completely operational, with proper fire flow, and in accordance with the plans approved by the Buckeye Fire Chief and City Engineer.
r. All buildings shall be equipped with a fire protection system as required by City of Buckeye Ordinance 20-13.
s. Where two fire apparatus access roads are required, they shall be placed a distance apart equal to not less than one half of the length of the maximum overall diagonal

dimension of the lot or area to be served, measured in a straight line between accesses.

t. All streets must conform to the Maricopa County/Phoenix street name and hundred block grid system.
u. Residential developments where the number of dwelling units exceeds 10 shall be provided with two separate and approved fire apparatus access roads.
v. Phasing of public infrastructure shall be subject to a phasing plan as approved by the Development Services Director and City Engineer.
w. Prior to Final Plat recordation, final landscaping and irrigation plans, including all lighting improvements, shall be reviewed and approved by the City of Buckeye.
x. The Property Owner/Developer shall provide for channelization of off-site storm water that will be intercepted by this project in accordance with a Final Drainage Report as approved by the City Engineer, which shall be submitted along with the first submittal of the improvements plans. In the case where work related to interception of off-site storm water is required on adjacent parcels of land not controlled by the Property Owner/Developer, the Property Owner/Developer shall first obtain a drainage easement from the adjacent parcel owners. When required, said easement shall include an acknowledgment by the adjacent parcel owner(s) that historic drainage discharge points may be altered. Said drainage easements shall be executed and submitted to the City prior to approval of the Grading Plans and shall be recorded prior to approval of the Final Plat for this project.
y. Prior to Final Plat approval, the Property Owner/Developer shall obtain approval from the applicable utility interests for easement location and width as required for utility purposes.
z. At the time of improvement plan submittal, the Property Owner/Developer shall provide a comprehensive Drainage Master Plan, which addresses all on-site and off-site drainage requirements and issues. The Drainage Master Plan shall also identify the method by which existing 100-year floodplains will be mitigated.
aa. The Buckeye Fire Chief and City Engineer shall determine the number, location, and types of all fire hydrants.
bb. Prior to delivery of any combustible materials to the site, the fire protection system shall be completely operational, with proper fire flow, and in accordance with the plans approved by the Buckeye Fire Chief and City Engineer.
cc. The Applicant will submit an electronic CAD and GIS file with full construction documents of the development to the City Engineer, Public Works Department, and GIS Administrator upon Final Plat approval in order to maintain current street records and assist in emergency dispatch and response.

dd. All streets (local, collector, and arterial), sidewalks, parks, and other common areas, as determined by the City Engineer, shall be sufficiently illuminated to ensure the safety and security of persons and property. The City Engineer shall approve all lighting improvements.

ee. All street names shall be subject to final approval by the City of Buckeye and shall conform to the City of Phoenix grid alignment.

ff. Pavement sections for all streets shall be determined in accordance with a City Engineer-approved geotechnical analysis, but shall not be less than the City's minimum requirements.

gg. Collector streets shall have a raised, landscaped median except at intersections where left-turn lanes are provided.

hh. Prior to the issuance of a Building Permit, the Property Owner/Developer shall pay a pro rata share, based on acreage, of the cost of up to nine (9) future traffic signals to be installed within this section of land. The sectional contribution is to be based on the following allocation of costs: (i) 25 percent share of four (4) possible signals at arterial street intersections; (ii) 50 percent share of four (4) possible signals at half-mile collector street intersections or project entries; and (iii) 100 percent share of one (1) possible signal internal to this project. The cost shall be based on an anticipated signal cost as determined by the City Engineer.

ii. Street signs and sign posts shall be placed at all street intersections, with stop signs where applicable, by the Property Owner/Developer and shall be in place when street paving is completed. Specification for design, construction, location, and installation shall be in accordance with City roadway standards and shall be approved by the City Engineer.

jj. The paved portion of all cul-de-sacs shall have a minimum radius of 43 feet.

kk. Any traffic signals that are required due to traffic generated by this project shall be installed by the Property Owner/Developer when warranted.

ll. All irrigation ditches to remain on-site shall be installed underground. Irrigation pipe crossings of the streets shall be constructed to the City's standards.

mm. All existing irrigation facilities located on the site shall be abandoned, relocated off the property, or installed underground. Any District-owned facilities to be located within the right-of-way shall be located near the rear of the right-of-way and the right-of-way shall be extended at lease five (5) feet. Any additional right-of-way for District-owned facilities (not to exceed five feet) can de deducted from the depth of the perimeter landscape tracts.

nn. At the time of Improvement Plan submittal, the Property Owner/Developer shall submit for review and approval a Sewer Master Plan, which provides sizing calculations for all on-site and off-site sewers.

oo. Prior to Final Plat approval, an effluent irrigation pipe (Purple Pipe) system shall be designed by the Property Owner/Developer and approved by the City Engineer in order to service all association maintained landscaping. At such time as an effluent delivery system is designed and developed by the City, the Property Owner/Developer is required to install and bring the development's system into full operation by connecting into the City's system.

pp. The Property Owner/Developer is responsible for providing, at their sole cost and expense, all public infrastructure necessary to serve the project including, without limitation, water and wastewater service in accordance with Ordinance No. 86-06. This includes water supply, infrastructure, and capacity for the production, treatments and delivery of water to the project and the collection, treatment and disposal, including recharge and/or reuse, of wastewater generated at the project. Notwithstanding any authority of the City to create a special district for purposes of funding infrastructure in the City, to meet its obligations under this Stipulation and under Ordinance No. 86-06, the Property Owner/Developer may participate jointly with other property owners/developers in the provision of the necessary regional public infrastructure to serve the subject Property and, in such event, shall pay its pro-rata share of the costs of providing such infrastructure and shall provide documentation satisfactory to the City of such participation and payment of its pro rata share.

qq. Prior to Final Plat/Site Plan approval, the Property Owner/Developer shall submit to the City for review and approval Water and Wastewater Master Plans. In order to provide for water production and treatment, the Property Owner/Developer may be required to provide additional sites for production wells and water production site on the Final Plat/Site Plan or at off-site locations.

rr. The Property Owner/Developer is responsible for providing water at the project for construction purposes including obtaining the necessary water rights for the water supply to be used for construction purposes.

ss. If the property is location with the City's water service area, to the extent allowed by law, all Type-I Non-irrigation and Irrigation Grandfathered Rights associated with the property shall be properly extinguished and the resulting extinguishment credits conveyed to the City of Buckeye or pledged to the City of Buckeye account at the Arizona Department of Water Resources prior to the issuance of any building permits.

tt. If the property is located within the City's water service area, the Property Owner/Developer shall allocate any surface water rights to the City prior to the issuance of any building permits

uu. If the Development is within the City of Buckeye's Water Service Area, the Property Owner/Developer shall notify the City's Water Resources Department of the location of any registered and unregistered wells on the property and the Property Owner/Developer and the City's Water Resources Department shall meet and confer to determine if the wells are beneficial or whether they shall be abandoned. Wells shall be abandoned by the Property Owner/Developer if the City's Water Resources Department determines that they present a health and safety hazard or are contributing to groundwater contamination and are not able to be rehabilitated, modified, or re-drilled to prevent the health and safety hazard or groundwater contamination.

vv. Abandonment of wells shall be performed pursuant to and in compliance with State law and shall be completed prior to the issuance of any building permits.

ww. In the event the City has been designated by the Arizona Department of Water Resources (ADWR) as having an assured water supply, the Property Owner/Developer has, prior to Final Plat approval and if requested by the City, reduced the volume of its analysis of assured water supply for the subdivision to allow the City to include the relinquished water supply in the City's designation in order that the City may provide water service to the subdivision; provided, however, the Property Owner/Developer may relinquish a portion(s) of its analysis for assured water supply in connection with water service by the City to a Phase or Phases of development of the subdivision if ADWR approves such partial relinquishment and reduction in the analysis volume without negatively impacting the priority of the remaining reserved groundwater under the Property Owner/Developer's analysis of assured water supply. The Property Owner/Developer acknowledges that the City is preparing to submit to ADWR its application for designation as an assured water provider and the Property Owner/Developer agrees to cooperate with and support the City's efforts in processing its designation application. The Property Owner/Developer further agrees that it shall submit to ADWR its request to reduce its analysis, by the volume required to meet the demand of the development included in the designation, as applicable and as requested by the City, upon (1) ADWR's administrative determination that the City's designation application is complete; and (2) written notice from ADWR to the City that ADWR is prepared to issue its order designating the City as an assured water provider upon submission of any applicable requests to reduce analyses of assured water supply as evidence of physical availability (the foregoing requirements

collectively referred to as "Analysis Reduction Requirements"). If prior to the date on which ADWR issues its order designating the City as an assured water provider, the law or ADWR policy and procedure change that affect the above Analysis Reduction Requirements for the Property Owner/Developer, the Property Owner/Developer specifically acknowledges and agrees that the City shall have the right to require the Property Owner/Developer's compliance with the new law or ADWR policy or procedure and the Property Owner/Developer agrees that is shall perform its obligations in such regard at its sole cost and expense.

xx. Prior to Final Plat approval, the Development Services Director shall require the Property Owner/Developer to produce a Certificate of Assured Water Supply issued by the Arizona Department of Water Resources (ADWR), covering all lots and parcels created, defined, or depicted on said plat. The certificate must be consistent with all Arizona Department of Water Resources ADWR rules and regulations. In the event the City has been designated an assured water provided prior to Final Plat approval, and the ADWR has not yet issued a Certificate or Certificates of Assured Water Supply for the subdivision, a Certificate or Certificates of Assured Water Supply will not be required by the City. The City may instead require as a condition to Final Plat approval that the Property Owner/Developer provide the City with other evidence demonstrating that there is sufficient volume and quality of water necessary to serve the demands at the subdivision such as a physical availability determination issued by the ADWR along with supporting documentation or that the Property Owner/Developer provide the City with a copy of an analysis of assured water supply, with supporting documentation, issued by the ADWR for the subdivision.

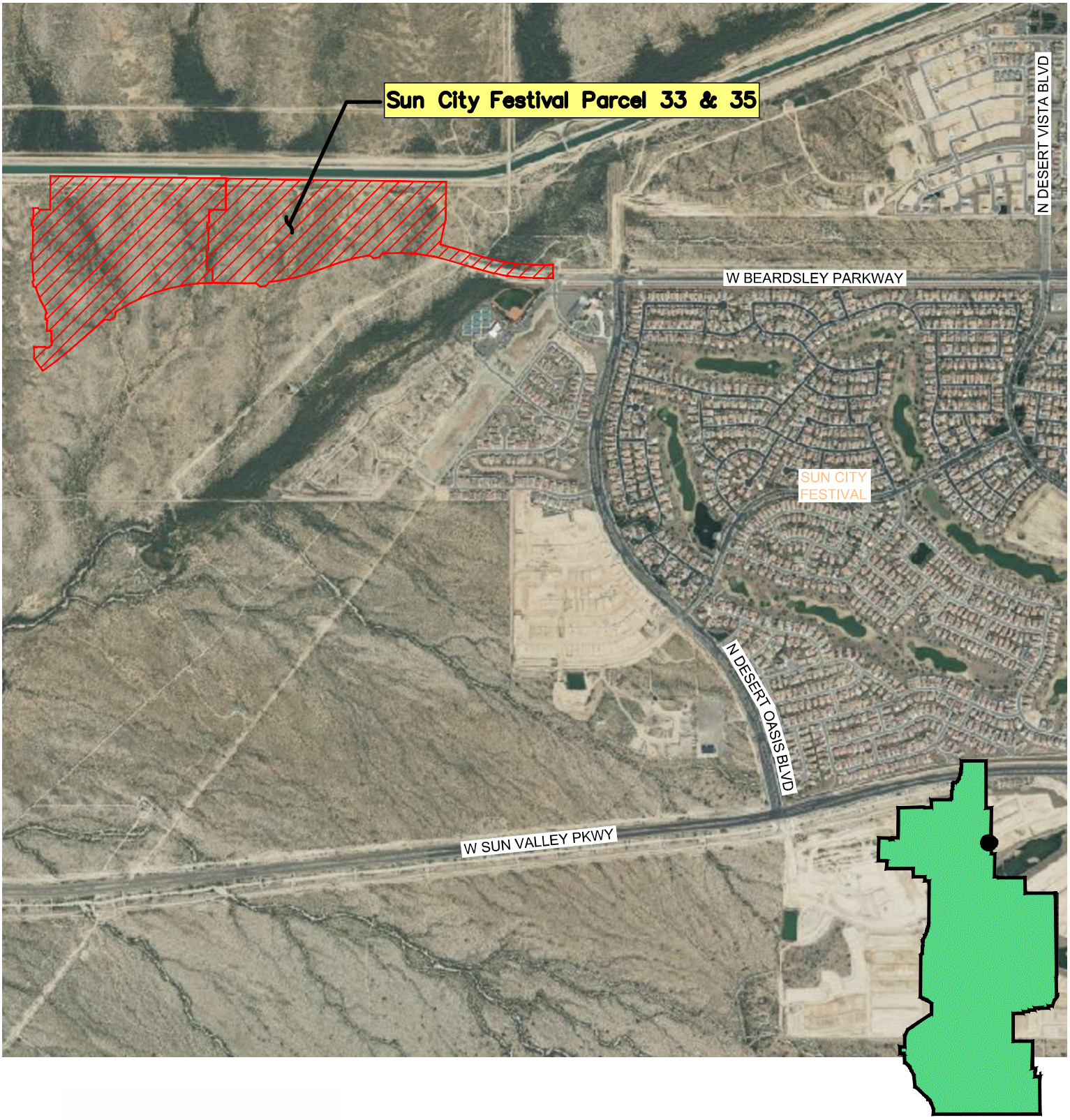
ATTACHMENTS

- Vicinity Map
- Narrative
- Preliminary Plat
- Conceptual Landscape & Wall Plan

Prepared By:
Robert Busick, Planner II

Reviewed By:
Adam Copeland, Deputy Director of Planning

Vicinity Map



BUCKEYE, AZ

SUBJECT SITE

0 0.25 0.5 Miles

N

RECEIVED

03 AUG 2021

CITY OF BUCKEYE by: RB

PLZS 20 00093

4th Submittal

FESTIVAL RANCH
PUP E PLANNING AREA 3 PARCELS 33 & 35
PRELIMINARY PLAT NARRATIVE

August 3, 2021

Prepared for:

16767 North Perimeter Drive, Suite 100
Scottsdale, Arizona 85260
(480) 391-6000

Prepared by:

19621 N. 23rd Drive, Suite 150
Phoenix, Arizona 85027
(602) 977-8075

Cardno Project No. 4201464000

Application Request

This application requests the approval of a preliminary plat for Festival Ranch PUP E Parcels 33 and 35, a portion of the Festival Ranch Master Plan. The preliminary plat for Festival Ranch Parcels 33 and 35 contains a total of 325 lots and a gross area of 101.60 acres. Excluding the right of way for Beardsley Parkway, the net area is 84.98 acres.

Introduction

The Festival Ranch Community Master Plan (CMP) is comprised of approximately 10,105 acres. The property is located in the northern portion of the City of Buckeye. The CMP is bounded on the west by the Hassayampa River and by State Lands on the north and east. The south edge of the property is partially bisected by the Sun Valley Parkway and is bounded by a small portion of the White Tank Mountains, State Lands, and private landowners.

The original Festival Ranch CMP consisted of six Planning Units, identified as Planning Units A through F. Portions of the original Planning Units E and F are presently identified as Planning Area One, Planning Area Two and Planning Area 3 of the Festival Ranch Development. This Preliminary Plat is a portion of Festival Ranch Planning Unit E Planning Area Three.

The subject site is located in the most western portion of Planning Unit E. The site is bounded to the north by the CAP canal, to the east by Wagner Wash, to the west by future the Planning Unit F development area, and to the south by Beardsley Parkway.

Within Festival Ranch there are numerous parcels identified with residential, recreation, retail, mixed use, worship and school designations. This parcel will be developed as a detached, single-family residential parcel with a net density of 3.82 du/ac. The remaining parcels within PUP E will be subsequently submitted, under separate submittal packages, as they are developed per the City of Buckeye requirements.

Location

This preliminary plat consists of a portion of Section 22 of Township 4 North, Range 4 West of the Gila and Salt River Base and Meridian, Maricopa County, Arizona. The site is located within the City of Buckeye north of Beardsley Parkway, and west of Desert Oasis Boulevard.

Zoning

The property is zoned Planned Community per the Festival Ranch CMP as approved by City Council in September of 2000.

Proposed Development

The Festival Ranch PUP E identifies these parcels as Flex Residential, Development Option 2 which allows for a density range of 2-5 du/acre. This Preliminary Plat will be developed in two phases identified as Parcels 33 and 35. These parcels contain a total of 325 lots with three typical residential lot widths of 45, 50 and 55 feet. All lots will have a minimum depth of 115 feet. Parcels 33 and 35 are planned with various walking trails and open spaces spread throughout the development, with one programmed open space area located within each parcel. Please refer to sheet three of the conceptual Landscape Plan for a list of proposed amenities.

Preliminary Plat for Festival Ranch Parcels 33 and 35

The net area of the site is 84.98 acres. Landscaped open space totals 20.28 acres, which represents 23.9% of the net area.

Street Improvements

Parcels 33 and 35 are bordered by Beardsley Parkway to the south. The north half of Beardsley Parkway will be developed to provide access to Parcels 33 and 35. The south half will be developed as the future Parcels 84 and 88 are developed.

All residential streets have a 44-foot right of way. The local streets will be 32 ft wide from back-of-curb to back-of-curb as approved in the Festival Ranch CMP on September of 2000. Standard street light design with LED lighting will be used in Parcels 33 and 35.

Utilities

Located near the east boundary of the site, there is an existing high voltage electrical transmission easement for a WAPA transmission line with towers and access road. The transmission towers are spaced at an interval of approximately 1,300 to 1,400 feet.

The Central Arizona Project (CAP) Canal is located adjacent to the north boundary of the project and to the overall Festival Ranch PUP E northern boundary. The CAP is designed to bring about 1.5 million acre-feet of Colorado River water per year to Pima, Pinal and Maricopa counties. It is a 336-mile long system of aqueducts, tunnels, pumping plants and pipelines and is the largest single resource of renewable water supplies in the state of Arizona.

There is one existing 15-inch trunk sewer main is located within the street network of the future parcel 84 and 88 that originates at the existing treatment facility south of Sun Valley Parkway and continues east in Beardsley Parkway to Planning Area 1.

There are no other existing utilities in this portion of Planning Unit E within this preliminary plat.

Communications

Cox Communications will provide video, high-speed data and telephone services to Festival Ranch. Cox is currently constructing or has facilities within Festival Ranch to serve this project. Cox is aware of the development timeline for Festival Ranch and they have both expressed their ability to provide communications services in accordance with the project's needs.

Natural Gas

Pulte Homes has negotiated an agreement with Southwest Gas to provide natural gas service to Festival Ranch.

Electricity

Pulte Homes has worked with Arizona Public Service (APS) to provide electrical service to Festival Ranch. APS has installed a 69-kV, overhead transmission line that runs from approximately Bell Road and Cotton Lane west along the Salt River Project corridor to service the project. Pulte Homes and APS have also constructed a substation on the Festival Ranch property to service the project. The delivery of electrical service will be timed to meet the project's needs.

Open Space and Recreation

Festival Foothills residents have access to the amenities located within Festival Foothills Phases 1 and 2 located along the eastern limits of Festival Ranch, which include a 12 acre community park, consisting of a splash pad, 2 full court basketball courts, children's adventure playground for all ages, lighted baseball and multi-purpose field with auxiliary fields, and picnic

ramadas with barbecue facilities directly connected to a K-8 school located at the intersection of Canyon Springs and Desert Vista Boulevard. Additionally, residents will have access to multiple parks located in Phases 1 and 2 designed for various age groups located throughout the community linked together by a series of trails running through the community.

Sun City Festival has several amenity facilities spread throughout the community to ensure residents' convenient access to community activities and facilities. Just east of the site, across Wagner Wash, is a community arts and crafts center with an ancillary softball field and pickle ball sport courts. Additionally, there is public access to the dog parks and golf course. The golf course and accompanying facilities include 27 existing golf holes. A driving range with practice greens is also provided. The golf course provides not only recreation programming for the community, but it augments and enhances the landscaping and open space in the community.

Tract E of Parcel 33 will include a community park. Possible community park amenities include a pool site with a restroom facility, covered patio area and sunbathing deck with pool chairs, play structure tot lot, active turf area, and off-street parking.

Parcels 33 and 35 will include a series of connected open spaces that will provide excellent connectivity to the residents. The open spaces will consist of two programmed open space sites, pedestrian walkways, landscaping, and retention for the community. Sidewalks are proposed to connect the open space to the adjacent street network.

Beardsley Parkway includes an 8'-0" wide public granular trail on north side of the alignment along with an 8'-0" wide attached concrete sidewalk, both of which are located within the right-of-way. An 8'-0" wide detached concrete sidewalk with 9'-0" of landscaping adjacent to the street, is planned to be located within the right-of-way on the south side of Beardsley Parkway**.** Lighting for the public trail will be provided by the existing and planned streetlights along Beardsley Parkway.

An 8'-0" wide concrete trail will be provided on the south side of the CAP Canal. The trail will provide multiple connections into Parcels 33 and 35 and will be available for to all Festival Ranch residents.

Offsite & Onsite Stormwater Control

A master study of the storm water system was developed by Coe & Van Loo Consultants, Inc. The study has been recently updated as part of a regional master storm water system by Erie & Associates and excerpts from the report are included as part of the Final Drainage Report. Parcels 33 and 35 have been designed in accordance with the updated study. (Dated October 29, 2020)

Water Supply and Distribution

A study of the water distribution system to serve the area was prepared by Wilson Engineers dated October 14, 2020).

The Sun City Festival potable water infrastructure consists of a system of water distribution mains, booster pump stations, pressure control valves, wells and storage tanks.

The number of wells has been determined based on the maximum day demand and coincident irrigation and construction water use demands. Well production rates have been assumed to be 1,200 gpm, based on information from Errol Montgomery and Associates, Inc. Initially three groundwater wells will be in operation. Two of the wells currently serving Sun City Festival are

located south of Beardsley Parkway and one is located north of Beardsley Parkway. Future well #4 is located north of Beardsley Parkway. The existing and future wells will be of sufficient size and capacity to serve Parcels 33 and 35. Well #1 is in Parcel E1, Well #2 is within the confines of the water campus and Well #3 is located in Parcel N1. Well #4 is within Sun City Festival Parcel HH1-1.

The booster pump stations have been designed to meet the greater of the maximum day demand plus fire flow or the peak hour demand. The storage tanks will supplement the source supply when demands exceed maximum day demand (i.e. peak hour and fire flow). Initial storage requirements are based on a four-hour commercial fire flow of maximum intensity and 50% maximum day demand equalization and emergency reserve.

The parcels currently being developed are located within the City of Buckeye pressure zone 6 and have been found to have adequate pressure and supply to serve the associated parcels.

Wastewater Collection and Treatment

A study of the wastewater collection and treatment system to serve this area was prepared by Wilson Engineers (dated October 14, 2020).

Based on the natural topography, the wastewater collection infrastructure consists of an existing 15” gravity trunk sewer line that parallels the west side of Wagner Wash within the proposed street network. The trunk sewer follows street alignments and/or sewer easements, and has been internalized in the residential streets where possible. The trunk sewer discharges to the Festival Ranch Water Reclamation Facility (WRF), located at the southwest corner of the development, south of Sun Valley Parkway.

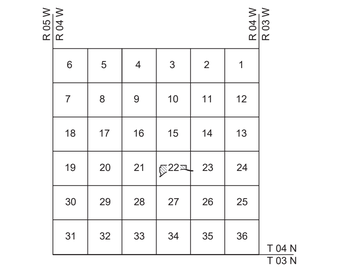
Public Services

Police and fire services will be provided for the community by the City of Buckeye. Emergency staff will be stationed at Buckeye Fire House No. 704. The Fire House is located along primary transportation corridors at the intersection of Beardsley Parkway and Desert Oasis Boulevard, to minimize response times.

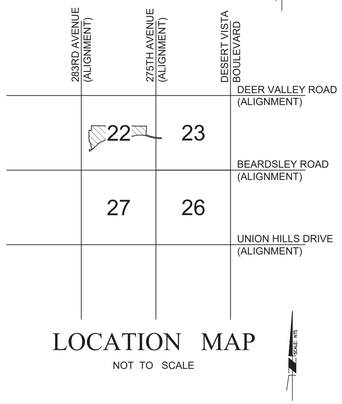
The Wickenburg School District provides public education to Festival Ranch. Pulte Homes has worked closely with the District. Pulte Homes will provide the City a letter of support for the development of Festival Ranch Parcels 33 and 35.

PRELIMINARY PLAT
FOR
FESTIVAL RANCH PLANNING AREA 3 - PUP E PARCELS 33 & 35
A PARCEL OF LAND SITUATED IN SECTION 22, TOWNSHIP 4 NORTH, RANGE 4 WEST OF THE GILA AND SALT RIVER BASE AND MERIDIAN, CITY OF BUCKEYE, MARICOPA COUNTY, ARIZONA

3rd Submittal
PLZS-20-00093
RECEIVED
JULY 21 2021
CITY OF BUCKEYE by:
WD



VICINITY MAP
NOT TO SCALE



LOCATION MAP
NOT TO SCALE

FEMA FLOOD ZONE INFORMATION

COMMUNITY NUMBER	PANEL NUMBER	MAP NUMBER	DATE OF FIRM	FIRM ZONE	BASE FLOOD ELEVATION (IN AO USE DEPTH)
040039	1170L	04013C1170L	10/16/13	X	-

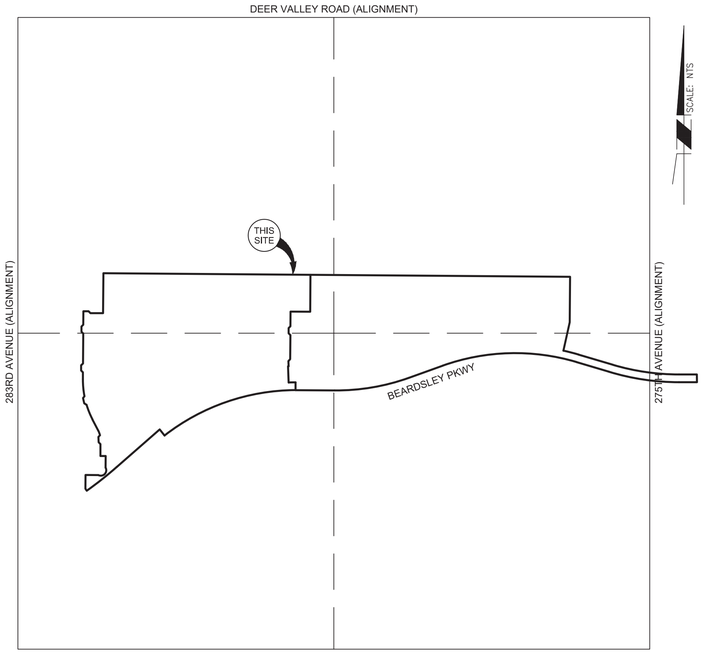
GENERAL NOTES

1. THE INTENT OF THIS PRELIMINARY PLAT IS TO MEET THE REQUIREMENTS OF THE FESTIVAL RANCH COMMUNITY MASTER PLAN (CMP) APPROVED BY THE CITY OF BUCKEYE SEPTEMBER 2000 AND ALL AMENDMENTS THERETO.
2. THIS PRELIMINARY PLAT IS INTENDED TO COVER THE FOLLOWING PARCELS: 33 & 35. ALL OTHER PARCELS WILL HAVE TO BE SUBMITTED UNDER SEPARATE PRELIMINARY PLAT OR SITE PLAN SUBMITTALS AS REQUIRED BY THE CITY OF BUCKEYE.
3. STREET NAMES WILL BE PROVIDED BY THE DEVELOPER IN CONJUNCTION WITH THE FINAL PLAN AND APPROVED BY THE FIRE CHIEF.
4. NO STRUCTURE CAN BE CONSTRUCTED WITHIN THE DRAINAGE EASEMENT WITH THE EXCEPTION OF SIGNAGE AND LIGHTING OR AS APPROVED BY THE CITY OF BUCKEYE, CITY ENGINEER.
5. ALL SETBACKS SHALL CONFORM WITH THE FESTIVAL RANCH COMMUNITY MASTER PLAN (CMP) APPROVED BY THE CITY OF BUCKEYE SEPTEMBER 2000 AND ALL AMENDMENTS THERETO OR AS APPLICABLE TO THE CITY OF BUCKEYE, DEVELOPMENT CODE.
6. THIS PRELIMINARY PLAT IS INTENDED TO BE CONSTRUCTED IN PHASES. ULTIMATE PHASING SHALL BE DICTATED BY MARKET CONDITIONS.
7. THE PROPERTY IS ZONED PLANNED COMMUNITY (PC) PER THE FESTIVAL RANCH COMMUNITY MASTER PLAN (CMP) AS APPROVED BY THE CITY COUNCIL IN SEPTEMBER, 2000
8. THE DECLARATION OF COVENANTS, CONDITIONS AND RESTRICTIONS FOR SUN CITY FESTIVAL, DOCUMENT #20051720347 WAS RECORDED 11/14/05.
9. ALL RESIDENTIAL LOTS SHALL CONFORM TO THE FESTIVAL RANCH COMMUNITY MASTERPLAN (CMP), DEVELOPMENT OPTION 2, R1-3.5 ZONING CATEGORY.
10. THIS PLAT IS WITHIN PLANNING UNIT E PER PUP E AMENDMENT APPROVED 12/2020.
11. THIS PLAT LIES WITHIN FEMA FLOOD INSURANCE RATE MAP (FIRM) PANEL NUMBER C1170L, DATED OCTOBER 16, 2013. THIS PROJECT FALLS UNDER ZONE "X", DEFINED AS "AREAS OF 0.2% ANNUAL CHANCE FLOOD; AREAS OF 1% ANNUAL CHANCE FLOOD WITH AVERAGE DEPTHS OF LESS THAN 1 FOOT OR WITH DRAINAGE AREAS LESS THAN 1 SQUARE MILE; AND AREAS PROTECTED BY LEVEES FROM 1% ANNUAL CHANCE FLOOD."
12. THIS PLAT FALLS WITH IN THE WICKENBURG UNIFIED SCHOOL DISTRICT.

UTILITY COMPANIES

SEWER	CITY OF BUCKEYE
WATER	CITY OF BUCKEYE
ELECTRIC	APS
ELECTRIC	SRP
TELEPHONE	COX / ZONA COMMUNICATIONS
CATV	COX
INTERNET	COX / ZONA COMMUNICATIONS
GAS	SOUTHWEST GAS
GAS	TRANSWESTERN
IRRIGATION	CENTRAL ARIZONA PROJECT

Buckeye Fire Medical Rescue Department
☒ Approved
☐ Approved with Comments
☐ Approved with Stipulations
☐ Not Approved Resubmit
Date: 10/7/2021
Reviewed By: wyan
Final approval subject to site inspection



OVERALL DEVELOPMENT
NOT TO SCALE

ENGINEER
CARDNO, INC.
DANIEL J. POTTINGER, P.E.
19621 N. 23RD DRIVE, SUITE 150
PHOENIX, AZ 85027
PHONE: (602) 977-8000
FAX: (602) 977-8099
EMAIL: DANIEL.POTTINGER@CARDNO.COM

DEVELOPER
PULTE HOME COMPANY, LLC
LAURA MEYERS
16767 NORTH PERIMETER DRIVE, SUITE 100
SCOTTSDALE, AZ 85260
PHONE: (480) 391-6000
FAX: (480) 391-6100
EMAIL: LAURA.MEYERS@PULTEGROUP.COM

BENCHMARK
ALUMINUM CAP IN A 5 INCH PVC PIPE WITH A COUNTY LOGO ACCESS COVER STAMPED 4HH2, 1999, SURROUNDED WITH A CONCRETE COLLAR FLUSH WITH THE GROUND, WITNESSED BY A WHITE CARSONITE MARKER, ELEVATION - 1566.565' (NAVD 88) LOCATED WITHIN, SECTION 15, TOWNSHIP 4N, RANGE 4W.

BASIS OF BEARING
COMMENCING AT THE EAST QUARTER CORNER OF SAID SECTION 22, BEING A FOUND GLO BRASS CAP STAMPED "1/4 S22 S23 1916, FROM WHICH A BLM CAP MARKED "AP47A TR39 S22 S23 T4N R4W 1987" AS DESCRIBED IN THE OFFICIAL FIELD NOTE RECORD AT BOOK 5282, PAGE 8, HAVING A BEARING OF NORTH 00°22'19" EAST, A DISTANCE OF 468.31 FEET, BEING THE (BASIS OF BEARINGS), SAID EAST QUARTER CORNER IS ALSO THE POINT OF BEGINNING.

SHEET INDEX

1	COVER SHEET
2	KEY MAP
3	CROSS SECTION, DETAILS & NOTES
4-5	PRELIMINARY PLAT
6-7	UTILITY EXHIBIT
8	STREET NAME EXHIBIT
9	FIRE ACCESS EXHIBIT

Call at least two full working days before you begin excavation.
ARIZONA 811 Arizona Blue Stake, Inc.
Dial 8-1-1 or 1-800-STAKE-IT (782-5348)
In Maricopa County: (602) 263-1100

MANAGING ENGINEERING / SURVEYOR: DANIEL J. POTTINGER, P.E.
PROJECT COORDINATOR: DANIEL J. POTTINGER, P.E.
DESIGN LAYOUT: DLP | DRAFTED: LPJ | CHECKED: DJP
FIELD SURVEY: | DRAFTED: | CHECKED:
DRAWING SCALES: AS NOTED

PLAN TYPE: PRELIMINARY PLAT

ENGINEER INFORMATION:
PHOENIX
19621 N. 23RD DR, STE 150, PHOENIX, AZ 85027
TEL (602) 977-8000 FAX (602) 977-8099
www.cardno.com
Cardno Shaping the Future

PROJECT: FESTIVAL RANCH PLANNING AREA 3 - PUP E PARCELS 33 & 35

PROJECT PLAN STICKER

REVISIONS:
1
2
3

COB PERMITTING APPROVED STAMP | COB ENGINEERING APPROVED STAMP | SUBMITTAL

(POSSIBLE AS-BUILT SEAL)

DESIGN SEAL
Registered Professional Engineer (Civil) CERTIFICATE NO. 36384 DANIEL J. POTTINGER 21 Date Signed 6/14/21 ARIZONA, U.S.A. Expires 6/30/22

ORIGINAL PLAN DATE: JUN/2021
LATEST REVISION DATE:
PROJECT NUMBER: 4201464000
SHEET NUMBER: 1 of 9
COB PLAN TRACKING #: PLZS-20-00093
COB PERMIT #: -

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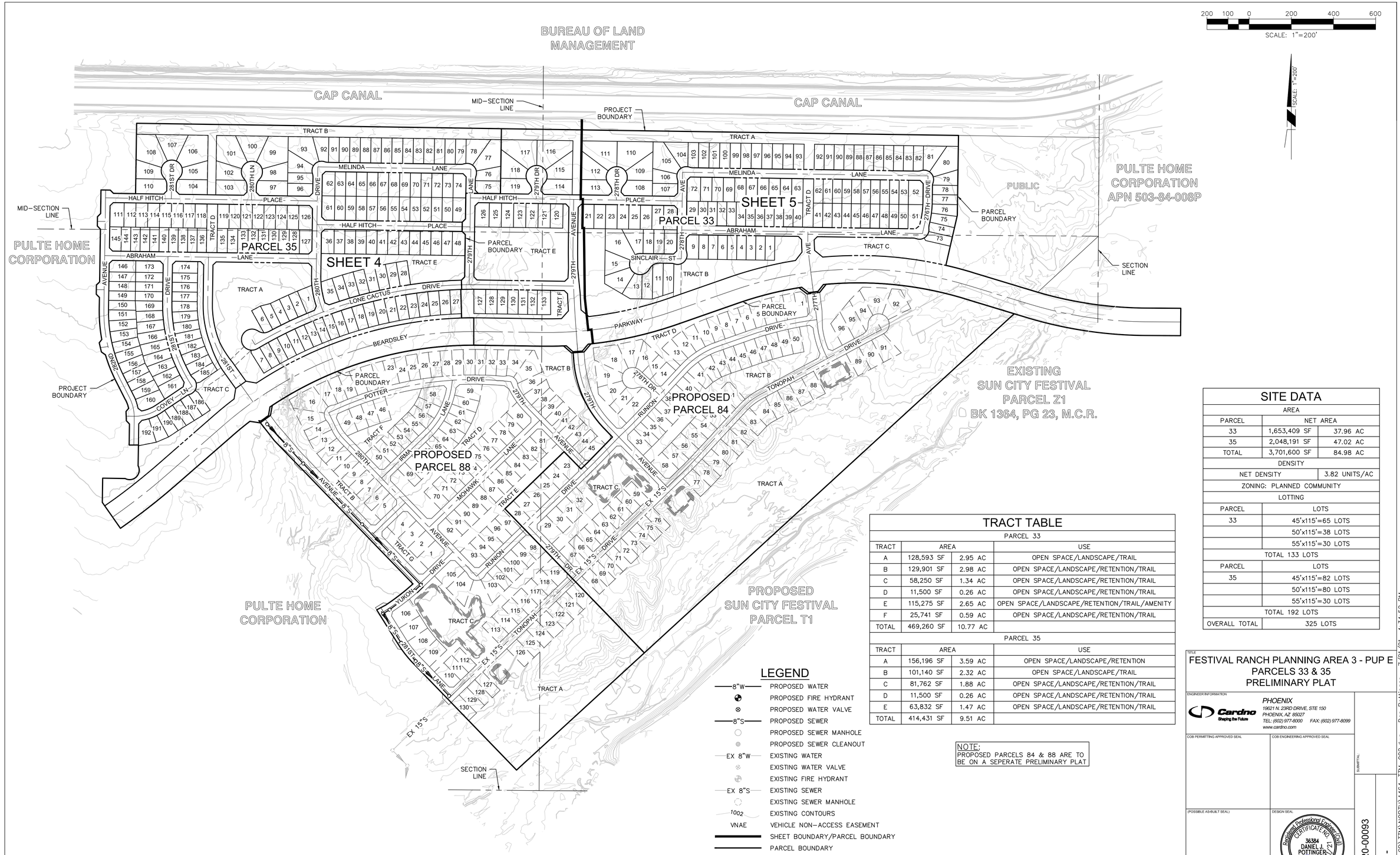

SITE DATA

AREA		
PARCEL	NET AREA	
33	1,653,409 SF	37.96 AC
35	2,048,191 SF	47.02 AC
TOTAL	3,701,600 SF	84.98 AC
DENSITY		
NET DENSITY		3.82 UNITS/AC
ZONING: PLANNED COMMUNITY		
LOTTING		
PARCEL	LOTS	
33	45'x115'=65 LOTS	
	50'x115'=38 LOTS	
	55'x115'=30 LOTS	
TOTAL 133 LOTS		
PARCEL	LOTS	
35	45'x115'=82 LOTS	
	50'x115'=80 LOTS	
	55'x115'=30 LOTS	
TOTAL 192 LOTS		
OVERALL TOTAL	325 LOTS	

TRACT TABLE

PARCEL 33			
TRACT	AREA		USE
A	128,593 SF	2.95 AC	OPEN SPACE/LANDSCAPE/TRAIL
B	129,901 SF	2.98 AC	OPEN SPACE/LANDSCAPE/RETENTION/TRAIL
C	58,250 SF	1.34 AC	OPEN SPACE/LANDSCAPE/RETENTION/TRAIL
D	11,500 SF	0.26 AC	OPEN SPACE/LANDSCAPE/RETENTION/TRAIL
E	115,275 SF	2.65 AC	OPEN SPACE/LANDSCAPE/RETENTION/TRAIL/AMENITY
F	25,741 SF	0.59 AC	OPEN SPACE/LANDSCAPE/RETENTION/TRAIL
TOTAL	469,260 SF	10.77 AC	
PARCEL 35			
TRACT	AREA		USE
A	156,196 SF	3.59 AC	OPEN SPACE/LANDSCAPE/RETENTION
B	101,140 SF	2.32 AC	OPEN SPACE/LANDSCAPE/TRAIL
C	81,762 SF	1.88 AC	OPEN SPACE/LANDSCAPE/RETENTION/TRAIL
D	11,500 SF	0.26 AC	OPEN SPACE/LANDSCAPE/RETENTION/TRAIL
E	63,832 SF	1.47 AC	OPEN SPACE/LANDSCAPE/RETENTION/TRAIL
TOTAL	414,431 SF	9.51 AC	

NOTE:
PROPOSED PARCELS 84 & 88 ARE TO BE ON A SEPERATE PRELIMINARY PLAT

LEGEND

- 8"W — PROPOSED WATER
- PROPOSED FIRE HYDRANT
- PROPOSED WATER VALVE
- 8"S — PROPOSED SEWER
- PROPOSED SEWER MANHOLE
- PROPOSED SEWER CLEANOUT
- EX 8"W — EXISTING WATER
- EXISTING WATER VALVE
- EXISTING FIRE HYDRANT
- EX 8"S — EXISTING SEWER
- EXISTING SEWER MANHOLE
- 1002 — EXISTING CONTOURS
- VNAE — VEHICLE NON-ACCESS EASEMENT
- SHEET BOUNDARY/PARCEL BOUNDARY
- PARCEL BOUNDARY
- STREET DRAINAGE
- PROPOSED SEWER FLOW
- PUE — PUBLIC UTILITY EASEMENT
- RDWY ESMT — ROADWAY EASEMENT
- WS — WATER SAMPLING STATION

Call at least two full working days before you begin excavation. ARIZONA 811 Arizona Blue Stake, Inc. Dial 8-1-1 or 1-800-STAKE-IT (782-5348) In Maricopa County: (602) 263-1100

TITLE
FESTIVAL RANCH PLANNING AREA 3 - PUP E PARCELS 33 & 35 PRELIMINARY PLAT

ENGINEER INFORMATION
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(POSSIBLE AS-BUILT SEAL) | DESIGN SEAL

Registered Professional Engineer (Civil) CERTIFICATE NO. 36384 DANIEL J. POTTINGER Date Signed 7/21/21 ARIZONA, U.S.A. Expires 6/30/22

ORIGINAL PLAN DATE	LATEST REVISION DATE
JUL/2021	-
PROJECT NUMBER	SHEET NUMBER
4201464000	2 of 9

COB PLAN TRACKING # PLZS-20-00093 SUBMITTAL -

COB PERMIT # -

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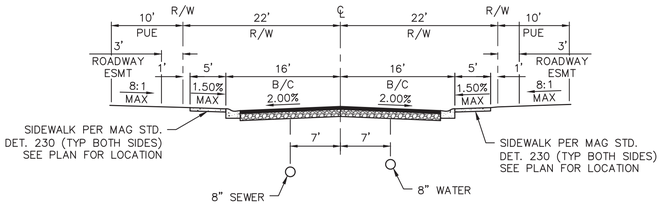
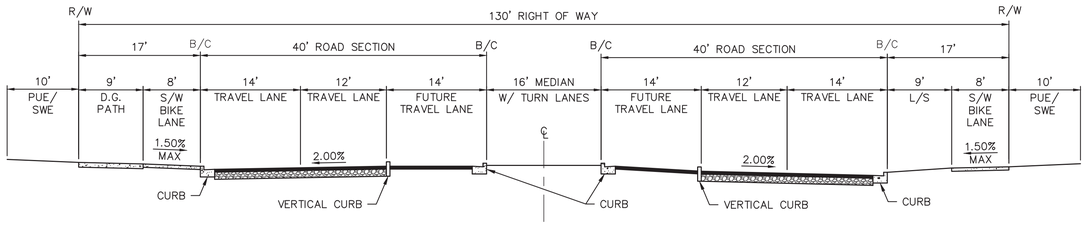


TYPICAL LOCAL STREET

(PER APPROVED FESTIVAL RANCH CMP DATED SEPTEMBER 2000)
FACING NORTH AND EAST
NTS

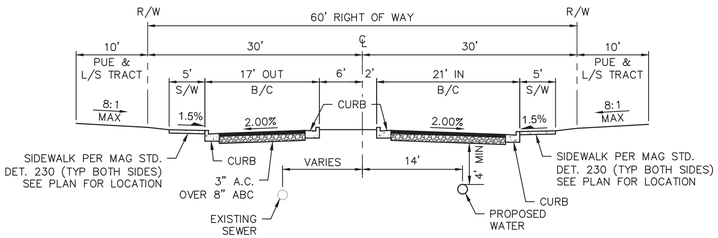


A-130
MAJOR ARTERIAL (BIKE OFF ROAD)
BEARDSLEY PARKWAY

(PER APPROVED FESTIVAL RANCH CMP DATED SEPTEMBER 2000)
(LOOKING EAST)
NTS

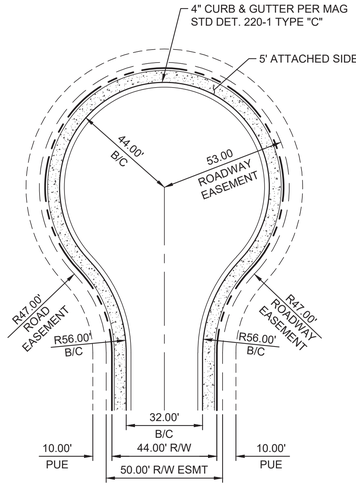
NOTES

1. PUE/LANDSCAPE 8:1 MAX SLOPE.
2. CURB AND GUTTER PER MAG STANDARDS. DETERMINED WITH FINAL CONSTRUCTION DOCUMENTS.
3. SANITARY SEWER MAINS SHALL BE PLACED SOUTH OR WEST OF CENTER LINE UNLESS EXISTING SEWER LINES REQUIRE ALTERNATE LOCATION.
4. WATER MAINS SHALL BE PLACED NORTH OR EAST OF CENTERLINE UNLESS EXISTING SEWER LINES REQUIRE ALTERNATE LOCATION.
5. PAVEMENT AND BASE REQUIREMENTS: TO BE PER C.O.B. REQUIREMENTS AND GEOTECHNICAL REPORT RECOMMENDATIONS - WHICH EVER IS GREATER.
6. ALL ROADWAY SECTIONS, CUL-DE-SAC, KNUCKLE AND TYPICAL LOTTING DETAILS PER APPROVED FESTIVAL RANCH CMP DATED SEPTEMBER 2000.
7. ALL FINISH FLOOR ELEVATIONS ARE A MINIMUM OF ONE (1) FOOT ABOVE THE 100-YEAR STORM WATER SURFACE ELEVATION.



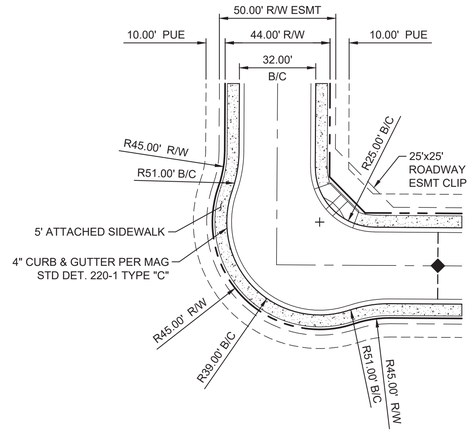
SUBDIVISION ENTRANCE

(PER APPROVED FESTIVAL RANCH CMP DATED SEPTEMBER 2000)
21' IN & 17' OUT B/C TO B/C WITH 60' R/W
NTS



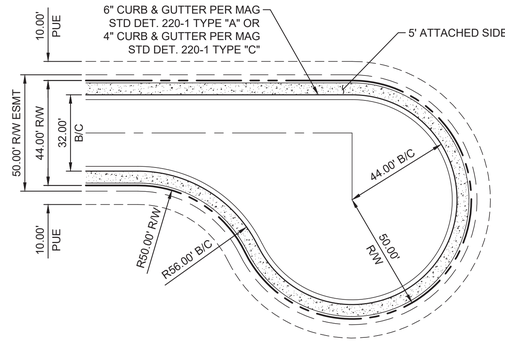
TYPICAL CUL-DE-SAC

N.T.S.



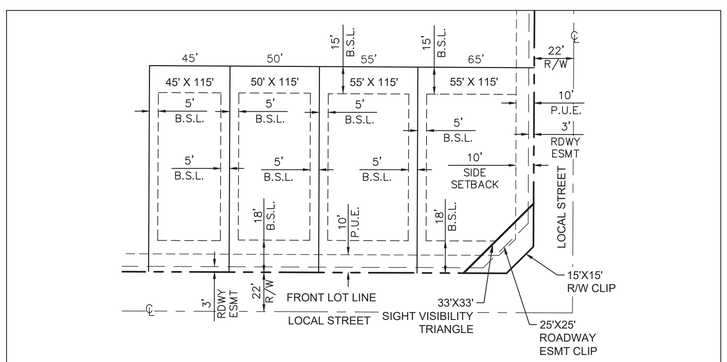
TYPICAL KNUCKLE

N.T.S.



TYPICAL OFFSET CUL-DE-SAC

N.T.S.



NOTES:
1. SETBACK FROM THE FACE OF GARAGE TO THE EDGE OF SIDEWALK SHALL BE 20 FEET.
2. FESTIVAL RANCH CMP DEVELOPMENT OPTION 2, R1-3.5.

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FESTIVAL RANCH PLANNING AREA 3 - PUP E
PARCELS 33 & 35
PRELIMINARY PLAT

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PHOENIX, AZ. 85027
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SUBMITTAL:

(POSSIBLE AS-BUILT SEAL)

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Registered Professional Engineer (Civil)
CERTIFICATE NO.
36384
DANIEL J. POTTINGER
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ARIZONA, U.S.A.
Expires 6/30/22

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4201464000	3 of 9

COB PLAN TRACKING #: PLZS-20-00093
COB PERMIT #: -

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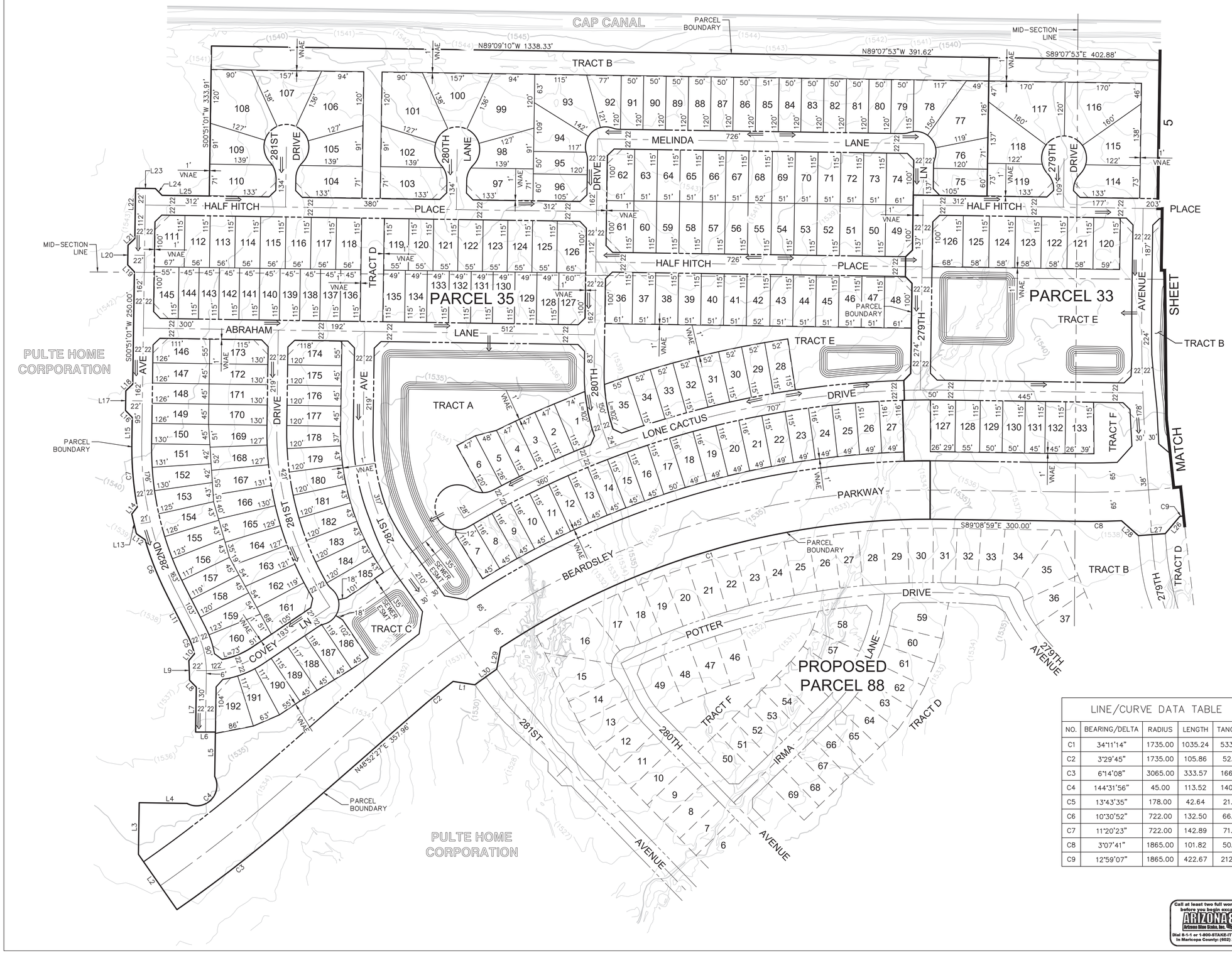

100 50 0 100 200 300

SCALE: 1"=100'

SCALE: 1"=100'

LINE/CURVE DATA TABLE

NO.	BEARING/DELTA	RADIUS	LENGTH	TANGENT
L1	S81°16'04"E	--	48.82'	--
L2	S34°53'25"E	--	150.00'	--
L3	S00°51'01"W	--	115.00'	--
L4	S89°08'59"E	--	106.52'	--
L5	S00°51'01"W	--	99.11'	--
L6	S89°54'19"W	--	44.01'	--
L7	S00°51'01"W	--	100.00'	--
L8	S44°08'59"E	--	21.21'	--
L9	S02°07'53"E	--	44.06'	--
L10	S40°02'27"W	--	18.96'	--
L11	S26°54'35"E	--	102.55'	--
L12	S55°09'03"E	--	23.20'	--
L13	S13°18'47"E	--	44.99'	--
L14	S38°19'06"W	--	19.52'	--
L15	S00°51'01"W	--	57.53'	--
L16	S44°08'59"E	--	21.21'	--
L17	S00°51'01"W	--	44.00'	--
L18	S45°51'01"W	--	21.21'	--
L19	S44°08'59"E	--	21.21'	--
L20	S00°51'01"W	--	44.00'	--
L21	S45°51'01"W	--	21.21'	--
L22	S00°51'01"W	--	112.00'	--
L23	S89°08'59"E	--	44.00'	--
L24	S44°08'59"E	--	21.21'	--
L25	S89°08'59"E	--	105.00'	--
L26	S39°59'44"W	--	50.12'	--
L27	N85°43'31"E	--	60.00'	--
L28	N48°32'43"W	--	50.12'	--
L29	N10°18'03"E	--	48.82'	--
L30	N54°30'59"E	--	60.00'	--

LINE/CURVE DATA TABLE

NO.	BEARING/DELTA	RADIUS	LENGTH	TANGENT
C1	34°11'14"	1735.00	1035.24	533.54
C2	3°29'45"	1735.00	105.86	52.95
C3	6°14'08"	3065.00	333.57	166.95
C4	144°31'56"	45.00	113.52	140.72
C5	13°43'35"	178.00	42.64	21.42
C6	10°30'52"	722.00	132.50	66.43
C7	11°20'23"	722.00	142.89	71.68
C8	3°07'41"	1865.00	101.82	50.92
C9	12°59'07"	1865.00	422.67	212.25

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Expires 6/30/22

SUBMITTAL

ORIGINAL PLAN DATE: JUN/2021

LATEST REVISION DATE: -

PROJECT NUMBER: 4201464000

SHEET NUMBER: 4 of 9

COB PLAN TRACKING #: PLZS-20-00093

COB PERMIT #: -

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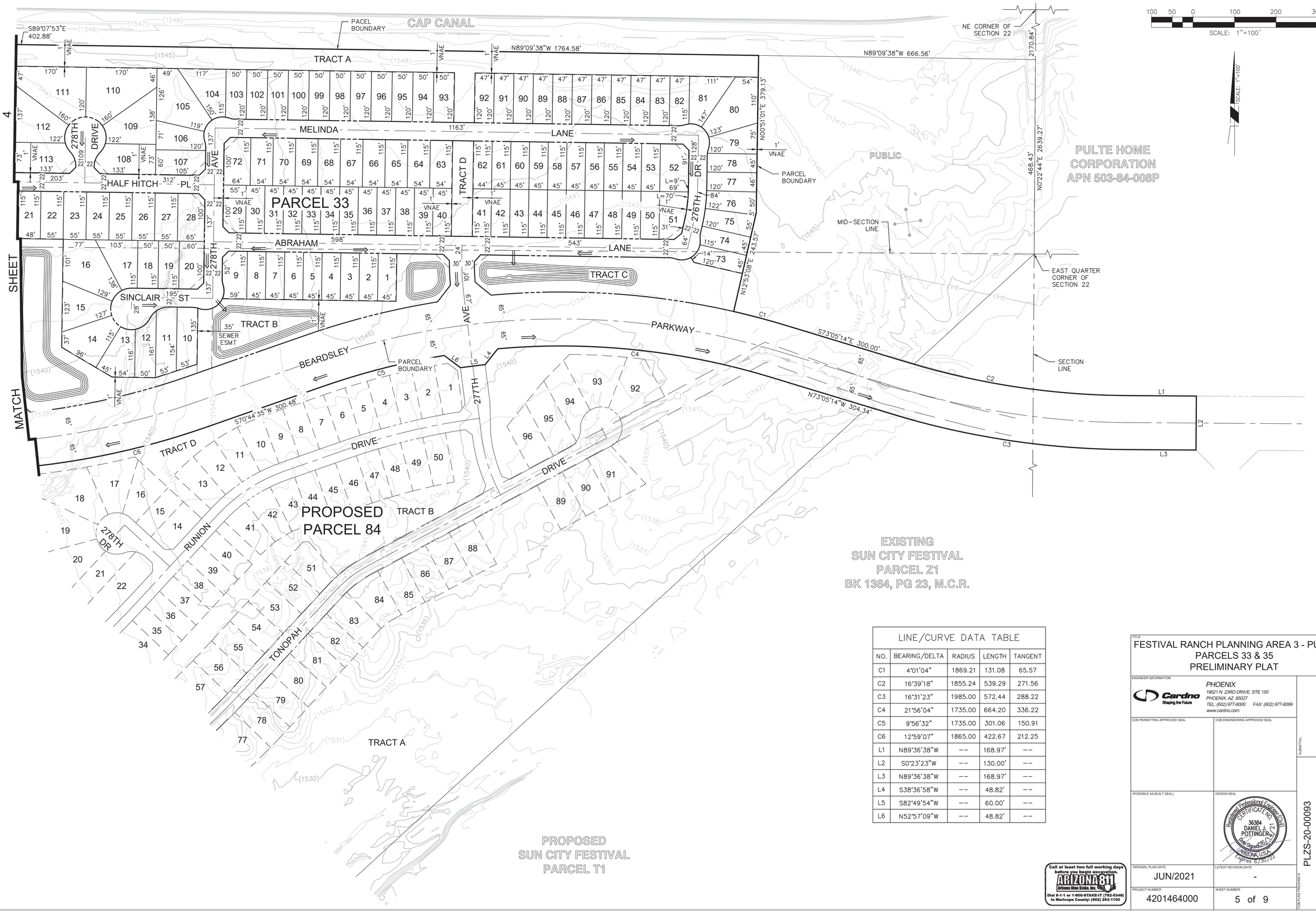

LINE/CURVE DATA TABLE				
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C2	16°39'18"	1855.24	539.29	271.56
C3	16°31'23"	1985.00	572.44	288.22
C4	21°56'04"	1735.00	664.20	336.22
C5	9°56'32"	1735.00	301.06	150.91
C6	12°59'07"	1865.00	422.67	212.25
L1	N89°36'38"W	--	168.97'	--
L2	S0°23'23"W	--	130.00'	--
L3	N89°36'38"W	--	168.97'	--
L4	S38°36'58"W	--	48.82'	--
L5	S82°49'54"W	--	60.00'	--
L6	N52°57'09"W	--	48.82'	--

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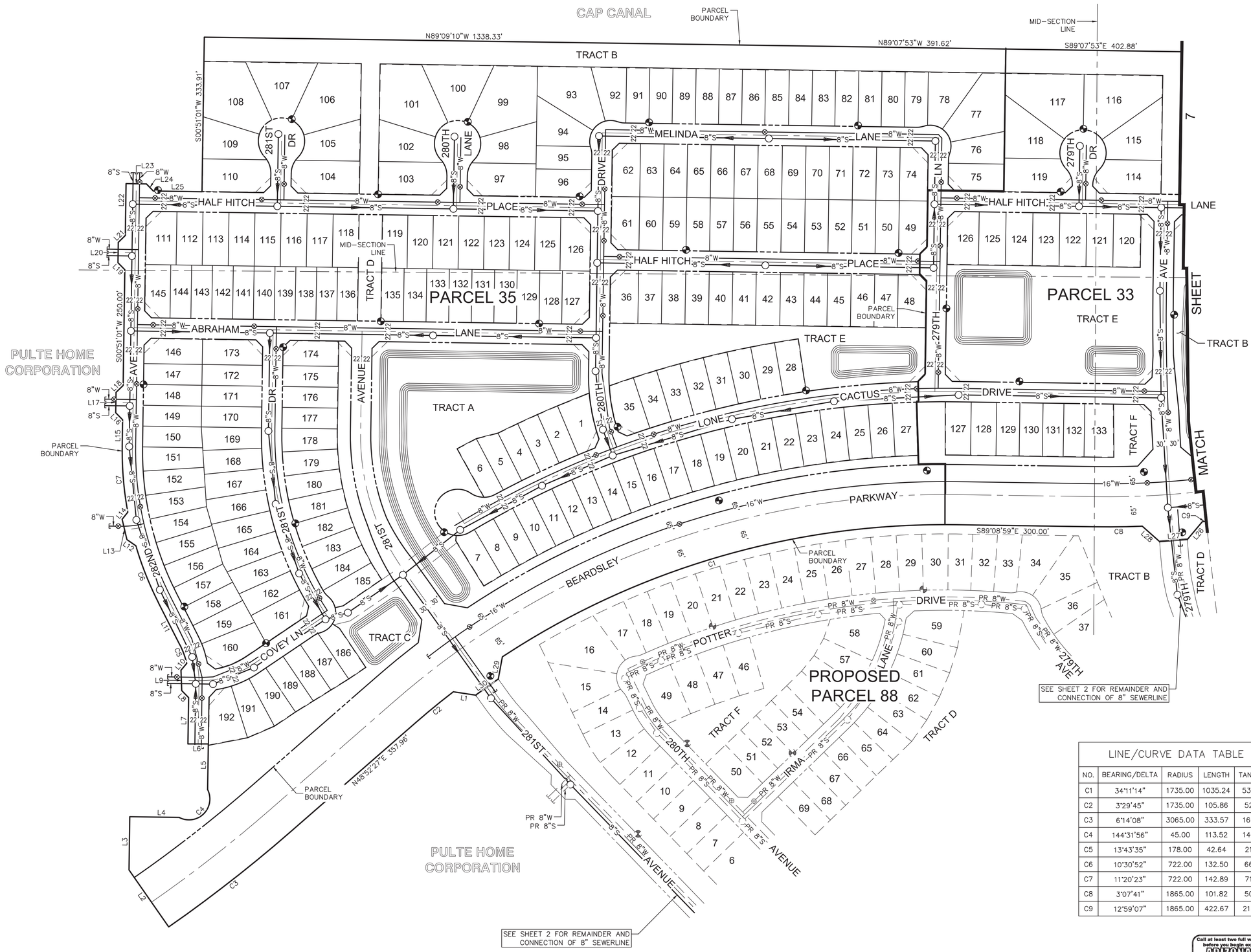

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NO.	BEARING/DELTA	RADIUS	LENGTH	TANGENT
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L3	S00°51'01"W	--	115.00'	--
L4	S89°08'59"E	--	106.52'	--
L5	S00°51'01"W	--	99.11'	--
L6	S89°54'19"W	--	44.01'	--
L7	S00°51'01"W	--	100.00'	--
L8	S44°08'59"E	--	21.21'	--
L9	S02°07'53"E	--	44.06'	--
L10	S40°02'27"W	--	18.96'	--
L11	S26°54'35"E	--	102.55'	--
L12	S55°09'03"E	--	23.20'	--
L13	S13°18'47"E	--	44.99'	--
L14	S38°19'06"W	--	19.52'	--
L15	S00°51'01"W	--	57.53'	--
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L18	S45°51'01"W	--	21.21'	--
L19	S44°08'59"E	--	21.21'	--
L20	S00°51'01"W	--	44.00'	--
L21	S45°51'01"W	--	21.21'	--
L22	S00°51'01"W	--	112.00'	--
L23	S89°08'59"E	--	44.00'	--
L24	S44°08'59"E	--	21.21'	--
L25	S89°08'59"E	--	105.00'	--
L26	S39°59'44"W	--	50.12'	--
L27	S85°43'31"W	--	60.00'	--
L28	N48°32'43"W	--	50.12'	--
L29	S10°18'03"W	--	48.82'	--
L30	S54°30'59"W	--	60.00'	--

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C3	6°14'08"	3065.00	333.57	166.95
C4	144°31'56"	45.00	113.52	140.72
C5	13°43'35"	178.00	42.64	21.42
C6	10°30'52"	722.00	132.50	66.43
C7	11°20'23"	722.00	142.89	71.68
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In Maricopa County: (602) 263-1100

TITLE
FESTIVAL RANCH PLANNING AREA 3 - PUP E
PARCELS 33 & 35
PRELIMINARY PLAT

ENGINEER INFORMATION
Cardno Shaping the Future
PHOENIX
19021 N. 23RD DRIVE, STE 150
PHOENIX, AZ 85027
TEL: (602) 977-8000 FAX: (622) 977-8099
www.cardno.com

COB PERMITTING APPROVED SEAL | COB ENGINEERING APPROVED SEAL | SUBMITTAL: 6/18/21 7:45:33 AM Derek Pearce

(POSSIBLE AS-BUILT SEAL) | DESIGN SEAL
Registered Professional Engineer (Civil) CERTIFICATE NO. 36384 DANIEL J. POTTINGER Date Signed 06/17/21 ARIZONA, U.S.A. Expires 6/30/22

ORIGINAL PLAN DATE: JUN/2021 | LATEST REVISION DATE: -
PROJECT NUMBER: 4201464000 | SHEET NUMBER: 6 of 9

COB PLAN TRACKING #: PLZS-20-00093
COB PERMIT #: -

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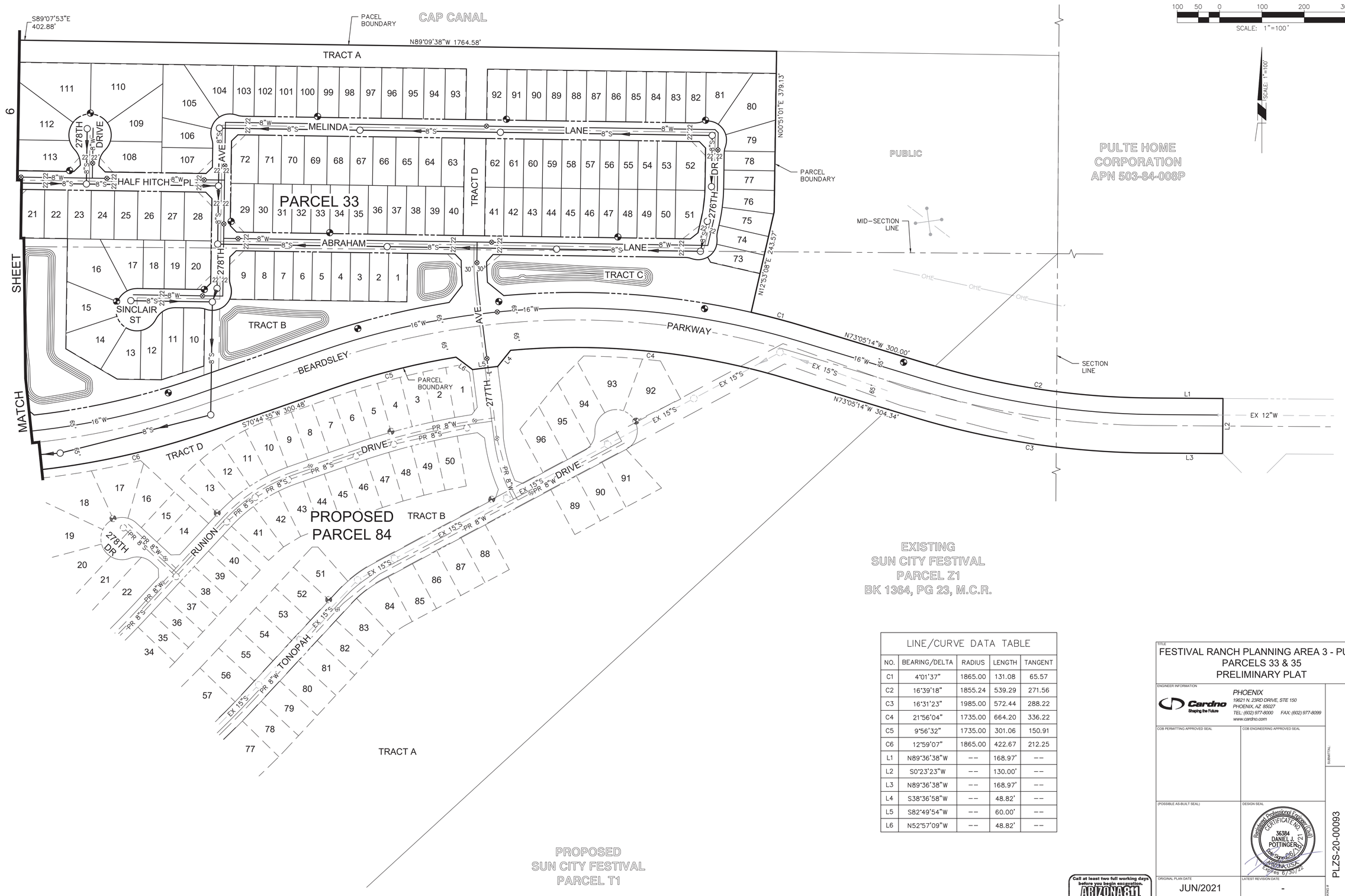

LINE/CURVE DATA TABLE				
NO.	BEARING/DELTA	RADIUS	LENGTH	TANGENT
C1	4°01'37"	1865.00	131.08	65.57
C2	16°39'18"	1855.24	539.29	271.56
C3	16°31'23"	1985.00	572.44	288.22
C4	21°56'04"	1735.00	664.20	336.22
C5	9°56'32"	1735.00	301.06	150.91
C6	12°59'07"	1865.00	422.67	212.25
L1	N89°36'38"W	--	168.97'	--
L2	S0°23'23"W	--	130.00'	--
L3	N89°36'38"W	--	168.97'	--
L4	S38°36'58"W	--	48.82'	--
L5	S82°49'54"W	--	60.00'	--
L6	N52°57'09"W	--	48.82'	--

Call at least two full working days before you begin excavation.
ARIZONA 811
Arizona Blue Stake, Inc.
Dial 8-1-1 or 1-800-STAKE-IT (782-5348)
In Maricopa County: (602) 263-1100

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JUN/2021	-
PROJECT NUMBER	SHEET NUMBER
4201464000	7 of 9

COB PLAN TRACKING #: PLZS-20-00093

COB PERMIT #: -

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T9

180 90 0 180 360 540

SCALE: 1"=180'

SCALE: 1"=180'

21300 N HORSHAM DRIVE

21250 N COVEY LANE

21200 N QUAIL AVENUE

21100 N MATTHEW DRIVE

21000 N ROSE GARDEN LANE

20900 N ROSS AVENUE

20800 N POTTER DRIVE

20750 N IRMA LANE

20700 N

20600 N MOHAWK DRIVE

20500 N RUNION DRIVE

20400 N TONOPAH DRIVE

20300 N YUKON DRIVE

28200 W

28100 W

28000 W

27900 W

27800 W

27700 W

27600 W

CAP CANAL

TRACT A

TRACT B

TRACT C

TRACT D

TRACT E

TRACT F

TRACT G

PARCEL 33

PARCEL 35

PROPOSED PARCEL 84

PROPOSED PARCEL 88

MELINDA

HALF HITCH

ABRAHAM

SINCLAIR

LONE CACTUS

BEARDSLEY

PARKWAY

COVEY

21600 N

21550 N

21500 N

21450 N

21400 N

20850 N

LANE

PLACE

DRIVE

AVENUE

ST

27975 W

27900 W

27800 W AVE

27700 W AVE

279TH

278TH

277TH

280TH

281ST

28150 W

28200 W

28050 W

28075 W

27850 W

27950 W

27975 W

27800 W

27850 W

27900 W

27700 W

21250 N LN

2100N BEAUBIEN DR (BBN) PHX

21050N HARMONY LN

TITLE

FESTIVAL RANCH PLANNING AREA 3 - PUP E
PARCELS 33 & 35
STREET NAME EXHIBIT

ENGINEER INFORMATION

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SUBMITTAL

ORIGINAL PLAN DATE: JUN/2021

LATEST REVISION DATE: -

PROJECT NUMBER: 4201464000

SHEET NUMBER: 8 of 9

COB PLAN TRACKING #: PLZS-20-00093

COB PERMIT #: -

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62

TITLE

FESTIVAL RANCH PLANNING AREA 3 - PUP E
PARCELS 33 & 35
FIRE ACCESS EXHIBIT

ENGINEER INFORMATION

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CERTIFICATE NO. 12
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POTTINGER
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3rd Submittal

PLZS-20-00093

RECEIVED

JUL 01 2021

CITY OF BUCKEYE by: WD

CAP CANAL FRONTAGE TO REMAIN UNDISTURBED

COMMUNITY TRAIL CONNECTION THROUGH OPEN SPACE

8' WIDE PRIVATE CONCRETE TRAIL

CAP CANAL

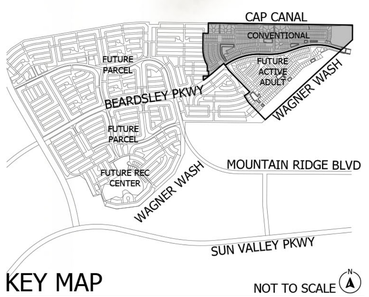
FUTURE LIBRARY

COMMUNITY ENTRY FEATURE WITH DECORATIVE WALLS AND ENHANCED VEGETATION

COMMUNITY AMENITY, SEE SHEET 3

COMMUNITY AMENITY, SEE SHEET 3

8' WIDE PUBLIC GRANULAR TRAILS (NORTH SIDE OF BEARDSLEY PKWY), SEE SHEET 3



KEY MAP

NOT TO SCALE

PLANT MATERIALS LEGEND

Trees	Size
Acacia aneura Mulga Acacia	24" Box
Acacia salicina Willow Acacia	36" Box
Acacia smallii Sweet Acacia	24" Box
Caesalpinia cacalaco Cascalote	36" Box
Parkinsonia hyb. 'Desert Museum' Palo Verde	48" Box
Chitalpa tashkinensis Chitalpa	24" Box
Fraxinus velutina Velvet Ash	36" Box
Prosopis galndulosa Honey Mesquite	36" Box
Prosopis hybrid Thornless Mesquite	36" Box
Quercus virginiana Heritage Oak	48" Box
Sophora secundiflora Texas Mountain Laurel	24" Box
Ulmus parvifolia 'Allee' Elm	48" Box
Vitex agnus-castus Chaste Tree	24" Box

Extra Large Shrubs	Size
Bougainvillea 'Barbara Karst' Bougainvillea	5 gal.
Caesalpinia mexicana Mexican Bird of Paradise	5 gal.
Caesalpinia pulcherrima Red Bird of Paradise	5 gal.
Dodonea viscosa Hopbush	5 gal.
Tecoma alata 'Orange Jubilee' Orange Jubilee	15 gal.
Vaquelina californica Arizona Rosewood	15 gal.

Large Shrubs	Size
Calliandra californica Red Fairy Duster	5 gal.
Cassia artemesoides 'Silver' Silver Cassia	5 gal.
Larrea tridentata Creosote	5 gal.
Leucophyllum frutescens 'Green Cloud' Green Cloud Sage	5 gal.
Leucophyllum langmaniae 'Lynn's Legacy' Lynn's Legacy Sage	5 gal.
Leucophyllum langmaniae 'Rio Bravo' Rio Bravo Sage	5 gal.
Simmondsia Chinensis Jojoba	15 gal.
Viguira deltoidea Goldeneye	1 gal.

Medium Shrubs	Size
Eremophila glabra spp. caranosa-Winter Blaze Winter Blaze	5 gal.
Eremophila hygrophana Blue Bells Blue Bells	5 gal.
Leucophyllum candidum 'Thunder Cloud' Thunder Cloud Sage	5 gal.
Rosmarinus officinalis Rosemary	5 gal.
Ruellia brittloniana Ruellia	5 gal.
Ruellia peninsularis Desert Ruellia	5 gal.

Small Shrubs	Size
Ambrosia deltoidea Triangle Leaf Bursage	1 gal.

Groundcovers	Size
Acacia redolens Prostrate Acacia	1 gal.
Eremophila prostrata 'Outback Sunrise' Outback Sunrise Eremophila	1 gal.
Lantana sp. 'New Red' Lantana	1 gal.
Lantana sp. 'New Gold' Lantana	1 gal.
Rosmarinus officinalis 'Prostratus' Trailing Rosemary	1 gal.
Trachleospermum jasminoides Asiatic Jasmine	1 gal.
Verbena goodingii Gooding's Verbena	1 gal.

Cacti/ Accents	Size
Agave americana 'Marginata' Century Plant	5 gal.
Agave deserti Desert Agave	5 gal.
Agave geminiflora Twn Flowered Agave	5 gal.
Agave murpheyi Murphey's Agave	5 gal.
Aloe barbadensis Medicinal Aloe	5 Gal.
Asclepias subulata Desert Milkweed	5 gal.
Carnegeia gigantea Sauguaro	6' spear
Dasylirion quadrangulatum Mexican Grass Tree	5 gal.
Dasylirion wheeleri Desert Spoon	5 gal.
Fouqueria splendens Ocotillo	8 cane min.

Hesperaloe funifera Giant Hesperaloe	5 gal
Hesperaloe parviflora Yellow Yucca	5 gal.
Muhlenbergia capillaris 'Regal Mist'	5 gal.
Muhlenbergia lindheimeri 'Autumn Glow'	5 gal.
Muhlenbergia rigens Deer Grass	1 gal.
Nolina bigelovii Beargrass	5 gal.
Opuntia basilaris Bevertail Prickly Pear	5 gal.
Opuntia englemannii Engelmann's Prickly Pear	5 gal.
Yucca baccata Banana Yucca	5 Gal.
Yucca pallida Pale Leaf Yucca	5 gal
Yucca rupicola Twisted Leaf Yucca	5 Gal.

Vines	Size
Bougainvillea 'Barbara Karst' Bougainvillea	5 gal
Bougainvillea 'San Diego Red' Bougainvillea	5 gal
Gelsemium sempevirens Carolina Jessamine	5 gal

Inerts	
No Symbol	Decomposed Granite 1" Minus Mountain Vista Brown

ADDITIONAL PLANT MATERIAL SELECTIONS MAY BE ADDED TO FUTURE CONSTRUCTION PLANS AS SELECTED FROM THE ADWR LOW WATER PLANT LIST OR THE APPROVED PUP E AMENDMENT AREA PLANT PALETTE.

TREE SIZE REQUIREMENTS:
48" BOX TREES REQUIRED (5%)
36" BOX TREES REQUIRED (35%)

TYPICAL NOTES:

- ALL INTERSECTIONS HAVE SIGHT VISIBILITY TRIANGLES PER CITY OF BUCKEYE EDS 6-3.307. ALL TREES SHALL BE 20' FROM STREET LIGHTS AND ALL VEGETATION SHALL BE 6' CLEAR FROM FIRE HYDRANTS
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PulteGroup

Del Webb

FESTIVAL RANCH - PUP E

Conceptual Landscape Plan

Plan Scale: 1:150' (150' 300' 450')

Date: 06-21-2021

Sheet 1 of 5

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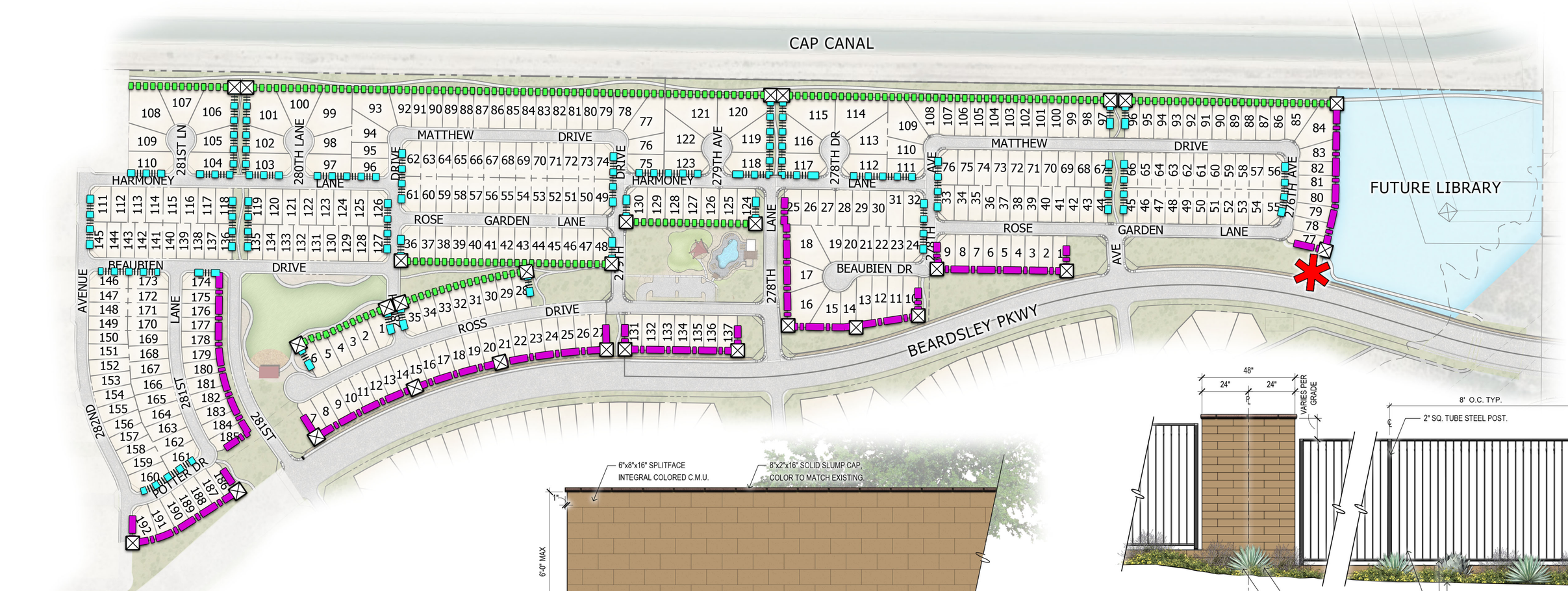
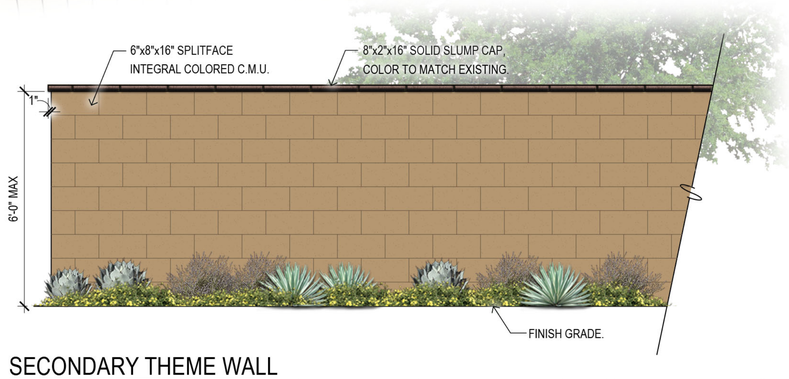
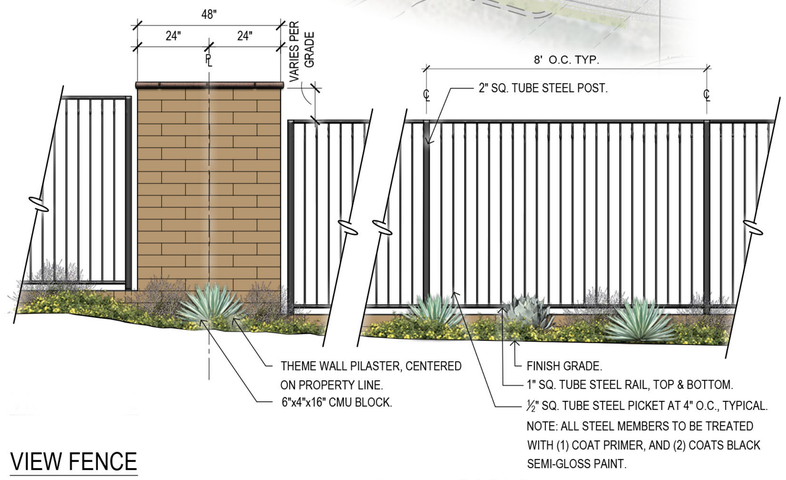
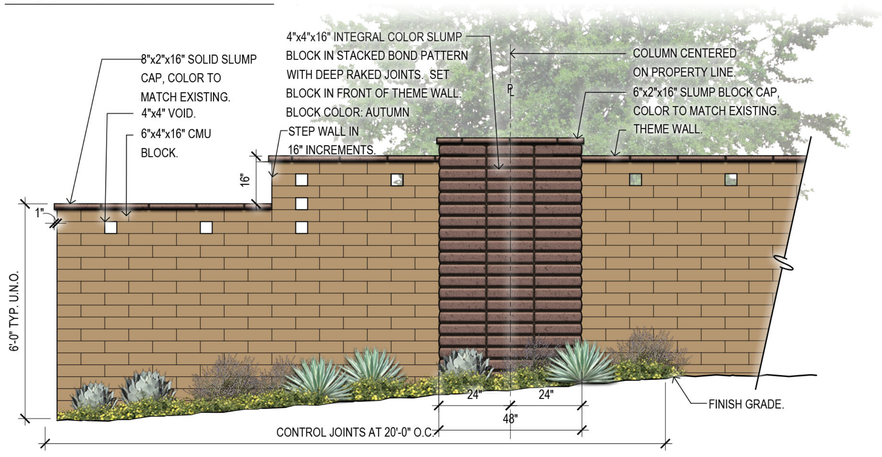




SECONDARY THEME WALL



VIEW FENCE



PRIMARY THEME WALL WITH PILASTER

WALL LEGEND

SYMBOL	DESCRIPTION
	PERIMETER THEME WALL
	SECONDARY THEME WALL
	VIEW FENCE
	PILASTER
	MINOR ENTRY MONUMENT

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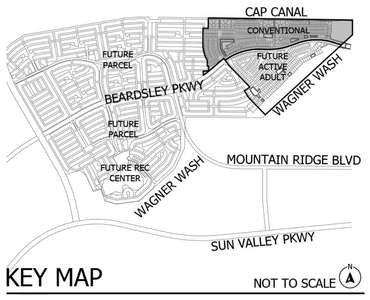

KEY MAP NOT TO SCALE

PulteGroup Del Webb

FESTIVAL RANCH - PUP E

Conceptual Walls Plan

Plan Scale: 1:150' 150' 300' 450' Date: 06-21-2021

Sheet 2 of 5

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ABLA

FUTURE CAP CANAL TRAIL BY OTHERS, SEE SECTION C BELOW

CAP CANAL

B

A

ROSE GARDEN LANE

27TH LANE

BEARDSLEY PKWY

FUTURE LIBRARY

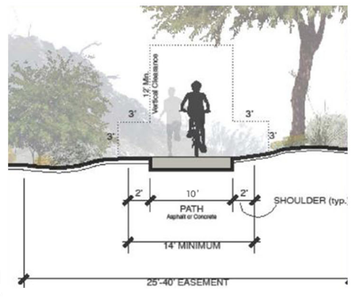
MINOR ENTRY MONUMENT

PARK A - TRADITIONAL
AMENITIES TO INCLUDE:

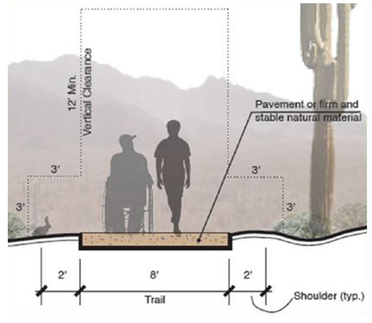
- SHADE STRUCTURE
- USABLE TURF AREA
- SEATING NODES
- 6' WIDE CONCRETE TRAIL
- PET WASTE STATION
- INTERPRETIVE PLAY AREA

PARK B - TRADITIONAL
AMENITIES TO INCLUDE:

- SHADE STRUCTURE
- TOT LOT WITH CLIMBER
- 5' WIDE CONCRETE TRAIL
- PARK BENCH
- MULTI-USE ACTIVITY LAWN
- COMMUNITY POOL FACILITY
- RESTROOM FACILITY
- 24-SPACE PARKING LOT



FUTURE "CAP" CANAL TRAIL SECTION "B"



PUBLIC GRANULAR TRAIL ALONG NORTH SIDE OF BEARDSLEY PKWY, SECTION "A"

TRAIL LEGEND

SYMBOL	DESCRIPTION
	10' CONCRETE OR APPROVED ALTERNATE SURFACING WAGNER WASH PUBLIC TRAIL
	8' WIDE PUBLIC GRANULAR TRAIL
	5' WIDE CONCRETE TRAIL
	LOCAL SIDEWALK
	8' WIDE PRIVATE CONCRETE TRAIL
	8' ATTACHED CONCRETE SIDEWALK (NORTH SIDE)
	8' DETACHED CONCRETE SIDEWALK (SOUTH SIDE)
	FUTURE CAP CANAL TRAIL BY OTHERS
	TRAILHEAD (MINOR PUBLIC)
	GOLF CART ACCESS (RESIDENT) - UNDERPASS
	MINOR ENTRY MONUMENT

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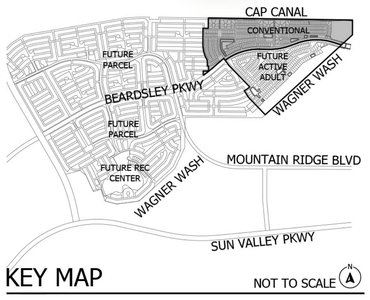

KEY MAP NOT TO SCALE

PulteGroup
Del Webb

FESTIVAL RANCH - PUP E

Conceptual Circulation Plan

Plan Scale: 1:150' 150' 300' 450'

Date: 06-21-2021

Sheet 3 of 5

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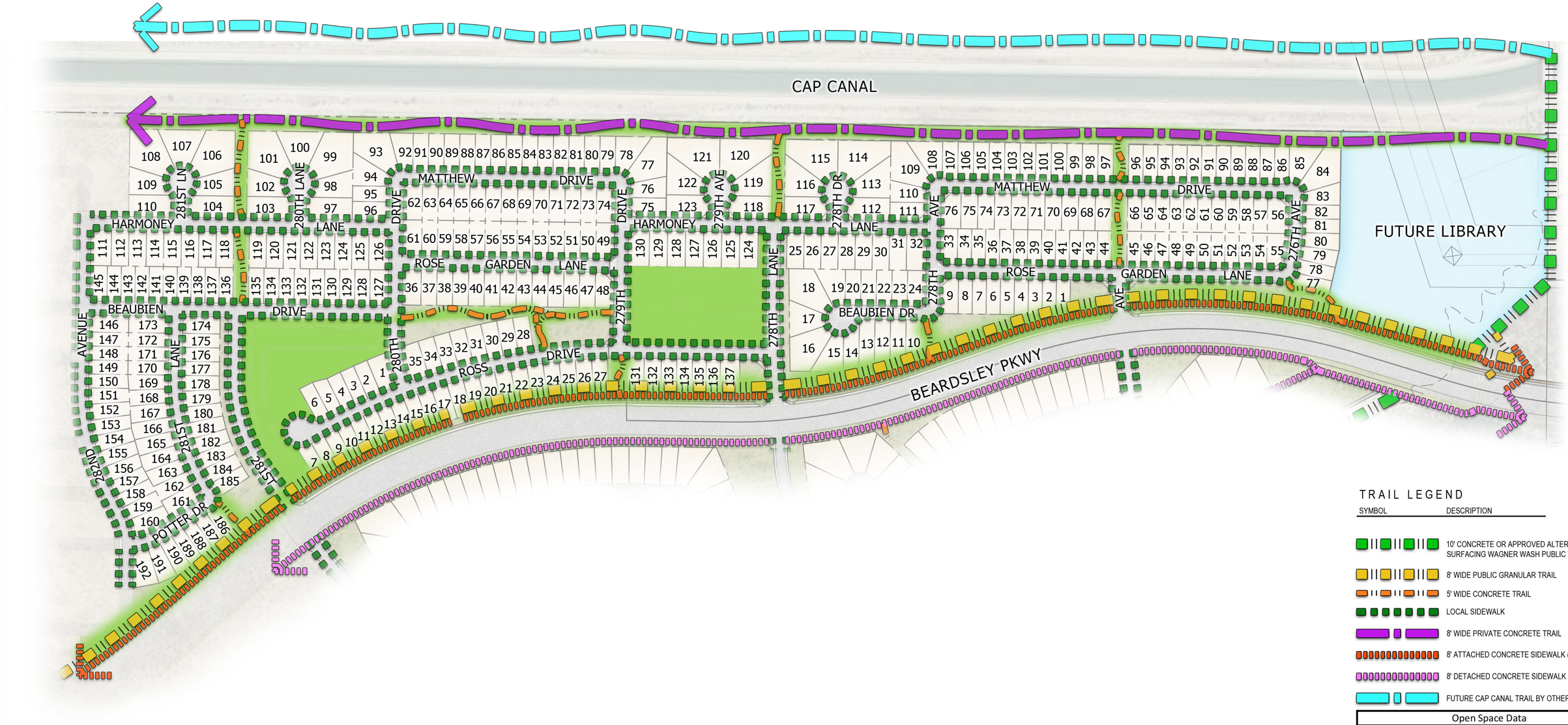

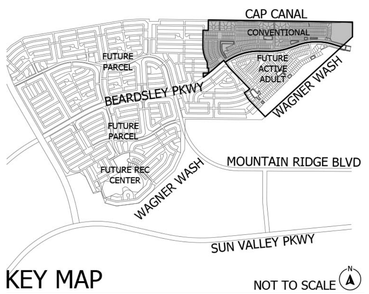

KEY MAP NOT TO SCALE

TRAIL LEGEND

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	8' WIDE PUBLIC GRANULAR TRAIL
	5' WIDE CONCRETE TRAIL
	LOCAL SIDEWALK
	8' WIDE PRIVATE CONCRETE TRAIL
	8' ATTACHED CONCRETE SIDEWALK (NORTH SIDE)
	8' DETACHED CONCRETE SIDEWALK (SOUTH SIDE)
	FUTURE CAP CANAL TRAIL BY OTHERS

Open Space Data		
	Acres	Percent
Gross Acreage	84.98	100.00%
Open Space Required	17.00	20.00%
Open Space Provided	19.52	22.97%
Active Open Space	5.16	6.07%

*Trails are included as the width x length of the trail.

TYPICAL NOTES:

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PulteGroup Del Webb

FESTIVAL RANCH - PUP E

Conceptual Open Space Plan

Plan Scale: 1:150' (150' 300' 450') Date: 06-21-2021

Sheet 4 of 5

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AB LA

Park A

General Amenities & Trail Character

Park B

Entry Monument

PulteGroup
Del Webb

FESTIVAL RANCH - PUP E

Amenity Character

Plan Scale: 1 : 150'

150' 300' 450'

Date: 06-21-2021

Sheet 5 of 5

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AB LA

CITY OF BUCKEYE
Regular Planning & Zoning Commission
PLANNING ACTION REPORT

MEETING DATE: 08/24/21	**AGENDA ITEM:** 3.C. PLZV-21-00030-Verrado Marketside PB Bell Apartments-Site Plan
DATE PREPARED: 08/19/21	**DISTRICT NO.:** 6
STAFF LIAISON: Sean Banda, Senior Planner, sbanda@buckeyeaz.gov, (623) 349-6215	
DEPARTMENT: Development Services	**AGENDA ITEM TYPE:** Public Meeting / Non Consent - New Business

ACTION/MOTION: (This language identifies the formal motion to be made by the Voting Members)
Verrado Marketside PB Bell Apartments-Site Plan (PLZV-21-00030)
Recommendation to approve a Site Plan for a 150-unit single-story bungalow multi-family rental development in the Planned Community (PC) Zoning District and Verrado Community Master Plan (CMP) Zoning Overlay District.

SUMMARY

Items related to a project or facility location must include an attached vicinity map for Council Review.
ATTACHMENTS:
PLZV-21-00030 VERRADO MARKETSIDE APARTMENTS - Narrative
PLZV-21-00030 VERRADO MARKETSIDE APARTMENTS - SITE PLAN
PLZV-21-00030 VERRADO MARKETSIDE APARTMEN TS SITE- Landscape
PLZV-21-00030 VERRADO MARKETSIDE APARTMENTS - Fire Truck Exhibit
3R - PLZV-21-00030 VERRADO MARKETSIDE APARTMENTS - DMB Approval Letter.pdf
PLZV-21-00030-StaffReport.docx

CITY OF BUCKEYE

VERRADO MARKETSIDE

Site Plan Review Project Narrative No. 2

Todd & Associates, Inc. 05.03.21

3rd Submittal

PLZV-21-00030

RECEIVED

JULY 15 2021

CITY OF BUCKEYE by:
WD

PROJECT TEAM

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PROJECT OVERVIEW

PROJECT INTRODUCTION

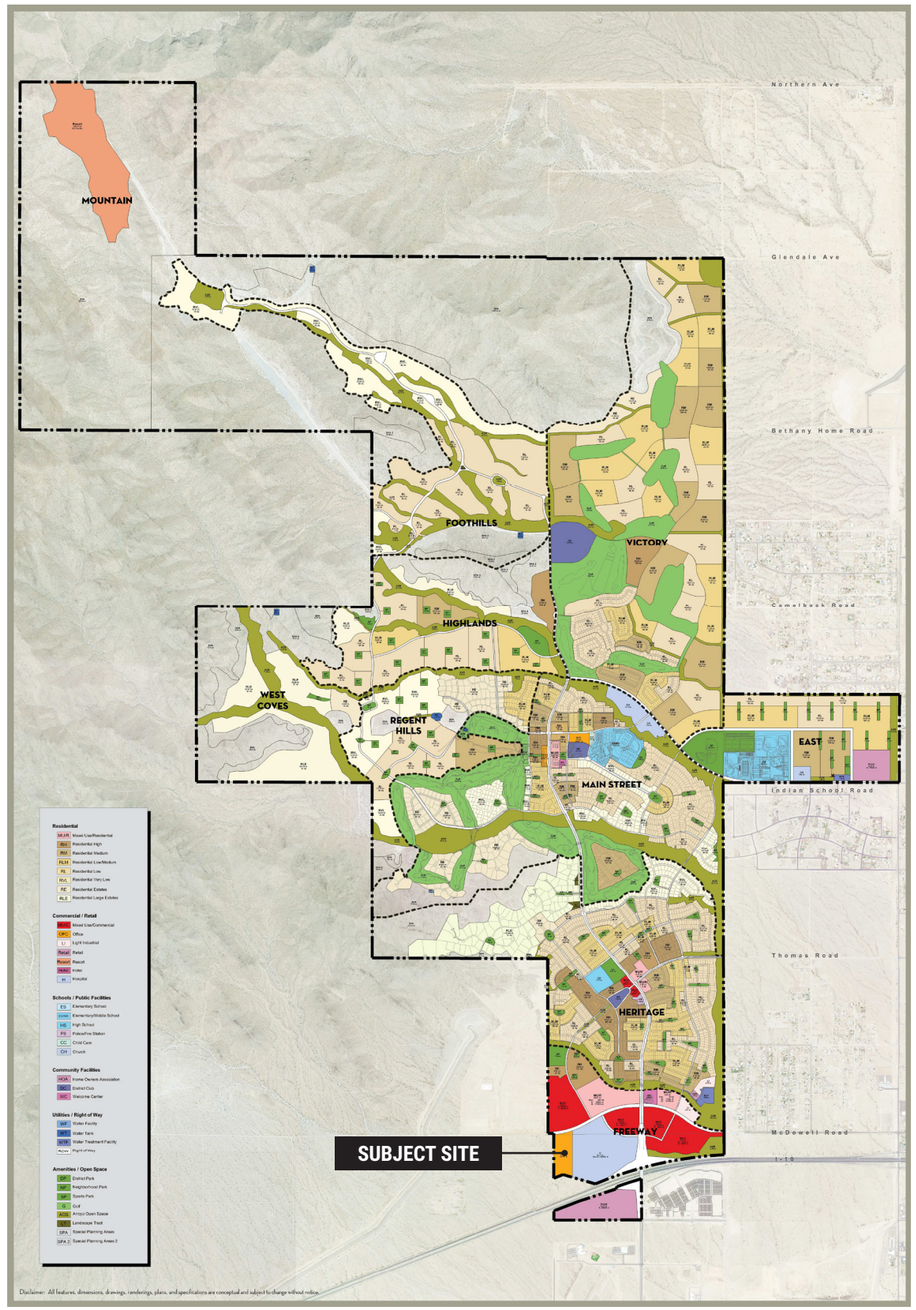
P.B. Bell is pleased to submit this Site Plan Review Submittal Project Narrative for Verrado Marketside, a proposed 150-unit, single-story multi-family rental development on approximately 16.19 net acres located near the southeast corner of McDowell Road and 215th Avenue in the City of Buckeye. The site is located in the southwest corner of the Verrado Community Master Plan (CMP). Shown to the right is the Verrado Conceptual Master Plan Exhibit of the overall Verrado CMP with the Subject Site outlined in black. The Maricopa County parcel map number for the site is 504-20-001U.

P.B. Bell, founded in 1976, is an Arizona-owned and operated real estate management and development institution that has had a consistent presence in Arizona for over 40 years. Based in Scottsdale, P.B. Bell's portfolio includes Class A, B and C products and its clientele range from global investment firms to individual owners. As a leader in the multifamily housing industry, P.B. Bell has earned multiple awards for its design, development and management services.

SITE PLAN APPROVAL REQUEST

P.B. Bell is requesting Site Plan Review Approval from the City of Buckeye for a 150-unit single-story bungalow multi-family rental development. In doing so, P.B. Bell has submitted and obtained approval of the Site Plan Review Submittal from the overall developer DMB before submitting this Site Plan Review Approval request to the City of Buckeye (see attached DMB Approval Letter). The City of Buckeye will review for general compliance with the general plan policies and development code requirements. Since the site is located within the Verrado Community Master Plan (CMP), some of the City of Buckeye development codes (i.e., perimeter setback, open space, etc.) will be superseded by the Master Plan.

Maricopa County Parcel Map



Verrado Conceptual Master Plan

SUBJECT SITE

PROPERTY

- The Subject Site is currently vacant and consists of ±16.19 net acres and ±17.24 gross acres.
- The Subject Site is undeveloped land just north of Interstate 10 and located at the southeast corner of McDowell Road and 215th Avenue.
- The topography of the site slopes generally in a southerly direction.
- The entire site is located within Flood Hazard Zones "X Shaded". This hazard is defined as "Areas of 0.2% annual chance flood, areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood."

SITE CONTEXT

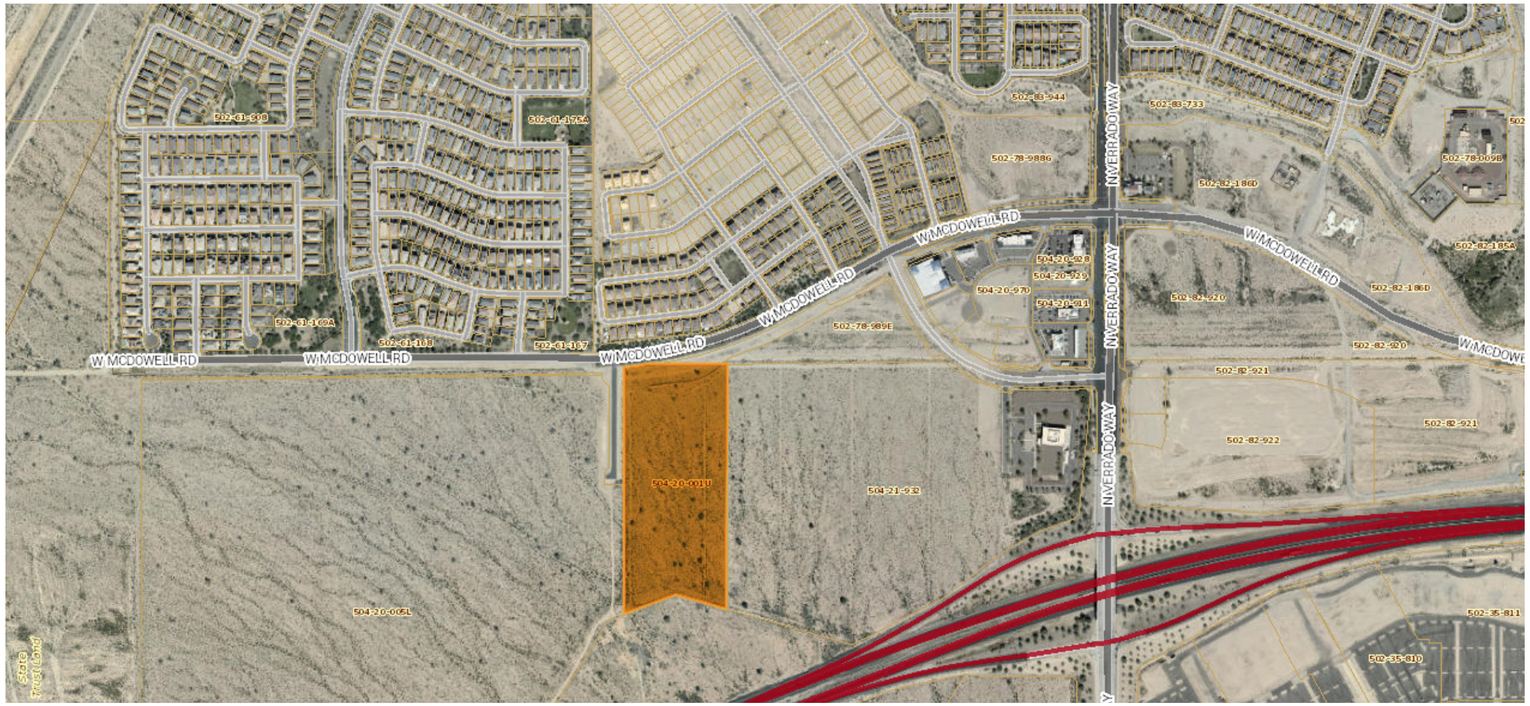
The Subject Site surrounding land uses are as follows:

North
McDowell Road; Verrado Master Planned Community (Affinity at Verrado – Single-Family Residential); and Sienna Hills Master Planned Community (single-family residential).

East
Verrado Master Planned Community (Future Banner Health Facility)

South
Vacant Land

West
Vacant Land (Future Mountain View Business Center)



Site Area Context Aerial

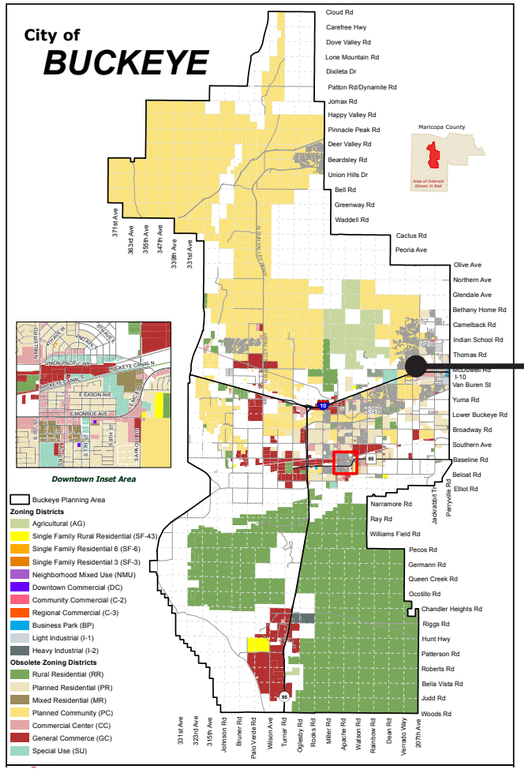
GENERAL PLAN AND ZONING DESIGNATIONS

GENERAL PLAN

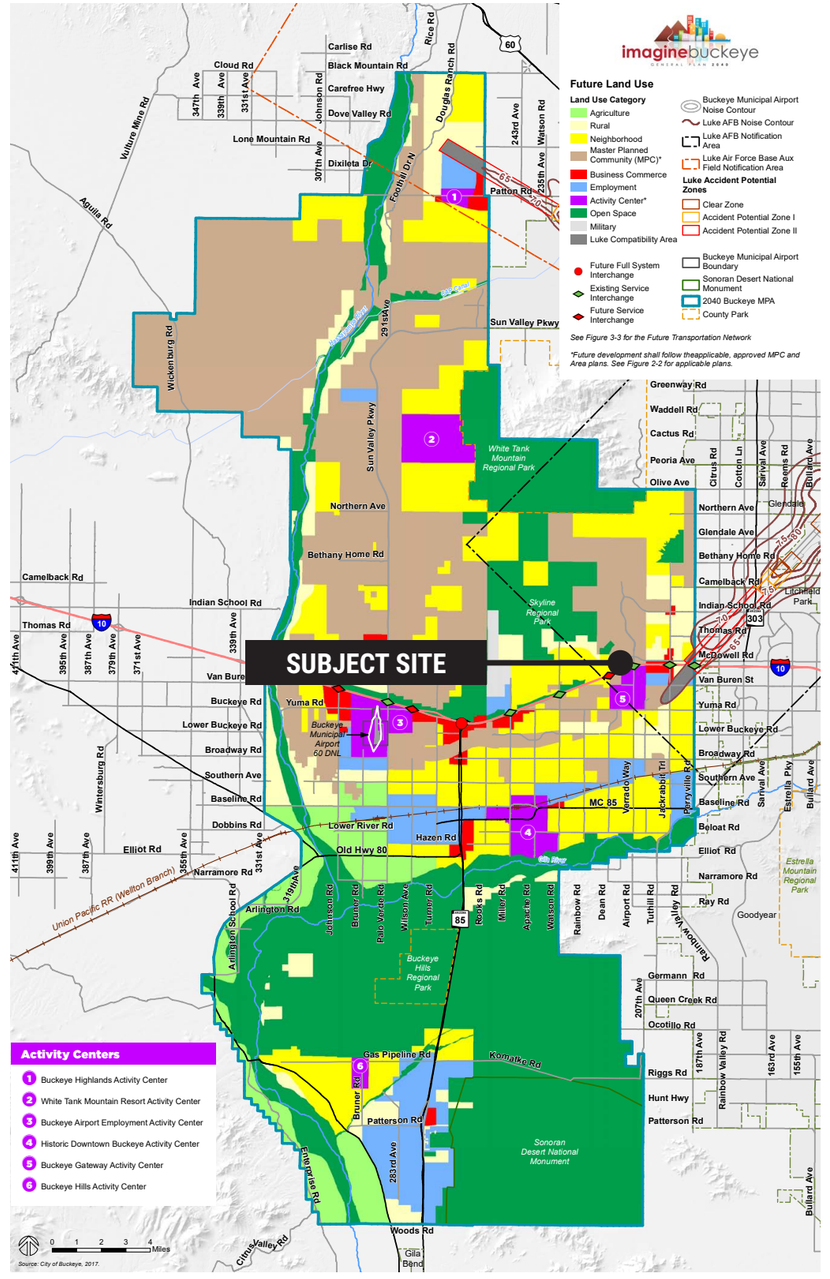
- The 2040 General Plan has designated the Subject Site as Verrado Master Planned Community (MPC), which allows for multi-family residential.

ZONING

- The Subject Site is zoned Planned Community (PC) which is an obsolete zoning district. No future rezoning may occur to any of the districts listed in the Obsolete Districts.
- The Planned Community Zoning District is designed to accommodate all land uses approved as part of the Community Master Plan, where specific uses, public services, densities, and design criteria have been identified and adopted.



City of Buckeye Zoning Map



2040 General Plan Land Use Map

SITE PLAN

SITE PLAN NARRATIVE

The proposed site plan consists of 150 single-story bungalow rental units. The development concept is based upon a walkable “Paseo” through the middle of the site to allow residents a direct pedestrian connection to the clubhouse, fitness center, main pool area, and the secondary open space area. The project provides one covered parking space (carport or attached garage) for each dwelling unit.

There are six (6) proposed building types:

1. 1 Bedroom
2. 1 Bedroom Duplex
3. 2 Bedroom
4. 2 Bedroom Duplex with Attached Garages
5. 3 Bedroom
6. 3 Bedroom with Attached Garages

Each building has a front porch and a patio in the backyard. The backyards are fenced with a 6-foot vinyl fence.

BACKYARD FENCE WITH GATE, TYPICAL

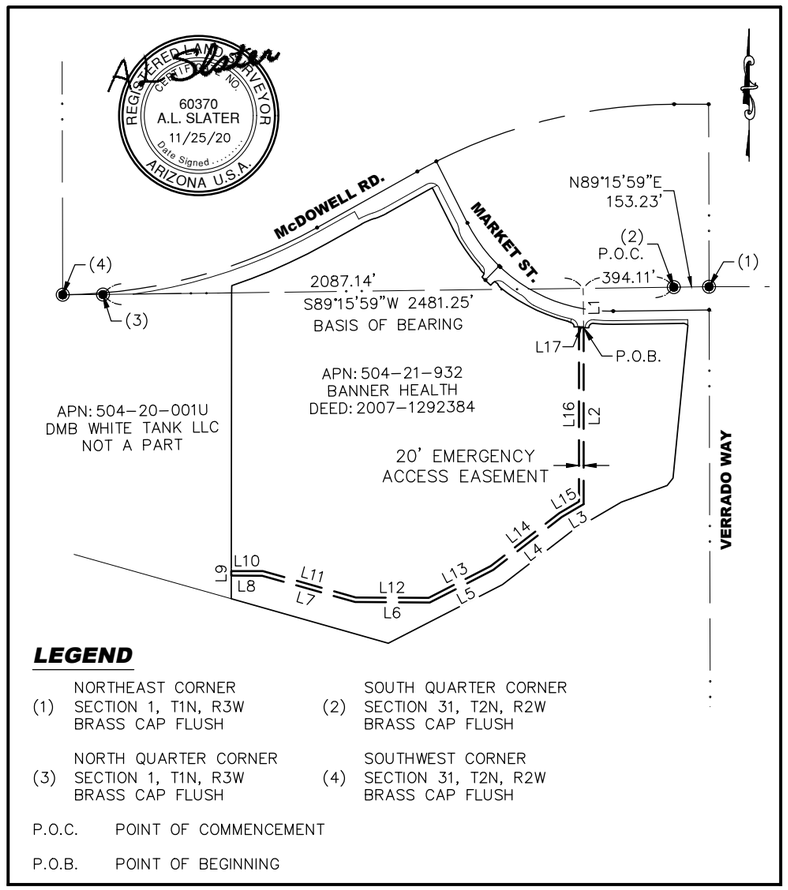
6-FOOT (BACKYARD) & 4-FOOT (DOG PARK)

VEHICULAR ACCESS

MAIN & FIRE/EMERGENCY ACCESS

The main vehicular access is from McDowell Road and is located at the northeast corner of the site.
This main entry will have alternative pavement material to create a defined entrance and "sense of arrival."

- The secondary access is located at the southeast corner of the site. This access is used for fire/emergency access only.
- This secondary access complies with the City of Buckeye fire access requirement, providing access that is placed a distance equal to but not less than one half of the length of the maximum overall diagonal dimension of the lot or area to be served, measured in a straight line between access points.
- The fire/emergency access point will need to be routed through the Banner Health parcel. A temporary fire/emergency road will be provided until the time the Banner Health facility is developed. Banner Health and P.B. Bell have come to an agreement with the fire/emergency access easement. See Banner Health Emergency Access Easement Exhibit to the right.



Banner Health Emergency Access Easement

LINE TABLE		
LINE	DIRECTION	LENGTH
L1	S00°44'01"E	170.80'
L2	S00°00'00"E	766.95'
L3	S59°34'11"W	109.25'
L4	S52°21'10"W	377.53'
L5	S62°47'55"W	309.69'
L6	N89°36'55"W	324.38'
L7	N74°11'14"W	420.11'
L8	N89°54'47"W	134.16'
L9	N00°05'13"E	20.00'
L10	S89°54'47"E	136.92'
L11	S74°11'14"E	420.16'
L12	S89°36'55"E	316.76'
L13	N62°47'55"E	302.95'
L14	N52°21'10"E	376.96'
L15	N59°34'11"E	99.06'
L16	N00°00'00"E	758.27'
L17	S82°06'28"E	20.19'

LANDSCAPE

LANDSCAPE NARRATIVE

The Verrado Marketside landscape design uses the Verrado Design Guidelines as its basis of design. Verrado lies within the desert transition zone, offering opportunities for unique and site-specific responses to the landscape.

- The landscape design will reinforce the Verrado Town Building Principles, promoting a sense of community.
- The site's hardscape and landscape will be sensitive to the surrounding character of the area, using the nearby White Tank Mountains and rich agricultural history as inspiration to guide the desert theme.
- Remaining sensitive to this desert transition zone, the planting plan utilizes low water use plants as a sustainable design strategy and connects the development to the surrounding natural environment.
- The site design promotes pedestrian-friendly activity that focuses on creating a neighborhood community.
- The landscaping throughout the site provides amenities of shade, site furnishing, lighting, and signage to address areas of comfort, convenience, accessibility, safety, security and atmosphere.
- Site amenities are distributed throughout the community and include: a dog park, pool amenity, indoor & outdoor clubhouse spaces, shaded walking paths, open turf game courts, shaded ramada areas and barbeque activity spaces.

PROPOSED DEVELOPMENT STANDARDS

The site will follow Verrado Design Guidelines and development standards:

Development Standards	Verrado Community Master Plan
Density:	
Max. Allowed:	No Maximum Density
Provided:	9.26 D.U./Net Acres
Building Height:	
Max. Allowed:	48' or 4 stories maximum
Provided:	1-story
Setbacks:	
Front:	Perimeter setback of 20'
Side:	Perimeter setback of 20'
Rear:	Perimeter setback of 20'
Lot Coverage:	
Maximum Allowed:	75%
Provided:	30%
Open Space:	
Minimum Allowed:	10%
Provided:	19.7%

ARCHITECTURE

ARCHITECTURAL CHARACTER

Verrado Marketside single-story rental units' design reflects a Desert Contemporary aesthetic, keeping with the surrounding neighborhood and greater Verrado community. The individual buildings are simple, geometric forms intended to be read together as a unified whole. Parapet roof forms predominate, with sloped shed roofs adding emphasis at entries and the Community Clubhouse.

Materials are appropriate to the location. Smooth stucco wall finishes with crisp, square corners are the primary material with brick accents to add emphasis at strategic locations. Flat concrete tiles, reinforce the clean, modern aesthetic of the sloped roofing.

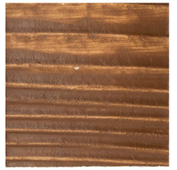
The spaces between the buildings are considered as important as the buildings themselves. These positive outdoor spaces are thoughtfully landscaped to provide comfortable, shaded pedestrian circulation paths throughout the community. Each apartment home features a covered front porch, providing residents an opportunity to personalize and identify their home.

BUILDING MATERIALITY

Stucco

Stucco

Masonry Veneer
Running Bond Modular



Accent Material
Fiber Cement Board 6" Lap

Conc. Roof Tile

Residential Window Frame
Glass: Clear Low-E

Storefront Windows & Doors
Glass: Clear Low-E

VERRADO MARKETSIDE CLUBHOUSE

NORTHEAST ELEVATION

ARCHITECTURE

BUILDING TYPES

BUILDING TYPE 1A
1 BEDROOM

Front Elevation

BUILDING TYPE 1B
1 BEDROOM DUPLEX

Front Elevation

BUILDING TYPE 2A
2 BEDROOM

Front Elevation

BUILDING TYPE 2B
2 BEDROOM DUPLEX WITH GARAGE

Front Elevation

BUILDING TYPE 3A
3 BEDROOM

Front Elevation

BUILDING TYPE 3B
3 BEDROOM WITH GARAGE

Front Elevation

FIRE PROTECTION

- The City of Buckeye has adopted the 2014 International Fire Code and the 2012 International Fire Code (CPG Tank Installation Requirements).
- The development is a single-story rental development, with buildings less than 5,000 square feet. As a result of this, the development does not have to provide a fire sprinkler system per the International Fire Code 2014. Todd & Associates contacted Fire Marshal Nate Ryan on August 6, 2020 to verify.
- The fire turning radius is based upon WB-50 turning radius. Civil engineer (Atwell) provided a WB-50 Turning Movement Exhibit to show the site complies with the fire turning radius.
- The development has provided an 8-inch fire line loop, and fire protection will be provided utilizing fire hydrants spaced per the City standards. Although these are residential dwellings, the more conservative spacing for commercial and industrial complexes of 300 feet on-center were used in this development.

PUBLIC RIGHT-OF-WAY/TRAFFIC

- The existing McDowell Road is an east-west two (2) lane roadway with one lane of travel in each direction at the current time. The ultimate configuration of McDowell Road is a four (4) lane arterial with two (2) lanes of travel in each direction, a solid center median, a detached 6-foot sidewalk, and a bike lane in each direction. Per the City of Buckeye, McDowell Road is classified as an arterial street (120' R.O.W. or 60' ½ R.O.W.).

GRADING & DRAINAGE

- The existing site drops approximately 3-feet off of McDowell Road and sheet flows with an approximate 1.3% slope to the south east corner which is the ultimate outfall of the site.
- The proposed site utilizes a retaining wall on the north property line which allows the proposed site to drop on the north side then follows the existing ground elevation to ultimately drain to the southeast corner. Any rainfall on the site will sheet flow to curbs, gutters, flow lines and ultimately to catch basins throughout the site. It will then drain to the underground retention system which is sized to hold the 100 year, 2 hour storm event. This system will be placed in the middle of the site along the fire lane. In the event that the system is flooded with a larger storm event, it will drain through the local site outfalls and cascade towards the southeast corner (without backing up to the buildings) towards the ultimate outfall, which is 1-foot minimum lower than the lowest proposed finish floor.

UTILITIES

- The water system will tie into the existing water line in McDowell Road at the northwest and northeast corners of the site to create a 4-inch domestic water main loop and an 8-inch fire main loop, which will be serviced by EPCOR Water Company. Water meters for the domestic main and backflow prevention assemblies for the fire main will be placed south of McDowell Road.
- An 8-inch sewer main, designed per the city standards, will flow to the southeast corner of the site, where a sewer main being proposed by DMB is being designed and will be built. The sewer main goes through the Banner Medical site to the east then to the City sewer main in Verrado Road.

SOURCE OF WATER

- EPCOR will be providing water for the site through the connection to the water system along the road to the north.

WASTEWATER MANAGEMENT

- Sewer will be provided by the City sewer system as mentioned above.

PHASING

- It is anticipated the site will be developed in one (1) phase.

CONCLUSION

P.B. Bell has identified the City of Buckeye as one of the most self-motivated and exciting communities in the Phoenix Metropolitan area and is excited to develop their single-story bungalow rental multi-family residential communities at this location. We look forward to gathering input from the City Staff that will allow us to make our vision for this site a reality.

TODD+ASSOCIATES

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www.toddassoc.com

APARTMENTS - VERRADO MARKETSIDE

BUCKEYE, AZ

Project No. 19-2015-01
Project Log No.

Date July 14, 2021

CITY SITE PLAN REVIEW SUBMITTAL #3

Client:
PB BELL
8434 N. 90TH STREET
SCOTTSDALE, AZ 85258
480-951-2222 p
480-951-2426 f

REGISTERED ARCHITECT
CERTIFICATE NO.
13467
GARY D. TODD
Date Signed 07/15/21
ARIZONA U.S.A.
EXPIRES 9/30/22

SHEET INDEX

COVER

ARCHITECTURAL:

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A1.3.4 ENLARGED SITE PLAN
A1.3.5 ENLARGED SITE PLAN
A1.3.6 ENLARGED SITE PLAN

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A2.3 FLOOR PLAN BUILDING TYPE 2A (2 BED)
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A3.1 COLOR ELEVATIONS BUILDING TYPE 1A (1 BED)
A3.2 COLOR ELEVATIONS BUILDING TYPE 1B (1 BED DUPLEX)
A3.3 COLOR ELEVATIONS BUILDING TYPE 2A (2 BED)
A3.4 COLOR ELEVATIONS BUILDING TYPE 2B (2 BED DUPLEX W/GARAGE)
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FD1.1 FIRE LANE ROLLED CURB DETAIL

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1 OF 10 COVER SHEET
2 OF 10 SECTIONS & DETAILS
3 OF 10 GRADING & DRAINAGE
4 OF 10 GRADING & DRAINAGE
5 OF 10 GRADING & DRAINAGE
6 OF 10 GRADING & DRAINAGE
7 OF 10 GRADING & DRAINAGE
8 OF 10 GRADING & DRAINAGE
9 OF 10 GRADING & DRAINAGE
10 OF 10GRADING & DRAINAGE

1 OF 9 COVER SHEET
2 OF 9 WATER & SEWER
3 OF 9 WATER & SEWER
4 OF 9 WATER & SEWER
5 OF 9 WATER & SEWER
6 OF 9 WATER & SEWER
7 OF 9 WATER & SEWER
8 OF 9 WATER & SEWER
9 OF 9 WATER & SEWER

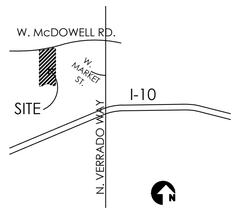
ELECTRICAL:

1 OF 9 PHOTOMETRIC COVER SHEET
2 OF 9 PHOTOMETRIC CALCULATIONS
3 OF 9 PHOTOMETRIC CALCULATIONS
4 OF 9 PHOTOMETRIC CALCULATIONS
5 OF 9 PHOTOMETRIC CALCULATIONS
6 OF 9 PHOTOMETRIC CALCULATIONS
7 OF 9 PHOTOMETRIC CALCULATIONS
8 OF 9 PHOTOMETRIC CUT SHEET & DETAILS
9 OF 9 PHOTOMETRIC CUT SHEET & DETAILS

FIRE:

1 of 1 FIRE TRUCK EXHIBIT

VICINITY MAP



LEGAL DESCRIPTION

SEE ALTA SURVEY

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REVISIONS

Rev.	Date:	Description:
△		
△		
△		
△		
△		

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Preliminary Not For Construction

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N.T.S.

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19-2015-01

PB Bell

APARTMENTS - VERRADO MARKETSIDE

Buckeye, Arizona

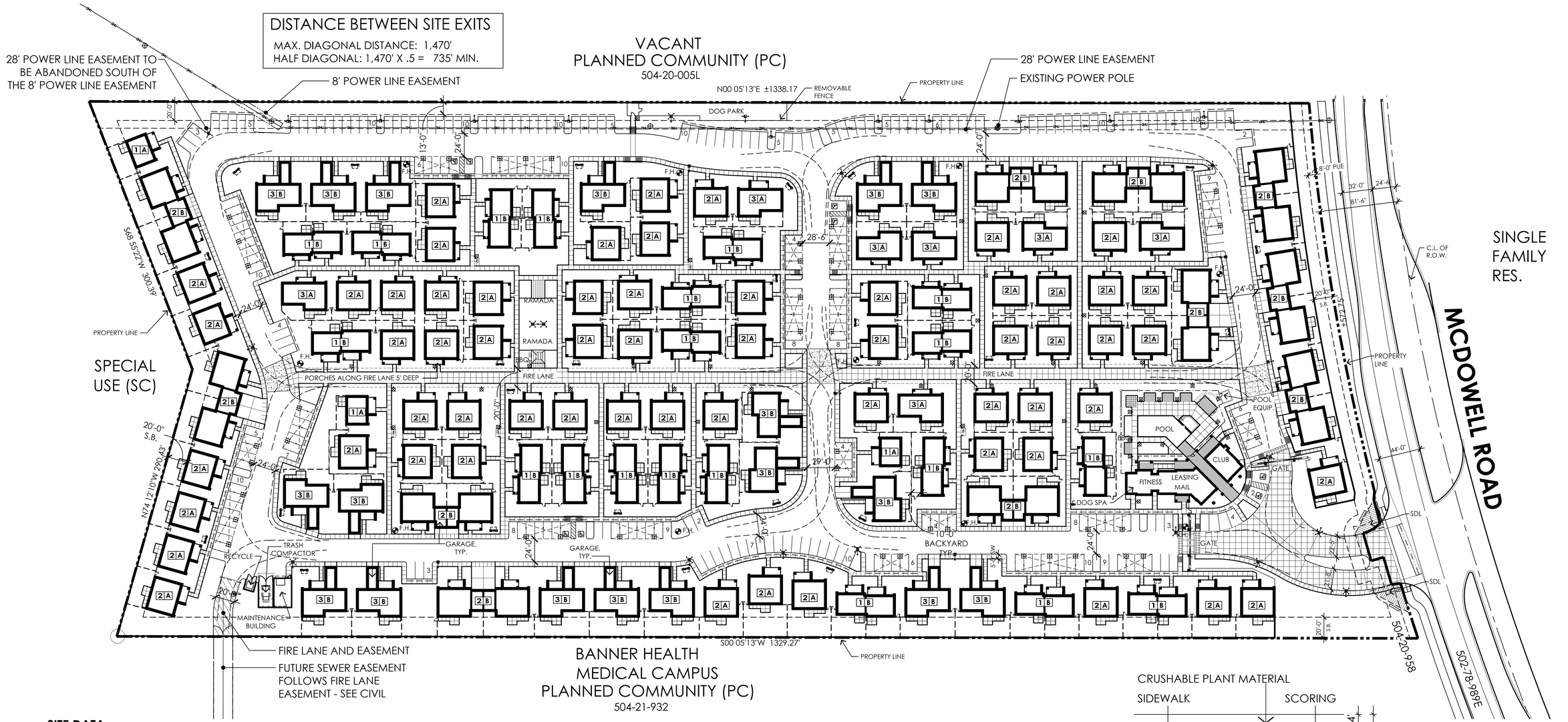
CITY SITE PLAN REVIEW SUBMITTAL #3

July 14, 2021

AERIAL PLAN

Preliminary Not For Construction

A0.1



SITE DATA

ASSESSOR'S PARCEL NUMBER 504-20-001U

SITE AREA:
- GROSS SITE AREA 17.24 AC / 750,974 sf
- EXISTING NET SITE AREA: 16.13 AC / 702,614 sf

ZONING:
- EXISTING ZONING PLANNED COMMUNITY (PC) (VERRADO MASTER PLAN)
- PROPOSED ZONING (PC) VERRADO MASTER PLAN

DENSITY
- DENSITY ALLOWED VERRADO (NO STANDARD)
- GROSS DENSITY PROVIDED 9.02 DU/AC

BUILDING HEIGHT:
- MAX. BUILDING HT. VERRADO (NO STANDARD)
- BUILDING HT. PROPOSED 1 STORY

UNIT MIX:

APARTMENT TYPE & MIX

UNIT TYPE	#DU	RATIO
1 BR / 1 BA (1A / 1B)	43	28.7%
2 BR / 2 BA (2A / 2B)	82	54.7%
3 BR / 2 BA (3A / 3B)	25	16.6%
TOTAL	150	100.0%

SETBACKS:
- REQUIRED 20'
- PROVIDED PERIMETER SETBACK 20'

LOT COVERAGE:
- MAXIMUM ALLOWED 75% (528,927 S.F.)
- 75% x NET AREA (702,614 S.F. x 75% = 526,961 S.F.)
- PROVIDED 30.3% (212,574 S.F.)

OPEN SPACE:
- MINIMUM ALLOWED 10.0% (70,524 S.F.)
- 10% x NET AREA (702,614 S.F. x 10% = 70,261 S.F.)
- PROVIDED NET AREA: 19.8% (139,255 S.F.)

PARKING:

PARKING REQUIRED:

UNIT TYPE	#DU	P.S. RATIO	P.S. REQ.
1 BR / 1 BA	43	1.0 P.S./DU	43
2 BR / 2 BA	82	1.5 P.S./DU	123
3 BR / 2 BA	25	2.0 P.S./DU	50
GUEST	150	1 P.S./5 DU	30
TOTAL			246 (1.64 P.S./ DU)

PARKING:

PARKING PROVIDED:

	P.S.
SURFACE	169 P.S.
CARPORTS	113 P.S.
TANDEMS	6 P.S.
GARAGE 2 BR UNIT GARAGE	22 P.S.
GARAGE 3 BR UNIT GARAGE	18 P.S.
TOTAL PARKING PROVIDED:	328 P.S. (2.18P.S./ DU)
ACCESSIBLE STALLS REQUIRED	8 P.S.
ACCESSIBLE STALLS PROVIDED (INCLUDING 2 VAN SPACES)	8 P.S.

LEGEND

PARKING CANOPY

ASSUMED PROPERTY LINE

ACCESSIBLE PARKING SPACE

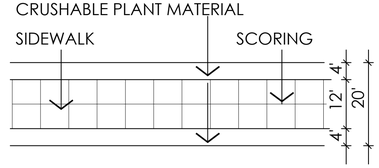
05 / 1 B — BUILDING NUMBER (ON ENLARGED PLANS ONLY); NUMBER INDICATES NUMBER OF BEDROOMS PER UNIT; LETTER INDICATES BEDROOM TYPE

PROPOSED FIRE HYDRANT

F.D.C. (FIRE DEPARTMENT CONNECTION) SEE A0.4

FIRE TRUCK TURNING RADIUS - WB50 TURNING RADIUS PER CITY OF BUCKEYE STANDARDS.

CRUSHABLE PLANT MATERIAL

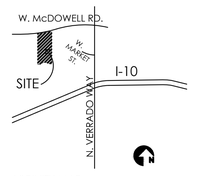


*ALL MATERIAL OVER COMPACTED BASE PER CITY OF BUCKEYE FIRE DEPARTMENT STANDARDS

PROPOSED FIRE LANE

0' 25' 50' 100'

SCALE: 1" = 50'-0"



VICINITY MAP

REGISTERED ARCHITECT CERTIFICATE NO. 13467 GARY D. TODD 07/15/21 Date Signed ARIZONA, U.S.A.

EXPIRES 9/30/22

TODD + ASSOCIATES
602-952-8280 / TODDASSOC.COM
19-2015-01

PB Bell

APARTMENTS - VERRADO MARKETSIDE

Buckeye, Arizona

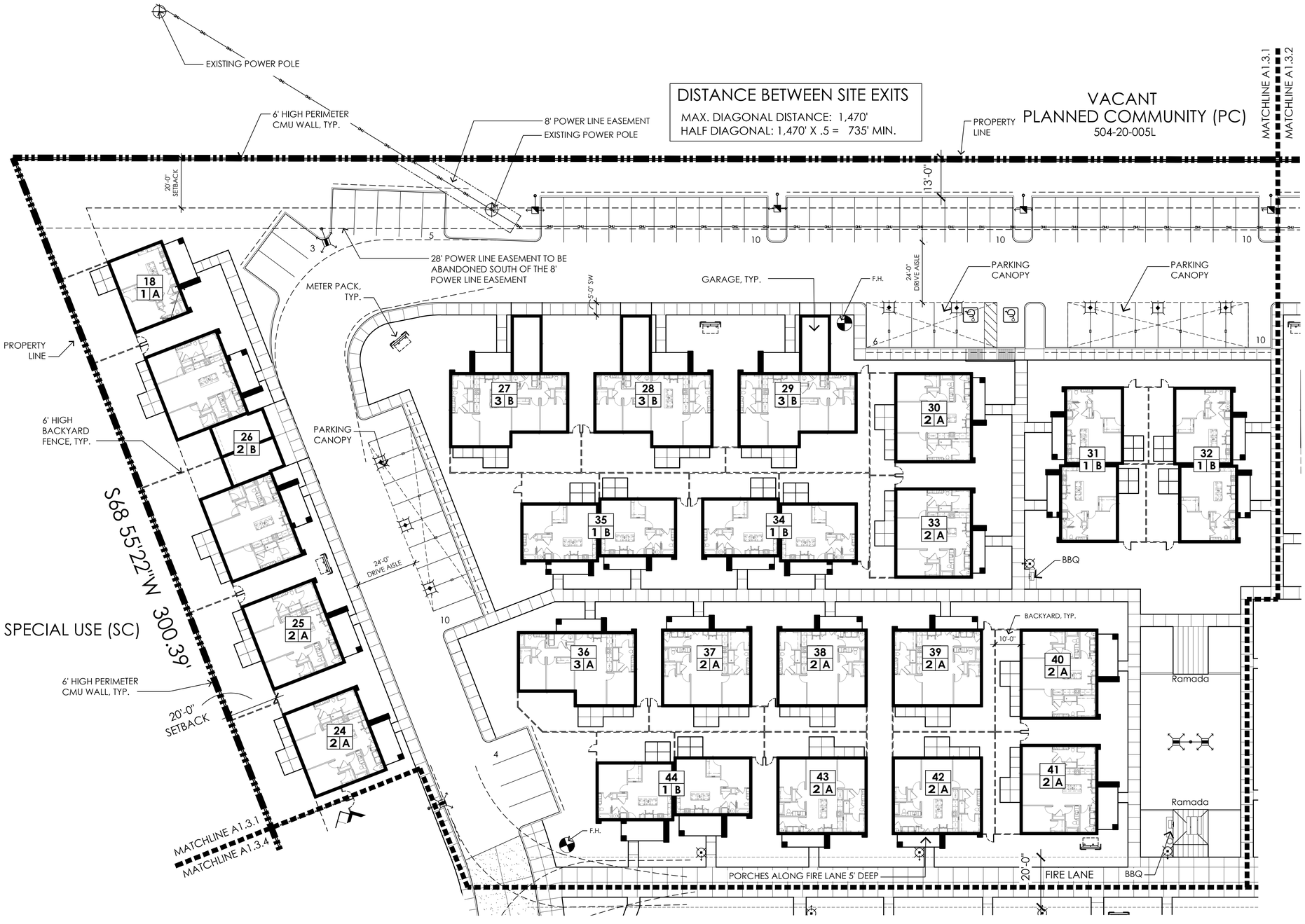
CITY SITE PLAN REVIEW SUBMITTAL #3

July 14, 2021

SITE PLAN

Preliminary Not For Construction

A1.1



REGISTERED ARCHITECT
CERTIFICATE NO.
13467
GARY D. TODD
07/15/21
Date Signed
ARIZONA, USA

EXPIRES 9/30/22

A1.3.1	A1.3.2	A1.3.3
A1.3.4	A1.3.5	A1.3.6

SITE KEY PLAN

0" 10' 20' 40'

SCALE: 1" = 20'-0"

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APARTMENTS - VERRADO MARKETSIDE

Buckeye, Arizona

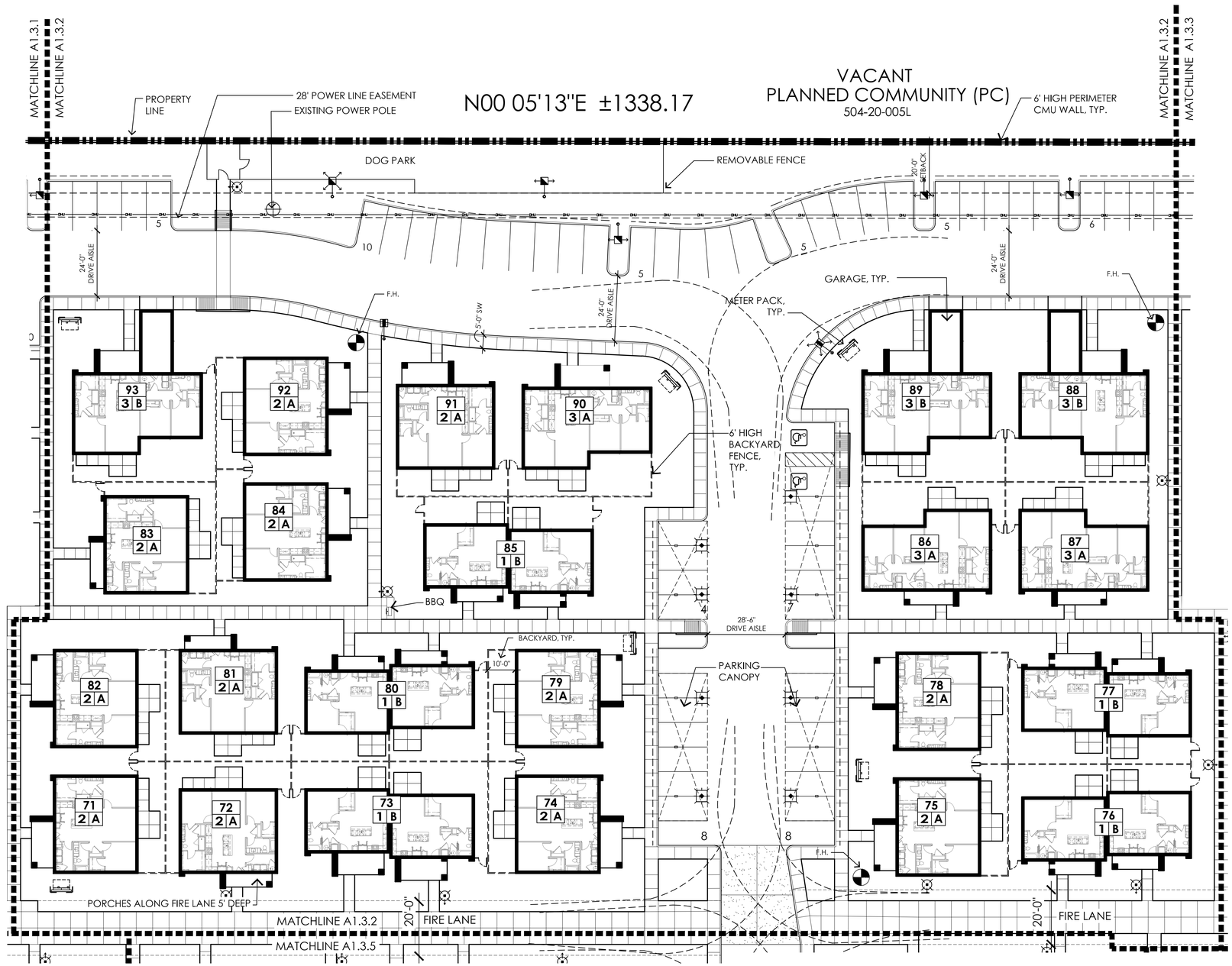
CITY SITE PLAN REVIEW SUBMITTAL #3

July 14, 2021

ENLARGED SITE PLAN

Preliminary Not For Construction

A1.3.1



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A1.3.1	A1.3.2	A1.3.3
A1.3.4	A1.3.5	A1.3.6

SITE KEY PLAN

0" 10' 20' 40'

SCALE: 1" = 20'-0"

N

TODD + ASSOCIATES

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19-2015-01

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APARTMENTS - VERRADO MARKETSIDE

Buckeye, Arizona

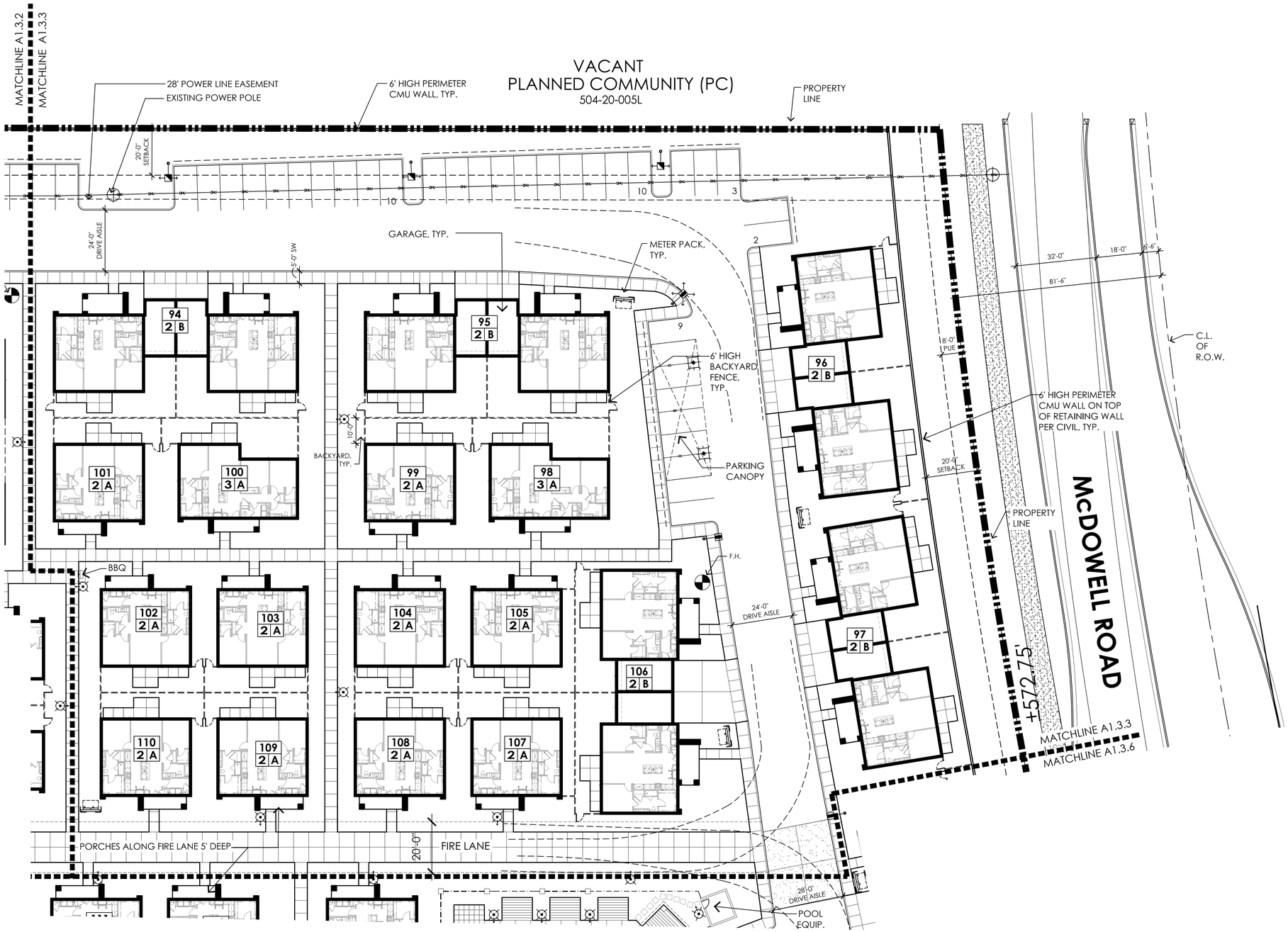
CITY SITE PLAN REVIEW SUBMITTAL #3

July 14, 2021

ENLARGED SITE PLAN

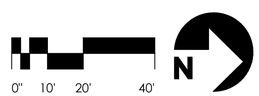
Preliminary Not For Construction

A1.3.2



EXPIRES 9/30/22

SITE KEY PLAN



SCALE: 1" = 20'-0"

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APARTMENTS - VERRADO MARKETSIDE

Buckeye, Arizona

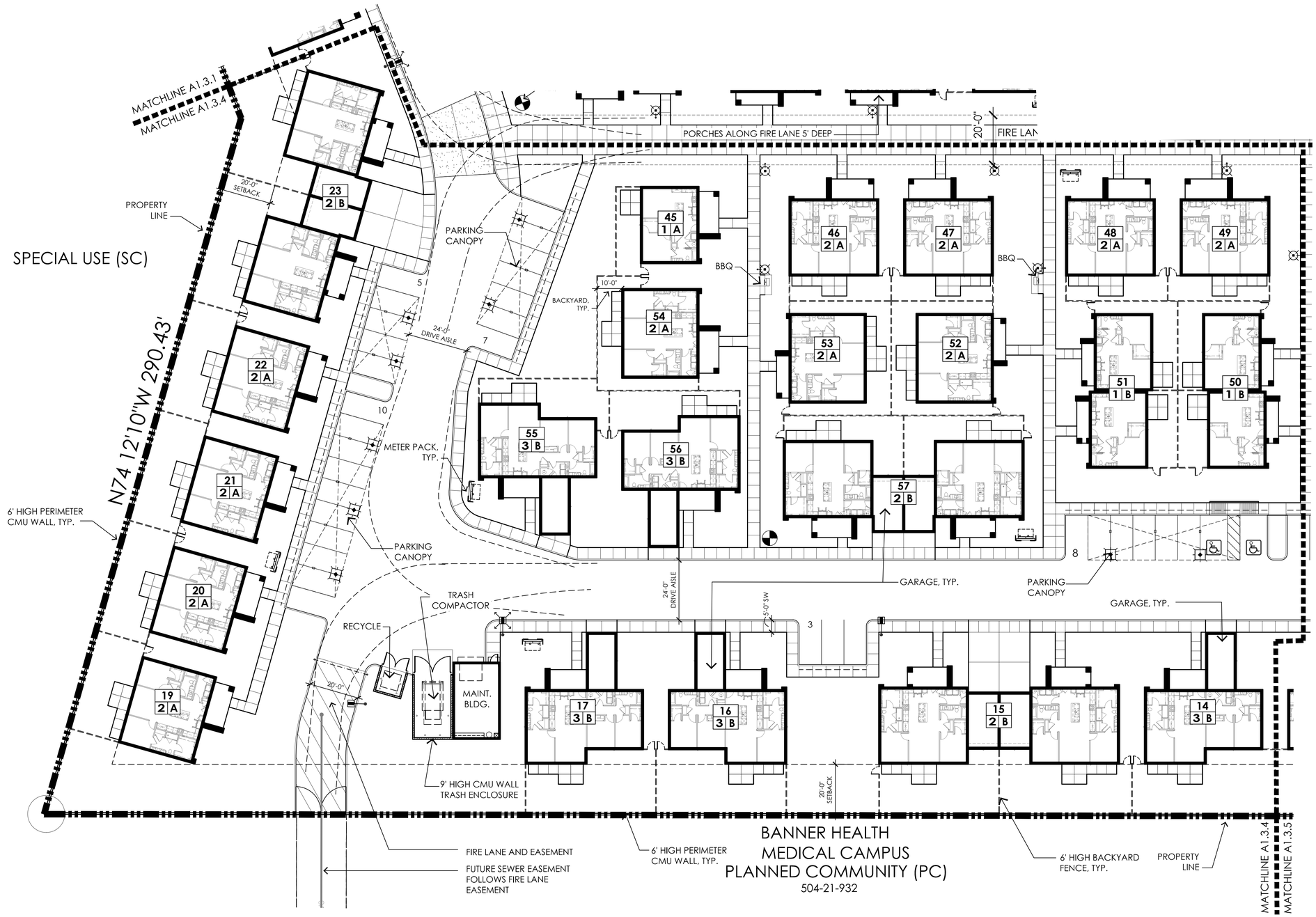
CITY SITE PLAN REVIEW SUBMITTAL #3

July 14, 2021

ENLARGED SITE PLAN

Preliminary Not For Construction

A1.3.3



BANNER HEALTH
MEDICAL CAMPUS
PLANNED COMMUNITY (PC)
504-21-932

REGISTERED ARCHITECT
CERTIFICATE NO.
13467
GARY D.
TODD
07/15/21
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ARIZONA, U.S.A.

EXPIRES 9/30/22

A1.3.1	A1.3.2	A1.3.3
A1.3.4	A1.3.5	A1.3.6

SITE KEY PLAN

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

TODD + ASSOCIATES
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19-2015-01

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APARTMENTS - VERRADO MARKETSIDE

Buckeye, Arizona

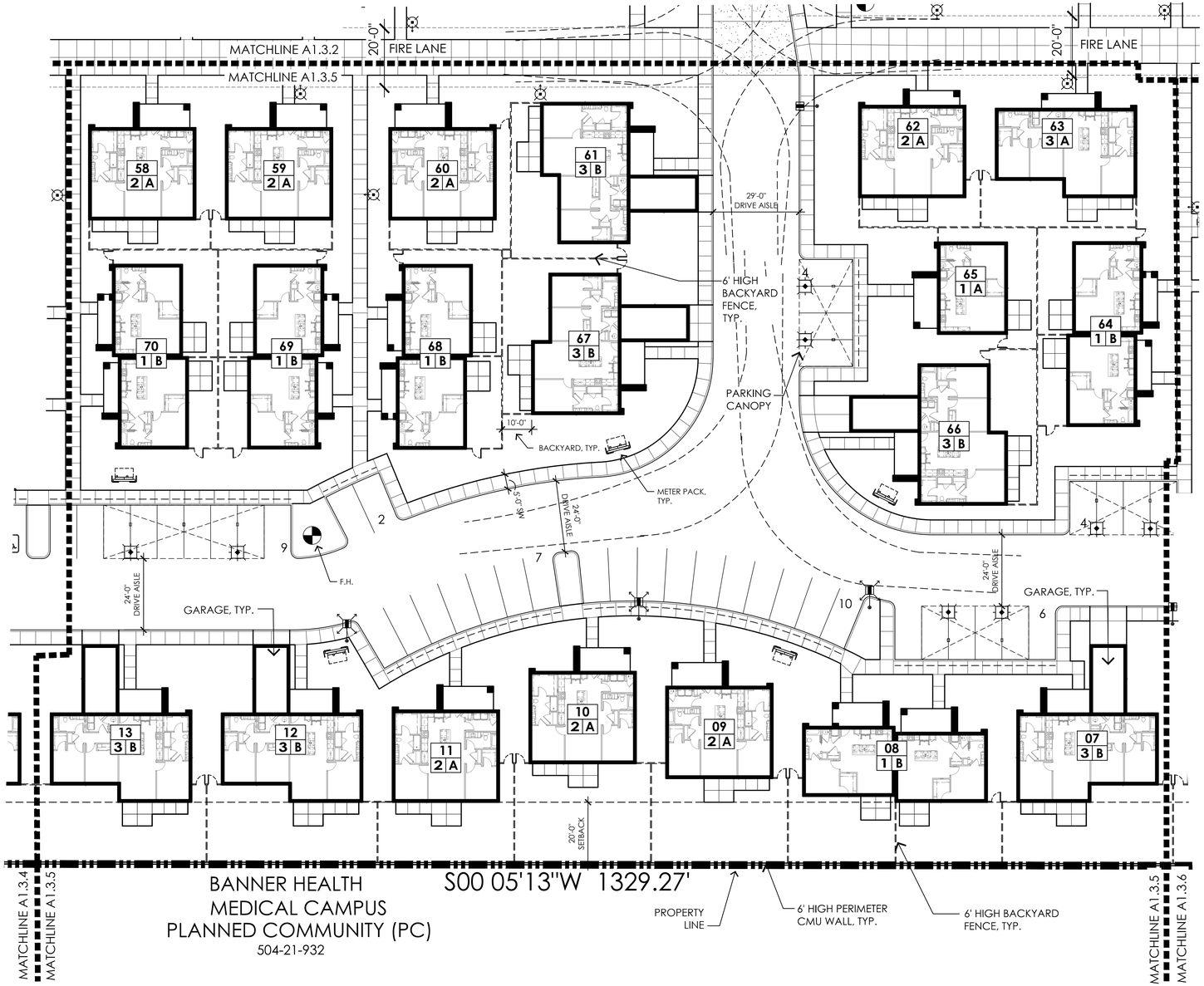
CITY SITE PLAN REVIEW SUBMITTAL #3

July 14, 2021

ENLARGED SITE PLAN

Preliminary Not For Construction

A1.3.4



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CERTIFICATE NO.
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Date Signed
ARIZONA, USA

EXPIRES 9/30/22

A1.3.1	A1.3.2	A1.3.3
A1.3.4	A1.3.5	A1.3.6

SITE KEY PLAN

0" 10' 20' 40'

SCALE: 1" = 20'-0"

TODD + ASSOCIATES

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APARTMENTS - VERRADO MARKETSIDE

Buckeye, Arizona

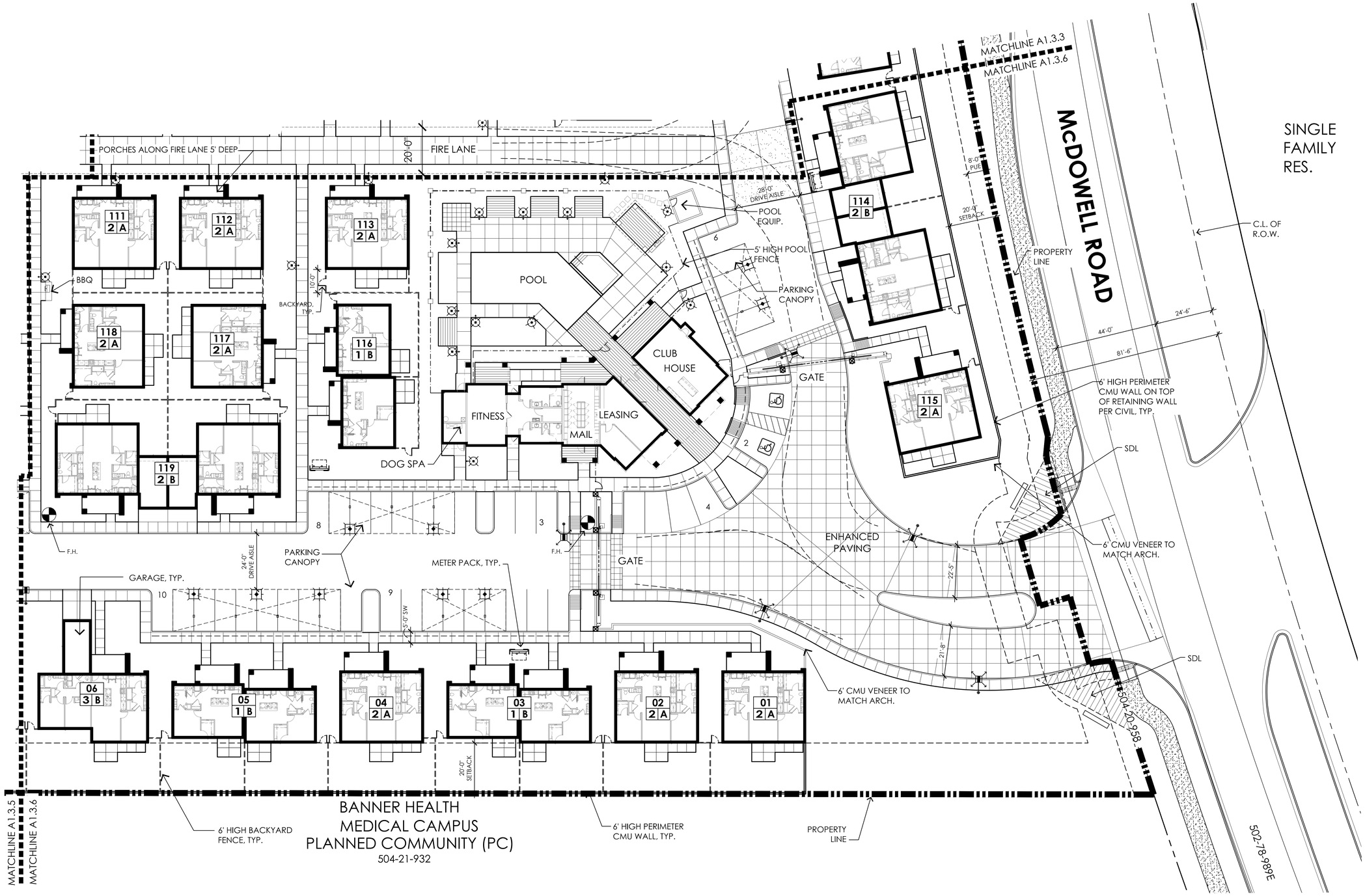
CITY SITE PLAN REVIEW SUBMITTAL #3

July 14, 2021

ENLARGED SITE PLAN

Preliminary Not For Construction

A1.3.5



REGISTERED ARCHITECT
CERTIFICATE NO.
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ARIZONA, USA

EXPIRES 9/30/22

A1.3.1	A1.3.2	A1.3.3
A1.3.4	A1.3.5	A1.3.6

SITE KEY PLAN

0" 10' 20' 40'

SCALE: 1" = 20'-0"

TODD + ASSOCIATES
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19-2015-01

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APARTMENTS - VERRADO MARKETSIDE

Buckeye, Arizona

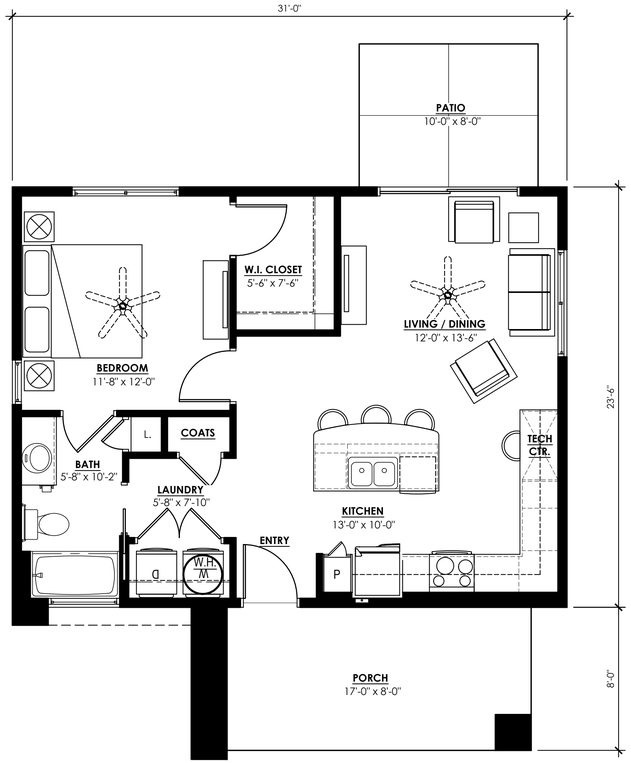
CITY SITE PLAN REVIEW SUBMITTAL #3

July 14, 2021

ENLARGED SITE PLAN

Preliminary Not For Construction

A1.3.6



NOTE:
UNIT LIVABLE SQUARE FOOTAGE IS MEASURED FROM THE OUTSIDE FACE OF THE EXTERIOR STUD WALL TO THE CENTER OF THE UNIT PARTY WALL. AREA DOES NOT INCLUDE PATIO OR EXTERIOR STORAGE / MECHANICAL ROOMS.

0" 2' 4' 8'
SCALE: 1/4" = 1'-0"

REGISTERED ARCHITECT
CERTIFICATE NO.
13467
GARY D.
TODD
07/15/21
Date Signed
ARIZONA, USA
EXPIRES 9/30/22

TODD + ASSOCIATES
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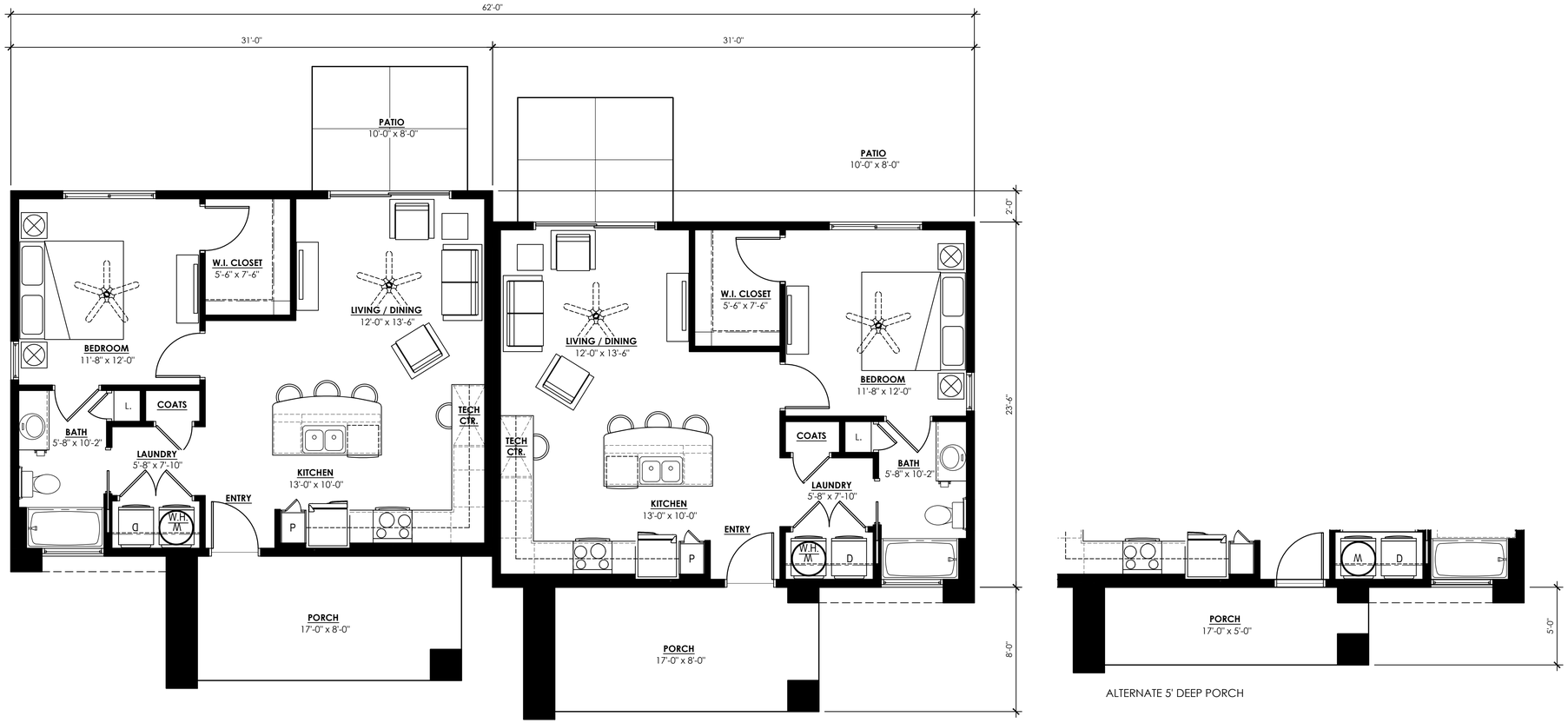
APARTMENTS - VERRADO MARKETSIDE

Buckeye, Arizona
CITY SITE PLAN REVIEW SUBMITTAL #3
July 14, 2021

FLOOR PLAN
BUILDING TYPE 1A (1 BD.)

Preliminary Not For Construction

A2.1



NOTE:
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0" 2' 4' 8'
SCALE: 1/4" = 1'-0"

REGISTERED ARCHITECT
CERTIFICATE NO.
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Date Signed
ARIZONA, U.S.A.
EXPIRES 9/30/22

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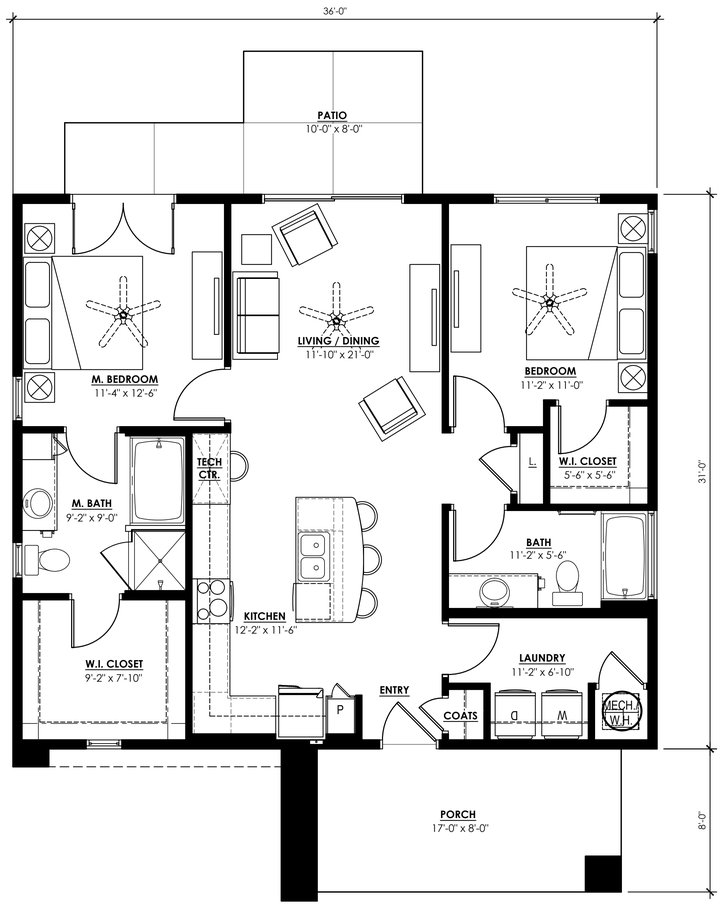
APARTMENTS - VERRADO MARKETSIDE

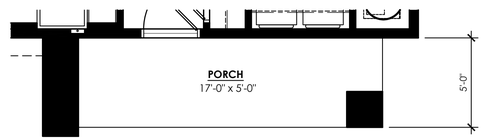
Buckeye, Arizona
CITY SITE PLAN REVIEW SUBMITTAL #3
July 14, 2021

FLOOR PLAN
BUILDING TYPE 1B (1 BD. DUPLEX)

Preliminary Not For Construction

A2.2





ALTERNATE 5' DEEP PORCH

NOTE:
UNIT LIVABLE SQUARE FOOTAGE IS MEASURED FROM THE OUTSIDE FACE OF THE EXTERIOR STUD WALL TO THE CENTER OF THE UNIT PARTY WALL. AREA DOES NOT INCLUDE PATIO OR EXTERIOR STORAGE / MECHANICAL ROOMS.

0" 2' 4' 8'
SCALE: 1/4" = 1'-0"

REGISTERED ARCHITECT
CERTIFICATE NO.
13467
GARY D. TODD
07/15/21
Date Signed
ARIZONA USA
EXPIRES 9/30/22

TODD + ASSOCIATES
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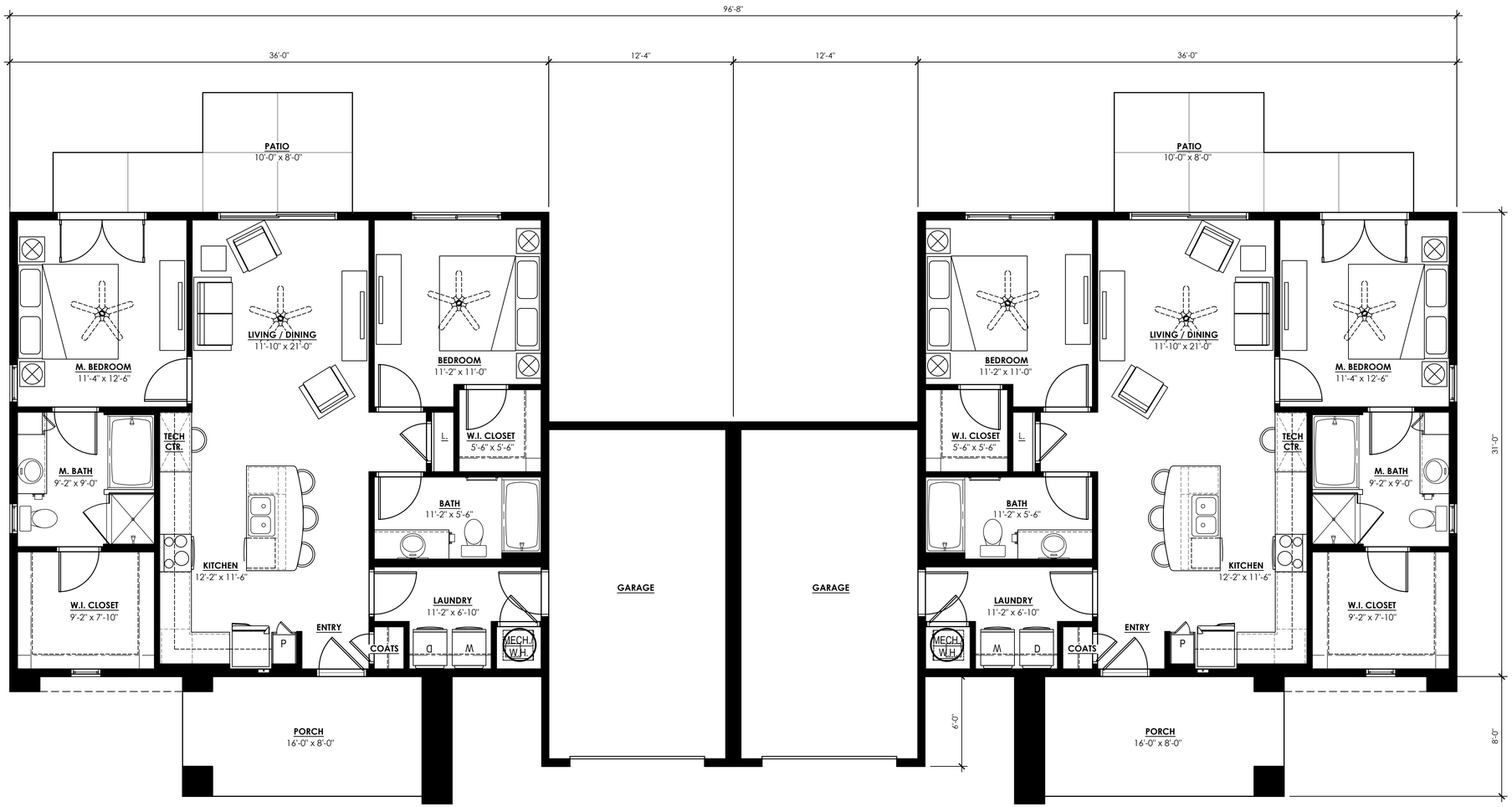
APARTMENTS - VERRADO MARKETSIDE

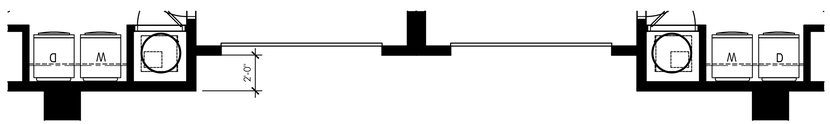
Buckeye, Arizona
CITY SITE PLAN REVIEW SUBMITTAL #3
July 14, 2021

FLOOR PLAN
BUILDING TYPE 2A (2 BD.)

Preliminary Not For Construction

A2.3





ALTERNATE GARAGE

NOTE:
UNIT LIVABLE SQUARE FOOTAGE IS MEASURED FROM THE OUTSIDE FACE OF THE EXTERIOR STUD WALL TO THE CENTER OF THE UNIT PARTY WALL. AREA DOES NOT INCLUDE PATIO OR EXTERIOR STORAGE / MECHANICAL ROOMS.

0" 2' 4' 8'
SCALE: 1/4" = 1'-0"

REGISTERED ARCHITECT
CERTIFICATE NO.
13467
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ARIZONA, USA

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APARTMENTS - VERRADO MARKETSIDE

Buckeye, Arizona

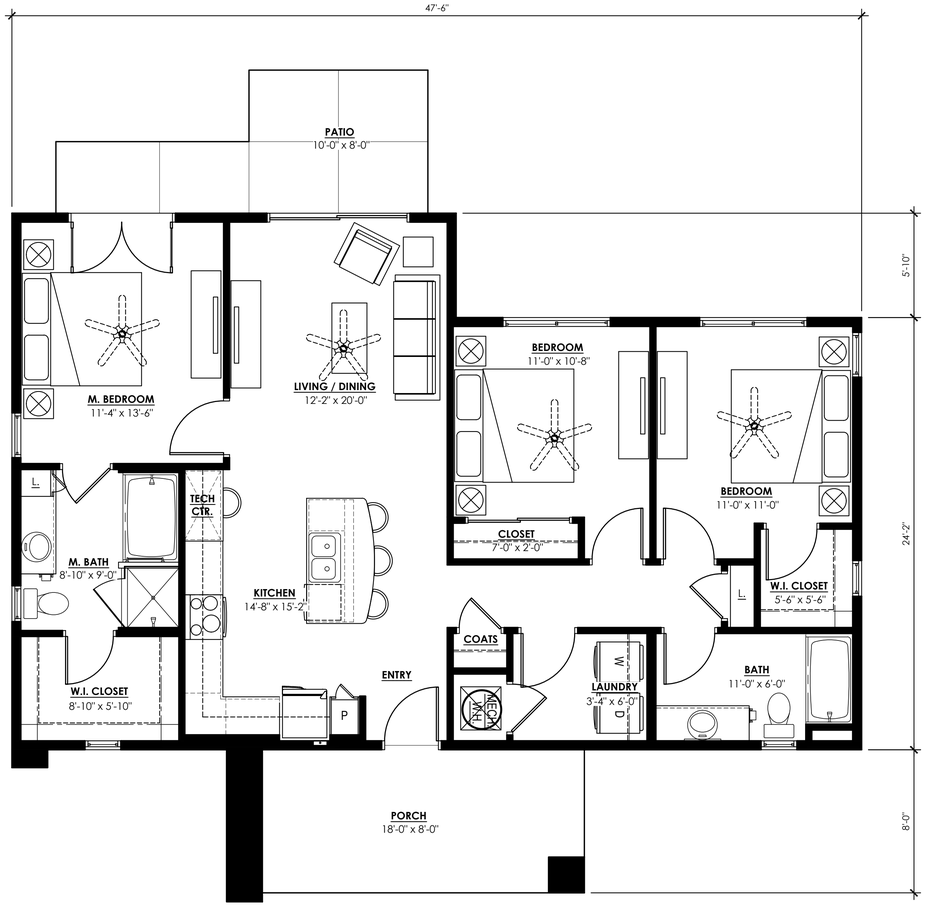
CITY SITE PLAN REVIEW SUBMITTAL #3

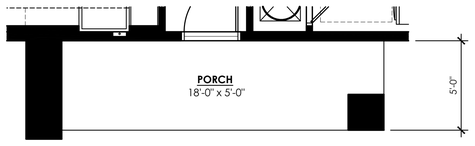
July 14, 2021

FLOOR PLAN
BUILDING TYPE 2B (2 BD. DUPLEX W/ GARAGE)

Preliminary Not For Construction

A2.4





ALTERNATE 5' DEEP PORCH

NOTE:
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0" 2' 4' 8'
SCALE: 1/4" = 1'-0"

REGISTERED ARCHITECT
CERTIFICATE NO.
13467
GARY D.
TODD
07/15/21
Date Signed
ARIZONA, USA
EXPIRES 9/30/22

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APARTMENTS - VERRADO MARKETSIDE

Buckeye, Arizona

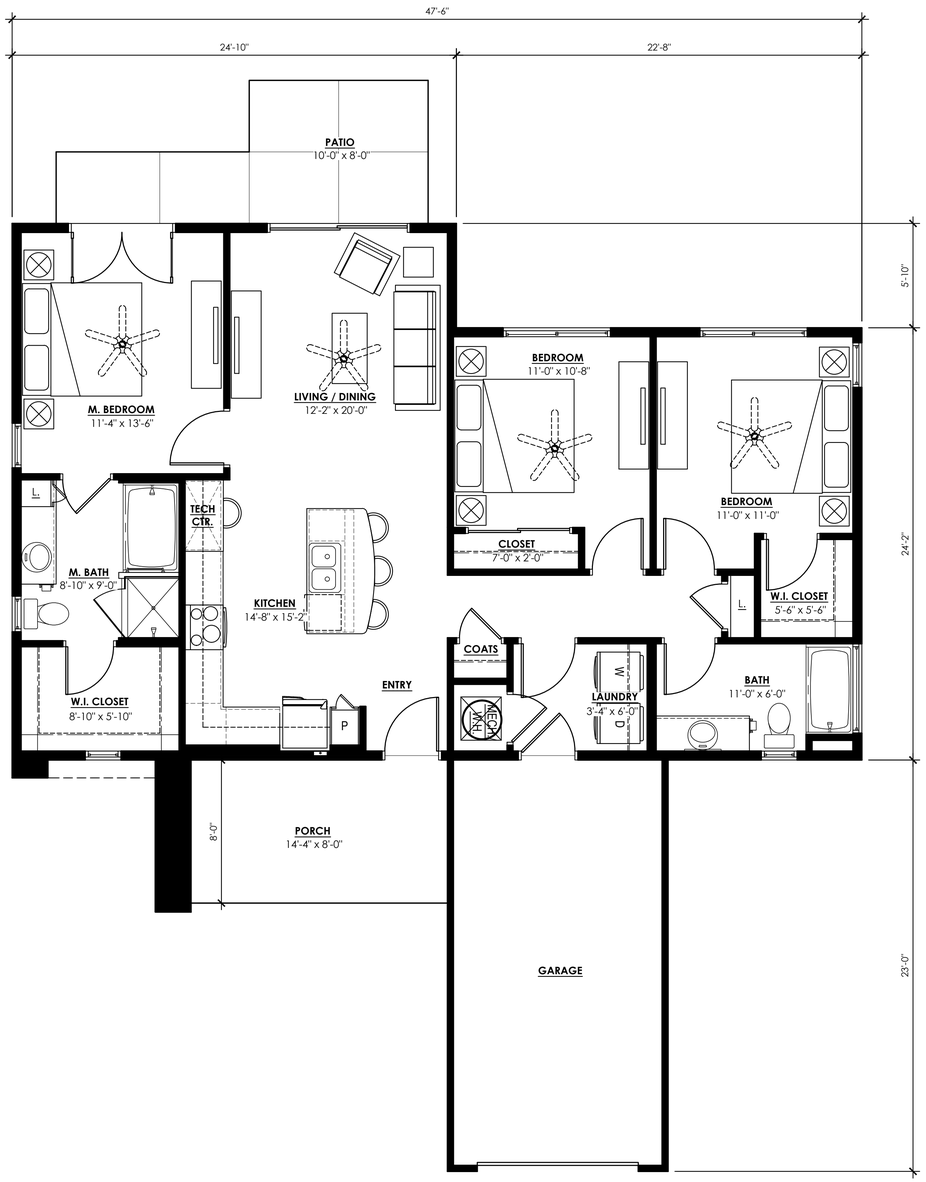
CITY SITE PLAN REVIEW SUBMITTAL #3

July 14, 2021

FLOOR PLAN
BUILDING TYPE 3A (3 BD.)

Preliminary Not For Construction

A2.5



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0" 2' 4' 8'
SCALE: 1/4" = 1'-0"

REGISTERED ARCHITECT
CERTIFICATE NO.
13467
GARY D.
TODD
07/15/21
Date Signed
ARIZONA U.S.A.
EXPIRES 9/30/22

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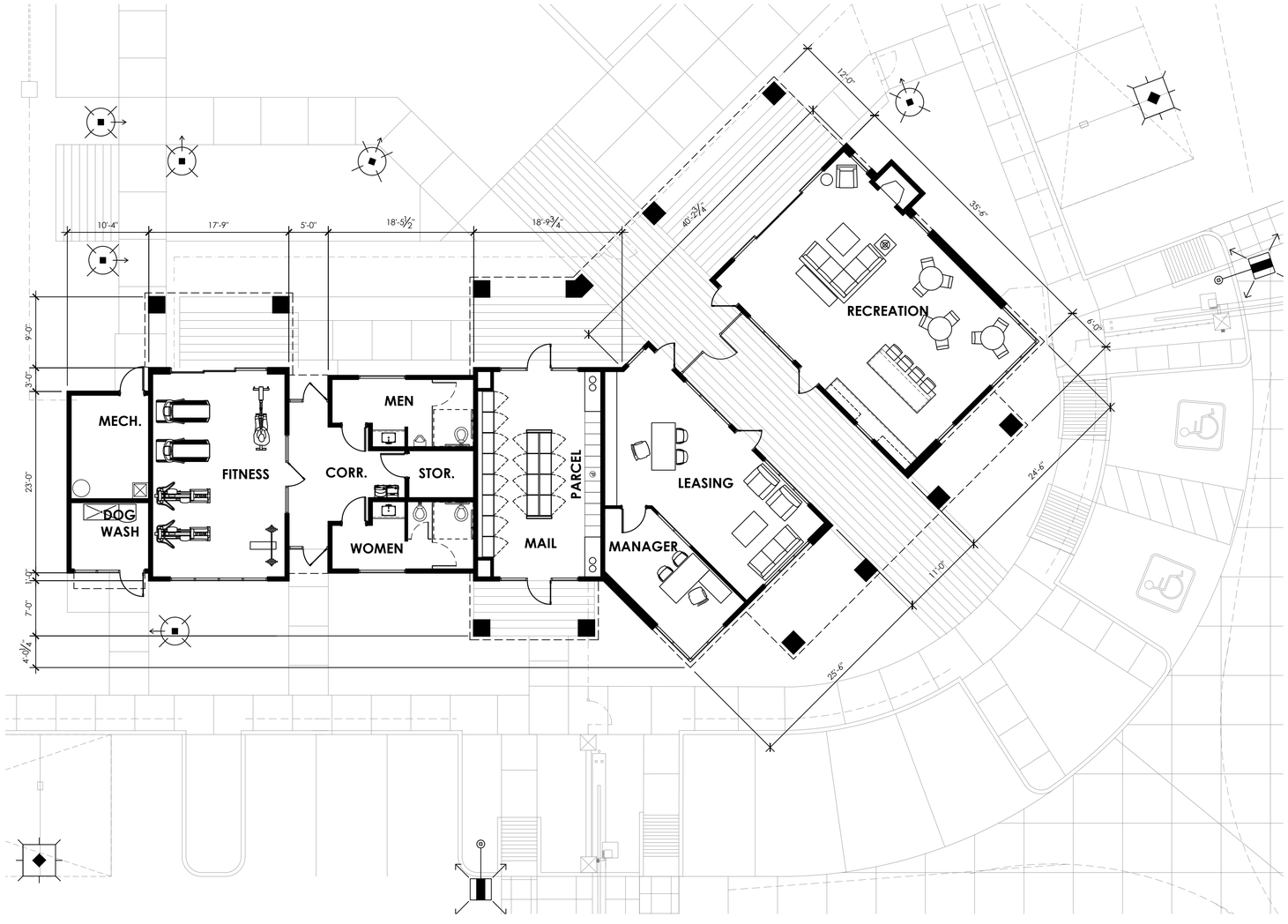
APARTMENTS - VERRADO MARKETSIDE

Buckeye, Arizona
CITY SITE PLAN REVIEW SUBMITTAL #3
July 14, 2021

FLOOR PLAN
BUILDING TYPE 3B (3 BD. W/ GARAGE)
Preliminary Not For Construction

A2.6



0" 4' 8' 16'

SCALE: 1/8" = 1'-0"

REGISTERED ARCHITECT
CERTIFICATE NO.
13467
GARY D. TODD
6/21
Signed
ARIZONA U.S.A.
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APARTMENTS - VERRADO MARKETSIDE

Buckeye, Arizona

CITY SITE PLAN REVIEW SUBMITTAL #3

July 14, 2021

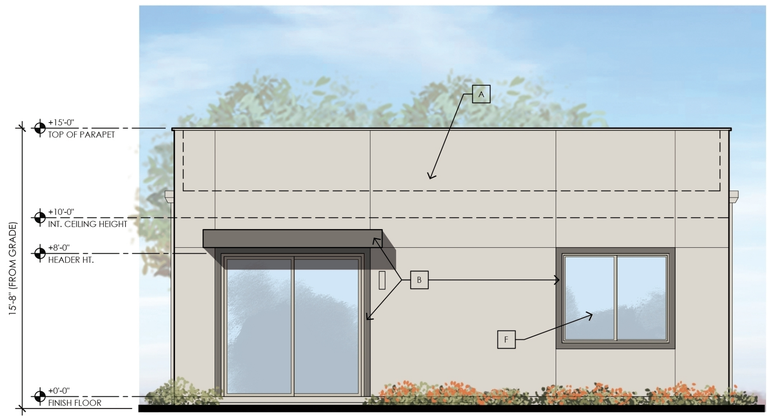
FLOOR PLAN
CLUBHOUSE

Preliminary Not For Construction

A2.7

1 **FRONT ELEVATION**
SCALE: 1/4" = 1'-0"

2 **RIGHT ELEVATION**
SCALE: 1/4" = 1'-0"



3 **REAR ELEVATION**
SCALE: 1/4" = 1'-0"

4 **LEFT ELEVATION**
SCALE: 1/4" = 1'-0"

MATERIAL FINISH

CODE	LOCATION	MANUFACTURER	COLOR
A*	EXTERIOR STUCCO	SHERWIN WILLIAMS	SW9166 "DRIFT OF MIST" (LRV 69)
B*	EXTERIOR STUCCO	SHERWIN WILLIAMS	SW7019 "GAUNTLET GRAY" (LRV 17)
C	BRICK VENEER	INTERSTATE BRICK	"MONTEREY" 2 1/4" MODULAR COMMERICAL
D	6" FIBER CEMENT BOARD LAP SIDING	WOODTONE RUSTIC SERIES	"MOUNTAIN CEDAR"
E	SLOPED ROOF	BORAL CONC. ROOF TILE	SAXONY 900 SLATE "STONE MOUNTAIN DARK"
F	VINYL WINDOW	THERMOTECH CLASSIC SERIES	"TAN"

* MEDIUM SAND FOR ALL BUILDINGS ALONG MCDOWELL. **MONTEREY** FOR ALL REMAINING STRUCTURES.

REGISTERED ARCHITECT
CERTIFICATE NO.
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APARTMENTS - VERRADO MARKETSIDE

Buckeye, Arizona

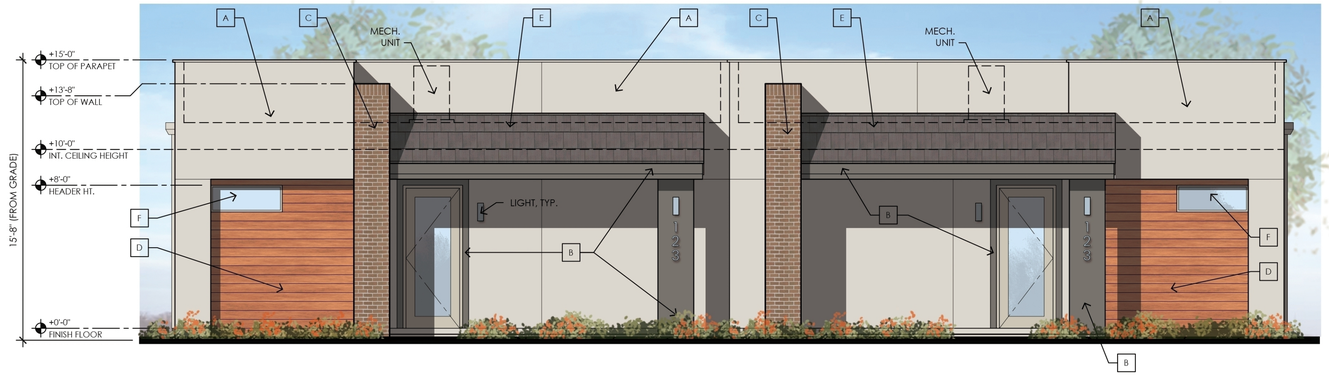
CITY SITE PLAN REVIEW SUBMITTAL #3

July 14, 2021

COLOR ELEVATIONS
BUILDING TYPE 1A (1 BD.)

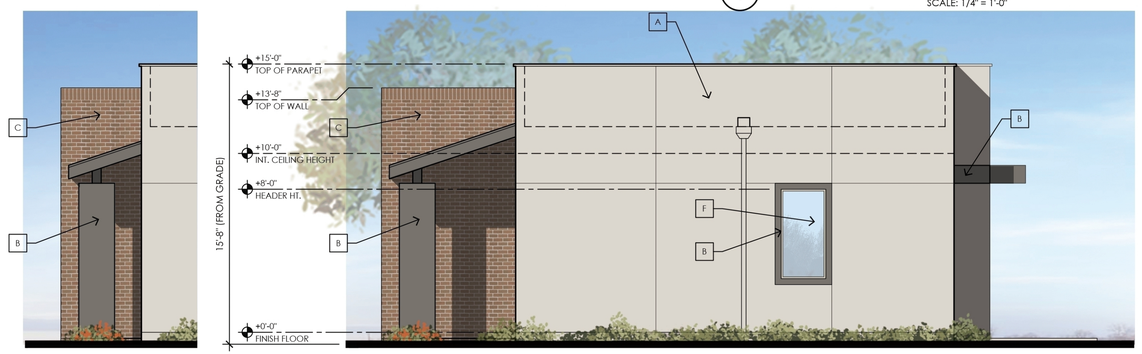
Preliminary Not For Construction

A3.1

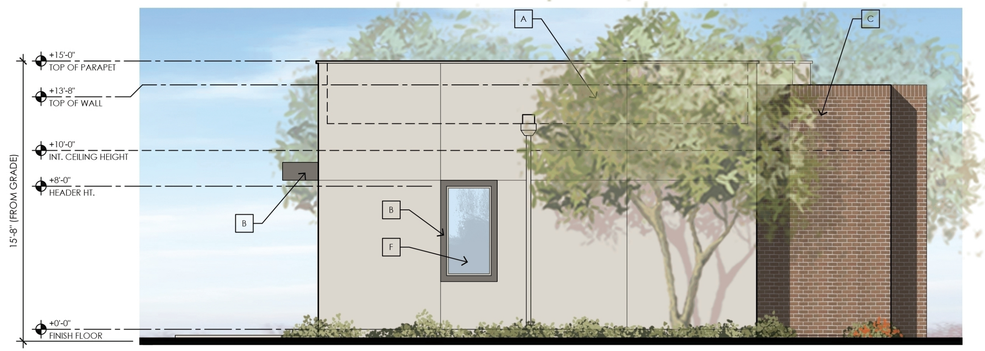


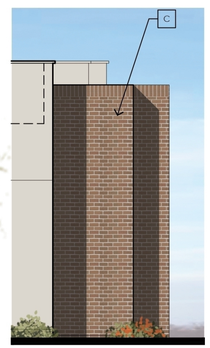
1 FRONT ELEVATION

SCALE: 1/4" = 1'-0"



ALTERNATE 5' DEEP PORCH





ALTERNATE 5' DEEP PORCH

2 RIGHT ELEVATION

SCALE: 1/4" = 1'-0"

3 LEFT ELEVATION

SCALE: 1/4" = 1'-0"

4 REAR ELEVATION

SCALE: 1/4" = 1'-0"

REGISTERED ARCHITECT
CERTIFICATE NO.
13467
GARY D. TODD
Date Signed 07/15/21
ARIZONA U.S.A.

EXPIRES 9/30/22

MATERIAL FINISH

CODE	LOCATION	MANUFACTURER	COLOR
A*	EXTERIOR STUCCO	SHERWIN WILLIAMS	SW9166 "DRIFT OF MIST" (LRV 69)
B*	EXTERIOR STUCCO	SHERWIN WILLIAMS	SW7019 "GAUNTLET GRAY" (LRV 17)
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F	VINYL WINDOW	THERMOTECH CLASSIC SERIES	"TAN"

* MEDIUM SAND FOR ALL BUILDINGS ALONG MCDOWELL. **MONTEREY** FOR ALL REMAINING STRUCTURES.

TODD + ASSOCIATES
602-952-8280 / TODDASSOC.COM
19-2015-01

PB Bell

APARTMENTS - VERRADO MARKETSIDE

Buckeye, Arizona

CITY SITE PLAN REVIEW SUBMITTAL #3

July 14, 2021

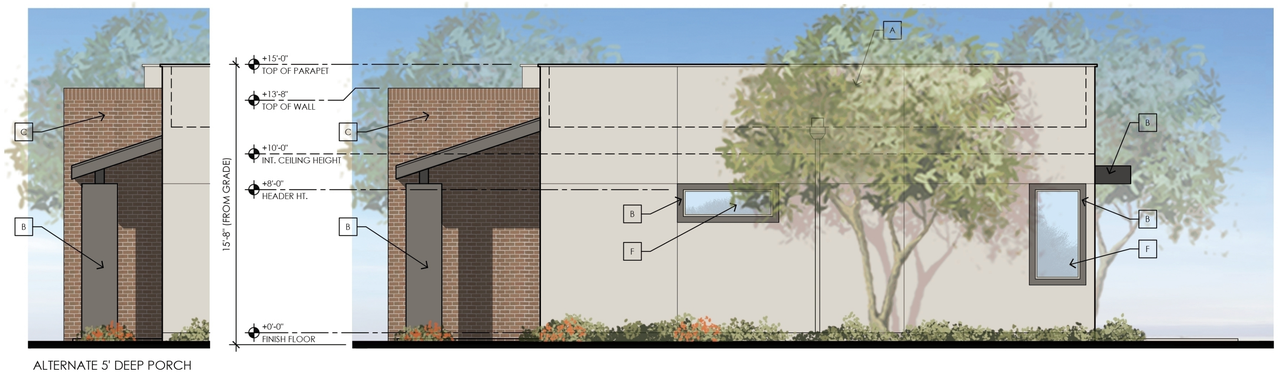
COLOR ELEVATIONS
BUILDING TYPE 1B (1 BD. DUPLEX)

Preliminary Not For Construction

A3.2

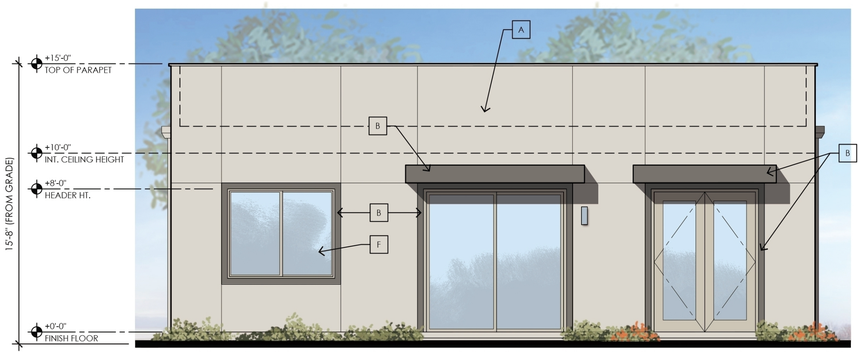
1 FRONT ELEVATION

SCALE: 1/4" = 1'-0"



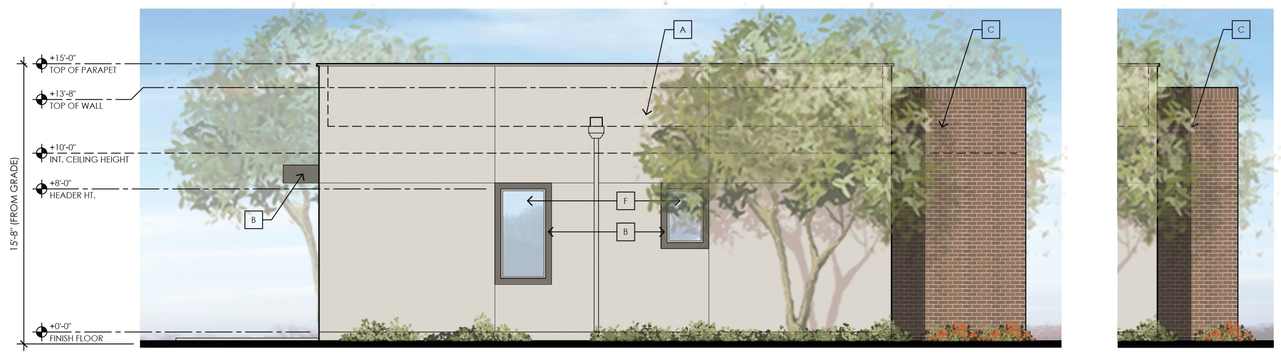
2 RIGHT ELEVATION

SCALE: 1/4" = 1'-0"



3 REAR ELEVATION

SCALE: 1/4" = 1'-0"



4 LEFT ELEVATION

SCALE: 1/4" = 1'-0"

MATERIAL FINISH

CODE	LOCATION	MANUFACTURER	COLOR
A*	EXTERIOR STUCCO	SHERWIN WILLIAMS	SW9166 "DRIFT OF MIST" (LRV 69)
B*	EXTERIOR STUCCO	SHERWIN WILLIAMS	SW7019 "GAUNTLET GRAY" (LRV 17)
C	BRICK VENEER	INTERSTATE BRICK	"MONTEREY" 2 $\frac{1}{4}$" MODULAR COMMERICAL
D	6" FIBER CEMENT BOARD LAP SIDING	WOODTONE RUSTIC SERIES	"MOUNTAIN CEDAR"
E	SLOPED ROOF	BORAL CONC. ROOF TILE	SAXONY 900 SLATE "STONE MOUNTAIN DARK"
F	VINYL WINDOW	THERMOTECH CLASSIC SERIES	"TAN"

* MEDIUM SAND FOR ALL BUILDINGS ALONG MCDOWELL. **MONTEREY** FOR ALL REMAINING STRUCTURES.

REGISTERED ARCHITECT CERTIFICATE NO. 13467 GARY D. TODD 07/15/21 Date Signed ARIZONA, USA

EXPIRES 9/30/22

TODD + ASSOCIATES
602-952-8280 / TODDASSOC.COM
19-2015-01

PB Bell

APARTMENTS - VERRADO MARKETSIDE

Buckeye, Arizona

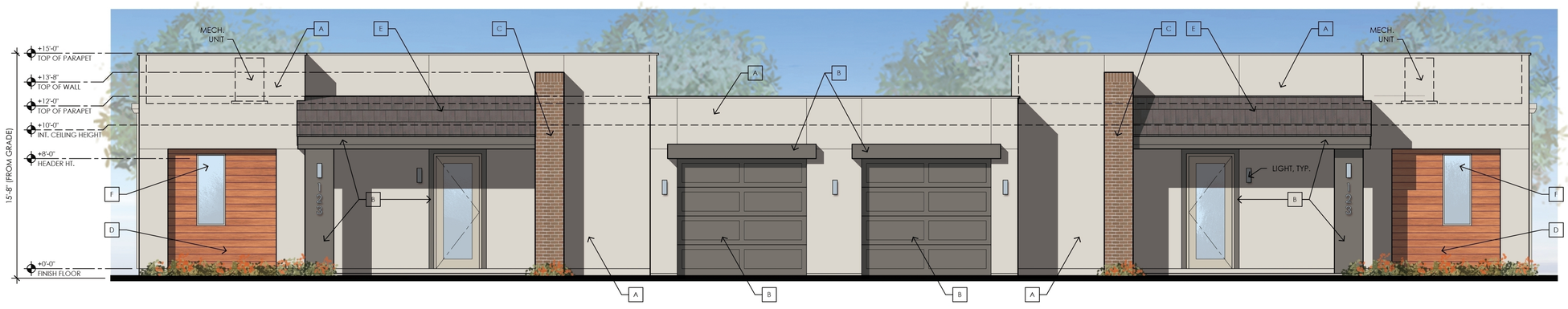
CITY SITE PLAN REVIEW SUBMITTAL #3

July 14, 2021

COLOR ELEVATIONS
BUILDING TYPE 2A (2 BD.)

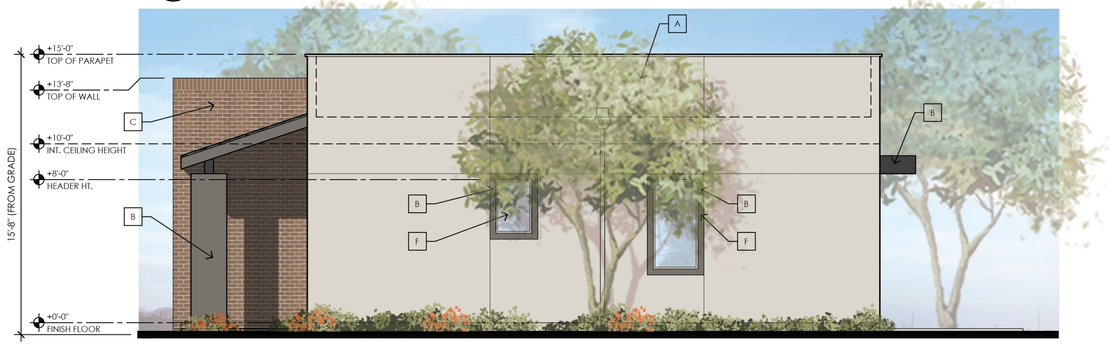
Preliminary Not For Construction

A3.3



1 FRONT ELEVATION

SCALE: 1/4" = 1'-0"

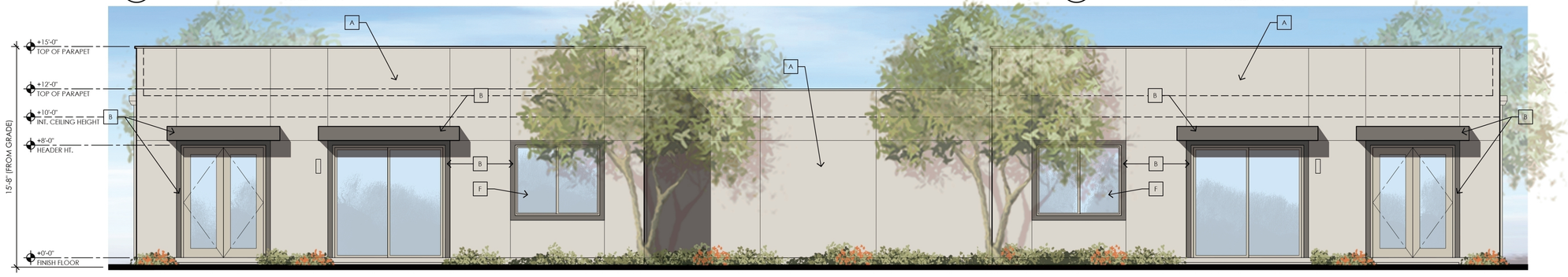


2 RIGHT ELEVATION

SCALE: 1/4" = 1'-0"

3 LEFT ELEVATION

SCALE: 1/4" = 1'-0"



4 REAR ELEVATION

SCALE: 1/4" = 1'-0"

MATERIAL FINISH

CODE	LOCATION	MANUFACTURER	COLOR
A*	EXTERIOR STUCCO	SHERWIN WILLIAMS	SW9166 "DRIFT OF MIST" (LRV 69)
B*	EXTERIOR STUCCO	SHERWIN WILLIAMS	SW7019 "GAUNTLET GRAY" (LRV 17)
C	BRICK VENEER	INTERSTATE BRICK	"MONTEREY" 2 $\frac{1}{4}$" MODULAR COMMERICAL
D	6" FIBER CEMENT BOARD LAP SIDING	WOODTONE RUSTIC SERIES	"MOUNTAIN CEDAR"
E	SLOPED ROOF	BORAL CONC. ROOF TILE	SAXONY 900 SLATE "STONE MOUNTAIN DARK"
F	VINYL WINDOW	THERMOTECH CLASSIC SERIES	"TAN"

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REGISTERED ARCHITECT CERTIFICATE NO. 13467 GARY D. TODD 07/15/21 Date Signed AZ, USA

EXPIRES 9/30/22

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19-2015-01

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APARTMENTS - VERRADO MARKETSIDE

Buckeye, Arizona

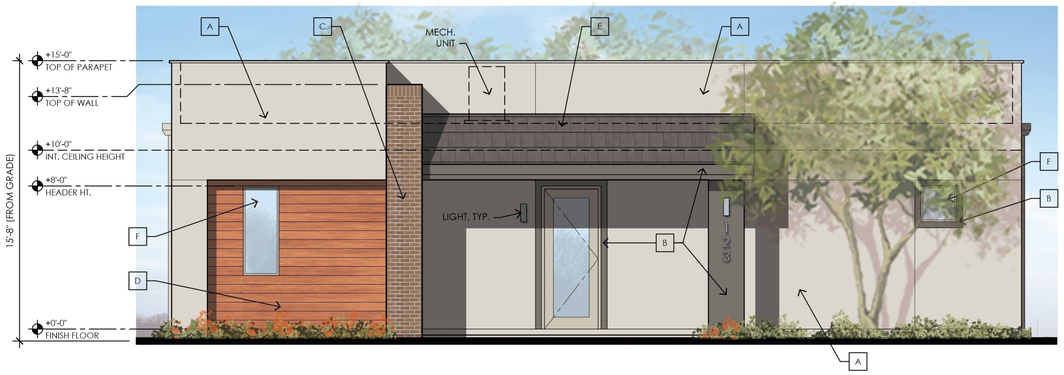
CITY SITE PLAN REVIEW SUBMITTAL #3

July 14, 2021

COLOR ELEVATIONS
BUILDING TYPE 2B (2 BD. DUPLEX W/ GARAGE)

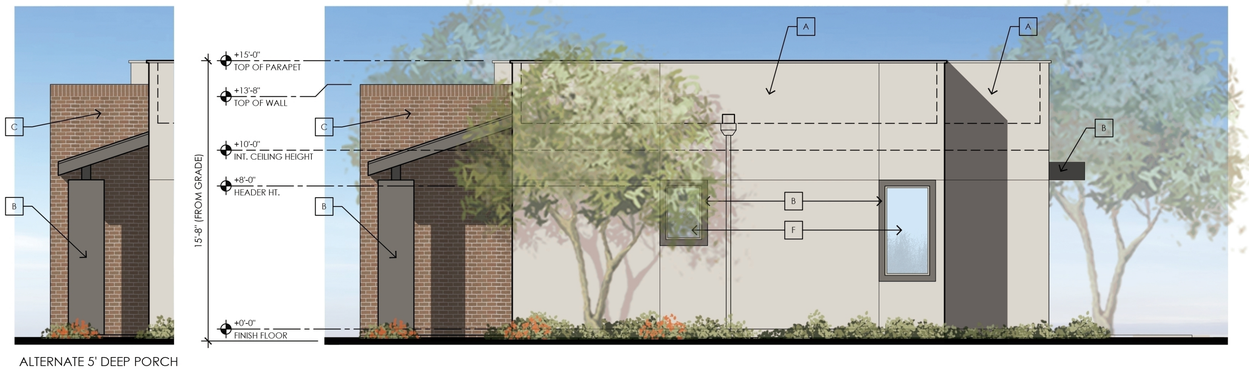
Preliminary Not For Construction

A3.4



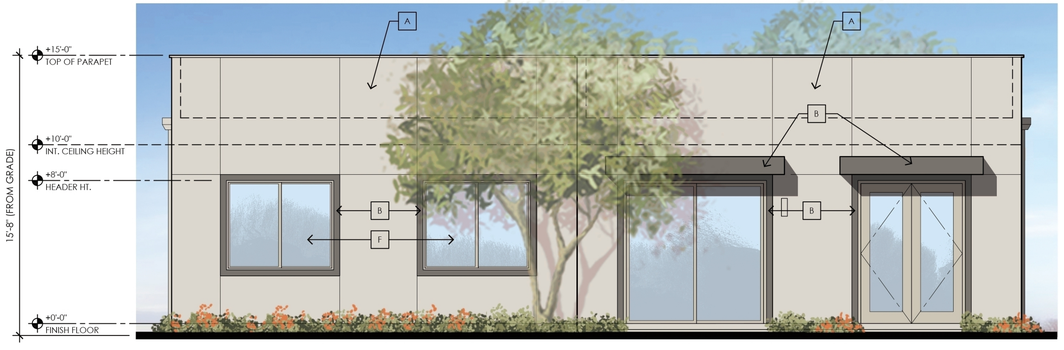
1 FRONT ELEVATION

SCALE: 1/4" = 1'-0"



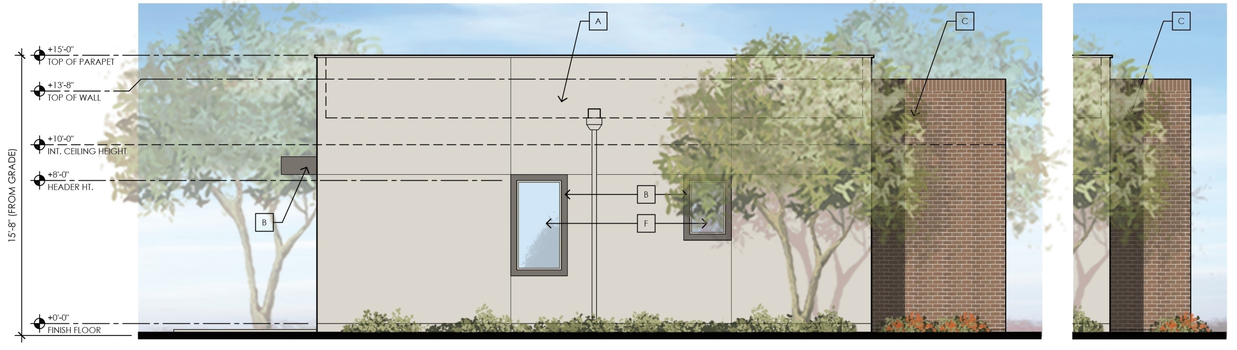
2 RIGHT ELEVATION

SCALE: 1/4" = 1'-0"



3 REAR ELEVATION

SCALE: 1/4" = 1'-0"



4 LEFT ELEVATION

SCALE: 1/4" = 1'-0"

REGISTERED ARCHITECT
CERTIFICATE NO.
13467
GARY D. TODD
07/15/21
Date Signed
ARIZONA, U.S.A.

EXPIRES 9/30/22

MATERIAL FINISH

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F	VINYL WINDOW	THERMOTECH CLASSIC SERIES	"TAN"

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19-2015-01

PBBell

APARTMENTS - VERRADO MARKETSIDE

Buckeye, Arizona

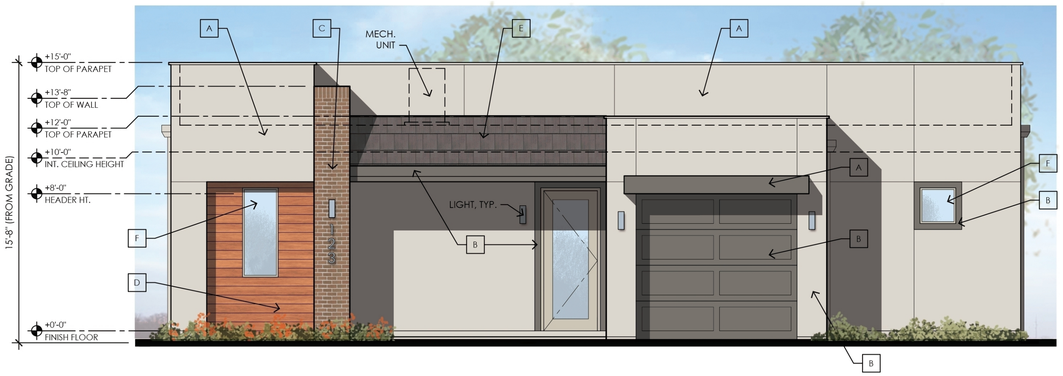
CITY SITE PLAN REVIEW SUBMITTAL #3

July 14, 2021

COLOR ELEVATIONS
BUILDING TYPE 3A (3 BD.)

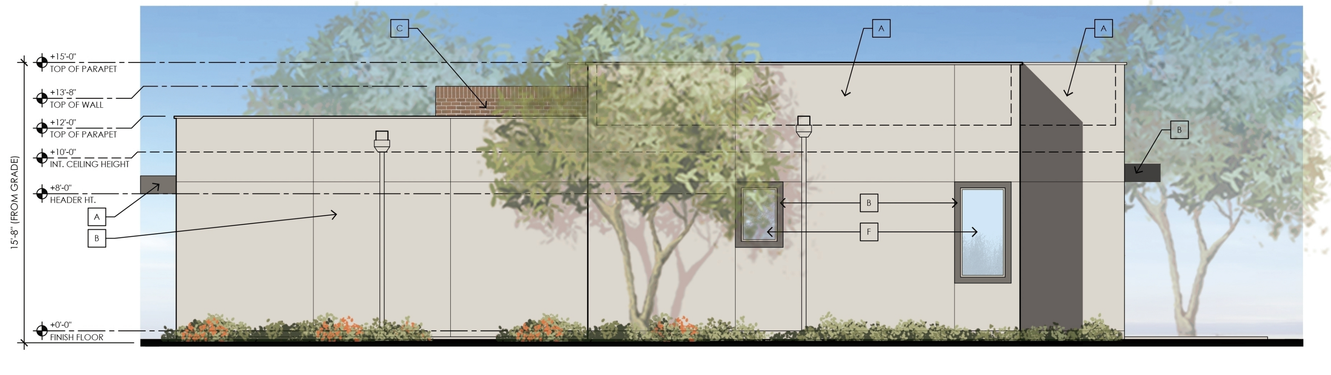
Preliminary Not For Construction

A3.5



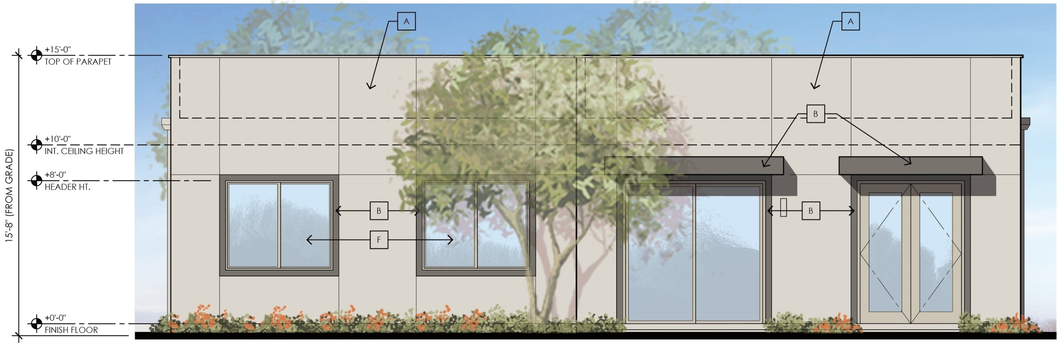
1 FRONT ELEVATION

SCALE: 1/4" = 1'-0"



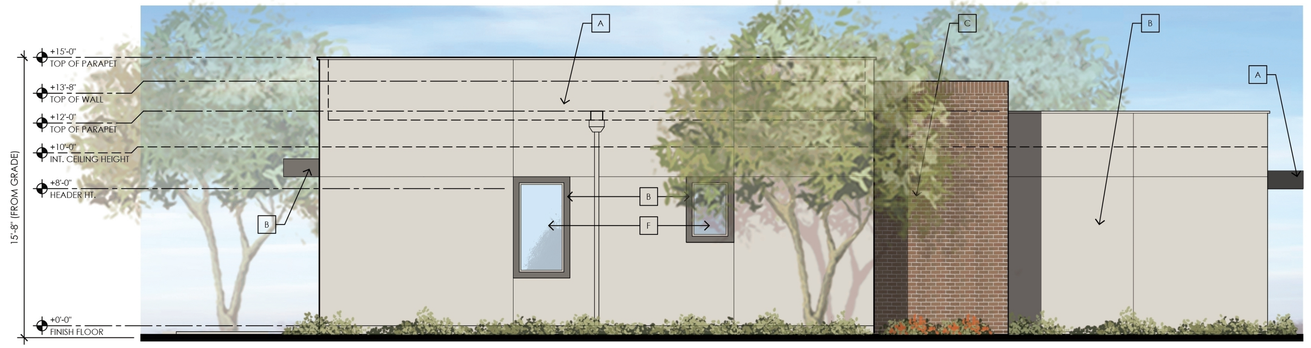
2 RIGHT ELEVATION

SCALE: 1/4" = 1'-0"



3 REAR ELEVATION

SCALE: 1/4" = 1'-0"



4 LEFT ELEVATION

SCALE: 1/4" = 1'-0"

REGISTERED ARCHITECT
CERTIFICATE NO.
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GARY D. TODD
07/15/21
Date Signed
ARIZONA U.S.A.

EXPIRES 9/30/22

MATERIAL FINISH

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19-2015-01

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APARTMENTS - VERRADO MARKETSIDE

Buckeye, Arizona

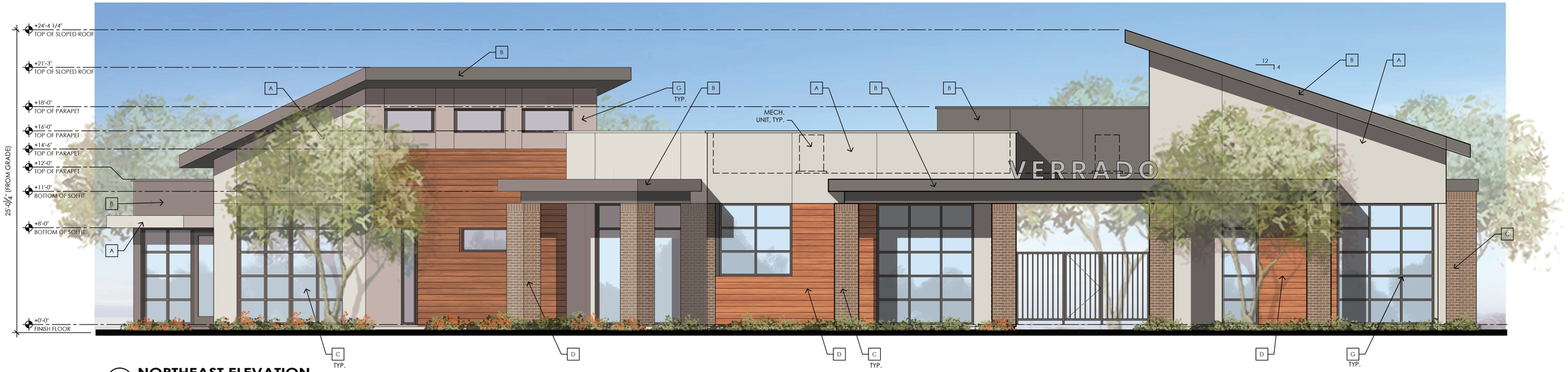
CITY SITE PLAN REVIEW SUBMITTAL #3

July 14, 2021

COLOR ELEVATIONS
BUILDING TYPE 3B (3 BD. W/ GARAGE)

Preliminary Not For Construction

A3.6



1 NORTHEAST ELEVATION

SCALE: 1/4" = 1'-0"

2 NORTHWEST ELEVATION

SCALE: 1/4" = 1'-0"

REGISTERED ARCHITECT
CERTIFICATE NO.
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07/15/21
Date Signed
ARIZONA U.S.A.

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MATERIAL FINISH

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F	VINYL WINDOW	THERMOTECH CLASSIC SERIES	"TAN"
G	ALUMINUM STOREFRONT WINDOW	ARCADIA OR KAWNEER	"DARK BRONZE"

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APARTMENTS - VERRADO MARKETSIDE

Buckeye, Arizona

CITY SITE PLAN REVIEW SUBMITTAL #3

July 14, 2021

COLOR ELEVATIONS
CLUBHOUSE

Preliminary Not For Construction

A3.7

1 SOUTHWEST ELEVATION

SCALE: 1/4" = 1'-0"

2 WEST ELEVATION

SCALE: 1/4" = 1'-0"

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MATERIAL FINISH

CODE	LOCATION	MANUFACTURER	COLOR
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F	VINYL WINDOW	THERMOTECH CLASSIC SERIES	"TAN"
G	ALUMINUM STOREFRONT WINDOW	ARCADIA OR KAWNEER	"DARK BRONZE"

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19-2015-01

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APARTMENTS - VERRADO MARKETSIDE

Buckeye, Arizona

CITY SITE PLAN REVIEW SUBMITTAL #3

July 14, 2021

COLOR ELEVATIONS
CLUBHOUSE

Preliminary Not For Construction

A3.8

1 SOUTH ELEVATION

SCALE: 1/4" = 1'-0"

2 EAST ELEVATION

SCALE: 1/4" = 1'-0"

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TODD
07/15/21
Date Signed
ARIZONA, USA

EXPIRES 9/30/22

MATERIAL FINISH

CODE	LOCATION	MANUFACTURER	COLOR
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APARTMENTS - VERRADO MARKETSIDE

Buckeye, Arizona

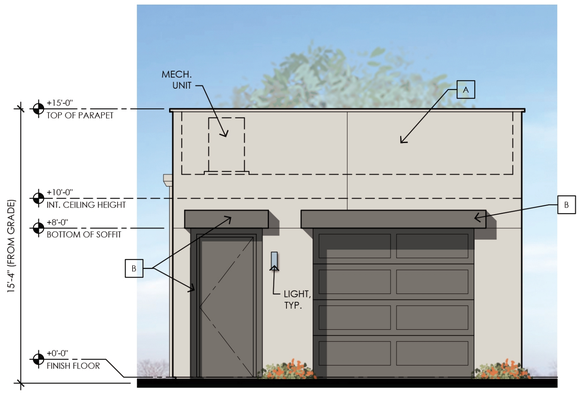
CITY SITE PLAN REVIEW SUBMITTAL #3

July 14, 2021

COLOR ELEVATIONS
CLUBHOUSE

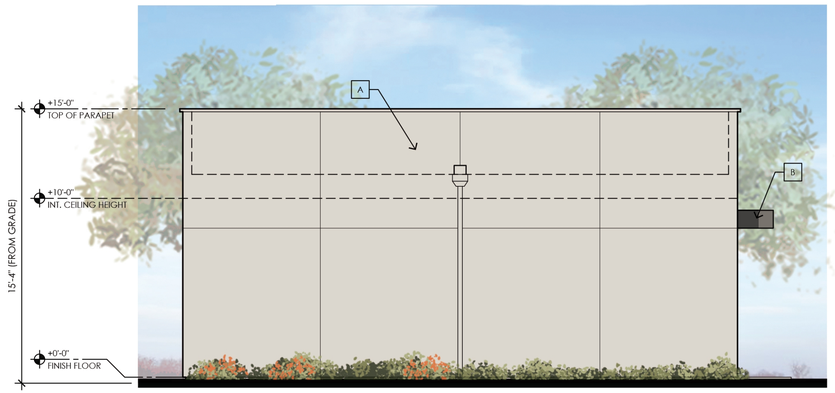
Preliminary Not For Construction

A3.9



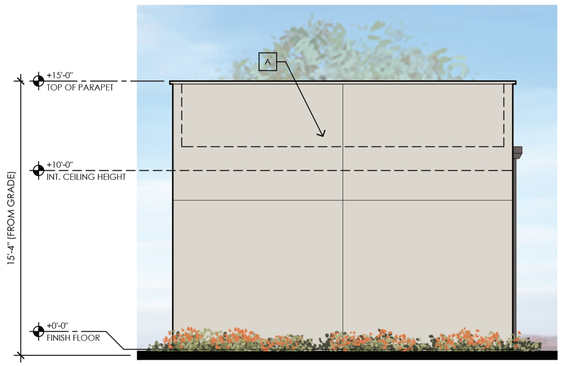
1 **NORTHWEST ELEVATION**

SCALE: 1/4" = 1'-0"



2 **SOUTHEAST ELEVATION**

SCALE: 1/4" = 1'-0"

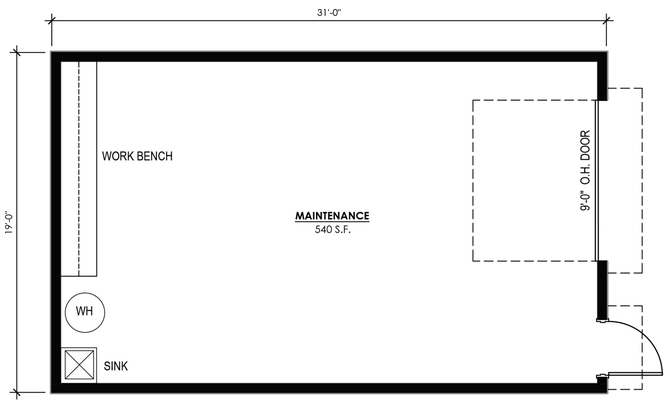


3 **SOUTHWEST ELEVATION**

SCALE: 1/4" = 1'-0"

4 **NORTHWEST ELEVATION**

SCALE: 1/4" = 1'-0"



3 **FLOOR PLAN**

SCALE: 1/4" = 1'-0"

N

MATERIAL FINISH

CODE	LOCATION	MANUFACTURER	COLOR
A*	EXTERIOR STUCCO	SHERWIN WILLIAMS	SW9166 "DRIFT OF MIST" (LRV 69)
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EXPIRES 9/30/22

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19-2015-01

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APARTMENTS - VERRADO MARKETSIDE

Buckeye, Arizona

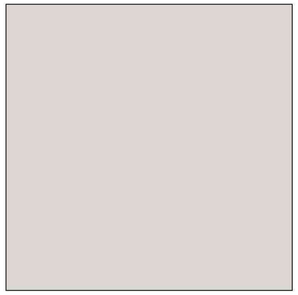
CITY SITE PLAN REVIEW SUBMITTAL #3

July 14, 2021

COLOR ELEVATIONS / FLOOR PLAN - MAINTENANCE BUILDING

Preliminary Not For Construction

A3.10



Stucco

A MFGR: Sherwin Williams - (LRV 69)
COLOR: Drift of Mist #SW9166

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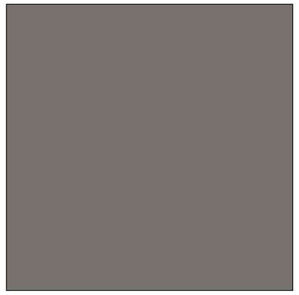

Stucco

B MFGR: Sherwin Williams - (LRV 17)
COLOR: Gauntlet Gray #SW7019

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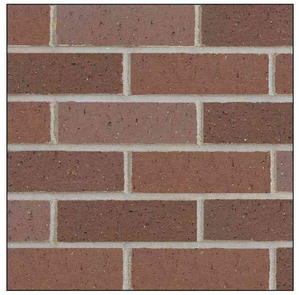


Masonry Veneer - Running Bond Modular

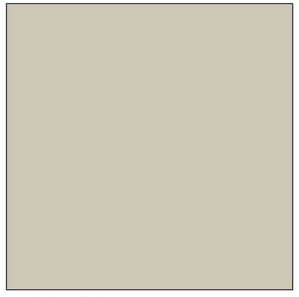
C MFGR: Interstate Brick
COLOR: Monterey 2-1/4" modular commercial

Accent Material
Fiber Cement Board 6" Lap

D MFGR: Woodtone Rustic Series
COLOR: Mountain Cedar

Conc. Roof Tile

E MFGR: Boral Conc. Roof Tile
COLOR: Saxony 900 Slate: Stone Mountain Dark



Residential Window Frame
Glass: Clear Low-E

F MFGR: Thermotech Classic Series
COLOR: Tan Vinyl Window

Storefront Windows & Doors
Glass: Clear Low-E

G MFGR: Arcadia / Kawneer
COLOR: Dark Bronze

REGISTERED ARCHITECT
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TODD
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ARIZONA, U.S.A.

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APARTMENTS - VERRADO MARKETSIDE

Buckeye, Arizona

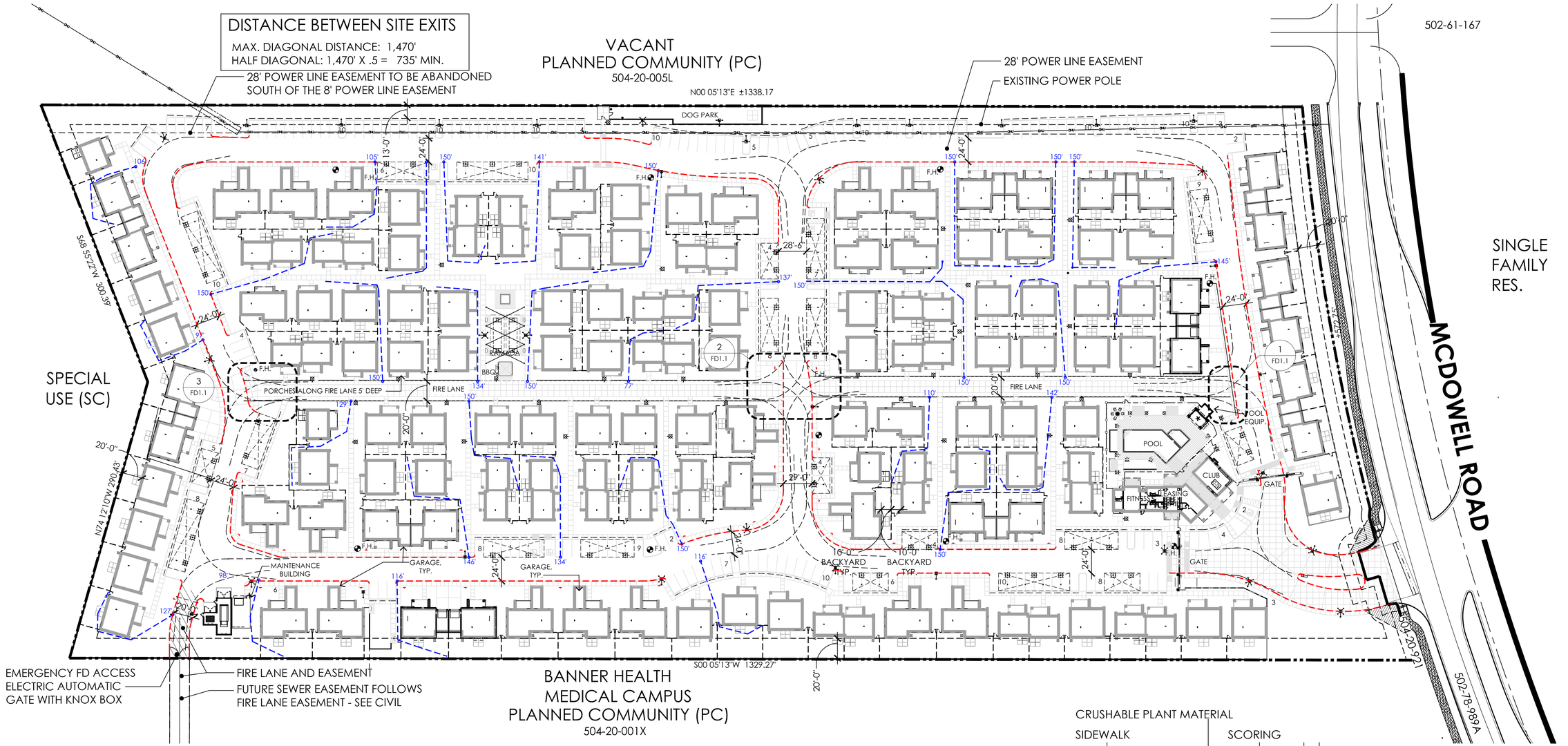
CITY SITE PLAN REVIEW SUBMITTAL #3

July 14, 2021

COLOR & MATERIALS

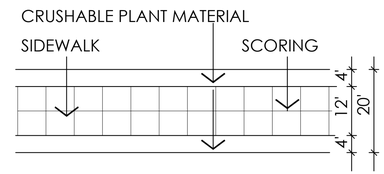
Preliminary Not For Construction

A4.1



LEGEND

- PARKING CANOPY
- ASSUMED PROPERTY LINE
- ACCESSIBLE PARKING SPACE
- FIRE LANE - NO PARKING SEE 4/FD1.1
- LINE OF FIRE HOSE PULL - 150' MAX DISTANCE
- 05 / 1 B — BUILDING NUMBER (ON ENLARGED PLANS ONLY); NUMBER INDICATES NUMBER OF BEDROOMS PER UNIT; LETTER INDICATES BEDROOM TYPE
- PROPOSED FIRE HYDRANT
- FIRE TRUCK TURNING RADIUS - WB50 TURNING RADIUS PER CITY OF BUCKEYE STANDARDS.



*ALL MATERIAL OVER COMPACTED BASE PER CITY OF BUCKEYE FIRE DEPARTMENT STANDARDS

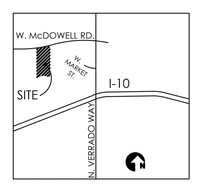
PROPOSED FIRE LANE

FIRE DEPARTMENT NOTES:

A. ALL BUILDINGS AND STRUCTURES SHALL HAVE AN AUTOMATIC FIRE SPRINKLER SYSTEM INSTALLED UNDER SEPARATE SUBMITTAL AND PERMIT.
B. DRY HORIZONTAL STANDPIPES MAY BE REQUIRED IF THE 150' HOSE PULL CAN NOT BE MET.
C. ALL MANUAL GATES AND COMMERCIAL BUILDINGS WILL REQUIRE C.O.B. F.D. KNOX BOX 3200 SERIES.
D. ALL EMERGENCY ACCESS GATES WILL NEED TO MEET C.O.B. F.D. GATE EMERGENCY ACCESS DESIGN AND FORMAL SUBMITTAL FOR A F.D. REVIEW.
E. CONTRACTOR SHALL SUBMIT FIRE ALARM PLANS AND OBTAIN APPROVAL PRIOR TO INSTALLATION.
F. CONTRACTOR SHALL SUBMIT SPRINKLER PLANS AND OBTAIN APPROVAL PRIOR TO INSTALLATION.

0" 25' 50' 100'

SCALE: 1" = 50'-0"



VICINITY MAP

REGISTERED ARCHITECT
CERTIFICATE NO.
13467
GARY D. TODD
Date Signed 07/15/21
ARIZONA, U.S.A.

EXPIRES 9/30/22

TODD + ASSOCIATES
602-952-8280 / TODDASSOC.COM
19-2015-01

PBBell

APARTMENTS - VERRADO MARKETSIDE

Buckeye, Arizona

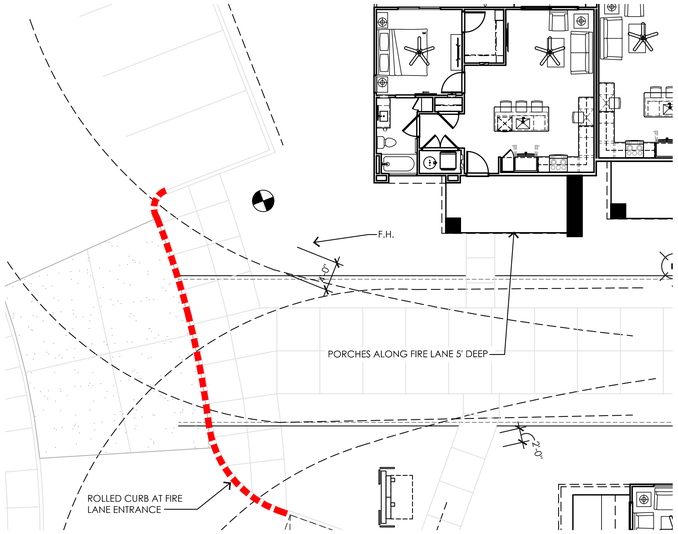
CITY SITE PLAN REVIEW SUBMITTAL #3

July 14, 2021

SITE PLAN

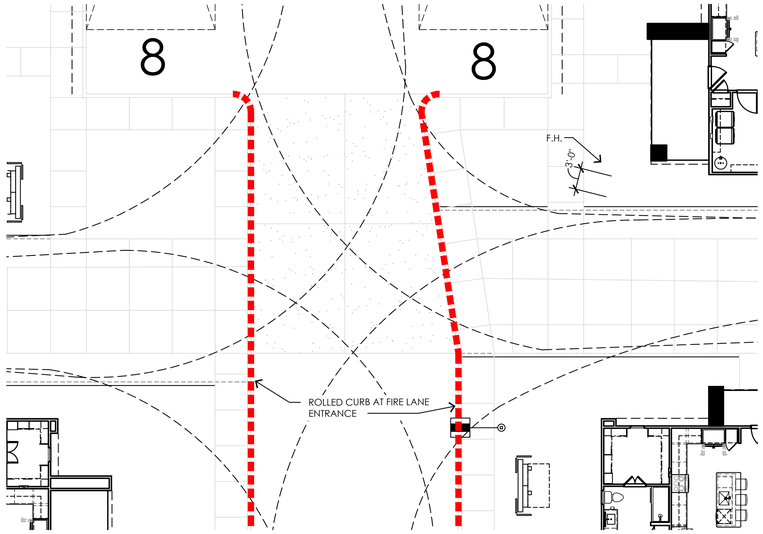
Preliminary Not For Construction

FD1.0



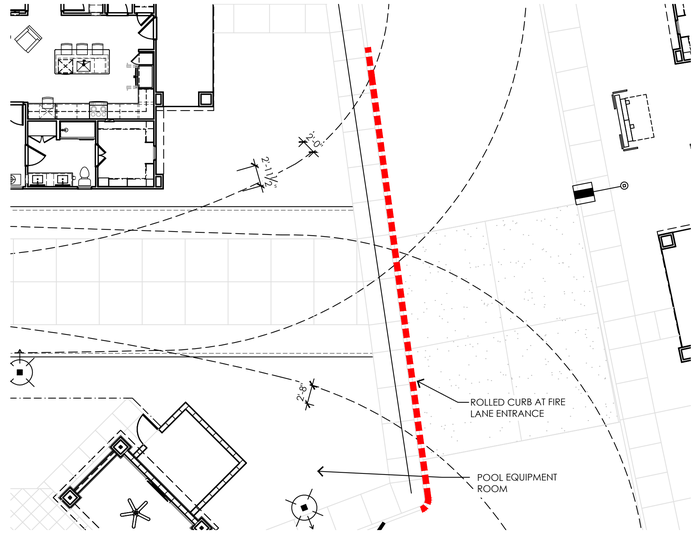
3 FIRE LANE - SOUTH ENTRANCE AT ROLLED CURB

SCALE: 1" = 10'-0"



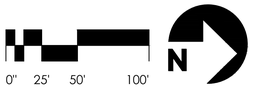
2 FIRE LANE - CENTRAL ENTRANCES AT ROLLED CURB

SCALE: 1" = 10'-0"

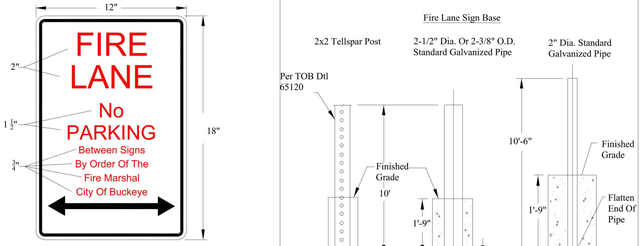


1 FIRE LANE - NORTH ENTRANCE AT ROLLED CURB

SCALE: 1" = 10'-0"



SCALE: 1" = 50'-0"

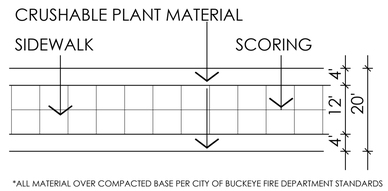


GENERAL NOTES

1. At the beginning and end of the fire lane, the sign shall have a single headed arrow pointing in the direction the regulation is in effect. The intermediate signs shall have double headed arrows pointing in both directions.
2. The maximum spacing of the signs shall be 100', contingent upon the City Engineer's review and approval.
3. The signs shall be set at an angle of not less than 30° nor more than 45° with the curb or line of traffic flow.
4. The clearance to the bottom of the sign shall be 7'. There shall be no other signs attached to the sign or the sign pole.
5. The sign plate shall be a minimum of 12" x 18" with a thickness of 0.80".
6. The sign face shall meet the COB sign sheeting standards. Use the standard sign face blank for a R7-32 or equivalent.
7. Signage letter shall be from the "CLEARVIEW" Font.

4 FIRE LANE - NO PARKING SIGN PER C.O.B. DETAIL 31452

SCALE: 1" = 10'-0"

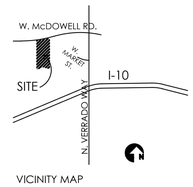


*ALL MATERIAL OVER COMPACTED BASE PER CITY OF BUCKEYE FIRE DEPARTMENT STANDARDS

PROPOSED FIRE LANE

LEGEND

- PARKING CANOPY
- ASSUMED PROPERTY LINE
- ACCESSIBLE PARKING SPACE
- ROLLED CURB AT FIRE LANE- PAINT AND LABEL PER C.O.B. FIRE CODE AMENDMENT SECTION 503.3.2
- 05 / 1 B — BUILDING NUMBER (ON ENLARGED PLANS ONLY); NUMBER INDICATES NUMBER OF BEDROOMS PER UNIT; LETTER INDICATES BEDROOM TYPE
- PROPOSED FIRE HYDRANT
- FIRE TRUCK TURNING RADIUS - WB50 TURNING RADIUS PER CITY OF BUCKEYE STANDARDS.



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PB Bell

APARTMENTS - VERRADO MARKETSIDE

Buckeye, Arizona

CITY SITE PLAN REVIEW SUBMITTAL #3

July 14, 2021

SITE PLAN

Preliminary Not For Construction

FD1.1

3rd Submittal

PLZV-21-00030

RECEIVED

JULY 15 2021

CITY OF BUCKEYE by: WD

PLANT PALETTE

SYMBOL	BOTANICAL NAME	COMMON NAME	SIZE	CAL.	QTY.	TREE INSTALL SIZE (H' x W')
TREES	w/ MATURITY (H' x W')					
	ACACIA SALACINA (50'x40')	WILLOW ACACIA	15 GAL.	1"	75	6' x 2.5'
	ACACIA WILLARDIANA (20'x15')	PALO BLANCO	15 GAL.	1"	50	5' x 2.5'
	CAESALPINIA MEXICANA (15'x15')	MEXICAN BIRD OF PARADISE	15 GAL.	1"(MULTI)	12	5' x 3'
	EBENOPSIS EBANO (40'x40')	TEXAS EBONY	24" BOX 36" BOX	1.5" 2.25"	21 2	7' x 4' 9' x 6'
	OLNEYA TESOTA (30'x30')	IRONWOOD	48" BOX	6"(MULTI)	14	15' x 20'
	PARKINSONIA MICROPHYLLA (25'x25')	FOOTHILLS PALO VERDE	15 GAL. 24" BOX	.75" 1.25"	117 10	3' x 3' 5' x 4'
	PROSOPIS GLANDULOSA 'AZT' THORNLESS (25'x30')	TEXAS HONEY MESQUITE	15 GAL.	.75"	24	7' x 2.5'
	SOPHORA SECUNDIFLORA (20'x15')	TEXAS MOUNTAIN LAUREL	24" BOX	1.5" (MULTI)	7	4' x 3'
PALMS			**SIZE**	**QTY.**	**MAT. SIZE**	
	YUCCA ELATA	SOAPTREE YUCCA	7 GAL.	-	6'h x 2'w	

SHRUBS				
CAESALPINIA PULCHERRIMA	RED BIRD OF PARADISE	5 GAL.	-	8'h x 10'w
CALLIANDRA CALIFORNICA	BAJA FAIRY DUSTER	5 GAL.	-	3'h x 3'w
CORDIA PARVIFOLIA	LITTLE LEAF CORDIA	5 GAL.	-	8'h x 10'w
DODONEA VISCOSA	GREEN HOPSEED	5 GAL.	-	8'h x 8'w
EREMOPHILA MACULATA 'VALENTINE'	VALENTINE EREMOPHILA	5 GAL.	-	5'h x 5'w
EREMOPHILA HYGROPHANA	BLUEBELLS	5 GAL.	-	3'h x 3'w
EUPHORBIA TIRUCALLI	FIRE STICKS	5 GAL.	-	4'h x4'w
JUSTICIA SPICIGERA	MEXICAN HONEYSUCKLE	5 GAL.	-	3'h x3'w
LEUCOPHYLLUM 'LYNNS LEGACY'	HYBRID TEXAS SAGE	5 GAL.	-	5'h x 5'w
RUELLIA PENINSULARIS	DESERT RUELLIA	5 GAL.	-	4'h x 4'w
RUESSELIA EQUISETIFORMIS	CORAL FOUNTAIN	5 GAL.	-	3'h x4'w
SIMMONDSIA CHINENSIS	JOJOBA	5 GAL.	-	4'h x4'w
TECOMA STANS 'SIERRA APRICOT'	YELLOW BELLS	5 GAL.	-	3'h x4'w
		TOTAL SHRUBS		**± 1,350**

ACCENTS				
AGAVE COLORATA	MESCAL CENIZA	5 GAL	-	2'h x 3'w
AGAVE DESMETTIANA	SMOOTH AGAVE	5 GAL	-	2'h x 3'w
AGAVE PARRYI	PARRY'S AGAVE	5 GAL	-	2'h x 3'w
AGAVE WEBERI	WEBER'S AGAVE	5 GAL	-	4'h x 4'w
ALOE BARBADENSIS	MEDICINAL ALOE	5 GAL.	-	2'h x 3'w
DASYLIRION WHEELERI	DESERT SPOON	5 GAL.	-	5'h x 5'w
ECHINOCACTUS GRUSONII	GOLDEN BARREL CACTUS	5 GAL.	-	2'h x 2'w
HESPERALOE FUNIFERA 'CHIANGII'	WIDE LEAF HESPERALOE	5 GAL.	-	6'h x 6'w
HESPERALOE PARVILORA x 'PERFU', 'PINK PARADE'	'PINK PARADE' RED YUCCA	5 GAL.	-	3'h x 4'w
MUHLENBERGIA LINDHEIMERI 'AUTUMN GLOW'	LINHEIMER MUHLY	5 GAL.	-	5'h x 5'w
PACHYCERUS MARGINATUS	MEXICAN FENCE POST	25 GAL.	-	10'h x 2'w
PEDILANTHUS MACROCARPUS	LADY'S SLIPPER	5 GAL.	-	3'h x 3'w
PENSTEMON EATONI	FIRECRACKER PENSTEMON	5 GAL.	-	1'h x 4'w
PENSTEMON PARRYI	PARRY AGAVE	5 GAL.	-	2'h x 3'w
YUCCA PALLIDA	PALE LEAF YUCCA	5 GAL.	-	2'h x 3'w
		TOTAL ACCENTS		**±630**

GROUNDCOVERS				
EREMOPHILA GLABRA 'MINGENEW GOLD'	OUTBACK SUNRISE EMU	1 GAL	-	3'h x 5'w
LANTANA 'NEW GOLD'	NEW GOLD LANTANA	5 GAL.	-	1'h x 4'w
LANTANA MONTEVIDENSIS	PURPLE LANTANA	1 GAL.	-	1'h x 3'w
ROSMARINUS OFFICINALIS 'HUNTINGTON CARPET'	TRAILING ROSEMARY	5 GAL.	-	1'h x 4'w
TETRANEURIS ACAULIS	ANGELITA DAISY	5 GAL.	-	8"h x 18"w
	TOTAL ACCENTS			**±1,800**

VINES				
BOUGAINVILLEA 'BARBARA KARST'	BOUGAINVILLEA VINE	5 GAL.	-	10'h x 10'w
PODRANEA RICASOLIANA	PINK TRUMPET VINE	5 GAL.	-	10'h x 10'w
	TOTAL VINES			**±60**

GROUNDPLANE		
TYPICAL PLANTING BEDS	DECOMPOSED GRANITE, 2" DEPTH, 1/2" SCREENED, 'SADDLEBACK BROWN'	+/- 188,000 SF (FRONT) +/- 73,000 SF (BACK)
	3'-8" COBBLE w/ FILTER FABRIC, COLOR TO MATCH D.G.	
	ROOF DRAINS: +/- 2'x4" PER AREA	+/- 1,200 SF
	POOL AREA	+/- 1,500 SF
	LEASING	+/- 1,200 SF
	MAIN ENTRY DRIVE	+/- 5,000 SF
	SYNTHETIC TURF: 'SPRING PRO 70' 70oz. / 2" PILE HEIGHT	
	BACKYARDS (PER TENANT SELECTION)	TBD
	POOL AREA	+/- 550 SF
	NATURAL TURF: MIDIRON BERMUDA SOD	
	DOG PARK	+/- 1,750 SF
	TURF AREA	+/- 2,050 SF

LANDSCAPE AREA:

FRONT & COMMON SPACE AREA	+/- 197,000 SF
BACKYARD AREA	+/- 73,0000 SF

BACKYARD PLANTING

BACKYARD PLANTING OPTIONS TO BE OFFERED DURING THE PERMIT REVIEW PLANS.

SITE WALLS	HEIGHT	TYPE	FINISH / COLOR	DETAIL
NORTH/SOUTH/EAST PERIMETER:	6' HIGH	8"x16"x8" CMU WALL	PRECISION "BONE"	SEE DTL 4 / L1.8
WEST PERIMETER:	6' HIGH	IRON PICKET FENCE	DARK BRONZE	SEE DTL 5 / L1.8
BACK YARD	6' HIGH	VINYL PRE-FAB POST & FENCE	TO MATCH SW9166 "DRIFT OF MIST" (LRV 69)	SEE DTL 2 / L1.8
GATES & FENCES:				
DOG PARK FENCE:	4' HIGH	VINYL PRE-FAB POST & FENCE	MATCH ARCH.	SEE DTL 2 / L1.8
POOL FENCE:	5' HIGH	METAL PICKET	DARK BRONZE	SEE DTL 1 / L1.8
VEHICLULAR GATE:	5' HIGH	METAL PICKET	DARK BRONZE	-

NOTES:
1. 6' CLEAR BETWEEN FIRE HYDRANTS AND TREES
2. 13'-6' VERTICAL CLEAR FOR ALL TREES ALONG ALL STREETS

0" 25' 50' 100'

SCALE: 1" = 50'-0"

TODD + ASSOCIATES

602-952-8280 / TODDASSOC.COM

19-2015-01

PB Bell

APARTMENTS - VERRADO MARKETSIDE

Buckeye, Arizona

CITY SITE PLAN REVIEW SUBMITTAL #3

July 14, 2021

OVERALL LANDSCAPE PLAN

Preliminary Not For Construction

STEVEN D. VOORHEES 23444 07-14-21 ARIZONA, U.S.A.

LICENSE EXPIRES 9/30/2022

L1.1

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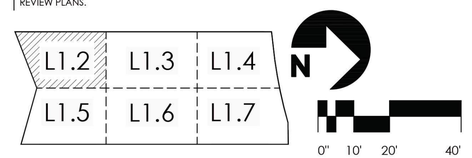


LANDSCAPE KEY PLAN

SCALE: 1" = 20'-0"

TODD + ASSOCIATES
602-952-8280 / TODDASSOC.COM
19-2015-01

PBBell

APARTMENTS - VERRADO MARKETSIDE

Buckeye, Arizona

CITY SITE PLAN REVIEW SUBMITTAL #3

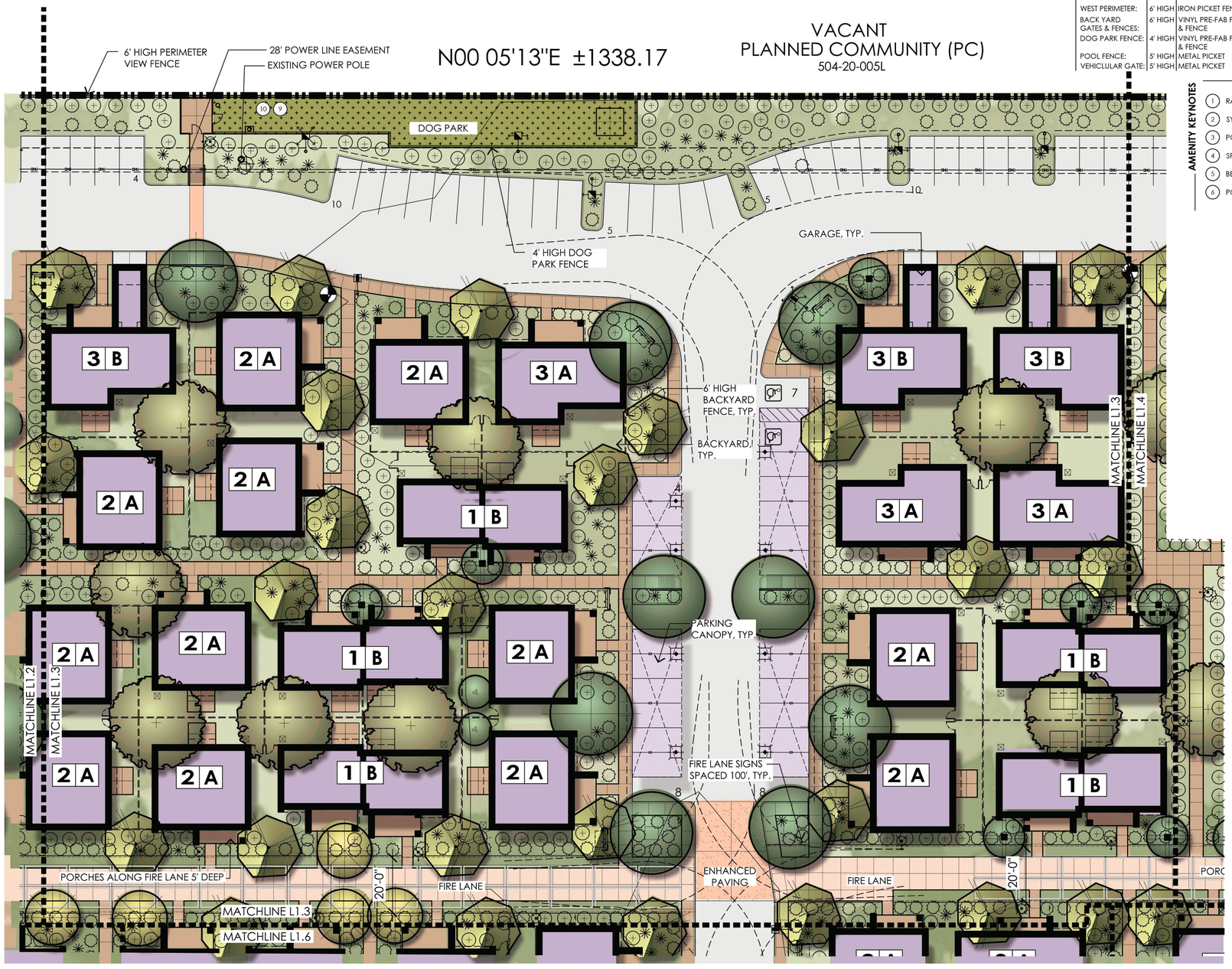
July 14, 2021

ENLARGED LANDSCAPE PLAN

Preliminary Not For Construction

LICENSE EXPIRES 9/30/2022

L1.2



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AMENITY KEY'NOTES

1. RAMADA
2. SYNTHETIC TURF
3. POOL
4. SPA
5. BBQ
6. POOL EQUIPMENT
7. CORNHOLE BOARDS
8. SEATING CUBES
9. TURF
10. DOG DRINKING FOUNTAIN

PLANT PALETTE

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	ACACIA WILLARDIANA (20'x15')	PALO BLANCO	15 GAL.	1"	50	5' x 2.5'
	CAESALPINIA MEXICANA (15'x15')	MEXICAN BIRD OF PARADISE	15 GAL.	1"(MULTI)	12	5' x 3'
	EBENOPSIS EBANO (40'x40')	TEXAS EBONY	24" BOX 36" BOX	1.5" 2.25"	21 2	7' x 4' 9' x 6'
	OLNEYA TESOTA (30'x30')	IRONWOOD	48" BOX	6"(MULTI)	14	15' x 20'
	PARKINSONIA MICROPHYLLA (25'x25')	FOOTHILLS PALO VERDE	15 GAL. 24" BOX	.75" 1.25"	117 10	3' x 3' 5' x 4'
	PROSOPIS GLANDULOSA 'AZT' THORNLESS' (25'x30')	TEXAS HONEY MESQUITE	15 GAL.	.75"	24	7' x 2.5'
	SOPHORA SECUNDIFLORA (20'x15')	TEXAS MOUNTAIN LAUREL	24" BOX	1.5" (MULTI)	7	4' x 3'
PALMS			**SIZE**	**QTY.**	**MAT. SIZE**	
	YUCCA ELATA	SOAPTREE YUCCA	7 GAL.	-	6'h x 2'w	
SHRUBS						
	CAESALPINIA PULCHERRIMA	RED BIRD OF PARADISE	5 GAL.	-	8'h x 10'w	
	CALLIANDRA CALIFORNICA	BAJA FAIRY DUSTER	5 GAL.	-	3'h x 3'w	
	CORDIA PARVIFOLIA	LITTLE LEAF CORDIA	5 GAL.	-	8'h x 10'w	
	DODONEA VISCOSA	GREEN HOPSEED	5 GAL.	-	8'h x 8'w	
	EREMOPHILA MACULATA 'VALENTINE'	VALENTINE EREMOPHILA	5 GAL.	-	5'h x 5'w	
	EREMOPHILA HYGROPHANA	BLUEBELLS	5 GAL.	-	3'h x 3'w	
	EUPHORBIA TIRUCALLI	FIRE STICKS	5 GAL.	-	4'h x4'w	
	JUSTICIA SPICIGERA	MEXICAN HONEYSUCKLE	5 GAL.	-	3'h x3'w	
	LEUCOPHYLLUM 'LYNNS LEGACY'	HYBRID TEXAS SAGE	5 GAL.	-	5'h x 5'w	
	RUELLIA PENINSULARIS	DESERT RUELLIA	5 GAL.	-	4'h x 4'w	
	RUESSELIA EQUISETIFORMIS	CORAL FOUNTAIN	5 GAL.	-	3'h x4'w	
	SIMMONDSIA CHINENSIS	JOJOBA	5 GAL.	-	4'h x4'w	
	TECOMA STANS 'SIERRA APRICOT'	YELLOW BELLS	5 GAL.	-	3'h x4'w	
			TOTAL SHRUBS		**± 1,350**	
ACCENTS						
	AGAVE COLORATA	MESCAL CENIZA	5 GAL	-	2'h x 3'w	
	AGAVE DESMETTIANA	SMOOTH AGAVE	5 GAL	-	2'h x 3'w	
	AGAVE PARRYI	PARRY'S AGAVE	5 GAL	-	2'h x 3'w	
	AGAVE WEBERI	WEBER'S AGAVE	5 GAL	-	4'h x 4'w	
	ALOE BARBADENSIS	MEDICINAL ALOE	5 GAL.	-	2'h x 3'w	
	DASYLIRION WHEELERI	DESERT SPOON	5 GAL.	-	5'h x 5'w	
	ECHINOCACTUS GRUSONII	GOLDEN BARREL CACTUS	5 GAL.	-	2'h x 2'w	
	HESPERALOE FUNIFERA 'CHIANGII'	WIDE LEAF HESPERALOE	5 GAL.	-	6'h x 6'w	
	HESPERALOE PARVILORA x 'PERFU', 'PINK PARADE'	'PINK PARADE' RED YUCCA	5 GAL.	-	3'h x 4'w	
	MUHLENBERGIA LINDHEIMERI 'AUTUMN GLOW'	LINHEIMER MUHLY	5 GAL.	-	5'h x 5'w	
	PACHYCERUS MARGINATUS	MEXICAN FENCE POST	25 GAL.	-	10'h x 2'w	
	PEDILANTHUS MACROCARPUS	LADY'S SLIPPER	5 GAL.	-	3'h x 3'w	
	PENSTEMON EATONI	FIRECRACKER PENSTEMON	5 GAL.	-	1'h x 4'w	
	PENSTEMON PARRYI	PARRY AGAVE	5 GAL.	-	2'h x 3'w	
	YUCCA PALLIDA	PALE LEAF YUCCA	5 GAL.	-	2'h x 3'w	
			TOTAL ACCENTS		**±630**	
GROUNDCOVERS						
	EREMOPHILA GLABRA 'MINGENEW GOLD'	OUTBACK SUNRISE EMU	1 GAL	-	3'h x 5'w	
	LANTANA 'NEW GOLD'	NEW GOLD LANTANA	5 GAL.	-	1'h x 4'w	
	LANTANA MONTEVIDENSIS	PURPLE LANTANA	1 GAL.	-	1'h x 3'w	
	ROSMARINUS OFFICINALIS 'HUNTINGTON CARPET'	TRAILING ROSEMARY	5 GAL.	-	1'h x 4'w	
	TETRANEURIS ACAULIS	ANGELITA DAISY	5 GAL.	-	8"h x 18"w	
			TOTAL ACCENTS		**±1,800**	
VINES						
	BOUGAINVILLEA 'BARBARA KARST'	BOUGAINVILLEA VINE	5 GAL.	-	10'h x 10'w	
	PODRANEA RICASOLIANA	PINK TRUMPET VINE	5 GAL.	-	10'h x 10'w	
			TOTAL VINES		**±60**	

GROUNDPLANE

TYPICAL PLANTING BEDS	DECOMPOSED GRANITE, 2" DEPTH, 1/2" SCREENED, 'SADDLEBACK BROWN'	+/- 188,000 SF (FRONT) +/- 73,000 SF (BACK)
	3'-8" COBBLE w/ FILTER FABRIC, COLOR TO MATCH D.G.	
	ROOF DRAINS: +/- 2'x4' PER AREA	+/- 1,200 SF
	POOL AREA	+/- 1,500 SF
	LEASING	+/- 1,200 SF
	MAIN ENTRY DRIVE	+/- 5,000 SF
	SYNTHETIC TURF: 'SPRING PRO 70' 70oz. / 2" PILE HEIGHT	
	BACKYARDS (PER TENANT SELECTION)	TBD
	POOL AREA	+/- 550 SF
	NATURAL TURF: MIDIRON BERMUDA SOD	
	DOG PARK	+/- 1,750 SF
	TURF AREA	+/- 2,050 SF

LANDSCAPE AREA:

FRONT & COMMON SPACE AREA	+/- 197,000 SF
BACKYARD AREA	+/- 73,0000 SF

BACKYARD PLANTING

BACKYARD PLANTING OPTIONS TO BE OFFERED DURING THE PERMIT REVIEW PLANS.

LANDSCAPE KEY PLAN

0" 10' 20' 40'

SCALE: 1" = 20'-0"

TODD + ASSOCIATES
602-952-8280 / TODDASSOC.COM
19-2015-01

PBBell

APARTMENTS - VERRADO MARKETSIDE

Buckeye, Arizona

CITY SITE PLAN REVIEW SUBMITTAL #3

July 14, 2021

ENLARGED LANDSCAPE PLAN

Preliminary Not For Construction

LICENSE EXPIRES 9/30/2022

L1.3

GROUNDPLANE

TYPICAL PLANTING BEDS	DECOMPOSED GRANITE, 2" DEPTH, 1/2" SCREENED, 'SADDLEBACK BROWN'	+/- 188,000 SF (FRONT) +/- 73,000 SF (BACK)
	3'-8" COBBLE w/ FILTER FABRIC, COLOR TO MATCH D.G.	
	ROOF DRAINS: +/- 2'x4' PER AREA	+/- 1,200 SF
	POOL AREA	+/- 1,500 SF
	LEASING	+/- 1,200 SF
	MAIN ENTRY DRIVE	+/- 5,000 SF
	SYNTHETIC TURF: 'SPRING PRO 70' 70oz. / 2" PILE HEIGHT	
	BACKYARDS (PER TENANT SELECTION)	TBD
	POOL AREA	+/- 550 SF
	NATURAL TURF: MIDIRON BERMUDA SOD	
	DOG PARK	+/- 1,750 SF
	TURF AREA	+/- 2,050 SF

LANDSCAPE AREA:

FRONT & COMMON SPACE AREA	+/- 197,000 SF
BACKYARD AREA	+/- 73,0000 SF

BACKYARD PLANTING

BACKYARD PLANTING OPTIONS TO BE OFFERED DURING THE PERMIT REVIEW PLANS.

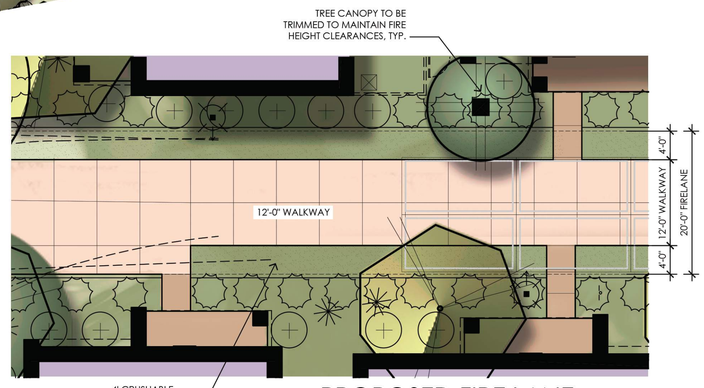
PLANT PALETTE

SYMBOL	BOTANICAL NAME	COMMON NAME	SIZE	CAL.	QTY.	SIZE (MIN. INSTALL SIZE (H' x W'))
TREES	w/ MATURITY (H' x W')					
	ACACIA SALACINA (50'x40')	WILLOW ACACIA	15 GAL.	1"	75	6' x 2.5'
	ACACIA WILLARDIANA (20'x15')	PALO BLANCO	15 GAL.	1"	50	5' x 2.5'
	CAESALPINIA MEXICANA (15'x15')	MEXICAN BIRD OF PARADISE	15 GAL.	1"(MULTI)	12	5' x 3'
	EBENOPSIS EBANO (40'x40')	TEXAS EBONY	24" BOX 36" BOX	1.5" 2.25"	21 2	7' x 4' 9' x 6'
	OLNEYA TESOTA (30'x30')	IRONWOOD	48" BOX	6"(MULTI)	14	15' x 20'
	PARKINSONIA MICROPHYLLA (25'x25')	FOOTHILLS PALO VERDE	15 GAL. 24" BOX	.75" 1.25"	117 10	3' x 3' 5' x 4'
	PROSOPIS GLANDULOSA 'AZT' THORNLESS (25'x30')	TEXAS HONEY MESQUITE	15 GAL.	.75"	24	7' x 2.5'
	SOPHORA SECUNDIFLORA (20'x15')	TEXAS MOUNTAIN LAUREL	24" BOX	1.5" (MULTI)	7	4' x 3'
PALMS			**SIZE**	**QTY.**	**MAT. SIZE**	
	YUCCA ELATA	SOAPTREE YUCCA	7 GAL.	-	6'h x 2'w	
SHRUBS						
	CAESALPINIA PULCHERRIMA	RED BIRD OF PARADISE	5 GAL.	-	8'h x 10'w	
	CALLIANDRA CALIFORNICA	BAJA FAIRY DUSTER	5 GAL.	-	3'h x 3'w	
	CORDIA PARVIFOLIA	LITTLE LEAF CORDIA	5 GAL.	-	8'h x 10'w	
	DODONEA VISCOSA	GREEN HOPSEED	5 GAL.	-	8'h x 8'w	
	EREMOPHILA MACULATA 'VALENTINE'	VALENTINE EREMOPHILA	5 GAL.	-	5'h x 5'w	
	EREMOPHILA HYGROPHANA	BLUEBELLS	5 GAL.	-	3'h x 3'w	
	EUPHORBIA TIRUCALLI	FIRE STICKS	5 GAL.	-	4'h x4'w	
	JUSTICIA SPICIGERA	MEXICAN HONEYSUCKLE	5 GAL.	-	3'h x3'w	
	LEUCOPHYLLUM 'LYNNS LEGACY'	HYBRID TEXAS SAGE	5 GAL.	-	5'h x 5'w	
	RUELLIA PENINSULARIS	DESERT RUELLIA	5 GAL.	-	4'h x 4'w	
	RUESSELIA EQUISETIFORMIS	CORAL FOUNTAIN	5 GAL.	-	3'h x4'w	
	SIMMONDSIA CHINENSIS	JOJOBA	5 GAL.	-	4'h x4'w	
	TECOMA STANS 'SIERRA APRICOT'	YELLOW BELLS	5 GAL.	-	3'h x4'w	
			TOTAL SHRUBS		**± 1,350**	
ACCENTS						
	AGAVE COLORATA	MESCAL CENIZA	5 GAL	-	2'h x 3'w	
	AGAVE DESMETTIANA	SMOOTH AGAVE	5 GAL	-	2'h x 3'w	
	AGAVE PARRYI	PARRY'S AGAVE	5 GAL	-	2'h x 3'w	
	AGAVE WEBERI	WEBER'S AGAVE	5 GAL	-	4'h x 4'w	
	ALOE BARBADENSIS	MEDICINAL ALOE	5 GAL.	-	2'h x 3'w	
	DASYLIRION WHEELERI	DESERT SPOON	5 GAL.	-	5'h x 5'w	
	ECHINOCACTUS GRUSONII	GOLDEN BARREL CACTUS	5 GAL.	-	2'h x 2'w	
	HESPERALOE FUNIFERA 'CHIANGII'	WIDE LEAF HESPERALOE	5 GAL.	-	6'h x 6'w	
	HESPERALOE PARVILORA x 'PERFU', 'PINK PARADE'	'PINK PARADE' RED YUCCA	5 GAL.	-	3'h x 4'w	
	MUHLENBERGIA LINDHEIMERI 'AUTUMN GLOW'	LINHEIMER MUHLY	5 GAL.	-	5'h x 5'w	
	PACHYCERUS MARGINATUS	MEXICAN FENCE POST	25 GAL.	-	10'h x 2'w	
	PEDILANTHUS MACROCARPUS	LADY'S SLIPPER	5 GAL.	-	3'h x 3'w	
	PENSTEMON EATONI	FIRECRACKER PENSTEMON	5 GAL.	-	1'h x 4'w	
	PENSTEMON PARRYI	PARRY AGAVE	5 GAL.	-	2'h x 3'w	
	YUCCA PALLIDA	PALE LEAF YUCCA	5 GAL.	-	2'h x 3'w	
			TOTAL ACCENTS		**±630**	
GROUNDCOVERS						
	EREMOPHILA GLABRA 'MINGENEW GOLD'	OUTBACK SUNRISE EMU	1 GAL	-	3'h x 5'w	
	LANTANA 'NEW GOLD'	NEW GOLD LANTANA	5 GAL.	-	1'h x 4'w	
	LANTANA MONTEVIDENSIS	PURPLE LANTANA	1 GAL.	-	1'h x 3'w	
	ROSMARINUS OFFICINALIS 'HUNTINGTON CARPET'	TRAILING ROSEMARY	5 GAL.	-	1'h x 4'w	
	TETRANEURIS ACAULIS	ANGELITA DAISY	5 GAL.	-	8"h x 18"w	
			TOTAL ACCENTS		**±1,800**	
VINES						
	BOUGAINVILLEA 'BARBARA KARST'	BOUGAINVILLEA VINE	5 GAL.	-	10'h x 10'w	
	PODRANEA RICASOLIANA	PINK TRUMPET VINE	5 GAL.	-	10'h x 10'w	
			TOTAL VINES		**±60**	

SITE WALLS	HEIGHT	TYPE	FINISH / COLOR	DETAIL
NORTH/SOUTH/EAST PERIMETER:	6' HIGH	8"x16"x8" CMU WALL	PRECISION "BONE"	SEE DTL 4 / L1.8
WEST PERIMETER:	6' HIGH	IRON PICKET FENCE	DARK BRONZE	SEE DTL 5 / L1.8
BACK YARD GATES & FENCES:	6' HIGH	VINYL PRE-FAB POST & FENCE	TO MATCH SW9166 "DRIFT OF MIST" (LRV 69)	SEE DTL 2 / L1.8
DOG PARK FENCE:	4' HIGH	VINYL PRE-FAB POST & FENCE	MATCH ARCH.	SEE DTL 2 / L1.8
POOL FENCE:	5' HIGH	METAL PICKET	DARK BRONZE	SEE DTL 1 / L1.8
VEHICLULAR GATE:	5' HIGH	METAL PICKET	DARK BRONZE	-

AMENITY KEYNOTES

1. RAMADA
2. SYNTHETIC TURF
3. POOL
4. SPA
5. BBQ
6. POOL EQUIPMENT
7. CORNHOLE BOARDS
8. SEATING CUBES
9. TURF
10. DOG DRINKING FOUNTAIN



PROPOSED FIRE LANE

SCALE: 1"=20'-0"

LANDSCAPE KEY PLAN

0" 10' 20' 40'

SCALE: 1" = 20'-0"

N

TODD + ASSOCIATES
602-952-8280 / TODDASSOC.COM
19-2015-01

PB Bell

APARTMENTS - VERRADO MARKETSIDE

Buckeye, Arizona

CITY SITE PLAN REVIEW SUBMITTAL #3

July 14, 2021

ENLARGED LANDSCAPE PLAN

Preliminary Not For Construction

STEVEN D. VOORHEES 07-14-21 ARIZONA, U.S.A.

LICENSE EXPIRES 9/30/2022

L1.4

SITE WALLS	HEIGHT	TYPE	FINISH / COLOR	DETAIL
NORTH/SOUTH/EAST PERIMETER:	6' HIGH	8"x16"x8" CMU WALL	PRECISION "BONE"	SEE DTL 4 / L1.8
WEST PERIMETER:	6' HIGH	IRON PICKET FENCE	DARK BRONZE	SEE DTL 5 / L1.8
BACK YARD GATES & FENCES:	6' HIGH	VINYL PRE-FAB POST & FENCE	TO MATCH SW9166 "DRIFT OF MIST" (LRV 69)	SEE DTL 2 / L1.8
DOG PARK FENCE:	4' HIGH	VINYL PRE-FAB POST & FENCE	MATCH ARCH.	SEE DTL 2 / L1.8
POOL FENCE:	5' HIGH	METAL PICKET	DARK BRONZE	SEE DTL 1 / L1.8
VEHICLULAR GATE:	5' HIGH	METAL PICKET	DARK BRONZE	-

PLANT PALETTE

SYMBOL	BOTANICAL NAME	COMMON NAME	SIZE	CAL.	QTY.	SIZE (MIN. INSTALL SIZE (H' x W'))
TREES	w/ MATURITY (H' x W')					
	ACACIA SALACINA (50'x40')	WILLOW ACACIA	15 GAL.	1"	75	6' x 2.5'
	ACACIA WILLARDIANA (20'x15')	PALO BLANCO	15 GAL.	1"	50	5' x 2.5'
	CAESALPINIA MEXICANA (15'x15')	MEXICAN BIRD OF PARADISE	15 GAL.	1"(MULTI)	12	5' x 3'
	EBENOPSIS EBANO (40'x40')	TEXAS EBONY	24" BOX 36" BOX	1.5" 2.25"	21 2	7' x 4' 9' x 6'
	OLNEYA TESOTA (30'x30')	IRONWOOD	48" BOX	6"(MULTI)	14	15' x 20'
	PARKINSONIA MICROPHYLLA (25'x25')	FOOTHILLS PALO VERDE	15 GAL. 24" BOX	.75" 1.25"	117 10	3' x 3' 5' x 4'
	PROSOPIS GLANDULOSA 'AZT' THORNLESS (25'x30')	TEXAS HONEY MESQUITE	15 GAL.	.75"	24	7' x 2.5'
	SOPHORA SECUNDIFLORA (20'x15')	TEXAS MOUNTAIN LAUREL	24" BOX	1.5" (MULTI)	7	4' x 3'

PALMS		SIZE	QTY.	MAT. SIZE
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SHRUBS				
CAESALPINIA PULCHERRIMA	RED BIRD OF PARADISE	5 GAL.	-	8'h x 10'w
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CORDIA PARVIFOLIA	LITTLE LEAF CORDIA	5 GAL.	-	8'h x 10'w
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EREMOPHILA MACULATA 'VALENTINE'	VALENTINE EREMOPHILA	5 GAL.	-	5'h x 5'w
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	TOTAL SHRUBS			**± 1,350**

ACCENTS				
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GROUNDPLANE

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	ROOF DRAINS: +/- 2'x4' PER AREA	+/- 1,200 SF
	POOL AREA	+/- 1,500 SF
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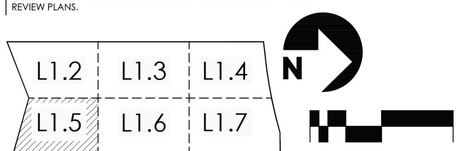

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ENLARGED LANDSCAPE PLAN

Preliminary Not For Construction

23444 STEVEN D. VOORHEES 07-14-21 ARIZONA, U.S.A.

LICENSE EXPIRES 9/30/2022

L1.5

PLANT PALETTE

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	CAESALPINIA MEXICANA (15'x15')	MEXICAN BIRD OF PARADISE	15 GAL.	1"(MULTI)	12	5' x 3'
	EBENOPSIS EBANO (40'x40')	TEXAS EBONY	24" BOX 36" BOX	1.5" 2.25"	21 2	7' x 4' 9' x 6'
	OLNEYA TESOTA (30'x30')	IRONWOOD	48" BOX	6"(MULTI)	14	15' x 20'
	PARKINSONIA MICROPHYLLA (25'x25')	FOOTHILLS PALO VERDE	15 GAL. 24" BOX	.75" 1.25"	117 10	3' x 3' 5' x 4'
	PROSOPIS GLANDULOSA 'AZT' THORNLESS (25'x30')	TEXAS HONEY MESQUITE	15 GAL.	.75"	24	7' x 2.5'
	SOPHORA SECUNDIFLORA (20'x15')	TEXAS MOUNTAIN LAUREL	24" BOX	1.5" (MULTI)	7	4' x 3'

		SIZE	QTY.	MAT. SIZE
PALMS				
	YUCCA ELATA — SOAPTREE YUCCA	7 GAL.	-	6'h x 2'w
SHRUBS				
	CAESALPINIA PULCHERRIMA — RED BIRD OF PARADISE	5 GAL.	-	8'h x 10'w
	CALLIANDRA CALIFORNICA — BAJA FAIRY DUSTER	5 GAL.	-	3'h x 3'w
	CORDIA PARVIFOLIA — LITTLE LEAF CORDIA	5 GAL.	-	8'h x 10'w
	DODONEA VISCOSA — GREEN HOPSEED	5 GAL.	-	8'h x 8'w
	EREMOPHILA MACULATA 'VALENTINE' — VALENTINE EREMOPHILA	5 GAL.	-	5'h x 5'w
	EREMOPHILA HYGROPHANA — BLUEBELLS	5 GAL.	-	3'h x 3'w
	EUPHORBIA TIRUCALLI — FIRE STICKS	5 GAL.	-	4'h x4'w
	JUSTICIA SPICIGERA — MEXICAN HONEYSUCKLE	5 GAL.	-	3'h x3'w
	LEUCOPHYLLUM 'LYNNS LEGACY' — HYBRID TEXAS SAGE	5 GAL.	-	5'h x 5'w
	RUELLIA PENINSULARIS — DESERT RUELLIA	5 GAL.	-	4'h x 4'w
	RUESSELIA EQUISETIFORMIS — CORAL FOUNTAIN	5 GAL.	-	3'h x4'w
	SIMMONDSIA CHINENSIS — JOJOBA	5 GAL.	-	4'h x4'w
	TECOMA STANS 'SIERRA APRICOT' — YELLOW BELLS	5 GAL.	-	3'h x4'w
		TOTAL SHRUBS		**± 1,350**
ACCENTS				
	AGAVE COLORATA — MESCAL CENIZA	5 GAL	-	2'h x 3'w
	AGAVE DESMETTIANA — SMOOTH AGAVE	5 GAL	-	2'h x 3'w
	AGAVE PARRYI — PARRY'S AGAVE	5 GAL	-	2'h x 3'w
	AGAVE WEBERI — WEBER'S AGAVE	5 GAL	-	4'h x 4'w
	ALOE BARBADENSIS — MEDICINAL ALOE	5 GAL.	-	2'h x 3'w
	DASYLIRION WHEELERI — DESERT SPOON	5 GAL.	-	5'h x 5'w
	ECHINOCACTUS GRUSONII — GOLDEN BARREL CACTUS	5 GAL.	-	2'h x 2'w
	HESPERALOE FUNIFERA 'CHIANGII' — WIDE LEAF HESPERALOE	5 GAL.	-	6'h x 6'w
	HESPERALOE PARVILORA x 'PERFU', 'PINK PARADE' — 'PINK PARADE' RED YUCCA	5 GAL.	-	3'h x 4'w
	MUHLENBERGIA LINDHEIMERI 'AUTUMN GLOW' — LINHEIMER MUHLY	5 GAL.	-	5'h x 5'w
	PACHYCERUS MARGINATUS — MEXICAN FENCE POST	25 GAL.	-	10'h x 2'w
	PEDILANTHUS MACROCARPUS — LADY'S SLIPPER	5 GAL.	-	3'h x 3'w
	PENSTEMON EATONI — FIRECRACKER PENSTEMON	5 GAL.	-	1'h x 4'w
	PENSTEMON PARRYI — PARRY AGAVE	5 GAL.	-	2'h x 3'w
	YUCCA PALLIDA — PALE LEAF YUCCA	5 GAL.	-	2'h x 3'w
		TOTAL ACCENTS		**±630**
GROUNDCOVERS				
	EREMOPHILA GLABRA 'MINGENEW GOLD' — OUTBACK SUNRISE EMU	1 GAL	-	3'h x 5'w
	LANTANA 'NEW GOLD' — NEW GOLD LANTANA	5 GAL.	-	1'h x 4'w
	LANTANA MONTEVIDENSIS — PURPLE LANTANA	1 GAL.	-	1'h x 3'w
	ROSMARINUS OFFICINALIS 'HUNTINGTON CARPET' — TRAILING ROSEMARY	5 GAL.	-	1'h x 4'w
	TETRANEURIS ACAULIS — ANGELITA DAISY	5 GAL.	-	8"h x 18"w
		TOTAL ACCENTS		**±1,800**
VINES				
	BOUGAINVILLEA 'BARBARA KARST' — BOUGAINVILLEA VINE	5 GAL.	-	10'h x 10'w
	PODRANEA RICASOLIANA — PINK TRUMPET VINE	5 GAL.	-	10'h x 10'w
		TOTAL VINES		**±60**

GROUNDPLANE

TYPICAL PLANTING BEDS	DECOMPOSED GRANITE, 2" DEPTH, 1/2" SCREENED, 'SADDLEBACK BROWN'	+/- 188,000 SF (FRONT) +/- 73,000 SF (BACK)
	3'-8" COBBLE w/ FILTER FABRIC, COLOR TO MATCH D.G.	
	ROOF DRAINS: +/- 2'x4' PER AREA	+/- 1,200 SF
	POOL AREA	+/- 1,500 SF
	LEASING	+/- 1,200 SF
	MAIN ENTRY DRIVE	+/- 5,000 SF
	SYNTHETIC TURF: 'SPRING PRO 70' 70oz. / 2" PILE HEIGHT	
	BACKYARDS (PER TENANT SELECTION)	TBD
	POOL AREA	+/- 550 SF
	NATURAL TURF: MIDIRON BERMUDA SOD	
	DOG PARK	+/- 1,750 SF
	TURF AREA	+/- 2,050 SF

LANDSCAPE AREA:

FRONT & COMMON SPACE AREA	+/- 197,000 SF
BACKYARD AREA	+/- 73,0000 SF

BACKYARD PLANTING

BACKYARD PLANTING OPTIONS TO BE OFFERED DURING THE PERMIT REVIEW PLANS.

AMENITY KEYNOTES

1. RAMADA
2. SYNTHETIC TURF
3. POOL
4. SPA
5. BBQ
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SITE WALLS	HEIGHT	TYPE	FINISH / COLOR	DETAIL
NORTH/SOUTH/EAST PERIMETER:	6' HIGH	8"x16"x8" CMU WALL	PRECISION "BONE"	SEE DTL 4 / L1.8
WEST PERIMETER:	6' HIGH	IRON PICKET FENCE	DARK BRONZE	SEE DTL 5 / L1.8
BACK YARD GATES & FENCES:	6' HIGH	VINYL PRE-FAB POST & FENCE	TO MATCH SW9166 "DRIFT OF MIST" (LRV 69)	SEE DTL 2 / L1.8
DOG PARK FENCE:	4' HIGH	VINYL PRE-FAB POST & FENCE	MATCH ARCH.	SEE DTL 2 / L1.8
POOL FENCE:	5' HIGH	METAL PICKET	DARK BRONZE	SEE DTL 1 / L1.8
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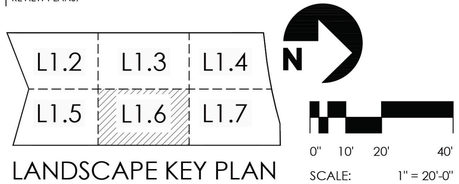


LANDSCAPE KEY PLAN

TODD + ASSOCIATES
602-952-8280 / TODDASSOC.COM
19-2015-01

PBBell

APARTMENTS - VERRADO MARKETSIDE

Buckeye, Arizona

CITY SITE PLAN REVIEW SUBMITTAL #3

July 14, 2021

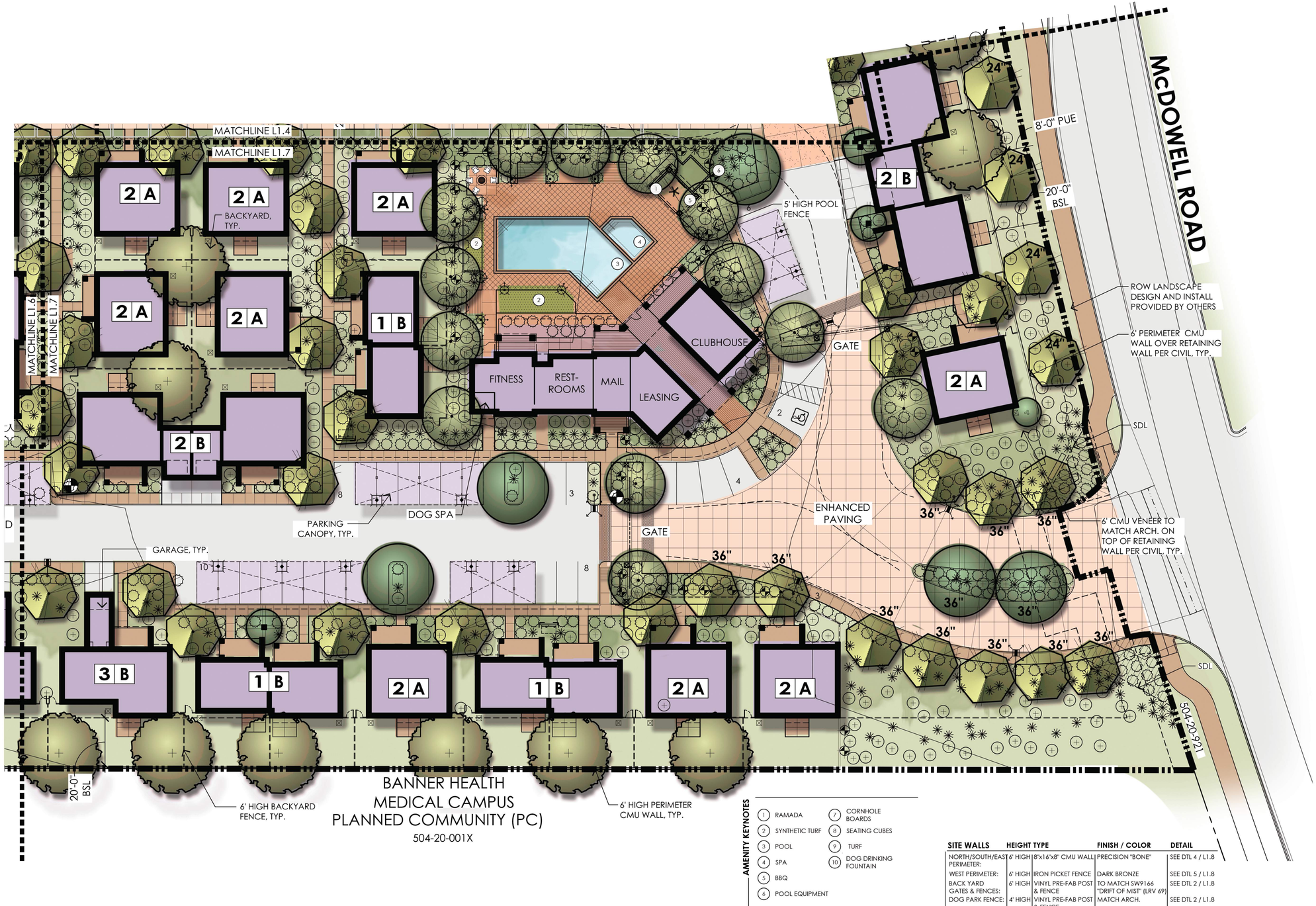
ENLARGED LANDSCAPE PLAN

Preliminary Not For Construction

23446
STEVEN D. VOORHEES
07-14-21
REGISTERED LANDSCAPE ARCHITECT
ARIZONA, U.S.A.

LICENSE EXPIRES 9/30/2022

L1.6



PLANT PALETTE

SYMBOL	BOTANICAL NAME	COMMON NAME	SIZE	CAL.	QTY.	SIZE (MIN. INSTALL SIZE (FT. x WT.)
TREES	w/ MATURITY (FT x WT)					
	ACACIA SALACINA (50'x40')	WILLOW ACACIA	15 GAL.	1"	75	6' x 2.5'
	ACACIA WILLARDIANA (20'x15')	PALO BLANCO	15 GAL.	1"	50	5' x 2.5'
	CAESALPINIA MEXICANA (15'x15')	MEXICAN BIRD OF PARADISE	15 GAL.	1"(MULTI)	12	5' x 3'
	EBENOPSIS EBANO (40'x40')	TEXAS EBONY	24" BOX 36" BOX	1.5" 2.25"	21 2	7' x 4' 9' x 6'
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EUPHORBIA TIRUCALLI	FIRE STICKS	5 GAL.	-	4'h x4'w
JUSTICIA SPICIGERA	MEXICAN HONEYSUCKLE	5 GAL.	-	3'h x3'w
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AGAVE WEBERI	WEBER'S AGAVE	5 GAL	-	4'h x 4'w
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DASYLIRION WHEELERI	DESERT SPOON	5 GAL	-	5'h x 5'w
ECHINOCACTUS GRUSONII	GOLDEN BARREL CACTUS	5 GAL	-	2'h x 2'w
HESPERALOE FUNIFERA 'CHIANGII'	WIDE LEAF HESPERALOE	5 GAL	-	6'h x 6'w
HESPERALOE PARVILORA x 'PERFU', 'PINK PARADE'	'PINK PARADE' RED YUCCA	5 GAL	-	3'h x 4'w
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	ROOF DRAINS: +/- 2'x4' PER AREA	+/- 1,200 SF
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	MAIN ENTRY DRIVE	+/- 5,000 SF
	SYNTHETIC TURF: 'SPRING PRO 70' 70oz. / 2" PILE HEIGHT	
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LANDSCAPE AREA:

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BACKYARD PLANTING

BACKYARD PLANTING OPTIONS TO BE OFFERED DURING THE PERMIT REVIEW PLANS.

AMENITY KEYNOTES

1. RAMADA
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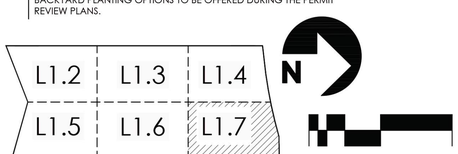
SITE WALLS	HEIGHT	TYPE	FINISH / COLOR	DETAIL
NORTH/SOUTH/EAST PERIMETER:	6' HIGH	8"x16"x8" CMU WALL	PRECISION "BONE"	SEE DTL 4 / L1.8
WEST PERIMETER:	6' HIGH	IRON PICKET FENCE	DARK BRONZE	SEE DTL 5 / L1.8
BACK YARD GATES & FENCES:	6' HIGH	VINYL PRE-FAB POST & FENCE	TO MATCH SW9166 "DRIFT OF MIST" (LRV 69)	SEE DTL 2 / L1.8
DOG PARK FENCE:	4' HIGH	VINYL PRE-FAB POST & FENCE	MATCH ARCH.	SEE DTL 2 / L1.8
POOL FENCE:	5' HIGH	METAL PICKET	DARK BRONZE	SEE DTL 1 / L1.8
VEHICLULAR GATE:	5' HIGH	METAL PICKET	DARK BRONZE	-



LANDSCAPE KEY PLAN

TODD + ASSOCIATES
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19-2015-01

PBBell

APARTMENTS - VERRADO MARKETSIDE

Buckeye, Arizona

CITY SITE PLAN REVIEW SUBMITTAL #3

July 14, 2021

ENLARGED LANDSCAPE PLAN

Preliminary Not For Construction

LICENSE EXPIRES 9/30/2022

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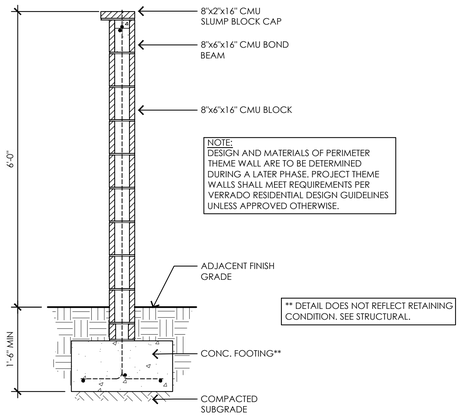
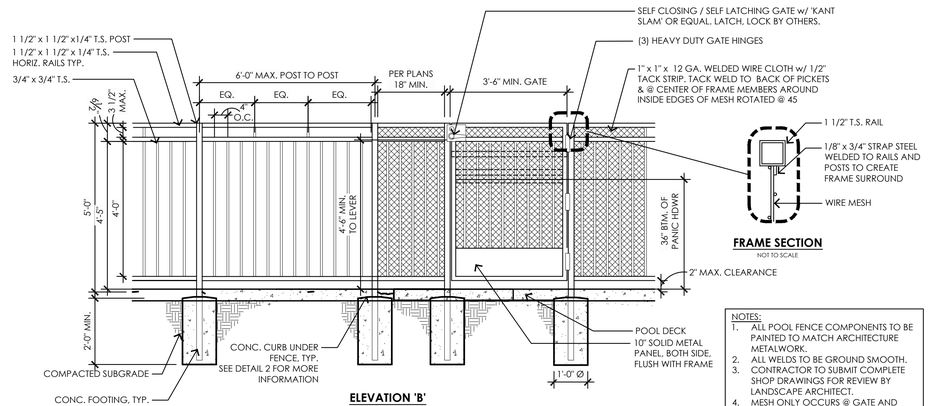


3 CMU PERIMETER WALL

TYPICAL - PERIMETER WALL

SCALE: 3/4"=1'-0



FRAME SECTION

NOT TO SCALE

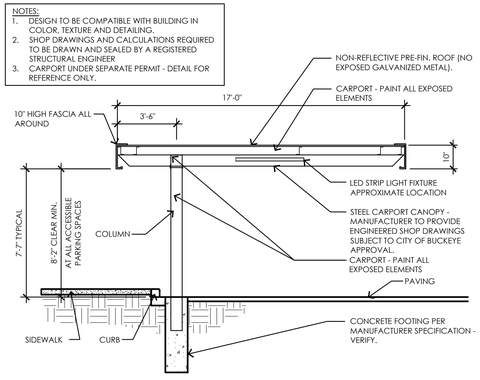
ELEVATION 'B'

NOTES:
1. ALL POOL FENCE COMPONENTS TO BE PAINTED TO MATCH ARCHITECTURE METALWORK.
2. ALL WELDS TO BE GROUND SMOOTH.
3. CONTRACTOR TO SUBMIT COMPLETE SHOP DRAWINGS FOR REVIEW BY LANDSCAPE ARCHITECT.
4. MESH ONLY OCCURS @ GATE AND SIDES OF EACH GATE.

1 POOL FENCE WITH GATE, TYPICAL

SCALE: 1/2" - 1'-0"

NOTES:
1. DESIGN TO BE COMPATIBLE WITH BUILDING IN COLOR, TEXTURE AND DETAILING.
2. SHOP DRAWINGS AND CALCULATIONS REQUIRED TO BE DRAWN AND SEALED BY A REGISTERED STRUCTURAL ENGINEER
3. CARPORT UNDER SEPARATE PERMIT - DETAIL FOR REFERENCE ONLY.



4 PARKING CANOPY

SCALE: 1/4" = 1'-0"

2 BACKYARD FENCE WITH GATE, TYPICAL

6' (BACKYARD) & 4' (DOG PARK)

SCALE: NTS

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19-2015-01

PB Bell

APARTMENTS - VERRADO MARKETSIDE

Buckeye, Arizona

CITY SITE PLAN REVIEW SUBMITTAL #3

July 14, 2021

SITE DETAILS

Preliminary Not For Construction

LICENSE EXPIRES 9/30/2022

L1.8

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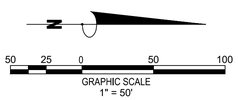
3rd Submittal

PLZV-21-00030

RECEIVED

JULY 15 2021

CITY OF BUCKEYE by:
WD



THE LOCATIONS OF EXISTING UNDERGROUND UTILITIES ARE SHOWN IN AN APPROXIMATE WAY ONLY AND HAVE NOT BEEN INDEPENDENTLY VERIFIED BY THE OWNER OR ITS REPRESENTATIVE. THE CONTRACTOR SHALL DETERMINE THE EXACT LOCATION OF ALL EXISTING UTILITIES BEFORE COMMENCING WORK, AND AGREES TO BE FULLY RESPONSIBLE FOR ANY AND ALL DAMAGES WHICH MIGHT BE OCCASIONED BY THE CONTRACTOR'S FAILURE TO EXACTLY LOCATE AND PRESERVE ANY AND ALL UNDERGROUND UTILITIES.

NOTICE:
CONSTRUCTION SITE SAFETY IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR; NEITHER THE OWNER NOR THE ENGINEER SHALL BE EXPECTED TO ASSUME ANY RESPONSIBILITY FOR SAFETY OF THE WORK, OF PERSONS ENGAGED IN THE WORK, OF ANY NEARBY STRUCTURES, OR OF ANY OTHER PERSONS.

ATWELL
866.850.4200 www.atwell-group.com

FIRE TRUCK EXHIBIT

CONCEPTUAL PLANS

PB BELL VERRADO

BUCKEYE, ARIZONA

811 Know what's below. Call before you dig.

REVISIONS:

Registered Professional Engineer (Civil)
CERTIFICATE NO.
37287
RAMZI GEORGES
Date Signed 06/24/21
ARIZONA, U.S.A.

PM.	RYG
DR.	GSM
JOB NO.	
FILE NO.	20000357.01-08

SHEET NO.
01 OF 01

CITY PROJECT # PLZV-21-00030

s:\20000357 - alta - pb bell - verrado - apn 504-20-001x\dwg\plan sets\construction\grading\20000357-grd 01-08.dwg Plotdate: 4/28/2021

3rd Submittal

PLZV-21-00030

RECEIVED

JULY 15 2021

CITY OF BUCKEYE by:
WD

January 12, 2021

Mr. Dan Tilton
Bell Residential Development, LLC
8434 N. 90th Street, Suite 100
Scottsdale, AZ 85258

RE: Verrado – Preliminary Design Review
Bell Residential Development, LLC
Verrado Marketside

Dear Dan:

This letter is to confirm DMB Master Developer Preliminary Design Review Approval of your submitted Site Plan, along with individual building elevations, and landscape plans without conditions or stipulations.

Final approval is subject to review of colors and materials boards. Please contact me if you have any questions or need additional information.

Sincerely,

Aaron Macneil
Senior Vice President of Operations

c: Dan Kelly, DMB Associates
Michelle Uhan, M. Architectural Consulting
Jill Hegardt, DMB Associates

BUCKEYE, AZ

SITE PLAN

Report to the Planning and Zoning Commission

CASE NUMBER:	PLZV-21-00030
TITLE:	Verrado Marketside Apartments
MEETING DATE:	August 24, 2021

Applicant:	Scott Pieart, Todd & Associates
Owner:	Colby Weadock, PB Bell
Request:	Site Plan for a 150-unit single-story multi-family rental development in the Verrado CMP
District	6
Location:	Generally located at the southwest corner of McDowell Road and 210th Avenue Alignment.
Site size:	Approximately 16.19 acres
Density:	Approximately 9.26 du/ac
Public input:	NA
Recommendation:	Approve with conditions

AREA CONTEXT

Table 1: Existing Land Use, General Plan Designation, and Zoning District

	LAND USE	GENERAL PLAN	ZONING
Subject Property	Undeveloped	Master Planned Community	PC, Planned Community with CMP Overlay
North	Verrado Marketside Residential Phase 1	Master Planned Community	PC, Planned Community with CMP Overlay
South	Undeveloped, Sunbelt Land Holdings	Buckeye Gateway Activity Center	C-3, Regional Commercial
East	Verrado, Future Banner Hospital Campus	Master Planned Community	PC, Planned Community with CMP Overlay
West	Undeveloped, Mountain View Business Center	Master Planned Community	PC, Planned Community with CMP Overlay

PUBLIC PARTICIPATION SUMMARY:

1. The applicant sent out an updated Notice of Application to all property owners within 300 feet of all property lines of the subject property on July 12, 2021.

2. No public comment was received at the time this staff report was written.

BACKGROUND:

3. Annexation and relevant case history
   a. A99-11 – Annexation into the Town of Buckeye – Approved by Town Council in 1999
   b. CMP99-22 - Verrado Community Master Plan – Approved by Town Council on November 2, 1999
   c. SP14-17 (PLZ-14-00097)-Verrado Marketside District Major Site Plan - Approved by City Council on April 21, 2015

ANALYSIS:

4. Conformance with General Plan: The City of Buckeye Imagine Buckeye 2040 General Plan designates this property as Master Planned Community. Verrado is developing consistent with this general plan designation.

5. Land Use: The property is zoned Planned Community and is governed by a Community Master Plan Zoning Overlay District, known as the Verrado CMP, which was adopted in

1999 with an accompanying development agreement. The Verrado CMP covers 8,816 acres and includes seven Planning Units. Densities range from 0-35 du/ac. Commercial sites allowing neighborhood retail, office space, major retail, public facilities, etc. are included within the CMP area.

6. The approved Master Plan Land Use Budget allows a total of 14,080 residential units, 1,000 Resort Rooms, and 4,234,550 square feet of Commercial/Mixed-Use space. This application meets all requirements of the approved Verrado CMP. The proposed site plan is consistent with the Verrado CMP and generally consistent with the required Planning Unit Environmental Design Plans.

7. According to the Verrado CMP and Marketside Site Plan this area has been conceived to be a Commercial/Mixed Use, High Development Option. The proposed rental community falls within the allowed parameters of the Verrado CMP Development Option. The land use designation is designed to accommodate general commercial, retail, employment, residential, civic, cultural entertainment, recreational, industrial uses and specifically allow residential adjacent to commercial (Future Banner Hospital Campus).

8. The building elevations and landscape plans were approved by the developer, DMB, which has design authority according to the Verrado CMP.

   a. Interior Fencing (Screening)-Internal screening is provided between units that include a 6' vinyl fencing which is not listed as an approved fencing or screening material in the CMP (see example below). Staff's recommendation was that the perimeter fencing visible from the ROW meet the design criteria with 6' Verrado Marketside theme wall and 6' iron view fencing. As mentioned above, the city has no design authority per the Verrado CMP. City staff do make design recommendations through the development process, but in some cases those recommendations are not implemented.

BACKYARD FENCE WITH GATE, TYPICAL
6-FOOT (BACKYARD) & 4-FOOT (DOG PARK)

b. Below are a few of the DMB approved building designs for all six (6) proposed building types ranging in size from one (1)-bedroom to three (3)-bedroom units with attached garages (for more detail please see the attached "Apartments-Verrado Marketside" site plan).

Verrado CMP Land Use Designation – Commercial Mixed Use, High

Maximum Height:	6 stories or 84'
Proposed:	1-story
Minimum Open Space:	5%
Proposed :	19.7%
Perimeter Setback	0'
Proposed:	20'

Schools

9. Verrado has two existing elementary schools and a middle school in the Litchfield Elementary School District. Verrado also has a high school that is part of the Agua Fria Union High School District. This development is closest to the Heritage Elementary.

Circulation

10. All street widths and designs conform to the approved Verrado CMP, Master Circulation Plan, and updated Planning Unit Circulation and Streets Plan. The City Engineer and Fire Department have reviewed and approved the proposed private internal driveways, fire-lanes and street sections. Vehicular access to the proposed site plan is primarily from McDowell Road. The dwelling units are also accessed from private drives throughout the development.

Fire

11. The subject property will be served by the City of Buckeye. The closest City of Buckeye fire station to the subject property is Fire Station 3 located at 2582 N Verrado Way within the Verrado Master Planned Community. In addition a future fire station is planned on a parcel located on the southwest corner of Verrado Way and Highlands Park Drive. The fire department has reviewed the access and circulation and approved the site plan with conditions.

Open Space/Recreation

12. The proposed apartments have on-site amenities including a dog park, pool, indoor and outdoor clubhouse space, shaded walking paths, open turf game courts, ramada and barbeque areas. Also, this proposed site is still part of the large Verrado network of trails and open space. The on-site amenities and open space exceeds the required minimum according to the Verrado CMP.

Landscaping

13. All final landscaping will be required to be reviewed and approved in accordance with Planning Unit Environmental Design Plan for Verrado Marketside District according to the Verrado CMP.

Infrastructure

14. Water: EPCOR Water Company will be the water provider. The water line in McDowell Road will be extended to provide service to the site. A 4-inch domestic water main loop and an 8-inch fire main loop will be used to service the site.
15. Sewer: EPCOR Water Company provides sewer service to the site. An 8-inch sewer line is designed to convey wastewater to the southeast section of the site where it will go through the Banner Medical Campus site over to Verrado Way.

RECOMMENDATION:

16. Staff recommends the Planning and Zoning Commission motion for approval with conditions a-z, for the following reasons:

    - Conformance with General Plan
    - Conformance with the Verrado Community Master Plan
    - No outstanding issues from reviewing departments (Development Services, Engineering, Fire, Police, Public Works, Community Services and Water Resources)

a. Development of this project shall be in conformance with the Site Plan entitled "Apartments-Verrado Marketside" consisting of 29 sheets, dated July 14, 2021, except as modified by the following stipulations.

b. Development of the property shall be in general conformance to the project narrative report entitled "Verrado Marketside Site Plan Review Project Narrative No. 2" consisting of 12 sheets, dated May 3, 2021, except as modified by the following stipulations.

c. Site Plan approval is valid for a period of two (2) years. The Development Services Director or Designee may grant a one-time extension of 12 months, if in the opinion of the Director, satisfactory progress has been made towards completion of the site plan development. Additional extensions may be approved through the discretion of the Planning and Zoning Commission.

d. The property owner/s and their successor waive any and all claims for diminution in value of the property with regard to any action taken by City of Buckeye as result of this approval.

e. All landscaped areas within the public rights of way, whether to be maintained by the City of Buckeye or if delegated to the adjacent property owner, homeowners' association or other property maintenance association, shall be designed and sealed by a landscape architect licensed by the Arizona Board of Technical Registration. (The above described MID requirement ensures protection of the city in case maintenance of the ROW landscaping is not kept up or is abandoned by the responsible owner.) The City Public Works Department shall review all irrigation plans for material selection only; therefore, the landscape architect shall coordinate with the Public Works Department early in the design to ensure the most efficient means of landscape irrigation that will reduce both long term maintenance costs and keep watering to the absolute minimum required for healthy growth of landscaping along the roadways of the City of Buckeye.

f. Shrubbery in the right of way shall not obstruct any regulatory signage or sight distance triangle as defined in the Engineering Development Standards; therefore, shall be trimmed to less than 2'-0".

g. Landscaping within the public-right-of-way will require:
    1. All landscaped areas, except those intentionally maintained with native plants, shall include an automatic irrigation system.

2. All native plant landscaping plans shall include an establishment maintenance plan that ensures long term growth of all plantings.
3. Establishment maintenance plan shall be sealed by a registered Landscape Architect.
4. Water-efficient systems (e.g., drip, mini-spray, bubbler-type, or similar drip systems) shall be used whenever feasible. Low-flow sprinkler heads with matched precipitation rates shall be used when spray or rotor-type heads are specified for watering shrubs and ground cover areas.
5. Multi-program weather sensing controllers with separated valves and circuits shall be used when the project contains more than one type of landscape treatment (e.g., lawn, ground cover, shrub, tree areas), or a variety of solar aspects.
6. Soil moisture-sensing devices and rain sensors shall be used on all projects within public rights of way and in landscape tracts. The use of satellite based controllers is encouraged.
7. Root barriers shall be designed and incorporated for all trees that are in the public right of way to ensure vertical root growth and avoid adjacent curb, sidewalk or pavement upheaval due to tree roots.
8. Linear Root barriers shall be used along public improvements that are only on one side of a tree.
9. Surround Root barriers shall be used when a tree is within the sidewalk or within a median.
10. Tree canopies extending into the right of way shall be trimmed to the following minimum standards: 18'-0" over any public roadway, 7'-0" over any public sidewalk.

h. Prohibited Trees: The following trees are prohibited from any landscaping plans in accordance with Chapter 9 of City Code (Section 9-10):

    1. Male Mulberry Tree (Morus Alba).
    2. Olive Tree (Olea Europea).
    3. Additionally, North Indian Rosewood Trees (Dalbergia Sissoo) shall not be planted within the rights of way (and are suggested not be planted within the property) due to their destructive and invasive root structure

i. All trash shall be collected through a City of Buckeye licensed trash hauler, including construction debris. Trash enclosures shall be in accordance with City of Buckeye standards.

j. Storm Drainage: The City of Buckeye is permitted as a Phase 2 MS4 and is now subject to more stringent standards for stormwater discharge. All stormwater plans must now meet the requirements of the City of Buckeye's MS4 permit as issued by ADEQ (Permit Number AZG2016-002).

k. All buildings and structures will require fire sprinklers, fire alarm and offsite monitoring. An automatic sprinkler system shall be installed throughout all occupancies in accordance with NFPA 13 Installation of Sprinkler Systems and Fire Department Interpretation and Applications Manual.903.2.1.

l. Fire Lane signage and markings to be shown on site plan. Per City Fire Code 2014.
    1. Fire lane signs per City of Buckeye will adhere to standard detail specifications (City of Buckeye detail number 31452).
    2. Curb, street or driveway will be painted red to indicate fire lane and labeled "FIRE LANE NO PARKING" in white block letters 3 inches (76.2mm) in height with a 3/4 in. (19.5 mm) stroke, on the vertical face of the curb to indicate a fire lane.
    3. Lettering shall not be greater than 75'-0" (15.24m) apart and shall be posted at the beginning and end of the fire lane.

m. All addressing must be reviewed and approved by the City of Buckeye Fire Marshal, prior to issuing building permits.

n. The Buckeye Fire Chief and City Engineer shall determine the number, location, and types of all fire hydrants.

o. Prior to delivery of any combustible materials to the site, the fire protection system shall be completely operational, with proper fire flow, and in accordance with the plans approved by the Buckeye Fire Chief and City Engineer.

p. Where two fire apparatus access roads are required, they shall be placed a distance apart equal to not less than one half of the length of the maximum overall diagonal dimension of the lot or area to be served, measured in a straight line between accesses.

q. Minimum fire flow is 1500gpm for duration of 2 hours and or meet the requirements per IFC 2012 Appendix "B" Section B105 based on the size and building classification.

r. The Property Owner/Developer shall submit for review and approval a complete package of construction drawings consisting of but not limited to paving, storm drain, grading, drainage, erosion & sediment control, water, sewer, landscaping and all associated design reports per the requirements set forth in the Engineering Design Standards (EDS).

s. All streets, sidewalks, parks, and other common areas, shall be sufficiently illuminated to ensure the safety and security of persons and property.

t. The Property Owner/Developer shall submit an electronic CAD and GIS file with full construction documents of the development to the City Engineer upon final approval in order to maintain current street records and assist in emergency dispatch and response.

SITE SPECIFIC CONDITIONS

u. The Site Plan, conceptual utility plan, and conceptual grading & drainage plans were reviewed to a conceptual plan level of detail only. Construction level comments will be forth coming at the time of construction drawing submittal.

v. The design storm for the project shall be in compliance with the Verrado Master Drainage Report. The design storm currently approved in the Verrado Master Drainage Report is the 100yr, 24hr storm. If the site is to continue forward with the 100yr, 2hr storm event, given the Verrado Master Drainage Report is currently undergoing revision, then it shall be AT-RISK. Construction drawings will not be approved or permitted until the drainage design for the site is in compliance with the approved Verrado Master Drainage Report.

w. All finish floor elevations shall be one (1) foot above adjacent 100 year water surface elevation.

x. Construction drawings will not be approved or permitted until the Verrado Marketside West Trunk Sewer project is permitted.

y. Construction drawings will not be approved or permitted until the Verrado McDowell Road Improvement project is permitted.

z. Prior to any Certificate-of-Occupancy, the Verrado Marketside West Trunk Sewer project and Verrado McDowell Road Improvement project shall be constructed and complete.

ATTACHMENTS

- Applicant's Narrative with Vicinity Map
- Site Plan
- Preliminary Landscape Plan
- Fire Truck Exhibit
- DMB Approval Letter

Prepared By:
Sean Banda, Senior Planner

Reviewed By:
Adam Copeland, Deputy Director of Planning

CITY OF BUCKEYE
Regular Planning & Zoning Commission
PLANNING ACTION REPORT

MEETING DATE: 08/24/21	**AGENDA ITEM:** 3.D. Buckeye Wildlife Corridors Best Practices Guide
DATE PREPARED: 08/19/21	**DISTRICT NO.:** All
STAFF LIAISON: Adam Copeland, Deputy Director of Planning, acopeland@buckeyeaz.gov, 623-349-6210	
DEPARTMENT: Development Services	**AGENDA ITEM TYPE:** Public Meeting / Non Consent - New Business

ACTION/MOTION: (This language identifies the formal motion to be made by the Voting Members)
Buckeye Wildlife Corridors Best Practices Guide
Recommend approval of the Buckeye Wildlife Corridors Best Practices Guide to the City Council.

SUMMARY

Items related to a project or facility location must include an attached vicinity map for Council Review.
ATTACHMENTS:
WCBPGFinalStaffReport.pdf
WCBPGFINAL.pdf

BUCKEYE, AZ

Report to the Planning and Zoning Commission

TITLE:	**Buckeye Wildlife Corridors Best Practices Guide**
MEETING DATE:	**August 24, 2021**
Applicant:	City of Buckeye Adam Copeland, Deputy Director of Planning Robert Wisener, Conservation Project Manager
Primary Consultants:	Bruce Meighen, CEO & President- Logan Simpson Kristina Kachur, Assistant Project Manager- Logan Simpson Celeste Warner, FIACP Chief of Strategic Development- Matrix Design Group
Request:	Approval for the Buckeye Wildlife Corridors Best Practices Guide
Public input:	Provided in Report
Recommendation:	**Approval** to City Council

INTRODUCTION

The Buckeye Wildlife Corridors Best Practices Guide (Guide) is the first of its kind in the Phoenix region. The Guide offers developers, city staff, non-profits, and others a foundation to start the conversation about wildlife corridors with the goal of incorporating best practices in the design of new communities.

Growth within the planning area could isolate habitat blocks, such as the White Tank Mountains, Buckeye Hills, and Hassayampa and Gila Rivers. The wildlife corridors are intended to connect these habitat blocks through a thoughtful and intentional plan. Planned wildlife corridors link significant habitat blocks and reduce habitat fragmentation by allowing species to move freely between various habitats. Without a plan and collaboration with various stakeholders these corridors would be lost. This Guide was developed through research, community outreach, and a case study-based approach—centered around three factors: environment, growth, and quality of life. The Guide is intended to be a tool to advocate for wildlife connectivity and context sensitive development. With collaboration being a fundamental premise of community, the Guide starts the conversation about providing connectivity to ensure that wildlife thrives.

BACKGROUND

Over the past decade, the Arizona Game and Fish Department, in coordination with stakeholder groups, have identified important wildlife corridors that connect habitat blocks throughout the state, Maricopa County, and the City of Buckeye's planning area. The Guide is one of the key implementation measures from the Imagine Buckeye 2040 General Plan, which was adopted and ratified in 2018. Past planning efforts, including the General Plan and the Parks and Recreation Master Plan, have identified the importance of wildlife connectivity to maintain and enhance biodiversity in the city and surrounding areas.

The goal in the General Plan is to move from a role of guidance to implementation with a series of ongoing, short-term, mid-term, and long-term actions that are intended to be carried out over the next 20 years. As one of the short-term implementation measures within the Stewardship Theme of the General Plan, the development and implementation of a best practices guide for wildlife corridors and crossings were established. The Guide is supported by the following goals in the General Plan:

- Goal ST-1
  Buckeye is dedicated to preserving the aesthetic and environmental qualities of the desert.
- Goal ST-2
  Important natural assets are protected from the man-made environment.

Within the planning area, much of the City's land remains undeveloped and provides essential habitat for mule deer, bighorn sheep, desert tortoise, coyote, fox, javelina, mountain lion, bobcat, birds, reptiles, and other wildlife who currently travel throughout the open areas that are, in the most part, unobstructed. Other lands south of the White Tank Mountains near the Gila River are either agriculture or new residential communities that have been built since 2000. These agricultural lands can also provide ancillary benefits to wildlife but are not as critical as un-fragmented natural landscapes and the corridors that connect them.

PUBLIC PARTICIPATION

As part of the Guide's development, it was important to hear from various groups and individuals with different expertise to help inform the planning process and to ensure that the plan is well-rounded. The project team sought to inform community-wide stakeholders of the plan and its goals to gain a common understanding and framework in moving the Guide forward. A series of stakeholder meetings and joint workshops were held throughout the process that were facilitated with open collaboration and transparency.

Many of the community partners and key stakeholders that were a significant part of this process include:

- Maricopa County (Transportation, Planning, Flood Control District, and Parks)
- Bureau of Land Management (BLM)
- Arizona State Land Department (ASLD)
- Arizona Game and Fish Department (AZGFD)
- White Tank Mountains Conservancy
- Gila River Collaborative
- The Rio Reimagined Stakeholders
- Landowners, Citizens of Buckeye, Home Builders, and Developers
- City of Buckeye Staff
- Buckeye City Council
- Buckeye Planning & Zoning Commission
- Buckeye Community Services Advisory Board
- Buckeye Youth Council
- Maricopa Association of Governments (MAG)
- Cities of Goodyear, Glendale, and Surprise
- Utility Easement Managers (e.g., Arizona Public Service, Canal Districts)

Stakeholder Meeting and Outreach Dates:

- 10/29/2018: Wildlife Corridors Stakeholders Meeting
- 03/25/2019: Wildlife Corridors Stakeholders Meeting Scope Preparation
- 02/26/2020: Consultants Selected Project Launch Meeting

- 05/07/2020: Development Partnering Group/Stakeholder Group Meeting
- May 2020: Individual Stakeholder Interviews – 30 Individuals Interviewed
- 09/17/2020: Development Partnering Group Update
- 10/01/2020: Stakeholder Group Meeting
- 01/19/2021: City Council/Planning & Zoning Commission/Community Services Advisory Board Joint Workshop
- 03/16/2021: Developer Focus Group Meeting
- 04/21/2021: Development Partnering Group/Stakeholder Group/Public Outreach
- 06/21/2021: Stakeholder Small Group Meeting (WTMC)
- 07/07/2021: Developer Focus Group Meeting

GUIDE IMPLIMENTATION

As part of the Guide development, research was conducted by reviewing a multitude of case studies from other cities, counties, and transportation agencies. Nearly 40 case studies were initially reviewed for their applicability to the City. The case studies were subsequently refined to those with similarities to the City, with similar size communities, study areas, environment, state laws and regulations, and wildlife corridor specific studies. Interviews with staff members from each jurisdiction were conducted to gather further information. From these studies and stakeholder feedback, the best practices were identified.

The Guide is intended to be a tool that will be utilized by city staff as projects move their way through the development process. Though many projects already have existing entitlements, staff will utilize the recommendations in the Guide as wildlife corridors are reviewed through the development process.

RECOMMENDATION

Staff recommends the Planning and Zoning Commission recommend **approval** of the Buckeye Wildlife Corridors Best Practices Guide to City Council for the following reasons:

- Conformance with General Plan
- Conformance with the Parks and Trails Master Plan
- No outstanding issues from reviewing departments

The Wildlife Corridors Best Practices Guide will be considered by the City Council for approval on September 21, 2021.

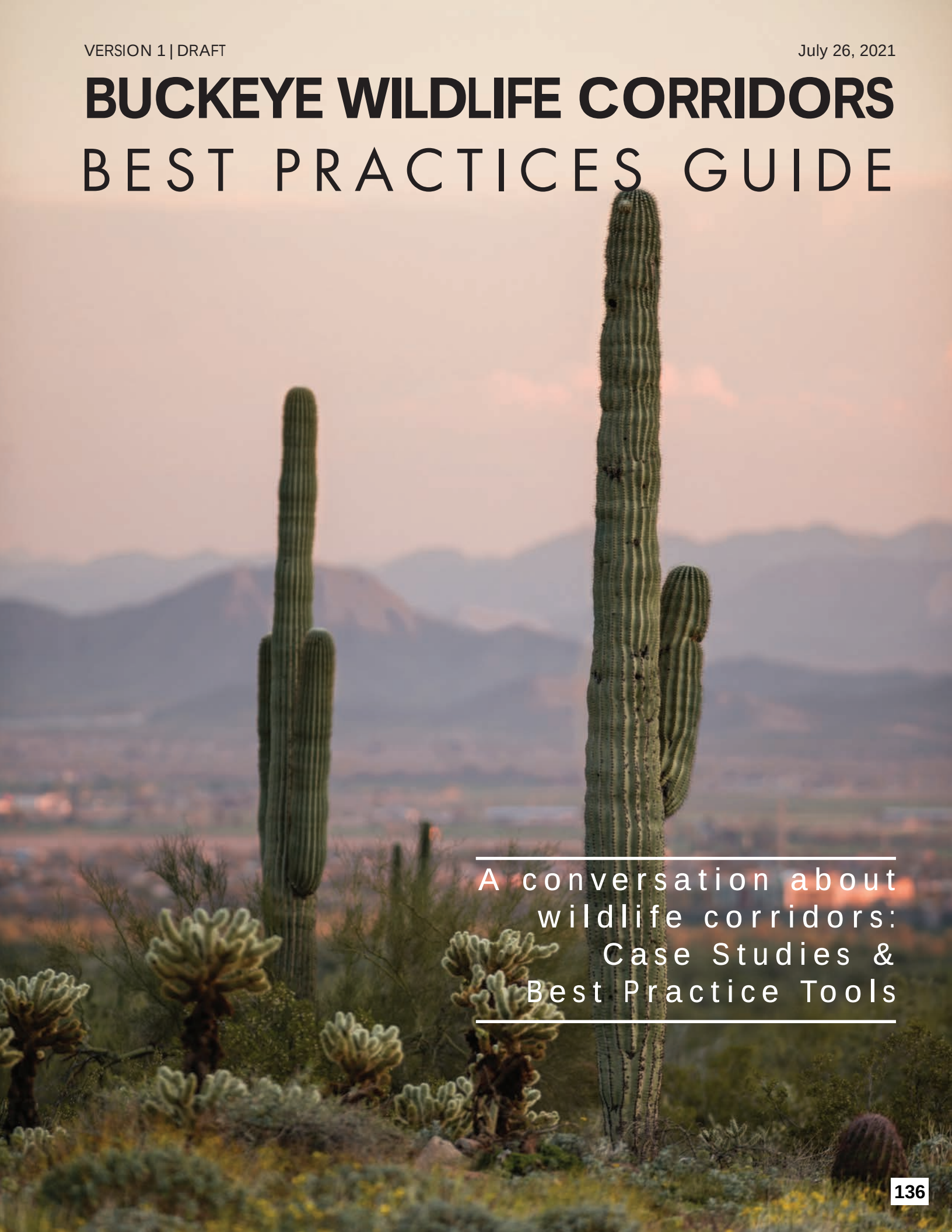
Prepared By:
Adam Copeland, Deputy Director of Planning
Robert Wisener, Conservation Project Manager

VERSION 1 | DRAFT

July 26, 2021

BUCKEYE WILDLIFE CORRIDORS

BEST PRACTICES GUIDE



A conversation about wildlife corridors: Case Studies & Best Practice Tools

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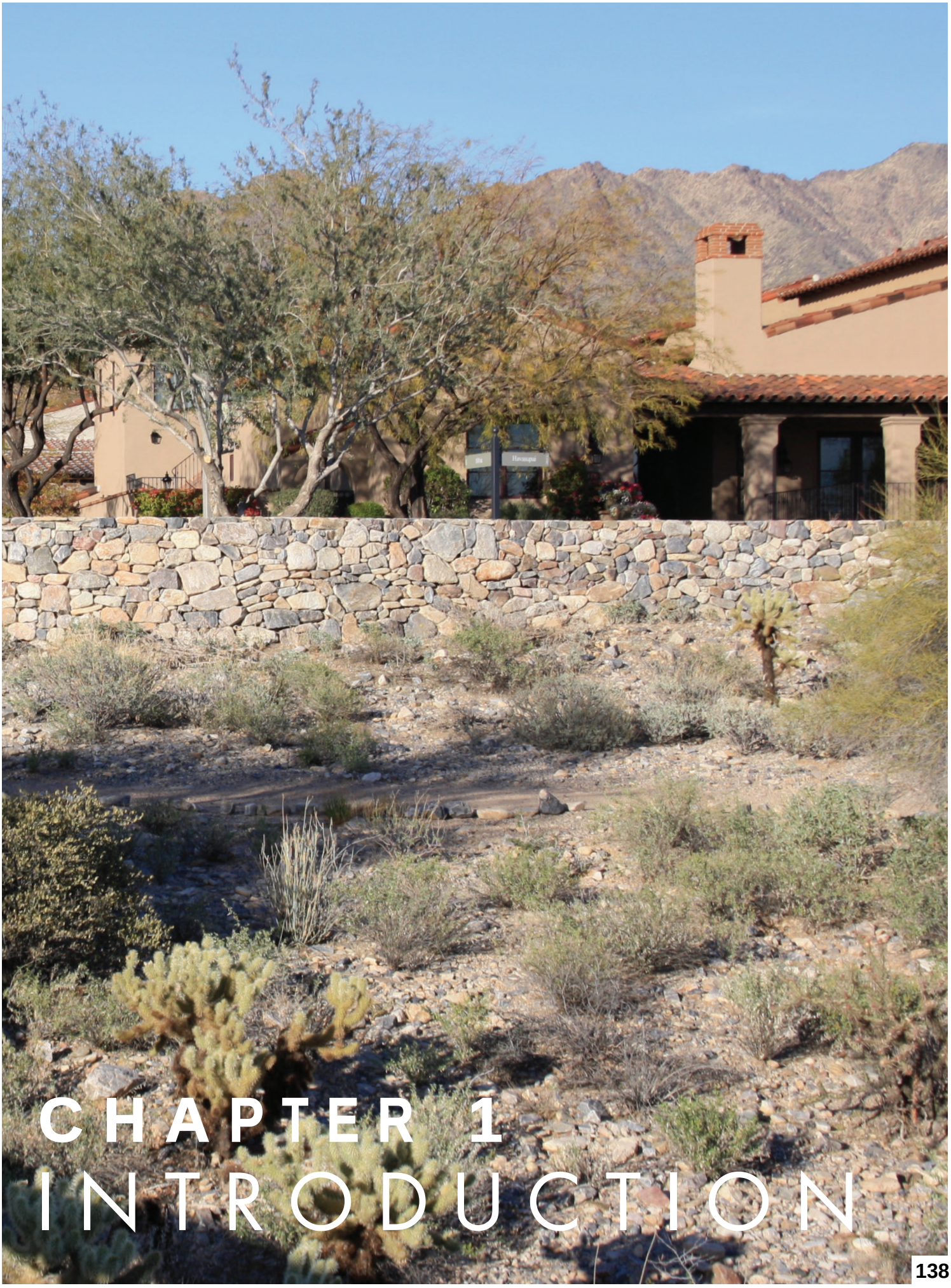
Appendix A Plant Palette



CHAPTER 1
INTRODUCTION

INTRODUCTION

The City of Buckeye (City) Wildlife Corridors Best Practices Guide (Guide) is the first of its kind in the Phoenix region. The Guide offers planners, residents, developers, non-profits, conversationalists, property owners, and City leadership the foundation to start the conversation about wildlife corridors. It includes literature review, case studies, best management practices, and tools for development that integrates wildlife corridors within the City's growth area (planning area) to set the stage for future initiatives. To maintain the connectivity that preserves our biodiversity, an empirical and thoughtful approach was required.

THE IMPORTANCE OF THIS GUIDE

This Guide changes the conversation from statewide initiatives to tools that can be used locally. Buckeye is a desirable place to live, however many of the region's local mountain ranges have become isolated islands. The Guide is an opportunity to preserve the connection between habitats in the Sonoran Desert while developing as a premier city.

One function of wildlife corridors is to link significant habitat areas, thus reducing adverse effects of habitat fragmentation by allowing species to move freely between substantive patches of remaining habitat. Passages consisting of natural features, drainages, washes, open space, pathways, and parks can be incorporated into the design of a development project, if done thoughtfully.

Growth within the planning area could isolate habitat blocks, such as the White Tank Mountains and Hassayampa and Gila Rivers, from wildlife corridors such as the Hassayampa River Valley if not done thoughtfully and intentionally. Planned wildlife corridors link significant habitat blocks and reduce habitat fragmentation by allowing species to move freely between substantive patches.

Habitat Block – a relatively large and unfragmented area of land capable of sustaining healthy populations of wildlife into the foreseeable future.

The Guide was developed through research, community outreach, and a case study-based approach—centered around three factors: environment, growth, and quality of life. The Guide is a tool to advocate for wildlife connectivity and context-sensitive development. With collaboration being a fundamental premise of community, the Guide starts the conversation about providing connectivity to ensure that wildlife thrives.

HISTORY OF WILDLIFE CORRIDORS IN BUCKEYE

Nestled against the White Tank Mountains and Buckeye Hills along the Hassayampa and Gila Rivers lies the City of Buckeye. Much of the City's land remains undeveloped and provides essential habitat for mule deer, bighorn sheep, desert tortoise, coyote, fox, javelina, mountain lion, bobcat, birds, and other wildlife, who currently travel throughout the open areas mostly uobstructed. Other lands south of the White Tank Mountains near the Gila River are either agriculture or new residential communities that have been built since 2000. These agricultural lands can also provide ancillary benefits to wildlife but are not as critical as unfragmented natural landscapes and the corridors that connect them.

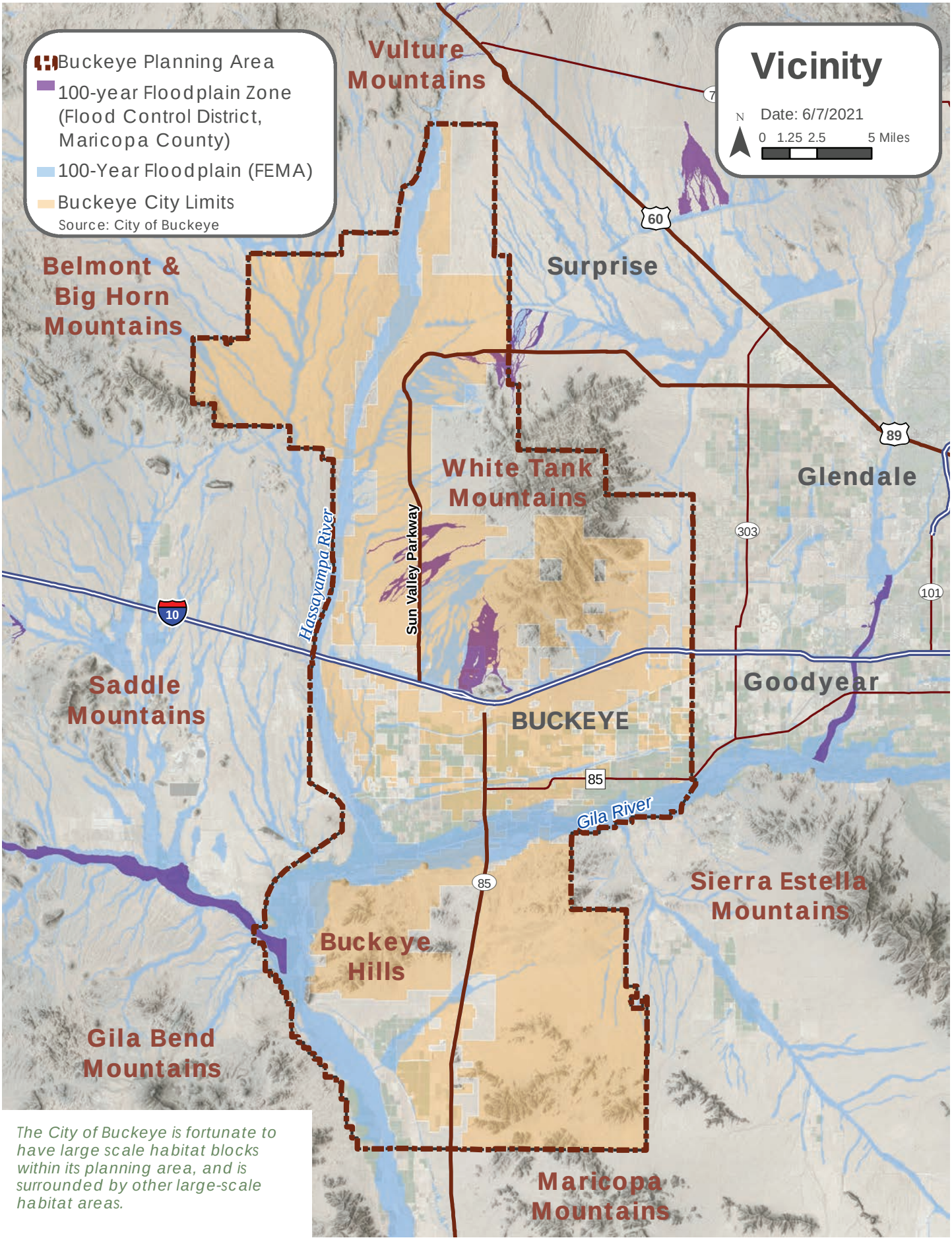
Over the past decade, the Arizona Game and Fish Department, in coordination with stakeholder groups, have identified important wildlife corridors that connect habitat blocks throughout the state, Maricopa County, and Buckeye's growth area. This Guide is the next step and is one of the key implementation measures from the City's Imagine Buckeye 2040 General Plan, which was ratified in 2018. Buckeye's General Plan recognizes that our residents can live side-by-side with surrounding wildlife; protecting critical habitat while ensuring our future quality of life and promoting economic development. Past planning efforts, including the General Plan and the Parks and Recreation Master Plan, have identified the importance of wildlife connectivity to maintain and enhance biodiversity in the City. The goals and policies articulate a vision for natural and planned wildlife corridors.

This Guide is part of an implementation measure derived from the City's Imagine Buckeye 2040 General Plan.

RELATIONSHIP TO OTHER PLANNING EFFORTS

The City of Buckeye's General Plan, Transportation Plan, Bicycle & Pedestrian (Active Transportation) Plan, and Parks and Recreation Master Plan provide the overall policy guidance and existing City direction for land use, growth, public services, infrastructure, and resource conservation. Found within these documents are essential wildlife-friendly related policies and additional information to preserve our wildlife corridors. The Transportation and Bicycle & Pedestrian Master Plans incorporate the Imagine Buckeye General Plan's goals and policies and significantly detail transportation standards, locations, and implementation projects.

Resiliency –
The ability of an ecosystem to respond to disturbance and still maintain function by resisting damage and recovering quickly.



The City of Buckeye is fortunate to have large scale habitat blocks within its planning area, and is surrounded by other large-scale habitat areas.

GUIDE OVERVIEW

THE PREMISE OF THIS GUIDE

Ones' ethics can often revolve around a single premise and balancing conflicting values, such as development versus wildlife. This Guide continues to enhance how the Buckeye community defines itself and its quality of life.

This broader definition includes the concept of braided strands of a rope and the strength that it provides. It is the appreciation of the ecosystem in all aspects of the community that is only as strong as its commitment to three components, or strands, of wildlife corridor ethos: environment, growth, and quality of life. This is known as the triple bottom line. The triple bottom line considers impacts and benefits based not only on one focus, but multiple components.

This Guide is premised on these strands or components, outlining their importance in context of Buckeye, how it relates to resiliency and the triple bottom line associated with sustainability, and an overview of related existing plans, studies, and data.

"We abuse land because we regard it as a commodity belonging to us. When we see land as a community to which we belong, we may begin to use it with love and respect."

- Aldo Leopold, A Sand County Almanac and Sketches Here and There (New York: Oxford University Press, 1949).

For this planning effort the three identified components are: environment, growth, and quality of life.

WHO SHOULD USE THIS GUIDE

This Guide is a tool for planners, residents, developers, and landowners to foster collaboration in developing and preserving Buckeye's wildlife areas. The Guide focuses on regional to site level tools. The Guide is not intended to identify geographically specific corridors as much of these corridors have already been mapped through Arizona Game and Fish and illustrated in the General Plan; instead, it acknowledges the environmental, growth, and quality of life factors critical in developing innovative, resilient, and forward-thinking solutions that may apply to many locations. The mapping identifies locations of interest based on previously compiled resource data and analysis. In addition to integrating best management practices with future development proposals, residents can use this Guide to implement wildlife-friendly practices on their properties, and conservation partners can use this Guide to align resources with City efforts.

It is not a regulatory document - but rather, a resource that could be used with partners to apply solutions on the ground.

WHEN TO USE THIS GUIDE

The City and other reviewing agencies have established processes, applications, regulations, and permits to ensure development contributes to the community's vision. The Guide complements existing City processes with tools that apply to each step in the development process. From the evaluation of community master plans and amendments to commercial and residential design review to County Projects, City planners use this Guide to facilitate the discussion about planning within wildlife corridors to establish continuity. Various incentives could be evaluated on a case-by-case basis during the development process.

Use of this Guide during Buckeye's Planning and Zoning Process

Pre-Application Conference
Discussion of Guide and applicable tools.

Development Review Process- Entitlement, City CIP Projects, Unincorporated Maricopa County Projects
Work with applicant/city departments/other agencies to identify tools within the Guide that can be integrated.

Grants
City, Non-Profits, and other agencies and partners to explore more grant opportunities that could integrate the Guide into competitive project proposals.

A GRASS-ROOTS EFFORT

As part of this Guide's development, it was important to hear from various groups and individuals with different expertise to help inform the planning process and ensure that the plan is well-rounded. The project team sought to inform community-wide stakeholders of the plan and its goals for the community to gain a common understanding.

Developed by Regional Partners

This Guide is a consolidated effort by many community partners. Key stakeholders that helped create the foundation of this document include:

- Maricopa County (Transportation, Planning, Flood Control District, Parks)
- Bureau of Land Management (BLM)
- Arizona State Land Department (ASLD)
- Arizona Game and Fish Department (AZGFD)
- Conservation Organizations
- Landowners, Citizens of Buckeye, Home Builders, and Developers
- City of Buckeye Staff
- Planning & Zoning Commission and Community Services Advisory Board
- Buckeye Youth Council
- Maricopa Association of Governments (MAG)
- Cities of Goodyear, Glendale, and Surprise
- Utility Easement Managers (e.g., Arizona Public Service, Canal Districts)

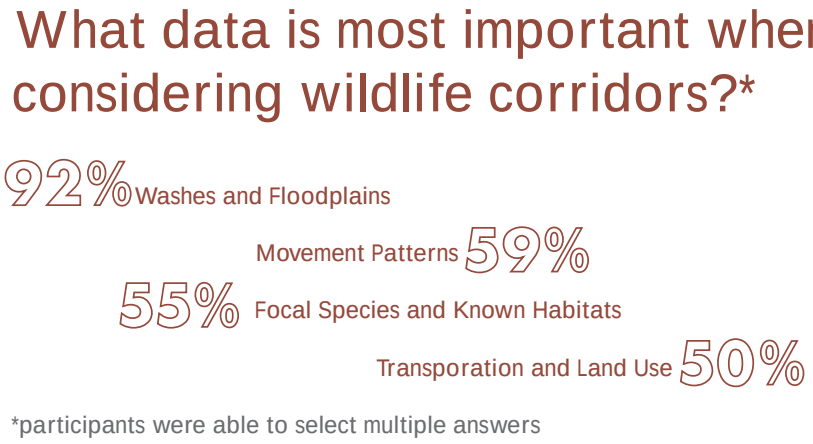
OUTREACH GOALS

Multiple outreach series were conducted to garner input from our stakeholders and our community.

Outreach Series #1 Highlight

Stakeholder and Development Partnering Group Meeting (May 2020)

One virtual webinar with over 40 people attending was utilized to introduce the community to the project and gather input from landowners/developers, utility providers, agencies, and advocacy groups. Attendees' feedback was crucial to developing the Guide and its implementation.



Outreach Series #2 Highlight

Stakeholder Interviews and Small Group Meetings (June 2020)

Early in the process, the consultant team engaged various stakeholders, including landowners/developers, utility providers, agencies, and advocacy groups, to garner input on the development of the Guide and feedback on how best to approach the Guide's implementation. Over 30 stakeholders representing a variety of interested parties were interviewed.

Outreach Series #3 Highlight

Council, Commission, and Board Check-in (January 2021)

A joint meeting was held with the City Council, Planning and Zoning Commission, and the Community Services Advisory Boards - the first of its kind with 20 attendees. Comments were focused on the importance of preserving our community's wildlife and their habitat.

We only have one chance to do this – it falls upon our shoulders to make sure that it's done right.
- Vice Mayor Youngker

Outreach Series #4 Highlight

Virtual Community Meeting (April 2021)

Due to the continuing global health pandemic, a virtual community meeting was held to share highlights of the Guide as the draft was being developed. Highlights of each chapter were shared and Input was gathered. Participants asked questions primarily on funding, implementation, and various tools. The draft plan was shared with stakeholders and refined prior to adoption.

66 Participants

WHAT WE HEARD: A SUMMARY

ENVIRONMENT

Communication. Keep all stakeholders involved and informed on species and habitats throughout and after the process.

Vitality. Conserve wildlife corridors to ensure habitats persist into the future while maintaining opportunities for development.

Transparency. To the extent possible, information on suitable corridors/connections should be promptly shared with all parties.

Big Game Movement. Removal of movement barriers and connections to ensure unfragmented habitat areas.

Mule Deer. Consideration of a key focal species due to extensive movement and adversity to change.

Co-environmental Benefits. Consider positive impacts on water quality, flood control, carbon reduction, etc.

QUALITY OF LIFE

Education. Educate stakeholders and the community about: the importance of corridors and types of wildlife supported; the outline of best management practices and identification of long-term management responsibilities; types of activities that could and should not occur; and how landowners, advocacy groups, public agencies, and utility providers play a role.

Multipurpose. The benefits derived from the corridors should address all stakeholders and allow multipurpose where appropriate.

Amenities. Integration of passive recreation amenities, scenic corridors, and open space buffers are a win-win.

Fiscal Impacts. Understand how broader impacts including economic development, property values, and human health and safety can be shared among stakeholders.

GROWTH

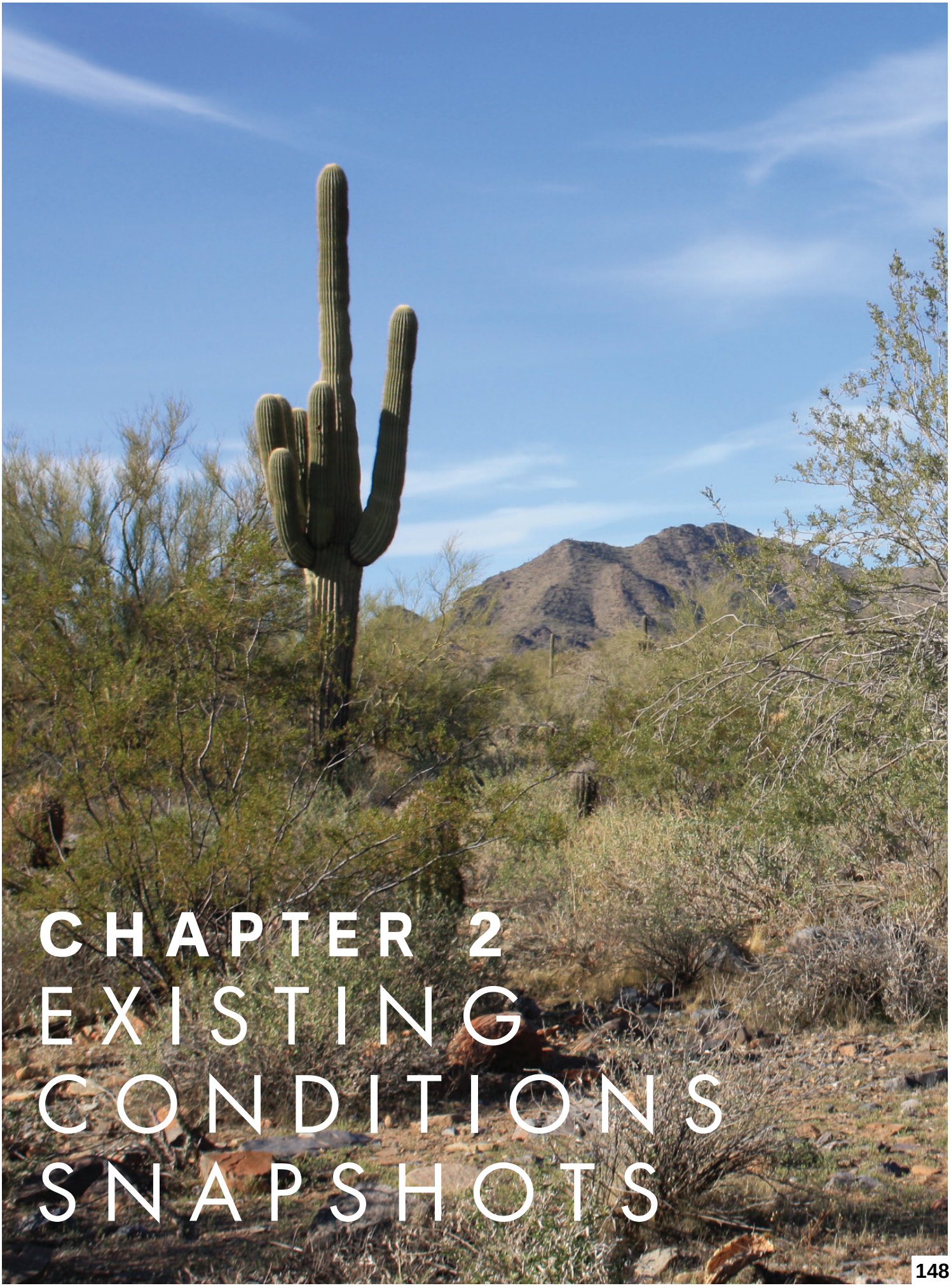
Partnership. Implementation should be done in partnership through dedication, preservation, incentives, and agreements for operations, maintenance, and liability.

Economics. Ensure the corridors are preserved, designed, and maintained, through its life cycle, in a financially feasible manner.

Infrastructure. Thoughtfully provide new multi-purpose infrastructure in order to deliver utilities effectively while minimizing habitat disturbance.

Costs vs. Value. Short-term costs should enhance growth and development and long-term implementation should add value for the city, residents, and landowners.

Usage of Drainages. Reduction in infrastructure costs, coordination with green infrastructure, and low impact design with private development.



CHAPTER 2
EXISTING CONDITIONS SNAPSHOTS

INTRODUCTION

The Existing Conditions "Snapshots" serves as a prelude to the Guide, providing background and critical considerations to form a strong understanding. This Summary is a highlight of relevant data based on the best available data from the City, local and state agencies, case studies, and stakeholders. The snapshots are not a scientific paper or a literature review; instead, they provide the reader with a glimpse of what is possible.

For those who wish to dive deeper, more information and links to additional studies, reports, and mapping resources are available at bit.ly/BuckeyeWildlifeCorridors.

ENVIRONMENT

WHY IT MATTERS & ASSOCIATED BENEFITS

Partnerships are necessary to ensure that wildlife corridors, essential connections, wildlife-friendly development, and low impact design tools are considered when planning for new growth. Wildlife habitat includes a combination of landform, vegetation, and water resources within the planning area. The Sonoran Desert is not only a great area to recreate; it also provides vital habitat providing movement of species in response to needs related to climate, nutrition, reproduction, and genetic interchange.

Open space areas that become surrounded by development can lead to extirpation. Extirpation is when certain species of animals are no longer found in a geographic area due to dwindling population numbers, often caused by limited food and water sources, loss of seasonal migration routes, and the limited gene flow that allows for genetic variability. Other areas in the Phoenix metropolitan area have experienced similar losses of species diversity. Mule deer were once found throughout the Phoenix mountain preserves like Piestewa Peak and Camelback Mountain. Identifying ways to preserve wildlife habitat alongside wildlife friendly development can promote the biodiversity that the City values.

Wildlife Corridor

A wildlife corridor (or wildlife linkage) is an area of undeveloped habitat used by wildlife to move between or within habitat blocks to complete activities necessary for survival and reproduction. Corridors are preserved or may be constructed to allow passage for wildlife through developed areas.

Environmental Resiliency & Triple Bottom Line Relationship

Environmental: Preserving wildlife corridors and open space is a critical component of creating a resilient environment, which is the ability of an ecosystem to respond to and recover from damage or disturbance. Wildlife corridors such as riparian areas can maintain water supply and quality, reduce occurrence and severity of flooding, provide natural stabilization of stream banks, improve air quality, and reduce energy costs through temperature mitigation and biofiltering.

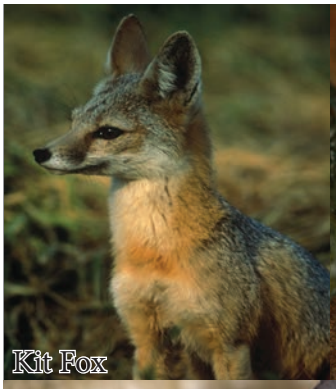
Growth: Strategic preservation of high-value natural resources furthers resiliency as these areas serve more than just their ecological function. Protection of washes allows a stop-gap for significant flooding events and stormwater retention and firebreaks, which can be accomplished through green infrastructure programs, FEMA community rating system creating credit opportunities, and others. Improved wildlife crossings across major roads helps improve human safety by reducing vehicle accidents.

Quality of Life: Large open spaces and natural areas provide recreational space, trails, viewshed preservation, placemaking, community separation, community amenities and, more importantly, access to nature.

DATA HIGHLIGHTS

Known Habitats of Regionally Significant Species

Arizona Game and Fish Department modeled the habitat and migratory needs for focal species found in the White Tanks using the assumption that habitat suitability correlates with permeability (ability to move in and out of the area freely). The Guide pays specific attention to mule deer in this section, due to their habitat needs which is similar to needs of other species. Focal species have been identified with the expectation that by protecting their habitats and corridors, the broad diversity of native species are also likely to persist. Other representative species include:


Kit Fox

Sonoran Desert Toad

Black-Tailed Jackrabbit

California Leaf-nosed Bats

Javelina

Bighorn Sheep

Bighorn sheep are a critical focal species and are endemic to the area. Historically, bighorn populations were severely impacted by domestic livestock-introduced diseases, unregulated subsistence hunting, and landscape changes such as the drying of significant river systems and washes. Many bighorn populations statewide have seen population reductions or extirpation. Management actions such as relocation, in addition to the construction of water catchments, appear to have reversed the population decline in some areas, such as Buckeye Hills West and East and between the Bighorn and Belmont mountains. AZGFD has begun the process to reintroduce bighorn sheep into the White Tank Mountains.

Mule deer are a vital focal species and is the planning area's and the Sonoran Desert's most predominant, large, and wide-ranging vertebrate. This species is recognized as having specific habitat requirements and behavioral characteristics that make them particularly vulnerable to human disturbance. Mule deer are found throughout moderately mountainous terrain, including bajadas and valley bottoms, at varying densities (.04 – 1.5 deer/ km^2) depending on habitat quality. Very steep, rocky mountains, generally characterized as bighorn sheep habitat such as the Buckeye Hills and North Maricopa Mountains, do not support mule deer. Primary forage species for mule deer are Foothill Palo Verde, Blue Palo Verde, Ironwood, Jojoba, and Shrubby Buckwheat.

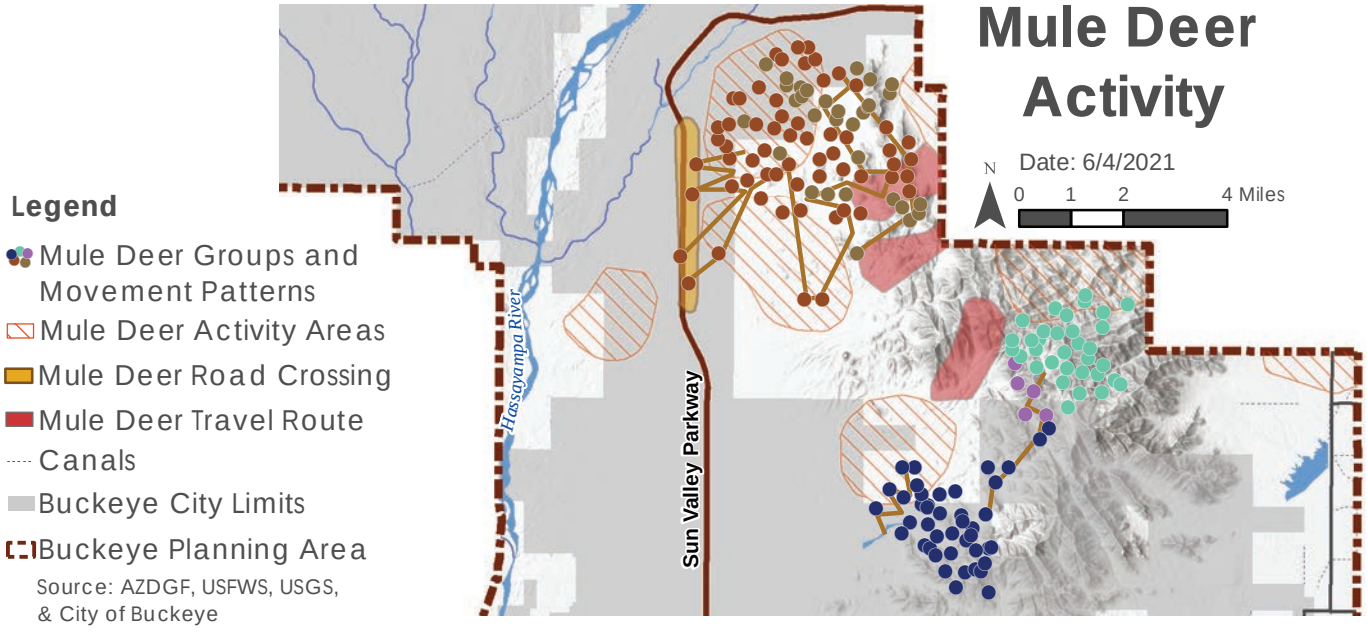
In general, if habitat areas are maintained with all the necessary components to support a viable population of mule deer as well as infrastructure design that facilitates movement corridors between habitat areas, then most of the remaining endemic species characteristic of the Sonoran Desert in the Buckeye area will be accommodated. Mule deer in southern Arizona don't migrate, but rather move within their home ranges based on rainfall, food availability, and disturbance factors.

While mule deer are exceptionally well adapted to the arid Sonoran Desert environment, they still require open water for about eight weeks during May-July. Each mule deer's home range includes at least one constant water source in the form of an AZGFD water catchment, canal, irrigated farm area, spring, or other water body. A water source drying up or receiving significant disturbance precludes use by mule deer.

Habitat Blocks and Movement Corridors

Large unfragmented habitat blocks, and the wildlife corridors (movement areas) that connect them, are critical for many species to survive. Many species use riparian areas as corridors because they support heavy and diverse plant cover for increased food availability, thermal shelter, and visual barriers. The Gila River is used extensively by many species because of its surface water availability and dense vegetative cover. It is of particular value as a wildlife movement corridor because of the exceptionally long bridged SR 85 crossing over the Gila River. The riparian areas are also impacted by sand and gravel mining operations; however, this can offer an opportunity for restoration and creation of permanent habitat. In contrast, the Hassayampa River riparian area is primarily a broad desert wash with generally no free water and only moderately denser vegetation than the surrounding uplands. In addition to the Hassayampa and Gila rivers, numerous washes flow from the higher elevations. Wash channels have varying degrees of surface water with some having few hours of flowing water a year. A significant component of riparian area value for movement corridors consist of bridged crossings or culvert-type structures needed for water flow for storm events. Studies have shown that mule deer are more apt to utilize washes as crossing points beneath roadways with greater width when coupled with permanent water sources. Otherwise, mule deer are more likely to cross the road at grade, leading to possible collisions with vehicles.

The North Maricopa Mountains are well connected to the Buckeye Hills East to the north, Sierra Estrella area to the east, and South Maricopa Mountains to the south. There is a moderate ability for wildlife species movement between Buckeye Hills West and the Gila Bend Mountains to the west, but the movement to the east into the Buckeye Hill East is impaired by multiple fence structures associated with the expansion of SR 85 from 2 to 4 lanes. Buckeye Hills East allows for the natural movement corridor for bighorn sheep between the Buckeye Hills and Sierra Estrella through the series of low mountains and hills connecting the two habitat blocks through northern Rainbow Valley.

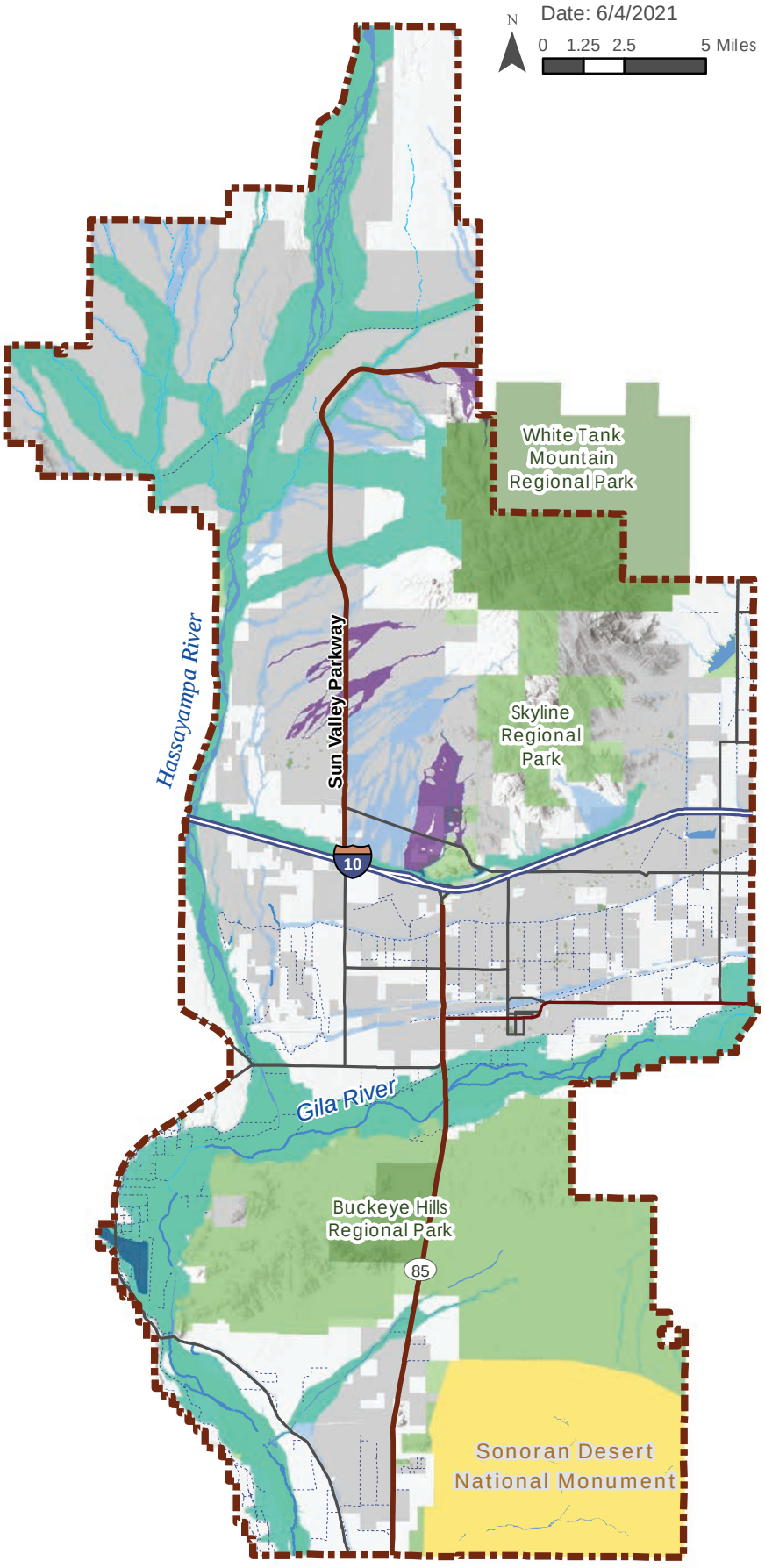


Environment

Legend

- Intermittent Stream
- Perennial Stream/River
- Canals
- 100-year Floodplain Zone (Flood Control District, Maricopa County)
- 100-Year Floodplain (FEMA)
- City & HOA Parks
- Open Space
- Major Wildlife Corridors
- Rivers and Water Bodies
- Buckeye City Limits
- Buckeye Planning Area

Source: City of Buckeye, MCFCD



Major Wildlife Corridors are identified in the General Plan. The City of Buckeye recognizes there may be other areas where wildlife are likely to inhabit and move. The City of Buckeye acknowledges that these corridors are likely wider than needed for most wildlife movement and encourages wildlife friendly development outside of these study areas.

Barriers

The Central Arizona Project Canal (CAP), Sun Valley Parkway, and other major transportation corridors (e.g. SR 85) are formidable barriers for most wildlife species. Even with dozens of culverts built along the Sun Valley Parkway, the most adept at navigating barriers, like mountain lions or coyotes, have difficulty navigating crossings other than at the dedicated wildlife crossing bridges, siphons under the Hassayampa River, Jackrabbit Wash, the bridged wash crossing for Daggs Wash, and bridged crossings for public right-of-way. The development in the Hassayampa Valley at full build-out and the pinch points along CAP are the most significant impediments to successful wildlife corridors.

Access ramps at culvert crossings serve all terrestrial wildlife.

Floodplain/Riparian Areas and Restoration

Habitat quality and degradation of wildlife habitats – whether in the valley, washes, or Gila River – show a correlation to wildlife populations and species diversity. Riparian areas are rare in Arizona with 90% of hydro-riparian areas being lost. These areas are of the highest habitat quality for their ability to support a diversity of plant and wildlife species and act as critical linkages in the landscape. Meso-riparian habitats also provide high quality habitat but have been converting at rapid rates due to invasive species such as tamarisk. Xeroriparian provide a medium quality habitat for their ability to sustain seasonal plants and wildlife and act as critical linkages for movement of these species. Meso-riparian and xero-riparian make up more than 81% of all riparian areas in the southwest and are undervalued in regards to ecological and hydrological values, often being modified and or destroyed through construction.

Protection of important resources during construction can help maintain existing desert habitats and aesthetics.

Vegetation management to enhance or maintain corridors can take two forms, both of which are related to managing invasive plant species. The first action is to restore riparian habitats by the removal of salt cedar and promoting native plants in washes and rivers. The second is to mitigate upland invasive plant species such as red brome grass, stinknet, and mustard species by aggressively suppressing all wildfires in the planning area. Sonoran Desert scrub, which is the dominant plant community in the planning area, did not coevolve with fire and is poorly adapted to surviving or recovering from a fire. Human intervention to restore and maintain degraded ecosystems has been proven to provide better habitat, connectivity, and fire suppression.

GROWTH

WHY IT MATTERS & ASSOCIATED BENEFITS

Buckeye is evolving rapidly. The population increase warrants thoughtful planning and careful consideration for development and the wildlife that inhabits the area. Current public and private planning efforts and the amount of undeveloped land in Buckeye presents the opportunity to ensure a high quality of life for residents, while preserving key native species that depend on large habitat blocks and corridors between them for survival.

Understanding how wildlife habitat can benefit growth and associated infrastructure is vital to stakeholders, especially those instrumental in implementing these best practices. Preserving healthy corridors comes with a cost and is one of the most significant stakeholder-identified barriers to the implementation. Who pays and who benefits? The needs between the landowner, the developer, the homeowner, or the region needs to be balanced.

Growth Resiliency & Triple Bottom Line Relationship

Environmental: The numerous floodplain and drainage corridors throughout the planning area provide opportunities for restored natural areas, wildlife movement, and water capture, storage, and areas for groundwater recharge. The preservation of riparian habitats provide multi-purpose benefits including natural site drainage patterns, improved on- and off-site water quality, improved air quality, an established sense of place, enhanced pedestrian amenities, and overall lower costs.

Growth: Any development requires thoughtful stormwater management, particularly from the mountainous areas to alluvial fans and the large regional drainages of the Hassayampa and Gila rivers. Compliance with floodplain management ordinances provides an opportunity to maintain continuity of these riparian corridors. Transportation and infrastructure should be coordinated with washes. It is essential to include wildlife crossings when designing significant transportation corridors. These and other smart growth initiatives can ensure future sustainability of development and wildlife.

Quality of Life: New growth should add to the quality of life of residents, and preservation of wildlife and their habitat contributes to that quality of life. This preservation also provides a structure to organize infrastructure facilities and recreation amenities. Many residents desire resilient communities, whether that is the cooling effect provided from natural corridors, or the reduction of flooding and its associated cost in flood premiums and remediation.

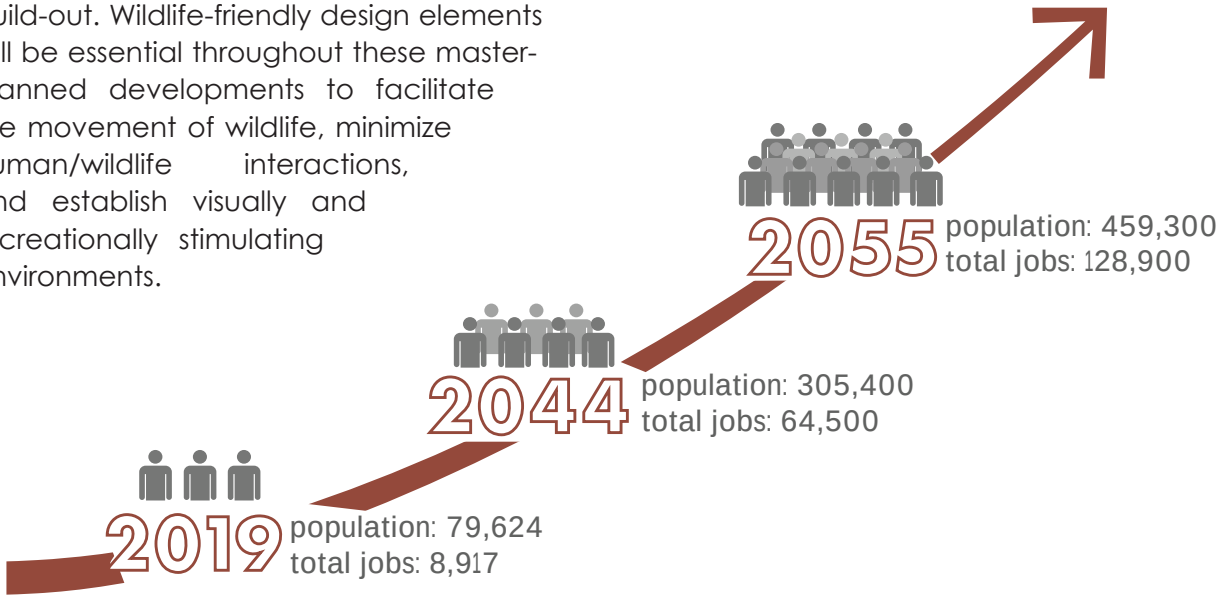
DATA HIGHLIGHTS

An Area Planned for the Future

Buckeye is a highly desirable area due to its large undeveloped land, existing and planned development, quality of life, natural areas, and access to the greater region. It is one of the fastest-growing cities in the state and the country, growing by 1,300% from 1990 to 2015. Projections show population and employment increasing exponentially in the next 20 to 45 years and new developments are positioned for this growth. Employment sectors, apart from local government, provide education, health, and social services (20% of employment), as well as retail amenities (16% of employment) to the residents of Buckeye. Much of the projected growth is expected to occur within the Community Master Plans (CMP) and Planned Area Developments, with a potential for 240,000 residential units at build-out. Wildlife-friendly design elements will be essential throughout these master-planned developments to facilitate the movement of wildlife, minimize human/wildlife interactions, and establish visually and recreationally stimulating environments.

Douglas Ranch accounts for 30% of the planned developable area (33,810 acres with 84,000 units)

Festival Ranch accounts for 9% of the planned developable area (10,105 acres with 24,176 units)



Growth: Planned Development

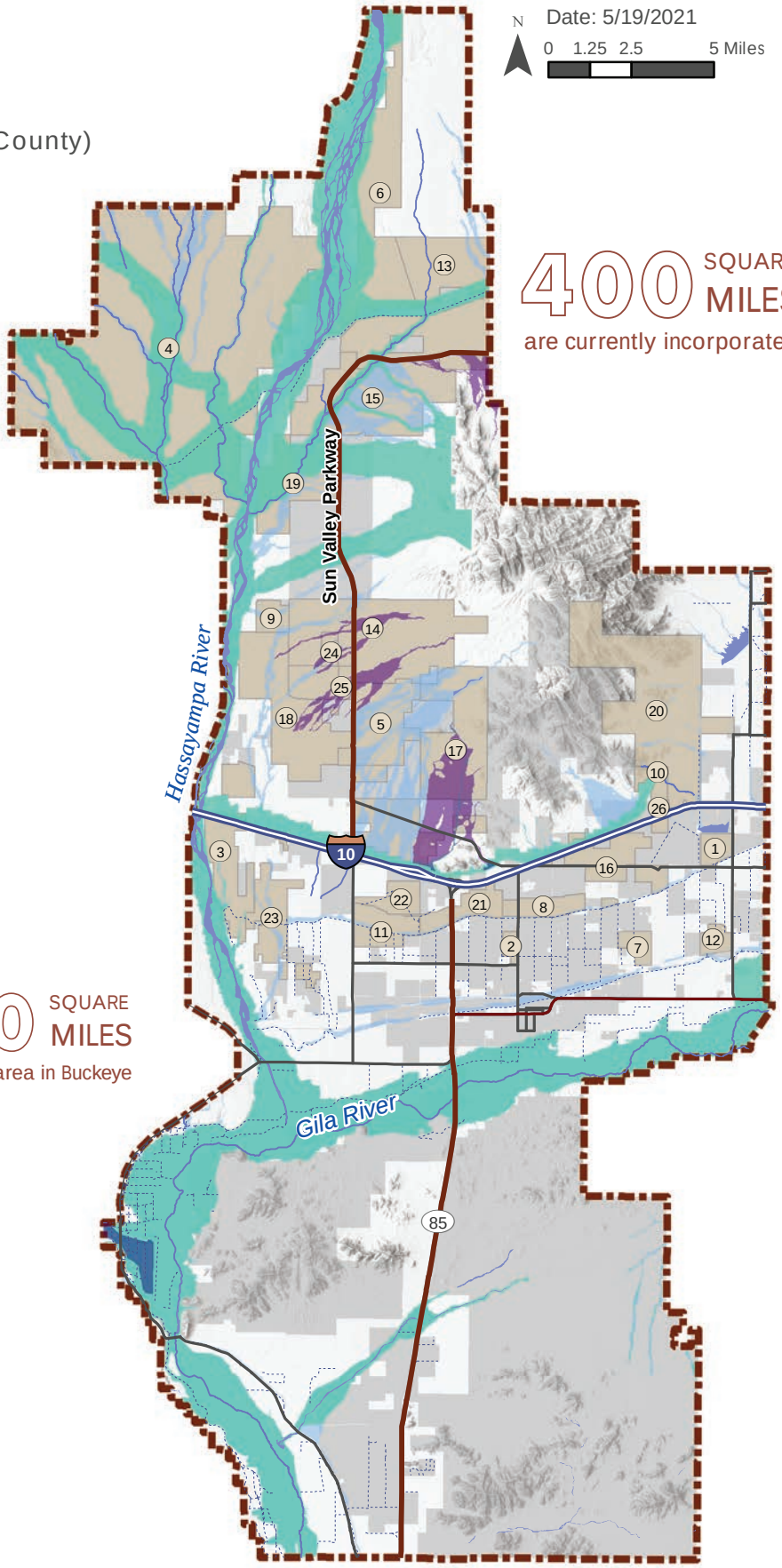
Legend

- Canals
- 100-year Floodplain Zone (Flood Control District, Maricopa County)
- 100-Year Floodplain (FEMA)
- Rivers and Water Bodies
- Major Wildlife Corridors
- Community Master Plan & PAD
- Buckeye City Limits
- Buckeye Planning Area

Source: USFWS, USGS, & City of Buckeye

Community Master Plan & PAD

1. Blue Horizons
2. Copper Falls
3. Desert Creek
4. Douglas Ranch
5. Elianto
6. Festival Ranch
7. Henry Park
8. Monte Verde
9. Montiere
10. Sienna Hills
11. Silver Rock
12. Southwest Ranch
13. Spurlock Ranch
14. Sun Valley South
15. Sun Valley
16. Sundance
17. Tartesso
18. Tartesso West
19. Trillium West
20. Verrado
21. Westpark
22. Westwind
23. Cipriani
24. Valle Del Rio
25. Valle Del Sol
26. Mountain View Business Center



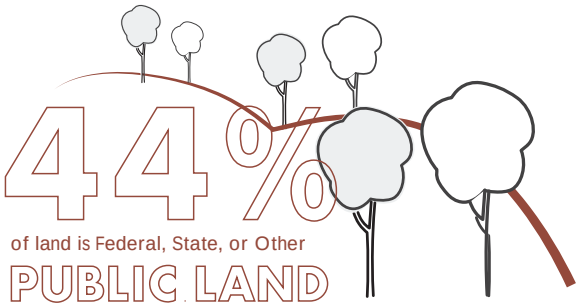
400 SQUARE MILES are currently incorporated

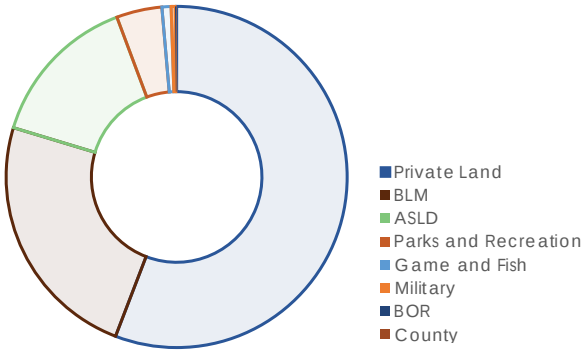
640 SQUARE MILES of planning area in Buckeye

Much of the projected growth is expected to occur within the community master plans (CMP), with a potential for 240,000 residential units at build-out.

Public Land Ownership

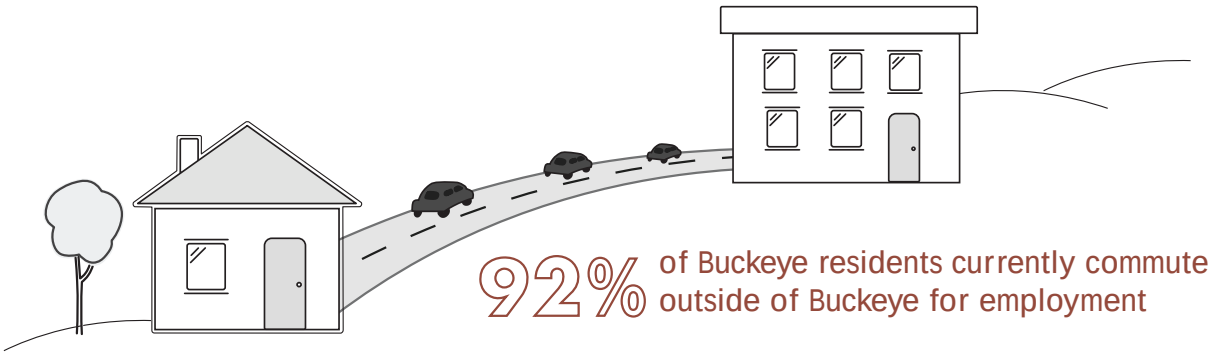
Within the City's planning area, approximately 44% of land is made up of Federal, State, or other public lands and the City is almost entirely surrounded on the north, west, and south by land owned by the Arizona State Land Department (ASLD) and the Bureau of Land Management (BLM). BLM-managed land north of I-10, not within a current Recreation and Public Purpose lease, is generally identified as available for sale or exchange. ASLD-owned land may eventually transfer to private interests and should be viewed as developable property. Through the Arizona Preserve Initiative, state lands could be designated appropriate for conservation, and then purchased, with transfer of the density from the purchased land to other state lands. A portion of this ASLD land adjacent to the White Tank Mountain Regional Park is designated as Neighborhood and Activity Center future land uses in the Buckeye General Plan.





Transportation Network

To facilitate a growing population and economy, a transportation network must be planned. Currently, 92% of Buckeye residents are commuting out of Buckeye for their employment, and between 2010 and 2015, traffic counts on I-10 and SR 85 increased by 18% and 50%, respectively. Annual growth in vehicular travel is anticipated to increase as the population continues to grow. The proposed SR 30 and the proposed I-11 would allow for more efficient vehicle travel within and outside of Buckeye, in addition to absorbing the increasing amount of vehicles on the region's roadways. As proposed roadways are developed, environmental features and wildlife connectivity should be considered to promote safety and reduce vehicular collisions with wildlife. Both ADOT and AZGFD provide guidance for wildlife connectivity, including escape measures, fencing, and crossing structures.



Growth: Planned Transportation Patterns

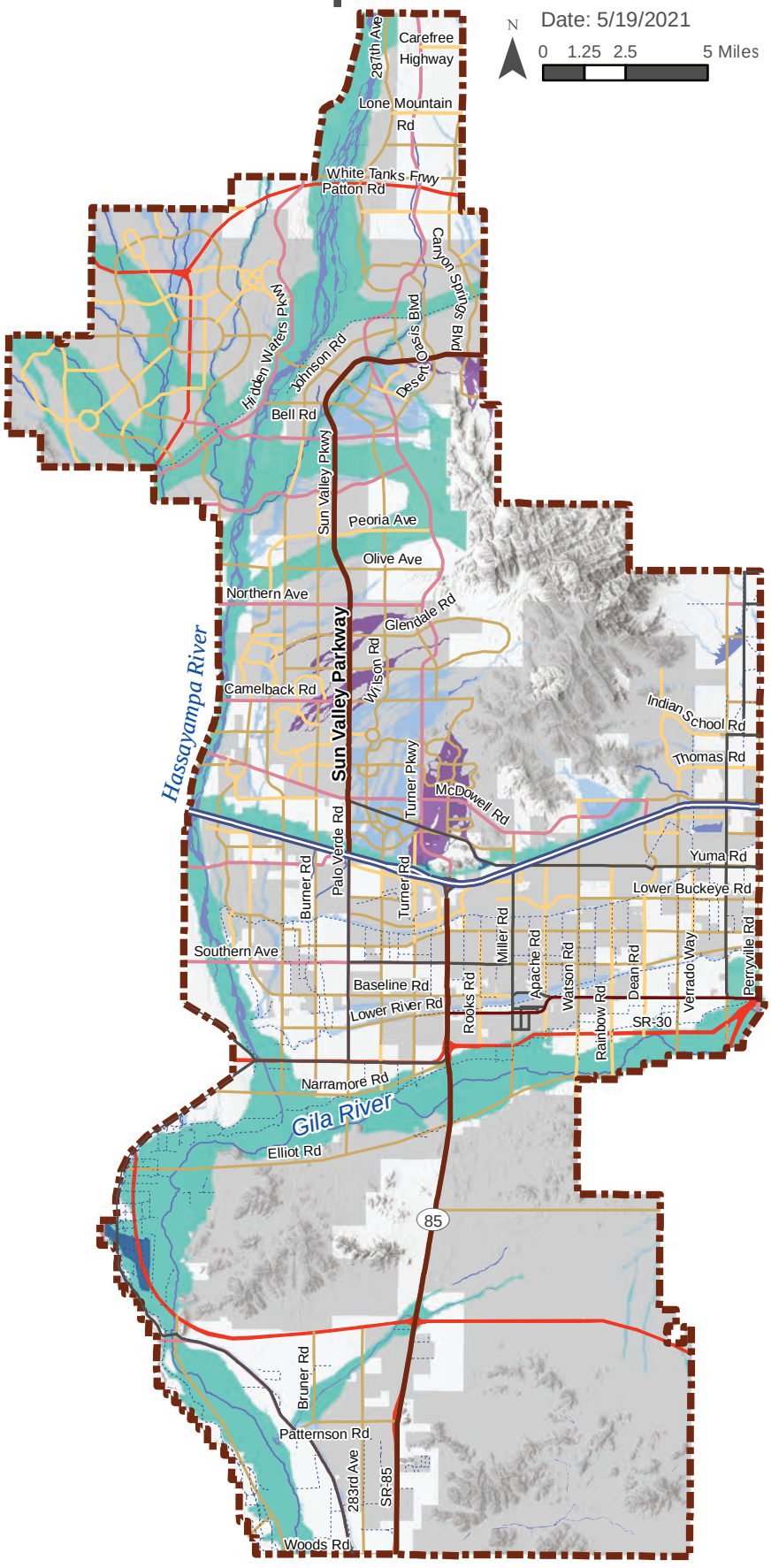
Legend

- Canals
- 100-year Floodplain Zone (Flood Control District, Maricopa County)
- 100-Year Floodplain (FEMA)
- Rivers and Water Bodies
- Major Wildlife Corridors
- Buckeye City Limits
- Buckeye Planning Area

Future Network City Classification

- Parkway
- Major Arterial
- Arterial (Highways in ADOT/ MCDOT Jurisdiction)

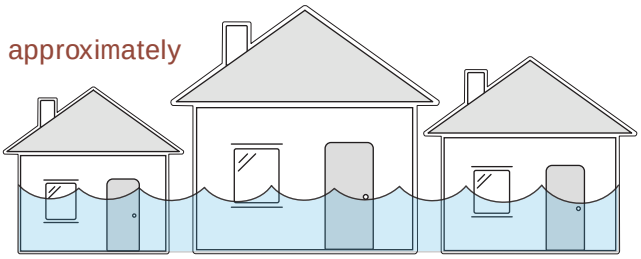
Source: USFWS, USGS, & City of Buckeye



Floodplain & Drainage

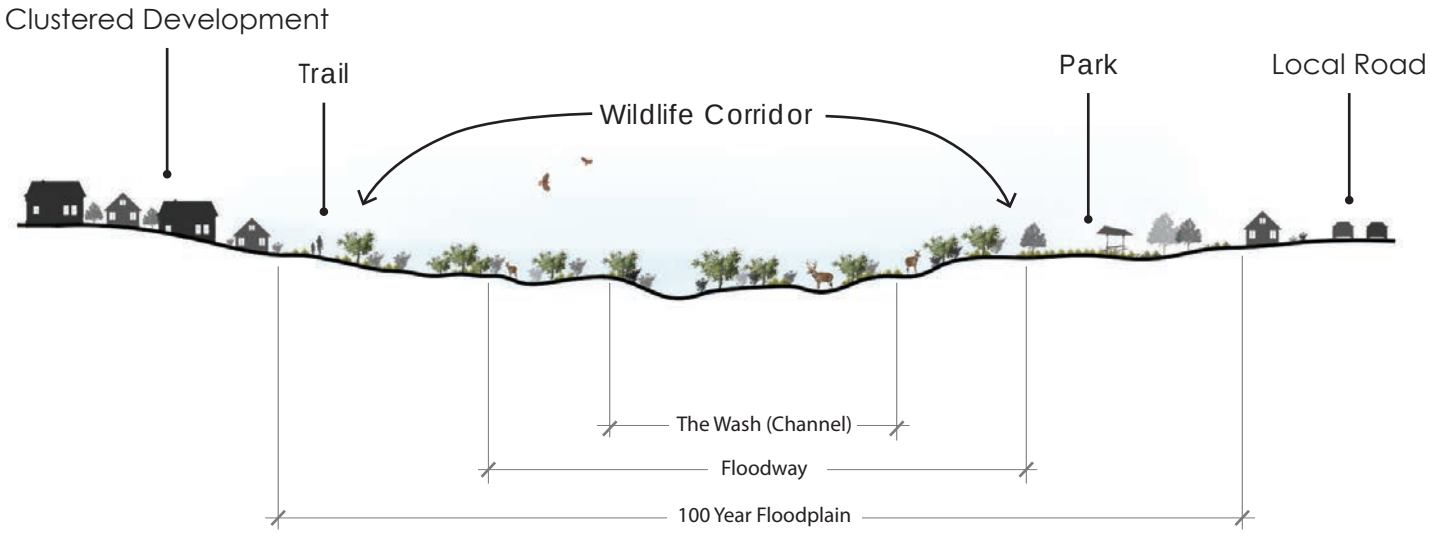
Buckeye currently relies on groundwater as its source of potable water. Many water canal and diversions crisscross Buckeye, supplying Arizona's arid communities with water needed to sustain a growing population. Canals that bring water to the area from the Colorado River, such as the Central Arizona Project, create barriers to wildlife movement.

Floodplains and washes in Buckeye are key to providing wildlife corridors and connections avoiding key barriers such as crossings at I-10, including the Flood Control District of Maricopa County flood retarding structures at the south end of the White Tank Mountains to the Hassayampa River.



Some species may use specific drainageways for travel, and increasingly as home range habitat, as urban development expands. Therefore, opportunities exist to improve safety, promote connectivity and highway permeability, and prevent loss of focal species.

Several drainage master plans have been completed in the area by the Flood Control District of Maricopa County and numerous floodplain delineation studies have identified the location and extents of the 100-year floodplain for washes connecting the White Tank Mountains and other regional mountain ranges to the Hassayampa and Gila rivers, as well as the location for alluvial fans, a key habitat opportunity for mule deer.



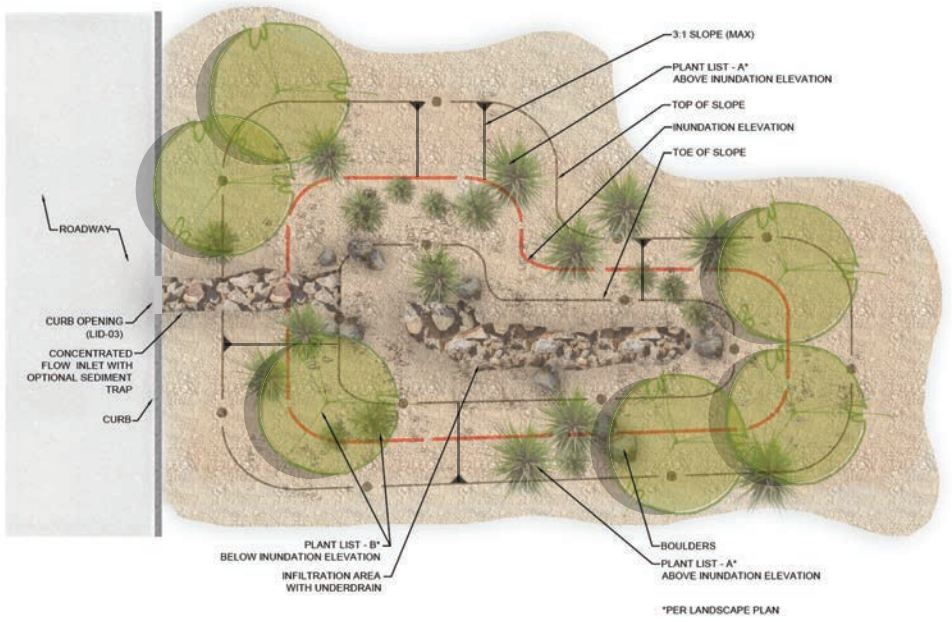
Wildlife corridors can be a part of, and enhanced by, floodplains if non-structural elements are utilized. Widths of the features depicted varies, refer to Chapter 4 for more information.

Green, Low Impact, and Multipurpose Open Space

Resilient growth patterns and wildlife corridors can be supported by green infrastructure and low impact development and multi-purpose open space concepts. These approaches are alternative to traditional engineering and are intended to manage storm flows typically found within the area. These tools re-create natural hydrological patterns by using landscaping and collection techniques that store, absorb, infiltrate, evaporate, and detain runoff. Key objectives include minimizing stormwater impacts, reducing the development/grading footprint, reducing impervious surfaces, conserving natural resources, maintaining natural drainage courses, reducing heat island effects, and reducing the reliance on pipes and structural runoff collection systems.

These concepts typically reduce the initial capital cost to development by requiring less earth work and construction costs up front. In turn, there is less impact on wildlife habitat by reducing the disturbance to native vegetation and the likelihood of the establishment of invasive plants on disturbed soils. Regular and long-term maintenance is still required. Less erosion, sedimentation, and labor-intensive maintenance associated with manicured landscaping is likely to reduce cost over the long term; however, real world lifetime studies are minimal. Developers usually absorb this cost during the construction of a project – sometimes decades – before turning common area maintenance over to homeowners' associations or managed through a Maintenance Improvement District.

LANDSCAPING DETAILS AND SPECIFICATIONS



ASU's Sustainable Cities Network "Greater Phoenix Metro Green Infrastructure Handbook" demonstrates techniques that can be incorporated into routine design elements at a site scale.

LID 5 STORMWATER HARVESTING BASIN - PLAN
N.T.S.

QUALITY OF LIFE

WHY IT MATTERS & ASSOCIATED BENEFITS

High quality of life is essential to a thriving economy and a healthy environment; it is deeply intertwined with, and inseparable from, one's interactions with the environment and growth. It brings new residents and employers to Buckeye — and keeps them there.

Quality of life includes factors, such as a variety of housing options, jobs/employment opportunities, quality schools, adequate medical facilities, public services and amenities, culture and social interactions, public safety, transportation, recreational opportunities, and open space.

Open space and outdoor recreational opportunities have a positive impact on the City in several ways. Financial benefits are accrued through sales and property taxes, recruitment of talent, new industries, and other benefits experienced through improvements in mental and physical health. Costs to the community need to include the capital, management, and operational costs of improvements. Quality of life also needs to acknowledge that we must continue to have less impact on our environments through environmentally-conscious building and development practices.

Quality of Life Resiliency & Triple Bottom Line Relationship

Environment: The environment is a critical part of what makes people healthy - from clean drinking water to protection from natural hazards. One of the few things that are permanent in any growing area is the preservation of quality open space that protect these services and provide habitat to wildlife that has long inhabited this area. Preserving our quality of life also means respecting our community plans and the chance to consider them and implement them in any solution.

Growth: Wildlife corridors, adjacent parks, and open space serve as gathering spaces for the community and can benefit surrounding neighborhoods through enhanced stormwater retention and evaporative cooling. Cost-benefit analyses and other studies highlight the increase in property value, and the resulting fiscal benefits to the City, from the associated access to wildlife corridors and other open space areas.

Quality of Life: Quality of life's value stems from access to community parks and open spaces, strong social connections, and integration of environmentally conscious development. Quality of life is transgenerational and the costs and benefits of development over time need to be considered. Quality of life seeks to provide equilibrium between current and future development to ensure long-term sustainability and community resiliency.

DATA HIGHLIGHTS

Wildlife Habitat and Economic Development

The combination of regional open spaces, wildlife, and trails are key components of tourism that increase the amount of time spent visiting an area. Open spaces that offer unique experiences, like the opportunity to see wildlife can result in an increase in visitors. Visitor activity translates into fiscal benefits, such as the generation of lodging or sales tax revenue from travel-related purchases. In 2011, the US Fish and Wildlife Service estimated that Arizona had nearly 1.6 million resident and nonresident participants engaging in wildlife viewing activities, and these participants spent approximately $935 million on related purchases. While nearly half of the economic impact is generated in the retail/accommodations/food services industries, other industries such as transportation, warehousing, finance, and professional and business services are also positively impacted by the outdoor recreation industry.

Outdoor recreation in Arizona supported roughly 108,000 jobs and $8.6 billion in gross state product in 2017, equating to approximately 2.6% of the state's economy.
(US Bureau of Economic Analysis)

Wildlife Habitat and Health

Access to nature has a direct impact on social, mental, and physical health. According to research compiled by the National Recreation and Park Association, people who live near and spend time in parks and open spaces, experience reduced levels of stress, anxiety, and depression as compared to people that do not visit those locations. Long term access to open space could reduce both personal and public spending related decreasing medical costs, as well as improve water quality, air quality, and even reduce costs and damages associated with flooding or fires. Research suggests that job attractiveness, and thus the ability to attract new industries and a younger, well-educated workforce, can increase upwards to 30% when communities offer a higher quality of life. Areas with high degrees of natural environments also attract new residents in the form of retirees, which can be seen as an engine for economic growth and development; they often have retirement income and are not tied down to a specific location for work.

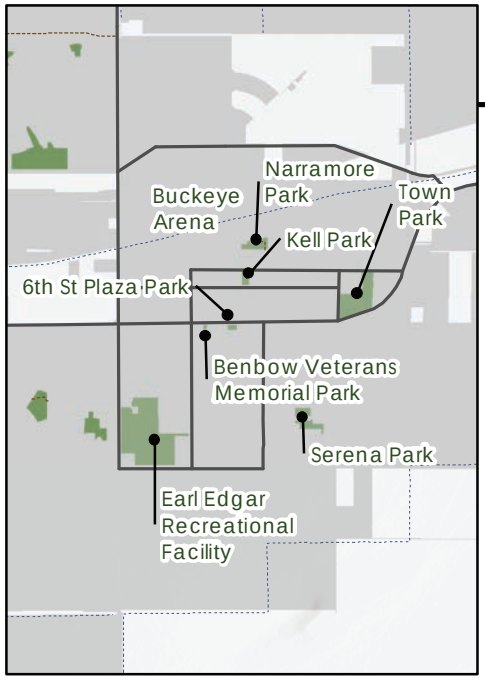
Quality of Life

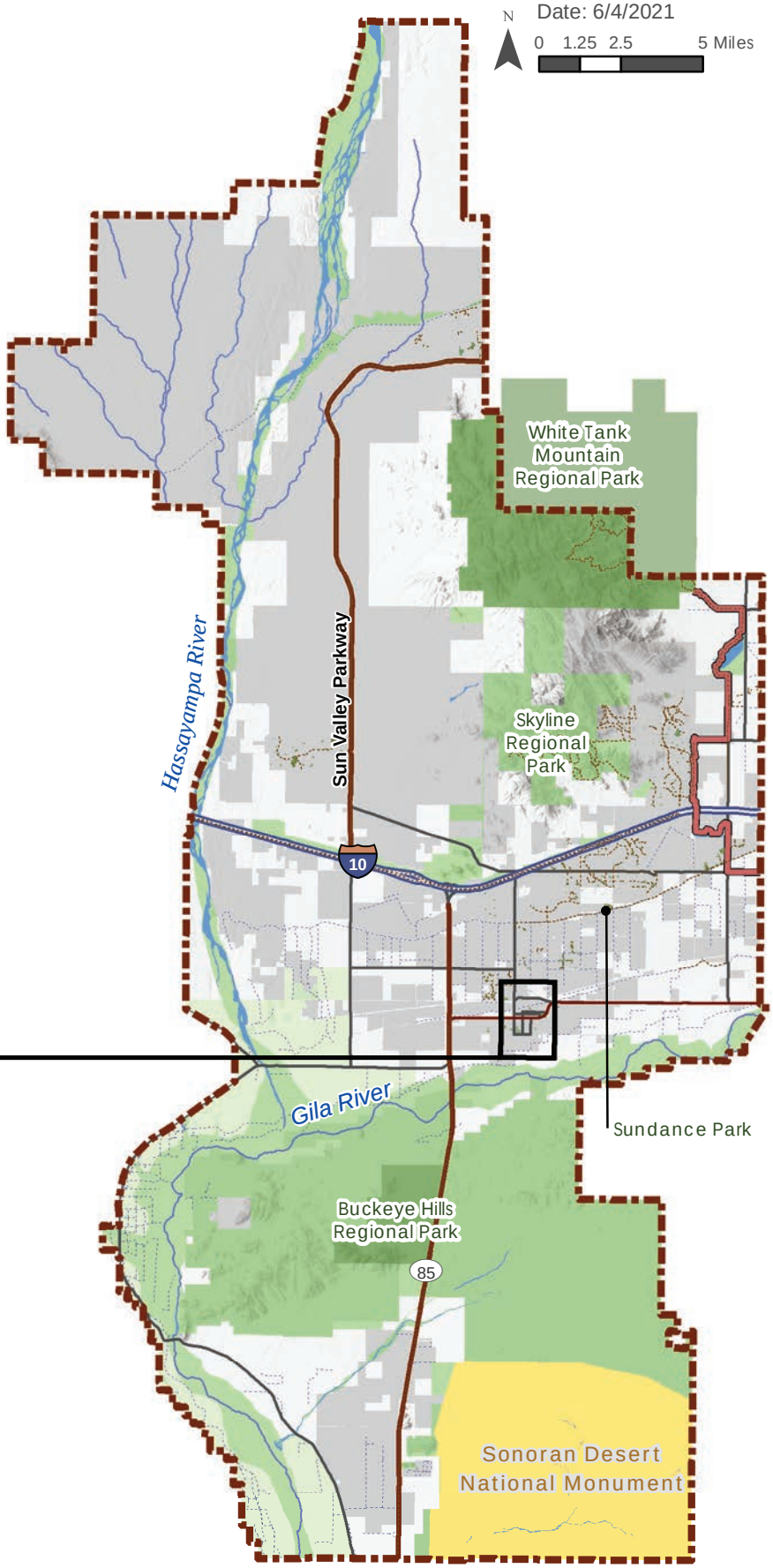
Legend

- Trails and Bikeways
- Regional Trails
- City & HOA Parks
- Open Space
- Agriculture
- Canals
- Buckeye City Limits
- Buckeye Planning Area

Source: USFWS, USGS, Maricopa County & City of Buckeye

The planning area includes 4,455 acres for Maricopa County's Buckeye Hills Regional Park, 3,459 acres for the western portion of the White Tank Regional Park, and 8,675 acres for Skyline Regional Park south of the White Tank Mountains. Skyline Regional Park is BLM land which is leased to the City at no cost for use as a regional park and mountain preserve. It provides access to miles of hiking trails with connections to Verrado's trail systems and a future trail connection with the White Tank Mountain Regional Park.

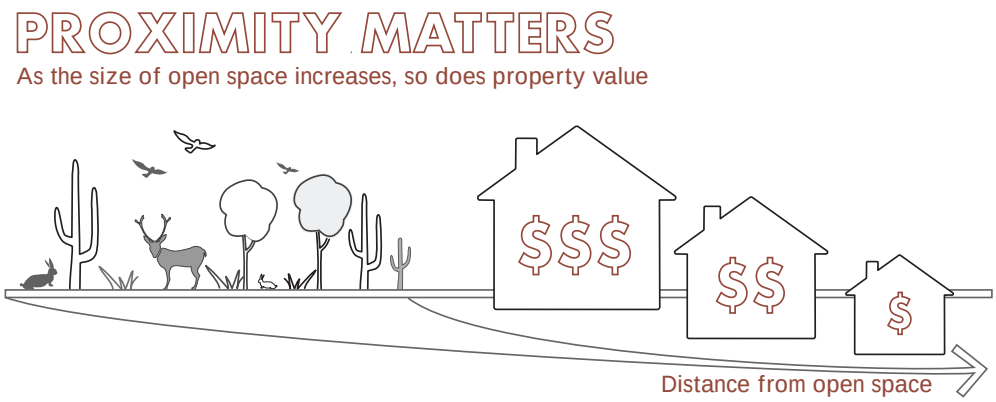




Wildlife Habitat and Property Values

Living adjacent or near open spaces creates a potential for increases in property values, resulting in additional property tax revenues for municipalities and, eventually, higher sales prices for property owners. The characteristics of an open space, in combination with the characteristics of the surrounding area, influence the degree of impact on local property values. The larger the natural area and the closer the proximity, the greater the increase. Other factors that influence an area's quality of life is the degree of naturalness, physical appearance and maintenance of the area (including safety), and amenities available.

Increases in property values can range from 3% to as much as 20% or more with a premium of 8-10% on properties abutting open spaces.



Parks, Trails, and Open Space

Parks, open spaces, and trails also provide a benefit for nature. Preservation of mountainous and rocky areas plays an important role in maintaining valuable habitat for mule deer. Conserving open space with diverse vegetation types, elevational gradients and a variety of topographic features would be key to accommodating many different species of wildlife. Steep mountains, rolling hills and mountain valleys, rocky bajadas, incised washes, ridgelines, flat desert valley, caves, and even abandoned mines all are important to the ecosystem of an area and its biodiversity.

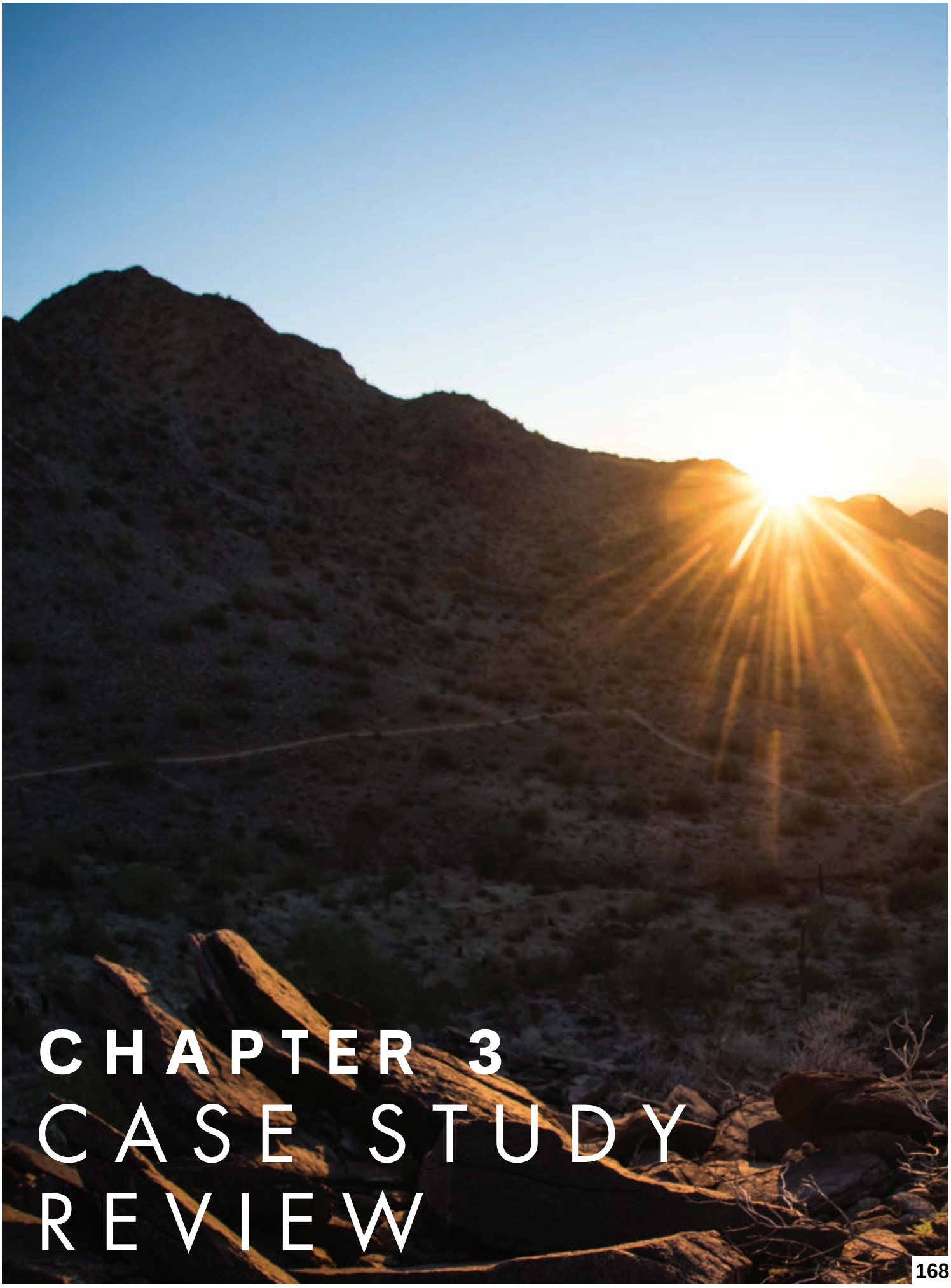
Wildlife populations may become isolated and more susceptible to local extirpation and reduced genetic diversity without interaction with other wildlife populations. Also, reduced access to food supplies, shelter, and water sources coupled with an increased risk of vehicle impacts and human interactions can negatively impact population numbers.

According to the 2016 Parks and Recreation Master Plan, the level of service for developed park acres per 1,000 residents has not kept pace with the population growth since 2000, even though the number of smaller private parks is increasing. Larger community and regional parks serve both the broader community and wildlife. They provide opportunities to co-locate significant utilities and drainage areas that can serve as buffers to wildlife corridors and provide resting areas for wildlife. Smaller community parks can be important habitat patches or "stepping stone" habitat for many species such as birds, small reptiles, and rodents. Depending on the distribution and proximity of these small parks, they can serve to enhance a region's connectivity for wildlife.

However, many species will require larger habitat "cores" and continuous suitable habitat between these cores, to achieve population maintenance processes. The City currently provides more conservation park acres of open space per 1,000 residents (153 acres per 1,000 residents) than all other communities in Maricopa County through its provision of the 8,675-acre Skyline Regional Park in the southern White Tank Mountains. Open spaces within the planning area, as identified on the Future Land Use Map, represent close to a quarter of the future land use. These regional public lands provide some of the most significant opportunities to create the structure of a sustainable wildlife corridor network. The City outlines the open space requirements by district type in the Development Code (Table 5.4-1; page 6-9).

Another major component of quality of life is trail connections. A robust trail system encourages residents to use alternative modes of transportation and increases access to natural areas within the community. Pathways and trails can be established adjacent to natural and manmade linear corridors including rivers and washes, utility corridors, canals, and flood control structures, allowing wildlife to flourish.

Small trail systems currently exist - both Sundance Park and Earl Edgar Recreational Facility have perimeter walking paths. The City intends to develop paths to connect regional resources, such as the mountain ranges to the rivers. Significant opportunities include the 310-mile Maricopa Trail — a shared-use non-motorized trail system to connect Maricopa County regional parks — and the El Rio trail — which is planned to run along the Gila River and will connect Estrella Mountain Regional Park to Buckeye Hills Regional Park.



CHAPTER 3
CASE STUDY REVIEW

INTRODUCTION

As part of the Guide development, research was conducted by reviewing a multitude of case studies from other cities, counties, and transportation agencies. Nearly 40 case studies were initially reviewed for their applicability to the City. The case studies were subsequently refined (table on next page) to those with similarities to the City, an emphasis on a similar size community/study area, an arid environment, located in Arizona under similar state laws and regulations, and wildlife corridor specific studies. Interviews with staff members from each jurisdiction were conducted to gather further information. This section summarizes the key aspects of each case study, how the tools are implemented, and associations with the Triple Bottom Line.

CASE STUDY SUMMARIES

CASE STUDY	SIZE	ARID ENVIRONMENT	ARIZONA	WILDLIFE CORRIDOR SPECIFIC
Town of Marana, AZ	City-wide	Yes	Yes	Yes
City of Scottsdale, AZ	Site Specific	Yes	Yes	Yes
Pima County Regional Flood Control District, AZ	Regional	Yes	Yes	No
Pima County, AZ	City-wide	Yes	Yes	No
Ventura County, CA	Regional	Yes	No	Yes
Clark County, NV	Site Specific	Yes	No	Yes
City of St. George, UT	City-wide	Yes	No	Yes
Arizona Department of Transportation	Site Specific	Yes	Yes	Yes
City of Peoria, AZ	City-wide	Yes	Yes	Yes
City of Edmonton, Canada	City-wide	No	No	Yes

TOWN OF MARANA, AZ

TITLE 17 Land Development Code: Environmental Resource Preservation Native Plant Protection Landscape Requirements

In 2001, the City of Marana began working on a habitat conservation and incidental take plan, which included recommended updates and modifications to Title 17 of the Land Development Code; however, Proposition 207 (2007 [Private Property Rights Protection Act]), made updates to Title 17 not feasible because it requires the government to reimburse land owners if regulations result in a decrease in the property's value. To date, Title 17 is the only method in place to preserve corridors and protect drainage areas, but there must be a discretionary action/ council hearing similar to rezoning. Title 17 requires a Site Resource Inventory (SRI) to be completed 2 weeks before a development pre-application meeting, but there is no enforcement mechanism to ensure corridor protection. Rather, the Town of Marana works with developers on a case-by-case basis to preserve wildlife crossings and prioritize corridor connections.

Best Management Practices Identified:

- Developer-local government cooperation
- Site-specific resource inventory
- Land development code open space requirements

Highlights

Keys to Success, Barriers, and Lessons Learned

- Meaningful cooperation with developers early on is the key to preserving important wildlife crossings and corridors. Without the cooperation from developers, Arizona Proposition 207 makes it very difficult, if not impossible, to enforce preservation of wildlife corridors specifically.
- Property values on the Tortilita Fan are higher than other areas of the Town due to more open space and preservation of land. The increased open space is partially due to Title 17 and the SRI, but is also due the Pima County and Town of Marana Habitat Conservation Plans.
- Marana has seen decreased mortality rates of multiple species along transportation corridors that have wildlife crossings and non-wildlife attracting plantings. The implementation of wildlife crossings and plantings is due in part to Title 17, but also in part to placement of wildlife crossings and use of plantings.

Financing/Funding

- No specific funding for the SRI, as it is required to be completed by property owners
- Habitat conservation program funding from the Arizona Game & Fish department (Segment 1, 2, and 3 grants)
- Pima County RTA sales tax funding

Implementer/Partners(s)

The Town of Marana has had its greatest success in preserving corridors and protecting drainages through cooperation with developers on a case by case basis. Cooperation with developers at early stages prioritizes protection of wildlife corridors and crossings during the development design over protection of other, less valuable resources.

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https://static1.squarespace.com/static/54cc191ce4b0f886f4762582/t/55030b8fe4b0aba001413dea/1426262927466/Title+17+-+Environmental+Resource+Preservation.pdf

Why It Matters & Associated Benefits

The inability to ensure developers provide accurate information is the biggest barrier to preserving specific wildlife corridors and crossings. The Town of Marana has a knowledgeable staff that works with developers during the pre-application meeting and before final development entitlements to ensure the preservation of key corridors, which requires an in-depth understanding of Marana's Development Code, Title 17, and development costs.

Implementation of general habitat conservation policies and programs in conjunction with Title 17 has contributed to its success. General habitat conservation policies include the use of non-wildlife attracting plantings in road medians, landscaped buffers adjacent to major transportation corridors, open space requirements of 30% for all developments, and encouraged clustered development.

Triple Bottom Line Benefits

ENVIRONMENT						
Big Game Wildlife Movement	Connections/ Development of Unfragmented Habitat Areas	Positive Impact on other wildlife	Identified Focal Species Protection	Environmental Benefits (e.g. Water Quality, Carbon Reduction, Habitat Restoration)		Other
X	X	X		X		
GROWTH						
Integrated with Private Development	Reduction in Infrastructure Costs	Green Infrastructure/ Low Impact Design	Wildlife-Friendly Design	Usage of Drainages	Consideration of Transportation Infrastructure	Other
X			X	X		
QUALITY OF LIFE						
Integration of Recreational Amenities (Parks and Trails)	Fiscal Impacts to the City	Economic Development	Environmentally Friendly Land Use Design (e.g. sustainable housing, clustering, porosity)		Multipurpose Corridors and Partnership	Other
	X*	X*	X			

** Economic or fiscal benefits are likely but not specifically measured.*

CITY OF SCOTTSDALE, AZ

Environmentally Sensitive Lands Overlay

The Environmentally Sensitive Lands Overlay (ESL) is a series of zoning regulations originally adopted in 1991 – and subsequently amended in 2001, 2003, and 2004 – which guide the development of desert and mountain areas in Scottsdale. The ESL encompasses over 130 square miles of property, some of which were previously established within the Hillside District.

The ESL aims to identify, protect, and manage environmentally sensitive lands in the City. The Ordinance requires a percentage of each property – 20 to 80% based upon landform area and slopes – be permanently preserved as natural area open space (NAOS) and specific environmental features be protected including vegetation, washes, and mountain ridges and peaks. The ESL goal is to keep the preserved areas natural while still allowing some trails and recreation access. The ESL also regulates lighting and planting/vegetation types.

Best Management Practices Identified:

- Land development code open space requirements
- Direct acquisition of State Trust Lands for open space was approved by the voters in 2013 utilizing State Parks and Proposition 303 funds
- Preservation priority of hillsides and steep slopes
- Lighting requirements
- Planting/Vegetation Types

Highlights

Keys to Success, Barriers, and Lessons Learned

- NAOS can be released and dedicated administratively, enabling staff to coordinate with adjacent property owners to preserve contiguous land.
- NAOS percentages are based upon landform area and slope, which provides better protection in steeper slopes and more sensative areas.
- The minimum of 20% preservation and the NAOS designation are frustrating for incoming residents unaware of the ESL. Educating the public and developers about the purpose, process, and intent of the ESL has been key to overcoming political resistance.
- The ESL was well-vetted through both the Planning Commission and City Council.
- The ESL allows for an exemption from the newest standard if hardship can be shown, but the applicant must still meet standards from a previous ESL version.

Financing/Funding

- None. NAOS is dedicated when properties are developed as an exaction.

Implementer/Partners(s)

The City of Scottsdale can release and dedicate NAOS administratively, enabling staff to coordinate with adjacent property owners to preserve contiguous land pieces. The City has also partnered with the McDowell – Sonoran Conservancy to manage preserved land.

Contact/Links:

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ayaron@ScottsdaleAZ.gov

Scott Hamilton (McDowell-Sonoran Preserve Manager)

480-312-7722

https://www.scottsdaleaz.gov/codes/ESLO

Why It Matters & Associated Benefits

Scottsdale was the first municipality to develop an ESL. Many of the subsequent programs adopted by other cities have followed Scottsdale's program closely with only minor changes. Staff indicated a preference to have land dedicated by tracts via subdivision plat rather than by lot to preserve important corridors and washes better. The ESL has been revised many times since its inital adoption, and exemptions can be granted through the City Council if the newest ESL standards create a hardship, but the applicant must meet previous standards of the ESL. Applicants are not exempt from all ESL standards.

Scottsdale has designated 1/3 of the total land area as the McDowell – Sonoran Preserve and requires 20% to 80% of the area of significant landforms and steep slopes to be preserved. The percentage of land required to be preserved as NAOS varies based upon landform (lower desert, upper desert, hillside) and land slope, with hillsides and steeper slopes having the highest NAOS preservation requirements.

Triple Bottom Line Benefits

ENVIRONMENT						
Big Game Wildlife Movement	Connections/ Development of Unfragmented Habitat Areas	Positive Impact on other wildlife	Identified Focal Species Protection	Environmental Benefits (e.g. Water Quality, Carbon Reduction, Habitat Restoration)		Other
X	X	X		X		
GROWTH						
Integrated with Private Development	Reduction in Infrastructure Costs	Green Infrastructure/ Low Impact Design	Wildlife-Friendly Design	Usage of Drainages	Consideration of Transportation Infrastructure	Other
X				X		
QUALITY OF LIFE						
Integration of Recreational Amenities (Parks and Trails)	Fiscal Impacts to the City	Economic Development	Environmentally Friendly Land Use Design (e.g. sustainable housing, clustering, porosity)		Multipurpose Corridors and Partnership	Other
X	X*	X*	X			

** Economic or fiscal benefits are likely but not specifically measured.*

PIMA COUNTY REGIONAL FLOOD CONTROL DISTRICT, AZ

Regulated Riparian Habitat Mitigation Standards and Implementation Guidelines

The Mitigation Standards and Riparian Habitat Projection Guidelines supplement Title 16 Chapter 16.30 of the Watercourse and Riparian Habitat Protection and Mitigation Requirements; Ordinance No. 2010 FC5. The ordinance requires preserving and/or enhancing riparian vegetation and habitat along watercourses and floodplains to promote stable flow and sediment transport conditions, preserve natural floodplain functions, and provide watercourse management. The Mitigation Standards and Riparian Habitat Projection Guidelines outline steps to develop a Riparian Habitat Mitigation Plan, whose purpose is to promote the benefits provided by riparian habitat, ensure long-term stability of natural floodplains and associated plants and animals, and promote an economic benefit to the County by providing aesthetic, recreation and wildlife values of riparian habitat for the enjoyment of residents and visitors.

Best Management Practices Identified:

- Avoidance/Minimization of disturbance
- Modified Development Standards
- Riparian Habitat Mitigation through Grading and Erosion Control, Planting, Irrigation, Maintenance/ Monitoring

Highlights

Keys to Success, Barriers, and Lessons Learned

- Builds on the Conservation Land System – Sonoran Desert Conservation Plan and Native Plant Preservation Ordinance.
    - Use of streamlined development processes to reduce delays from the USFWS and ACOE.
- Tied to floodplain protection and public safety – reduces erosion, slows flow, & reduces flood occurrences.
- While the ordinance is important, public outreach is critical to understand the "why."
- Developers are more aware than the general public. For example, unless a building permit has been submitted, it is unlikely that property owners would be aware of the standards. The Flood Control District (FCD) completes its own outreach with property owners in riparian zones.

Financing/Funding

- None (allows for Modified Development Standards).

Implementer/Partners(s)

Pima County provides notice through planning and building permit applications; Landowners pay for and implement.

Contact/Links:

Brian Jones (Division Manager)

520-724-4600

https://webcms.pima.gov/UserFiles/Servers/Server_6/File/Government/Flood%20Control/Rules%20and%20Procedures/Riparian%20Habitat%20Mitigation%20Plan%20Guidelines/onsite-guidelines.pdf

Why It Matters & Associated Benefits

The Flood Control District maps regulated floodplains and the associated riparian habitat. The guidelines define various types of habitat and their benefits, which are required to be avoided or mitigated (greater than 1/3-acre disturbance) by a property owner when development occurs. According to the Arizona Riparian Council (http://azriparian.org/), approximately 60-75% of Arizona's wildlife species are dependent on riparian habitat to sustain their populations by providing food, shelter, and protection from predators.

Vegetation management is outlined for the direct planting of trees, shrubs, and grasses on the project. The goal is to maintain the complete ecosystem habitat from soil quality to understory grasses and succulents to canopy trees and shrubs. Tree and shrub planting requirements (size, number, and type) and seeding (types and methods) are provided. Offsite mitigation may be allowed when preservation or onsite mitigation is not practicable. In this case, fee-in-lieu payments are collected and used to preserve other lands in perpetuity or restore County-owned lands that are not meeting standards.

Triple Bottom Line Benefits

ENVIRONMENT						
Big Game Wildlife Movement	Connections/ Development of Unfragmented Habitat Areas	Positive Impact on other wildlife	Identified Focal Species Protection	Environmental Benefits (e.g. Water Quality, Carbon Reduction, Habitat Restoration)		Other
X	X	X		X		Riparian habitat protection
GROWTH						
Integrated with Private Development	Reduction in Infrastructure Costs	Green Infrastructure/ Low Impact Design	Wildlife-Friendly Design	Usage of Drainages	Consideration of Transportation Infrastructure	Other
X	X	X	X	X		
QUALITY OF LIFE						
Integration of Recreational Amenities (Parks and Trails)	Fiscal Impacts to the City	Economic Development	Environmentally Friendly Land Use Design (e.g. sustainable housing, clustering, porosity)		Multipurpose Corridors and Partnership	Other
	X*	X	X		X	

** Economic or fiscal benefits are likely but not specifically measured.*

PIMA COUNTY, AZ

Transfer of Development Rights Implementation Guide (A.R.S. 11-821.03)

The Pima County Transfer of Development Rights (TDR) program and Implementation Guide is a way for landowners, in a constrained area such as a wildlife corridor or floodplain (sending area), to transfer their development rights to a growth area (the receiving area). Landowners in sending areas can sell development right credits to developers, who can then increase parcels' density in receiving areas. The seller can either agree not to develop their land, placing a deed restriction on the land, or develop it at a lower density with associated zoning restrictions. TDR programs are intended to provide an economic incentive for preserving important open space, allowing landowners to offset their property's development value.

Best Management Practices Identified:

- Transfer of Development Rights
- Receiving and Sending areas designated in the Comprehensive Plan
- Voluntary participation in the program

Highlights

Keys to Success, Barriers, and Lessons Learned

- The TDR program is completely voluntary. Property owners within the Sending Areas have the right to develop their properties in accordance with the existing zoning on their properties.
- TDR register database is maintained by the County. The database helps facilitate contacts between parties who may want to participate in the TDR program and establishes no obligations on any of the parties involved.
- Arizona's statute requires a system of monitoring sales and use of TDR's. Certificates track the number of TDR's at any one time and to reduce possible fraud that might occur if a seller tried to sell the same development potential to two different buyers.

Financing/Funding

- TDRs create an incentive for protection of sensitive lands, by allowing owners to receive compensation in return for foregoing possible development. The price of TDR's is established in the private market between buyers and sellers with no involvement from Pima County government.

Implementer/Partners(s)

Pima County established a TDR market by designating Sending and Receiving Areas and the conditions for development and manages the TDR register. Landowners voluntarily participate in the program.

Contact/Links:

Chris Poirier (Planning Official)

(520) 724-9000

https://webcms.pima.gov/UserFiles/Servers/Server_6/File/Government/Development%20Services/Land%20Planning%20and%20Regulation/Current%20Planning%20Tab/TDR%20Implementation%20Guide.pdf

https://webcms.pima.gov/UserFiles/Servers/Server_6/File/Government/Development%20Services/Land%20Planning%20and%20Regulation/Current%20Planning%20Tab/DRC%20procedures%20&%20requirements.pdf

Why It Matters & Associated Benefits

A TDR program provides another method for the County to conserve sensitive lands that have been identified for preservation without having to buy the land and taking the land off the tax rolls, while at the same time allowing the property owner to continue to receive economic benefit from the land. In addition, a TDR program can help encourage more urban development into areas where it is more appropriate. It can also discourage "wildcat" or unregulated development in some areas of the County.

Triple Bottom Line Benefits

ENVIRONMENT						
Big Game Wildlife Movement	Connections/ Development of Unfragmented Habitat Areas	Positive Impact on other wildlife	Identified Focal Species Protection	Environmental Benefits (e.g. Water Quality, Carbon Reduction, Habitat Restoration)		Other
	X	X		X		
GROWTH						
Integrated with Private Development	Reduction in Infrastructure Costs	Green Infrastructure/ Low Impact Design	Wildlife-Friendly Design	Usage of Drainages	Consideration of Transportation Infrastructure	Other
X	X	X	X		X	
QUALITY OF LIFE						
Integration of Recreational Amenities (Parks and Trails)	Fiscal Impacts to the City	Economic Development	Environmentally Friendly Land Use Design (e.g. sustainable housing, clustering, porosity)		Multipurpose Corridors and Partnership	Other
X		X	X			

Cluster Development Guidelines (Section 18.09.040)

Cluster development provides for thoughtful site planning and design that recognizes the constraints and opportunities of that site. Cluster development allows for cost-effective development due to decreases in grading and more efficient servicing of the development with utilities, roads, and other essential services; additional open space for private or community purposes; and protection of existing neighborhoods through the provision of open space buffers and the location of structures. Remaining land can be put into a conservation easement. A conservation easement will involve a land trust where the landowner retains ownership of the land but forfeits the development right in exchange for compensation and tax incentives. Conservation easements are maintained on the land in perpetuity and are recorded in land records and on the property title.

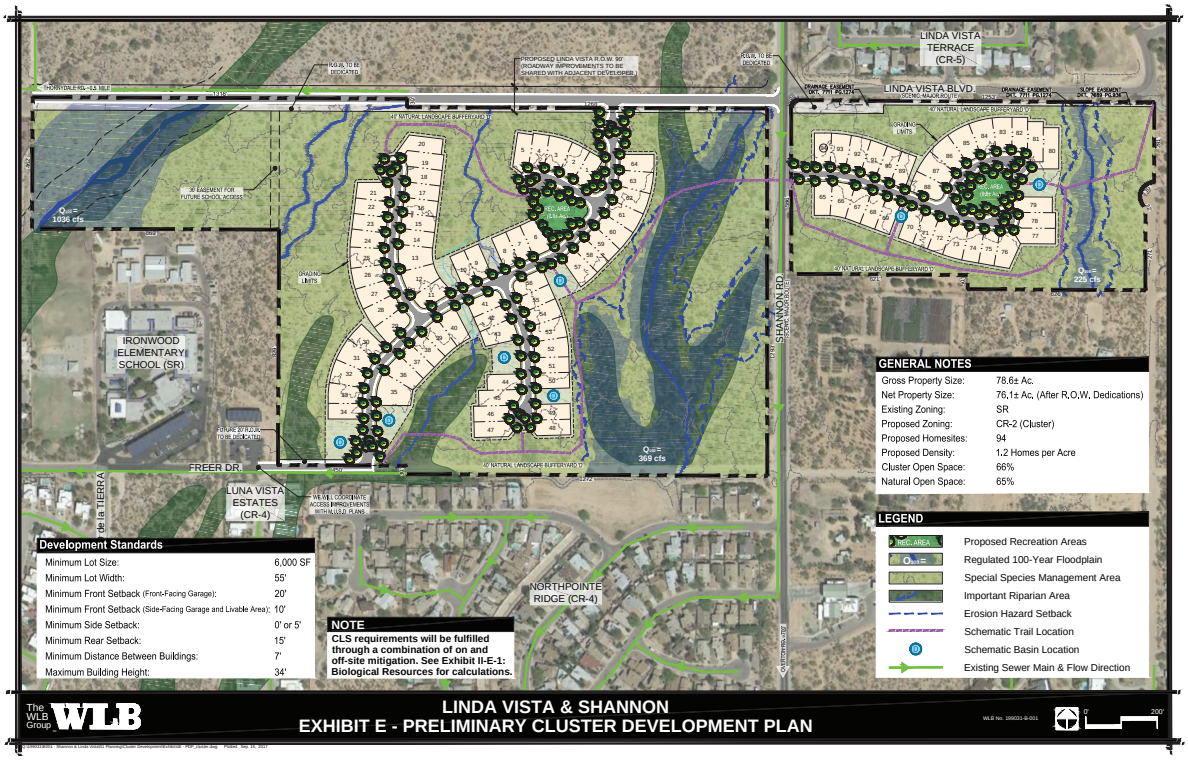
Best Management Practices Identified:

- Conservation Easements
- Cluster Developments
- Site-Specific Planning and Analysis

Highlights

Keys to Success, Barriers, and Lessons Learned

- Cluster developments are not popular among the high-end real estate markets, which prefer one-acre homesites. Cluster developments often look like townhouse complexes, which does not hold much market appeal, especially in rural areas. According to County staff, only five development projects have opted for the cluster zoning approach in the past five years because of the lack of interest in the market.



Financing/Funding

- No funding is provided for cluster development, however, conserved lands can be put into a conservation easement. Certain tax and incentives to landowners can be realized when land is put into a conservation easement.

Implementer/Partners(s)

Developers and Pima County. Cluster developments are proposed by developers and approved through the County's Planning Division.

Contact/Links:

Chris Poirier (Planning Official)

(520) 724-9000

https://webcms.pima.gov/UserFiles/Servers/Server_6/File/Government/Development%20Services/Land%20Planning%20and%20Regulation/Current%20Planning%20Tab/TDR%20Implementation%20Guide.pdf

https://webcms.pima.gov/UserFiles/Servers/Server_6/File/Government/Development%20Services/Land%20Planning%20and%20Regulation/Current%20Planning%20Tab/DRC%20procedures%20&%20requirements.pdf

Why It Matters & Associated Benefits

Developed in the mid-1970s, Fairfield Sunrise was one of the first projects to take advantage of the Pima County land development code's new cluster development option. The property includes numerous exposed ridges and steep, narrow canyons that thread down to the Rillito River. Within this sensitive landscape, the developer grouped homes on small building lots and designed narrow streets that help preserve open space and views of the city below. Fairfield Sunrise ended up with considerably more open space than other one-acre subdivisions. As a result, it succeeded in preserving wildlife corridors and drainage areas that allows multiple species to migrate between desert and mountains. Because the project's design reduced the number of roads, overall infrastructure costs were kept low. At the same time, city views turned out to be more marketable than originally assumed. The combination of these factors made Fairfield Sunrise a financial success.

Triple Bottom Line Benefits

ENVIRONMENT						
Big Game Wildlife Movement	Connections/ Development of Unfragmented Habitat Areas	Positive Impact on other wildlife	Identified Focal Species Protection	Environmental Benefits (e.g. Water Quality, Carbon Reduction, Habitat Restoration)		Other
	X	X		X		
GROWTH						
Integrated with Private Development	Reduction in Infrastructure Costs	Green Infrastructure/ Low Impact Design	Wildlife-Friendly Design	Usage of Drainages	Consideration of Transportation Infrastructure	Other
X	X	X	X		X	
QUALITY OF LIFE						
Integration of Recreational Amenities (Parks and Trails)	Fiscal Impacts to the City	Economic Development	Environmentally Friendly Land Use Design (e.g. sustainable housing, clustering, porosity)		Multipurpose Corridors and Partnership	Other
X		X	X			

VENTURA COUNTY, CA

Habitat Connectivity and Wildlife Corridors Overlay Zone (Sec. 8109-4.8) of the Ventura County Non-Coastal Zoning Ordinance

Ventura County revised their Zoning Ordinance to ensure development is designed and constructed to allow wildlife and plant species to disperse between natural lands without violating individual property rights. Early stated goals included minimizing habitat loss and fragmentation, reducing corridor chokepoints, and abating direct and indirect barriers. They found that the degree to which the land supports wildlife movement depends on both the physical setting and the behavioral response of plants and animals.

Best Management Practices Identified:

- Invasive plants use restrictions
- Outdoor night lighting standards
- Impermeable fencing limits
- Buffers around surface water and important road crossings
- Designated Critical Wildlife Passage Zones with compact siting

Highlights

Keys to Success, Barriers, and Lessons Learned

- Directed by Board of Supervisors and a clear set of objectives
- A broad range of outreach
- Based on South Coast Wildlands GIS analysis to delineate linkages for best "live-in" and "move-through" habitats
- The ordinance contains a sufficient number of exemptions and compromises. Several modifications to the ordinance were made based on input: fencing regulations, added exemptions, parcel size thresholds used for the compact siting standards, refinements to the crossing structure identification methodology, standards for essential lighting and security lighting, and allowances made for invasive plants that are grown for commercial agricultural purposes.

Regulatory Mechanisms in Zoning Ordinance	Project Objective
Limits on outdoor night lighting	Minimize indirect barriers
Buffers around Surface Water Features	Minimize Vegetation Loss and Habitat Fragmentation
Buffers around road crossings	Minimize Vegetation Loss and Habitat Fragmentation
Limits on impermeable fencing	Minimize direct barriers
Encourage Compact Siting in CWPAs	Minimize Vegetation Loss and Habitat Fragmentation, Protect/Enhance Chokepoints
Prohibit intentional planting of invasive plants	Minimize Vegetation Loss and Habitat Fragmentation

Financing/Funding

- None

Implementer/Partners(s)

Developer (limited prohibitions, many exceptions).

Contact/Links:

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shelley.sussman@ventura.org

https://docs.vcrma.org/images/pdf/planning/ordinances/VCNCZO_Current.pdf

Why It Matters & Associated Benefits

The County highlighted the following benefits: movement through habitats is essential for wildlife and native plant survival; protection of Ventura County's biological diversity (plants and animals); allowing animals to find food, shelter, establish home ranges; protection against die-off due to diseases, periodic loss of food resources, and inbreeding; and provide crucial habitat after fires (riparian areas are key for post-fire survival). Many scientists, regulators, academics, land managers, private property owners, businesses, and non-profits worked together to select animal and plant species to represent a diversity of habitat needs and movement patterns ("Focal species"). Regulatory mechanisms in the zoning ordinance focus on outdoor night lighting limits, buffers around surface water features, buffers around road crossings, limits on impermeable fencing, encouraging compact siting, and prohibiting intentional planting of invasive plants.

Triple Bottom Line Benefits

ENVIRONMENT						
Big Game Wildlife Movement	Connections/ Development of Unfragmented Habitat Areas	Positive Impact on other wildlife	Identified Foc al Species Protection	Environmental Benefits (e.g. Water Quality, Carbon Reduction, Habitat Restoration)		Other
X	X	X	X	X		
GROWTH						
Integrated with Private Development	Reduction in Infrastructure Costs	Green Infrastructure/ Low Impact Design	Wildlife-Friendly Design	Usage of Drainages	Consideration of Transportation Infrastructure	Other
X		X	X		X	
QUALITY OF LIFE						
Integration of Recreational Amenities (Parks and Trails)	Fiscal Impacts to the City	Economic Development	Environmentally Friendly Land Use Design (e.g. sustainable housing, clustering, porosity)		Multipurpose Corridors and Partnership	Other
			X		X	

CLARK COUNTY, NV

Clark County Wetlands Park and Las Vegas Wash Improvements

The Clark County Wetlands Park and Las Vegas Wash serves to provide wildlife habitat, flood mitigation, and passive recreation. Wetlands enhancement, bank stabilization, and revegetation are key components in the Wetlands Park and Wash. What was once a highly-structural flood control measure is now a hybrid of structural and non-structural efforts to mitigate flooding and provide much-needed wildlife habitat in the County. These improvements have also resulted in flood hazard avoidance, erosion control, public safety & education, preservation of environmentally and economically sensitive areas, improved water quality, economic opportunities, and tourism.

Best Management Practices Identified:

- Erosion control structures (weirs)
- Invasive plant species management program
- Revegetation
- Extensive wildlife and water quality monitoring
- Desert Conservation Program Development Disturbance fee (USFWS - ESA Program)

Highlights

Keys to Success, Barriers, and Lessons Learned

- Community support and non-profit agency efforts led to the prioritization and the subsequent development of the Wetlands Park, which continues to provide education, and active and passive recreational opportunities to the public and tourists.
- An initial barrier to this program was a lack of community awareness of the importance of open space, the Wash, and its surrounding wetlands. The Southern Nevada Water Authority reached out to the public in 1998 to develop solutions to address the Wash's degradation and wetlands.
- The Las Vegas Wash Coordination Committee is represented by over two dozen local, state, and federal agencies, the environmental community, the business community, the City of Las Vegas, the University of Nevada Las Vegas (UNLV), and private citizens.

Financing/Funding

- Clark County approved a quarter-cent sales tax allocated for water and wastewater projects. Grants and general funds are also used.

Implementer/Partners(s)

City, Water Authority

Contact/Links:

Las Vegas Wash Coordination Committee

702.258.3930

Southern Nevada Water Authority

Beth Moore

702.822.8449

Why It Matters & Associated Benefits

The Wetlands Park's cornerstone is its Nature Center, which provides education about the Wash and the region. In addition to the Nature Center, a 210-acre nature preserve is home to trails, ponds, and constructed weirs, which help slow water, prevent erosion and promote healthy wetlands.

There are 19 weirs along the Wash for bank stabilization. Additionally, an invasive plant species management program has been implemented with 500 acres revegetated and over 500,000 pounds of trash removed from the Wash and surrounding areas. Wildlife and water quality monitoring is conducted, as is cultural resource identification. Biological surveys are also conducted to ensure the viability of the Wash's Adaptive Management Plan.

Triple Bottom Line Benefits

ENVIRONMENT						
Big Game Wildlife Movement	Connections/ Development of Unfragmented Habitat Areas	Positive Impact on other wildlife	Identified Focal Species Protection	Environmental Benefits (e.g. Water Quality, Carbon Reduction, Habitat Restoration)		Other
	X	X		X		Flood hazard mitigation

GROWTH						
Integrated with Private Development	Reduction in Infrastructure Costs	Green Infrastructure/ Low Impact Design	Wildlife-Friendly Design	Usage of Drainages	Consideration of Transportation Infrastructure	Other
	X	X	X	X		

QUALITY OF LIFE					
Integration of Recreational Amenities (Parks and Trails)	Fiscal Impacts to the City	Economic Development	Environmentally Friendly Land Use Design (e.g. sustainable housing, clustering, porosity)	Multipurpose Corridors and Partnership	Other
X	X	X*	X	X	Recreational opportunities and safety

** Economic or fiscal benefits are likely but not specifically measured.*

CITY OF ST. GEORGE, UT

Floodplain and Trails

After a devastating dam failure and subsequent reluctance to pass ordinances limiting development along the river, the City of St. George turned to develop a walking trail along an 8-mile stretch of the river that would provide adequate setback to keep people out of harm's way. Federal Emergency Management Agency (FEMA) Hazard Mitigation Grant Program (HMGP) funds were used to acquire property along the badly damaged riverbanks of the Virgin River to stop further development. It was the first time FEMA had ever awarded such a grant to a community. The City of St. George now has a trail system that has expanded to 43 miles and has created a new, vibrant social mentality and many economic opportunities for the community. The trail is also a "service road" for a city sewer line and fire protection access.

Best Management Practices Identified:

- Trail Buffer
- Bike/Pedestrian Path
- Setbacks
- Property Acquisition

Highlights

Keys to Success, Barriers, and Lessons Learned

- City Council initially voted against a measure to ban development along the river in a 3-2 vote. That event led to the walking trail that would provide the desired adequate setback from the river.
- The City's flexibility and willingness to develop an alternative option to protect its citizen and preserve the floodplain has proven successful, with several communities now enjoying the economic and health-related benefits of the trail.

Financing/Funding

- Initially funded through FEMA Hazard Mitigation Grant Program (HMGP), on-going trail efforts are funded through parks and recreation and general fund sources.

Implementer/Partners(s)

City

Contact/Links:

Shane McAffee (Director of Leisure Services)

435-627-4530

shane.mcaffee@sgcity.org

https://www.sgcity.org/legacy/floodplain/

Why It Matters & Associated Benefits

Trail buffers are a regionally appropriate, effective method of preserving land along waterways and promoting safety for residents and the natural environment. The buffers enhance the environmental quality, providing nesting areas for endangered birds and fish species, and providing a greenway corridor. Trails can serve as dual purpose linear maintenance roads for utility corridors.

Triple Bottom Line Benefits

ENVIRONMENT					
Big Game Wildlife Movement	Connections/ Development of Unfragmented Habitat Areas	Positive Impact on other wildlife	Identified Focal Species Protection	Environmental Benefits (e.g. Water Quality, Carbon Reduction, Habitat Restoration)	Other
	X	X		X	Flood hazard mitigation

GROWTH						
Integrated with Private Development	Reduction in Infrastructure Costs	Green Infrastructure/ Low Impact Design	Wildlife-Friendly Design	Usage of Drainages	Consideration of Transportation Infrastructure	Other
	X	X	X	X		

QUALITY OF LIFE					
Integration of Recreational Amenities (Parks and Trails)	Fiscal Impacts to the City	Economic Development	Environmentally Friendly Land Use Design (e.g. sustainable housing, clustering, porosity)	Multipurpose Corridors and Partnership	Other
X	X	X	X	X	Recreational opportunities and safety

ARIZONA DEPARTMENT OF TRANSPORTATION (ADOT)

Arizona Department of Transportation Wildlife Connectivity Guidance & 2006 Arizona Wildlife Linkages Assessment

Arizona Department of Transportation compiled multiple case studies across Arizona, analyzing various corridors with wildlife underpasses, bridges, and fencing. In each case study, the rate of wildlife-vehicle collisions of elk and deer decreased. Also, the case studies show an increased economic benefit from reduced elk-vehicle collisions.

The 2006 Arizona Wildlife Linkages Assessment was developed to identify large blocks of protected habitat, the potential wildlife movement corridors between, as well as through them, and the factors threatening to disrupt these linkage zones. The Assessment additionally outlines the methodology to create specific wildlife linkage designs in each of the potential linkage zones.

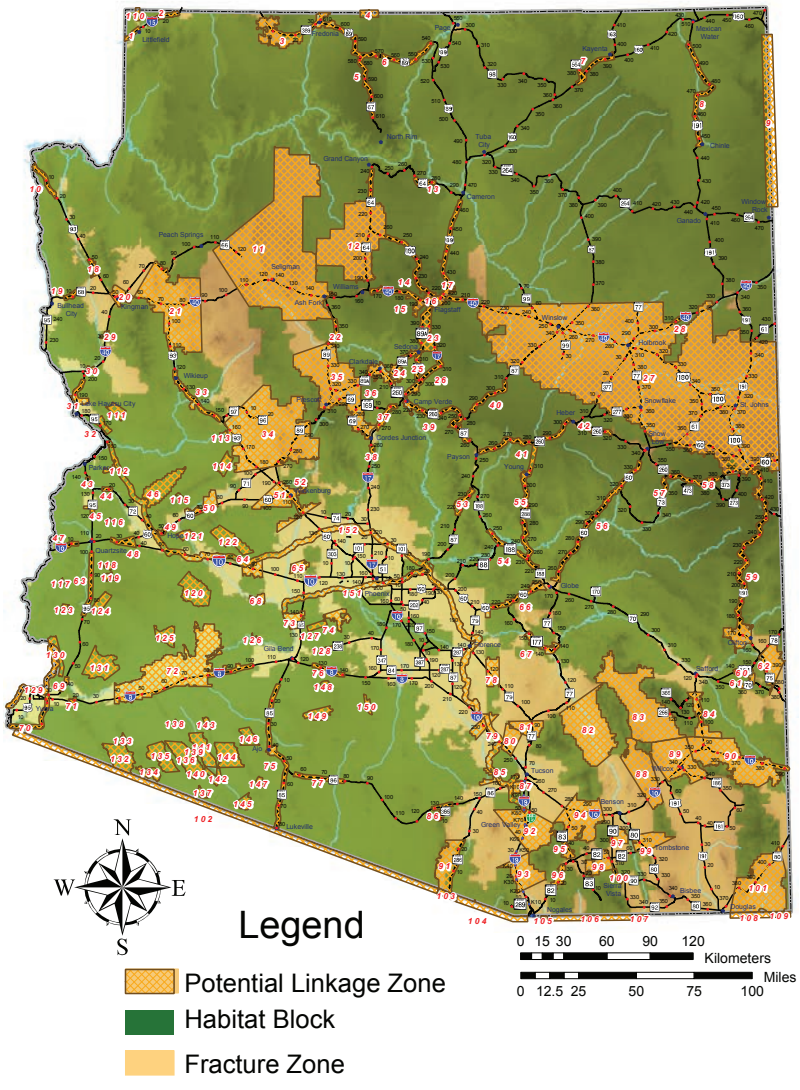
Best Management Practices Identified:

- Wildlife underpasses
- Wildlife funnel fencing
- Wildlife escape measures
- Identification of threat and opportunities

Highlights

Keys to Success, Barriers, and Lessons Learned

- The highest priority corridors for preservation have the highest threat, opportunity for use, and the highest biological value.
- The design of the wildlife linkage should be determined on a case by case basis.
- Each species and habitat type have different requirements for crossings.



Financing/Funding

- Various state, local, and federal grant funds. A full list can be found here: https://azdot.gov/sites/default/files/2019/06/awlw-section-xii-sources-for-connectivity-resolution.pdf

Implementer/Partners(s)

This project built upon an already existing collaborative partnership between the Federal Highway Administration, ADOT, Arizona Game and Fish Department, and the USDA Forest Service Tonto National Forest.

Contact/Links:

Scott Sprague

ssprague@azgfd.gov

https://azdot.gov/sites/default/files/2019/06/wildlife_connectivity_guidance.pdf

https://azdot.gov/business/environmental-planning/programs/wildlife-linkages

Why It Matters & Associated Benefits

Each wildlife crossing should be designed with the species, habitat type, and degree of habitat fragmentation in mind. Also, corridors that were highly prioritized are those with the highest threat of loss or degradation, highest opportunity for use, and highest biological value.

Triple Bottom Line Benefits

ENVIRONMENT						
Big Game Wildlife Movement	Connections/ Development of Unfragmented Habitat Areas	Positive Impact on other wildlife	Identified Focal Species Protection	Environmental Benefits (e.g. Water Quality, Carbon Reduction, Habitat Restoration)		Other
X	X		X			

GROWTH						
Integrated with Private Development	Reduction in Infrastructure Costs	Green Infrastructure/ Low Impact Design	Wildlife-Friendly Design	Usage of Drainages	Consideration of Transportation Infrastructure	Other
			X		X	

QUALITY OF LIFE					
Integration of Recreational Amenities (Parks and Trails)	Fiscal Impacts to the City	Economic Development	Environmentally Friendly Land Use Design (e.g. sustainable housing, clustering, porosity)	Multipurpose Corridors and Partnership	Other
		X			

CITY OF PEORIA, AZ

Peoria Sonoran Preservation Plan - Acquisition for Open Space

Peoria incorporated the Maricopa County Wildlife Connectivity Assessment into their Open Space Decision Support Model, where wildlife linkages are priorities when looking at land acquisitions for open space.

The key elements of the Peoria Sonoran Preservation Plan are to: prioritize ecologically and historically significant land, provide abundant, high-quality recreational opportunities, create an extensive open space network for future generations to enjoy, and implement effective funding and conservation strategies.

Best Management Practices Identified:

- Cooperative planning of Federal, State, and private lands containing a high level of natural, recreational, scenic, and cultural values
- Cooperation with landowners to obtain conservation easements, dedications, or acquisitions

Highlights

Keys to Success, Barriers, and Lessons Learned

- By focusing on lands with multiple resource values and areas close to each other - there is greater public support for utilizing general funds, grants, park impact fees, and land dedication.
- Tools focus both on acquisition and conservation easements. Developed parkland is often located directly beside open space areas.
- A focus on lands near each other creates an open space system that serves multiple benefits.
- A key factor in the success of the Sonoran Preservation Plan is the cooperation with private landowners to obtain conservation easements, dedications, or acquisitions for identified significant parcels using open space and park funds.

Financing/Funding

- The only existing funding mechanism is private land open space dedications through the Hillside and DLCO entitlement process, which can only be applied in specific areas. The following were suggested: 1) Dedicated Sales Tax or property tax 2) Open Space Bonds 3) Property Assessments/ Special Districts 4) General Fund Taxes 5) Local Government Partnerships 6) Federal, state, and non-profit grants 7) Capital Campaigns, Corporate Donations, and Gifts (individual, planned, memorial) 8) Volunteer and In-Kind Services
- The City Code allows for a broader definition of parks to include open space related to park impact fees or land dedication for a park and recreation area.

Contact/Links:

Chris Jacques

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https://www.peoriaaz.gov/government/departments/planning-and-zoning/document-library

peoriaaz.gov/Home/ShowDocument?id=11383

Implementer/Partners(s)

Bureau of Land Management

Why It Matters & Associated Benefits

A Decision Support System was developed to identify sensitive lands that merit special consideration for conservation. The model used over 20 datasets to identify and prioritize areas that merit special consideration for protection and can be updated as prioritization and criteria change over time to meet the City's changing needs. The criteria included cultural resources, scenic quality, access, distance proximity, wildlife habitat, and ownership. These inputs are weighted from 1-10 based on the community's values and their level of importance for protection. The City can continually alter weights and criteria to reflect current visions and needs.

Triple Bottom Line Benefits

ENVIRONMENT						
Big Game Wildlife Movement	Connections/ Development of Unfragmented Habitat Areas	Positive Impact on other wildlife	Identified Focal Species Protection	Environmental Benefits (e.g. Water Quality, Carbon Reduction, Habitat Restoration)		Other
	X					
GROWTH						
Integrated with Private Development	Reduction in Infrastructure Costs	Green Infrastructure/ Low Impact Design	Wildlife-Friendly Design	Usage of Drainages	Consideration of Transportation Infrastructure	Other
X		X				
QUALITY OF LIFE						
Integration of Recreational Amenities (Parks and Trails)	Fiscal Impacts to the City	Economic Development	Environmentally Friendly Land Use Design (e.g. sustainable housing, clustering, porosity)		Multipurpose Corridors and Partnership	Other
X	X*	X*	X			

** Economic or fiscal benefits are likely but not specifically measured.*

CITY OF EDMONTON, CANADA

Wildlife Passage Engineering Design Guidelines

These design guidelines were created to provide transportation designers and decision-makers with recommendations to incorporate wildlife needs into transportation projects. The desired outcomes are: 1) maintain habitat connectivity and reduce genetic isolation among Edmonton's wildlife populations so that these communities continue to fulfill their ecological, social, and economic functions and 2) to aid in the reduction of human-wildlife conflict, improve awareness, safety, and reduce collisions.

Best Management Practices Identified:

- Planning and Design Guidelines
- Mitigation Toolbox
- Construction BMPs
- Maintenance/Operations BMPs

Highlights

Keys to Success, Barriers, and Lessons Learned

- These guidelines were developed by a multidisciplinary team for a variety of partners, ensuring viability of the guidelines.
- Application of the best available science in wildlife passage design were adapted to a fragmented Urban Environment.
- Effectively communicating this information in a way that helps bridge the conversation between ecologists and transportation engineers ensures the integration of wildlife passage requirements into planning.
- Design guidelines are not intended to be overly prescriptive, which allows for flexibility to achieve a unique design for each location that suits both wildlife and humans.

Financing/Funding

- None.

Implementer/Partners(s)

Developers and City leaders. Support of city leadership to initiate a wildlife passage program is key to the longer term success of design guidelines.

Contact/Links:

Office of Natural Areas & Urban Biodiversity

Thomas Watson (Natural Areas Team Leader)

Thomas.Watson@edmonton.ca

https://www.edmonton.ca/city_government/documents/WPEDG_FINAL_Aug_2010.pdf

Why It Matters & Associated Benefits

The guidelines are used at various stages in a transportation project's life cycle, including planning, design, construction, operation, and maintenance. A detailed mitigation toolbox provides best practices, including signage, fencing, lighting, vegetation management, culverts, bridges, education, reduction in speed limits, diversion methods, and wildlife crosswalks. Other best practices are provided for construction, such as minimizing tree removal, managing erosion, waste management, and noise.

Triple Bottom Line Benefits

ENVIRONMENT						
Big Game Wildlife Movement	Connections/ Development of Unfragmented Habitat Areas	Positive Impact on other wildlife	Identified Focal Species Protection	Environmental Benefits (e.g. Water Quality, Carbon Reduction, Habitat Restoration)		Other
X	X	X		X		
GROWTH						
Integrated with Private Development	Reduction in Infrastructure Costs	Green Infrastructure/ Low Impact Design	Wildlife-Friendly Design	Usage of Drainages	Consideration of Transportation Infrastructure	Other
X	X	X	X	X	X	
QUALITY OF LIFE						
Integration of Recreational Amenities (Parks and Trails)	Fiscal Impacts to the City	Economic Development	Environmentally Friendly Land Use Design (e.g. sustainable housing, clustering, porosity)		Multipurpose Corridors and Partnership	Other
	X*	X	X		X	

** Economic or fiscal benefits are likely but not specifically measured.*

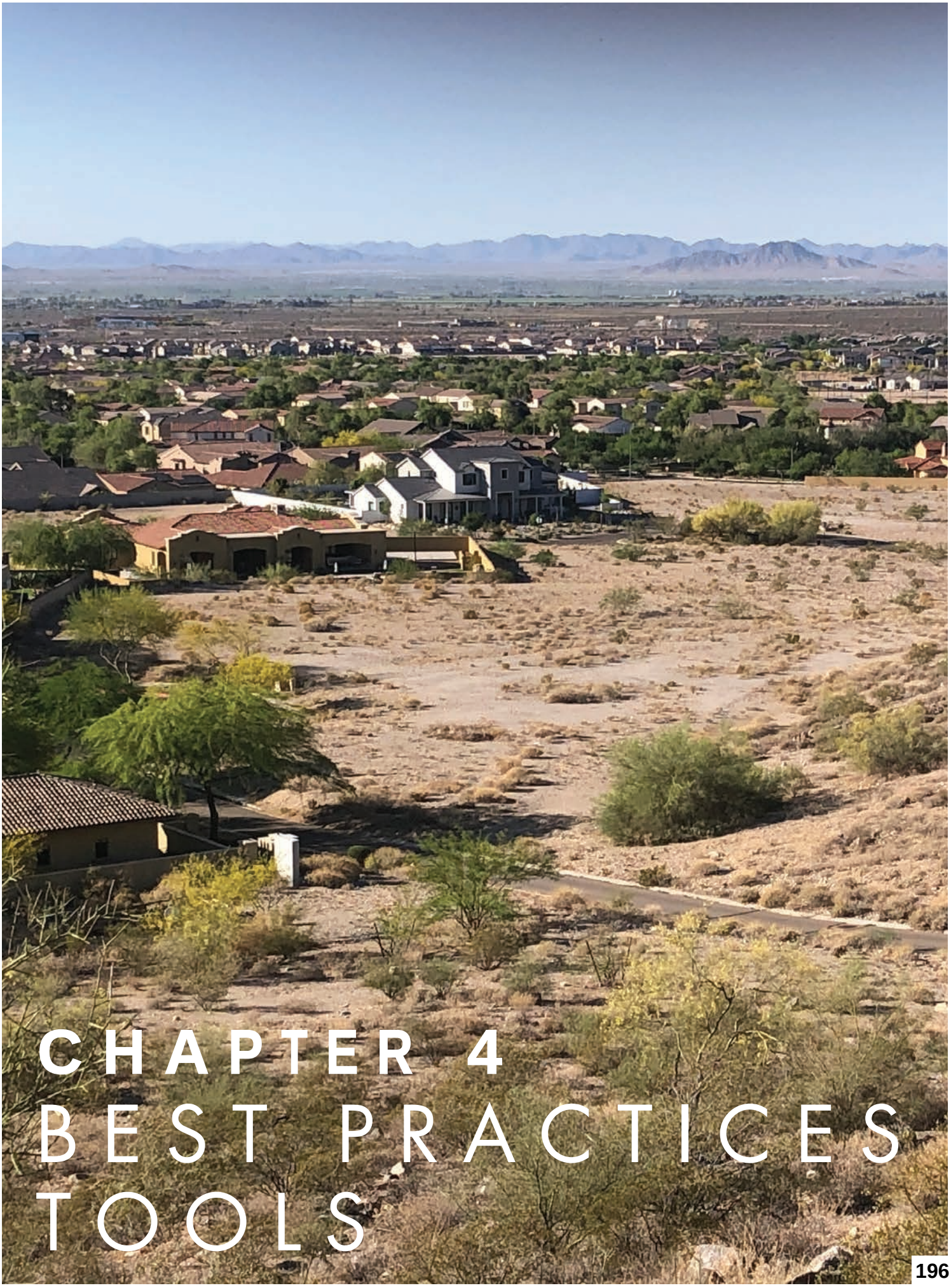
CASE STUDY SUMMARY

The following table summarizes the best practice tools presented in each case study and identifies those that were carried forward for recommendation. The recommendations presented in Chapter 4 are based on each tool's applicability to Buckeye (Applicability) and overall positive impact (Impact) on wildlife corridors.

CASE STUDY	BEST MANAGEMENT PRACTICE IDENTIFIED	APPLIC-ABILITY	IMPACT	CARRIED FORWARD
Town of Marana, AZ	Developer-local government cooperation	H	M	Coordination with developers occurs during the application process to preserve high value habitat voluntarily
	Site-specific resource inventory	M	H	Voluntary implementation by developers, prioritization of habitat
	Land development code open space requirements	M	M	Related to Porosity, Permeability, and Open Edge Treatments; Development Standard/ Permitting Process/ Fee Modifications; & Trail Buffer/Recreational Amenities
City of Scottsdale, AZ	Land development code open space requirements	M	M	Related to Porosity, Permeability, and Open Edge Treatments; Development Standard/ Permitting Process/ Fee Modifications; & Trail Buffer/Recreational Amenities
	Direct acquisition of State Trust Lands for open space was approved by the voters in 2013 utilizing State Parks and Proposition 303	L	H	Partner priority
	Preservation priority of hillsides and steep slopes	M	M	Yes (Conservation-Oriented Development with Density Bonuses & Riparian/Floodplain Buffer)
	Lighting requirements	H	H	Yes (Dark Sky Lighting)
	Planting/Vegetation Types	H	M	Yes (Seeding/Planting Guidance for Landscaping)
Pima County Regional Flood Control District, AZ	Avoidance/Minimization of disturbance	H	M	Yes (Conservation-Oriented Development with Density Bonuses & Riparian/Floodplain Buffer)
	Modified Development Standards	H	M	Yes (Development Standard/Permitting Process/ Fee Modifications)
	Riparian Habitat Mitigation through Grading and Erosion Control, Planting, Irrigation, Maintenance/ Monitoring	H	H	Yes (Riparian/Floodplain Buffer; Grading Limitations/Natural Landscape; & Seeding/ Planting Guidance for Landscaping)

CASE STUDY	BEST MANAGEMENT PRACTICE IDENTIFIED	APPLIC-ABILITY	IMPACT	CARRIED FORWARD
Pima County, AZ	Transfer of Development Rights	H	M/H	Yes (Transfer of Development Rights)
	Conservation Easements	H	H	Yes (Cluster Development with Conservation Easements)
	Cluster Developments	H	H	Yes (Cluster Development with Conservation Easements)
	Site-Specific Planning and Analysis	H	M/H	Relates to various Regional Tools
Ventura County, CA	Invasive plants use restrictions	H	H	Yes (Native Plant Preservation)
	Outdoor night lighting standards	H	H	Yes (Dark Sky Lighting)
	Impermeable fencing limits	H	H	Yes (Fencing/Walls)
	Buffers around surface water and important road crossings	H	H	Yes (Riparian/Floodplain Buffers)
	Designated Critical Wildlife Passage Zones with compact siting	H	H	No
Clark County, NV	Erosion control structures (weirs)	L	H	No, tool for perennial stream
	Invasive plant species management program	H	M	Yes (Native Plant Preservation)
	Revegetation	M	M	Yes (Seeding/Planting Guidance for Landscaping)
	Extensive wildlife and water quality monitoring	M	M	No
	Desert Conservation Program Development Disturbance fee (USFWS - ESA Program)	M	H	No
City of St George, UT	Bike/Pedestrian Path with Trail Buffer	H	M	Yes, (Trail Buffer/Recreational Amenities)
	Setbacks	H	H	Yes (Porosity/Permeability & Riparian/ Floodplain Buffer)
	Property Acquisition	L	H	Yes (Land Acquisition)

CASE STUDY	BEST MANAGEMENT PRACTICE IDENTIFIED	APPLIC-ABILITY	IMPACT	CARRIED FORWARD
ADOT	Wildlife underpasses	L	M	Yes (Roadway Crossings)
	Wildlife funnel fencing	M	H	Yes (Fencing/Walls)
	Wildlife escape measures	M	H	No
	Identification of threat and opportunities	M	M/H	Relates to crossing mechanisms and various Regional Tools
City of Peoria, AZ	Cooperative planning of Federal, State, and private lands containing a high level of natural, recreational, scenic, and cultural values	M	M	Yes, prioritization of habitats and resources for protection and conservation
	Cooperation with landowners to obtain conservation easements, dedications, or acquisitions	M	M	Relates to regional tools and partner priorities
City of Edmonton, Canada	Planning and Design Guidelines (identifying conflicts and focal species with avoidance measures)	M	M	Yes (see Regional Tools)
	Mitigation Toolbox (Signage, Fencing, Lighting, Sight Lines, Vegetation Management, Noise Barriers, Culverts, Bridges, Overpasses)	H	H	Yes (multiple)
	Construction BMPs	H	M	No, not discussed in detail
	Maintenance/Operations BMPs	H	M	No, not discussed in detail



CHAPTER 4
BEST PRACTICES TOOLS

INTRODUCTION

To meet the community's vision and goals as outlined in the General Plan and this Guide, this chapter provides recommended best management practices (BMPs) that could be incorporated into the design, development, and construction of residential and non-residential development within the City.

Building off the case studies, the BMPs presented in this toolbox provide a general understanding of how each BMP protects wildlife habitats and their movement and identifies, through example graphics, various effective methods for implementing that BMP within the City. As new development moves forward in Buckeye, this section is intended to provide tools and creative options to enhance wildlife corridors and wildlife-friendly development beyond the minimum City code requirements. The BMP tools are not standards or requirements that will be imposed on development, but are intended to encourage innovative alternatives that are wildlife-friendly.

The tools are grouped by scale:

Regional Tools & Incentives

- Multi-purpose Corridors/ Shared Infrastructure
- Conservation-Oriented Development with Density Bonuses
- Cluster Development with Conservation Easements
- Transfer of Development Rights
- Riparian/Floodplain Buffers
- Porosity, Permeability, and Open Edge Treatments
- Roadway Crossings (Overpasses/Underpasses/ Culverts)

Neighborhood Development Tools

- Scale of Design
- Trail Buffer/Recreational Amenities
- Native Plant Preservation
- At-Grade Crossings
- Signage
- Wildlife Water Catchments/ Developments

Design Tools

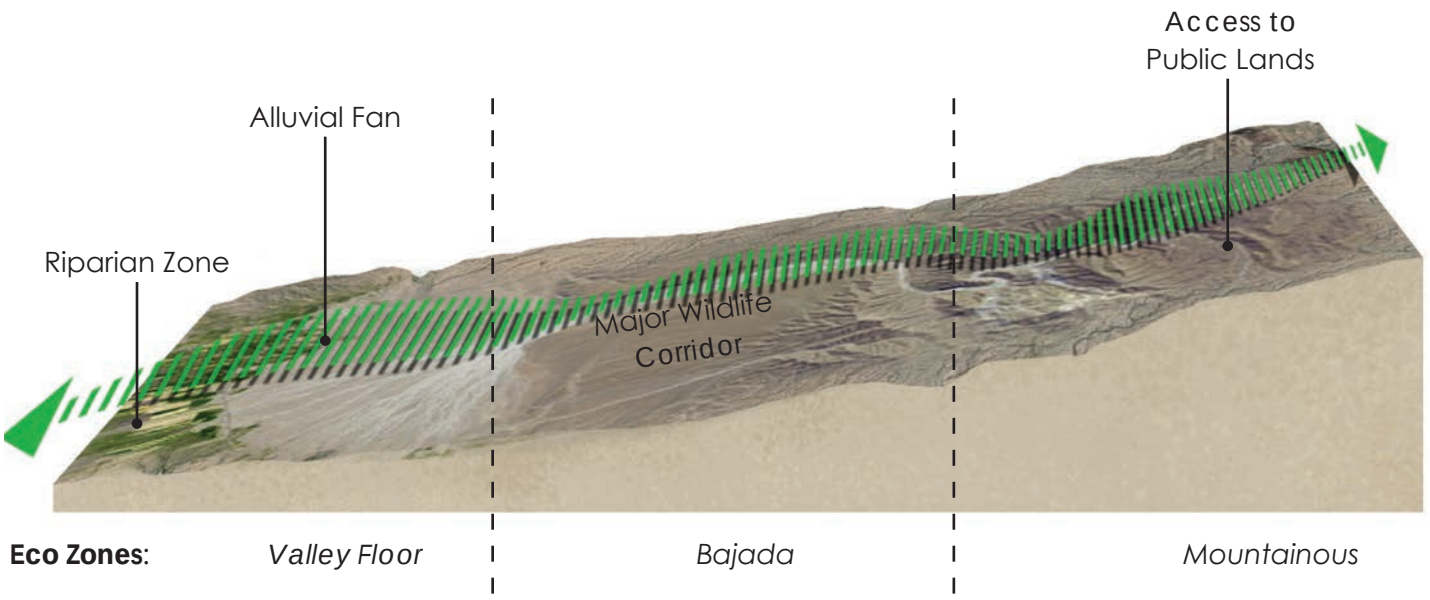
- Grading Limitations/Natural Landscape
- Fencing/Walls
- Dark Sky Lighting
- Noise Barriers
- Seeding/Planting Guidance for Landscaping
- Landscape Maintenance

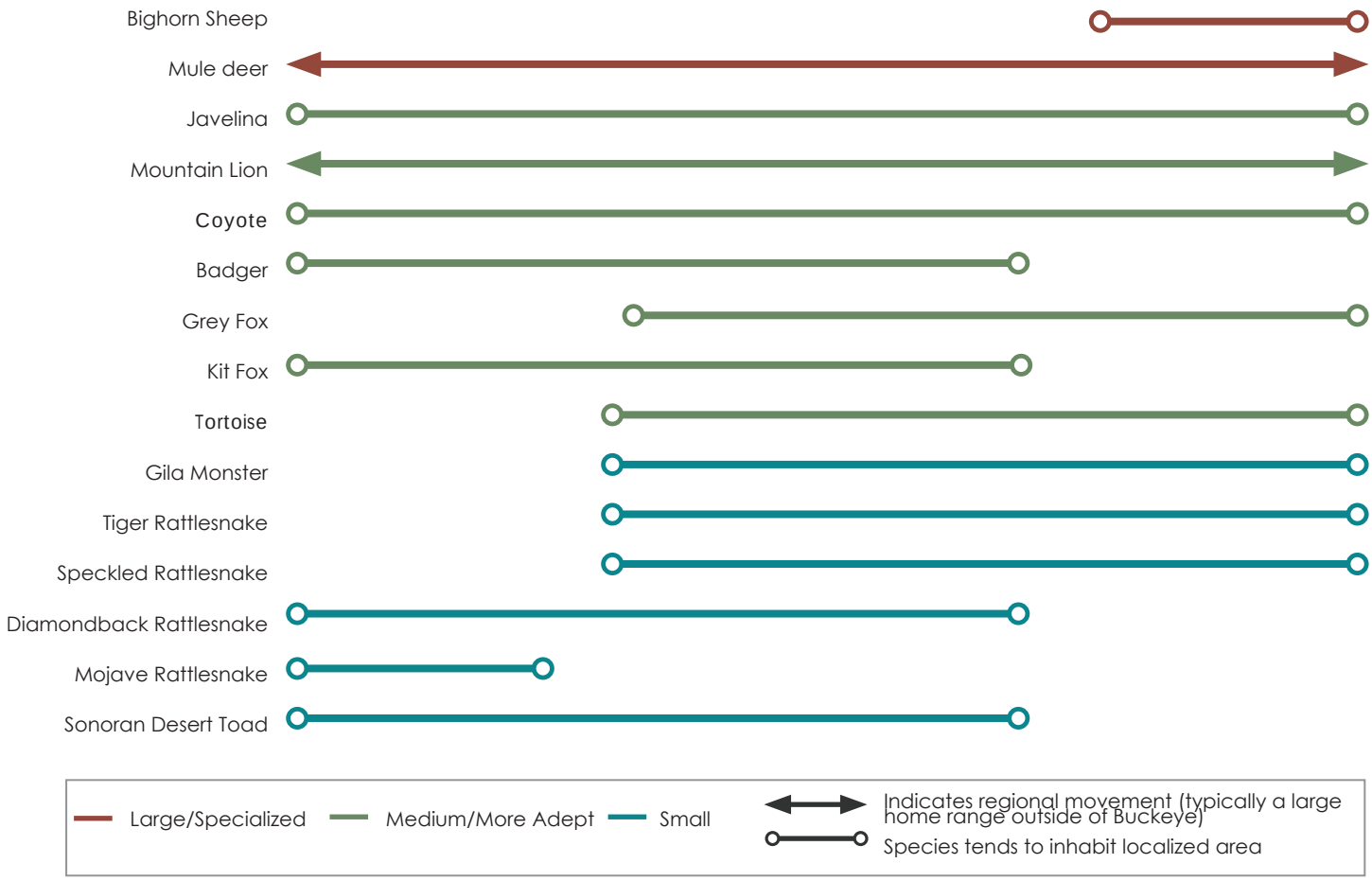
Other Tools & Partnerships

- Non-profits/Non-governmental Agencies
- Land Trusts
- Agency Partners
- Land Acquisition
- Stewardship/Restoration
- Education/Advocacy

WILDLIFE MOVEMENT

The ecological systems view gives perspective on how wildlife movements are connected throughout the entire corridor and beyond. This graphic highlights existing biodiversity within the three major eco-zones found within Buckeye, and how the ecological landscape is necessary to create thriving wildlife corridors.





REGIONAL TOOLS & INCENTIVES

The consideration of BMPs at the regional scale gives an early opportunity to provide for wildlife-friendly development, thus enhancing habitat for desirable native wildlife species. Protecting habitat patches and creating connected corridors through urban areas can help key species, while increasing quality of life by allowing residents the opportunity to interact with nature on a daily basis.

Regional tools provide the greatest opportunity to be paired with incentives and are integrated throughout this section. The City Code of Ordinances, Chapter 7 Development Code, outlines development standards and guidelines. Dimensional standards, including lot dimensions, setbacks, and lot coverages, may be adjusted to reconfigure subdivisions that benefit wildlife. Incentives would be considered on a case-by-case basis during the CMP amendment or PAD overlay process.

Tools in this section include:

1. Multi-purpose Corridors/Shared Infrastructure
2. Conservation-Oriented Development with Density Bonuses
3. Cluster Development with Conservation Easements
4. Transfer of Development Rights*
5. Riparian/Floodplain Buffers
6. Porosity, Permeability, & Open Edge Treatments
7. Roadway Crossings (Overpasses/Underpasses/Culverts)

*Not shown in the graphic above

1. MULTI-PURPOSE CORRIDORS/ SHARED INFRASTRUCTURE

A multi-purpose corridor is an ideal corridor that integrates multiple tools and/or utility functions with wildlife corridors to provide both human and wildlife benefits such as protection of environmental values, supporting wildlife habitats, floodplain management, recreation opportunities, and consolidated infrastructure corridors. For example, co-location of flood improvements that are wildlife-friendly along washes provide for wider corridors that are more amenable to wildlife passage and provide greater buffers of these utilities from development.

Further, development of wildlife mitigation features could allow for the width of the corridor to be reduced as the benefits for wildlife are increased - if there is appropriate habitat with no visibility of man-made structures. Wider multi-purpose corridors with co-located utilities, paths, and open space provide for wildlife habitat and flood water conveyance while providing less reliance on structural flood mitigation measures and their associate maintenance costs. Development of key infrastructure components and improvements can also encourage development to occur in desired places because infrastructure is already readily available.

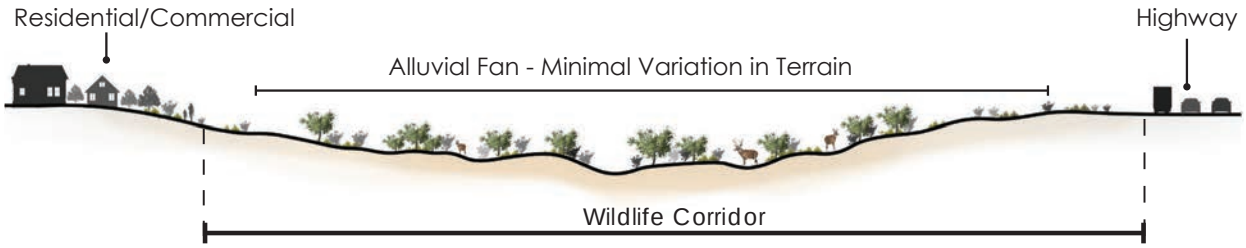
Stopping Barriers to Multipurpose Wildlife Corridors

- Multiple area pathways should be provided
- Suitable habitats for species should occur on both the edges of the corridor and at road crossing points
- Passages should be free of blockages such as dams, drop-structures, concrete barriers, silt or turbidity barriers
- Fencing should not block corridors or entrances to crossing structures and instead should direct animals
- Raised road sections discourage road crossings and should be used when possible to encourage wildlife to use crossing structures
- Design culverts specifically to provide for animal movement
- Larger roads should run parallel to large corridors and not bifurcate them

DEVELOPMENT OF MITIGATION FEATURES

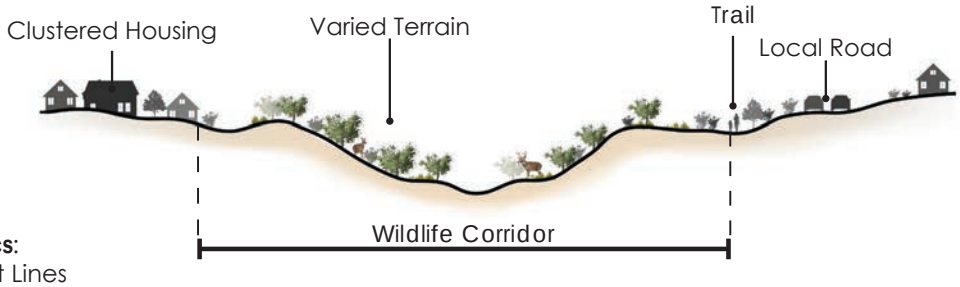
SIZE OF CORRIDOR

TYPE 1



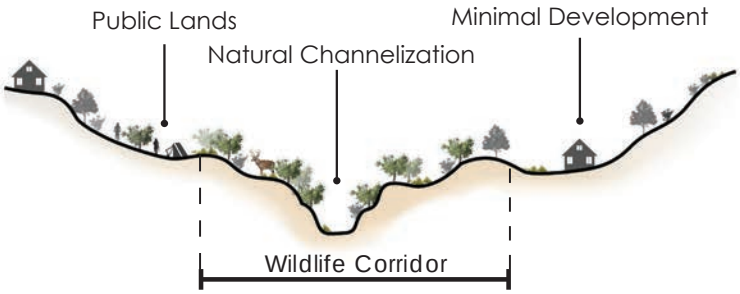
Characteristics:
Clear Sight Lines
No Noise Buffers
Minimal Variation in Terrain
High Density Development
Typ Eco-zone: Valley Floor

TYPE 2



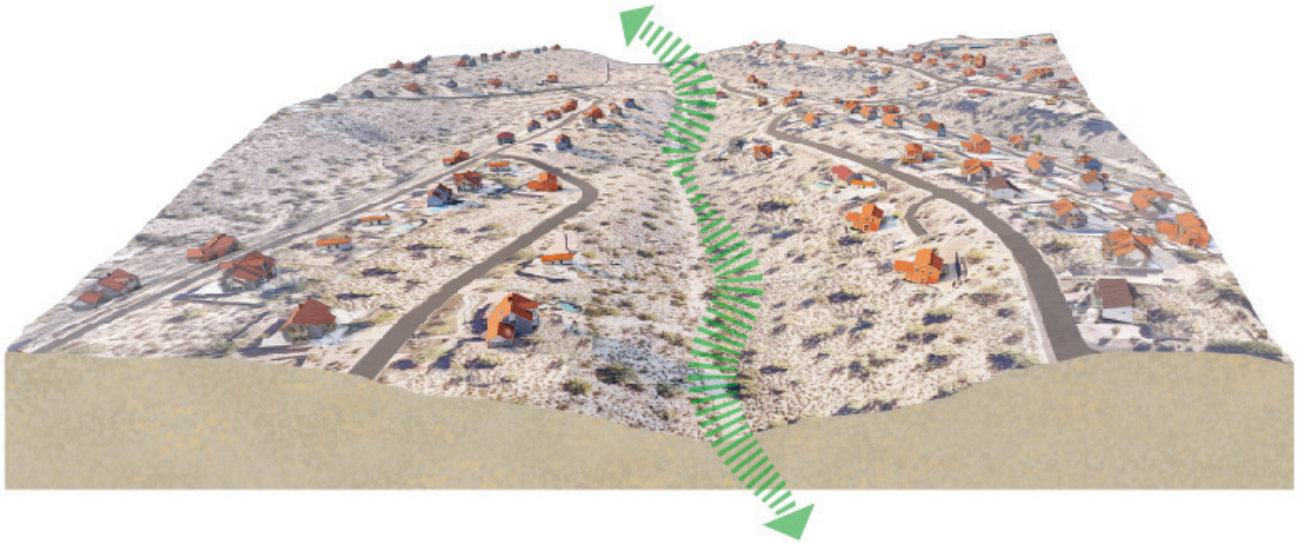
Characteristics:
Medium Sight Lines
Some Noise Buffers
Some Variations in Terrain
Medium Density Development
Typ Eco-zone: Bajada

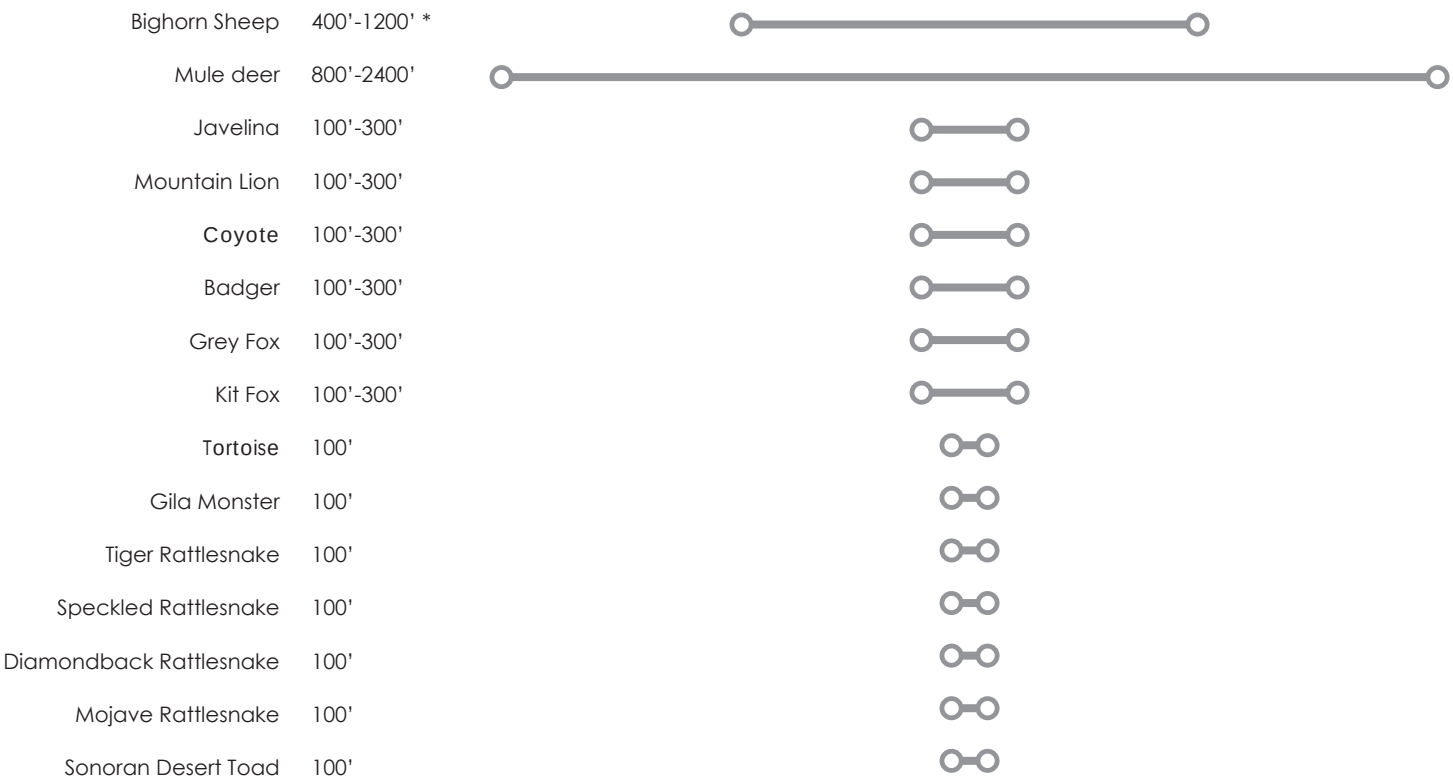
TYPE 3



Characteristics:
Obstructed Sight Lines
Minimum Noise
Varied Terrain
Low Density Development
Typ Eco-zone: Mountainous

The scientific literature shows a remarkable range of recommended movement corridor widths, ranging from a few to thousands of feet and empirical studies are typically unique to a very specific area. Widths can vary depending on a number of factors, such as the species and their range of movement, openness, vegetative cover, the nature of human disturbance, and other barriers previously highlighted. The following graphic provides a general range that should be considered for key species in Buckeye.





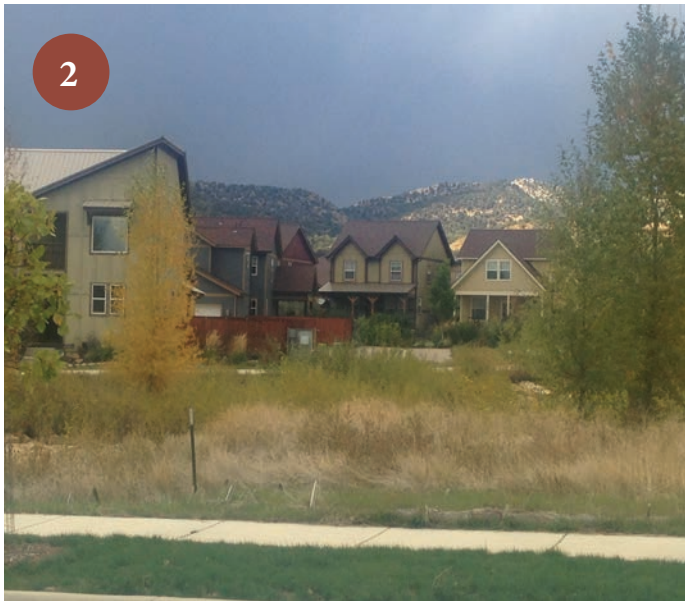
*Rough, rocky habitat

2. CONSERVATION-ORIENTED DEVELOPMENT WITH DENSITY BONUSES

Conservation-oriented development is a process by which the design of the development is driven through ecological-based planning to conserve the land with the highest resource values. Goals include minimizing vegetation loss, reducing habitat fragmentation, and increasing connectivity. This type of development entails planning with adjacent land uses in mind to maintain connectivity of open space and includes many other specific development practices, such as density bonuses, transferable development rights, and cluster development. Conservation-oriented development enables developers to capitalize on premiums that home buyers are willing to pay for access to natural amenities. Protected land is often managed by a homeowners' association. These protected open space lands have lower maintenance costs than manicured park space. Conservation-oriented development results in a compact village-type layout, reduces the number and length of roads and driveways, works with the natural flow of streams/washes, and locates site development, staging, and storage in previously disturbed areas.

Density bonuses could be used as an incentive to conservation-oriented development. The City Code of Ordinances, Chapter 7 Development Code outlines the maximum residential density (dwelling units/gross acre) allowed per zoning district. As an incentive to integrating land with wildlife benefits, density bonuses provide developers the ability to meet financial metrics. Density bonuses provide a direct incentive to a developer without requiring complex negotiations often associated with Transfer of Development Rights (TDRs). Density bonuses can also be associated with bonuses tied to affordable housing, accessory dwelling units, height, units on a parcel, or simply density.

Methods:



1. *Incentives, modification to development standards, or changes in the development code would allow property owners to conserve desired areas while encouraging higher densities in less sensitive locations.* ***2.*** *A compact village-type layout results in more shared open spaces.*

For more information: Protecting Land Through Conservation Development (Source: Trust for Public Lands)

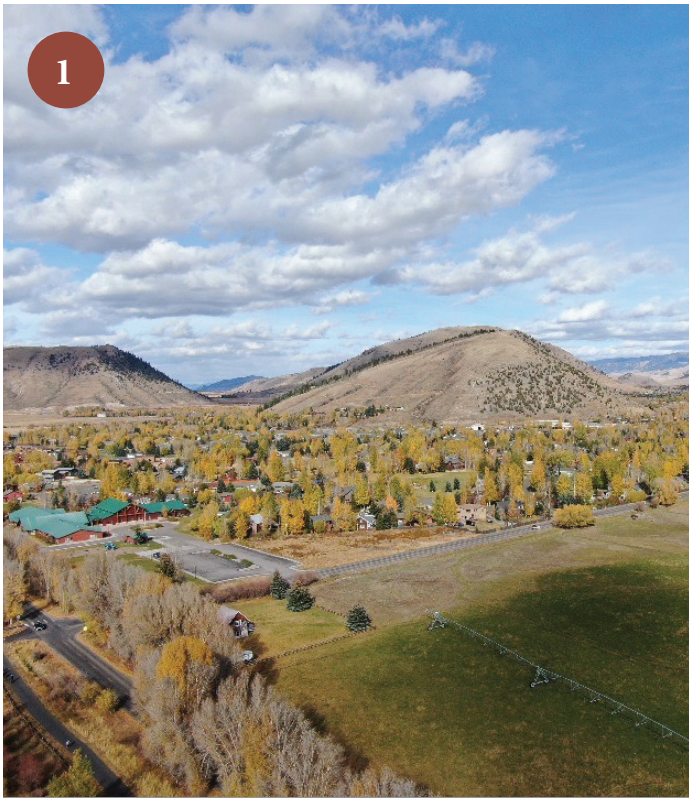
Village Conservation Communities (Source: SaportaReport)

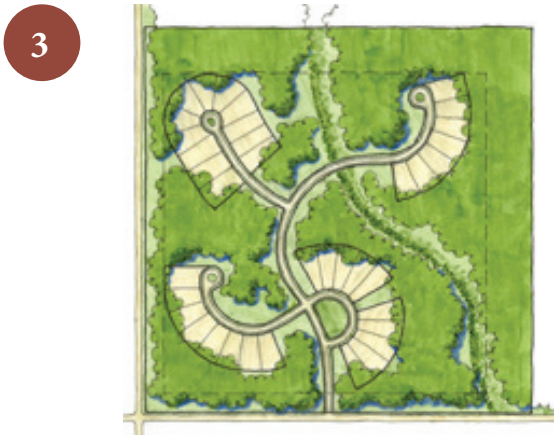
3. CLUSTER DEVELOPMENT WITH CONSERVATION EASEMENTS

Cluster development is an arrangement of residential structures that allows for grouping the structures by reducing lot area and yard requirements and incorporating the remaining areas as open space. Cluster development encourages protection of sensitive lands and allows for flexibility where development may not be desired, such as significant washes, movement corridors, hillsides, or sensitive vegetation. Implementing cluster development limits disturbance to wildlife by minimizing vegetation loss and habitat fragmentation, as well as reducing choke points. Cluster development can be combined with density bonuses previously described.

Conservation easements on undeveloped land are voluntary agreements between the landowner and a land trust or unit of government to maintain conservation values, while providing tax advantages to the landowner.

Methods:





1. *Development clustered and screened from road with large open space adjacent to the development.* ***2.*** *Fossil Creek Reservoir Plan in Fort Collins, CO allowed public entities and private developers to design projects that enhanced the character, preserved critical environmental resources, and minimized hazards.* ***3.*** *Example graphic of a conservation subdivision.*

For more information: Cluster Subdivisions (Source: Planning.org)

Cluster Developments (Source: Chesco Planning)

Cluster Subdivisions (Source: Verde River)

Model Zoning Ordinance for Rural Cluster Development (Source: Verde River)

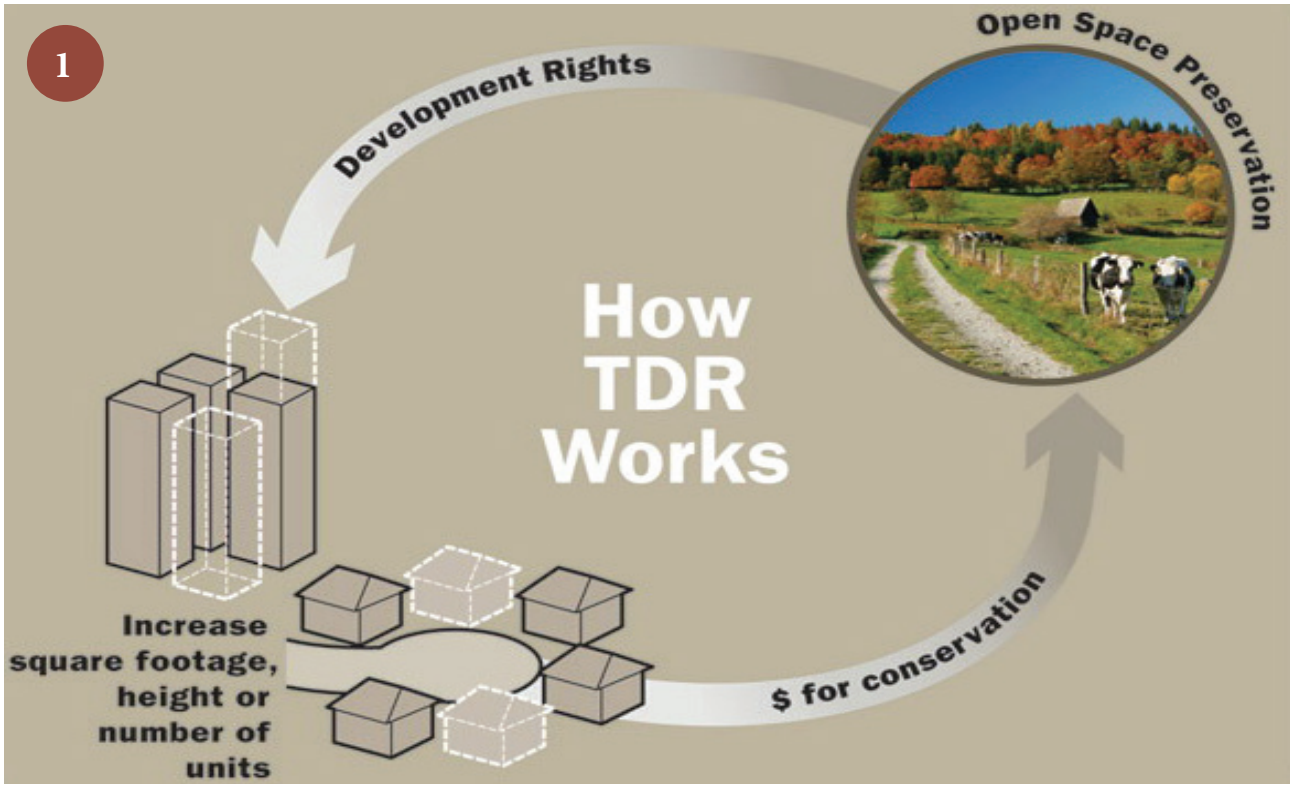
4. TRANSFER OF DEVELOPMENT RIGHTS

Transfer of development rights (TDR) programs allow landowners to transfer the right to develop one parcel of land to a different parcel of land, either contiguous or non-contiguous. TDRs are often accomplished through zoning and are meant to shift development from environmentally sensitive areas such as important wildlife habitat, to areas more suitable for development. TDRs can help reduce vegetation loss and habitat fragmentation and protect/enhance chokepoints.

In TDR programs, development rights are separated from the land, and those separated development rights become a tradable commodity that can be bought and sold. When a landowner chooses to separate some or all of their development rights, the property is preserved through a conservation easement, similar to cluster developments.

TDR programs have been used at varying levels and success rates. Successful TDR programs are those with strong community support; they protect areas with high conservation values and participants receive density bonuses. Low administrative/permitting costs incentivize landowners to utilize the program. High administrative costs and timelines can lead to the underutilization of this tool.

Methods:



1. *While voluntary, a municipal entity typically enacts an ordinance to enable property owners to change densities and manages the program's sending and receiving areas.*

For more information: Transfer of Development Rights (Source: KIng County, WA)

Transfer of Development Rights (Source: Conservation Tools)

5. RIPARIAN/FLOODPLAIN BUFFERS

Riparian areas, including the upland channel, as well as desert washes that receive intermittent runoff, are highly valuable as corridors for wildlife movement. In addition, these areas provide valuable habitat for wildlife, serving as food sources and vegetative structure for nesting and camouflage. Due to their high ecological value, these natural areas should be preserved to the greatest extent possible. Invasive species such as Tamarisk compete with native species for water and physical space, therefore they should be removed and maintained to improve the habitat value. Additionally, access to these areas by off-road-vehicles should be prohibited, for the purposes of reducing negative impacts to wildlife, floodplain protection, soil erosion, and to protect the native vegetation.

General setback/buffer distances (Pinal County Riparian Area Guidelines):

- Hydro-riparian and meso-riparian areas = Minimum of 250 feet
- Xero-riparian areas = Minimum of 150 feet
- Fencing, lighting, and nonnative vegetation should be minimized within 500 feet of the edge of a riparian area as they can influence animal movements and alter behavior.

Methods:

1. *Bank stabilization and buffering in Clark County, NV.* ***2.*** *Limited vegetation removal in Pima County, AZ.* ***3.*** *Native growth near an intermittent stream.*

For more information: Pinal County Riparian Area Guidelines (Source: Pinal County)

Conservation Thresholds for Land Use Planners (Source: Environmental Law Institute)

6. POROSITY, PERMEABILITY, AND OPEN EDGE TREATMENTS

A complementary approach to providing a large corridor between core habitat areas is the idea of landscape porosity or permeability. Landscape permeability increases intra-territorial movements for species with small home ranges or for daily and seasonal travel. Porosity decreases resistance to animal movement and increases the relative potential for animal passage across entire landscapes. Intra-territorial movements allow individual animals to move between food and water sources, shelter, and reproduction areas. Fencing can be a significant barrier and should be reduced between lots, keeping fencing closer to the structures (see tool for Fencing/Walls). The type and design of the fencing will be vital to the functionality with regards to permeability of wildlife.

Additionally, habitat edges are critical as they are most impacted but adjacent land uses. Negative edge effects includes increased chance of establishment by invasive species, changes in vegetation structure, and altered microclimate. Increasing development setbacks from property lines and reducing the allowed development area on lots can increase porosity and wildlife permeability and decrease impacts on habitat edges.

Treatments adjacent to wildlife corridors/habitat could include:

- open space/parks placed along corridors
- transportation system designed with single loaded streets, t-intersections, cul-de-sacs
- densities focused toward the center of development; lower densities with more permeability along edges
- limiting fencing to small patios and smaller building envelopes

Methods:

1. *Improving connectivity will help maintain the region's biodiversity by allowing species to move as needed to fulfill their life history requirements.* ***2.*** *Lower densities towards the edge of a development open up to larger wildlife corridors and sensitive lands.*

For more information: Wildlife corridors and permeability: A literature review (Source: OregonMetro)

7. ROADWAY CROSSINGS - OVERPASS/UNDERPASS/CULVERTS

Roadway crossings that provide for wildlife movement can be designed either in conjunction with, or separate from, other drainage crossings. Key habitat linkages should be identified to ensure the corridors and roadway crossing structures are located to support wildlife movement at an ecosystem level. Crossing structures should be used where roadways or other impediments intersect with wildlife movement corridors, and can be tailored to the requirements of certain species.

Roadway crossings should be designed in accordance with AZGFD guidelines https://www.azgfd.com/wildlife/planning/wildlifeguidelines/. These guidelines provide suggestions on heights and "openness" (Crossing Height x Crossing Width)/Crossing Length [in meters]) and includes considerations for supplemental lighting and fencing that may be needed to guide animals to a crossing structure. Desert washes are natural movement corridors for wildlife, so it may be possible or even desired to co-locate drainage and wildlife crossing structures in many areas. Culverts of various designs and materials (concrete box culverts, corrugated metal pipes) are most frequently used to facilitate wildlife movements. Dedicated overpass structures may also be used to assist wildlife passage over large roadways. Overpasses are more costly but may be effective in situations where topography doesn't lend itself to the construction of underpasses.

Properly designed roadway crossings can facilitate wildlife movement between habitat areas and reduce vehicle-wildlife collisions, benefiting both wildlife and humans. Most species prefer crossing structures that are three-sided (e.g., bridges), arched, or buried so that there is a natural substrate at the bottom of the structure. Incorporating vegetation into the wildlife crossing design and limiting vegetation removal around crossings during construction can increase their use by wildlife. Steep slopes that lead into or out of a crossing should be avoided; it is best to allow for a clear view through a crossing to the other side.

The AGFD (2012) provided the following recommendations based on a study of wildlife crossing structures in Pima County:

- Lizards comprise the majority of road-killed animals on roadways in the Sonoran Desert. The greatest level of permeability for lizards will be achieved using concrete box culverts compared to 24- or 36-inch corrugated metal pipe (pipe)culverts.
- Effective underpass structures for facilitating safe movement of amphibians beneath roadways include 36-inch pipe and concrete box culverts; however, 24-inch pipe culverts may also be suitable for amphibian use.
- Concrete box culverts are the most effective crossing structure for maintaining and/or enhancing connectivity for snakes. Culverts with higher openness ratios and a greater amount of natural substrate increase snake passage rates.
- Concrete box culverts are the most effective structures for small mammals, though 36-inch pipe culverts also provide high passage rates for small mammals.
- Concrete box culverts provide the highest roadway permeability for meso-carnivores such as bobcats, foxes, coyotes, and skunks.
- Javelina passage rates are generally high for 36-inch pipe and concrete box culverts but no use of 24-inch pipe culverts was documented during their study.
- Wildlife barrier fencing or rip-rap parallel with the roadway can steer wildlife towards desired crossing structures. It is not always needed and should only be implemented where critical linkages have been identified, or where rates of road mortality are high. Appropriate pre-fence planning should include road mortality hotspot analyses to determine the level of road mortality occurring and determine whether fencing is an appropriate mitigation strategy.

The AZGFD has also studied large mammal use of crossing structures in Arizona, including various underpasses and overpasses. These structures are significant investments that must be preceded and informed by movement studies of target populations. These structures must also be designed

in concert with wildlife barrier fencing that enhance the use of the crossing structures. These studies have shown that permeability can be improved, and wildlife-vehicle collisions can be significantly reduced in problem areas using a holistic approach that includes advance planning with stakeholders and pre-/post-project movement studies. The construction of a wildlife overpass by ADOT and the Pima County Regional Transportation Authority, an independent taxing district within Pima County, provides a recent example of how funding can be pooled for larger projects that benefit a wide range of species.

Recommendations for Height and Openness:

- Mule Deer, Bighorn Sheep (Large/ Specialized): 6' with minimum of o.75, preferable 0.9 openness ratio
- Mountain lion, Javelina, Badger, Kit Fox (Medium/ More Adept): 3'with relatively smaller openness ratio
- Reptiles, Amphibians (Small): 2', with 150 to 300' frequency

Methods:

1. *This recently constructed wildlife overpass in Pima County has already received frequent use by deer, javelina, and tortoises.* ***2.*** *Bridges over natural washes, especially those with large openings, can preserve wildlife corridors.* ***3.*** *An oversized culvert provides, which is stained to match the natural landscape, includes directional fencing to guide wildlife to crossings.* ***4.*** *Arch-type bridges provide underpasses for wildlife, located near a water source.* ***5.*** *Constructed drainages in developed areas can also serve as wildlife corridors.* ***6.*** *A concrete path is provided for small amphibians to navigate the rip-rap outflow of a culvert.*

For more information:

Bridge Guidelines (Source: AZGFD); Wildlife and Roads (Source: Center for Environmental Excellence); Culvert Guidelines (Source: AZGFD); Wildlife Linkage Research in Pima County: Crossing Structures and Fencing to Reduce Wildlife Mortality. (Source: Arizona Game and Fish Department 2012); Wittmann Area Drainage Master Plan, report in 23 volumes, prepared for Flood Control District of Maricopa County under contract No. FCD 2004C060, Executive Summary is Volume ES, FCD Library Call No. A344.204S. See particularly, Section 1.4.3.

NEIGHBORHOOD DEVELOPMENT TOOLS

The second level of tools are applicable at the neighborhood development scale. These tools take into consideration neighborhood amenities and design features that would be implemented through development review.

Tools in this section include:

8. Scale of Design
9. Trail Buffer/Recreational Amenities
10. Native Plant Preservation*
11. At-Grade Crossings
12. Signage
13. Wildlife Water Catchments/ Developments

*Not shown in the graphic above

8.SCALE OF DESIGN

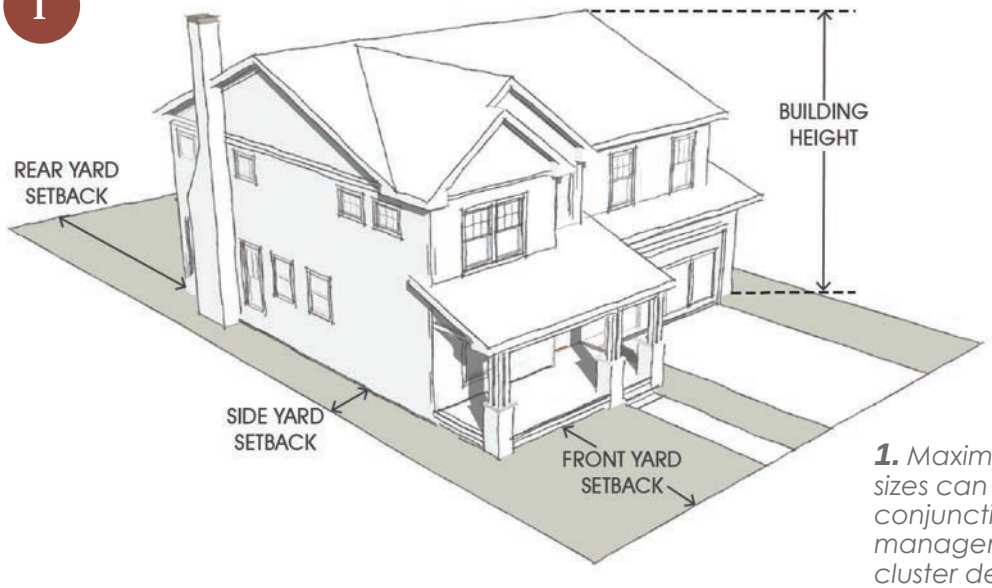
Another conservation-oriented development tool is to limit the scale of design. Generally, the scale of an individual structure is regulated through maximum floor area ratio (FAR) allowances, which is the percentage or area of a lot that may be covered by a structure. Other regulations may apply to building setbacks, and maximum height and number of stories. Some communities implement maximum square footage allowances for individual structures as well.

The scale can differ between zones, or can be the same across all zones. Limiting the maximum size, or scale, of a single structure can provide wildlife benefits by limiting the size of buildings on properties in sensitive areas, as large buildings may deter use of corridors or areas by some wildlife species. Smaller building have less of an impact on the environment, use less energy and water, and reduce trip generation. In many cases, it provides the opportunity to develop accessory dwelling units and guest houses which can be a bonus to developers and create the need porosity in an area.

Limiting the maximum size of a single structure can lead to multiple smaller structures, rather than a larger single structure if the size limit is too restrictive. It is important to consider the average size of a use when considering maximum size limitations.

Methods:

1



1. *Maximum house and structure sizes can be used alone, or in conjunction with other best management practice tools like cluster development.*

For more information:

Establish Maximum Size of Single Family Residences (Source: Sustainable Code)

Maximum Scale of Development (Source: Teton County Land Development Regulations)

Maximum Building SIze (Source: Teton County, WY)

9. TRAIL BUFFER/RECREATIONAL AMENITIES

Trail improvement projects can enhance connectivity through wildlife crossing areas by reducing impacts of edge disturbances and enhancing existing crossing opportunities. Implementing trail and recreation buffers around targeted and sensitive habitats can also improve connectivity and encourage wildlife crossing at safe places. Recreational trails along the urban-wildland interface, or a development boundary, can provide public access to greenways while minimizing the adverse effects on sensitive biological resources. Trail corridors often naturally integrate with floodway corridors; however, increasing the distance between the trail and floodplain protects the trail from future maintenance and reconstruction due to a flood event, and allows for additional buffer space for wildlife movement corridors. Trail easements can be given along corridors to provide additional buffer. Trail crossings of arterial roads should not overlap with wildlife crossings; separate crossings should be provided to minimize disturbance to wildlife and prevent human-wildlife conflicts.

The recommendation for width of trail buffers varies depending on setting and species. Generally, trails should be buffered from active floodways, water sources, or sensitive habitat by 100 - 300 feet. The USDA sites a Flight Initiation Distance (FID) for mule deer as 490 - 820 feet.

In addition to trail buffers, thought should be given to the placement of other recreational amenities within a development. For example, creating a community pool facility in the interior of a development or limiting residential pool development to interior lots helps to minimize wildlife conflicts with pools.

Methods:

1. *Vegetation used as a physical and visual buffer along a trail (Scottdale's Indian Bend Wash Greenbelt).* ***2.*** *Trails should be buffered with shrubs or topography to minimize wildlife disturbances; should be located on the edge or the corridor; and utilize lighting only adjacent to neighborhoods (see Dark Sky Lighting for more info).* ***3.*** *Parks and other public amenities can also act as buffers between residential lands and wildlife corridors.*

For more information: Wildlife Friendly Development (Source: AZFGD); Planning for Trails with Wildlife in Mind (Source: Colorado State Parks); Green Trails (Oregon Metro)

10. NATIVE PLANT PRESERVATION

On-site native plants should be preserved to the maximum extent possible. Not only is it more cost-effective to preserve vegetation than to revegetate, but also, once disturbed, the biological and visual integrity of a site becomes severely compromised and is complicated to restore. Native plant communities that are less disturbed promote functional connectivity and wildlife movement.

Native plants are well adapted to annual rainfall amounts in the region and most will survive on natural rainfall alone, once established. Invasive plants which prefer disturbed soils can increase fire frequency, reduce habitat quality, and out-compete natives for water (*see Section on Seeding/Planting Guidance for more information)*.

If disturbance of a site is unavoidable, salvaging of plants, surface rock, and the upper layer of soil can at least preserve some of the natural resources. Methods of plant salvage include boxing, mechanical spading, and bare-root transplant. Typically, a temporary salvage nursery is established on-site until the restoration area is available for replanting. A move-once process may also be used in some circumstances to minimize plant stress. Boulders and other surface rock may be salvaged, stored, and incorporated back into the restoration area relatively easily. A benefit of salvaging the upper layer of soil, stockpiling it, and then spreading it back over the site is that this process retains the natural site soil plus the seed bank, organic material, nutrients, and beneficial microorganisms, which would take time to reestablish with imported soil.

Methods:

1. *Planning for the preservation of large, established vegetation provides a native look.* ***2.*** *Plants can be salvaged on site until the area is available for replanting.* ***3.*** *Establishing an on-site nursery is one way to preserve native plants.* ***4.*** *Noxious, invasive species, such as stinknet, should be removed.*

For more information: Best Management Practices: Salvaging Topsoil (Source: Desert Tortoise Council)

11. AT-GRADE CROSSINGS

At-grade crossings, also known as dip crossings, should be accompanied by signage to increase driver awareness of potential wildlife (see next page for more information on Signage) and traffic calming measures to reduce vehicle speeds. Reduction in vehicle speeds allows more time for wildlife to cross and increases vehicle stopping distance, both of which reduce the risk of wildlife-vehicle collisions. Traffic calming measures used in residential neighborhoods include speed bumps, sidewalk extensions (bump-outs), raised medians, rumble strips, and traffic circles. Arterial crossings of major washes should be minimized by placing roadways parallel to drainages. Vegetation should be managed in the areas upstream and downstream of at-grade crossings to give motorists adequate sight distance.

Methods:

1. *Smaller collector streets and internal subdivision roads might be at-grade crossings.* ***2.*** *Small culverts beneath that allow passage across the road bed itself.* ***3.*** *Paralleling arterials adjacent to wildlife corridors and large drainages, such as the New River along the Loop 101 in Peoria, reduces the number of wildlife crossing structures, allowing for lower cost at-grade treatments.*

For more information: Wildlife Passage Engineering Design Guidelines (Source: City of Edmonton)

12. WILDLIFE INFORMATIONAL SIGNAGE

Signage may be used to warn drivers of wildlife corridors and potential crossings areas, especially where at-grade crossings are used or in areas where wildlife crossings are known but other BMPs are not implemented. Encouraging drivers to reduce their speed and be aware of the potential for wildlife on roads reduces wildlife-vehicle collisions, however, primarily only for large wildlife. Signs are more portable than other BMPs and may be moved, unlike crossing structures, to respond to changes in the surroundings. Temporary signs can also be used during seasonal events. Signs may also be used for educational purposes to inform the public about wildlife corridors and crossings.

Methods:

1. *Animal activated signs use active or passive detection methods to activate warning signs when wildlife is near.* ***2.*** *Wildlife messaging to educate the public about wildlife corridors.* ***3.*** *Signage in the Verrado neighborhood warns of drivers of wildlife habitat.* ***4.*** *Static signs alert drivers to the potential presence of wildlife.*

For more information: Wildlife Passage Engineering Design Guidelines (Source: City of Edmonton)

13. WATER CATCHMENTS/STORM WATER DEVELOPMENTS

Perennial free water is a major limiting habitat component for some species of wildlife, primarily mule deer and javelina. While water availability is limited across the southwest for all wildlife, creation of permanent water sources in strategic locations can mitigate habitat loss by creating new year-long viable habitat. In addition, the creation of permanent water sources can discourage wildlife visitation to developed areas/roadways in search of water or vegetation during drought periods.

Placement of permanent waters is very important; sites should generally be developed in areas where human disturbance will be low. Some developments may be large enough to contain appropriate sites, but others will require developers to partner with neighboring landowners and governmental agencies to locate appropriate sites. Most sites selected will not have access to water utility lines, so rainwater catchment systems must be used. However, integration with a storm water management element could allow for water sources closer to development by placing required retention basins close to wildlife corridors or habitat. All new subdivisions or other commercial development will require 100-year 2-hour retention volume to be provided for post-development land use conditions per local drainage regulations. Retention basins should not have 4-sided walls or fences to allow for wildlife water sources. Typically retention basins are less than 3 feet in depth and have a maximum 3:1 side slope which would be easy access for wildlife.

Areas around water developments could be landscaped with riparian broad leaf trees on a limited basis to attract non-problem categories of wildlife, such as birds (see Seeding/Planting Guidance for more information). State of the art techniques are:

- Minimum of 20,000 gallons of storage
- Buried system using 24" SDR 51 PVC as the storage component
- Use of a small desert wash as the rainwater collection component
- Use of a buried "walk-in" trough
- This system uses no moving parts and has a very high storage volume to surface area ratio for high efficiency.

Methods:

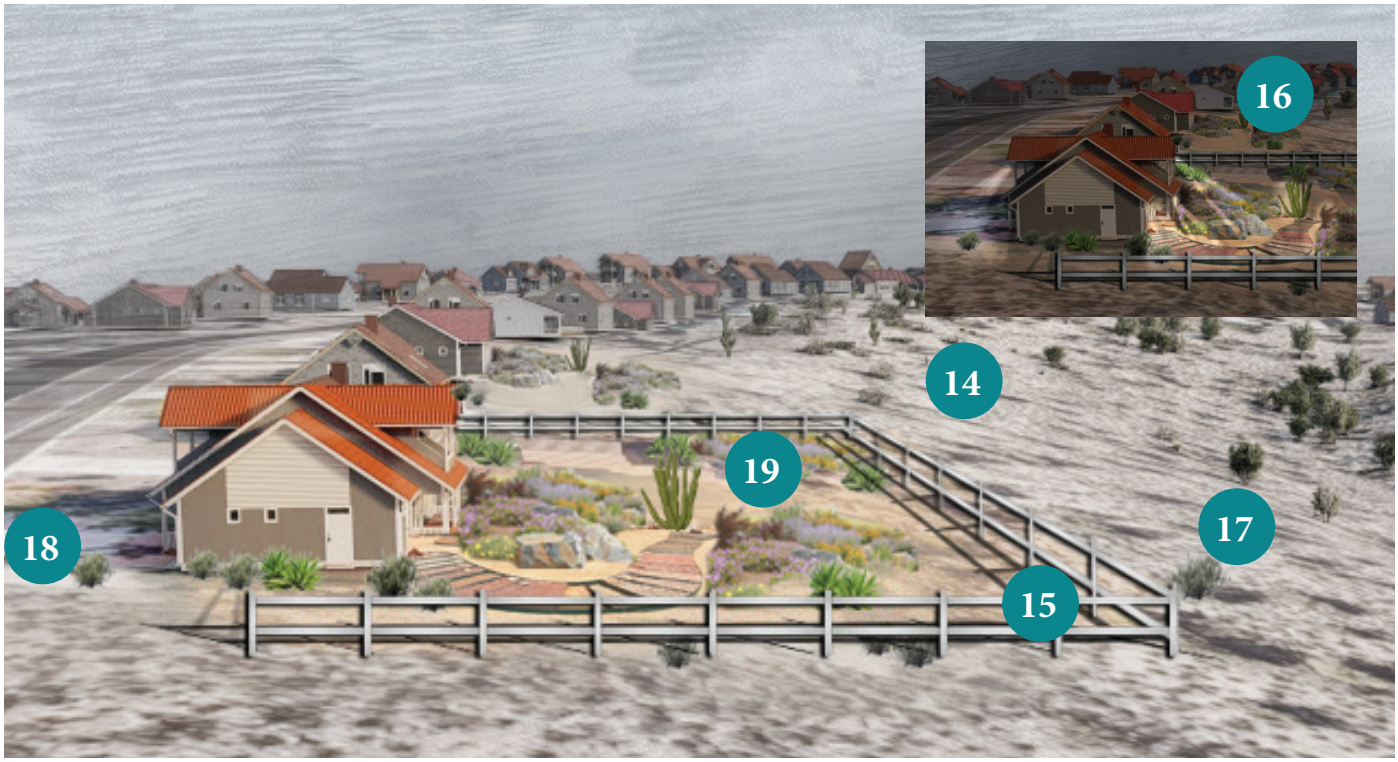
1. *In the desert locations, underground tanks keep troughs filled with water for wildlife to drink (Source: AGFD).* ***2.*** *Construction of a water development on top of the White Tanks to mitigate impacts from Verrado.*

For more information: Water Catchments (Source: AGFD)

DESIGN TOOLS

The following design and construction BMPs are site-specific approaches that can be incorporated into the infrastructure of future and existing development. Each tool may have multiple ways to be implemented or have varying degrees of applicability depending on the location and scale of the project.

The AZGFD has published several informational brochures that identify additional ways to reduce conflicts with wildlife at: https://www.azgfd.com/wildlife/livingwith/



Tools in this section include:

14. Grading Limitations/Natural Landscape
15. Fencing/Walls
16. Dark Sky Lighting
17. Noise Barriers
18. Landscape Maintenance/Limited Turf
19. Seeding/Planting Guidance for Landscaping

*Not shown in the graphic above

14. GRADING LIMITATIONS/NATURAL LANDSCAPE

To minimize impacts to native vegetation ecosystems, only areas planned for development should be cleared and graded. This approach allows natural drainage courses to be maintained and reduces the need to manage stormwater flows. Excavation and grading should be accomplished using low-impact earth-moving equipment to prevent compaction of the underlying soils. Wide-tracked vehicles such as backhoes, small bulldozers, and skid-steers are recommended. Excavating equipment should operate from outside of the drainage course or basin to the extent feasible. In addition, excavation methods should consider the installation of underdrains, if included in the contract documents.

Channels and other drainage features could also have suggested limits on side slopes and/or at least recommendations to provide 'down and through' and/or 'up and over' paths/ramps at some regular intervals to allow animals to traverse or enter these flood control elements. Again, limiting fencing or providing breaks along these long linear drainage features could also be recommended. Avoidance of vertical drop structures and concrete lined channels and limits on the use of large angular rip-rap for erosion control is also suggested with a preference for a non-structural features that also provide riparian habitat. However, these types of features could also be mitigated with soil cover or ramps to allow for movement of wildlife through the drainages.

Methods:

1. *Natural landscapes provide habitat for wildlife even within developments.* ***2.*** *Limiting grading and construction impacts to just the developed area reduces impacts on movement corridors,as well as drainages and conveyance systems.*

For more information: Greater Phoenix Metro Infrastructure Low-Impact Development Details For Alternative Stormwater Management (Source: City of Scottsdale)

15. FENCING/WALLS

Walls and fences can be barriers to wildlife movement, and can unnecessarily impede the movement of wildlife between habitat areas when that is not the intended purpose. Movement between habitat areas is necessary for wildlife to access food, water, shelter, and potential mates. Permeable fencing is fencing that allows for the safe passage of animals and is appropriate to use when the desire is to facilitate wildlife movement through existing or constructed wildlife corridors. Impermeable fencing restricts wildlife movement, but it is useful for preventing access to areas where the presence of wildlife is not desired.

In some situations, the purpose of constructing fencing or walls may be to exclude wildlife. If not, natural barriers or designs using natural materials (e.g., boulders, densely-planted vegetation, rip-rap), may be more effective than a fence at preventing access or providing privacy.

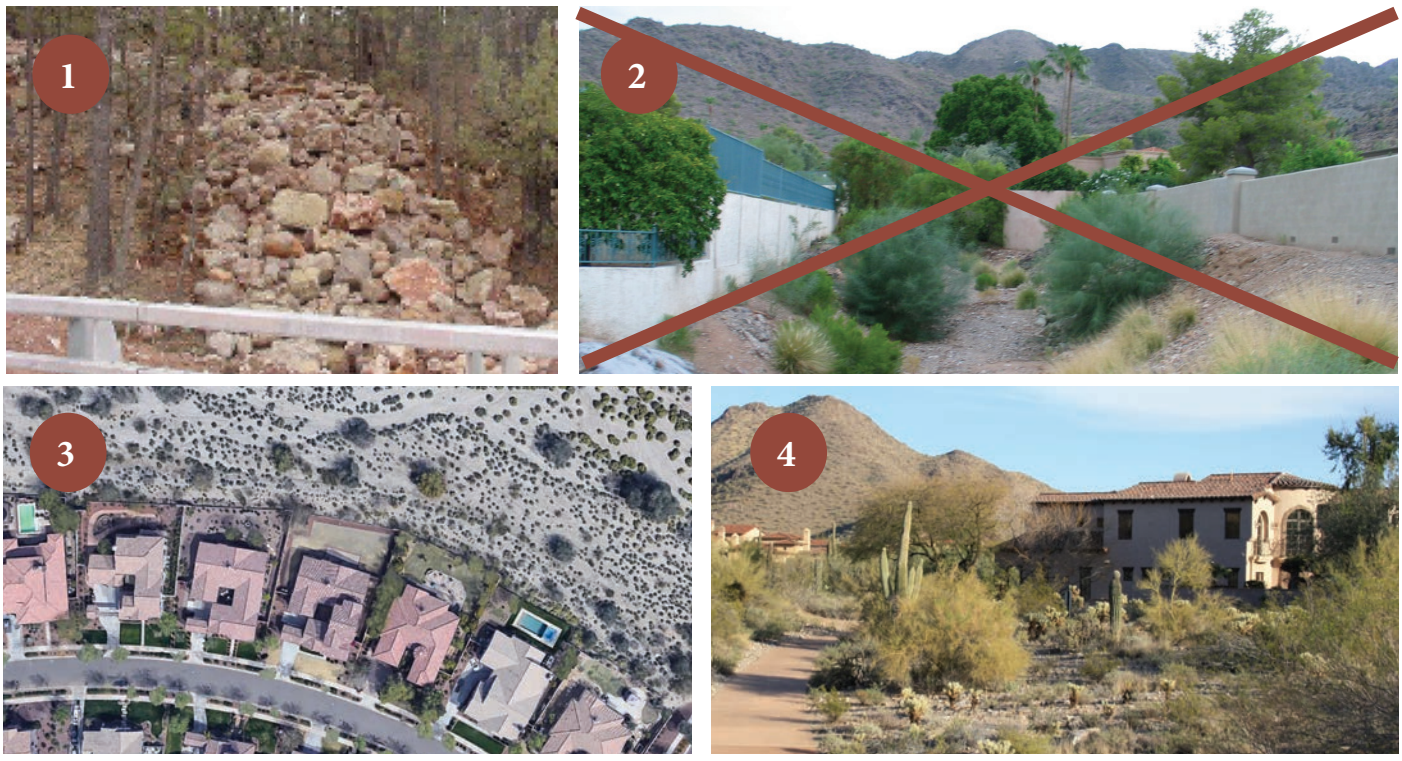
Fences or walls minimum:

8 feet tall to exclude deer

4 feet tall and buried at least 8 inches into the ground to be a long-term, effective barrier for animals such as javelina

These options can result in a more "natural" appearance and may also reduce maintenance requirements. Fencing, walls, and other barriers can be used to restrict access to road rights-of-way, as well as to funnel wildlife to habitat areas or crossing structures such as bridges and culverts. Decorative fencing should not contain features that can be hazardous to wildlife. These features include pointed or narrow extensions at the top of fences (which can injure animals that attempt to jump over), wires that may entangle animals, and hollow fence posts that are open at the top where birds or other small animals may become entrapped in an open cavity.

Methods:



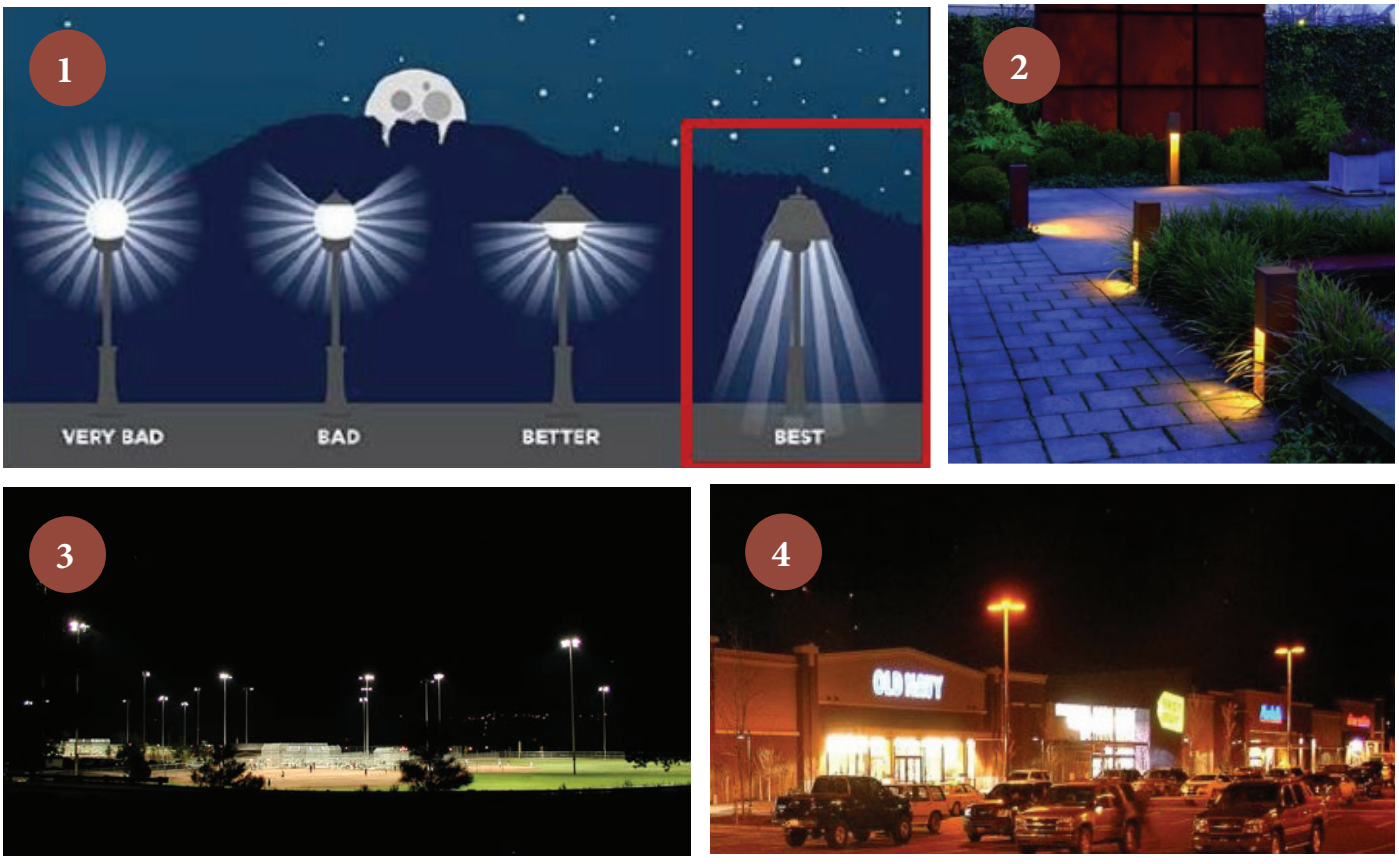
1. *Rock "fence" used by ADOT to direct deer movements.* ***2.*** *Fencing should allow for wildlife movement.* ***3.*** *Fencing/walls should be close to dwelling unit to maximum wildlife corridors.* ***4.*** *No fencing, especially on larger properties, expand movement areas (Exceptions could be made for the purpose of restricting wildlife from entering a road right-of-way or directing wildlife toward a wildlife crossing structure).*

For more information: Guidelines for Wildlife Compatible Fencing (Source: AZGFD)

16. DARK SKY LIGHTING

Lighting is an important safety feature in neighborhoods and can extend the use of amenities after dark, especially in the hot Arizona summers. However, artificial lighting can affects animals that sleep at night and can be disorienting for nocturnal animals and insects, including pollinators; disrupt reproduction cycles; benefit predators to detriment of their prey; and cause foraging avoidance. Light fixtures should be selectively placed, hooded/shielded (i.e., not emitting direct or indirect light above an imaginary horizontal plane passing through the light source), directed downward, and directed away from natural areas. In areas with evening activities that require lighting, the location and timing of activities should be considered and lights should be turned off when not needed. Light fixtures with motion or heat sensors may be used to keep lights off when lighting is not required. In addition to the location and type of fixture, it is important to consider the physical properties of the light that is produced. The International Dark-Sky Association (IDA) recommends using lighting that has a color temperature of no more than 3000 Kelvin. The IDA has developed the Fixture Seal of Approval program to provide objective, third-party certification for lighting that minimizes glare, reduces light trespass, and doesn't pollute the night sky. The City of Buckeye's standards for streetlights do meet these recommendations. View a database of fixtures here: https://www.darksky.org/our-work/lighting/lighting-for-industry/fsa/.

Methods:



1. *Shield and direct light downward and away from natural areas.* ***2.*** *Limit brightness and utilize warmer color (Less than 3000 kelvin) (Flagstaff Dark Skies).* ***3.****Thorpe Park dark sky complaint lighting (Flagstaff Dark Skies).* ***4.*** *Safeway service station lit to about 10 footcandles (Flagstaff Dark Skies).*

For more information: Wildlife Friendly Development (Source: AGFD)

Dark Sky Lighting (Source: Flagstaff Dark Skies Coalition)

17. NOISE BARRIERS

Noise associated with human activities and development can disturb wildlife and degrade wildlife habitats. Mule deer in particular are sensitive to the sound of human voices. Land uses that are associated with high levels of human activity or noise should be located away from designated wildlife habitat areas and wildlife movement corridors with an optimum buffer distance of 1,200 feet. Noise generating facilities include residential areas, human walkways and trails, commercial facilities, noise-generating utilities (e.g., pump stations), community centers, and schools. Noise barriers can be useful tools in screening sensitive areas from noise disturbance, though physical barriers such as noise walls may fragment habitat areas. In some cases, vegetative screening may provide a suitable alternative barrier to noise that also allows for unimpeded wildlife movement. Landscape berms may also be used to reduce noise and screen development from nearby roads. Any of these methods may be used alone, or in conjunction with one or more of the other methods for enhanced effects.

Planning for reduced traffic speeds and lower traffic volumes in the vicinity of wildlife habitats and movement corridors can result in reduced noise from vehicles. If possible, movement corridor structures should be constructed well in advance of development in order to allow wildlife populations to acclimate to using them in the absence of the eventual human-related disturbances.

Methods:

1. *Textured noise walls are commonly used to buffer residential areas from nearby highway traffic noise.* ***2.*** *Berms are commonly used to minimize noise and screen development from nearby roads.* ***3.*** *Visual screening such as trees/shrubs can be used to reduce noise and create an attractive feature.* ***4.*** *Walls can be designed to fit into the natural character.*

For more information: Noise Barrier Design Handbook (Source: Federal Highway Administration)

18. LANDSCAPE MAINTENANCE/LIMITED TURF

Landscapes comprised of native species are inherently low-maintenance because the plants are well-adapted to local conditions and do not require heavy inputs of water, fertilizer, or pesticides. Newly-planted trees and shrubs, even cacti, will need irrigation to become established, but as soon as possible the quantity of irrigation should be reduced to the minimal amount necessary to keep the plants viable. Depending on rainfall, irrigation may only be necessary during the summer months, if at all. Much more common than under-watering is over-watering, which can result in unnaturally-dense growth or excessive size. In general, a well-planned landscape of native species, where adequate space is allowed for the plants to mature naturally, should not require pruning. Habitat value is increased when the landscape is not overly manicured by pruning off flowers and fruits, or unnecessarily removing the lower branches of trees and shrubs. Fallen leaves and other plant parts contribute to a beneficial layer of mulch on the ground, and should be allowed to remain rather than blown off or raked.

Weeds should be controlled so that they do not compete with the landscape plants for moisture, nutrients, or physical space. Hand-pulling of weeds before they flower and set seed is a good method of control. Pre-emergent herbicides are commonly used in landscapes to control weeds, but their mode of action (preventing emergence of seedlings) does not differentiate between desirable native plant volunteers and unwanted weeds, so careful consideration should be given to their use. If a landscape restoration project includes application of native seed, then pre-emergent herbicides should not be used.

Long-term management of a native landscape, whether it be a restoration or a more traditional, planned landscape, will involve monitoring for erosion. Following rain events, the landscape should be inspected for signs of soil erosion, and if observed, it should be immediately repaired, and if necessary, the groundcover layer of rock or organic litter should be replenished. Volunteer native plants may be beneficial to the landscape, but if they crowd other plants or interfere with pedestrian or vehicle circulation, or negatively impact infrastructure such as utilities, then they should be removed. Some plant mortality is to be expected. Depending on the desired character of the landscape, dead plants, particularly tree snags, may be left in place as part of the habitat.

Methods:

1. *Reduction in turf replaced by native vegetation can help local ecosystems thrive - from pollinators to birds to large species moving through the area.* ***2.*** *Deep-rooted native plants are preferred to promote water infiltration and reduce erosion and maintenance requirements.*

For more information: Low Impact Development Toolkit (Source: Mesa, AZ)

19. SEEDING/PLANTING GUIDANCE FOR LANDSCAPING

Planting and seeding of trees, shrubs, and understory to re-establish a natural riparian plant community is an important complement to habitat preservation. Planned native landscapes can provide important benefits to wildlife. Of the three elements necessary for sustaining wildlife - food, water, and shelter – two of those are supplied by plants. And for some desert animals with the ability to obtain moisture from plants, such as desert tortoise, that third element is also provided.

Native plants can be used to augment or restore wildlife habitat that has been impacted by development. It is helpful to have a "model" of undisturbed habitat as a reference, to guide plant species selection and placement.

Landscapes associated with residential and commercial areas also can be of value to wildlife, particularly if they are near established wildlife corridors, but even more isolated patches of habitat can provide life-sustaining food and shelter to birds and other pollinators. Therefore, native plant species should be used for landscaping. If exotic plants are used, which is sometimes desirable for greater plant diversity in residential landscapes, then species that are poisonous to wildlife should be avoided, such asoleander in favor of non-palatable taxa (e.g. genus salvia).

A native plant palette is best; wildlife has evolved with the local flora, and from a horticultural standpoint, the native plants are well-adapted to the local soil conditions, temperature extremes, low rainfall, low humidity, and other environmental factors. Once established, native plants can survive on rainfall alone, if planted at densities similar to those found in the natural desert. Non-native plants with the potential to become invasive, such as African Sumac (*Rhus lancea*) should be avoided.

As important as appropriate plant selection is, so is the establishment of site topography and surface character. Natural areas that have been disturbed should be restored to their original topography as much as possible. Newly-created landscapes will also be more natural-appearing if gently-sloping mounds and shallow basins are integrated into the topography. The basins will capture and retain rainwater, benefiting nearby plants. Rock of various sizes is a typical groundcover of natural areas. If site disturbance has eliminated the natural cover,

Methods: A plant palette with additional recommendations is provided in Appendix A.

1. *Desert Agave.* ***2.*** *Ocotillo.* ***3.*** *Purple Threeawn.* ***4.*** *Galleta Grass.* ***5.*** *Desert Marigold.* ***6.*** *Globemallow.*

material from a rock source, compatible in color and texture, can be applied. The benefits of the rock cover include erosion control and moisture retention. Boulders may also be incorporated into either a restored habitat or a more traditional landscape, providing visual interest as well as habitat for lizards and other animals.

Landscapes may be established by several methods: seeding, planting of nursery-grown or desert-salvaged plants, or a combination of seeding and container plantings.

The process for seeding begins with soil preparation. A good seedbed features soil loosened to a depth of six or eight inches, with a rough surface texture. Plant debris and rock can remain. Soil amendments such as compost and fertilizer may be added, but are generally not essential. The seed mix should contain annuals, herbaceous perennials, shrubs, and trees representative of the local flora. When possible, seed should be collected nearby. If purchased, the seed source should be within a 50-mile radius of the site. The most common technique for seeding is hydroseeding, where the seed is mixed in a slurry with water and mulch, and then sprayed over the soil. Other application methods are drill seeding and hand broadcasting. The best time to seed is prior to the fall/winter rains. Seed applied at other times throughout the year will remain dormant until optimal moisture conditions are present. Irrigation of seeding is not recommended; the healthiest stand of plants will result from natural rainfall.

Planting of nursery stock or desert-salvaged material is ideally done in early fall, when air temperatures have moderated but the soil is still warm. Spring is also a favorable time to plant. Local nurseries are good sources of material; if the project requires large quantities, contracting with a nursery to grow the plants may be necessary. Irrigation will be necessary for plant establishment. The most common method is drip irrigation, either temporary above-ground, or permanent below-ground. After one or two growing seasons, the plants should be established enough that irrigation can be decreased and possibly even discontinued, particularly if water-harvesting basins have been integrated into the landscape to provide supplemental moisture from rainfall. New plantings should be monitored for browsing by wildlife, and if the impact is severe, protection such as wire cages around the plants may be required. The cages should be removed after the plants grow large enough to tolerate some herbivore damage.

7. *The most common technique for seeding is hydroseeding, where the seed is mixed in a slurry with water and mulch.*

For more information:

Arizona Native Plant Society

National Audubon Society

Arizona Municipal Water Users Association

Desert Botanical Garden

Mountain States Wholesale Nursery

OTHER TOOLS, NEXT STEPS & PARTNERSHIPS

The City, County, federal, state, and local agencies, nonprofits, and other groups are instrumental in conserving wildlife corridors and wildlife-friendly communities – extending what one governmental entity can do alone. Looking back at how great existing multi-purpose and wildlife corridors were created; they were a combination of public and private partnerships. Private entities are the implementing bodies of most projects. At the same time, nonprofits provide the means to make projects move forward, and the government provides the structure.

Can this be done? It is often just the act of recognizing the community, agencies, and the development community's will. Other significant wildlife corridors and large conservation efforts undertook the same process as this Guide. The following tools highlight some key roles that could be completed by local, state, and federal partners.

NONPROFITS/NON-GOVERNMENTAL AGENCY PARTNERS AND PROGRAM ALIGNMENT

Nonprofits and other non-governmental organizations are advocates and ambassadors that can work together to accomplish the implementation goals set out in this Guide. For example, partners can team up with local governments, private landowners, developers, educational institutions, and other nonprofit organizations to realize the vision. To combine funding, implementation resources, and alignment of long-range planning and programs. Future planning efforts could integrate the various tools and wildlife corridor concepts to assure regional implementation. Regional partners include:

- White Tank Mountains Conservancy
- Lower Gila River Collaborative
- Rio Reimagined
- Larger national land trusts, including the Nature Conservancy and Trust for Public Land
- Maricopa County Parks
- Local land trusts, including the Arizona Land and Water Trust
- Flood Control District of Maricopa County
- Arizona Game & Fish
- Audubon Society
- Partnering Cities and Jurisdictions

And many, many others...

DOCUMENT AND REGULATORY UPDATES

As the City does routine updates to the documents such as the General Plan, Parks and Open Space Plan, Development Code, Engineering Development standards, Transportation Plans or develops new plans (e.g., climate action plan), the Guide's various best practice tools should be incorporated.

LAND TRUSTS

One necessary step is a targeted effort aimed at land acquisition, conservation easement, and development restrictions of constrained or sensitive lands. This has been proven as one of the most effective tools in Arizona. Land trusts are a specific type of 501(c)3 nonprofit that typically holds contracts for conservation easements to preserve open space or agricultural land. They can also receive land donations or other forms of donations. Whether held in private or public ownership, their role is to continue to monitor the habitat quality and resources for which the land is conserved. Land trusts also generally serve as educators, providing the public with educational opportunities and events to learn about conserved lands and their benefits. As grants are acquired, or other funds are directed at land protection, land stewards will be necessary to maintain our new permanent open space.

For more information: https://www.landtrustalliance.org/what-you-can-do

LAND ACQUISITION

Like conservation easements that maintain the private use of the land, direct land acquisition acquires the land as a whole. Direct acquisition uses funds from grants, general funds, land dedication, park impact fees, land swaps, or other local, state, and federal sources, ensures the property for the use of wildlife, public health, safety and welfare, and public recreation. Local, state, federal, and private entities purchase land for these purposes from landowners. Lands that are constrained are often dedicated or purchased based on their useable value. Land acquisition is often funded by grants, bond measures, or state/federal programs. Land acquisition is a reliable means of conserving core habitats and corridors between habitats.

STEWARDSHIP/RESTORATION

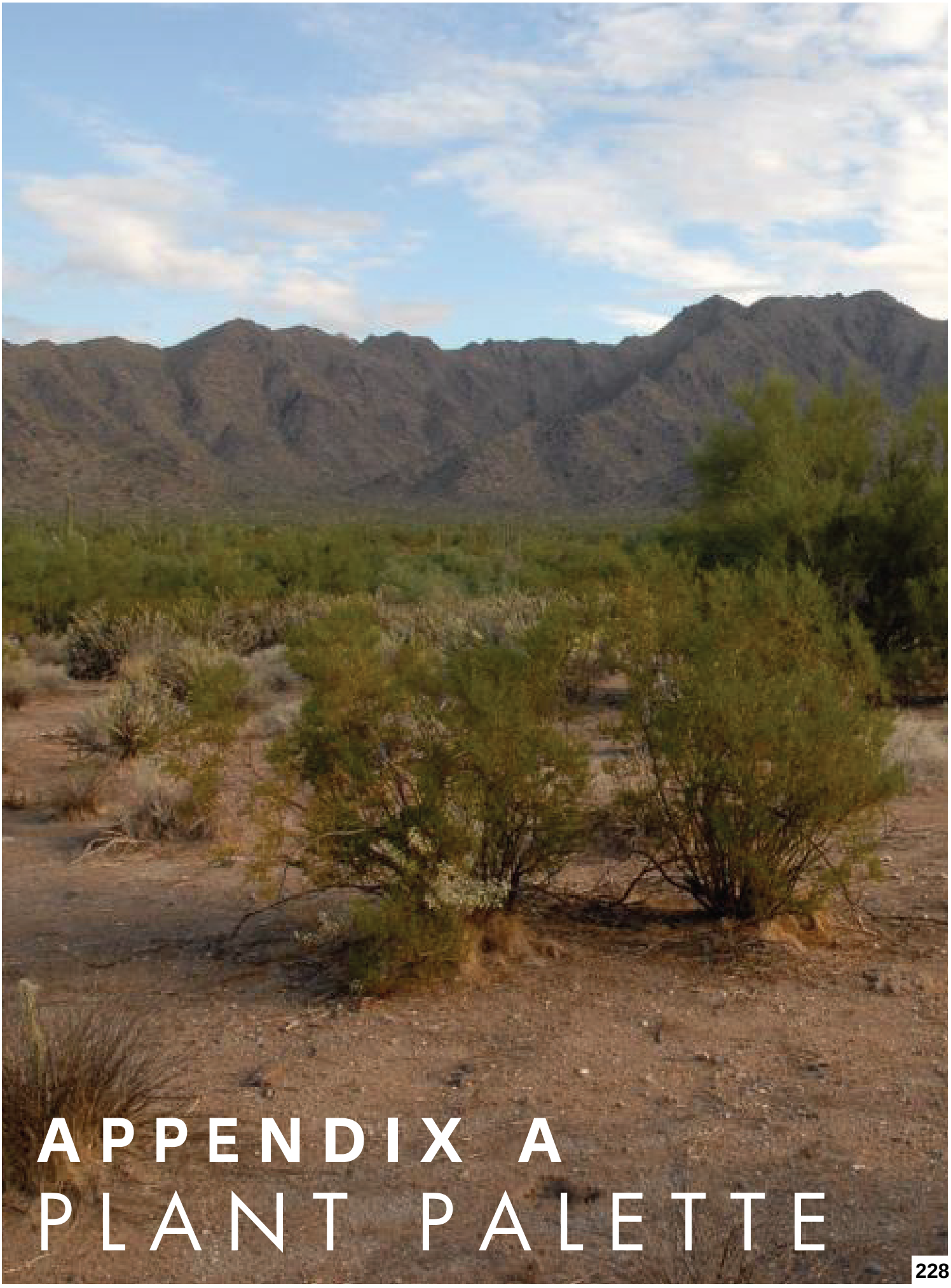
Long-term stewardship, including restoration, monitoring, and maintenance, should accompany many of the BMPs discussed. Recognition programs publicly acknowledge landowners, businesses, and other entities for conserving open space, protecting or restoring habitat areas, or carrying out wildlife-friendly BMPs. These include certification programs, such as the Audubon Society's Backyard Habitat program or the National Wildlife Federation's Certified Wildlife Habitat program.

EDUCATION/ADVOCACY

Broad outreach is needed to developers, organizations, residents, and employers on not only the benefits and goals of these best management practices so that they will be put into place but, as the tools are being implemented, education to increase awareness of wildlife interactions. The City may work with local groups, including schools, universities, and conservation groups. Information may include the purpose of wildlife BMPs (such as crossing structures and landscaping methods) and how to interact or not interact with wildlife.

For more information:

https://www.edmonton.ca/city_government/documents/WPEDG_FINAL_Aug_2010.pdf



APPENDIX A
PLANT PALETTE

CACTI & SUCCULENTS

Agave deserti (Desert Agave)

Carnegiea gigantea (Saguaro)

Cylindropuntia acanthocarpa (Buckhorn Cholla)

Cylindropuntia bigelovii (Teddybear Cholla)

Cylindropuntia echinocarpa (Silver Cholla)

Cylindropuntia leptocaulis (Desert Christmas Cholla)

Echinocereus engelmannii (Hedgehog Cactus)

Ferocactus cylindraceus (Barrel Cactus)

Fouquieria splendens (Ocotillo)

Mammilaria grahamii (Fishhook Pincushion)

Opuntia chlorotica (Pancake Prickly Pear)

Opuntia engelmannii (Engelmann's Prickly Pear)

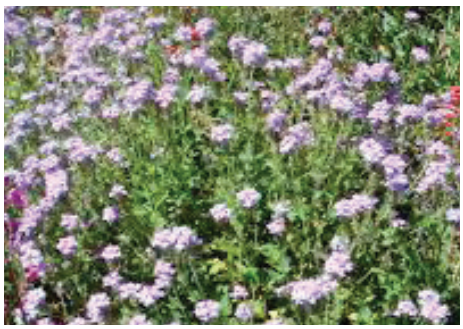
GRASSES

Aristida purpurea (Purple Threeawn)

Hilaria rigida (Galleta Grass)

HERBACEOUS PERENNIALS

Baileya multiradiata (Desert Marigold)



Glandularia gooddingii (Goodding's Verbena)

Melampodium leucanthum (Blackfoot Daisy)

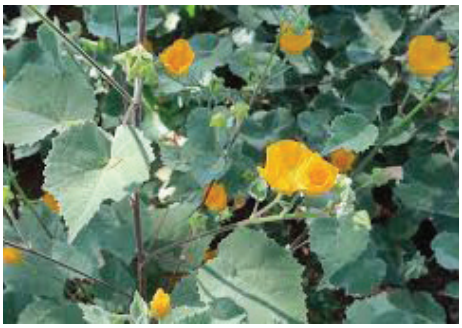
Penstemon parryi (Parry's Penstemon)

Psilostrophe cooperi (Paperflower)

Senna covesii (Desert Senna)

Sphaeralcea ambigua (Globemallow)

SHRUBS



Abutilon palmeri (Palmer's Abutilon)

Ambrosia deltoidea (Triangleleaf Bursage)

Ambrosia dumosa (White Bursage)

Asclepias subulata (Desert Milkweed)

Atriplex canescens (Fourwing Saltbush)

Atriplex lentiformis (Quail Bush)

Baccharis salicifolia (Seepwillow)

Bebbia juncea (Sweetbush)

Calliandra eriophylla (Fairy Duster)

Celtis ehrenbergiana (Desert Hackberry)

Condea emoryi (Desert Lavender)

Encelia farinosa (Brittlebush)

Ericameria laricifolia (Turpentine Bush)

Eriogonum fasciculatum v. poliofolium (Flattop Buckwheat)

Eriogonum wrightii (Wright's Buckwheat)

Justicia californica (Chuparosa)

Larrea tridentata (Creosote Bush)

Lotus rigidus (Deer Vetch)

Cylindropuntia bigelovii (Teddybear Cholla)

Lycium fremontii (Fremont Thornbush)

Pluchea sericea (Arrowweed)

TREES

Bursera microphylla (Elephant Tree)

Chilopsis linearis (Desert Willow)

Olneya tesota (Ironwood)

Parkinsonia florida (Blue Palo Verde)

Parkinsonia microphylla (Foothills Palo Verde)

Populus fremontii (Cottonwood)

Prosopis pubescens (Screwbean Mesquite)

Prosopis velutina (Velvet Mesquite)

Salix gooddingii (Goodding's Willow)