MARANA PLANNING COMMISSION
REGULAR COMMISSION MEETING
NOTICE AND AGENDA
11555 W. Civic Center Drive, Marana, Arizona 85653
Council Chambers, June 29, 2016, at or after 6:30 PM

Thomas Schnee, Chairman
Don Duncan, Vice Chair
Terry Fehrmann, Commissioner
Marcia Jakab, Commissioner
Steve Miklosi, Commissioner
Richard Miller, Commissioner
John Officer, Commissioner

Pursuant to A.R.S. § 38-431.02, notice is hereby given to the members of the Marana Planning Commission and to the general public that the Planning Commission will hold a meeting open to the public on June 29, 2016, at or after 6:30 PM located in the Council Chambers of the Marana Municipal Complex, 11555 W. Civic Center Drive, Marana, Arizona.

ACTION MAY BE TAKEN BY THE COMMISSION ON ANY ITEM LISTED ON THIS AGENDA. Revisions to the agenda can occur up to 24 hours prior to the meeting. Revised agenda items appear in *italics*.

MARANA PLANNING COMMISSION
Welcome to this public meeting of the Marana Planning Commission. The Commission consists of seven citizens who are appointed by the Town Council and serve without pay. For the most part, the Commission acts in an advisory capacity to the Town Council on matters related to land use planning and zoning. Citizens are encouraged to address the Commission with their concerns on agenda items during the public testimony portions of the meeting, or other issues at the Call to the Public.

Meeting Times
Regular Commission meetings are usually held on the last Wednesday of each month at 6:30 PM at the Marana Municipal Complex, although the date or time may change and additional meetings may be called at other times and/or places.

Speaking at Meetings
If you are interested in speaking to the Commission during the Call to the Public or Public Hearings, you must fill out a speaker card (located in the lobby outside the Council Chambers) and deliver it to the Planning Commission Secretary prior to the convening of the meeting.

All persons attending the Commission meeting, whether speaking to the Commission or not, are expected to observe the Commission rules, as well as the rules of politeness, propriety, decorum and good conduct. Any person interfering with the meeting in any way, or acting rudely or loudly will be removed from the meeting and will not be allowed to return.

Accessibility
To better serve the citizens of Marana and others attending our meetings, the Council Chambers are wheelchair and handicapped accessible. Persons with a disability may request a reasonable

accommodation, such as a sign language interpreter, by contacting the Town Clerk at (520) 382-1999. Requests should be made as early as possible to arrange the accommodation.

Agendas
Copies of the Agenda are available the day of the meeting in the lobby outside the Council Chambers or online at www.maranaaz.gov.

This Notice and Agenda posted no later than 24 hours prior to the meeting, at the Marana Municipal Complex, 11555 W. Civic Center Drive, the Marana Operations Center, 5100 W. Ina Road, and at www.maranaaz.gov.

REGULAR COMMISSION MEETING

CALL TO ORDER

PLEDGE OF ALLEGIANCE

INVOCATION/MOMENT OF SILENCE

ROLL CALL

CALL TO THE PUBLIC
At this time, any member of the public is allowed to address the Planning Commission on any issue within the jurisdiction of the Planning Commission, except for items scheduled for a Public Hearing at this meeting. The speaker may have up to three (3) minutes to speak. Any persons wishing to address the Commission must complete a speaker card (located at the rear of the Commission Chambers) and deliver it to the Commission Secretary prior to this agenda item being called. Pursuant to the Arizona Open Meeting Law, at the conclusion of Call to the Public, individual members of the Commission may respond to criticism made by those who have addressed the Commission, and may ask staff to review the matter, or may ask that the matter be placed on a future agenda. However, members of the Commission shall not discuss or take legal action on matters raised during an open call to the public unless the matters are properly noticed for discussion and legal action.

APPROVAL OF AGENDA

ANNOUNCEMENTS

GENERAL ORDER OF BUSINESS

A. Approval of Minutes of the May 25, 2016 Meeting

B. Public Hearings

1. **PCZ1602-001 Camino de Oeste Rezoning** Recommendation to Town Council regarding a request for approval to rezone approximately 72 acres of land from 'C' - Large Lot Zone to 'R-6' - Single-Family Residential.The property is generally located approximately a quarter mile north of Cortaro Farms Road, bordered by Hartman Lane and Camino de Oeste. (Steve Cheslak)

2. **PCZ1606-001 Twin Peaks Oasis Specific Plan** Recommendation to the Town Council regarding a request to rezone approximately 36.79 acres of land from "R-144 Residential" to "F Specific Plan" for the purpose of establishing the Twin Peaks Oasis Specific Plan, a master-planned single-family residential development. The request will be accompanied by a minor General Plan amendment to amend the current land use category from "LDR Low Density Residential" to "MPA Master Plan Area," to accommodate the proposed Specific Plan. The property is located at the northeast corner of Twin Peaks Road and Oasis Road. (Cynthia Ross)

3. **PCM1605-001 Amendment to Marana Town Code Title 17 (Land Development), Chapter 17-5 Subdivisions.**
Recommendation to the Town Council to approve an amendment to the Marana Town Code, Title 17 (Land Development)
pertaining to comprehensive revisions to the procedures and provisions for processing subdivision plats including the pre-application conference and the submittal, review, and approval of preliminary subdivision plats. (Brian D. Varney)

C. Commission Action

Opening remarks by an applicant should not exceed ten minutes. Comments by others should not exceed three minutes.

1. **SPA1605-001: Amendments to the Continental Ranch Specific Plan, Chapter V. Development Regulations and Chapter VII. Specific Plan Implementation.**
Recommendation to the Town Council to amend the Continental Ranch Specific Plan including revisions to the authorization and procedure for the interpretation of unclear regulations of the specific plan as well as for approving administrative changes. The amendments also include revisions to allow low-intensity medical-related uses in the Commercial land use designation, and to revise the authorization and procedure for allowing additional permitted uses within the various land use designations. (Brian D. Varney)

D. Informational Items/Possible Action Items

FUTURE AGENDA ITEMS

EXECUTIVE SESSIONS

Pursuant to A.R.S. 38-431.03, the Planning Commission may vote to go into executive session, which will not be open to the public, to discuss certain matters.

Executive Session pursuant to A.R.S. § 38-431.03(A)(3), the Planning Commission may ask for discussion or consultation for legal advice with the Town Attorney concerning any matter listed on this agenda.

ADJOURNMENT

Planning Commission
Meeting Date: 06/29/2016

To: Planning Commission

From: Terri Byler, Executive Assistant

Date: June 29, 2016

Subject: **Approval of Minutes of the May 25, 2016 Meeting**

Attachments

May 25, 2016 Meeting Minutes

PLANNING COMMISSION MEETING
MINUTES
11555 W. Civic Center Drive, Marana, Arizona 85653
Council Chambers, May 25, 2016, at or after 6:30 p.m.

Thomas Schnee, Chairman
Don Duncan, Vice Chair
Terry Fehrmann, Commissioner
Marcia Jakab, Commissioner
Steve Miklosi, Commissioner
Richard Miller, Commissioner
John Officer, Commissioner

DRAFT

REGULAR PLANNING COMMISSION MEETING

CALL TO ORDER. **Chairman Schnee** called the meeting to order at 6:30 p.m.

PLEDGE OF ALLEGIANCE AND INVOCATION/MOMENT OF SILENCE.
Led by **Vice Chair Duncan**.

ROLL CALL. Terri Byler, Planning Commission Secretary, called roll. Chairman Schnee and Commissioners Fehrmann and Miller were absent. A quorum was present.

CALL TO THE PUBLIC. No speaker cards presented.

APPROVAL OF AGENDA. ***Motion to approve by Commissioner Jakab, seconded by Commissioner Miklosi. Passed unanimously.***

ANNOUNCEMENTS.

GENERAL ORDER OF BUSINESS. Approval of March 30, 2016 meeting minutes.
Motion to approve by Commissioner Miklosi, seconded by Commissioner Jakab. Passed unanimously.

PUBLIC HEARINGS.

1. PCM1605-001 Amendment to Marana Town Code Title 17 (Land Development), Chapter17-5 Subdivisions. Recommendation to the Town Council to amend the Marana Town Code, Title 17 (Land Development) to revise the provisions and procedures identified within the Land Development Code for the pre-application conference, as well as the provisions and procedures for submittal, review, and approval of a preliminary subdivision plat. The proposed revisions eliminate redundant, unnecessary, and outdated provisions and procedures and consolidate duplicative language. (Brian D. Varney) **Brian Varney** stated that the Planning Department recently received feedback on this agenda item that they would like to evaluate further, so he requested a continuance to the June 29th Planning Commission meeting.

Motion to continue item PCM1605-001 Amendment to Marana Town Code Title 17 (Land Development), Chapter17-5 Subdivisions to the June 29th Planning Commission meeting by Commissioner Miklosi, seconded by Vice Chair Duncan. Passed unanimously. 4-0

COMMISSION ACTION.

INFORMATIONAL ITEMS/POSSIBLE ACTION ITEMS.

FUTURE AGENDA ITEMS.

ADJOURNMENT.

Motion to adjourn at 6:32 p.m. by Commissioner Jakab, seconded by Commissioner Officer. Passed unanimously.

CERTIFICATION.

I hereby certify that the foregoing are the true and correct minutes of the Marana Planning Commission meeting held on May 25, 2016. I further certify that a quorum was present.

Terri Byler

Terri Byler, Planning Commission Secretary

DRAFT

Planning Commission

Meeting Date: 06/29/2016

To: Planning Commission

From: Steven Cheslak, Planner II

Date: June 29, 2016

Strategic Plan Focus Area:
Not Applicable

Subject: **PCZ1602-001 Camino de Oeste Rezoning** Recommendation to Town Council regarding a request for approval to rezone approximately 72 acres of land from 'C' - Large Lot Zone to 'R-6' - Single-Family Residential.The property is generally located approximately a quarter mile north of Cortaro Farms Road, bordered by Hartman Lane and Camino de Oeste. (Steve Cheslak)

Discussion:

Rezoning Request

The rezoning area was originally zoned 'C' Large Lot Zone as part of a 1,329 acre annexation known as the 'Cortaro Vista Annexation', approved by the Town Council in June of 1990. The applicant is now requesting a recommendation to the Town Council for approval of the Camino de Oeste Rezoning in order to rezone the 72-acre project site from 'C' Large Lot Zone to 'R-6' - Single-Family Residential for a proposed single family residential community consisting of 145 lots.

Marana General Plan

The 2010 General Plan land use designation of the rezoning area property is Low Density Residential, 0.5-2.0 residences per acre (RAC). The Camino de Oeste project has a proposed residential density of 2 RAC which is in conformance with the General Plan and consistent with neighboring properties to the west, north and east with density ranges from 2 RAC to 6 RAC. The proposed project is designed to follow the growth area goals of low density residential development and open space preservation. The land set aside as open space, including the Hardy Wash (a riparian area) and on-site drainageways, are the most environmentally sensitive areas of the site.

Land Use

Development surrounding the Camino de Oeste project is predominately residential to the north, south, and east, with the planned residential DeAnza development located directly to the west. Neighboring the property's northern and eastern boundaries are the existing Countryside Terrace, Sunset Pointe, and Vista Oeste Estates residential subdivisions which are all located in Pima County. Adjacent to the property's western boundary is the DeAnza Specific Plan development and the existing Cortaro Ranch subdivision. Vacant land and existing homes on large lots are located directly south of the project site.

The land use Concept Plan for Camino de Oeste subdivision shows 145 single family residential lots proposed on the property providing for an overall residential density of 2 RAC. All lots will be a minimum of 6,000 square feet and are subject to the Town of Marana R-6 zoning development standards. Homesites will be offered in two different lot sizes, 50'x120' and 65'x120', and are grouped in such a way to preserve larger areas of continuous open space, providing land for wildlife habitat, less back to back neighbor conditions, and better opportunities for residents mountain views. In addition, all homes constructed within the project are proposed to be one story and will meet the residential standards within

Title 8 of the land Development Code.

The majority of the open space provided within the project will be Natural Undisturbed Open Space (NUOS), accounting for 30% (22 acres) of the project area. Additional open space has been designed in the Concept Plan as common area open space consisting of a neighborhood park, bufferyards, and areas for grading and drainage. Total open space provided within Camino de Oeste will be approximately 29 acres (40%). Bufferyards are provided along the perimeter of the property that will meet and in most cases exceed those required by the Town of Marana Land Development Code. The bufferyards will include a combination of landscape and property walls to serve as landscape screens to mitigate noise and visual impacts from adjacent properties and roadways. Property walls used within the project site will be predominantly view walls to capture the surrounding mountain views. In areas where greater privacy or screening is needed, five foot solid masonry walls will be used. All open space and common areas will be owned and maintained by the homeowners association.

There are slight encroachments planned within Hardy Wash on the north side of the project and within the two on-site washes that convey water. The encroachments are planned to ensure that regulatory increases to water surface elevations in the respective watercourses will not exceed allowable limits, or adversely impact adjacent properties. The proposed encroachment into the Hardy Wash Federal Emergency Management Agency (FEMA) floodplain would slightly alter the floodplain limits and will require approval of a Conditional Letter of Map Revision (CLOMR) by the Town of Marana and Pima County Regional Flood Control District. The CLOMR contains engineering information that demonstrates that the new floodplain limits would be re-aligned around the subdivision improvements and that the new lots would be situated outside the FEMA floodplain.

Access and Circulation

The site is bordered on the east and west by the existing collector roadways, Hartman Lane and Camino de Oeste, which provide for two access points for project residents. Both project entry roads are located to line up with proposed (DeAnza subdivision) and existing (Rosebay Drive) intersections. Each project entry will have entry monumentation to create a sense of arrival. The entrance off of Hartman Lane will be the primary project entry for the subdivision and both entries will be understated and located so as not to interfere with traffic. Internal roadways will meet the Marana subdivision street standards and follow the Town's typical local, public roadway section.

Based on the available traffic data and anticipated trips into the Hartman Lane access point, the northbound right-turn and southbound left-turn volumes into the site would not warrant a right-turn lane or left-turn lane for the projected opening / build-out year of 2019. Therefore, no improvements are anticipated for Hartman Lane as part of the Camino De Oeste development. On the east side of the project, the proposed site access from Camino De Oeste, aligned with the Rosebay Drive, the northbound left-turn volumes into the site from Camino De Oeste would warrant a left-turn lane, however, the southbound right-turn volumes would not warrant a right-turn lane for the projected opening / build-out year of 2019. Therefore, the only improvements anticipated for Camino De Oeste as part of the Camino De Oeste development is the addition of a northbound left-turn lane.

Utilities

The rezoning area is located within the Town of Marana water service area and the water supply is assured. The developer will be responsible for the design and construction of all on-site and off-site water infrastructure required to serve potable water and fire protection to the development. A water service agreement, as well as plans for the water distribution system will be required prior to development.

Sewer will be provided to future development within the rezoning area by Pima County. The Pima County Regional Wastewater Reclamation Department has indicated that flows from this project can be accommodated in the existing Hartman Lane and Camino de Oeste 12-inch public sewer lines adjacent to the rezoning area.

Tucson Electric Power and Southwest Gas currently serve the general area and will provide service to all future development in the rezoning area.

Citizen Participation

The applicants held a neighborhood meeting on April 21, 2016 at the DeGrazia Elementary School in the Countryside subdivision. All property owners within 300 feet of the rezoning area, as well as all neighborhood associations in the vicinity were invited to the meeting. The meeting was attended by approximately 20 of the invitees. The predominant concerns expressed by those in attendance included: increased traffic in the general area, impact on existing homeowner views, encroachment on wildlife habitat and project density. Since the neighborhood meeting, representatives of Norris Design and Pulte Homes have spoken to and met with the adjacent property owners to discuss their concerns regarding the project and it's impacts.

Additionally, the Town has received four letters of protest from neighboring area residents with concerns regarding traffic and the impact on the environment, wildlife and natural resources.

Public Notification

The public hearing was legally noticed in The Daily Territorial newspaper, and all property owners within 300 feet of the rezoning area were noticed by United States Mail of the date, time, and topic of the public hearing. Additional notice was posted at various locations within the community and on the Town website.

Recommended Findings of Fact

1. The property is currently zoned 'C' - Large Lot Zone. The proposed change in zoning from ‘C’ Large Lot Zone to ‘R-6’ Single – Family Residential will not require amendment to the Marana General Plan from the existing designation of Low Density Residential.
2. With the acceptance of the recommended conditions, the proposed rezoning is in compliance with all other development standards of the Land Development Code related to this zoning classification.
3. The proposed rezoning, with acceptance of the recommended conditions, does not appear to be detrimental to the immediate area or to the health, safety, and welfare of the inhabitants of the area and the Town of Marana.

Case Analysis

Review criteria:

1. Ability to comply with development regulations, i.e. water, sanitation, access, developable parcel, etc.:
   With the acceptance of the recommended conditions the proposed rezoning complies with the requirements of all agencies.
2. Ability to comply with requirements of the zoning regulations, i.e. lot size, frontage, setbacks, etc.:
   With the acceptance of the recommended conditions the proposed rezoning complies with the requirements of "R-6" Single-Family Residential zoning and the purpose and intent of the Land Development Code.
3. Consistent with the purpose of the zoning regulations and with the intent of the General Plan:
   The proposed rezoning is consistent with the purpose and intent of the Land Development Code and the General Plan Low Density Residential (LDR) land use category.
4. Compatible with the surrounding area, harmonious with the character of the neighborhood, not detrimental to the immediate area, and not detrimental to the health, safety, or welfare of the inhabitants of the area and the Town:
   Based upon the requirements and conditions, the proposed rezoning does not appear to be detrimental to the immediate area or to the general health, safety, and welfare of the inhabitants of the area and the Town of Marana.

Staff Recommendation:

Staff recommends that the Planning Commission recommends to the Marana Town Council approval of PCZ1602-001 based upon the recommended findings and subject to the following conditions:

1. Compliance with all applicable provisions of the Town's codes and ordinances current at the time of any subsequent development including, but not limited to, requirements for public improvements and payment of application fees and applicable development impact fees.
2. Any preliminary plat or development plan for any portion of the Rezoning Area shall be in general conformance with the tentative development plan presented to and approved by the Town Council as part of this Rezoning.
3. A master drainage study must be submitted by the Property Owners and accepted by the Town Engineer prior to Town approval of a preliminary plat or development plan for any portion of the Rezoning Area.
4. A water infrastructure and phasing plan (WIP) must be submitted by the Property Owners and accepted by the Marana Utilities Department (the "water provider") prior to approval of a preliminary plat for any portion of the Rezoning Area. The WIP shall identify all on-site and off-site water facilities needed to serve the proposed development. The WIP shall include all information required by the water provider, such as (but not limited to) analysis of water use and fire flow requirements, and well source, reservoir, and booster station infrastructure needed to serve the proposed development. If the water provider requires a water service agreement as a condition of service to the proposed development, the Property Owners must enter into a water service agreement with the water provider consistent with the accepted WIP.
5. A master sewer plan must be submitted by the Property Owners and accepted by Pima County Regional Wastewater Reclamation Department (the "wastewater utility") prior to the approval of any final plat or development plan for the Rezoning Area. The master sewer plan shall identify all on-site and off-site wastewater facilities needed to serve the proposed development, and shall include all information required by the wastewater utility. If the wastewater utility requires a sewer service agreement as a condition of service to the proposed development, the Property Owners must enter into a sewer service agreement with the wastewater utility consistent with the accepted master sewer plan.
6. The Property Owners must design and construct any roadway, drainage, water, and wastewater improvements, and dedicate or acquire any property rights associated with those improvements, that the Town requires based on the data and findings of the accepted traffic impact analysis, the accepted master drainage study, the accepted WIP, the accepted master sewer plan, and other studies approved in connection with the approval of a preliminary plat or development plan for any portion of the Rezoning Area.
7. The final design of all streets and circulation facilities, including gated access (if applicable) and emergency access, must be accepted by Northwest Fire District prior to Town Council consideration of a final plat for any portion of the Rezoning Area.
8. The maximum number of residential lots within the Rezoning Area shall not exceed 145.
9. No approval, permit or authorization by the Town of Marana authorizes violation of any federal or state law or regulation or relieves the Property Owners from responsibility to ensure compliance with all applicable federal and state laws and regulations, including the Endangered Species Act and the Clean Water Act. The Property Owners should retain appropriate experts and consult appropriate federal and state agencies to determine any action necessary to assure compliance with applicable laws and regulations.
10. The Property Owners shall transfer to Marana, by the appropriate Arizona Department of Water Resources form, those water rights being IGR, Type I or Type II for the Town providing designation of assured water supply and water service to the Rezoning Area. If Type I or Type II is needed on the Rezoning Area, the Town and the Property Owners shall arrive at an agreeable solution to the use of those water rights appurtenant to the affected portion of the Rezoning Area.
11. Prior to the issuance of any grading permits, the Property Owners shall submit evidence to the Town that all federal permit requirements have been met through the Corps of Engineers and the State Historic Preservation Office, if federal permits are required for the development of the Rezoning Area.

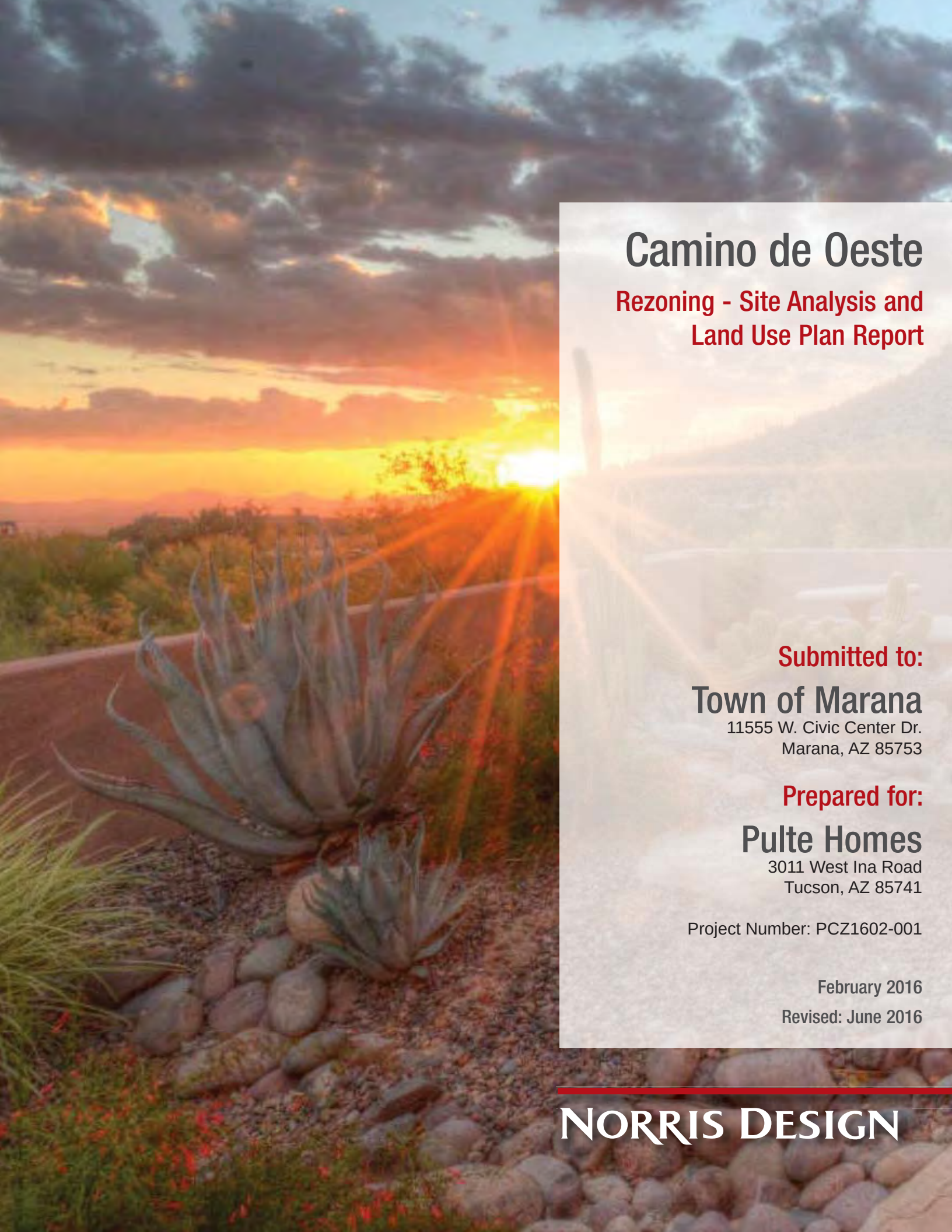
12. A 100% clearance survey for the desert tortoise shall be completed by a qualified biologist at the Property owner expense and a survey report shall be submitted to the Town and to Arizona Game and Fish Department AZGFD prior to issuance of any grading permits If a desert tortoise is found during the survey or at any time during construction the Property owner shall immediately notify the Town and AZGFD and the tortoise may be moved in accordance with the most current AZGFD Tortoise Handling Guidelines at the Property owner expense.
13. The Property Owners shall not cause any lot split of any kind without the written consent of the Town of Marana.
14. All homes constructed in the Rezoning Area shall be one story.

Suggested Motion:

I move to recommend to the Marana Town Council approval of PCZ1602--001 Camino de Oeste Rezoning, subject to the recommended conditions.

Attachments

Camino de Oeste Rezoning
Location Map
Application
Protest Letters



Camino de Oeste

Rezoning - Site Analysis and Land Use Plan Report

Submitted to:

Town of Marana
11555 W. Civic Center Dr.
Marana, AZ 85753

Prepared for:

Pulte Homes
3011 West Ina Road
Tucson, AZ 85741

Project Number: PCZ1602-001

February 2016
Revised: June 2016

NORRIS DESIGN

Camino de Oeste

Town of Marana

Submitted to:
Town of Marana
11555 W. Civic Center Dr.
Marana, Arizona 85753

Prepared for:
Pulte Homes
3011 West Ina Road
Tucson, Arizona 85741
Contact: Sam Mills
Ph: (520) 837-0275

Prepared by:
Norris Design
418 N. Toole Avenue
Tucson, Arizona 85701
Contact: Stacey Weaks, PLA
Ph: (520) 622-9565

EPS Group
8710 N. Thornydale Road, Suite 140
Tucson, Arizona 85742
Contact: Jeff Stine, PE
Ph: (520) 408-1400

CMG Drainage Engineering, Inc.
3555 N. Mountain Avenue
Tucson, Arizona 85719
Contact: Jerry Curless, PE
Ph: (520) 882-4244

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PART I — A. PROJECT INTRODUCTION

INTRODUCTION

The Camino de Oeste project is a 72-acre site located a quarter mile north of Cortaro Farms Road, bordered on the west by Hartman Lane and on the east by Camino de Oeste. The purpose of this analysis is to identify factors directly or indirectly influencing a rezoning of this property from Zone C (Large Lot Zone) to R-6 (Single-Family Residential).

The Harshbarger family has owned and operated 52.2 acres of this property as a working ranch for decades. Once surrounded by sparse development, the Harshbarger's property is now one of the last large lot remnant parcels in the area (See Exhibit I: A.1 - Regional Context). The remaining 20 acres of the project site are vacant. Recent development, including the approved DeAnza Specific Plan, surround the property to the north, west, and east, with medium density residential homes. In order to provide the best use for the land, this rezone will provide a residential subdivision that will complement the surrounding communities and provide new residential opportunities for the area (See Exhibit I: A.2 - Aerial Context).

The property owner's vision for this site is to create an exclusive residential neighborhood that takes advantage of the surrounding mountain views and is compatible with adjacent development. The roads and homesites are arranged in such a way to maintain and preserve large areas of natural undisturbed open space (NUOS). The Hardy Wash runs along the northern edge of the project site and will remain intact to provide for an unimpeded wildlife corridor. Lot orientation and location was designed to take advantage of views onto the open space and distant mountain views. The proposed development will provide a density of 2 residences per acre (RAC) that is consistent with surrounding single family residential subdivisions (ranging in density from 2 RAC to 6 RAC).

1. Anticipated Benefits to the Community

Camino de Oeste will provide 145 new residential lots to the area. The site plan preserves and enhances on-site natural open space features, while promoting an efficient use of land, energy and natural resources. This development will attract new residents and provide housing opportunities to accommodate the future growth and jobs anticipated in Marana.

2. Adherence to Town Plans

Adopted plans that play a role in the design approval and development of the Camino de Oeste project are the Town of Marana 2010 General Plan and the Marana Strategic Plan. It is the intent of this rezoning to integrate both of these governing plans. This project is in conformance with the intent of the Town of Marana 2010 General Plan and the Marana Strategic Plan.

The Camino de Oeste project is designed to follow the growth area goals of low density residential development and open space preservation. The land set aside as open space,

including the Hardy Wash (a riparian area) and on-site drainageways, are the most environmentally sensitive areas of the site. As a result, the proposed site plan provides a significant amount of open space in the form of NUOS and common area open space.

The project site is located within the infill area of the southern limits of the General Plan. The land use designation on the property is Low Density Residential, 0.5-2.0 residences per acre (RAC). The proposed density is 2 RAC; therefore, no amendments will be necessary for this development to be in conformance with the General Plan. Camino de Oeste will feature high-quality design and development that is compatible with what exists in the area and will provide new housing opportunities in proximity to neighborhood services, including schools, churches and the Southern Growth Area near I-10 and Cortaro Farms Road. According to the 2010 General Plan Land Use Designation Map, the vast majority of land surrounding the site is either Low Density Residential or Medium Density Residential.

The Camino de Oeste project is in conformance with the Marana Strategic Plan that was adopted January 6, 2015. The vision aligns with the 2015 Town of Marana Strategic Plan providing opportunities for community and recreation in a key growth area for the Town. Camino de Oeste is located at the emerging Cortaro Farms Road Interchange along Interstate 10 (I-10), providing significant residential opportunities to enhance the vitality of this growth area.

3. Proposed Densities and Maximum Number of Units

Camino de Oeste proposes a density of 2.0 RAC, fitting its Low Density Residential Land Use designation. The maximum number of units on this property will be 145.

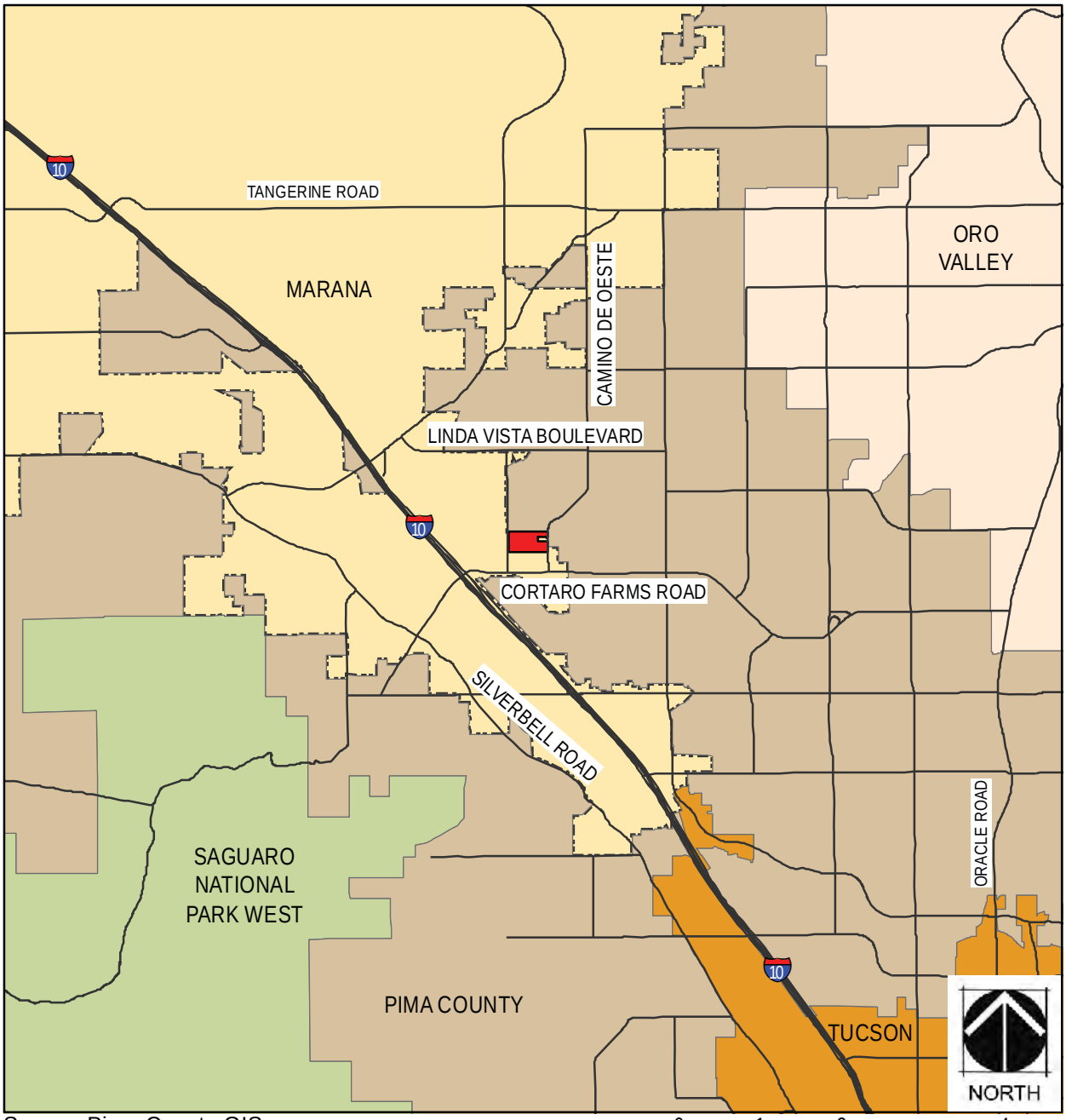
4. Mitigation to Adjacent Uses

The Camino de Oeste project site is characterized by gently rolling topography. There are views of the major mountain ranges in every direction. Setbacks from adjacent properties, changes in topography, and existing privacy walls make it difficult to have a complete view across the property from any adjacent property boundary. As part of the mitigation techniques for viewshed impact to these views and vistas, Camino de Oeste will incorporate landscape bufferyards and five foot property walls. One-story homes may be considered in key areas of high visibility. Please see Part III: C - Land Use Plan for a complete analysis of the project's viewsheds and mitigation techniques.

5. Anticipated Employment Numbers

This residential development is not expected to create permanent employment opportunities for the Town of Marana, but will however create and support temporary construction jobs during the construction of this project.

Exhibit I: A.1 - Regional Context



Source: Pima County GIS

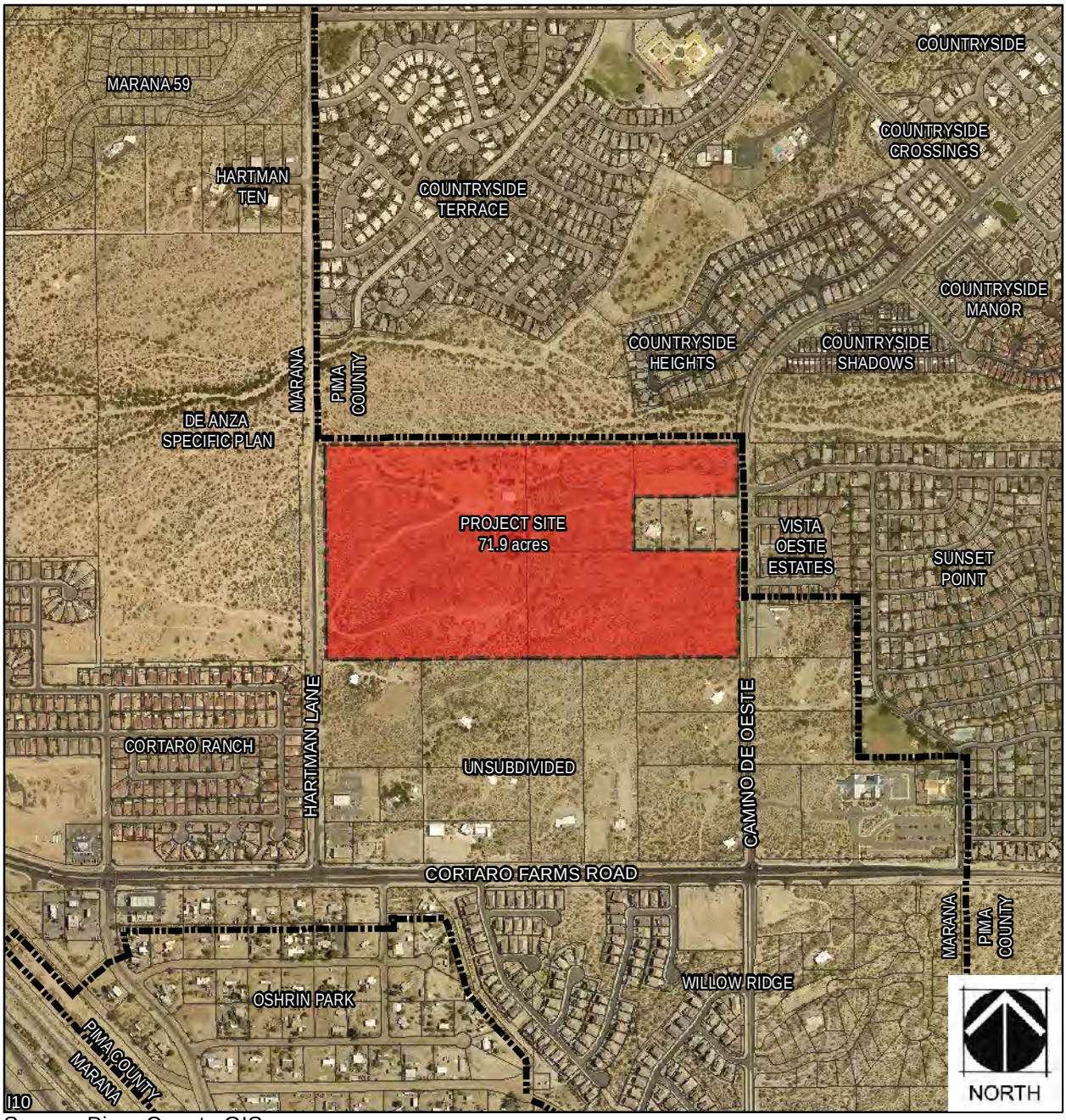
0 1 2 4 Miles

1 inch = 2 miles

LEGEND

- Project Site
- Marana
- Pima County
- Oro Valley
- Tucson
- Saguaro National Park West
- Major Road

Exhibit I: A.2 - Aerial Context



Source: Pima County GIS

0 500 1,000 2,000

SCALE: 1 " = 1,000 '

LEGEND

Project Site

Marana Town Limits

Parcel Boundary

PART II — B. DEVELOPMENT CAPABILITY/INVENTORY AND ANALYSIS REPORT

1. SITE LOCATION

The 72-acre project site is located in the Town of Marana within Township 12S, Range 12E, Section 25. The project site sits one quarter mile north of Cortaro Farms Road and is bound by Hartman Lane on the west, Camino de Oeste on the east and the Hardy Wash to the north (see Exhibit II.B.1). The project site is bordered by Unincorporated Pima County on the north and east sides of the property.

2. EXISTING LAND USES

Per the Town of Marana General Plan, the subject property has a land use designation of Low Density Residential. The main 37-acre parcel is currently, and has historically, been used as a private residence and ranch with an unpaved driveway to the existing residence, a horse barn, corrals, storage areas and several other ranch associated uses. The remaining parcels are vacant with several curb cuts and associated drainage improvements along the east and west boundaries (see Exhibit II.B.2).

3. CONTEXTUAL INFORMATION ON PROPERTY WITHIN A 1/4 MILE

a. Existing Zoning
   See Table II: B.3 - Contextual Information on Property within 1/4 Mile and Exhibit II: B.3.a.1 - Existing Zoning. Per the Town of Marana Zoning Map, parcel ID's 221-14-011B, 221-14-0100, 221-14-002F, and 221-14-009A are zoned as Zone C (Large Lot). See Exhibit II: B.3.a.2 - Adjacent Specific Plan Land Use for land use designations of surrounding Specific Plan areas.

b. General Plan Land Use
   See Table II: B.3 - Contextual Information on Property within 1/4 Mile and Exhibit II: B.3.b - General Plan Land Use.

c. Existing Land Use
   See Table II: B.3 - Contextual Information on Property within 1/4 Mile and Exhibit II.B.2 - Existing Land Uses.

d. Number of Stories of Existing Structures
   See Table II: B.3 - Contextual Information on Property within 1/4 Mile.

e. Pending Rezoning Cases
   Per Town of Marana Planning there are no pending rezoning cases within a 1/4 mile of the site.

f. Conditional Rezoning Cases Approved
Per Town of Marana Planning, the DeAnza Specific Plan is within a 1/4 mile of the site. See Exhibit II: B.3.a.1 - Existing Zoning. The De Anza Specific Plan was approved by the Town Council in October 2007. In June of 2015, Red Point Development submitted a residential plat for DeAnza for the 131.6 acres / 265 lots located on the west side of Hartman Lane. The preliminary plat was approved by Council on April 19th, 2016. The project is anticipated to start construction within the year.

g. Subdivisions and/or Development Plans Approved
See Exhibit II: B.3.g - Existing/Approved Subdivisions.

h. Adjacent Architectural Styles
The majority of the structures within 1/4 mile of the project site are existing homes that include single-family detached residential units with southwest and ranch architectural styles.

4. LOCATION OF WELLS / WELL SITES WITHIN 100' FROM SITE

According to the Arizona Department of Water Resources, there are two well sites on the property (to be abandoned), but no additional well sites within 100 feet of the site. See Exhibit II: B.4 Wells within 100' of Site.

TABLE II: B.3 CONTEXTUAL INFORMATION ON PROPERTY WITHIN 1/4 MILE.

Property	Zoning	General Plan Land Use	Existing Land Use	# of Stories
Camino de Oeste	Zone C (Large Lot)	Low Density Residential	Large Lot, Single Family Residential, Ranch Property	1
North	SR, CR-4, CR-5	Hardy Wash, Pima County Medium Intensity Urban	Open Space, Single Family Residential	1 & 2
East	R-36, CR-4, R-144	Pima County Medium Intensity Urban, Low Density Residential	Single-Family Residential	1 & 2
South	C, R-144, R-36, NC	Low Density Residential	Single-Family Residential, Commercial, Community Church	1
West	R-8, F	Medium Density Residential, Master Plan Area	Single-Family Residential, Partially Developed	1 & 2

SOURCE: PIMA COUNTY GIS; TOWN OF MARANA 2010 GENERAL PLAN, OCTOBER 2014

5. TOPOGRAPHY

a. Significant Site Topography

The topography of the site is characteristic of the Tortolita Mountains Alluvial Fan. The site is on the far downstream portion of the Tortolita Mountains Alluvial Fan. The site slopes from the northeast corner to the southwest corner of the site. The low areas are typically found within drainage areas and the high points are located in the central portion of the site where the existing ranch house currently sits. The site contains no hillside conservation areas or restricted peaks and ridges. There are no rock outcroppings located on the project site. The elevation ranges from approximately 2,188 feet at the southwest corner of the site to 2,270 feet at the northeast corner. Existing topography at two foot contour intervals is shown on Exhibit II: B.5.a - Existing Topographic Features.

i. Hillside Conservation Areas

No known Hillside Conservation Areas exist on the site.

ii. Rock Outcrops

No known rock outcroppings exist on the site.

iii. Slopes of 15% or Greater

The site includes a number of areas with 15% or greater slopes as delineated in Exhibit II: B.5.a - Existing Topographic Features.

iv. All Other Significant Topographic Features

The site does not contain any other significant topographic features.

v. Pre-development Cross-Slope

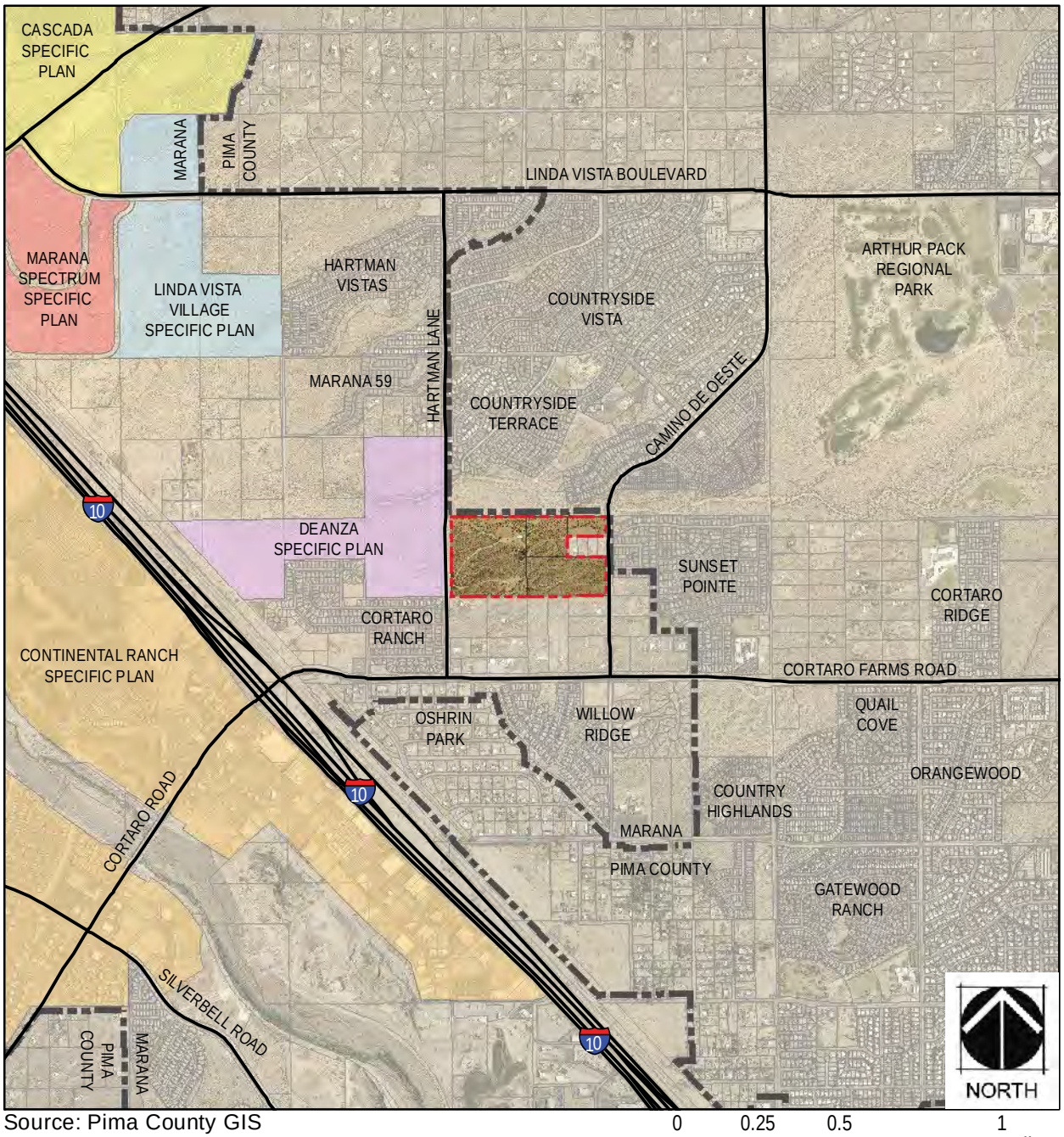
The pre-development average cross slope was calculated using a Digital Terrain Model contours (DTM) with one foot intervals. The average cross slope is 13.27%.

Average Cross-slope Calculation

Area	=	71.87 Acres
Contour Interval	=	1 Foot
Length of Contours	=	415,276.21 Linear Feet
Average Cross Slope	=	$\frac{\text{(Interval) x (Length of Contour) x (0.0023)}}{\text{Area}}$

$$\frac{(1) \times (415{,}276.21) \times (0.0023)}{71.87} = 13.27\%$$

Exhibit II: B.1 - Context Plan



Source: Pima County GIS

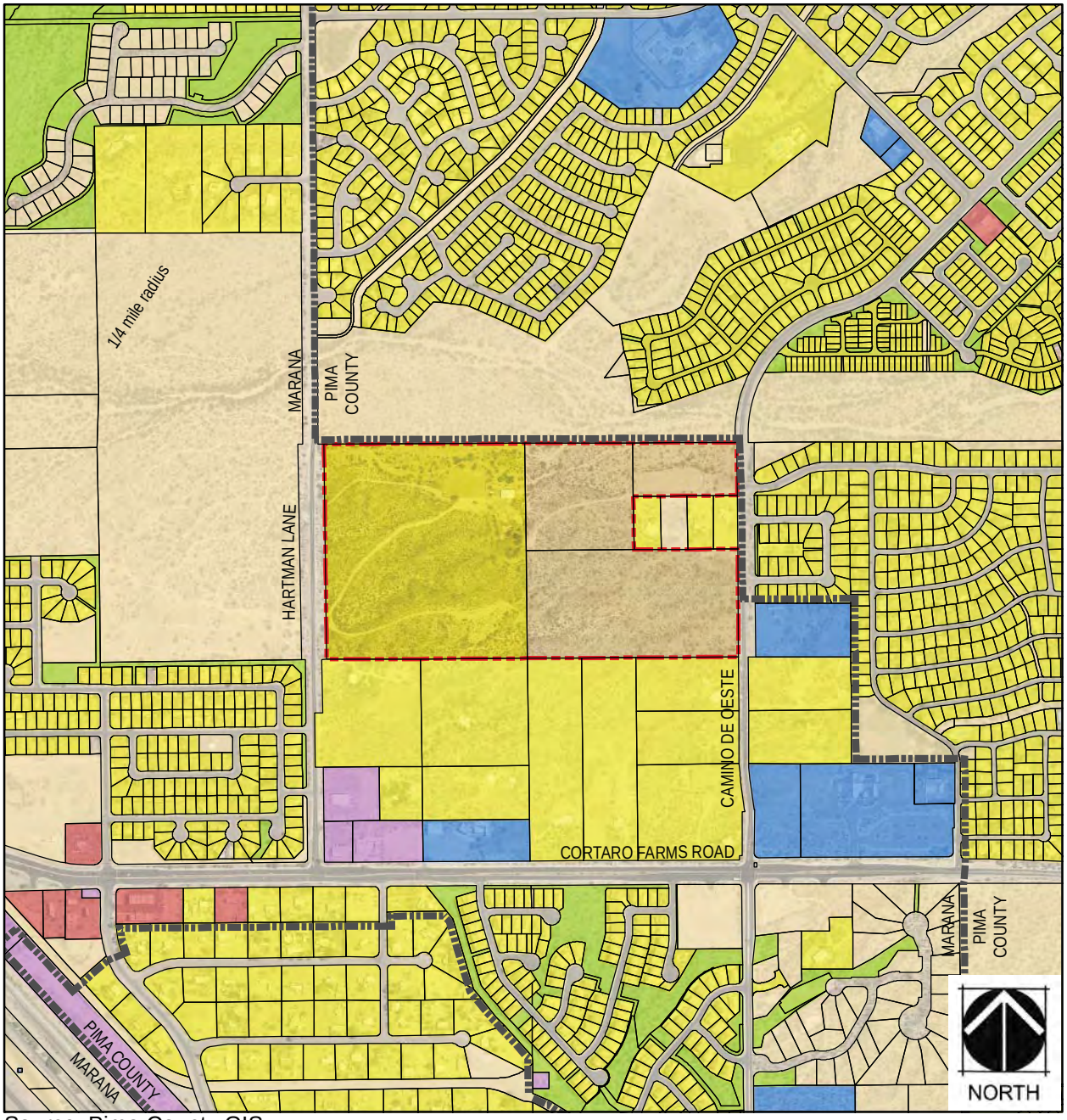
0 0.25 0.5 1 Miles

SCALE: 1" = 1/2 Mile

LEGEND

- Project Site
- Marana Town Limits
- Major Road
- DeAnza Specific Plan
- Linda Vista Village Specific Plan
- Marana Spectrum Specific Plan
- Continental Ranch Specific Plan
- Cascada Specific Plan

Exhibit II: B.2 - Existing Land Use



Source: Pima County GIS

0 500 1,000 2,000

SCALE: 1 " = 1,000 '

LEGEND

Project Site

Marana Town Limits

LAND USE

Single Family Residential

Commercial

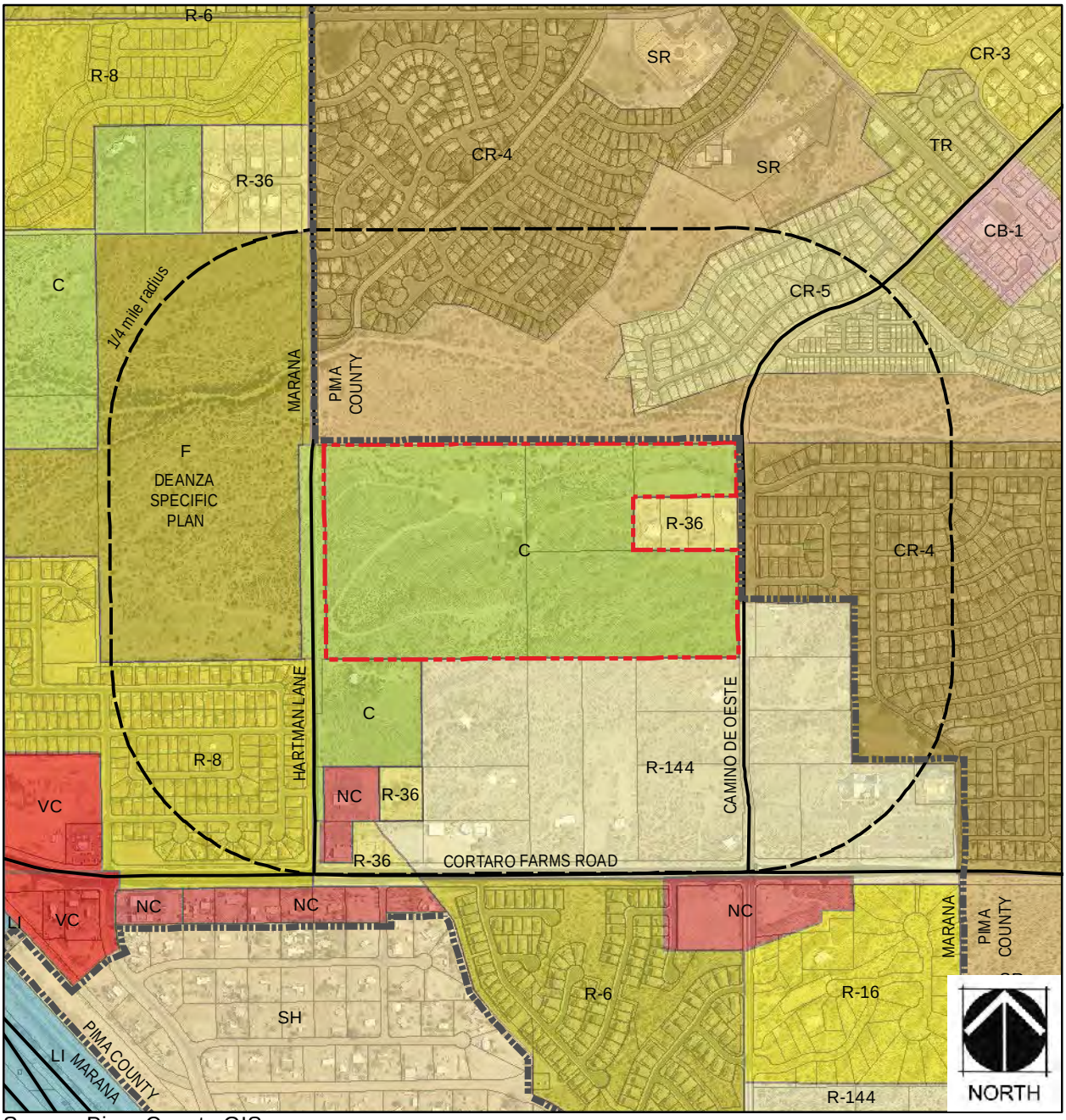
Institution

Open Space

Utility

Vacant

Exhibit II: B.3.a.1 - Existing Zoning



Source: Pima County GIS

0 500 1,000 2,000

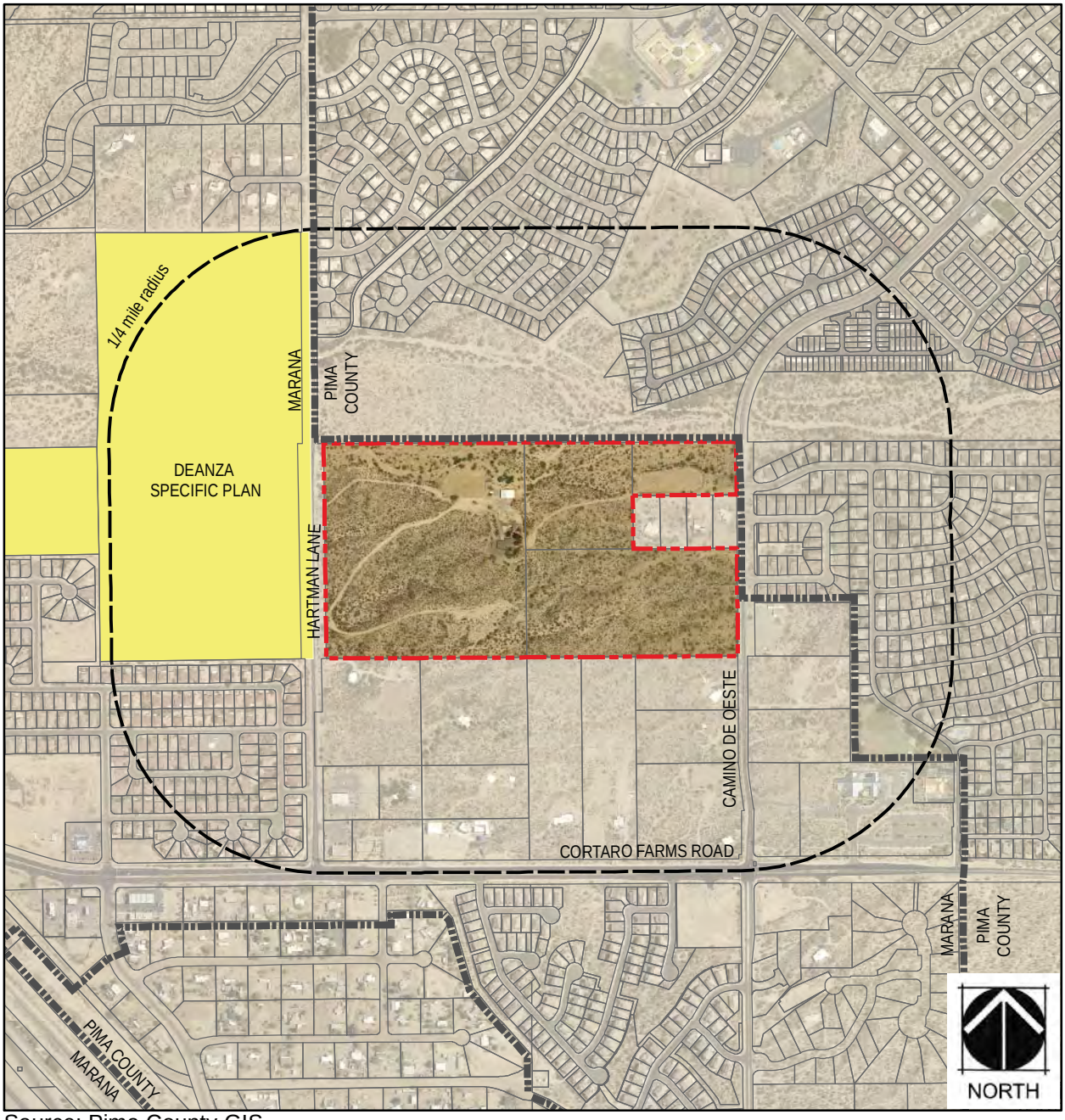
SCALE: 1 " = 1,000 '

LEGEND

- Project Site
- 1/4 mile radius
- Marana Town Limits

Marana Zoning		Pima County Zoning	
C	R-16	CB-1	SH
F	R-8	CR-3	SR
LI	R-6	CR-4	TR
R-144	VC	CR-5	
R-36	NC		

Exhibit II: B.3.a.2 - Adjacent Specific Plan Land Use



Source: Pima County GIS

0 500 1,000 2,000

SCALE: 1 " = 1,000 '

LEGEND

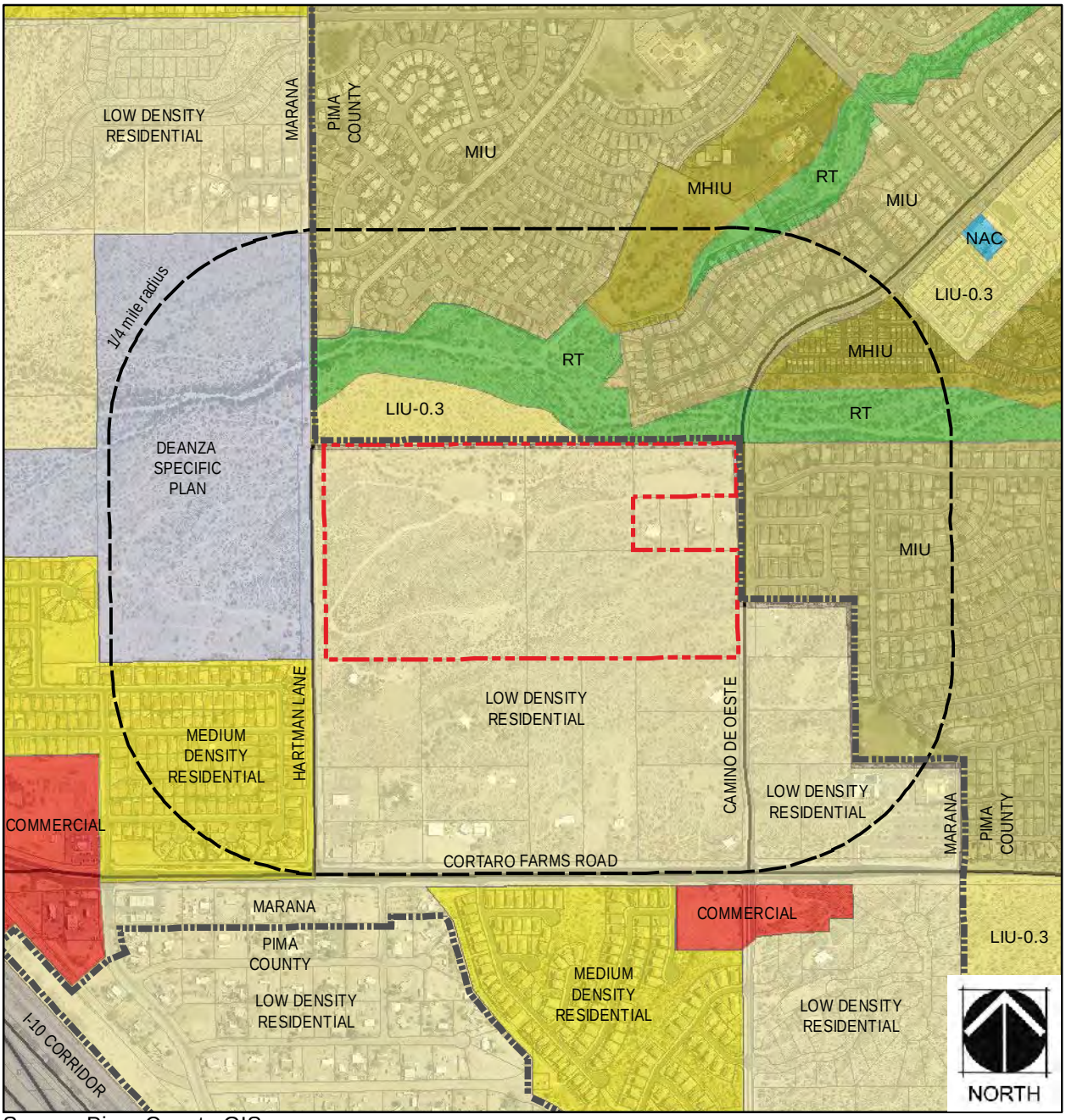
Project Site

Residential

1/4 mile radius

Marana Town Limits

Exhibit II: B.3.b - General Plan Land Use



Source: Pima County GIS

0 500 1,000 2,000

SCALE: 1 " = 1,000 '

LEGEND

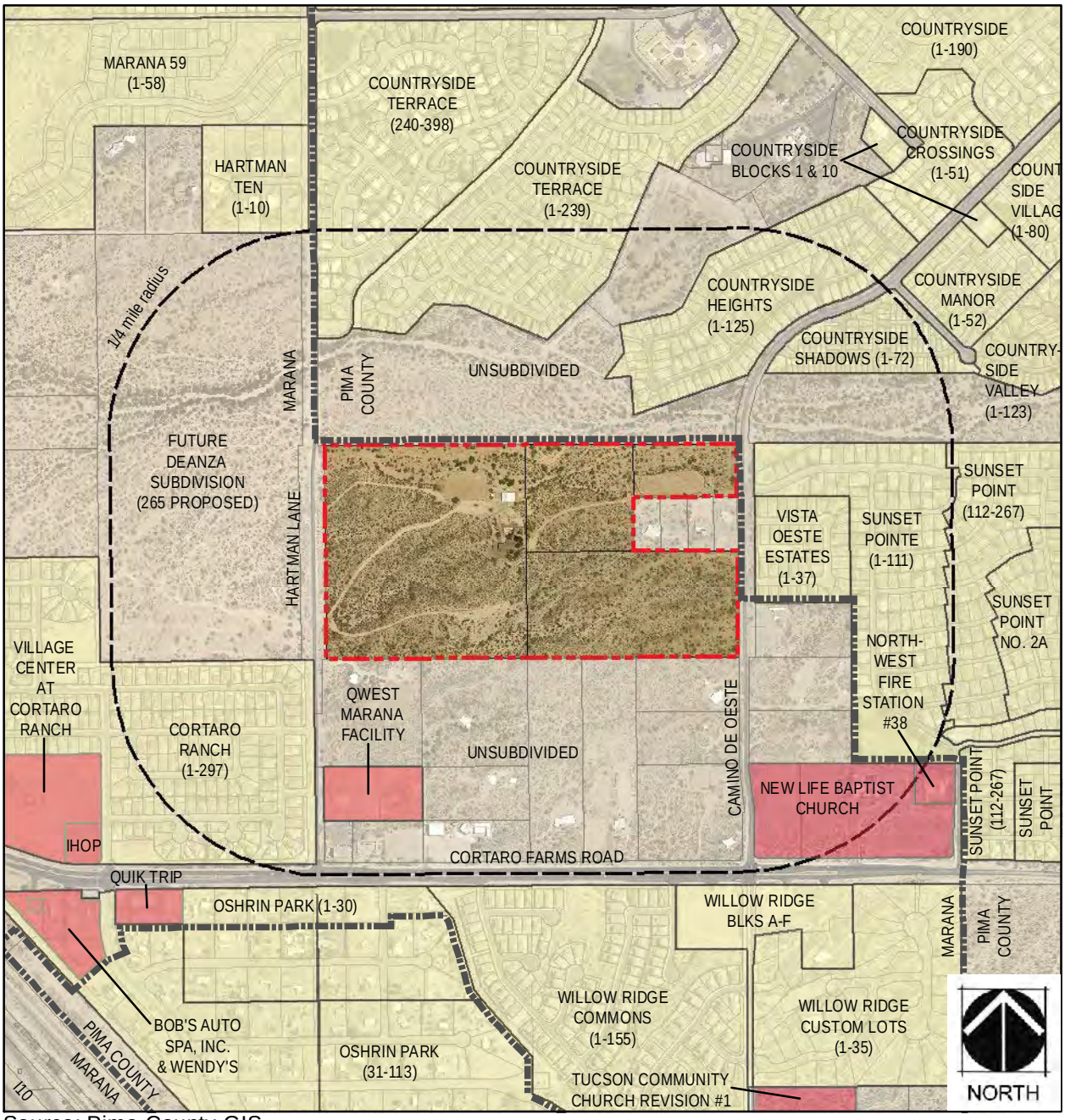
- Project Site
- 1/4 mile radius
- Marana Town Limits

Marana General Plan 2010

- Commercial
- Low Density Residential
- Medium Density Residential
- Master Plan Area
- I-10 Corridor

Pima County Comprehensive Plan 2015

- Low Intensity Urban-0.3 (LIU-0.3)
- Medium Intensity Urban (MIU)
- Medium High Iintensity Urban (MHIU)
- Neighborhood Activity Center (NAC)
- Resource Transition (RT)



Source: Pima County GIS

0 500 1,000 2,000

SCALE: 1 " = 1,000 '

LEGEND

- Project Site
- 1/4 mile radius
- Marana Town Limits
- Subdivision
- Approved Development Plan

Exhibit II: B.4 - Wells within 100' of Site



Source: Pima County GIS

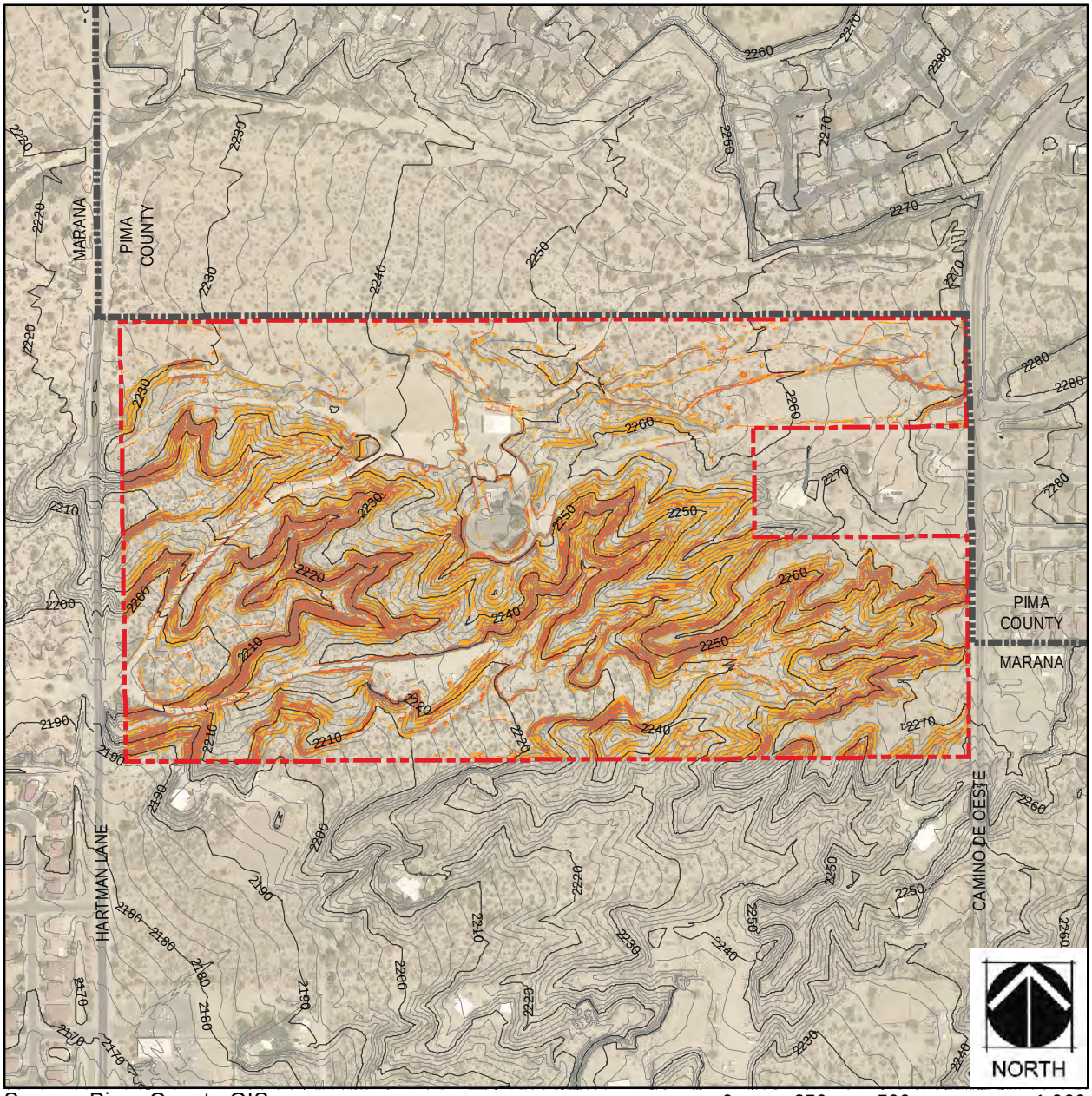
0 250 500 1,000

SCALE: 1 " = 500 '

LEGEND

- Existing Well with Identification Number
- Project Site
- 100ft radius
- Marana Town Limits

Exhibit II: B.5.a - Existing Topographic Features



Source: Pima County GIS

0 250 500 1,000

SCALE: 1 " = 500 '

LEGEND

Project Site

Marana Town Limits

2 ft Contour

10 ft Contour

Slope 15-25%

Slope 25% or greater

6. HYDROLOGY

a. Significant Hydrology

This section of the Camino de Oeste rezoning submittal includes pre-development on-site and off-site hydrologic and hydraulic characteristics. CMG Drainage Engineering, Inc. (CMG) conducted a preliminary drainage assessment for the project site based on the results of recent hydrologic computations using the PC Hydro method.

i. Off-site Watersheds Affecting or Affected by the Site

Exhibits II: B.6.a and Exhibit II: B.6.b show the boundaries of off-site watersheds that impact the subject property. The project is located within a critical hydrologic basin as defined by the Town of Marana. The upstream watersheds impact the subject property at five points. The first point is at the extreme northeast corner of the property where Hardy Wash flows partially onto the site and along the northern boundary. Hardy Wash is a regional watercourse with a design 100-year discharge of 3,205 cfs and a watershed area of 6,080 acres. The other four points where off-site stormwater enters the project emanate from small local watersheds upstream along the east property boundary. These flow Concentration Points, identified as CP8, CP9, CP10 and CP11 are labeled numerically on Exhibit II: B.6.a, and their respective 100-year discharges and watershed acreages are listed in tabular form on the exhibit.

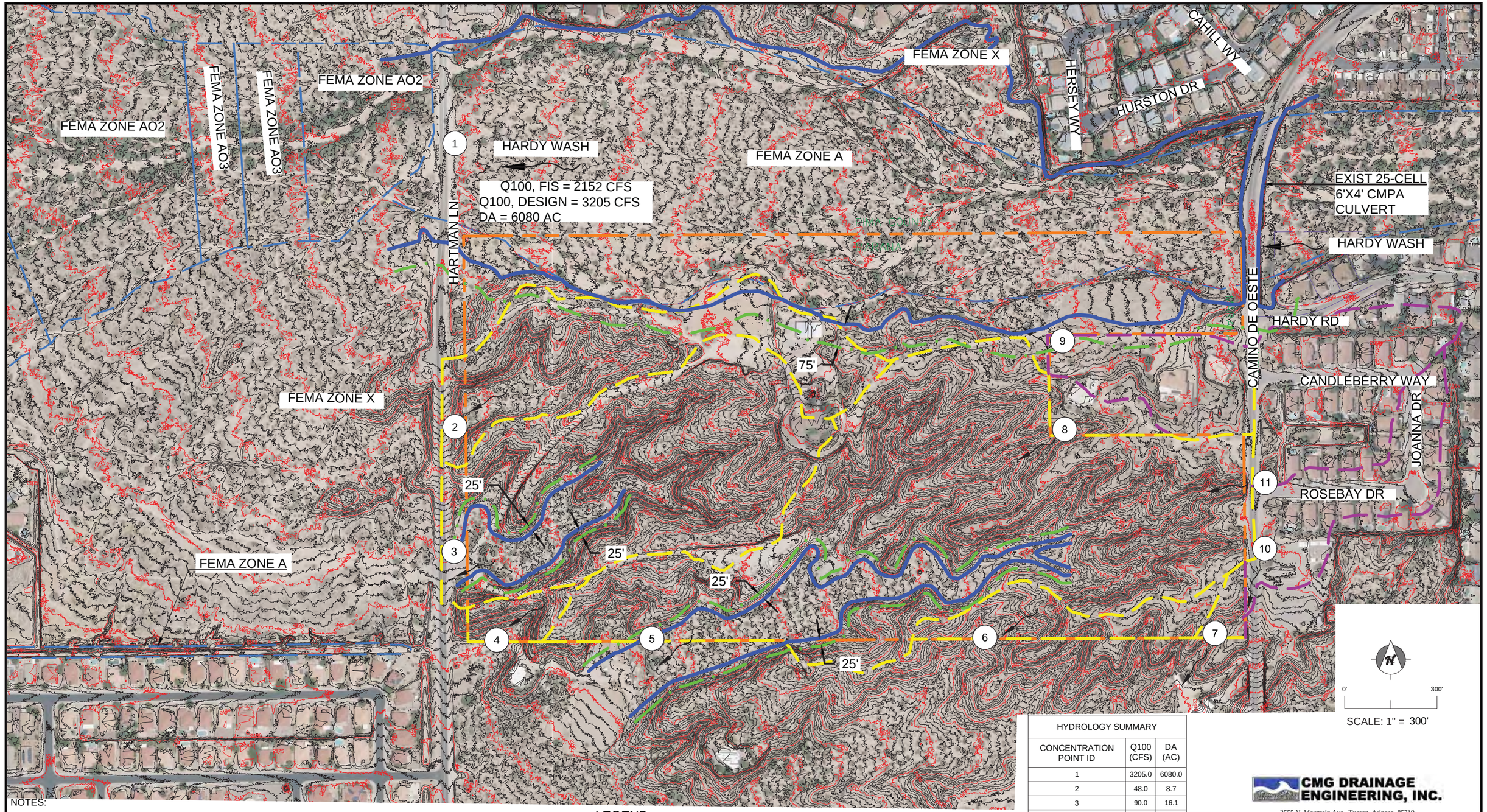
ii. Significant Off-site Features, Natural or Man-made

The most significant off-site feature that affects the project site is Hardy Wash, which drains east to west along the northern project boundary. Just upstream of the project, Hardy Wash drains under Camino de Oeste through a 25-cell 6'x4' corrugated metal pipe arch culvert. CMG has determined that the 3,205 cfs Hardy Wash 100-year discharge is conveyed beneath the roadway through the existing culverts.

iii. On-site Hydrology

Exhibit II: B.6.a shows the boundaries of on-site watersheds that impact the subject property. There are two onsite watersheds that produce 100-year discharges in excess of 50 cfs at CP3 (90 cfs) and at CP5 (160 cfs).

a. 100-year peak discharges exceeding 50 cfs.
   The corresponding 100-year floodplains for Wash #3 (CP3) and Wash #5 (CP5), along with their 25-foot erosion hazard setback (EHS) limits, have been mapped on Exhibit II: B.6.a. The 25 foot dimensions are based on Section 17-15-10.K of the Marana Floodplain and Erosion Hazard Management Code, January 2016.
b. Areas of sheet flooding and average depth.
   There are no areas of sheet flooding on the project site.
c. Federally mapped floodways and floodplains.
   Hardy Wash is a Federally-mapped watercourse. The Hardy Wash floodplains adjacent to the Camino de Oeste property are depicted on FEMA Flood Insurance Rate Map Panel 04019C1655L, which became effective on June 16, 2011. The effective FEMA floodplain limits and zone designations have also been shown on Exhibit II: B.6.a. For this project, CMG performed an updated hydraulic analysis



SCALE: 1" = 300'

NOTES:

1. CONCEPTUAL SITE LAYOUT WAS PROVIDED BY EPS GROUP, INC.
2. FEMA FLOODPLAIN LIMITS WERE OBTAINED FROM FIRM PANEL 04019C1655L WITH AN EFFECTIVE DATE OF JUNE 16, 2011.
3. VERTICAL DATUM = NAVD88
   HORIZONTAL PROJECTION = ARIZONA STATE PLANE CENTRAL, NAD83 HARN.
4. AERIAL PHOTO PROVIDED BY PIMA ASSOCIATION OF GOVERNMENTS (PAG), 2015.
5. TOPOGRAPHY PROVIDED BY PAG, 2015, 2-FT. CONTOUR INTERVALS.
6. SITE BOUNDARY PROVIDED BY ASHBY SURVEYING, DATED DECEMBER 12, 2015. BASIS OF ELEV. 2315.59- NAVD88.

LEGEND

- PROPERTY BOUNDARY
- OFFSITE WATERSHED BOUNDARY
- ONSITE WATERSHED BOUNDARY
- EFFECTIVE FEMA FLOODPLAIN
- CMG 100-YR FLOODPLAIN
- (12) FLOW CONCENTRATION POINT LOCATION & ID
- FLOW ARROW
- EROSION HAZARD SETBACK LIMIT

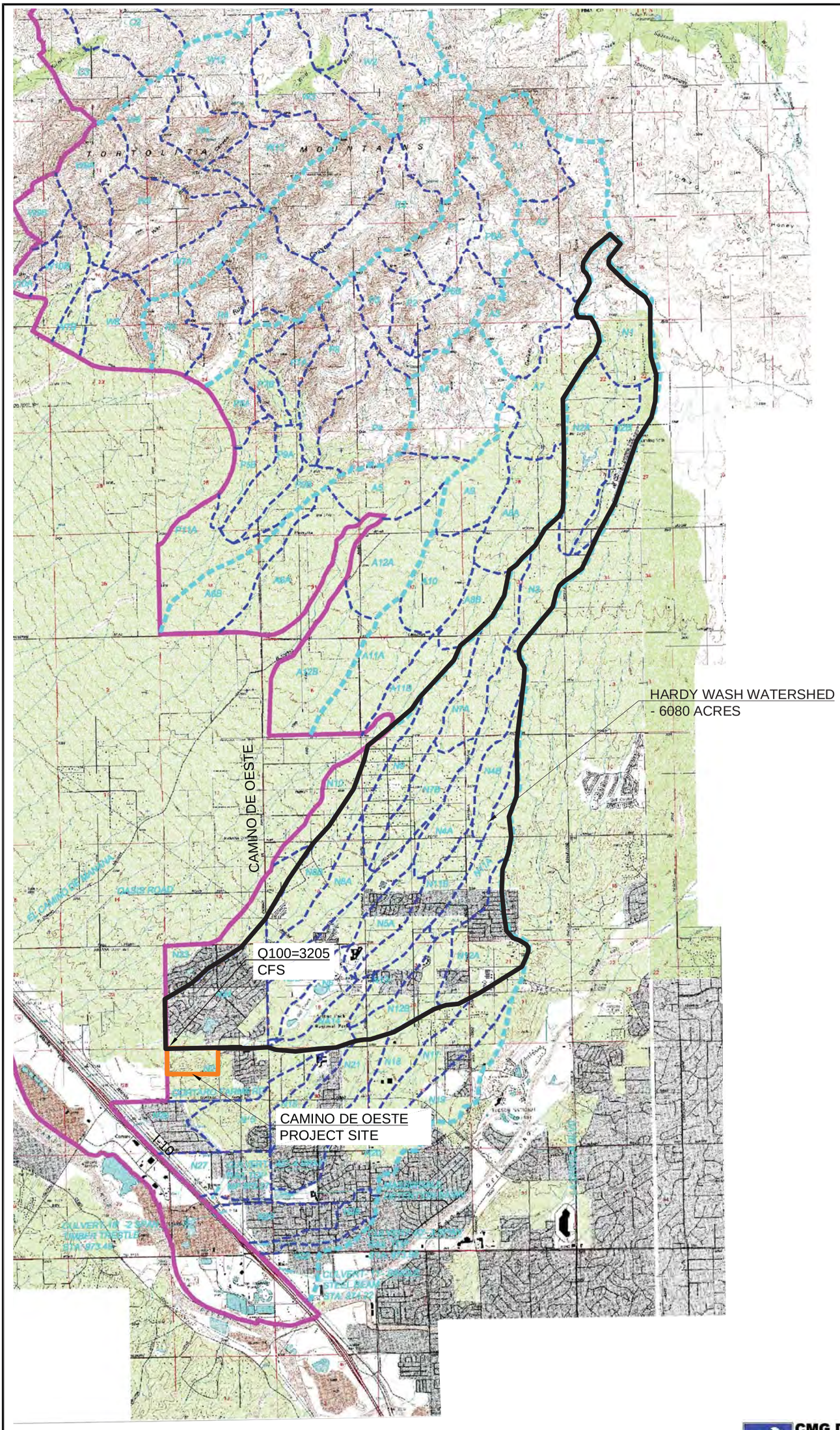
HYDROLOGY SUMMARY

CONCENTRATION POINT ID	Q100 (CFS)	DA (AC)
1	3205.0	6080.0
2	48.0	8.7
3	90.0	16.1
4	6.9	1.0
5 (Inc. CP-11 & CP-8)	160.0	35.7
6	17.0	2.5
7 (Inc. CP-10)	29.0	5.0
8	7.0	1.1
9	23.0	3.9
10	27.0	4.4
11	35.0	6.2

CMG DRAINAGE ENGINEERING, INC.
3555 N. Mountain Ave. Tucson, Arizona 85719
Phone (520) 882-4244 Fax (520) 888-1421

PROJECT NO.:	15-037
DESIGN:	JW
CHECKED:	JLC
DRAWN:	BJK/RMS
DATE:	02/03/2016
REV. DATE:	03/31/2016
REV. DATE:	
REV. DATE:	

EXHIBIT II: B.6.a
EXISTING DRAINAGE CONDITIONS FOR CAMINO DE OESTE PROPERTY



REFERENCE: FROM TOWN OF MARANA TORTOLITA FLOODPLAIN MAPPING STUDY - HEC1
WATERSHEDS & FLO-2D STUDY LIMITS - OCT 2008

SCALE: N.T.S.

LEGEND

- PROPERTY BOUNDARY
- WATERSHED BOUNDARY
- SUB-WATERSHED BOUNDARY
- TORTOLITA STUDY FLO-2D MODELING AREA BOUNDARY

CMG DRAINAGE ENGINEERING, INC.
3555 N. Mountain Ave. Tucson, Arizona 85719
Phone (520) 882-4244 Fax (520) 888-1421

PROJECT NO.:	15-037
DESIGN:	JKW
CHECKED:	JLC
DRAWN:	BJK
DATE:	02/03/2016
REV. DATE:	03/30/2016
REV. DATE:	
REV. DATE:	

EXHIBIT II: B.6.b
HARDY WASH
OFF-SITE WATERSHED MAP

and floodplain mapping for Hardy Wash based on new and more detailed topography than was used in the 2008 FEMA floodplain study. This analysis produced slightly different floodplain limits, which are considered more accurate than the effective FEMA floodplain. The updated CMG 100-year floodplain limits, along with the associated 75-foot EHS for Hardy Wash are shown on Exhibit II: B.6.a.

d. All peak discharges entering and exiting the site, as well as their contributing drainage areas have been shown on Exhibit II: B.6.a.

iv. Downstream Conditions

Other than the previously described Hardy Wash, drainage exits the property along its south and west boundaries as depicted on Exhibit II: B.6.a. Flows draining off the property to the west, primarily turn south and drain along Hartman Lane within a roadside ditch and the road right-of-way. In larger storms, a portion of these flows cross Hartman Lane and are conveyed within channels constructed along the north and east boundaries of the Cortaro Ranch subdivision. Stormwater runoff leaving the project site along the south boundary, drains within natural watercourses across the un-subdivided property to the south.

7. VEGETATION

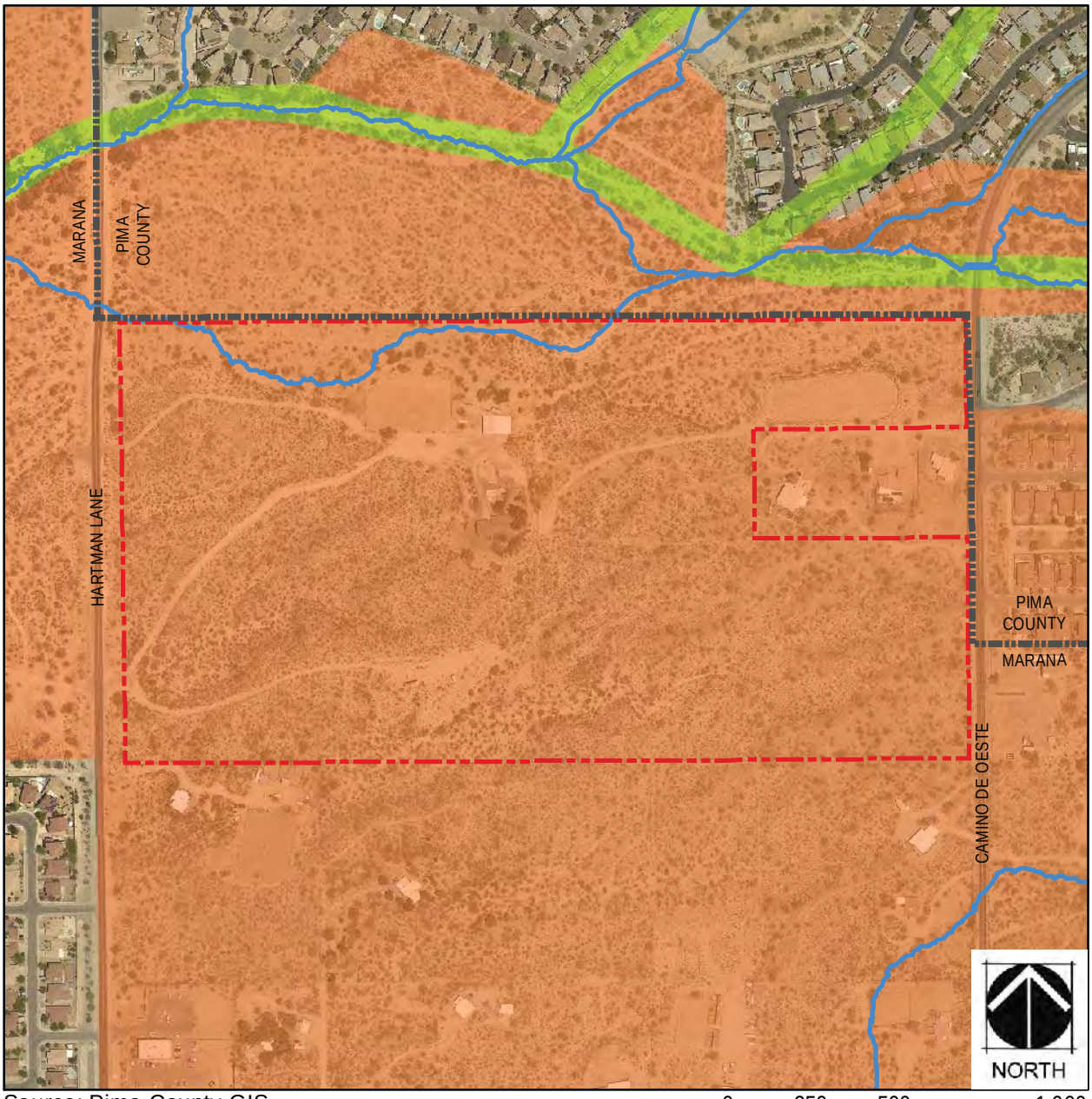
a. Vegetative Communities & Associations on Site

The vegetation on the site has been relatively disturbed due to development and use of the property as a ranch and corrals. The property includes a residence, barns, riding rings and other uses found on a ranch. This use over the years has disturbed the existing vegetation. The vegetative density and composition vary relative to proximity to slopes and drainage. Refer to Appendix A: Site Resource Inventory Map.

On-site vegetation is dominated by foothills palo verde, ironwood, saguaro, and creosote. Other, less frequently occurring species include desert hackberry, barrel cactus, white thorn acacia and triangle-leaf bursage. This vegetation is classified by Brown (1994) as part of the Sonoran Desert-Scrub - Paloverde-Mixed Cacti (Arizona Uplands) Series of the Tropical-Subtropical Desertlands. They are further sub-classified as part of the Larrea divaricata-mixed scrub Association.

The off-site vegetation in Hardy Wash is classified by Brown (1994) as part of the Mixed Scrub Series of the Tropical-Subtropical Swamp and Riparian Scrub. They are further sub-classified as part of the Prosopis velutina (velvet mesquite)-mixed scrub Association. The Velvet Mesquite Association includes Velvet Mesquite, Ironwood, Foothills Palo Verde, Cat Claw and Whitethorn Acacia, Desert Hackberry, and Saguaro. It is dominated by Ironwood and Cat Claw Acacia. See Table II: B.7.a - Vegetative Communities, and Exhibit II: B.7.a - Vegetative Communities.

Exhibit II: B.7.a - Vegetative Communities



Source: Pima County GIS

0 250 500 1,000

SCALE: 1 " = 500 '

LEGEND

- Project Site
- Marana Town Limits
- Washes
- Sonoran Desert-Scrub; Paloverde-Mixed Cacti (Arizona Uplands) Series; Larrea divaricata-mixed scrub Association
- Sonoran Deciduous Riparian Scrub; Mixed Scrub Series; Prosopis velutina (velvet mesquite)-mixed scrub Association

Table II: B.7.a - Vegetative Communities

Drainage - Mixed Scrub Series		
Trees	Shrubs	Cacti
• Ironwood (Olneya tesota) • Velvet Mesquite (Prosopis velutina) • Foothills Palo Verde (Parkinsonia aculeata) • Catclaw Acacia (Acacia greggii)	• White Thorn Acacia (Acacia constricta) • Desert Hackberry (Celtis pallida) • Canyon Ragweed (Ambrosia ambrosiodes)	• Saguaro (Carnegiea gigantea)
Uplands - Paloverde-Mixed Cacti (Arizona Uplands) Series		
Trees	Shrubs	Cacti
• Ironwood (Olneya tesota) • Foothills Palo Verde (Parkinsonia aculeata)	• Creosote (Larrea divaricata) • Triangle-leaf Bursage (Ambrosia deltoidea)	• Saguaro (Carnegiea gigantea) • Cholla (Opunita spp.)

Source: Site Observation, December 2015

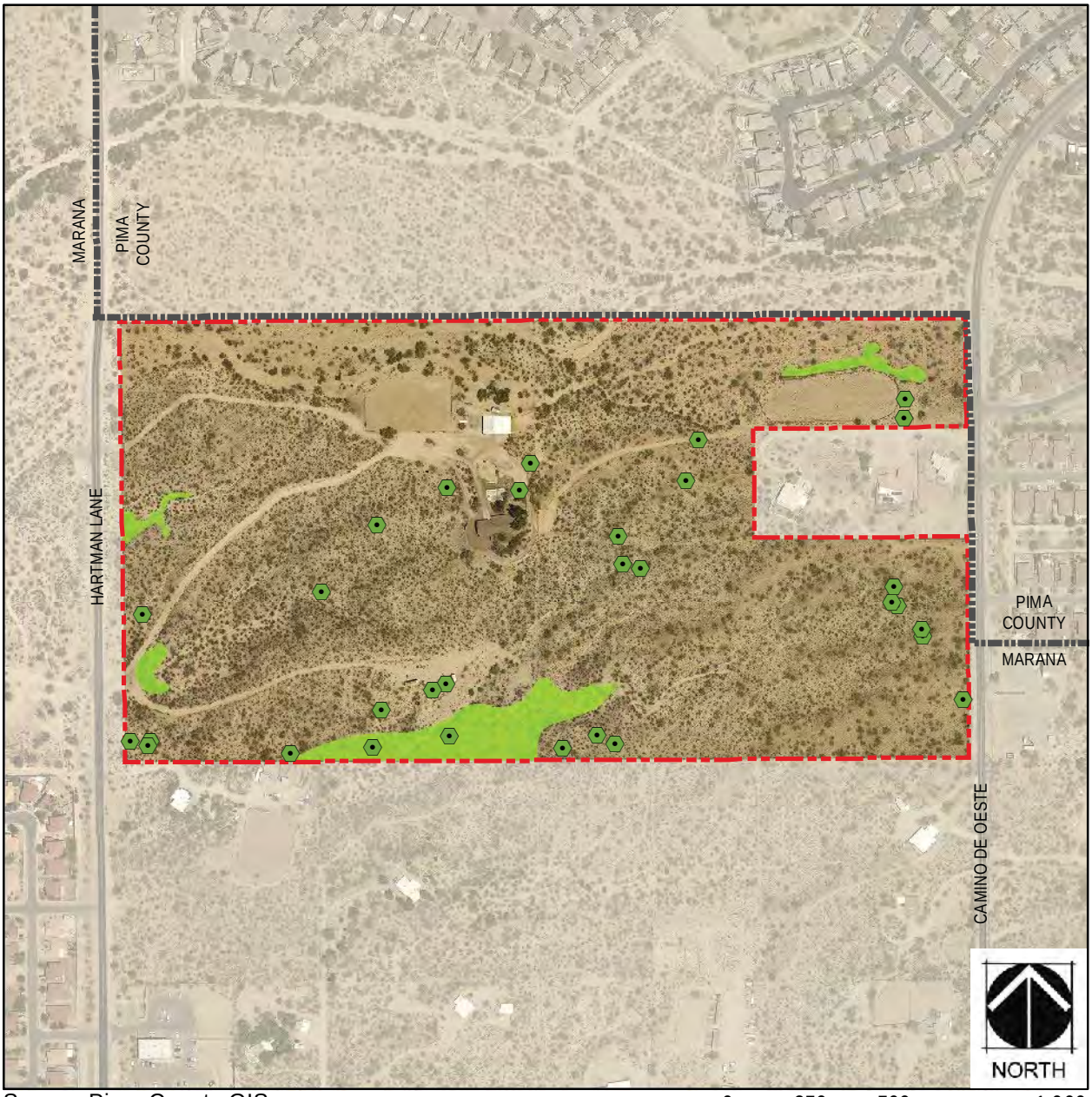
References: Brown, D.E. (Ed.). (1994). Biotic Communities: Southwestern United States and Northwestern Mexico. Salt Lake City, UT: University of Utah Press.

b. Significant Cacti, Groups of Trees, & Federally-listed Threatened / Endangered Species
Given the natural characteristics and existing vegetative composition of the site, and in compliance with the Town of Marana Land Development Code (Section 17.02 Native Plant Protection), Exhibit II: B.7.b – Significant Vegetation depicts the locations of vegetation inventoried as “significant”. Significant vegetation on the site consists of large Saguaro specimens. Several of the Saguaros on the site are large (approximately 20’ tall) and have arms indicative of age. Although the site overall does not have a significant density of Saguaros, a small area in the southwest corner of the property has close to 1/3 of the saguaros on site. Ironwood trees, and Foothills Palo Verde are the dominant species on the site and large specimens of Ironwood can be found in the riparian areas that are shown on the Significant Vegetation Exhibit.

Per Section 17.01.02 of the Town of Marana Land Development Code, the following is listed as criteria for identifying Significant Vegetation:

1. Plant species are native to the area.
2. Plant species composition is typical for the area.
3. Plants are generally healthy and will survive for 5 or more years.
4. Plant density is unusually high for the conditions (soil, slope, orientation, water availability).
5. An unusually large number of mature specimens of individual trees and/or columnar cactus species are present.
6. Noxious/invasive species are few and not visually prominent, such as Desert Broom, Tamarisk, Mexican Palo Verde and Tree of Heaven.
7. Grading or clearing has not substantially altered the landscape in the area.
8. Constructed non-native landscapes do not qualify as unique significant vegetation.

Exhibit II: B.7.b - Significant Vegetation



Source: Pima County GIS

0 250 500 1,000

SCALE: 1 " = 500 '

LEGEND

Project Site

Marana Town Limits

Significant Vegetation

Significant Vegetation (Saguaro)

The Arizona Game and Fish Department's Heritage Data Management System (HDMS) identifies two (2) plant species of Special Status within three (3) miles of the project vicinity, the Stag-horn Cholla (Opunita versicolor) and Tumamoc Globeberry (Tumamoca macdougalii). See Table II: B.7.b1 - Plant Species of Special Status and Table II: B.7b.2 - Status Definitions, and Exhibit II: B.2 - Arizona Game and Fish Department Letter.

Table II: B.7.b.1 - Plant Species of Special Status

Scientific Name	Common Name	FSW	USFS	BLM	State
Opuntia versicolor	Stag-horn Cholla				SR
Tumamoca macdougalii	Tumamoc Globeberry		S	S	SR
Carnegiea gigantea	Saguaro				HS

Source: Arizona Game and Fish On-line Environmental Review Tool, December 2015

Table II: B.7.b.2 - Status Definitions

Agency	Status	Definition
USFS (US Forest Service, US Department of Agriculture)	S: Sensitive	Those taxa occurring on National Forests in Arizona which are considered sensitive by the Regional Forester.
BLM (US Bureau of Land Management, US Department of the Interior)	S: Sensitive	Those taxa occurring on BLM Field Office Lands in Arizona which are considered sensitive by the Arizona State Office.
State - NPL Arizona Native Plant Law (2008), Arizona Department of Agriculture	SR: Salvage Restricted	Collection only with permit.
	HS: Highly Safeguarded	No collection allowed.

Source: www.azgfd.com, December 2015

c. Vegetative Densities by Percentage of Plant Cover

Existing vegetative densities found on the project site are related to the existing landforms which can be broadly classified as drainage areas, slopes, and alluvial fans. The slopes are characterized by rocky soils and smaller washes and have the greatest densities ranging from 51-75% cover. The cover is primarily smaller Ironwood and Foothills Palo Verde trees and the greatest densities of Saguaros are found on the slopes. The drainage and riparian areas are less dense with densities ranging from 26-50%. These areas have the greatest diversity of tree species on the site and are characterized by large trees in larger drainage areas. The alluvial fans have significantly less vegetative densities ranging from 0-25% cover. These areas are flat, sandy, and dominated by creosote and bursage. See Exhibit II: B.7.c - Vegetative Densities.

Exhibit II: B.7.c - Vegetative Densities



Source: Pima County GIS

0 250 500 1,000

SCALE: 1 " = 500 '

LEGEND

Project Site

Marana Town Limits

Low Density - 0-25%

Medium-Low Density - 26-50%

High-Medium Density - 51-75%

8. WILDLIFE

The Tucson-Tortolita-Santa Catalina Mountains Linkage is a major wildlife corridor that is within three miles of this project site. Previous planning and development along the Hardy Wash provided drainage solutions that enhanced a significant corridor proving wildlife connectivity north of the study area for this project. See Exhibit II: B.8.a - Wildlife Corridors.

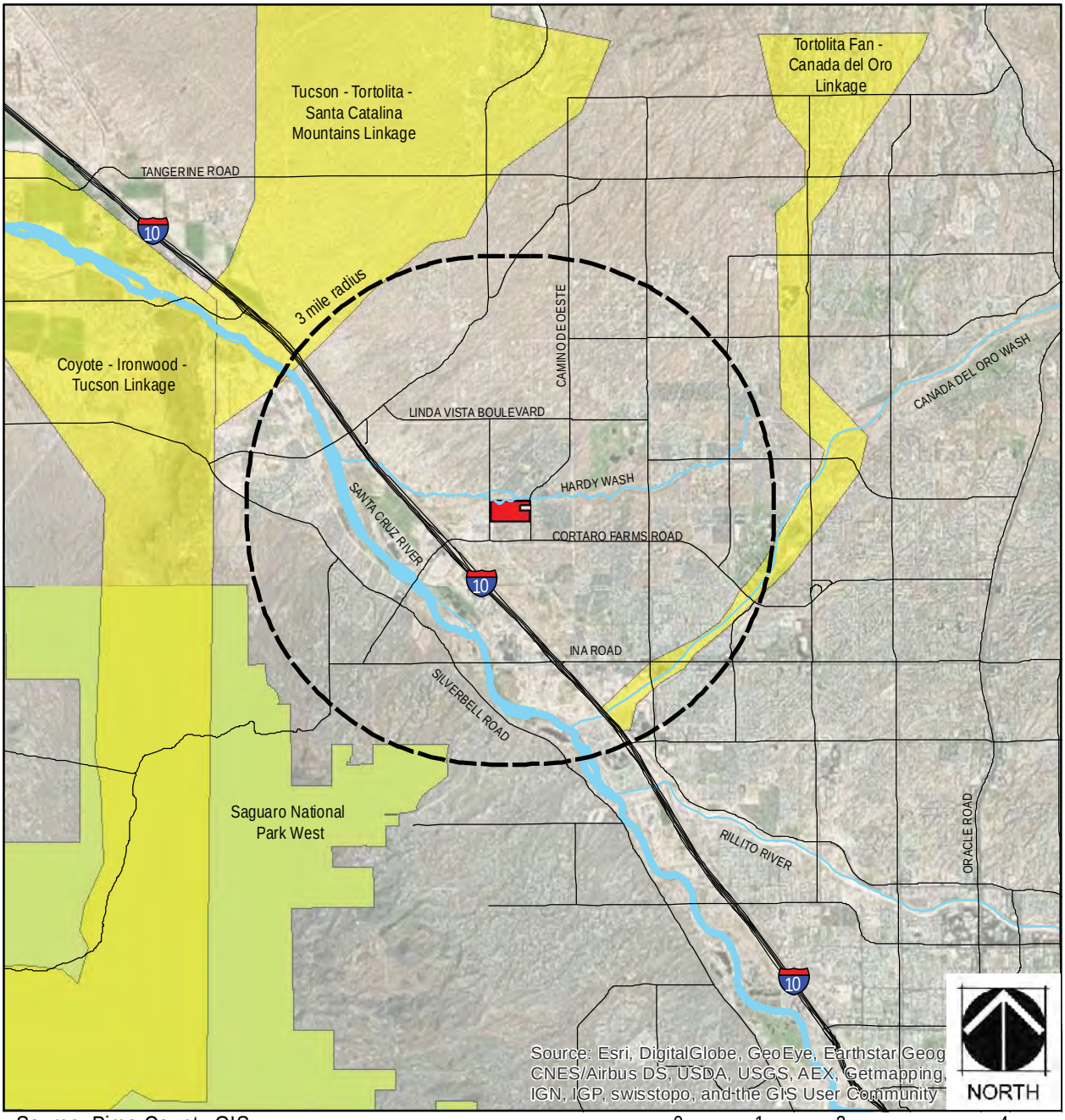
According to the Environmental Review On-Line Tools provided by the Arizona Game and Fish Department's Heritage Data Management and Project Evaluation Program, there are eight occurrences of species identified as Special Status Species within a three mile radius of the project site: Bat Colony, Fulvous Whistling-Duck (Dendrocygna bicolor), Cactus Ferruginous Pygmy-owl (Glaucidium brasilianum cactorum), Lesser Long-nosed Bat (Leptonycteris curasoae yerbabuenae), Cave Myotis (Myotis velifer), and Wildlife Corridor (Tucson - Torolita - Santa Catalina Mountains Linkage Design). A qualified biologist will perform a 100% clearance survey for the Sonoran Desert Tortoise prior to ground disturbance, using the Desert Tortoise Survey Guidelines for Environmental Consultants (Oct 2007) and the Guidelnes for Handling Sonoran Desert Tortoises Encountered on Development Projects (Jan 1997). In addition, the Cactus Ferruginous Pygmy-owl (Glaucidium brasilianum cactorum) is delisted from endangered species protection. See Table II: B.8.a.1 - Species of Special Status, and Table II: B.8.a.2 - Status Definitions, and Exhibit II: B.8.b - Arizona Game and Fish Department Letter.

TABLE II: B.8.A.1 - SPECIES OF SPECIAL STATUS

Scientific Name	Common Name	FSW	USFS	BLM	State
Bat Colony					
Dendrocygna bicolor	Fulvous Whistling-Duck	SC			
Glaucidium brasilianum cactorum	Cactus Ferruginous Pygmy-owl	SC	S	S	
Leptonycteris curasoae yerbabuenae	Lesser Long-nosed Bat	LE			
Myotis velifer	Cave Myotis	SC		S	
Tucson-Tortolita-Santa Catalina Mountains Linkage Design	Wildlife Corridor				

SOURCE: ARIZONA GAME AND FISH ON-LINE ENVIRONMENTAL REVIEW TOOL, DECEMBER 2015

Exhibit II: B.8.a - Wildlife Corridors



Source: Pima County GIS

0 1 2 4 Miles

1 " = 2 miles

LEGEND

- Project Site
- 3 Mile Radius
- Major Wash
- Santa Cruz River
- Wildlife Corridors
- Saguaro National Park West

TABLE II: B.8.A.2 - STATUS DEFINITIONS

Agency	Status	Definition
FWS (Fish and Wildlife Service, Federal US Status; Endangered Species Act, 1973 as amended)	LE: Listed Endangered	Imminent jeopardy of extinction.
	SC: Species of Concern	The terms "Species of Concern" or "Species at Risk" should be considered as terms-of-art that describe the entire realm of taxa whose conservation status may be of concern to the US Fish and Wildlife Service, but neither term has official status (currently all former C2 species).
USFS (US Forest Service, US Department of Agriculture)	S: Sensitive	Those taxa occurring on National Forests in Arizona which are considered sensitive by the Regional Forester.
BLM (US Bureau of Land Management, US Department of the Interior)	S: Sensitive	Those taxa occurring on BLM Field Office Lands in Arizona which are considered sensitive by the Arizona State Office.

SOURCE: WWW.AZGFD.COM, DECEMBER 2015

9. SOILS & GEOLOGY

a. Geotechnical Site Conditions

The project site is comprised of multiple soil types. See Exhibit II: B.9 - Soils Map. The predominant soil types found within the project site are Group A, Group B, and Group C.

Group A: (low runoff potential). Soils having high infiltration rates even when thoroughly wetted and consisting chiefly of deep, well to excessively well drainage sands or gravels. These soils have a high rate of water transmission.

Group B: Soils have moderate infiltration rates when thoroughly wetted, consisting chiefly of soils of moderately deep to deep, moderately well to well drained soils with moderately fine to moderately coarse textures. These soils have a moderate rate of water transmission.

Group C: Soils having slow infiltration rates when thoroughly wetted, consisting chiefly of soils with a layer that impedes the downward movement of water, or soils with moderately fine to fine texture and a slow infiltration rate. These soils have a slow rate of water transmission.

Arizona Environmental Online Review Tool Report

Arizona Game and Fish Department Mission
To conserve Arizona's diverse wildlife resources and manage for safe, compatible outdoor recreation opportunities for current and future generations.

Project Name:
Camino De Oeste Project

Project Description:
Single-family new home development.

Project Type:
Development Within Municipalities (Urban Growth), Residential subdivision and associated infrastructure, New construction

Contact Person:
Hillary Turby

Organization:
Norris Design

On Behalf Of:
CONSULTING

Project ID:
HGIS-01462

Please review the entire report for project type and/or species recommendations for the location information entered. Please retain a copy for future reference.

Arizona Game and Fish Department | project_report_camino_de_oeste_project_14278_17289.pdf
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Disclaimer:

1. This Environmental Review is based on the project study area that was entered. The report must be updated if the project study area, location, or the type of project changes.
2. This is a preliminary environmental screening tool. It is not a substitute for the potential knowledge gained by having a biologist conduct a field survey of the project area. This review is also not intended to replace environmental consultation (including federal consultation under the Endangered Species Act), land use permitting, or the Departments review of site-specific projects.
3. The Departments Heritage Data Management System (HDMS) data is not intended to include potential distribution of special status species. Arizona is large and diverse with plants, animals, and environmental conditions that are ever changing. Consequently, many areas may contain species that biologists do not know about or species previously noted in a particular area may no longer occur there. HDMS data contains information about species occurrences that have actually been reported to the Department. Not all of Arizona has been surveyed for special status species, and surveys that have been conducted have varied greatly in scope and intensity. Such surveys may reveal previously undocumented population of species of special concern.
4. HabiMap Arizona data, specifically Species of Greatest Conservation Need (SGCN) under our State Wildlife Action Plan (SWAP) and Species of Economic and Recreational Importance (SERI), represent potential species distribution models for the State of Arizona which are subject to ongoing change, modification and refinement. The status of a wildlife resource can change quickly, and the availability of new data will necessitate a refined assessment.

Locations Accuracy Disclaimer:
Project locations are assumed to be both precise and accurate for the purposes of environmental review. The creator/owner of the Project Review Report is solely responsible for the project location and thus the correctness of the Project Review Report content.

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Recommendations Disclaimer:

1. The Department is interested in the conservation of all fish and wildlife resources, including those species listed in this report and those that may have not been documented within the project vicinity as well as other game and nongame wildlife.
2. Recommendations have been made by the Department, under authority of Arizona Revised Statutes Title 5 (Amusements and Sports), 17 (Game and Fish), and 28 (Transportation).
3. Potential impacts to fish and wildlife resources may be minimized or avoided by the recommendations generated from information submitted for your proposed project. These recommendations are preliminary in scope, designed to provide early considerations on all species of wildlife.
4. Making this information directly available does not substitute for the Department's review of project proposals, and should not decrease our opportunity to review and evaluate additional project information and/or new project proposals.
5. Further coordination with the Department requires the submittal of this Environmental Review Report with a cover letter and project plans or documentation that includes project narrative, acreage to be impacted, how construction or project activity(s) are to be accomplished, and project locality information (including site map). Once AGFD had received the information, please allow 30 days for completion of project reviews. Send requests to:
   Project Evaluation Program, Habitat Branch
   Arizona Game and Fish Department
   5000 West Carefree Highway
   Phoenix, Arizona 85086-5000
   Phone Number: (623) 236-7600
   Fax Number: (623) 236-7366
   Or
   PEP@azgfd.gov
6. Coordination may also be necessary under the National Environmental Policy Act (NEPA) and/or Endangered Species Act (ESA). Site specific recommendations may be proposed during further NEPA/ESA analysis or through coordination with affected agencies

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Camino De Oeste Project

Aerial Image Basemap With Locator Map



Project Boundary

Buffered Project Boundary

Project Size (acres): 73.24

Lat/Long (DD): 32.3648 / -111.0763

County(s): Pima

AGFD Region(s): Tucson

Township/Range(s): T12S, R12E

USGS Quad(s): JAYNES

Service Layer Credits: Sources: Esri, HERE, DeLorme, TomTom, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong),

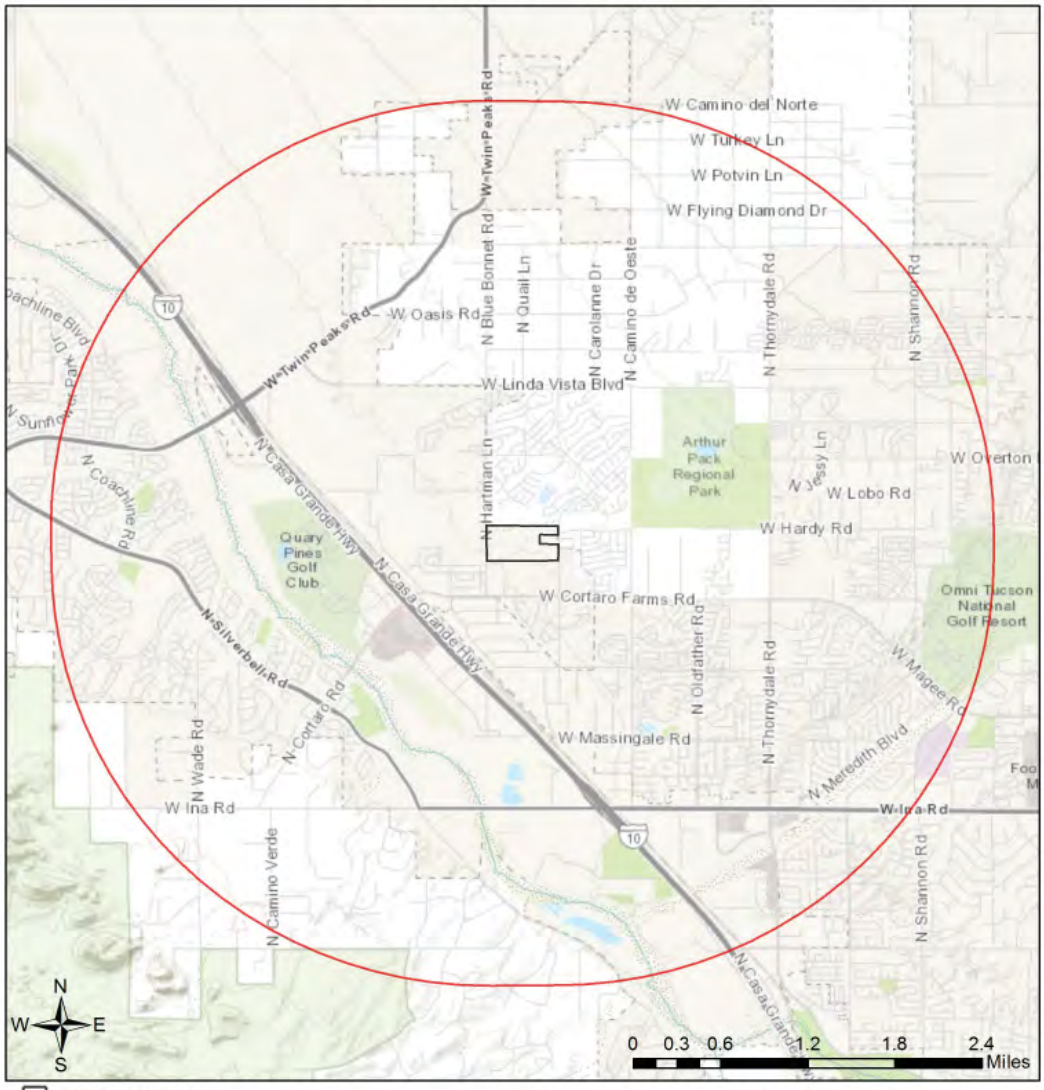


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Camino De Oeste Project

Web Map As Submitted By User



Project Boundary

Buffered Project Boundary

Project Size (acres): 73.24

Lat/Long (DD): 32.3648 / -111.0763

County(s): Pima

AGFD Region(s): Tucson

Township/Range(s): T12S, R12E

USGS Quad(s): JAYNES

Sources: Esri, HERE, DeLorme, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

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Camino De Oeste Project

Topo Basemap With Township/Ranges and Land Ownership



Project Boundary	Mixed/Other	Project Size (acres): 73.24
Buffered Project Boundary	National Park/Mon.	Lat/Long (DD): 32.3648 / -111.0763
Township/Ranges	Private	County(s): Pima
AZ Game and Fish Dept.	State and Regional Parks	AGFD Region(s): Tucson
BLM	State Trust	Township/Range(s): T12S, R12E
BOR	US Forest Service	USGS Quad(s): JAYNES
Indian Res.	Wildlife Area/Refuge	
Military		

Sources: Esri, HERE, DeLorme, Intermap, increment P Corp., GEBCO, USGS, FAO, NPS, NRCAN, GeoBase, IGN, Kadaster NL, Ordnance Survey, Esri Japan, METI, Esri China (Hong Kong), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

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Special Status Species and Special Areas Documented within 3 Miles of Project Vicinity

Scientific Name	Common Name	FWS	USFS	BLM	NPL	SGCN
Bat Colony						
Dendrocygna bicolor	Fulvous Whistling-Duck	SC				
Glaucidium brasilianum cactorum	Cactus Ferruginous Pygmy-owl	SC	S	S		1B
Leptonycteris curasoae yerbabuenae	Lesser Long-nosed Bat	LE				1A
Myotis velifer	Cave Myotis	SC		S		1B
Opuntia versicolor	Stag-horn Cholla				SR	
Tucson - Tortolita - Santa Catalina Mountains Linkage Design	Wildlife Corridor					
Tumamoca macdougalii	Tumamoc Globeberry		S	S	SR	

Note: Status code definitions can be found at http://www.azgfd.gov/w_c/edits/hdms_status_definitions.shtml*.*

Species of Greatest Conservation Need
Predicted within Project Vicinity based on Predicted Range Models

Scientific Name	Common Name	FWS	USFS	BLM	NPL	SGCN
Aix sponsa	Wood Duck					1B
Amazilia violiceps	Violet-crowned Hummingbird		S			1B
Ammospermophilus harrisii	Harris' Antelope Squirrel					1B
Anaxyrus retiformis	Sonoran Green Toad			S		1B
Anthus spragueii	Sprague's Pipit	C*				1A
Antrostomus ridgwayi	Buff-collared Nightjar		S			1B
Aquila chrysaetos	Golden Eagle	BGA		S		1B
Aspidoscelis stictogramma	Giant Spotted Whiptail	SC	S			1B
Athene cunicularia hypugaea	Western Burrowing Owl	SC	S	S		1B
Botaurus lentiginosus	American Bittern					1B
Buteo regalis	Ferruginous Hawk	SC		S		1B
Chilomeniscus stramineus	Variable Sandsnake					1B
Chionactis occipitalis klauberi	Tucson Shovel-nosed Snake	SC				1A
Coccyzus americanus	Yellow-billed Cuckoo (Western DPS)	LT	S			1A
Colaptes chrysoides	Gilded Flicker			S		1B
Coluber bilineatus	Sonoran Whipsnake					1B
Corynorhinus townsendii pallescens	Pale Townsend's Big-eared Bat	SC	S	S		1B
Crotalus tigris	Tiger Rattlesnake					1B
Crotaphytus nebrius	Sonoran Collared Lizard					1B
Cynanthus latirostris	Broad-billed Hummingbird		S			1B
Cyprinodon macularius	Desert Pupfish	LE				1A
Dipodomys spectabilis	Banner-tailed Kangaroo Rat			S		1B
Euderma maculatum	Spotted Bat	SC	S	S		1B
Eumops perotis californicus	Greater Western Bonneted Bat	SC		S		1B

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Species of Greatest Conservation Need
Predicted within Project Vicinity based on Predicted Range Models

Scientific Name	Common Name	FWS	USFS	BLM	NPL	SGCN
Falco peregrinus anatum	American Peregrine Falcon	SC	S	S		1A
Glaucidium brasilianum cactorum	Cactus Ferruginous Pygmy-owl	SC	S	S		1B
Gopherus morafkai	Sonoran Desert Tortoise	CCA	S			1A
Haliaeetus leucocephalus	Bald Eagle	SC, BGA	S	S		1A
Heloderma suspectum	Gila Monster					1A
Incilius alvarius	Sonoran Desert Toad					1B
Kinosternon sonoriense sonoriense	Desert Mud Turtle			S		1B
Lasiurus blossevillii	Western Red Bat		S			1B
Lasiurus xanthinus	Western Yellow Bat		S			1B
Leopardus pardalis	Ocelot	LE				1A
Leptonycteris curasoae yerbabuenae	Lesser Long-nosed Bat	LE				1A
Lepus alleni	Antelope Jackrabbit					1B
Lithobates yavapaiensis	Lowland Leopard Frog	SC	S	S		1A
Macrotus californicus	California Leaf-nosed Bat	SC		S		1B
Melanerpes uropygialis	Gila Woodpecker					1B
Meleagris gallopavo mexicana	Gould's Turkey		S			1B
Melospiza lincolnii	Lincoln's Sparrow					1B
Melozone aberti	Abert's Towhee		S			1B
Micruroides euryxanthus	Sonoran Coralsnake					1B
Myotis occultus	Arizona Myotis	SC		S		1B
Myotis velifer	Cave Myotis	SC		S		1B
Myotis yumanensis	Yuma Myotis	SC				1B
Nyctinomops femorosaccus	Pocketed Free-tailed Bat					1B
Panthera onca	Jaguar	LE				1A
Passerculus sandwichensis	Savannah Sparrow					1B
Perognathus amplus	Arizona Pocket Mouse					1B
Perognathus longimembris	Little Pocket Mouse					1B
Peucaea botterii arizonae	Arizona Botteri's Sparrow			S		1B
Peucaea carpalis	Rufous-winged Sparrow					1B
Phrynosoma solare	Regal Horned Lizard					1B
Phyllorhynchus browni	Saddled Leaf-nosed Snake					1B
Poeciliopsis occidentalis occidentalis	Gila Topminnow	LE				1A
Progne subis hesperia	Desert Purple Martin			S		1B
Setophaga petechia	Yellow Warbler					1B
Sonorella papagorum	Black Mountain Talussnail					1B
Tadarida brasiliensis	Brazilian Free-tailed Bat					1B

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Project ID: HGIS-01462

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Species of Greatest Conservation Need
Predicted within Project Vicinity based on Predicted Range Models

Scientific Name	Common Name	FWS	USFS	BLM	NPL	SGCN
Terrapene ornata	Ornate Box Turtle					1A
Troglodytes pacificus	Pacific Wren					1B
Vireo bellii arizonae	Arizona Bell's Vireo					1B
Vulpes macrotis	Kit Fox					1B

Species of Economic and Recreation Importance Predicted within Project Vicinity

Scientific Name	Common Name	FWS	USFS	BLM	NPL	SGCN
Callipepla gambelii	Gambel's Quail					
Odocoileus hemionus	Mule Deer					
Pecari tajacu	Javelina					
Puma concolor	Mountain Lion					
Zenaida asiatica	White-winged Dove					

Project Type: Development Within Municipalities (Urban Growth), Residential subdivision and associated infrastructure, New construction

Project Type Recommendations:

Fence recommendations will be dependant upon the goals of the fence project and the wildlife species expected to be impacted by the project. General guidelines for ensuring wildlife-friendly fences include: barbless wire on the top and bottom with the maximum fence height 42", minimum height for bottom 16". Modifications to this design may be considered for fencing anticipated to be routinely encountered by elk, bighorn sheep or pronghorn (e.g., Pronghorn fencing would require 18" minimum height on the bottom). Please refer to the Department's Fencing Guidelines located on the home page of this application at http://www.azgfd.gov/hgis/guidelines.aspx.

During the planning stages of your project, please consider the local or regional needs of wildlife in regards to movement, connectivity, and access to habitat needs. Loss of this permeability prevents wildlife from accessing resources, finding mates, reduces gene flow, prevents wildlife from re-colonizing areas where local extirpations may have occurred, and ultimately prevents wildlife from contributing to ecosystem functions, such as pollination, seed dispersal, control of prey numbers, and resistance to invasive species. In many cases, streams and washes provide natural movement corridors for wildlife and should be maintained in their natural state. Uplands also support a large diversity of species, and should be contained within important wildlife movement corridors. In addition, maintaining biodiversity and ecosystem functions can be facilitated through improving designs of structures, fences, roadways, and culverts to promote passage for a variety of wildlife.

Consider impacts of outdoor lighting on wildlife and develop measures or alternatives that can be taken to increase human safety while minimizing potential impacts to wildlife. Conduct wildlife surveys to determine species within project area, and evaluate proposed activities based on species biology and natural history to determine if artificial lighting may disrupt behavior patterns or habitat use. Use only the minimum amount of light needed for safety. Narrow spectrum bulbs should be used as often as possible to lower the range of species affected by lighting. All lighting should be shielded, cantered, or cut to ensure that light reaches only areas needing illumination.

Arizona Game and Fish Department | project_report_camino_de_oeste_project_14278_17289.pdf
Project ID: HGIS-01462 | Review Date: 12/9/2015 10:43:05 AM

Minimize potential introduction or spread of exotic invasive species. Invasive species can be plants, animals (exotic snails), and other organisms (e.g., microbes), which may cause alteration to ecological functions or compete with or prey upon native species and can cause social impacts (e.g., livestock forage reduction, increase wildfire risk). The terms noxious weed or invasive plants are often used interchangeably. Precautions should be taken to wash all equipment utilized in the project activities before leaving the site. Arizona has noxious weed regulations (Arizona Revised Statutes, Rules R3-4-244 and R3-4-245). See Arizona Department of Agriculture website for restricted plants, https://agriculture.az.gov/. Additionally, the U.S. Department of Agriculture has information regarding pest and invasive plant control methods including: pesticide, herbicide, biological control agents, and mechanical control, http://www.usda.gov/wps/portal/usdahome. The Department regulates the importation, purchasing, and transportation of wildlife and fish (Restricted Live Wildlife), please refer to the hunting regulations for further information http://www.azgfd.gov/h_f/hunting_rules.shtml

The construction or maintenance of water developments should include: incorporation of aspects of the natural environment and the visual resources, maintaining the water for a variety of species, water surface area (e.g., bats require a greater area due to in-flight drinking), accessibility, year-round availability, minimizing potential for water quality problems, frequency of flushing, shading of natural features, regular clean-up of debris, escape ramps, minimizing obstacles, and minimizing accumulation of silt and mud.

Minimization and mitigation of impacts to wildlife and fish species due to changes in water quality, quantity, chemistry, temperature, and alteration to flow regimes (timing, magnitude, duration, and frequency of floods) should be evaluated. Minimize impacts to springs, in-stream flow, and consider irrigation improvements to decrease water use. If dredging is a project component, consider timing of the project in order to minimize impacts to spawning fish and other aquatic species (include spawning seasons), and to reduce spread of exotic invasive species. We recommend early direct coordination with Project Evaluation Program for projects that could impact water resources, wetlands, streams, springs, and/or riparian habitats.

The Department recommends that wildlife surveys are conducted to determine if noise-sensitive species occur within the project area. Avoidance or minimization measures could include conducting project activities outside of breeding seasons.

Based on the project type entered, coordination with State Historic Preservation Office may be required (http://azstateparks.com/SHPO/index.html).

Trenches should be covered or back-filled as soon as possible. Incorporate escape ramps in ditches or fencing along the perimeter to deter small mammals and herptefauna (snakes, lizards, tortoise) from entering ditches.

Communities can actively support the sustainability and mobility of wildlife by incorporating wildlife planning into their regional/comprehensive plans, their regional transportation plans, and their open space/conservation land system programs. An effective approach to wildlife planning begins with the identification of the wildlife resources in need of protection, an assessment of important habitat blocks and connective corridors, and the incorporation of these critical wildlife components into the community plans and programs. Community planners should identify open spaces and habitat blocks that can be maintained in their area, and the necessary connections between those blocks to be preserved or protected. Community planners should also work with State and local transportation planning entities, and planners from other communities, to foster coordination and cooperation in developing compatible development plans to ensure wildlife habitat connectivity. The Department's guidelines for incorporating wildlife considerations into community planning and developments can be found on the home page of this application at http://www.azgfd.gov/hgis/guidelines.aspx.

Design culverts to minimize impacts to channel geometry, or design channel geometry (low flow, overbank, floodplains) and substrates to carry expected discharge using local drainages of appropriate size as templates. Reduce/minimize barriers to allow movement of amphibians or fish (e.g., eliminate falls). Also for terrestrial wildlife, washes and stream corridors often provide important corridors for movement. Overall culvert width, height, and length should be optimized for movement of the greatest number and diversity of species expected to utilize the passage. Culvert designs should consider moisture, light, and noise, while providing clear views at both ends to maximize utilization. For many species, fencing is an important design feature that can be utilized with culverts to funnel wildlife into these areas and minimize the potential for roadway collisions. Guidelines for culvert designs to facilitate wildlife passage can be found on the home page of this application at http://www.azgfd.gov/hgis/guidelines.aspx.

Based on the project type entered, coordination with Arizona Department of Environmental Quality may be required (http://www.azdeq.gov/).

Based on the project type entered, coordination with Arizona Department of Water Resources may be required (http://www.azwater.gov/azdwr/default.aspx).

Based on the project type entered, coordination with U.S. Army Corps of Engineers may be required (http://www.usace.army.mil/)

Based on the project type entered, coordination with County Flood Control district(s) may be required.

Development plans should provide for open natural space for wildlife movement, while also minimizing the potential for wildlife-human interactions through design features. Please contact Project Evaluation Program for more information on living with urban wildlife.

Vegetation restoration projects (including treatments of invasive or exotic species) should have a completed site-evaluation plan (identifying environmental conditions necessary to re-establish native vegetation), a revegetation plan (species, density, method of establishment), a short and long-term monitoring plan, including adaptive management guidelines to address needs for replacement vegetation.

The Department requests further coordination to provide project/species specific recommendations, please contact Project Evaluation Program directly. PEP@azgfd.gov

Project Location and/or Species Recommendations:

HDMS records indicate that one or more native plants listed on the Arizona Native Plant Law and Antiquities Act have been documented within the vicinity of your project area. Please contact:
Arizona Department of Agriculture
1688 W Adams St.
Phoenix, AZ 85007
Phone: 602.542.4373
https://agriculture.az.gov/environmental-services/np1

Arizona Game and Fish Department | project_report_camino_de_oeste_project_14278_17289.pdf
Project ID: HGIS-01462 | Review Date: 12/9/2015 10:43:05 AM

HDMS records indicate that one or more listed, proposed, or candidate species or Critical Habitat (Designated or Proposed) have been documented in the vicinity of your project. The Endangered Species Act (ESA) gives the US Fish and Wildlife Service (USFWS) regulatory authority over all federally listed species. Please contact USFWS Ecological Services Offices at http://www.fws.gov/southwest/es/arizona/ or:

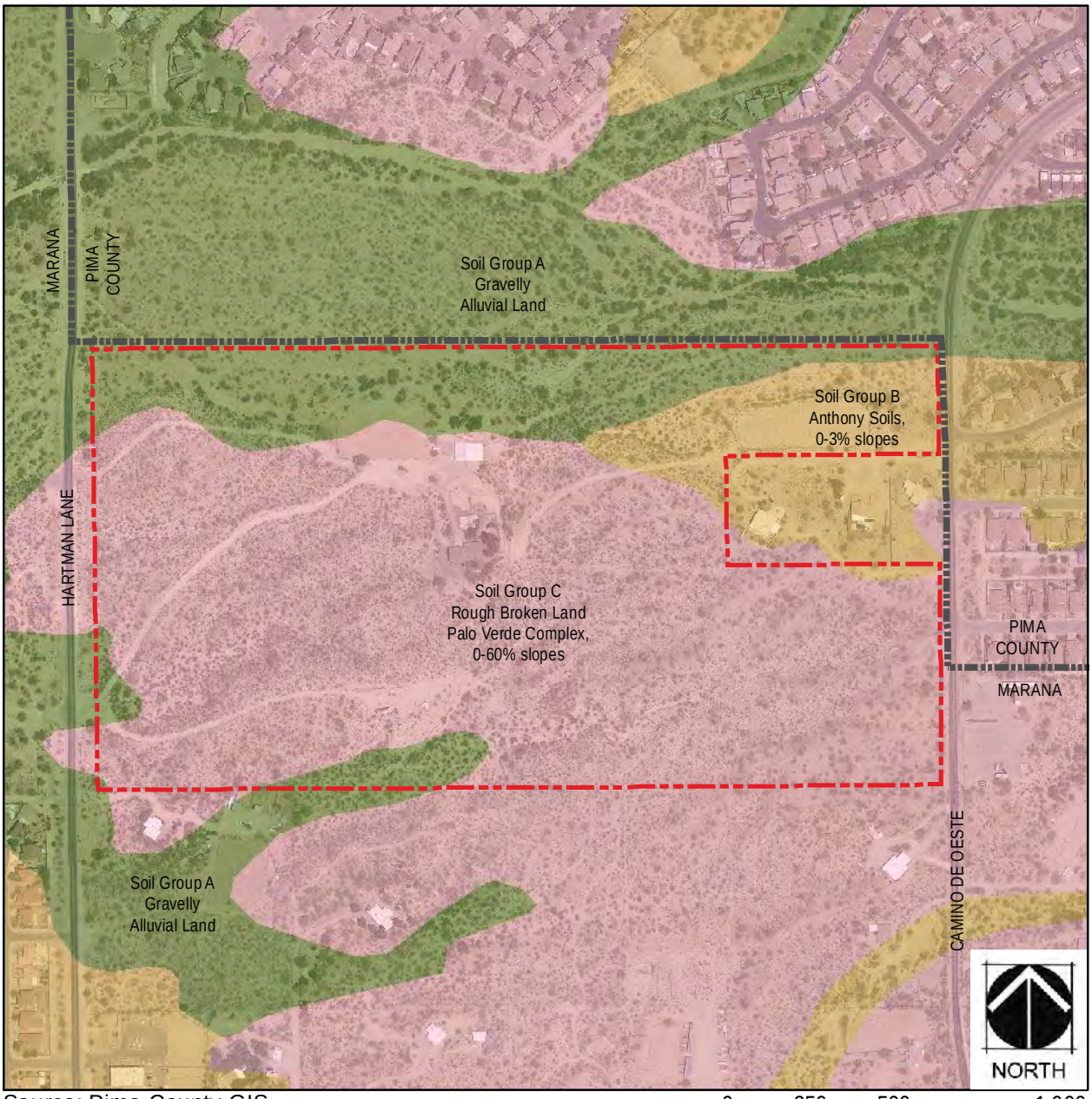
Phoenix Main Office
2321 W. Royal Palm Rd, Suite 103
Phoenix, AZ 85021
Phone: 602-242-0210
Fax: 602-242-2513

Tucson Sub-Office
201 N. Bonita Suite 141
Tucson, AZ 85745
Phone: 520-670-6144
Fax: 520-670-6155

Flagstaff Sub-Office
SW Forest Science Complex
2500 S. Pine Knoll Dr.
Flagstaff, AZ 86001
Phone: 928-556-2157
Fax: 928-556-2121

Analysis indicates that your project is located in the vicinity of an identified wildlife habitat linkage corridor. Project planning and implementation efforts should focus on maintaining adequate opportunities for wildlife permeability. For information pertaining to the linkage assessment and wildlife species that may be affected, please refer to: http://www.corridordesign.org/arizona. Please contact your local Arizona Game and Fish Department Regional Office for specific project recommendations: http://www.azgfd.gov/inside_azgfd/agency_directory.shtml.

Exhibit II: B.9 - Soils Map



Source: Pima County GIS

0 250 500 1,000

SCALE: 1 " = 500 '

LEGEND

- Project Site
- Marana Town Limits
- Soil Group A
- Soil Group B
- Soil Group C

10. VIEWSHEDS

a. Property Viewsheds

i. Viewsheds Onto & Across the Site

The project site consists of gently rolling topography that slopes from northeast to southwest. Views and vistas beyond adjacent properties are of the Tortolita Mountains to the north, Baboquivari Peak and Kitt Peak to the southwest, the Tucson Mountains to the south, the Silverbell Mountains to the west, and Mount Lemmon and Pusch Ridge (in the Santa Catalina Mountains) to the east. See Exhibit II: B.10.c - Views from/into the Site.

ii. Views which may be Blocked by Proposed Development

Views that may be blocked by the proposed development are concentrated around the four out parcels located within the northeast corner of the project site. These parcels will be most directly impacted by the development of Camino de Oeste. Since these adjacent parcels are set at a higher elevation than the Camino de Oeste project site, it is anticipated that impacts to their views will be minor. One of the four lots also has a pre-existing perimeter wall that blocks views to the south.

iii. Areas of High Visibility from Adjacent Off-site Locations

As illustrated by Exhibit II:B.10.a - Viewsheds, the perimeter of the property is highly visible from the adjacent collector roadways, however the interior portions of the property are obstructed due to topography changes and low to medium density vegetation. The higher elevations of the property can be seen from Interstate 10, although development plans for property west of the site might obscure some of these views in the future.

b. Photo Key Map and Viewsheds

Various photographs were taken of views from across the project site. Exhibit II:B.10.b - Photo Key Map indicates the locations and direction from which the photos were taken.

Exhibit II: B.10.a - Viewsheds



Source: Pima County GIS

0 250 500 1,000

SCALE: 1 " = 500 '

LEGEND

Project Site

Areas of High Visibility

Marana Town Limits

Exhibit II: B.10.b - Photo Key Map



Source: Pima County GIS

0 250 500 1,000

SCALE: 1 " = 500 '

LEGEND

View

Project Site

Marana Town Limits

Exhibit II: B.10.c - Views from/into the Site



1 View looking north.



2 View looking south.



3 View looking east.



4 View looking west.



5 View looking southwest.



6 View looking northwest.



7 View looking east into the property from the existing residential entry on Hartman Lane.



8 View looking northeast from the southern boundary.



9 View looking northwest from proposed entry on Camino de Oeste.



10 View looking west from the property's northeast corner.



11 View looking north from proposed entry on Camino de Oeste.



12 View looking north from the property's northwest corner.

11. TRAFFIC

a. Existing Roads and Access

The subject property is located one quarter mile north of the Cortaro Farms Road/Hartman Lane intersection in the Town of Marana. The site is bounded by Hartman Lane to the west, Camino de Oeste to the east and Hardy Wash to the north.

Additionally, Interstate 10 is located approximately one mile west of the project site. This portion of Interstate 10 is divided and consists of three lanes in each direction, and includes a frontage road that consists of two lanes in each direction.

i. Existing / Proposed Off-site Streets between the Development & Nearest Arterial Streets

Hartman Lane and Camino de Oeste border the project on the west and east respectively. These two collector roadways directly feed into the nearest arterial, Cortaro Farms Road.

ii. Arterial Streets within 1 Mile of the Project Site

Cortaro Farms Road is an urban arterial with a posted speed limit of 40 mph. It has four lanes (divided with a raised median) from Interstate 10 to about a 1/4 mile east of Camino de Oeste. It then transitions to a two-lane undivided roadway. It continues east about two miles to its terminus east of Shannon Road. In the vicinity of the project, Cortaro Farms Road has paved shoulders with sidewalks in both directions. It is designated on the Tucson Bike Map as a Key Connecting Street. Its theoretical level of service (LOS) E capacity is 32,900 vehicles per day (vpd) on its 4-lane section and 15,600 vpd along its 2-lane section. See Exhibit II: B.11.a - Existing Roads and Access.

A roadway inventory of all major roadways within one-mile of the subject property was conducted to obtain the following information:

1. Existing and proposed right-of-way widths.
2. Whether or not said widths conform to minimum requirements.
3. Ownership
4. Number of travel lanes and theoretical capacity and posted speed for existing roads.
5. Current average daily traffic volumes for existing streets.
6. Proposed roadway improvements to be provided by the applicant.

See Table II: B.11.a.ii - Nearest Arterial and Collector Streets.

Table II: B.11.a.ii - Nearest Arterial and Collector Streets

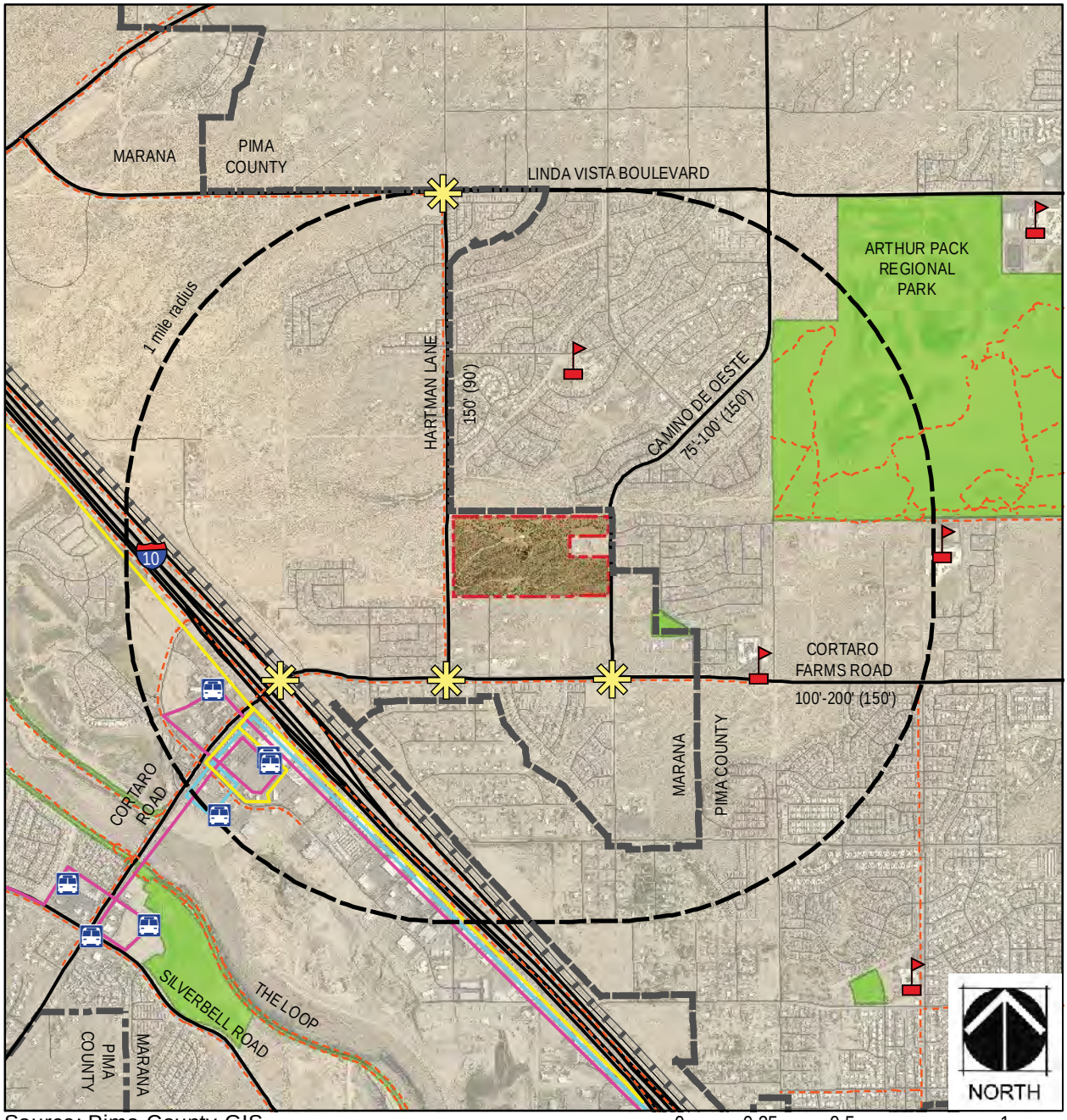
	Cortaro Farms Road	Camino de Oeste	Hartman Lane
Major Routes Classification	Arterial	Minor Collector	Minor Collector
Existing R.O.W. (Feet)	100-200 (narrows east of Camino de Oeste)	60-105 (narrows south of the project site toward Cortaro Farms Road)	90-160 (narrows north and south of the project site)
Future R.O.W. (Feet)*	150 (Town of Marana and Pima County)	80 (Pima County)	90 (Town of Marana) 80 (Pima County)
Current Number of Lanes (proposed)	2-4	2	2
Speed Limit	40	35	35
Ownership	Marana/Pima County	Pima County	Marana
ADT (Source, Year)	I-10 WB Frontage to Hartman Lane - 27,592 (PAG, 2012)	8,032 (PAG, 2011)	5,849 (PAG, 2013)
	Hartman Lane to Thornydale Road - 20,721 (PAG, 2012)		
Capacity (Florida Dept. of Transportation, 2002)	15,600-32,900	15,600	15,600
Conforms to Width Standards	No	No	Yes
Surface Conditions Paved Paved/Dirt Paved	Paved	Paved/Dirt	Paved
Proposed Improvements (See Part III - Land Use Plan)	NA	Northbound Left-Turn Lane	NA

Source: Town of Marana. Pima County Map Guide (Major Streets and Routes Plan)
*Some future ROW widths have recently been reduced from previously over-dedicated roadways

b. Existing / Proposed Intersections on Arterials within 1 Mile of the Site
Existing intersections on arterials within one-mile of the site include the signalized intersection of Cortaro Farms Road at Hartman Lane, Cortaro Farms Road at Camino De Oeste, and Cortaro Farms Road at Interstate 10.

c. Existing Bicycle / Pedestrian Ways Adjacent to the Site
Four of the project area roads within one-mile of the project site are designated on the Tucson Bike Map as bike routes. Cortaro Farms Road and Hardy Road have bike routes with a striped shoulder that connect to bike routes on Hartman Lane and Interstate 10

Exhibit II: B.11.a - Existing Roads and Access



Source: Pima County GIS

0 0.25 0.5 1 Miles

SCALE: 1" = 1/2 Mile

LEGEND

- Project Site
- 1 Mile Radius
- Marana Town Limits
- Park
- School
- Intersection
- Bus/Shuttle Stops
- Bus/Shuttle Route
  - 104X
  - 411
  - 413
- Major Road - Right of Way (Future Right of Way)
- Bicycle Route
- Railroad

Frontage Road, as well as the bike routes/trails within Arthur Pack Regional Park. There are pedestrian sidewalks along both sides of Cortaro Farms Road. Refer to Part II: B.12, Recreation and Trails, and Exhibit II: B.12.a: Trails, Parks & Recreation Areas for locations of existing bicycle routes, pedestrian ways, and parks within a one-mile radius.

12. RECREATION AND TRAILS

a. Description of Trails, Parks, and Recreation Areas within 1 Mile of the Site
As shown on Exhibit II: B.12.a - Recreation and Trails, there are three existing parks, Arthur Pack Regional Park, Sunset Point Neighborhood Park and Denny Dunn Neighborhood Park, within one-mile of the project site.

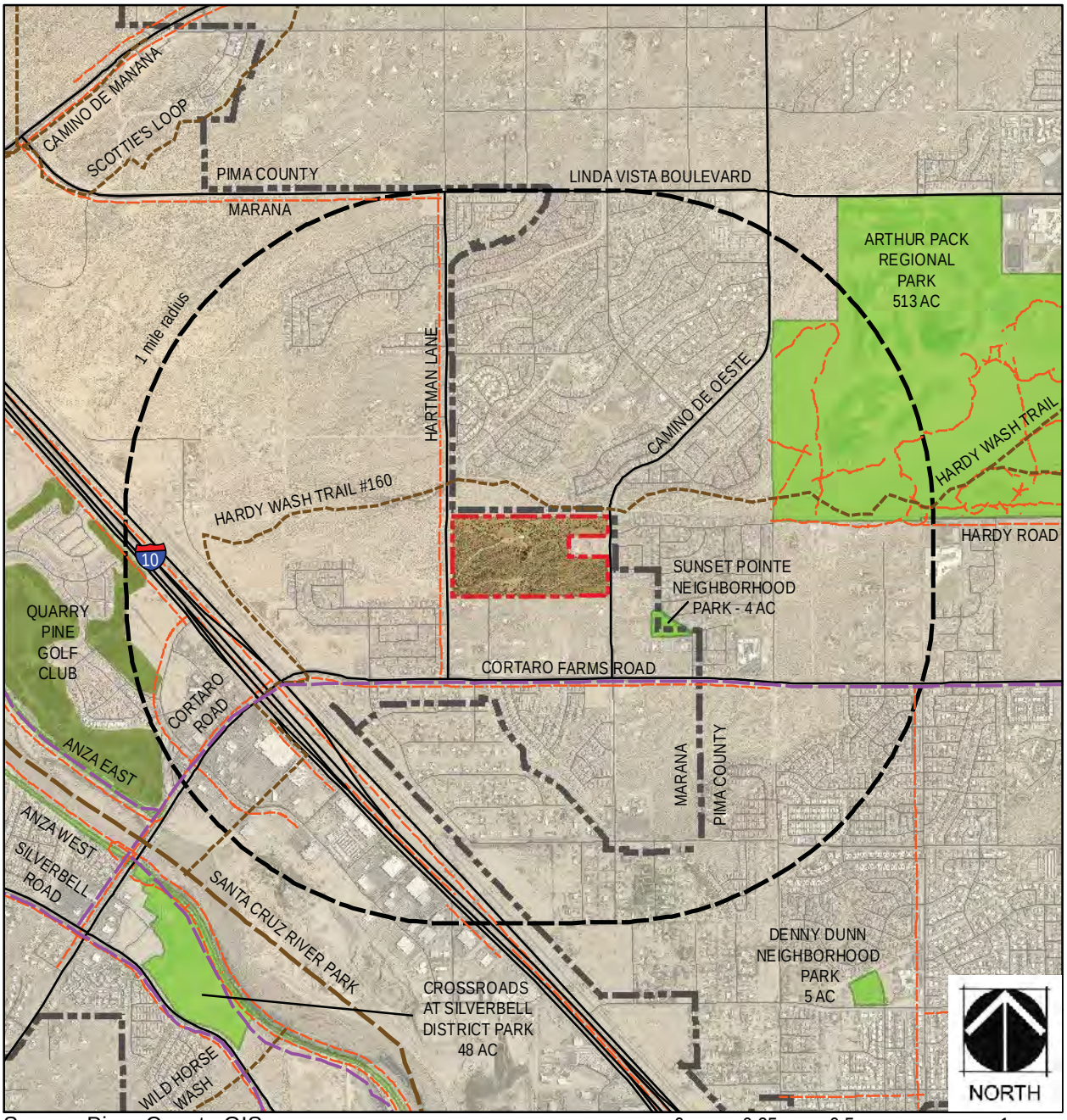
Arthur Pack Regional Park, located at Thornydale Road and Hardy Road, features multi-purpose ball fields, batting cages, basketball courts, playgrounds with and without shade structures, picnic areas, ramadas, restrooms, grills and hiking trails. Additionally, Arthur Pack Regional Park is home to the Crooked Tree Golf Course. Sunset Point Neighborhood Park, located northwest of the site on Star Grass Drive, has a baseball field, playground, picnic area and restrooms.

Denny Dunn Neighborhood Park, located west of Oldfather Drive along Massingale Road, includes two baseball fields, two soccer fields, a basketball court, playground, picnic area and restrooms. See Exhibit II: B.12.a - Trails, Parks & Recreation Areas.

i. Trails:
According to the Pima Regional Trail System Master Plan, there are two existing trails within one-mile of the project site. The Hardy Wash Trail (Pima County Trail #160) is an existing east-west trail, that follows the northern edge of the Hardy Wash adjacent to the subject property. The trail features both paved and unpaved portions as well as a second branch from Arthur Pack Regional Park northeast to Lambert Lane. The Cortaro Farms Road Path, almost seven miles long, connects the Silverbell Road Path to the La Cañada Drive Trail. It intersects the Santa Cruz and Cañada Del Oro River Parks.

ii. Santa Cruz River Park:
Southwest of the site are additional shared-use paths belonging to the Santa Cruz River Park. A combination of asphalt and gravel paths on both sides of the river, this scenic and recreational route stretches approximately 9.5 miles connecting small parks and other amenities located near the river. The River Park also features opportunities for bicycles, as both sides of the river between Grant Road and 29th Street are paved, while from Grant Street north the trail is paved on the west side only.

Exhibit II: B.12.a - Trails, Parks, & Recreation Areas



Source: Pima County GIS

0 0.25 0.5 1 Miles

SCALE: 1" = 1/2 Mile

LEGEND

- Project Site
- 1 Mile Radius
- Marana Town Limits
- Park
- Golf Course
- Trail
- Singletrack Trail
- Path
- Bicycle Route

iii. Bicycle Routes

Striped-shoulder bicycle routes are present along most major road segments, such as Cortaro Farms Road, however the collector roads bordering the site, Hartman Lane and Camino de Oeste, do not include striped-shoulder bicycle lanes.

13. CULTURAL, ARCHAEOLOGICAL, & HISTORICAL RESOURCES

a. Archaeological Resources

Portions of the site were previously surveyed for cultural resources in 1981. Fifty archaeology survey projects have been conducted within a one-mile radius of the site between 1953 and 2015. Twenty-nine archaeological sites have been identified within a one-mile radius of the project area. No sites are crossed by the project area; however, the eastern boundary of AZ AA:12:285(ASM) is adjacent to the project area. This site may extend into the project area. The Arizona State Museum recommends, but not required, that the Property be inspected for cultural resources by a qualified archaeological professional prior to any ground disturbing construction (see Exhibit II: B.13.b).

b. State Museum Letter

See Exhibit II: B.13.b - Arizona State Museum Letter.

14. EXISTING INFRASTRUCTURE & PUBLIC FACILITIES

a. Water

The project site is located within the Marana Water service area. Currently, the closest Town of Marana Municipal Water system facilities are located south of the project site along Hartman Lane and south of Cortaro Farms Road. Oro Valley Water is also in close proximity to the site with a waterline located in Camino de Oeste. See Exhibit II: B.14.a - Water Facilities.

b. Sewer

Pima County will provide sewer service for the site. See Exhibit II: B.14.b - Existing Sewer Service.

c. Schools & Libraries

The site is located within the Marana Unified School District. There are three schools located within a one-mile radius of the project boundary, Quail Run Elementary School, Tortolita Middle School, and DeGrazia Elementary School. There are no libraries within a one-mile radius of the project boundary. See Exhibit II: B.14.a: Public Facilities within 1 Mile Radius.

Arizona State Museum
THE UNIVERSITY OF ARIZONA
1013 E. UNIVERSITY BLVD.
TUCSON, AZ 85721

ARCHAEOLOGICAL SITE RECORDS SEARCH

This report documents the results of an archaeological site-records check.
It does not constitute a cultural resources clearance.

Date: 1/11/2016

Requester Name: Hillary Turby
Company: Norris Design
Address: 418 N. Toole Ave.
City, State, Zip Code: Tucson, AZ, 85701
Phone / E-mail: 520-622-9565 / hturby@norris-design.com

Project Name and/or Number: Camino De Oeste **Project Description:** Single family home residential development

Project Area Location: Parcels 221-14-011B, 221-14-0100, 221-14-002F, 221-14-009A

Legal Description: T12S, R12E, S25

Search Results:

According to a search of the archaeological records retained at the Arizona State Museum (ASM), 50 survey projects have been conducted within a one-mile radius of the project area between 1953 and 2015. Previous survey work was conducted in support of residential and commercial development; golf course construction; road construction and improvement; river bank stabilization; canal construction; storm water management; geotechnical study; and the installation and maintenance of fiber-optic, gas, pipe, and telephone lines. Portions of the project area were previously surveyed in 1981 (Fish et al. 1992; Madsen et al. 1993) and 2002 (Jones and Dart 2002). Twenty-nine archaeological sites have been identified within a 1-mile radius of the project area. No sites are crossed by the project area; however, the eastern boundary of AZ AA:12:285(ASM) is adjacent to the project area (Brack 2004; Howell 2009; Huntington 2002; Jones 2008; Jones and Klucas 2010; Moses 2003; Thurtle 2003). This site may extend into the project area.

Sites in Project Area:

None are recorded, but the project area has not been entirely surveyed. Additionally, nearby site AZ AA:12:285(ASM) may extend into the project area.

Recommendations:

1. Although portions of the project area have been previously surveyed, the work was conducted 14 to 35 years ago. It is standard archaeological practice for a property to be re-surveyed if the previous survey was conducted 10 or more years ago, as there is a possibility for unidentified archaeological properties to have since been exposed. Furthermore, the potential for AZ AA:12:285(ASM) to extend into the project area warrants further investigation.

ASM recommends, but it is not required by ASM, that a qualified archaeological contractor be consulted before any ground disturbance begins. A list of archaeological contractors is available on the ASM website at: http://www.statemuseum.arizona.edu/crservices/permits/index.shtml.

2. Pursuant to *Arizona Revised Statutes* §41-865 *et seq*., if any human remains or funerary objects are discovered during your project work, all work will stop within the area of the remains and Dr. Todd Pitezel, ASM assistant curator of archaeology, will be contacted immediately at 520-621-4795.

3. City, county, or municipal governments may have requirements, therefore ASM recommends that the relevant jurisdiction(s) be consulted.

If you have any questions about the results of this records search, please contact me.

Sincerely,

Shannon Twilling, M.A.

Shannon D. Twilling, M.A.
Research Specialist
Archaeological Permits Office
Arizona State Museum
(520) 621-1271
twilling@email.arizona.edu

References

Brack, M.L.
2004 *Cultural Resources Assessment of Cortaro Farms Road Between Interstate 10 and Stargrass Drive, Marana, Pima County, Arizona.* Project Report No. 04-143. Desert Archaeology, Inc., Tucson.

Fish, Suzanne K., Paul R. Fish, and John Madsen (editors)
1992 *The Marana Community in the Hohokam World*. Anthropological Papers of the University of Arizona 56. University of Arizona Press, Tucson.

Howell, Joseph
2009 *Results of Archaeological Monitoring at AZ AA:12:285(ASM), the Dairy Site, in Marana, Pima County, Arizona*. Report No. 2009-80. Tierra Right of Way Services, Tucson.

Huntington, Fred
2002 *Results of Archaeological Monitoring of the Sewer Installation on the Cortaro Ranch Development in Marana, Pima County, Arizona.* Archaeological Report No. 2002-032A. Tierra Right of Way Services, Tucson.

Jones, Jeffrey T.
2008 *Archaeological Testing at AZ AA:12:285(ASM) (The Dairy Site) and AZ AA:12:780 (the Canada Canal) in Marana, Pima County, Arizona*. Report No. 2008-126. Tierra Right of Way Services, Tucson.

Jones, Jeffrey T. and Allen Dart
2002 *Cultural Resources Survey of a 20-Acre Parcel along Camino de Oeste Near Cortaro Farms Road in Marana, Arizona.* Letter Report No. 2002.029. Old Pueblo Archaeology Center, Tucson.

Jones, Jeffrey T. and Eric E. Klucas (editors)
2010 *Results of Archaeological Data Recovery Investigations at the Portion of AZ AA:12:285(ASM), the Dairy Site, within the Proposed Qwest Expansion Locus in Marana, Pima County, Arizona*. Report No. 2010-22. Tierra Right of Way Services, Tucson.

Madsen, John N., Paul R. Fish and Suzanne K. Fish (editors)
1993 *The Northern Tucson Basin Survey: Research Directions and Background Studies*. Arizona State Museum Archaeological Series 182. University of Arizona, Tucson.

Moses, James
2003 *A Class III Cultural Resources Assessment Survey of 40 Acres at Joplin Road and Interstate 10 in Tucson, Pima County, Arizona*. Archaeological Report No. 2003-41. Tierra Right of Way Services, Tucson.

Thurtle, Mary Charlotte (editor)
2003 *Archaeological Monitoring and Sampling of Deeply Buried Late Archaic-Early Agricultural Deposits at the Dairy Site, AZ AA:12:285(ASM), in the Town of Marana, Arizona*. Archaeological Research Series, no. 1. Tierra Right of Way Services, Tucson.

Exhibit II: B.13.b - Arizona State Museum Letter



Company:
Norris Design

Project:
Camino de Oeste

Project Location:
T12S, R12E, S25

N

Proposed Project Area

0 265 530 1,060
Feet

Map generated by the Arizona State Museum

Arizona State Museum
The University of Arizona

Page 3 of 3

d. Police, Fire & Emergency Services
The site is located in and protected by the Northwest Fire District. The closest fire station is just over a half mile from the project area at 8475 North Star Grass Drive. The project site is within the Town of Marana's police jurisdiction. The Town of Marana Police Headquarters is located at 11555 W. Civic Center Drive. See Exhibit II: B.14.a Public Facilities with 1 Mile Radius.

e. Solid Waste Disposal & Recycling
Waste disposal and recycling will be provided by private companies.

f. Other Utilities
i. Existing Power
Currently, the site is located within the service area of Tucson Electric Power (TEP). See Exhibit II: B.14.f - Other Utilities, for the locations of these lines.

ii. Existing Gas
Currently, Southwest Gas Corporation serves this area. See Exhibit II: B.14.f - Other Utilities, for the location of this line.

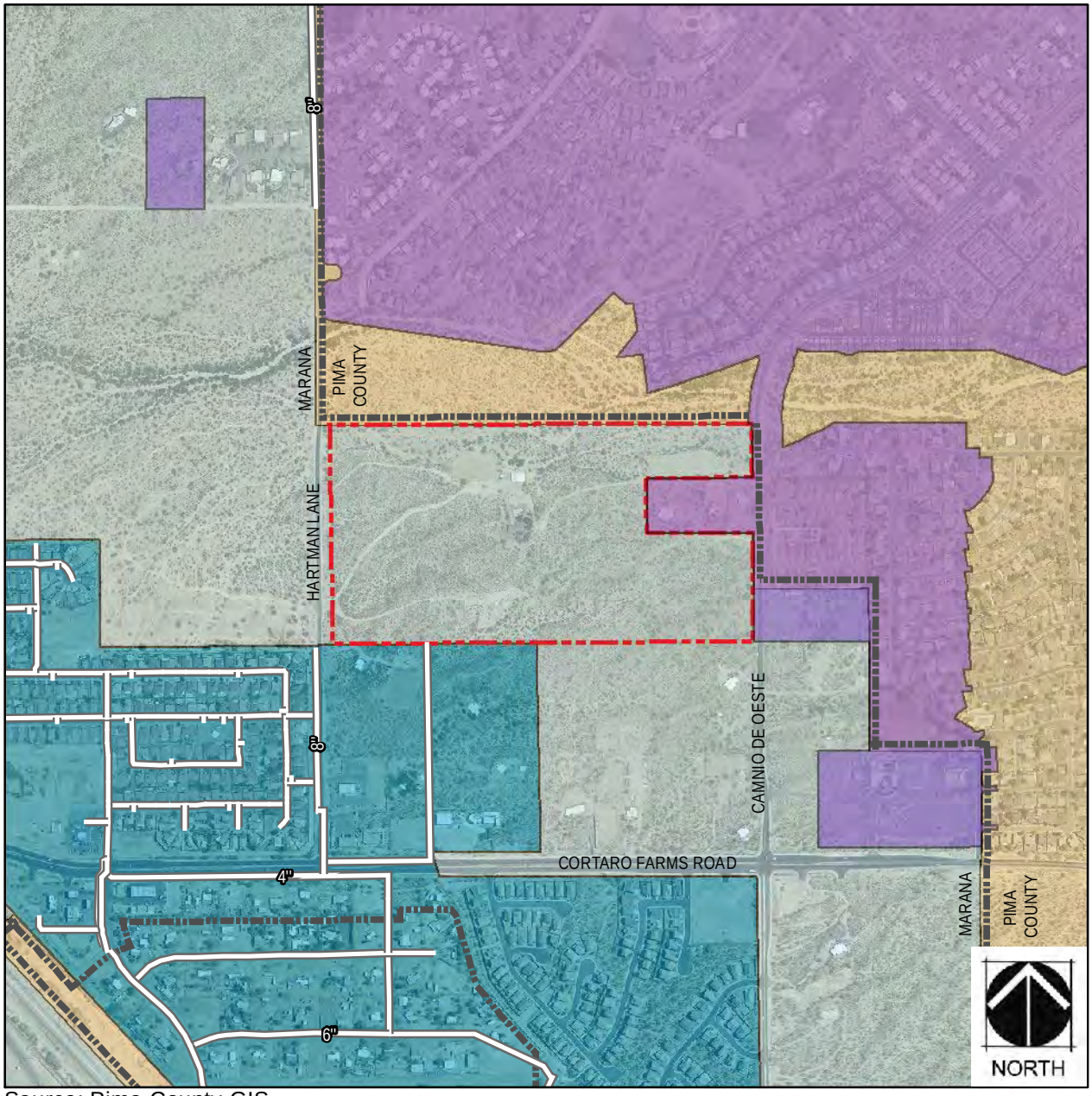
iii. Existing Communications
CenturyLink currently provides service to the area.

iv. Existing Cable
The site is located within the Comcast service area.

15. COMPOSITE CONSTRAINTS (MCHARG) MAP

A composite map depicting the site's Topography, Hydrology, and Vegetation, is shown in Exhibit B: M.1, Composite Constraints Map. There is no significant wildlife habitat on-site.

Exhibit II: B.14.a - Water Facilities



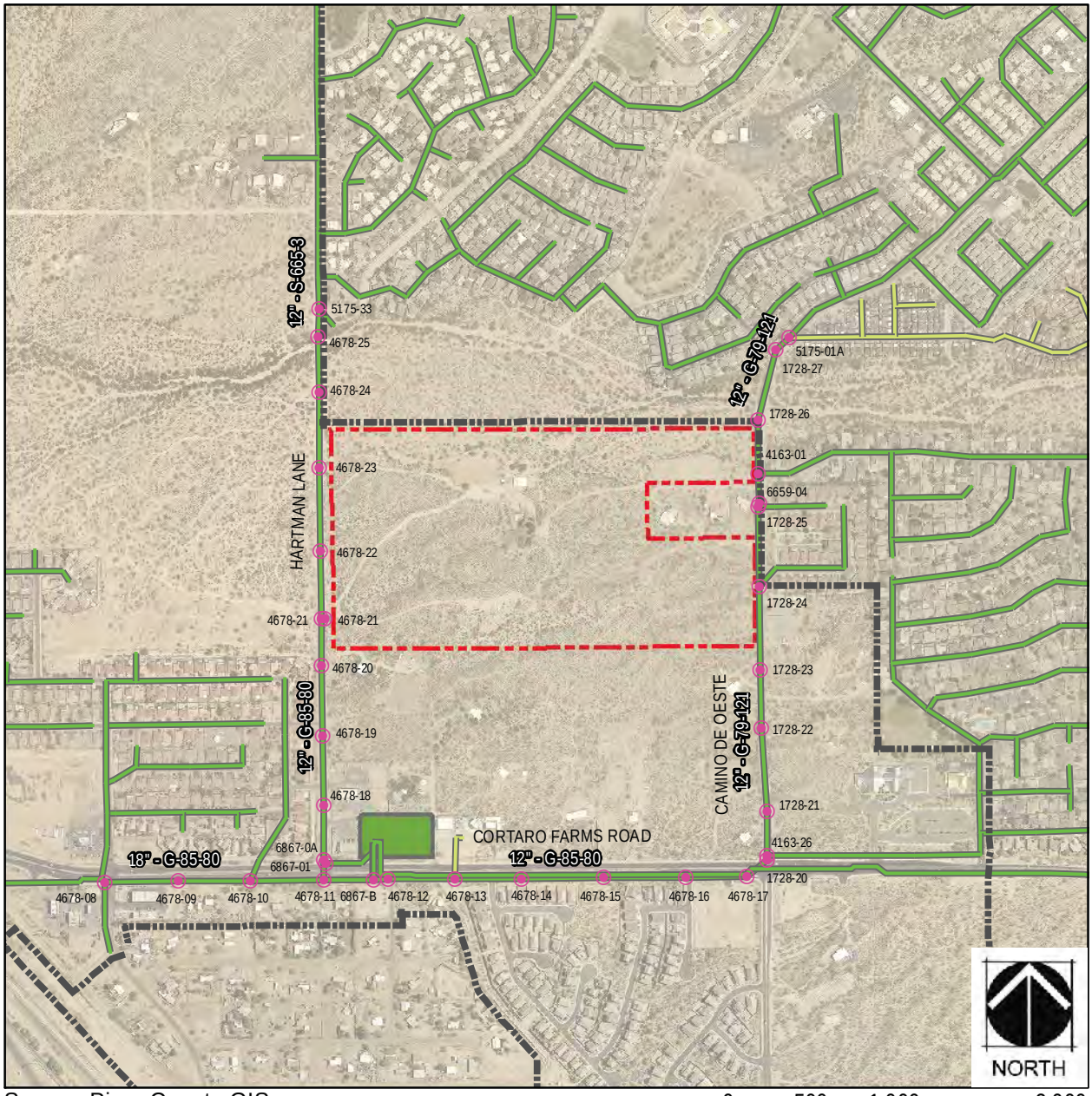
Source: Pima County GIS

0 500 1,000 2,000

SCALE: 1 " = 1,000 '

LEGEND

- Project Site
- Marana Town Limits
- Marana Intended Service Area
- Marana Water Service Area
- Tucson Water Service Area
- Town of Oro Valley Water Service Area



Source: Pima County GIS

0 500 1,000 2,000

SCALE: 1 " = 1,000 '

LEGEND

- Project Site
- Marana Town Limits
- Existing Sewer Line - Pipe Diameter & Plan Number
- Private Sewer Line
- Manhole with Identifcation Number
- Pima County Regional Wastewater Lift Station

Exhibit II: B.14.c-e - Public Facilities within 1 Mile Radius



Source: Pima County GIS

0 0.25 0.5 1 Miles

SCALE: 1" = 1/2 Mile

LEGEND

- Project Site
- 1 Mile Radius
- Marana Town Limits
- Park
- School
- Police Station
- Fire Station



Source: Pima County GIS

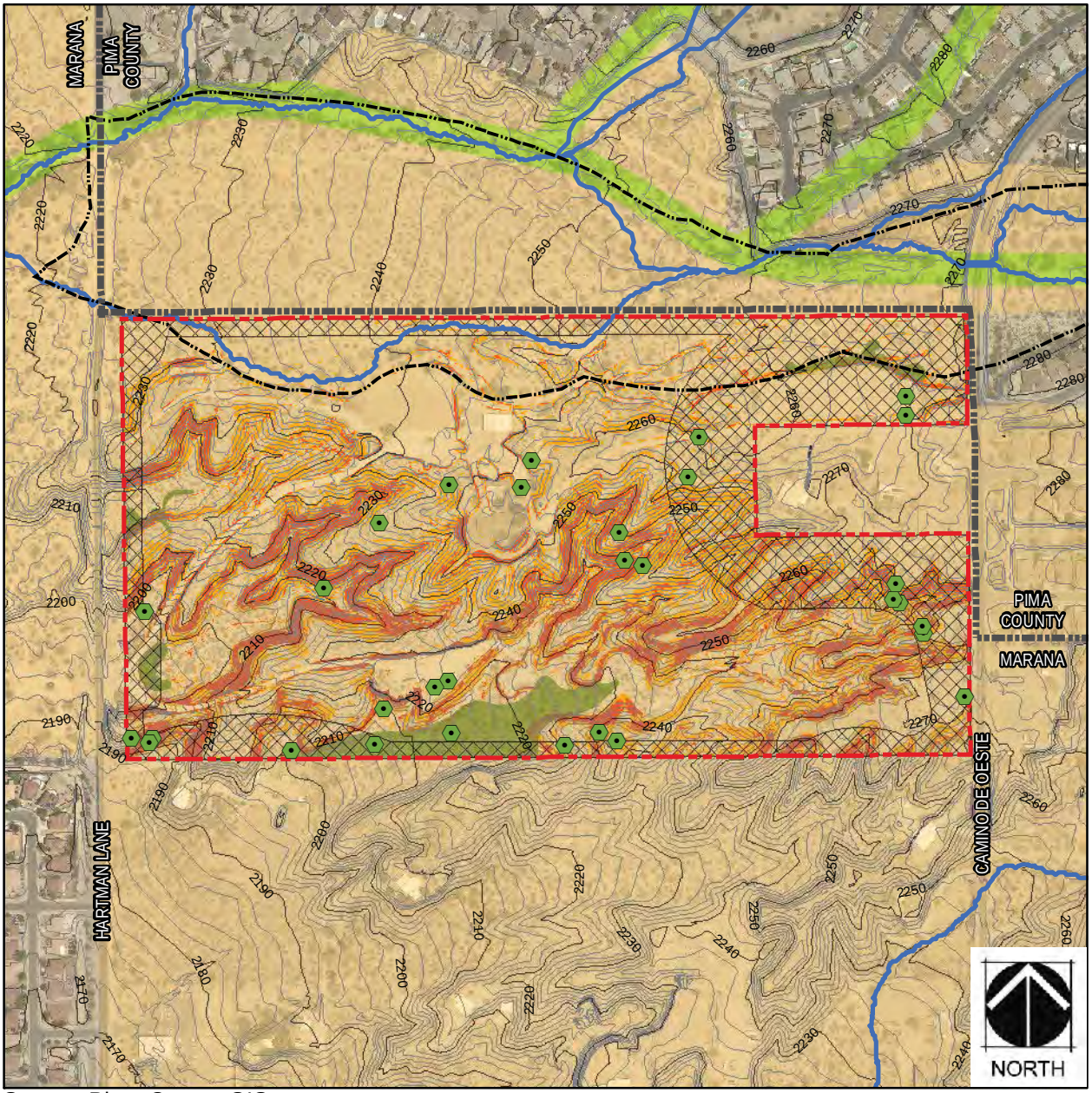
0 500 1,000 2,000

SCALE: 1 " = 1,039 '

LEGEND

- Project Site
- Marana Town Limits
- Gas Main
- Tucson Electric Power Lines

Exhibit II: B.15 - Composite Constraints Map



Source: Pima County GIS

0 250 500 1,000

SCALE: 1 " = 500 '

LEGEND

- Project Site
- Marana Town
- Wash
- FEMA Floodplain
- Areas of High Visibility
- 2 ft Contour
- 10 ft Contour
- Slope 15-25%
- Slope 25% or greater
- Significant Vegetation (Saguaro)
- Significant Vegetation
- Sonoran Desert-Scrub; Paloverde-Mixed Cacti
- Sonoran Deciduous Riparian

PART III — C. LAND USE PLAN

1. PROJECT NARRATIVE

This is a request to rezone the 72-acre project site from Zone C (Large Lot Zone) to R-6 (Single-Family Residential) for a proposed single family residential community consisting of 145 lots. The Camino de Oeste project will have a proposed residential density of 2 RAC that is consistent with neighboring properties to the west, north and east with density ranges from 2 RAC to 6 RAC. Lots will be a minimum of 6,000 square feet in size with a minimum width of fifty feet. All homes will be single-story. Residential will be the predominate land use within the Camino de Oeste development, with supplemental project open space provided in the form of NUOS and common area open space. Exhibit III: C.1 Conceptual Land Use Plan illustrates the property owner's vision to create an exclusive neighborhood that incorporates large amounts of continuous open space and takes advantage of surrounding mountain views.

2. CONFORMANCE / CONSISTENCY TO ADOPTED PLANS

The proposed Camino de Oeste project will conform to the Town of Marana General Plan and the recommendations set forth by regulatory agencies involved in permitting. Camino de Oeste is located within the Planning Area boundary of the Town's General Plan within the Southern Growth – Infill Opportunities Area. The southern growth area contains several master planned communities and residential subdivisions. Commercial facilities to serve these areas are located along the major transportation corridors such as Cortaro Farms Road. This area is primarily an infill area for residential development including planned developments, such as DeAnza.

The Marana General Plan designates the land within the proposed rezoning area as Low Density Residential (LDR). The Low Density Residential designation is typically characterized by single-family detached homes on relatively large lots with a density range of 0.5 to 2.0 residences per acre.

a. Marana 2010 General Plan

   The Camino de Oeste project is designed to follow the growth area goals of low density residential development and open space preservation. The land set aside as open space, including the Hardy Wash (a riparian area) and drainageways, are the most environmentally sensitive areas of the site. As a result, the site plan sets aside a significant amount of open space.

   Camino de Oeste is also located within the infill area of the southern limits of the General Plan. The land use designation on the property is Low Density Residential, 0.5-2.0 residences per acre (RAC). The proposed density is 2 RAC; therefore, no amendments will be necessary for this development to be in conformance with the General Plan. The Camino de Oeste project will feature high-quality design and development that is compatible with what exists in the area and will provide new housing opportunities in proximity to neighborhood services, including schools, churches and the Southern Growth

- Infill Opportunities Area near I-10 and Cortaro Farms Road. According to the 2010 General Plan Land Use Designation Map, the vast majority of land surrounding the site is either Low Density Residential or Medium Density Residential.

b. Marana Strategic Plan
Camino de Oeste is in conformance with the Marana Strategic Plan that was adopted January 6, 2015. The vision for the project aligns with the 2015 Town of Marana Strategic Plan, supporting opportunities for commerce, community and recreation in a key growth area for the Town. The Camino de Oeste project is located within the Town's Southern Growth – Infill Opportunities Area and meets the goals and vision for the area.

3. COMPATIBILITY WITH ADJOINING DEVELOPMENT

Development surrounding the Camino de Oeste project is predominately residential to the north, south, and east, with the planned residential DeAnza development located directly west of the project site. Neighboring the property's northern and eastern boundaries are the existing Countryside Terrace, Sunset Pointe, and Vista Oeste Estates residential subdivisions. Adjacent to the property's western boundary is the DeAnza Specific Plan (265 lots) and the existing Cortaro Ranch subdivision. Camino de Oeste complements the future and ongoing development activity in the general vicinity. In addition, the compatibility between this project and neighboring developments is further strengthened by incorporating buffers between the proposed development and existing residential communities. For a map of adjoining development refer to Exhibit II: B.3.g Existing/Approved Subdivisions.

4. LAND USE CONCEPT PLAN

The land use concept plan for Camino de Oeste is illustrated in Exhibit III: C.1 - Conceptual Land Use Plan. As shown on this exhibit, 145 single family residential lots are proposed on the property providing an overall residential density of 2 RAC. All lots will be a minimum of 6,000 square feet and be subject to the Town of Marana R-6 zoning development standards as outlined in the Town of Marana Land Development Code Title 5 - Zoning, Section 05.10.12 - R-6 Residential. It is anticipated that two different lot sizes will be offered, 50'x120' and 65'x120'. Homesites are grouped in such a way to preserve larger areas of continuous open space, providing corridors for wildlife habitat, less back to back neighbor conditions, and better opportunities for residents for mountain views. The majority of the open space provided within the project will be NUOS, accounting for 30% (22 acres) of the project area. Additional open space has been programed into the Concept Plan as common area open space consisting of a neighborhood park, bufferyards, and areas for grading and drainage. Total open space provided within Camino de Oeste will be approximately 29 acres (40%). All open space and common areas will be owned and maintained by the homeowners associations.

The site is bordered on the east and west by existing collector roadways, Camino de Oeste and Hartman Lane respectively, providing two access points for project residents. Both project entry roads are located to line up with proposed (as shown on the Preliminary Plat for DeAnza)

and existing (Rosebay Drive) intersections. Each project entry will have entry monumentation to create a sense of arrival. Although the entrance off Hartman Lane will be the primary project entry for Camino de Oeste, both entries will be understated and located so as not to interfere with traffic. Internal roadways will be forty-six feet in width and follow the Town of Marana typical local roadway section.

Roads and lots were designed to be clustered in order to preserve larger, continuous areas of NUOS and limit the number of homes directly backing adjacent collector roadways and residential uses. Bufferyards are provided along the perimeter of the property that will meet and in most cases exceed those required by the Town of Marana Land Development Code, Title 17 - Environmental Resource Preservation, Native Plant Protection and Landscape Requirements, Section 17.03.07 - Landscape Buffer Standards. The bufferyards will include a combination of landscape and property walls to serve as landscape screens to mitigate noise and visual impacts from adjacent properties and roadways. Property walls used within the project site will be predominantly view walls to capture the surrounding mountain views. In areas where greater privacy or screening is needed, five foot solid masonry walls will be used.

Camino de Oeste will be subject to the Marana Town Code, Title 17 - Land Development, Chapter 17-5 Subdivisions, Section 17-5-4 Design Standards.

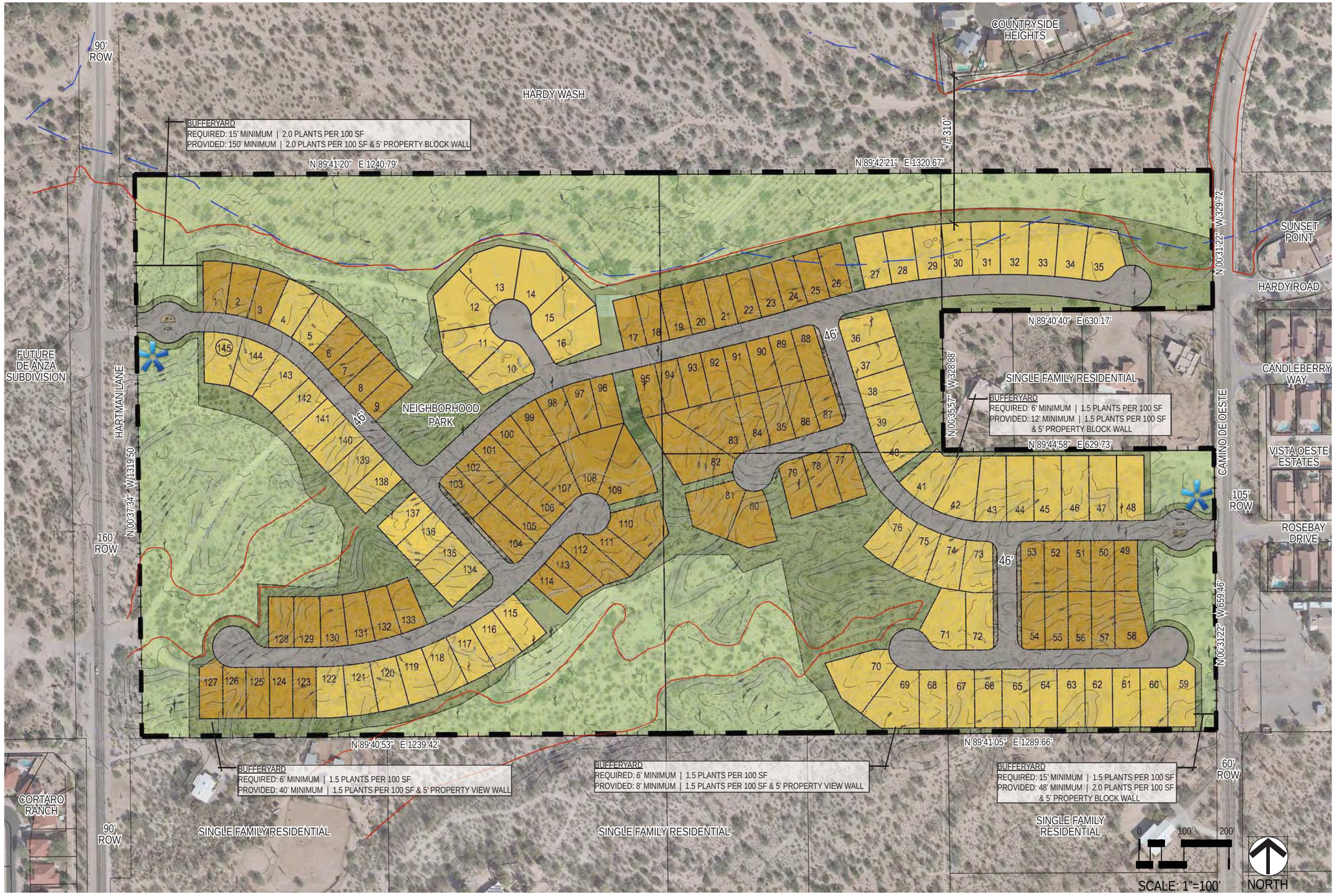
5. TOPOGRAPHY

a. Conceptual Land Use Plan Response to Existing Topographic Characteristics
There are no restricted peaks or ridges on the site, nor are there any rock outcrops. The project in its existing condition has an Average Cross Slope (ACS) of 13.27%. Because the ACS is less than 15%, grading is allowed per the proposed R- 6 zoning regulations. Approximately 70% of the project site will be graded to allow for the development of local roadways, residential lots, utilities, and site amenities. The remaining area, approximately 30% of the project site, will be set aside as NUOS.

b. Encroachment onto Slopes 15 Percent or Greater
Due to the unique topography of the project site, the conceptual land use plan for the property includes encroachment into areas with slopes of 15% or greater. Lots are clustered where possible to maximize contiguous NUOS area, preserve existing drainageways, and allow for potential wildlife corridors through the site.

c. New Average Cross-Slope
New cross-slope calculations are not required as the existing ACS was found to be less than 15%. There are considerable areas to remain natural on the site as designated on the Conceptual Land Use Plan (see Exhibit III: C.5.a - Encroachment onto Slopes of 15% or Greater).

d. Perimeter Area used in New Cross-Slope
Not applicable.



LEGEND

- 50'x120' (minimum) - 76 Lots / 52.4%
- 65'x120' (minimum) - 69 Lots / 47.6%

Total Yield	145 Lots
Gross Project Area	72.0 Acres
Gross Project Density	2 RAC

- Natural Area Open Space (NUOS)
- Common Area Open Space

Approximately 22 acres (30%) of the project site will be set aside as NUOS. Additional common area open space will be provided in the form of a neighborhood park, grading and drainage areas, and perimeter bufferyards. Total open space provided within Camino de Oeste will be approximately 29 acres (40%).

- Effective FEMA Floodplain
- Proposed 100 YR Floodplain

- Proposed Entry Monumentation

Notes:

1. For locations and dimensions of all existing buildings, structures, and easements on-site refer to the ALTA / ACSM Land Title Survey prepared by Ashby Surveying & Drafting Inc. dated 1-29-2016 submitted under separate cover.

2. The proposed locations of site amenities (i.e. neighborhood park and entry monumentation) are subject to change.

3. Residential development will be subject to the Town of Marana Land Development Code, Title 8 General Development Regulations, Section 08.06 Residential Design.

ENCHROACHMENT ONTO ≥ 15% SLOPES

SLOPES ≥ 15% TO REMAIN UNGRADED

PROJECT BOUNDARY

CONTOUR INTERVAL: 5'

PROPOSED LIMITS OF GRADING

HARDY WASH

HARTMAN LANE

CAMINO DE OESTE

PROPOSED LIMITS OF GRADING

PROPOSED LIMITS OF GRADING

N

0 200

Scale: 1"=200'

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CAMINO DE OESTE

MARANA, ARIZONA

ENCROACHMENT ONTO 15% OR GREATER SLOPES

Job No. 15-317

Sheet No. 1 of 1

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6. HYDROLOGY

a. Conceptual Development Plan Response to Existing Hydrological Characteristics
The conceptual land use plan maintains historical drainage patterns draining into and out of the site. The larger water courses remain essentially as is, draining within common areas/open space. Off-site storm water will be conveyed through the project site within drainage features/open space areas or via constructed channels.

b. Encroachment/Modification of Drainage Patterns
There are slight encroachments planned within Hardy Wash and the two on-site washes (#3 & #5 shown on Exhibit III: C.6) that convey over 50 cfs. The encroachments are planned such that regulatory increases to water surface elevations in the respective watercourses will not exceed allowable limits, or adversely impact adjacent properties. The proposed encroachment into the Hardy Wash FEMA floodplain would slightly alter the floodplain limits and would thus require submittal and approval of a Conditional Letter of Map Revision (CLOMR) by the Town of Marana and Pima County Regional Flood Control District. The CLOMR would contain engineering information that would demonstrate that the new floodplain limits would be re-aligned around the subdivision improvements and that the new lots would be situated outside the FEMA floodplain. Existing and proposed floodplain and erosion hazard setback (EHS) limits are shown on the Post-Project Drainage Conditions Exhibit III: C.6 for each of the proposed encroachments.

c. Potential Drainage Impact to Off-Site Land Uses
The project will not produce any adverse drainage impacts to upstream or downstream properties. Post-development discharges flowing onto the site will remain the same as under pre-development conditions. Due to the critical basin detention requirements, overall discharge rates exiting the site from on-site developed watersheds will be reduced in accordance with critical basin criteria in the Marana Floodplain & Erosion Hazard Management Code, Chapter 17-15.

d. Engineering and Design Features
All building pads will be designed to be a minimum of one foot above adjacent 100-year flood elevations. Where subdivision improvements encroach into regulatory floodplains, stabilized bank protection with adequate scour protection measures will be provided to protect from erosion and scour. This will effectively reduce the EHS along those improvements to be coincident with the new bank line. As part of the subdivision improvements that are proposed within the Hardy Wash floodplain, a constructed re-alignment of a low-flow channel braid is proposed along the toe of the new bank. This channel will redirect flows around the new improvements and will help maintain adequate conveyance capacity in Hardy Wash, so that increases to 100-year water surfaces are kept below the 0.1 foot regulatory maximum.

e. Conformance with Area Plan, Basin Management Plans and Town Policies
This project will provide on-site retention/detention in accordance with the Marana Floodplain & Erosion Hazard Management Code, Chapter 17-15 and the Pima County detention/retention manual. On-site stormwater flows will be detained down to below

existing (predevelopment) conditions per critical basin requirements. The retention/ detention basin(s) will likely be integrated within the open space corridors and the locations of the basin(s) will be determined in conjunction with preparation of the subdivision plats. On-site stormwater conveyance will adhere to current Town of Marana Land Development Code and applicable basin management plans. The total detention/retention volume for this project has been estimated to be 4.6 acre-feet. The Town of Marana Northwest Area Drainage Policy is not applicable to this site.

7. VEGETATION

a. Response to Existing Vegetative Characteristics
The majority of on-site vegetation consists of Sonoran Desert Scrub. The conceptual land use plan provides for 30% of the project site to be set aside as NUOS and additional open space will be provided in the form of common area open space. A Site Resource Inventory (SRI) has been submitted as part of this rezone application, identifying significant on-site vegetation such as saguaros and ironwoods (see Appendix A - SRI Map).

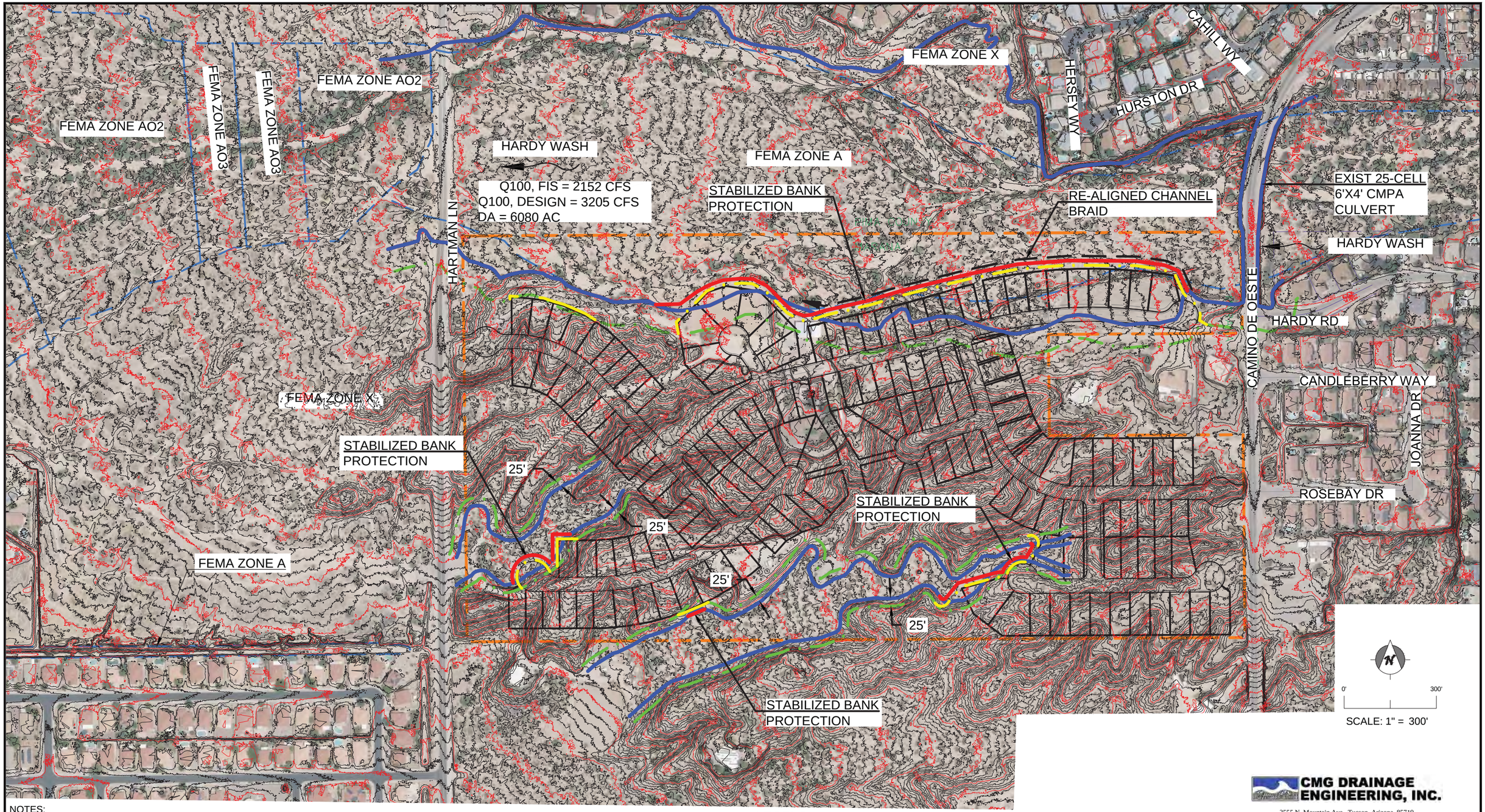
b. Response to the Native Plant Ordinance and Habitat Disturbance
The project will comply with the Town of Marana's Native Plant Preservation Ordinance, Title 17 of the Marana Town Code. The NUOS will satisfy the Native Plant Preservation requirements. When practical, viable vegetation that exists on-site may be considered for transplanting on-site, when feasible, into designated common areas or bufferyards requiring re-vegetation. Plants that cannot be preserved in place or salvaged for use in common areas of the project will be made available for use in Marana's existing parks, community centers or natural preserve areas.

c. Techniques Used to Mitigate Sound, Visibility, Lighting and Traffic
The land use concept plan for Camino de Oeste promotes exclusivity and minimizes homes backing to the property boundary. In areas where lots back to existing residential properties or the adjacent collector roadways, a bufferyard is incorporated to mitigate visibility, lighting and sound. The proposed bufferyards will be landscaped and perimeter lot walls provided. See Exhibit III: C.1 - Conceptual Land Use Plan. Two project entries are provided, splitting traffic volumes to either Hartman Lane or Camino de Oeste.

d. Cross-section Illustrations of Proposed Buffers to be Used Adjacent to Existing Development (See Exhibit III: C.7.d - Bufferyard Cross-Sections).

8. WILDLIFE

As described above in Section 7. Vegetation, existing site vegetation will be preserved in-place, where possible, in the NUOS. NUOS area located in and adjacent to ephemeral drainageways include an increased density of plants, a more diverse assemblage of plants, and larger plant specimens than occur in adjacent upland areas. The Hardy Wash will also be preserved as NUOS and will contribute greatly to the unimpeded movement of wildlife across the northern boundary of the site. By protecting these important areas as NUOS, impacts to wildlife species and their habitats are minimized, while maintaining wildlife corridors and connectivity through the site and across the region.



NOTES:

1. CONCEPTUAL SITE LAYOUT WAS PROVIDED BY EPS GROUP, INC.
2. FEMA FLOODPLAIN LIMITS WERE OBTAINED FROM FIRM PANEL 04019C1655L WITH AN EFFECTIVE DATE OF JUNE 16, 2011.
3. VERTICAL DATUM = NAVD88
   HORIZONTAL PROJECTION = ARIZONA STATE PLANE CENTRAL, NAD83 HARN.
4. AERIAL PHOTO PROVIDED BY PIMA ASSOCIATION OF GOVERNMENTS (PAG), 2015.
5. TOPOGRAPHY PROVIDED BY PAG, 2015, 2-FT. CONTOUR INTERVALS.
6. SITE BOUNDARY PROVIDED BY ASHBY SURVEYING, DATED DECEMBER 12, 2015. BASIS OF ELEV. 2315.59- NAVD88.

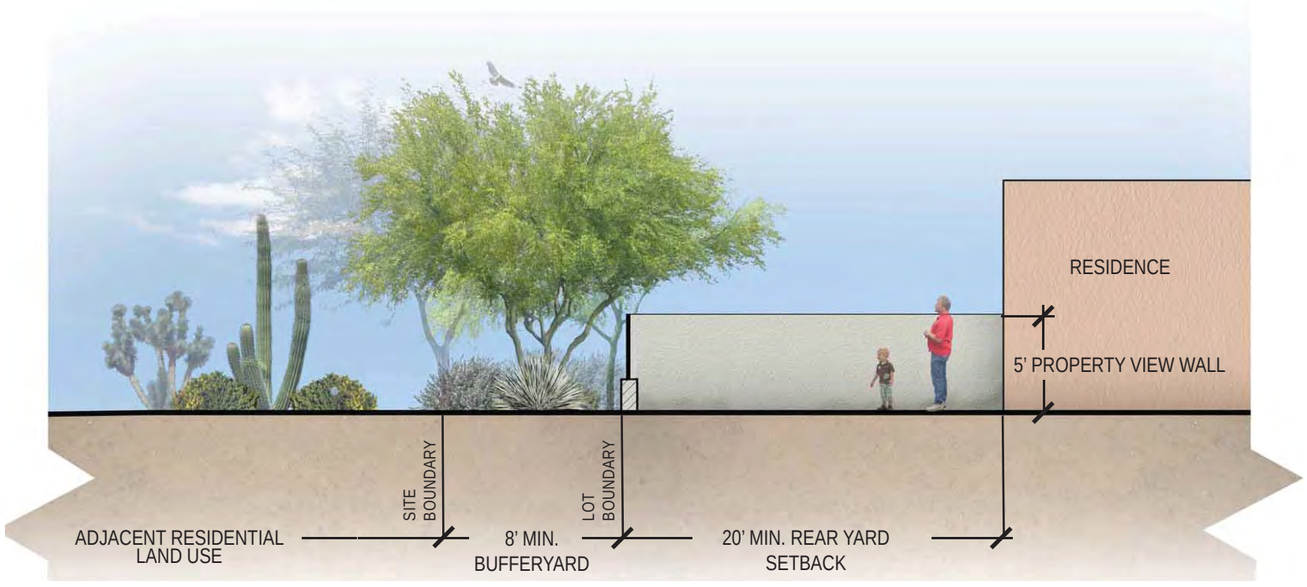
LEGEND

- PROPERTY BOUNDARY
- EFFECTIVE FEMA FLOODPLAIN
- CMG 100-YR EXIST FLOODPLAIN
- CMG 100-YR PRP FLOODPLAIN
- EXIST EROSION HAZARD SETBACK LIMIT
- PRP EROSION HAZARD SETBACK LIMIT

CMG DRAINAGE ENGINEERING, INC.
3555 N. Mountain Ave. Tucson, Arizona 85719
Phone (520) 882-4244 Fax (520) 888-1421

PROJECT NO.:	15-037
DESIGN:	JW
CHECKED:	JLC
DRAWN:	BJK/RMS
DATE:	02/03/2016
REV. DATE:	
REV. DATE:	
REV. DATE:	

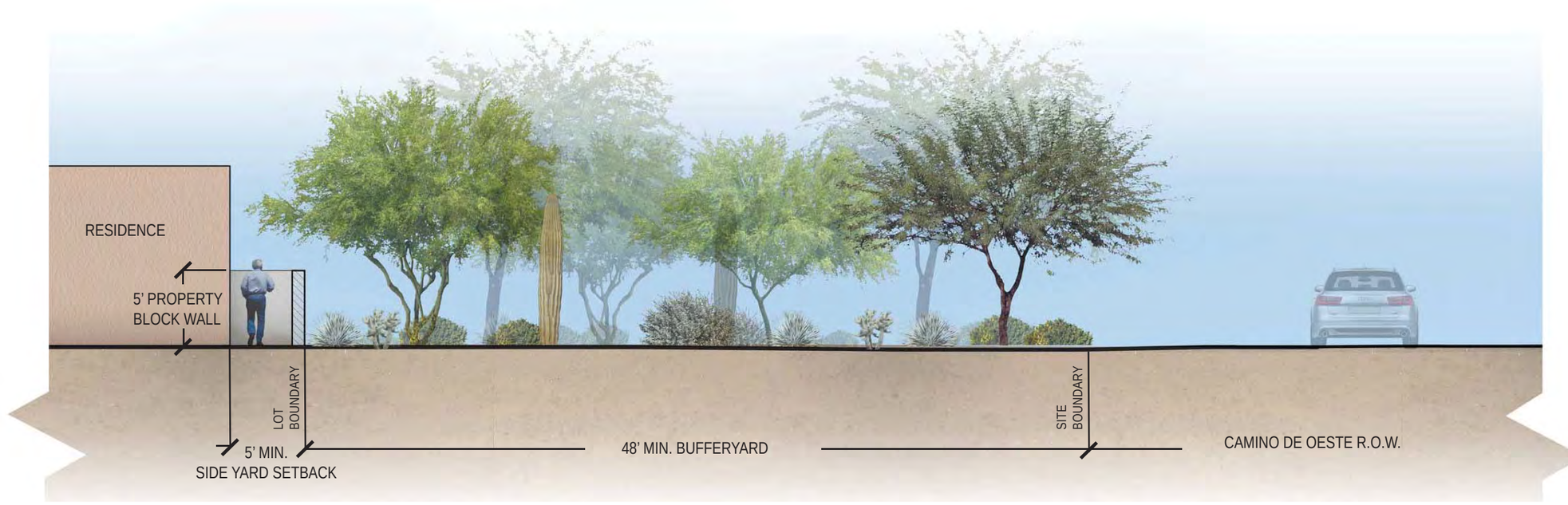
EXHIBIT C.6
POST-PROJECT DRAINAGE CONDITIONS FOR CAMINO DE OESTE PROPERTY

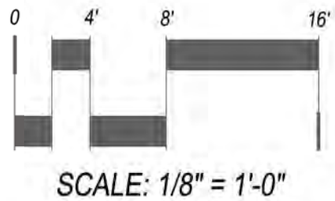


A) SOUTHERN SITE BOUNDARY SECTION

Conceptual Site Plan with Section Cuts







B) SOUTHEAST SITE BOUNDARY SECTION

9. VIEWSHEDS

As described in Part II - B: Development Capability Report, the topography of the Camino de Oeste project site is gently rolling with views of the region's mountains in all directions. Where possible, the development of Camino de Oeste shall maximize view corridors and vistas to the major mountain ranges. Alignments and locations of roads, homesites, and gathering spaces shall take advantage of these abundant mountain views, when possible. Setbacks from adjacent properties, changes in topography, and existing privacy walls, however, make it difficult to have a complete view across the property from any adjacent property boundary.

a. Mitigation Measures

The four parcels located within the northeast corner of the project site, that are not a part of the Camino de Oeste project, will be most directly impacted by this development, however, these homes are set at a higher elevation than the Camino de Oeste project causing minimal impact to mountain views. One of the four lots also has a pre-existing perimeter wall that blocks views to the south. The conceptual land use plan includes bufferyards that will include landscaping and property walls in order to assist in mitigating views of the Camino de Oeste project from the existing adjacent lots.

b. Areas of High Visibility

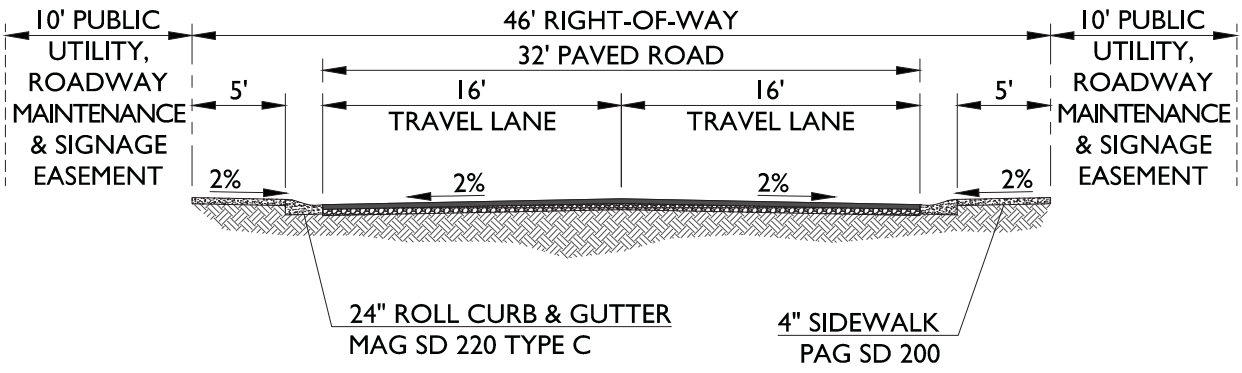
The perimeter of the site is highly visible from directly adjacent properties and collector roadways. These areas will be mitigated via landscape bufferyards and five foot property walls in key areas of high visibility. Additionally, all homes are planned to be single-story, reducing the visual impact to neighboring properties.

10. TRAFFIC

The proposed Camino De Oeste development site will have direct site access from Hartman Lane and Camino De Oeste. The proposed site access from Hartman Lane is located at the crest of a vertical curve. This is an ideal site access location on this road because it provides good sight visibility for left-turning vehicles into and out of the site as well as right-turning vehicles into the site. Based on the available traffic data and anticipated trips into this access point, the northbound right-turn and southbound left-turn volumes into the site from Hartman Lane would not warrant a right-turn lane or left-turn lane for the projected opening / build-out year of 2019. Therefore, no improvements are anticipated for Hartman Lane as part of the Camino De Oeste development.

The proposed site access from Camino De Oeste was positioned to line up with the Rosebay Drive, a site access for the residential development across Camino De Oeste. Based on the available traffic data and anticipated trips into this access point, the northbound left-turn volumes into the site from Camino De Oeste would warrant a left-turn lane, however, the southbound right-turn volumes would not warrant a right-turn lane for the projected opening / build-out year of 2019. Therefore, the only improvements anticipated for Camino De Oeste as part of the Camino De Oeste development is the addition of a northbound left-turn lane.

Exhibit III: C.10.f - Typical Street Sections



TYPICAL ROADWAY SECTION

NOT TO SCALE

Local residential streets proposed within the Camino de Oeste project will follow the Town of Marana's typical forty-six foot local roadway section (see Exhibit III: C.10.f - Typical Street Sections).

See Camino de Oeste Traffic Impact Analysis dated February 2016 (see Appendix D - Traffic Impact Analysis) for more detailed information regarding traffic.

11. PUBLIC UTILITIES

a. Sewer
Pima County Regional Wastewater Reclamation District has indicated capacity available for this project in the public sewer G-2001-158, downstream from manhole 4271-01 (See Exhibit III: C.11.a.1 and Exhibit III.C.11.a.2). Sewer capacity investigation No. 2016-14, dated January 25, 2016, from Pima County Regional Wastewater Reclamation Department, indicates that there is currently capacity in the downstream public sewer system.

b. Water
The property site lies within the boundary of the Town of Marana Municipal Water service area, however, Marana does not currently have service for the elevation zone that this project will require. The Developer will coordinate with Town of Marana Municipal Water to provide water service to the project.

c. Gas
Southwest Gas currently serves this area.

d. Electric
Tucson Electric Power currently serves this area.

12. PUBLIC SERVICES

a. Police Service
Camino de Oeste is located within the incorporated limits of the Town of Marana and shall be served by the Town of Marana Police Department.

b. Fire Service
The Camino de Oeste property is located in and protected by the Northwest Fire District. The closest fire station is just south of the site at 8475 North Star Grass Drive.

c. Sanitary Pick-up Services
Sanitary pick-up will be provided through a contract with a private solid-waste collection service.

EXISTING OVERHEAD ELECTRIC
(TUCSON ELECTRIC POWER)

HARDY WASH

SECONDARY CONNECTION TO
PUBLIC SEWER SYSTEM

HARTMAN LANE

CAMINO DE OESTE

PCRWRD
(PROVIDER)

NO FLOW THROUGH
CONNECTION PROPOSED

PRIMARY CONNECTION TO
PUBLIC SEWER SYSTEM

N

0 200
Scale: 1"=200'

PROPOSED SEWER SERVICE

Job No.
15-317

EPS GROUP
8710 N. Thornydale Rd, Suite 140
Tucson, AZ 85742
T:520.408.1400 | F:520.408.1403
www.epsgroupinc.com

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bzismann

PIMA COUNTY

REGIONAL WASTEWATER RECLAMATION DEPARTMENT
201 NORTH STONE AVENUE
TUCSON, ARIZONA 85701-1207

JACKSON JENKINS
DIRECTOR

PH: (520) 724-6500
FAX: (520) 724-9635

January 25, 2016

Ben Zismann
EPS Group, Inc.
8710 N Thornydale Road, Suite 140
Tucson, AZ 85742

Sewerage Capacity Investigation No. 2016-14 Type I

RE: **Pulte Camino de Oeste, Parcel 22114011B, 221140100, 22114009A, 22114002F**
Estimated Flow 31,320 gpd (ADWF).

Greetings:

The above referenced project is tributary to the Tres Rios Water Reclamation Facility via the Continental Ranch Interceptor.

Capacity is currently available for this project in the public sewer G-2001-158, downstream from manhole 4271-01

This letter is not a reservation or commitment of treatment or conveyance capacity for this project. It is not an approval of point and method of connection. It is an analysis of the system as of this date and valid for one year. Allocation of capacity is made by the Type III Capacity Response.

If further information is needed, please feel free to contact us at (520) 724-6642.

Reviewed by: Kurt Stemm, CEA Sr.

EXISTING OVERHEAD ELECTRIC
(TUCSON ELECTRIC POWER)

HARDY WASH

ORO VALLEY WATER
(NON-PROVIDER)

PRIMARY CONNECTION TO
PUBLIC WATER SYSTEM

PUBLIC WATER
TO BE LOOPED

HARTMAN LANE

CAMINO DE OESTE

MARANA WATER
(PROVIDER)

PRIMARY CONNECTION TO
PUBLIC WATER SYSTEM

POSSIBLE CONNECTION TO SOUTH
AT CAMINO DE OESTE/CORTARO FARMS

N

0 200
Scale: 1"=200'

8710 N. Thornydale Rd, Suite 140
Tucson, AZ 85742
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www.epsgroupinc.com

EPS GROUP

CAMINO DE OESTE
MARANA, ARIZONA
PROPOSED WATER SERVICE

Job No.
15-317

Sheet No.
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of 2

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d. Schools and Parks

Camino de Oeste is located within the Marana Unified School District (MUSD). Degrazia Elementary School, Quail Run Elementary School, Tortolita Middle School, and Mountain View High School are expected to serve the site. The development will not generate a sufficient population of students to warrant the location of a school site within the community. Contribution fees, if any, shall be determined prior to the approval of a Final Plat and shall be set forth in a Development Agreement. With a total of 145 residential lots, it is anticipated that approximately 51 students will be generated by the development of Camino de Oeste. MUSD provided the following multipliers to use for student enrollment projections. (MUSD multipliers do not distinguish between different housing products):

Elementary School: 0.25 students per home (0.25 x 145) = 36 students
Junior High & High School: 0.10 students per home (0.10 x 145) = 15 students

TABLE III: C.12 School Capacity

Schools	Address	School Capacity	2015/2016 School Enrollment
DeGrazia Elementary	5051 West Overton Road	1,248	502
Quail Run Elementary	4600 West Cortaro Farms Road	1,204	558
Tortolita Middle School	4101 West Hardy Road	1,577	841
Mountain View High School	3901 West Linda Vista	2,400	1,875

13. RECREATION & TRAILS

a. Recreation Areas to be Provided within the Development

A neighborhood park is planned for Camino de Oeste in the west portion of the site, providing for active and passive recreation opportunities. The interior roadways will also include sidewalks on both side of the road. This will allow for pedestrian access throughout the site as well as provide pedestrian connections to Hartman Lane and Camino de Oeste.

b. Ownership of Natural / Modified Open Space within the Development

A Homeowners Association regulated by CC&R's shall manage all NUOS and common area open space, including the neighborhood park. Proposed designated NUOS and

common area open space can be found on Exhibit III: C.1.

c. Access to Off-site Trails & How Access will be Maintained
Camino de Oeste residents will have access to off-site trails, including the Hardy Wash Trail, via Hartman Lane or Camino de Oeste.

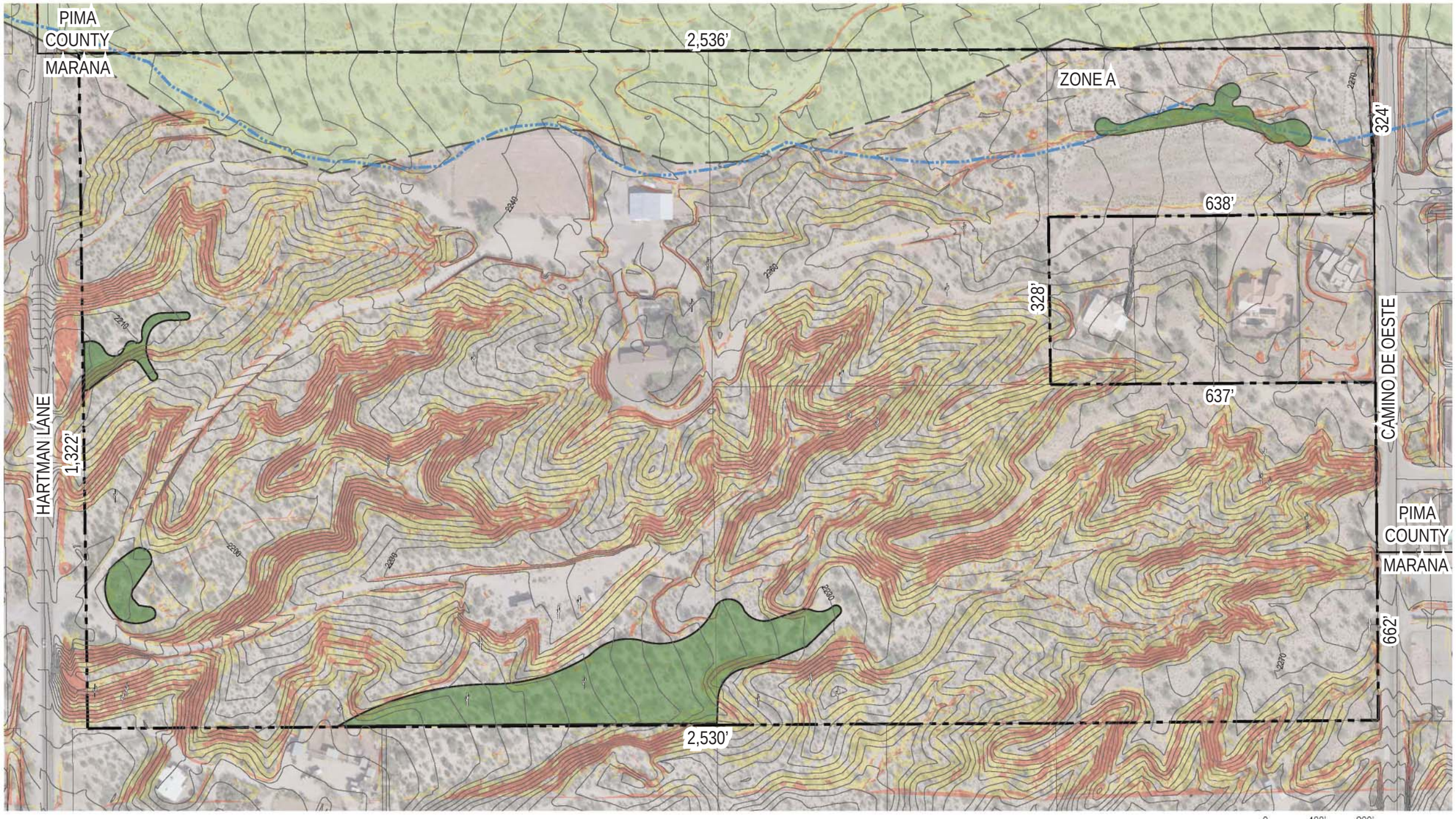
14. CULTURAL, ARCHAEOLOGICAL, & HISTORICAL RESOURCES

a. Measures Used for Protection of All Cultural and Historical Resources on the Site
As shown on Exhibit II: B.13.b: Arizona State Museum Letter, portions of the site have been surveyed for cultural resources. Twenty-nine archaeology sites are recorded within a one-mile radius of the site; none of which are located on the subject property.

b. Resources to be incorporated into Development
There are no known resources to be incorporated into the development. A cultural resource report for the project area will be submitted prior to issuance of a grading permit for the site. If a cultural resources report is older than ten years for this site, a qualified archaeologist will perform a site visit and review the cultural report to determine whether it is still accurate.

c. Measures to be Taken
If any human remains or funerary items are discovered anywhere during construction, or at any time, all work must stop in the area of the remains and Mr. John Madsen, Repatriation Coordinator, must be contacted immediately at (520) 621-4795, pursuant to A.R.S. §41-865.

APPENDIX A — SITE RESOURCE INVENTORY MAP



LOCATION MAP



LEGEND

- MARANA TOWN LIMITS
- PROPERTY BOUNDARY
- 100 YR REGULATORY FLOOD LIMIT
- PARCEL BOUNDARY
- 2 FOOT CONTOUR
- SIGNIFICANT VEGETATION
- RIPARIAN AREA
- SPECIMEN SAGUARO
- 15-25% SLOPE
- > 25% SLOPE

APPENDIX B — LEGAL DESCRIPTION & ALTA

LEGAL DESCRIPTION

PARCEL 1:

THE NORTH HALF OF THE NORTHEAST QUARTER OF THE NORTHEAST QUARTER OF THE NORTHWEST QUARTER OF SECTION 25, TOWNSHIP 12 SOUTH, RANGE 12 EAST, GILA AND SALT RIVER BASE AND MERIDIAN, PIMA COUNTY, ARIZONA.

EXCEPT THE EAST 30 FEET AS CONVEYED TO PIMA COUNTY, ARIZONA BY DEED RECORDED IN DOCKET 4474, PAGE 335.

PARCEL 2;

THE NORTHWEST QUARTER OF THE NORTHEAST QUARTER OF THE NORTHWEST QUARTER OF SECTION 25, TOWNSHIP 12 SOUTH, RANGE 12 EAST, GILA AND SALT RIVER BASE AND MERIDIAN, PIMA COUNTY, ARIZONA.

PARCEL 3;

THE NORTHWEST QUARTER OF THE NORTHWEST QUARTER OF SECTION 25, TOWNSHIP 12 SOUTH, RANGE 12 EAST, GILA AND SALT RIVER BASE AND MERIDIAN, PIMA COUNTY, ARIZONA.

EXCEPT THE WEST 30 FEET THEREOF; AND

FURTHER EXCEPT LYING WITHIN THE PROPER1Y TAKEN IN FINAL ORDER OF CONDEMNATION CASE NO. C20001137 RECORDED APRIL 30, 2001 IN DOCKET 11538, PAGE 2589.

PARCEL 4;

THE SOUTH HALF OF THE NORTHEAST QUARTER OF THE NORTHWEST QUARTER OF SECTION 25, TOWNSHIP 12 SOUTH, RANGE 12 EAST, GILA AND SALT RIVER BASE AND MERIDIAN, PIMA COUNTY, ARIZONA.

EXCEPT THE EAST 30 FEET AS CONVEYED TO PIMA COUNTY, ARIZONA, IN DOCKET 4474 AT PAGE 339.

NOTES

1.) THIS SURVEY IS BASED UPON THE LEGAL DESCRIPTIONS CONTAINED IN THE COMMITMENTS FOR TITLE INSURANCE ISSUED BY FIRST AMERICAN TITLE COMPANY; ORDER NO. 60013702–001–P13–BW, EFFECTIVE DATE: DECEMBER 28, 2015, AMENDMENT DATE: JANUARY 8, 2016, **AMENDMENT NO.: 4** (HARSHBARGER PARCELS) AND ORDER NO. 60013703–001–P13–BW, EFFECTIVE DATE: DECEMBER 28, 2015, AMENDMENT DATE: JANUARY 8, 2016, **AMENDMENT NO.: 5** (REDWING PARCEL).

2.) EASEMENTS SHOWN ON THIS SURVEY ARE PER THE SCHEDULE BII – EXCEPTIONS LISTED IN THE COMMITMENTS FOR TITLE INSURANCE REFERENCED IN NOTE 1.

3.) THE PROPERTY IS SUBJECT TO OR BENEFITS FROM THE FOLLOWING INSTRUMENTS OF RECORD AS LISTED IN SCHEDULE BII – EXCEPTIONS LISTED IN THE COMMITMENT FOR TITLE INSURANCE REFERENCED IN NOTE 1.

ORDER NO.: 60013702–001–P13–BW (HARSHBARGER PARCELS)

1. RESERVATIONS CONTAINED IN THE PATENT FROM THE UNITED STATES OF AMERICA, IN BOOK 326 OF DEEDS, PAGE 209, READING AS FOLLOWS: RESERVED FROM THE LANDS HEREBY GRANTED A RIGHT OF WAY THEREON FOR DITCHES OR CANALS CONSTRUCTED BY THE AUTHORITY OF THE UNITED STATES OF AMERICA. EXCEPTING AND RESERVING, HOWEVER, TO THE UNITED STATES ALL THE COAL AND OTHER MINERALS IN THE LANDS SO ENTERED AND PATENTED, TOGETHER WITH THE RIGHT TO PROSPECT FOR, MINE, AND REMOVE THE SAME PURSUANT TO THE PROVISIONS AND LIMITATIONS OF THE ACT OF DECEMBER 20, 1916 (30 STAT., 862) (PARCELS 1 AND 2) (AFFECTS PARCELS 1 AND 2)
2. RESERVATIONS CONTAINED IN THE PATENT FROM THE UNITED STATES OF AMERICA, IN BOOK 61 OF DEEDS AT PAGE 392, READING AS FOLLOWS: SUBJECT TO ANY VESTED AND ACCRUED WATER RIGHTS FOR MINING, AGRICULTURAL, MANUFACTURING OR OTHER PURPOSES, AND RIGHTS TO DITCHES AND RESERVOIRS USED IN CONNECTION WITH SUCH WATER RIGHTS AS MAY BE RECOGNIZED AND ACKNOWLEDGED BY THE LOCAL CUSTOMS, LAWS AND DECISIONS OF COURTS; AND THERE IS RESERVED FROM THE LANDS HEREBY GRANTED, A RIGHT OF WAY THEREON FOR DITCHES OR CANALS CONSTRUCTED BY THE AUTHORITY OF THE UNITED STATES OF AMERICA. (PARCEL 3) (AFFECTS PARCEL 3)
3. TAXES AND ASSESSMENTS COLLECTIBLE BY THE COUNTY TREASURER, A LIEN PAYABLE BUT NOT YET DUE FOR THE FOLLOWING YEAR: SECOND HALF OF 2015
4. WATER RIGHTS, CLAIMS OR TITLE TO WATER, AND AGREEMENTS, COVENANTS, CONDITIONS OR RIGHTS INCIDENT THERETO, WHETHER OR NOT SHOWN BY THE PUBLIC RECORDS. THIS EXCEPTION IS NOT LIMITED BY REASON OF THE DISCLOSURE OF ANY MATTER RELATING TO WATER RIGHTS AS MAY BE SET FORTH ELSEWHERE IN SCHEDULE B.
5. (INTENTIONALLY OMITTED)
6. (INTENTIONALLY OMITTED)
7. (INTENTIONALLY OMITTED)
8. (INTENTIONALLY OMITTED)
9. EASEMENT AND RIGHTS INCIDENT THERETO, AS SET FORTH IN INSTRUMENT: RECORDED IN DOCKET 6135 PAGE 880, RE–RECORDED IN DOCKET 6266 PAGE 846 – PURPOSE ELECTRIC LINES AND APPURTENANT FACILITIES. (SHOWN ON THE SURVEY - NOTE: A PORTION OF THE ELECTRIC BLUESTAKE FIELD COLLECTED DURING THIS SURVEY IS NOT LOCATED WITHIN THE DESCRIBED EASEMENT - SEE SHEET 3 OF 3)
10. EASEMENT AND RIGHTS INCIDENT THERETO, AS SET FORTH IN INSTRUMENT: RECORDED IN DOCKET 6137 PAGE 983 – PURPOSE COMMUNICATION AND OTHER FACILITIES AND ASSOCIATED MATTERS. (SHOWN ON THE SURVEY-NOTE: TELEPHONE PEDESTALS COLLECTED DURING THIS SURVEY ARE NOT LOCATED WITHIN THE DESCRIBED EASEMENT - SEE SHEET 3 OF 3)
11. (INTENTIONALLY OMITTED)
12. ANY MATTERS ARISING BY REASON OF THE INCLUSION OF SAID LAND WITHIN THE BOUNDARIES OF THE TOWN OF MARANA GENERAL PLAN AS SET FORTH IN INSTRUMENT RECORDED APRIL 22, 1997 IN DOCKET 10529, PAGE 1892.
13. RIGHTS OF PARTIES IN POSSESSION. NOTE: THIS EXCEPTION WILL BE AMENDED OR DELETED UPON THE SUBMISSION OF THE CORRESPONDING DOCUMENTS REQUIRED IN SCHEDULE B, PART I.
14. THE FOLLOWING MATTERS AS SET FORTH ON THAT CERTAIN SURVEY MADE BY ASHBY SURVEYING & DRAFTING, INC., DATED DECEMBER 14, 2015, JOB NO. 5919:

A. ENCROACHMENT OF WIRE FENCE FROM PARCELS 1, 2 AND 3 ONTO PROPERTY TO THE NORTH BY FROM 0.1 FEET TO 15.4 FEET;
B. TELEPHONE PEDESTAL LOCATED OUTSIDE OF EASEMENT AREA;
C. INTENTIONALLY OMITTED;
D. ENCROACHMENT OF GATE FROM SUBJECT PARCEL 1 ONTO PROPERTY TO THE SOUTH BY 0.6 FEET.
E. INTENTIONALLY OMITTED.

Maps not picked up in 45 days will be recycled. _____

Sequence _____
Fee _____
State of Arizona
County of Pima SS
I hereby certify that the instrument was filed for record at the request Of _____
Date _____
Time _____
Witness my hand and Official Seal
day and year above written
F. ANN RODRIGUEZ, County Recorder
By _____
Deputy

COUNTY RECORDER PIMA COUNTY ARIZONA

NOTES (CONTINUED)

ORDER NO.: 60013703–001–P13–BW (REDWING INVESTMENTS PARCEL)

1. RESERVATIONS CONTAINED IN THE PATENT FROM THE UNITED STATES OF AMERICA, IN BOOK 326 OF DEEDS, PAGE 209, READING AS FOLLOWS: RESERVED FROM THE LANDS HEREBY GRANTED A RIGHT OF WAY THEREON FOR DITCHES OR CANALS CONSTRUCTED BY THE AUTHORITY OF THE UNITED STATES OF AMERICA. EXCEPTING AND RESERVING, HOWEVER, TO THE UNITED STATES ALL THE COAL AND OTHER MINERALS IN THE LANDS SO ENTERED AND PATENTED, TOGETHER WITH THE RIGHT TO PROSPECT FOR, MINE, AND REMOVE THE SAME PURSUANT TO THE PROVISIONS AND LIMITATIONS OF THE ACT OF DECEMBER 20, 1916 (30 STAT., 862)
2. TAXES AND ASSESSMENTS COLLECTIBLE BY THE COUNTY TREASURER, A LIEN NOT YET DUE AND PAYABLE FOR THE FOLLOWING YEAR: 2017
3. WATER RIGHTS, CLAIMS OR TITLE TO WATER, AND AGREEMENTS, COVENANTS, CONDITIONS OR RIGHTS INCIDENT THERETO, WHETHER OR NOT SHOWN BY THE PUBLIC RECORDS. THIS EXCEPTION IS NOT LIMITED BY REASON OF THE DISCLOSURE OF ANY MATTER RELATING TO WATER RIGHTS AS MAY BE SET FORTH ELSEWHERE IN SCHEDULE B.
4. (INTENTIONALLY OMITTED)
5. (INTENTIONALLY OMITTED)
6. (INTENTIONALLY OMITTED)
7. ANY MATTERS ARISING BY REASON OF THE INCLUSION OF SAID LAND WITHIN THE BOUNDARIES OF THE TOWN OF MARANA GENERAL PLAN AS SET FORTH IN INSTRUMENT RECORDED APRIL 22, 1997 IN DOCKET 10529, PAGE 1892.
8. RIGHTS OF PARTIES IN POSSESSION. NOTE: THIS EXCEPTION WILL BE AMENDED OR DELETED UPON THE SUBMISSION OF THE CORRESPONDING DOCUMENTS REQUIRED IN SCHEDULE B, PART I.
9. THE FOLLOWING MATTER AS SET FORTH ON THAT CERTAIN SURVEY MADE BY ASHBY SURVEYING & DRAFTING, INC., DATED DECEMBER 14, 2015:

A. DIRT ROAD AND THE RIGHTS OF OTHERS TO USE SAID DIRT ROAD NEAR THE NORTH LINE OF SUBJECT PROPERTY.

4.) OTHER THAN SOILS TESTING WORK, DURING THE COMPLETION OF THIS SURVEY NO EVIDENCE OF CURRENT EARTH MOVING WORK, BUILDING CONSTRUCTION OR BUILDING ADDITIONS WAS OBSERVED.

5.) ACCORDING TO THE PIMA COUNTY MAJOR STREETS AND SCENIC ROUTES PLAN, REVISED MARCH 20, 2015, THE PLANNED OVERALL RIGHT–OF–WAY WIDTH FOR HARTMAN ROAD, ADJACENT TO THE SUBJECT PROPERTY, IS 90 FEET AND THE PLANNED OVERALL RIGHT–OF–WAY WIDTH FOR CAMINO DE OESTE, ADJACENT TO THE SUBJECT PROPERTY, IS 150 FEET. NOTE: THE CURRENT OVERALL RIGHT–OF–WAY WIDTH FOR HARTMAN ROAD, ADJACENT TO THE SUBJECT PROPERTY, IS 160 FEET.

6.) THIS IS AN ABOVE GROUND SURVEY ONLY. THE UNDERGROUND UTILITIES SHOWN HAVE BEEN LOCATED FROM FIELD SURVEY INFORMATION AND INFORMATION SHOWN ON UTILITY COMPANY BASE MAPS. THE SURVEYOR MAKES NO GUARANTEE THAT THE UNDERGROUND UTILITIES SHOWN COMPRISE ALL SUCH UTILITIES IN THE AREA, EITHER IN SERVICE OR ABANDONED. THE SURVEYOR FURTHER DOES NOT WARRANT THAT THE UNDERGROUND UTILITIES SHOWN ARE IN THE EXACT LOCATION INDICATED ALTHOUGH HE DOES CERTIFY THAT THEY ARE LOCATED AS ACCURATELY AS POSSIBLE FROM INFORMATION AVAILABLE. THE SURVEYOR HAS NOT PHYSICALLY LOCATED THE UNDERGROUND UTILITIES. PRIOR TO ANY CONSTRUCTION OR EXCAVATION, ARIZONA BLUESTAKE SHOULD BE CONTACTED TO MARK UTILITY LOCATIONS.

LEGAL DESCRIPTION (ORDER NO. 60013702-001-P13-BW - AMENDMENT #4)

PARCEL 1:
THE NORTH HALF OF THE NORTHEAST QUARTER OF THE NORTHEAST QUARTER OF THE NORTHWEST QUARTER OF SECTION 25, TOWNSHIP 12 SOUTH, RANGE 12 EAST, GILA AND SALT RIVER BASE AND MERIDIAN, PIMA COUNTY, ARIZONA.

EXCEPT THE EAST 30 FEET AS CONVEYED TO PIMA COUNTY, ARIZONA BY DEED RECORDED IN DOCKET 4474, PAGE 335.

PARCEL 2:
THE NORTHWEST QUARTER OF THE NORTHEAST QUARTER OF THE NORTHWEST QUARTER OF SECTION 25, TOWNSHIP 12 SOUTH, RANGE 12 EAST, GILA AND SALT RIVER BASE AND MERIDIAN, PIMA COUNTY, ARIZONA.

PARCEL 3:
THE NORTHWEST QUARTER OF THE NORTHWEST QUARTER OF SECTION 25, TOWNSHIP 12 SOUTH, RANGE 12 EAST, GILA AND SALT RIVER BASE AND MERIDIAN, PIMA COUNTY, ARIZONA.

EXCEPT THE WEST 30 FEET THEREOF; AND

FURTHER EXCEPT LYING WITHIN THE PROPERTY TAKEN IN FINAL ORDER OF CONDEMNATION CASE NO. C20001137 RECORDED APRIL 30, 2001 IN DOCKET 11538, PAGE 2589.

LEGAL DESCRIPTION (ORDER NO. 60013703-001-P13-BW - AMENDMENT #5)

THE SOUTH HALF OF THE NORTHEAST QUARTER OF THE NORTHWEST QUARTER OF SECTION 25, TOWNSHIP 12 SOUTH, RANGE 12 EAST, GILA AND SALT RIVER BASE AND MERIDIAN, PIMA COUNTY, ARIZONA.

EXCEPT THE EAST 30 FEET AS CONVEYED TO PIMA COUNTY, ARIZONA, IN DOCKET 4474 AT PAGE 339.

BASIS OF BEARINGS

THE REFERENCE MERIDIAN FOR THIS SURVEY IS GRID NORTH, ARIZONA STATE PLANE COORDINATE SYSTEM, NAD1983 (HARN92), CENTRAL ZONE. THE BASIS OF BEARINGS FOR THIS PROJECT IS THE GRID BEARING OF N 00°37'23" W BETWEEN A FOUND TOWN OF MARANA 3" DIAMETER BRASS CAP SURVEY MONUMENT SET IN CONCRETE STAMPED "RLS 35235" MARKING THE WEST 1/4 CORNER OF SECTION 25, TOWNSHIP 12 SOUTH RANGE 12 EAST, GILA AND SALT RIVER MERIDIAN, PIMA COUNTY, ARIZONA, AND A FOUND TOWN OF MARANA 3" DIAMETER BRASS CAP SURVEY MONUMENT SET IN CONCRETE STAMPED "RLS 35235" MARKING THE NORTHWEST CORNER OF SAID SECTION 25 AS SHOWN ON THE RECORD OF SURVEY OF SECTIONS 25 AND 26, T.12S., R.12E. AND SECTION 30, T.12S., R.13 E. RECORDED IN BOOK 26 OF SURVEYS AT PAGE 62, RECORDS OF PIMA COUNTY, ARIZONA.

REFERENCE MATERIAL

1.) PIMA COUNTY, ARIZONA ASSESSOR'S RECORD MAP.

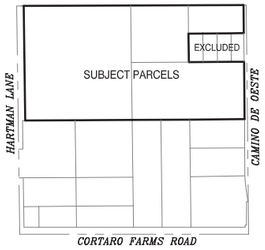
2.) RECORD DEEDS OF PIMA COUNTY, ARIZONA AS INDICATED BY THE DOCKET AND PAGE OR SEQUENCE NUMBERS SHOWN ON THIS SURVEY PLAT.

3.) RECORDS OF SURVEYS RECORDED IN THE FOLLOWING BOOK AND PAGES OF SURVEYS, RECORDS OF PIMA COUNTY, ARIZONA: BOOK 13 PAGE 43; BOOK 24 PAGE 18; BOOK 26 PAGE 62 AND BOOK 60 PAGE 28.

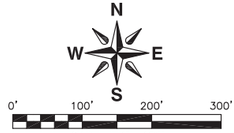
4.) SUBDIVISION FINAL PLATS RECORDED IN THE FOLLOWING BOOK AND PAGES OF MAPS AND PLATS, RECORDS OF PIMA COUNTY, ARIZONA: BOOK 36 PAGE 42; BOOK 38 PAGE 23; BOOK 45 PAGE 75 AND BOOK 64 PAGE 16.

5.) UNRECORDED SURVEYS PREPARED BY STITZER, JOHNSON AND ASSOCIATES, INC., PROJECT NUMBERS 6470A, 6470B AND 6470C, APRIL, 1984.

6.) PIMA COUNTY DEPARTMENT OF TRANSPORTATION (PCDOT) ARIZONA LAND SURVEY MONUMENT REFERENCE RECORDS.



LOCATION MAP (NOT TO SCALE)
A PORTION OF THE N.W. 1/4 OF SECTION 25,
T.12S., R.12E., G.&S.R.M., PIMA COUNTY, ARIZONA



SCALE: 1"=100'

LEGEND

- ● SET #4 REBAR WITH BRASS TAG STAMPED "RLS 19316"
- ⊠ FOUND 3" DIAMETER TOWN OF MARANA BRASS CAP SURVEY MONUMENT (BCSM) STAMPED AS NOTED (UNLESS NOTED OTHERWISE)
- HW⊕ FOUND 3" DIAMETER TOWN OF MARANA BRASS CAP SURVEY MONUMENT IN HANDWELL STAMPED AS NOTED
- ○ FOUND SURVEY MONUMENT AS NOTED
- ■ FOUND 1.5" DIAMETER ALUMINUM CAPPED PIN (ACP)
- ⊙ FOUND 1" INSIDE DIAMETER OPEN PIPE
- PC FOUND PLASTIC CAP STAMPED "RLS 16912" ON #4 REBAR
- ◎ CALCULATED POINT (NOTHING FOUND OR SET)
- (M) MEASURED BEARING AND/OR DISTANCE
- (C) CALCULATED BEARING AND/OR DISTANCE
- (R) RECORD BEARING AND/OR DISTANCE PER BOOK 26 OF SURVEYS PAGE 62, RECORDS OF PIMA COUNTY, ARIZONA
- (R1) RECORD BEARING AND/OR DISTANCE PER BOOK 13 OF SURVEYS PAGE 43, RECORDS OF PIMA COUNTY, ARIZONA
- (R2) RECORD BEARING AND/OR DISTANCE PER THE FINAL PLAT OF COUNTRYSIDE RECORDED IN BOOK 36 OF MAPS AND PLATS AT PAGE 42, RECORDS OF PIMA COUNTY, ARIZONA
- (R3) RECORD BEARING AND/OR DISTANCE PER UNRECORDED SURVEYS PREPARED BY STITZER, JOHNSON AND ASSOCIATES, INC., PROJECT NUMBERS 6470A, 6470B AND 6470C, APRIL, 1984.
- (R4) RECORD BEARING AND/OR DISTANCE PER DOCKET 11538 PAGE 2589, RECORDS OF PIMA COUNTY, ARIZONA. (ESTABLISHED ADDITIONAL 50 FEET OF RIGHT–OF–WAY FOR A TOTAL OF 80 FEET ON THE EAST SIDE OF HARTMAN LANE
- (R5) RECORD BEARING AND/OR DISTANCE PER (PIMA COUNTY, ARIZONA ROAD PROCEEDING #2272)
- (#) SCHEDULE B EXCEPTION ITEM NUMBER FROM THE COMMITMENT FOR TITLE INSURANCE ISSUED BY FIRST AMERICAN TITLE COMPANY; ORDER NO. 60013702–001–P13–BW (SHOWN ON SHEET 3 OF 3)

CERTIFICATION OF SURVEY

TO PULTE HOME CORPORATION, A MICHIGAN CORPORATION AND FIRST AMERICAN TITLE INSURANCE COMPANY:

THIS IS TO CERTIFY THAT THIS MAP OR PLAT AND THE SURVEY ON WHICH IT IS BASED WERE MADE IN ACCORDANCE WITH THE 2011 MINIMUM STANDARD DETAIL REQUIREMENTS FOR ALTA/ACSM LAND TITLE SURVEYS, JOINTLY ESTABLISHED AND ADOPTED BY ALTA AND NSPS, AND INCLUDES ITEMS 1, 8, 11(b), 16, 17, 20(a) AND 20(b) OF TABLE A THEREOF. THE FIELD WORK WAS COMPLETED ON DECEMBER 11, 2015.

Richard B. Howell Jr.
RICHARD B. HOWELL JR. R.L.S. 21774

REGISTERED LAND SURVEYOR 21774 RICHARD B. HOWELL JR. 1-29-2016 CERTIFICATE NO. EXPIRES 3/31/2018

Richard B. Howell Jr.
EXPIRES 3/31/2018

REVISIONS

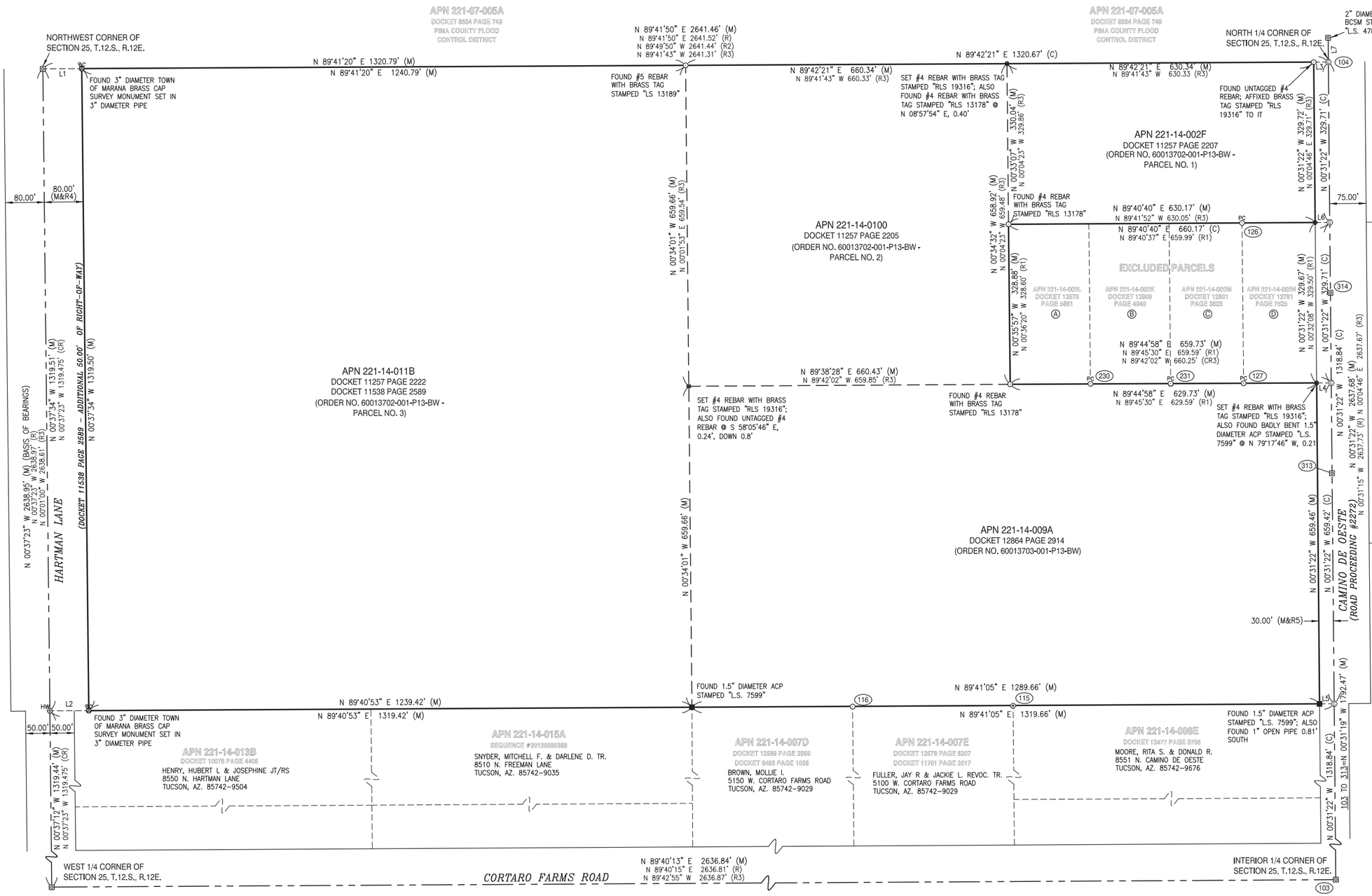
ALTA/ACSM LAND TITLE SURVEY
OF PORTIONS OF THE NORTH HALF OF THE NORTHWEST QUARTER OF SECTION 25, TOWNSHIP 12 SOUTH, RANGE 12 EAST, GILA AND SALT RIVER MERIDIAN, PIMA COUNTY, ARIZONA

Ashby SURVEYING & DRAFTING, INC.
717 N. SWAN ROAD
TUCSON, ARIZONA 85711
TEL: (520) 325-1991 • FAX: (520) 325-2074

DATE: 1–29–2016
JOB NO: 5919
SHEET: 1 OF 3

SEQUENCE NO. _____

SEQUENCE NO. _____



FOUND MONUMENT TABLE

NO.	DESCRIPTION
115	FOUND 1" INSIDE DIAMETER OPEN PIPE 0.58' SOUTH OF LINE
116	FOUND #4 REBAR WITH BRASS TAG STAMPED "LS 5713" 0.32' SOUTH OF LINE
126	FOUND #4 REBAR WITH PLASTIC CAP STAMPED "RLS 16912" ON LINE
127	FOUND #4 REBAR WITH PLASTIC CAP STAMPED "RLS 16912" 0.05' NORTH OF LINE
230	FOUND #4 REBAR WITH PLASTIC CAP STAMPED "RLS 16912" 0.25' NORTH OF LINE
231	FOUND #4 REBAR WITH PLASTIC CAP STAMPED "RLS 16912" ON LINE; ALSO FOUND UNTAGGED #4 REBAR WITH HOG RING 0.54' SOUTH
313	FOUND 2" DIAMETER BCSM STAMPED "RLS 14145" 0.03' EAST OF THE NORTH-SOUTH MID-SECTION LINE
314	FOUND 2" DIAMETER BCSM STAMPED "RLS 14145" 0.09' EAST OF THE NORTH-SOUTH MID-SECTION LINE

LEGEND

- ● SET #4 REBAR WITH BRASS TAG STAMPED "RLS 19316"
- ⊠ FOUND 3" DIAMETER TOWN OF MARANA BRASS CAP SURVEY MONUMENT (BCSM) STAMPED AS NOTED (UNLESS NOTED OTHERWISE)
- HW FOUND 3" DIAMETER TOWN OF MARANA BRASS CAP SURVEY MONUMENT IN HANDWELL STAMPED AS NOTED
- ○ FOUND SURVEY MONUMENT AS NOTED
- ■ FOUND 1.5" DIAMETER ALUMINUM CAPPED PIN (ACP)
- ⊙ FOUND 1" INSIDE DIAMETER OPEN PIPE
- PC FOUND PLASTIC CAP STAMPED "RLS 16912" ON #4 REBAR
- ◎ CALCULATED POINT (NOTHING FOUND OR SET)
- (M) MEASURED BEARING AND/OR DISTANCE
- (C) CALCULATED BEARING AND/OR DISTANCE
- (R) RECORD BEARING AND/OR DISTANCE PER BOOK 26 OF SURVEYS PAGE 62, RECORDS OF PIMA COUNTY, ARIZONA

LEGEND

- (R1) RECORD BEARING AND/OR DISTANCE PER BOOK 13 OF SURVEYS PAGE 43, RECORDS OF PIMA COUNTY, ARIZONA
- (R2) RECORD BEARING AND/OR DISTANCE PER THE FINAL PLAT OF COUNTRYSIDE RECORDED IN BOOK 36 OF MAPS AND PLATS AT PAGE 42, RECORDS OF PIMA COUNTY, ARIZONA
- (R3) UNRECORDED SURVEYS PREPARED BY STITZER, JOHNSON AND ASSOCIATES, INC., PROJECT NUMBERS 6470A, 6470B AND 6470C, APRIL, 1984.
- (R4) RECORD BEARING AND/OR DISTANCE PER DOCKET 11538 PAGE 2589, RECORDS OF PIMA COUNTY, ARIZONA. (ESTABLISHED ADDITIONAL 50 FEET OF RIGHT-OF-WAY FOR A TOTAL OF 80 FEET ON THE EAST SIDE OF HARTMAN LANE
- (R5) RECORD BEARING AND/OR DISTANCE PER (PIMA COUNTY, ARIZONA ROAD PROCEEDING #2272)
- (#) SCHEDULE B EXCEPTION ITEM NUMBER FROM THE COMMITMENT FOR TITLE INSURANCE ISSUED BY FIRST AMERICAN TITLE COMPANY; ORDER NO. 60013702-001-P13-BW

LINE TABLE (M OR C)

NO.	BEARING	DISTANCE
L1	N 89°41'20" E	80.00'
L2	N 89°40'53" E	80.00'
L3	N 89°42'21" E	30.00'
L4	N 89°44'58" E	30.00'
L5	N 89°41'05" E	30.00'
L6	N 89°40'40" E	30.00'
L7	N 00°20'25" W	49.94'

LINE TABLE (R2)

NO.	BEARING	DISTANCE
L7	N 00°09'55" E	50.00'

ADJACENT OWNERSHIP TABLE

A	APN 221-14-002L PADDOCK, JOHN A. & FAITH J. FAMILY TR 8745 N. CAMINO DE OESTE TUCSON, AZ. 85742
B	221-14-002K FELIX, GUILLERMO J. & GAMBOA-FELIX BELINDA CP/RS 4966 W CANDLEBERRY WAY TUCSON, AZ. 85742-8450
C	221-14-002M MENDOZA-ESTEBAN, CAROLE & MENDOZA, JOSE R 8725 N. CAMINO DE OESTE TUCSON, AZ. 85742
D	221-14-002N DIETZ, DANIEL A & KELLY D CP/RS 8715 N CAMINO DE OESTE TUCSON, AZ. 85742-9684

REGISTERED LAND SURVEYOR
21774
RICHARD B. HOWELL JR.
1-29-2016
Richard B. Howell Jr.
EXPIRES 3/31/2018

REVISIONS

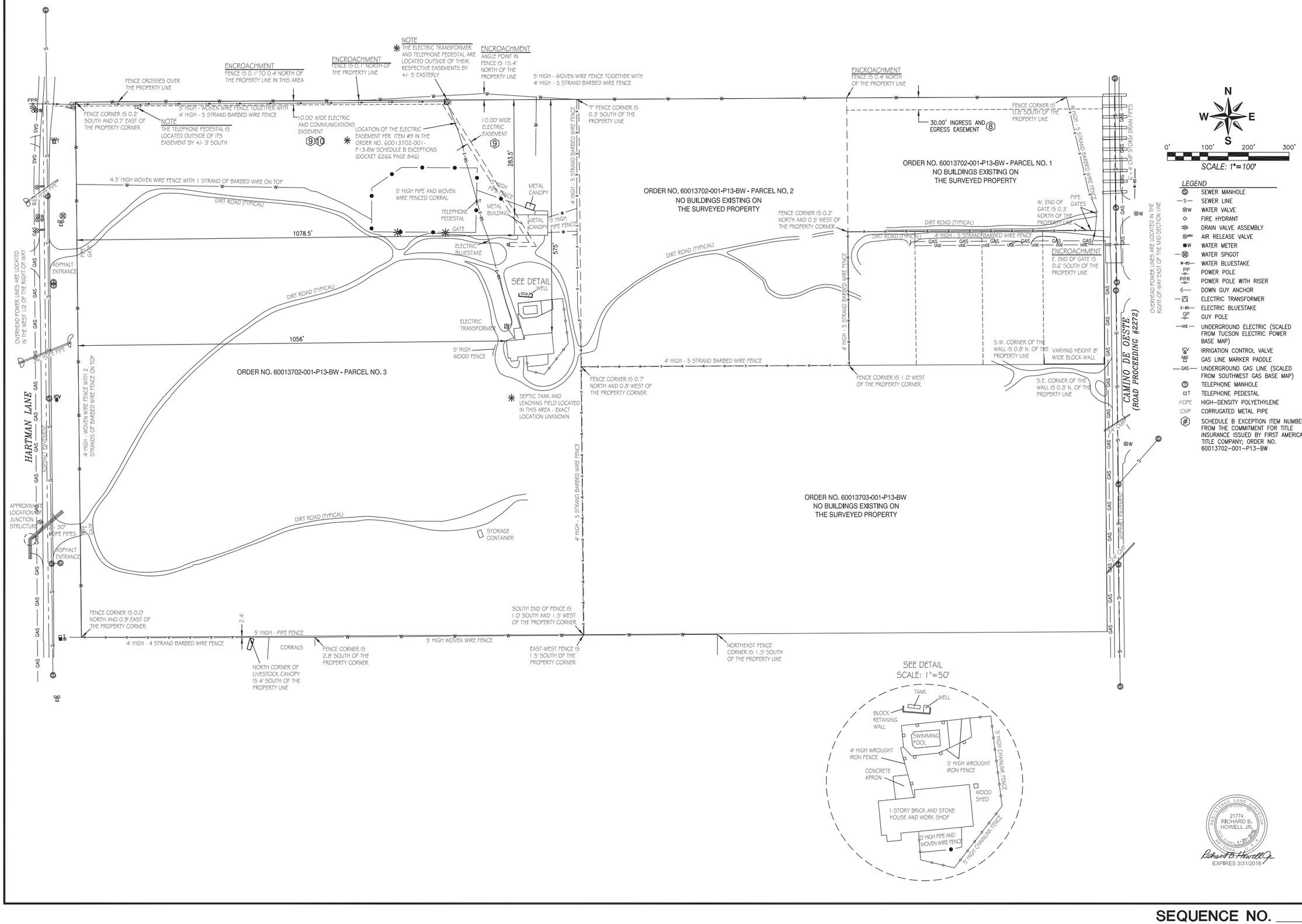
ALTA/ACSM LAND TITLE SURVEY
OF PORTIONS OF THE NORTHWEST QUARTER
OF SECTION 25, TOWNSHIP 12 SOUTH, RANGE 12 EAST, GILA AND
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Ashby
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TEL: (520) 325-1991 • FAX: (520) 325-2074

DATE: 1-29-2016
JOB NO: 5919
SHEET: 2 OF 3

SEQUENCE NO. _____

SEQUENCE NO. _____



REVISIONS

SEQUENCE NO. _____

ALTA/ACSM LAND TITLE SURVEY
OF PORTIONS OF THE NORTH HALF OF THE NORTHWEST QUARTER
OF SECTION 25, TOWNSHIP 12 SOUTH, RANGE 12 EAST, GILA AND
SALT RIVER MERIDIAN, PIMA COUNTY, ARIZONA

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SURVEYING & DRAFTING, INC.
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TUCSON, ARIZONA 85711
TEL: (520) 325-1991 • FAX: (520) 325-2074

DATE: 1-29-2016

JOB NO: 5919

SHEET: 3 OF 3

SEQUENCE NO. _____

APPENDIX C — TITLE REPORT

First American Title™

Commitment for Title Insurance

ISSUED BY

First American Title Insurance Company

Commitment

First American Title Insurance Company, a Nebraska corporation ("Company"), for a valuable consideration, commits to issue its policy or policies of title insurance, as identified in Schedule A, in favor of the Proposed Insured named in Schedule A, as owner or mortgagee of the estate or interest in the land described or referred to in Schedule A, upon payment of the premiums and charges and compliance with the Requirements; all subject to the provisions of Schedules A and B and to the Conditions of this Commitment.

This Commitment shall be effective only when the identity of the Proposed Insured and the amount of the policy or policies committed for have been inserted in Schedule A by the Company.

All liability and obligation under this Commitment shall cease and terminate 180 days after the Effective Date or when the policy or policies committed for shall issue, whichever first occurs, provided that the failure to issue the policy or policies is not the fault of the Company.

The Company will provide a sample of the policy form upon request.

In Witness Whereof, First American Title Insurance Company has caused its corporate name and seal to be affixed by its duly authorized officers on the date shown in Schedule A.

First American Title Insurance Company

Dennis J. Gilmore
President

Jeffrey S. Robinson
Secretary

(This Commitment is valid only when Schedules A and B are attached)

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CONDITIONS

1. The term mortgage, when used herein, shall include deed of trust, trust deed, or other security instrument.

2. If the proposed Insured has or acquired actual knowledge of any defect, lien, encumbrance, adverse claim or other matter affecting the estate or interest or mortgage thereon covered by this Commitment other than those shown in Schedule B hereof, and shall fail to disclose such knowledge to the Company in writing, the Company shall be relieved from liability for any loss or damage resulting from any act of reliance hereon to the extent the Company is prejudiced by failure to so disclose such knowledge. If the proposed Insured shall disclose such knowledge to the Company, or if the Company otherwise acquires actual knowledge of any such defect, lien, encumbrance, adverse claim or other matter, the Company at its option may amend Schedule B of this Commitment accordingly, but such amendment shall not relieve the Company from liability previously incurred pursuant to paragraph 3 of these Conditions.

3. Liability of the Company under this Commitment shall be only to the named proposed Insured and such parties included under the definition of Insured in the form of policy or policies committed for and only for actual loss incurred in reliance hereon in undertaking in good faith (a) to comply with the requirements hereof, or (b) to eliminate exceptions shown in Schedule B, or (c) to acquire or create the estate or interest or mortgage thereon covered by this Commitment. In no event shall such liability exceed the amount stated in Schedule A for the policy or policies committed for and such liability is subject to the insuring provisions and Conditions and the Exclusions from Coverage of the form of policy or policies committed for in favor of the proposed Insured which are hereby incorporated by reference and are made a part of this Commitment except as expressly modified herein.

4. This Commitment is a contract to issue one or more title insurance policies and is not an abstract of title or a report of the condition of title. Any action or actions or rights of action that the proposed Insured may have or may bring against the Company arising out of the status of the title to the estate or interest or the status of the mortgage thereon covered by this Commitment must be based on and are subject to the provisions of this Commitment.

5. The policy to be issued contains an arbitration clause. All arbitrable matters when the Amount of Insurance is $2,000,000 or less shall be arbitrated at the option of either the Company or the Insured as the exclusive remedy of the parties. You may review a copy of the arbitration rules at< http://www.alta.org/>.

First American Title™	Commitment for Title Insurance
	BY **First American Title Insurance Company**
Schedule A	

Order No.: **60013702-001-P13-BW**

1. Effective Date: **December 28, 2015, Amendment Date: January 8, 2016, Amendment No.: 4**

2. Policy or Policies to be issued: Amount

   a. **ALTA 2006 Extended Owner's Policy** **$2,350,000.00**

   Proposed Insured:

   PULTE HOME CORPORATION, a Michigan corporation

   b. **None** **$0.00**

   Proposed Insured:

   c. **None** **$0.00**

   Proposed Insured:

3. The estate or interest in the land described or referred to in this Commitment is

   FEE

4. Title to the estate or interest in the land is at the Effective Date vested in:

   LAURA J. HARSHBARGER, AKA JEAN HARSHBARGER, a married woman as her sole and separate property as to Parcels 1 and 2; and
   LAURA HARSHBARGER, AKA LAURA JEAN HARSHBARGER, a married woman as her sole and separate property as to Parcel 3

5. The land referred to in this Commitment is described as follows:

   See Exhibit A attached hereto and made a part hereof.

By: Sally Malone

Authorized Countersignature

Note: Please direct all inquiries and correspondence to
Title Security Agency, LLC
Pam Tighe, Escrow Officer
1 S. Church Avenue2040
Tucson, AZ 85701
Phone: (520) 740-0424
Email: Pamela.tighe@titlesecurity.com

Title Security Agency, LLC, issuing agent for First American Title Insurance Company

Barbara Whipple, Title Officer
Phone: (520) 740-0424
Email: barbara.whipple@titlesecurity.com
mc1
Typist

First American Title™	Commitment for Title Insurance
	BY First American Title Insurance Company
Exhibit A	

Order No.: **60013702-001-P13-BW**

LEGAL DESCRIPTION

The Land referred to herein below is situated in the County of Pima, State of Arizona, and is described as follows:

Parcel 1:

The North half of the Northeast quarter of the Northeast quarter of the Northwest quarter of Section 25, Township 12 South, Range 12 East, Gila and Salt River Base and Meridian, Pima County, Arizona.

EXCEPT the East 30 feet as conveyed to Pima County, Arizona by Deed recorded in Docket 4474, page 335.

(JV Arb 80)

Parcel 2:

The Northwest quarter of the Northeast quarter of the Northwest quarter of Section 25, Township 12 South, Range 12 East, Gila and Salt River Base and Meridian, Pima County, Arizona.

(JV Arb 33)

Parcel 3:

The Northwest quarter of the Northwest quarter of Section 25, Township 12 South, Range 12 East, Gila and Salt River Base and Meridian, Pima County, Arizona.

EXCEPT the West 30 feet thereof; and

FURTHER EXCEPT lying within the property taken in Final Order of Condemnation Case No. C20001137 recorded April 30, 2001 in Docket 11538, page 2589.

(JV Arb 79)

First American Title™	Commitment for Title Insurance
	BY First American Title Insurance Company
Schedule BI	

Order No.: **60013702-001-P13-BW**

REQUIREMENTS

The following requirements must be satisfied:

A. Payment of the necessary consideration for the estate or interest to be insured.

B. Pay all premiums, fees and charges for the policy.

C. Documents creating the estate or interest to be insured, must be properly executed, delivered and recorded.

D. Payment of all taxes and/or assessments levied against the subject premises which are due and payable.

1. PAY full year 2015 taxes in the amount of $2,021.81 plus interest; Tax Parcel No. 221-14-002F (Parcel 1).

2. PAY full year 2015 taxes in the amount of $4,229.75 plus interest; Tax Parcel No. 221-14-0010 (Parcel 2).

3. NOTE: Taxes for the first half 2015 taxes are shown paid in the amount of $8,767.95; Tax Parcel No. 221-14-011B (Parcel 3).

3a, PAY FULL YEAR 2016 TAXES for Parcels 1, 2 and 3. Amounts not available at this time.

4. RECORD Release and Reconveyance of Deed of Trust:

Amount	$95,000.00
Dated	December 17, 2002
Recorded	December 27, 2002
Docket	11955
Page	3178
Trustor	Laura Harshbarger, aka Laura Jean Harshbarger, a married woman
Trustee	Fidelity National Title Insurance Company
Beneficiary	Mortgage Electronic Registration Systems, Inc., solely as nominee for Capital Commerce Mortgage Co., a California Corporation

(Parcel 3)

Beneficial interest was assigned to New Residential Mortgage Loan Trust 2014-1, U.S. Bank National Association, as Indenture Trustee by mesne assignments of record, the last of which recorded at Sequence No. 20142650416

5. (INTENTIONALLY OMITTED) Inspection made.

6. (INTENTIONALLY OMITTED) Survey provided.

7. FURNISH the Company with Owner's Affidavit executed by LAURA J. HARSHBARGER, AKA JEAN HARSHBARGER, AKA LAURA JEAN HARSHBARGER

Said Owner's Affidavit to include an itemization of all leases (if any) including Lessee, date and terms, and shall indicate if any of said leases contain rights of first refusal or options to purchase. Said owner's Affidavit to also include a statement that the wells located on the subject property are not shared with any other parties.

Schedule BI (Continued)

Order No.: **60013702-001-P13-BW**

8. (INTENTIONALLY OMITTED)

9. (INTENTIONALLY OMITTED)

10. RECORD Deed from LAURA J. HARSHBARGER, AKA JEAN HARSHBARGER, a married woman as her sole and separate property as to Parcels 1 and 2; and LAURA HARSHBARGER, AKA LAURA JEAN HARSHBARGER, a married woman as her sole and separate property as to Parcel 3 to PULTE HOME CORPORATION, a Michigan corporation.

    NOTE: ARS 11:1133 may require the completion and filing of an Affidavit of Value.

    NOTE: Vesting deeds recorded in Docket 11257 at pages 2207, 2205 and 2222

End of Schedule BI

First American Title™	Commitment for Title Insurance
	BY First American Title Insurance Company
Schedule BII	

Order No.: **60013702-001-P13-BW**

EXCEPTIONS

The policy or policies to be issued will contain exceptions to the following matters unless the same are disposed of to the satisfaction of the Company:

1. RESERVATIONS contained in the Patent from the United States of America, in Book 326 of Deeds, page 209, reading as follows:

   RESERVED from the lands hereby granted a right of way thereon for ditches or canals constructed by the authority of the United States of America. Excepting and reserving, however, to the United States all the coal and other minerals in the lands so entered and patented, together with the right to prospect for, mine, and remove the same pursuant to the provisions and limitations of the Act of December 20, 1916 (30 Stat., 862)
   (Parcels 1 and 2)

2. RESERVATIONS contained in the Patent from the United States of America, in Book 61 of Deeds at page 392, reading as follows:

   SUBJECT to any vested and accrued water rights for mining, agricultural, manufacturing or other purposes, and rights to ditches and reservoirs used in connection with such water rights as may be recognized and acknowledged by the local customs, laws and decisions of courts; and there is reserved from the lands hereby granted, a right of way thereon for ditches or canals constructed by the authority of the United States of America.
   (Parcel 3)

3. TAXES AND ASSESSMENTS collectible by the County Treasurer, a lien not yet due and payable for the following year:

   2017

4. WATER RIGHTS, claims or title to water, and agreements, covenants, conditions or rights incident thereto, whether or not shown by the public records.
   This exception is not limited by reason of the disclosure of any matter relating to Water Rights as may be set forth elsewhere in Schedule B.

5. (INTENTIONALLY OMITTED)

6. (INTENTIONALLY OMITTED)

7. (INTENTIONALLY OMITTED)

8. (INTENTIONALLY OMITTED)

Schedule BII (Continued)

Order No.: **60013702-001-P13-BW**

9. EASEMENT and rights incident thereto, as set forth in instrument:

Recorded in Docket	6135
Page	880
Re-recorded in Docket	6266
Page	846
Purpose	electric lines and appurtenant facilities

10. EASEMENT and rights incident thereto, as set forth in instrument:

Recorded in Docket	6137
Page	983
Purpose	communication and other facilities and associated matters

11. (INTENTIONALLY OMITTED)

12. Any matters arising by reason of the inclusion of said land within the boundaries of the Town of Marana General Plan as set forth in instrument recorded April 22, 1997 in Docket 10529, page 1892.

13. RIGHTS OF PARTIES in possession.
NOTE: This exception will be amended or deleted upon the submission of the corresponding documents required in Schedule B, Part I.

14. The following matters as set forth on that certain survey made by Ashby Surveying & Drafting, Inc., dated December 14, 2015, Job No. 5919:

a. Encroachment of wire fence from Parcels 1, 2 and 3 onto property to the north by from 0.1 feet to 15.4 feet;
b. Telephone pedestal located outside of easement area;
c. Intentionally Omitted;
d. Encroachment of gate from subject Parcel 1 onto property to the south by 0.6 feet.
e. Intentionally Omitted.

END OF SCHEDULE BII

First American Title™

Privacy Information

We Are Committed to Safeguarding Customer Information

In order to better serve your needs now and in the future, we may ask you to provide us with certain information. We understand that you may be concerned about what we will do with such information - particularly any personal or financial information. We agree that you have a right to know how we will utilize the personal information you provide to us. Therefore, together with our subsidiaries we have adopted this Privacy Policy to govern the use and handling of your personal information.

Applicability

This Privacy Policy governs our use of the information that you provide to us. It does not govern the manner in which we may use information we have obtained from any other source, such as information obtained from a public record or from another person or entity. First American has also adopted broader guidelines that govern our use of personal information regardless of its source. First American calls these guidelines its Fair Information Values.

Types of Information

Depending upon which of our services you are utilizing, the types of nonpublic personal information that we may collect include:

- Information we receive from you on applications, forms and in other communications to us, whether in writing, in person, by telephone or any other means;
- Information about your transactions with us, our affiliated companies, or others; and
- Information we receive from a consumer reporting agency.

Use of Information

We request information from you for our own legitimate business purposes and not for the benefit of any nonaffiliated party. Therefore, we will not release your information to nonaffiliated parties except: (1) as necessary for us to provide the product or service you have requested of us; or (2) as permitted by law. We may, however, store such information indefinitely, including the period after which any customer relationship has ceased. Such information may be used for any internal purpose, such as quality control efforts or customer analysis. We may also provide all of the types of nonpublic personal information listed above to one or more of our affiliated companies. Such affiliated companies include financial service providers, such as title insurers, property and casualty insurers, and trust and investment advisory companies, or companies involved in real estate services, such as appraisal companies, home warranty companies and escrow companies. Furthermore, we may also provide all the information we collect, as described above, to companies that perform marketing services on our behalf, on behalf of our affiliated companies or to other financial institutions with whom we or our affiliated companies have joint marketing agreements.

Former Customers

Even if you are no longer our customer, our Privacy Policy will continue to apply to you.

Confidentiality and Security

We will use our best efforts to ensure that no unauthorized parties have access to any of your information. We restrict access to nonpublic personal information about you to those individuals and entities who need to know that information to provide products or services to you. We will use our best efforts to train and oversee our employees and agents to ensure that your information will be handled responsibly and in accordance with this Privacy Policy and First American's Fair Information Values. We currently maintain physical, electronic, and procedural safeguards that comply with federal regulations to guard your nonpublic personal information.

Information Obtained Through Our Web Site

First American Financial Corporation is sensitive to privacy issues on the Internet. We believe it is important you know how we treat the information about you we receive on the Internet.

In general, you can visit First American or its affiliates' Web sites on the World Wide Web without telling us who you are or revealing any information about yourself. Our Web servers collect the domain names, not the e-mail addresses, of visitors. This information is aggregated to measure the number of visits, average time spent on the site, pages viewed and similar information. First American uses this information to measure the use of our site and to develop ideas to improve the content of our site.

There are times, however, when we may need information from you, such as your name and email address. When information is needed, we will use our best efforts to let you know at the time of collection how we will use the personal information. Usually, the personal information we collect is used only by us to respond to your inquiry, process an order or allow you to access specific account/profile information. If you choose to share any personal information with us, we will only use it in accordance with the policies outlined above.

Business Relationships

First American Financial Corporation's site and its affiliates' sites may contain links to other Web sites. While we try to link only to sites that share our high standards and respect for privacy, we are not responsible for the content or the privacy practices employed by other sites.

Cookies

Some of First American's Web sites may make use of "cookie" technology to measure site activity and to customize information to your personal tastes. A cookie is an element of data that a Web site can send to your browser, which may then store the cookie on your hard drive.

FirstAm.com uses stored cookies. The goal of this technology is to better serve you when visiting our site, save you time when you are here and to provide you with a more meaningful and productive Web site experience.

Fair Information Values

Fairness We consider consumer expectations about their privacy in all our businesses. We only offer products and services that assure a favorable balance between consumer benefits and consumer privacy.

Public Record We believe that an open public record creates significant value for society, enhances consumer choice and creates consumer opportunity. We actively support an open public record and emphasize its importance and contribution to our economy.

Use We believe we should behave responsibly when we use information about a consumer in our business. We will obey the laws governing the collection, use and dissemination of data.

Accuracy We will take reasonable steps to help assure the accuracy of the data we collect, use and disseminate. Where possible, we will take reasonable steps to correct inaccurate information. When, as with the public record, we cannot correct inaccurate information, we will take all reasonable steps to assist consumers in identifying the source of the erroneous data so that the consumer can secure the required corrections.

Education We endeavor to educate the users of our products and services, our employees and others in our industry about the importance of consumer privacy. We will instruct our employees on our fair information values and on the responsible collection and use of data. We will encourage others in our industry to collect and use information in a responsible manner.

Security We will maintain appropriate facilities and systems to protect against unauthorized access to and corruption of the data we maintain.

NOTICE OF TITLE POLICY DISCOUNTS

Residential Resale and Refinance Transactions – Arizona

Escrow No.: 60013702

Please note certain discounts sometimes apply to reduce title insurance premiums. You should review the possible discounts listed below and tell your escrow officer if you think any apply. For some of the discounts, you may be asked to provide additional information to allow us to verify that the discount is applicable. The discount will be subject to specific formulas filed by the Underwriter with the Arizona Department of Insurance and the location of the property.

SHORT/LONG TERM RESALE RATE:

There are certain discounts available if your purchase was within last 5 years and insured by us or another title company. The discount will vary depending on when you purchased your property and who insured it.

REFINANCE RATE:

There are certain discounts available if your current transaction is a refinance of a prior loan that was insured by us, or another title insurance company. This rate is subject to determination of loan balances in some instances, depending on the formula filed by the Underwriter being used to insure the current transaction.

Please acknowledge your understanding of the foregoing disclosure, even if no discount applies, by signing below.

Date: _____ Date: _____

_____ _____

Signature of Seller/Borrower Signature of Seller/Borrower

_____ _____

Print Name Print Name

DISCLOSURE NOTICES

Good Funds Law
Arizona Revised Statutes Section 6-843 regulates the disbursement of escrow funds by an escrow agent. The law requires that funds be deposited in the escrow agent's escrow account and available for withdrawal prior to disbursement. Funds deposited with the Company by wire transfer may be disbursed upon receipt. Funds deposited with the Company in the form of cashier's checks, certified checks or teller's checks, or checks which are made by an affiliate of a state or federally regulated depository institution when the check is drawn on that institution, may be disbursed the same day as deposited. If funds are deposited with the Company by other methods, recording and/or disbursement may be delayed.

PURCHASER DWELLING ACTIONS NOTICE
Pursuant to Arizona Revised Statutes Section 12-1363.N, notice is hereby provided to the purchaser of a dwelling of the provisions of Arizona Revised Statutes Sections 12-1361, 1362 and 1363. These statutory sections set forth the requirements to be met by a purchaser prior to bringing an action against the seller of a dwelling arising out of or related to the design, construction, condition or sale of the dwelling. "Dwelling" means a single or multifamily unit designed for residential use and common areas and improvements owned or maintained by an association or its members. "Seller" means any person, firm, partnership, corporation, association or other organization engaged in the business of designing, constructing or selling dwellings. The complete statutory sections can be viewed on the Arizona State Legislature's web site: www.azleg.state.az.us/ars/ars.htm.

NOTICE:
Pursuant to Arizona Revised Statutes 11-480, effective January 1, 1991, the County Recorder may not accept documents for recording that do not comply with the following:

a Print must be ten-point type (pica) or larger.

b Margins of at least one-half inch along the left and right sides one-half inch across the bottom and at least two inches on top for recording and return address information.

c Each instrument shall be no larger than 8 ½ inches in width and 14 inches in length.

NOTICE
OF
IMPORTANT CHANGE TO ARIZONA NOTARY LAWS

If your client is a foreign citizen, you will want to be aware of this change.

Arizona law currently provides that "satisfactory evidence of identity" for purposes of a notary's acknowledging signatures or performing jurats includes a "current form of identification issued by a federal, state or tribal government…." (A.R.S. 41-311.11.) Effective August 25, 2004, however, this provision has been amended to provided that the current form of identification must be issued by "the United States government or a state or tribal government…." This change means that a current form of identification issued by a foreign government, such as a foreign driver's license, will **NOT** meet the statutory identification requirements.

To avoid delays in closing transactions involving foreign citizens who may not have appropriate identification, you should determine as soon as possible what form(s) of identification your clients have. If they do not have appropriate identification, then you may wish to suggest, depending on their circumstances, that they apply for and obtain an appropriate form of U.S. or state identification.

Title Security Agency, LLC

AFFILIATION DISCLOSURE
Pursuant to ARS 6-840

This is to give you notice that Title Security Agency of Arizona, a Delaware limited liability company, doing business in the State of Arizona as Title Security Agency, LLC ("Title Security"), has a business relationship with First American Title Insurance Company ("FATCO"), a company that provides title insurance policies. Title Security is also affiliated with and has business relationships with Long Title Agency, LLC ("Long Title"), Catalina Title Agency, LLC ("Catalina Title"), and Signature Title Agency, LLC ("Signature Title") to provide title services. Title Security is a Title Agent for and has business relationships with First American Title Insurance Company, Old Republic National Title Insurance Company and Title Resources Guaranty Company, which underwrite the policies issued by Title Security. Because of these relationships, this referral may provide Title Security with a financial or other benefit.

You are not required to use Title Security, Long Title, Catalina Title, Signature Title, First American Title Insurance Company, Old Republic National Title Insurance Company or Title Resources Guaranty Company, as part of the real estate transaction for this subject property.

THERE ARE FREQUENTLY OTHER SETTLEMENT SERVICE PROVIDERS AVAILABLE WITH SIMILAR SERVICES. YOU ARE FREE TO SHOP AROUND TO DETERMINE THAT YOU ARE RECEIVING THE BEST SERVICES AND THE BEST RATE FOR THESE SERVICES.

The rates for escrow agencies that are also title insurers or title insurance agents are filed with the Arizona Department of Financial Institutions and the escrow agency may not deviate from those filed rates. Title insurance rates are filed with the Arizona Department of Insurance by each title insurer, and the rates are the same for all title insurance issuing agents for each particular insurer. The premium you are charged for your title insurance policy is based upon the purchase price for the property you are purchasing/selling. If you are refinancing, the premium you are charged for your title insurance policy is based upon the loan amount. You may request to review the title insurance rate card which establishes the premium amount from the escrow agent handling your transaction.

First American Title™

Commitment for Title Insurance

ISSUED BY

First American Title Insurance Company

Commitment

First American Title Insurance Company, a Nebraska corporation ("Company"), for a valuable consideration, commits to issue its policy or policies of title insurance, as identified in Schedule A, in favor of the Proposed Insured named in Schedule A, as owner or mortgagee of the estate or interest in the land described or referred to in Schedule A, upon payment of the premiums and charges and compliance with the Requirements; all subject to the provisions of Schedules A and B and to the Conditions of this Commitment.

This Commitment shall be effective only when the identity of the Proposed Insured and the amount of the policy or policies committed for have been inserted in Schedule A by the Company.

All liability and obligation under this Commitment shall cease and terminate 180 days after the Effective Date or when the policy or policies committed for shall issue, whichever first occurs, provided that the failure to issue the policy or policies is not the fault of the Company.

The Company will provide a sample of the policy form upon request.

In Witness Whereof, First American Title Insurance Company has caused its corporate name and seal to be affixed by its duly authorized officers on the date shown in Schedule A.

First American Title Insurance Company

Dennis J. Gilmore
President

Jeffrey S. Robinson
Secretary

(This Commitment is valid only when Schedules A and B are attached)

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All other uses are prohibited. Reprinted under license from the American Land Title Association.

CONDITIONS

1. The term mortgage, when used herein, shall include deed of trust, trust deed, or other security instrument.

2. If the proposed Insured has or acquired actual knowledge of any defect, lien, encumbrance, adverse claim or other matter affecting the estate or interest or mortgage thereon covered by this Commitment other than those shown in Schedule B hereof, and shall fail to disclose such knowledge to the Company in writing, the Company shall be relieved from liability for any loss or damage resulting from any act of reliance hereon to the extent the Company is prejudiced by failure to so disclose such knowledge. If the proposed Insured shall disclose such knowledge to the Company, or if the Company otherwise acquires actual knowledge of any such defect, lien, encumbrance, adverse claim or other matter, the Company at its option may amend Schedule B of this Commitment accordingly, but such amendment shall not relieve the Company from liability previously incurred pursuant to paragraph 3 of these Conditions.

3. Liability of the Company under this Commitment shall be only to the named proposed Insured and such parties included under the definition of Insured in the form of policy or policies committed for and only for actual loss incurred in reliance hereon in undertaking in good faith (a) to comply with the requirements hereof, or (b) to eliminate exceptions shown in Schedule B, or (c) to acquire or create the estate or interest or mortgage thereon covered by this Commitment. In no event shall such liability exceed the amount stated in Schedule A for the policy or policies committed for and such liability is subject to the insuring provisions and Conditions and the Exclusions from Coverage of the form of policy or policies committed for in favor of the proposed Insured which are hereby incorporated by reference and are made a part of this Commitment except as expressly modified herein.

4. This Commitment is a contract to issue one or more title insurance policies and is not an abstract of title or a report of the condition of title. Any action or actions or rights of action that the proposed Insured may have or may bring against the Company arising out of the status of the title to the estate or interest or the status of the mortgage thereon covered by this Commitment must be based on and are subject to the provisions of this Commitment.

5. The policy to be issued contains an arbitration clause. All arbitrable matters when the Amount of Insurance is $2,000,000 or less shall be arbitrated at the option of either the Company or the Insured as the exclusive remedy of the parties. You may review a copy of the arbitration rules at< http://www.alta.org/>.

First American Title™	**Commitment for Title Insurance**
	BY **First American Title Insurance Company**
Schedule A	

Order No.: **60013703-001-P13-BW**

1. Effective Date: **December 28, 2015, Amendment Date: January 8, 2016, Amendment No.: 5**
2. Policy or Policies to be issued: Amount

   a. **ALTA 2006 Extended Owner's Policy** **$888,000.00**

   Proposed Insured:

   PULTE HOME CORPORATION, a Michigan corporation

   b. **None** **$0.00**

   Proposed Insured:

   c. **None** **$0.00**

   Proposed Insured:

3. The estate or interest in the land described or referred to in this Commitment is

   A FEE

4. Title to the FEE estate or interest in the land is at the Effective Date vested in:

   REDWING INVESTMENTS, LLC, an Arizona limited liability company

5. The land referred to in this Commitment is described as follows:

   See Exhibit A attached hereto and made a part hereof.

By: _____
Authorized Countersignature

Note: Please direct all inquiries and correspondence to
Title Security Agency, LLC
Pam Tighe, Escrow Officer
1 S. Church Avenue2040
Tucson, AZ 85701
Phone: (520) 740-0424
Email: Pamela.tighe@titlesecurity.com

Title Security Agency, LLC, issuing agent for First American Title Insurance Company

Barbara Whipple, Title Officer
Phone: (520) 740-0424
Email: barbara.whipple@titlesecurity.com
mc1
Typist

First American Title™	**Commitment for Title Insurance**
	BY **First American Title Insurance Company**
Exhibit A	

Order No.: **60013703-001-P13-BW**

LEGAL DESCRIPTION

The Land referred to herein below is situated in the County of Pima, State of Arizona, and is described as follows:

The South half of the Northeast quarter of the Northwest quarter of Section 25, Township 12 South, Range 12 East, Gila and Salt River Base and Meridian, Pima County, Arizona.

EXCEPT the East 30 feet as conveyed to Pima County, Arizona, in Docket 4474 at page 339.

(JV Arb 26)

First American Title™	Commitment for Title Insurance
	BY First American Title Insurance Company
Schedule BI	

Order No.: **60013703-001-P13-BW**

REQUIREMENTS

The following requirements must be satisfied:

A. Payment of the necessary consideration for the estate or interest to be insured.

B. Pay all premiums, fees and charges for the policy.

C. Documents creating the estate or interest to be insured, must be properly executed, delivered and recorded.

D. Payment of all taxes and/or assessments levied against the subject premises which are due and payable.

1. NOTE: Full year 2015 taxes are shown paid in the amount of $10,809.30; Tax Parcel No. 221-14-009A

1a. PAY taxes for the full year 2016. Amounts unavailable at this time.

2. (INTENTIONALLY OMITTED) Release recorded December 16, 2015 as Sequence No. 2015-3500537.

3. SUBMIT fully executed copy of the Operating Agreement (and all amendments) of the limited liability company named below for examination. The right is reserved to make additional requirements upon said examination.

   REDWING INVESTMENTS, LLC, an Arizona limited liability company

4. (INTENTIONALLY OMITTED) Inspection done.

5. (INTENTIONALLY OMITTED) Survey provided.

6. FURNISH the Company with Owner's Affidavit executed by REDWING INVESTMENTS, LLC, an Arizona limited liability company

   Said Owner's Affidavit to include an itemization of all leases (if any) including Lessee, date and terms, and shall indicate if any of said leases contain rights of first refusal or options to purchase.

7. (INTENTIONALLY OMITTED)

8. RECORD Deed from REDWING INVESTMENTS, LLC, an Arizona limited liability company to PULTE HOME CORPORATION, a Michigan corporation, in accordance with the terms of that certain Purchase and Sale Agreement and Joint Escrow Instructions dated October 26, 2015, disclosed by Memorandum of Agreement recorded October 26, 2013 at Sequence No. 20152990535.

   NOTE: ARS 11:1133 may require the completion and filing of an Affidavit of Value.

   NOTE: Vesting deed recorded in Docket 12864 at page 2914

End of Schedule BI

First American Title™	Commitment for Title Insurance
	BY First American Title Insurance Company
Schedule BII	

Order No.: **60013703-001-P13-BW**

EXCEPTIONS

The policy or policies to be issued will contain exceptions to the following matters unless the same are disposed of to the satisfaction of the Company:

1. RESERVATIONS contained in the Patent from the United States of America, in Book 326 of Deeds, page 209, reading as follows:

   RESERVED from the lands hereby granted a right of way thereon for ditches or canals constructed by the authority of the United States of America. Excepting and reserving, however, to the United States all the coal and other minerals in the lands so entered and patented, together with the right to prospect for, mine, and remove the same pursuant to the provisions and limitations of the Act of December 20, 1916 (30 Stat., 862)

2. TAXES AND ASSESSMENTS collectible by the County Treasurer, a lien not yet due and payable for the following year:

   2017

3. WATER RIGHTS, claims or title to water, and agreements, covenants, conditions or rights incident thereto, whether or not shown by the public records.
   This exception is not limited by reason of the disclosure of any matter relating to Water Rights as may be set forth elsewhere in Schedule B.

4. (INTENTIONALLY OMITTED)

5. (INTENTIONALLY OMITTED)

6. (INTENTIONALLY OMITTED)

7. Any matters arising by reason of the inclusion of said land within the boundaries of the Town of Marana General Plan as set forth in instrument recorded April 22, 1997 in Docket 10529, page 1892.

8. RIGHTS OF PARTIES in possession.
   NOTE: This exception will be amended or deleted upon the submission of the corresponding documents required in Schedule B, Part I.

9. The following matter as set forth on that certain survey made by Ashby Surveying & Drafting, Inc., dated December 14, 2015:

   a. Dirt road and the rights of others to use said dirt road near the north line of subject property.

END OF SCHEDULE BII

First American Title™

Privacy Information

We Are Committed to Safeguarding Customer Information

In order to better serve your needs now and in the future, we may ask you to provide us with certain information. We understand that you may be concerned about what we will do with such information - particularly any personal or financial information. We agree that you have a right to know how we will utilize the personal information you provide to us. Therefore, together with our subsidiaries we have adopted this Privacy Policy to govern the use and handling of your personal information.

Applicability

This Privacy Policy governs our use of the information that you provide to us. It does not govern the manner in which we may use information we have obtained from any other source, such as information obtained from a public record or from another person or entity. First American has also adopted broader guidelines that govern our use of personal information regardless of its source. First American calls these guidelines its Fair Information Values.

Types of Information

Depending upon which of our services you are utilizing, the types of nonpublic personal information that we may collect include:

- Information we receive from you on applications, forms and in other communications to us, whether in writing, in person, by telephone or any other means;
- Information about your transactions with us, our affiliated companies, or others; and
- Information we receive from a consumer reporting agency.

Use of Information

We request information from you for our own legitimate business purposes and not for the benefit of any nonaffiliated party. Therefore, we will not release your information to nonaffiliated parties except: (1) as necessary for us to provide the product or service you have requested of us; or (2) as permitted by law. We may, however, store such information indefinitely, including the period after which any customer relationship has ceased. Such information may be used for any internal purpose, such as quality control efforts or customer analysis. We may also provide all of the types of nonpublic personal information listed above to one or more of our affiliated companies. Such affiliated companies include financial service providers, such as title insurers, property and casualty insurers, and trust and investment advisory companies, or companies involved in real estate services, such as appraisal companies, home warranty companies and escrow companies. Furthermore, we may also provide all the information we collect, as described above, to companies that perform marketing services on our behalf, on behalf of our affiliated companies or to other financial institutions with whom we or our affiliated companies have joint marketing agreements.

Former Customers

Even if you are no longer our customer, our Privacy Policy will continue to apply to you.

Confidentiality and Security

We will use our best efforts to ensure that no unauthorized parties have access to any of your information. We restrict access to nonpublic personal information about you to those individuals and entities who need to know that information to provide products or services to you. We will use our best efforts to train and oversee our employees and agents to ensure that your information will be handled responsibly and in accordance with this Privacy Policy and First American's Fair Information Values. We currently maintain physical, electronic, and procedural safeguards that comply with federal regulations to guard your nonpublic personal information.

Information Obtained Through Our Web Site

First American Financial Corporation is sensitive to privacy issues on the Internet. We believe it is important you know how we treat the information about you we receive on the Internet.

In general, you can visit First American or its affiliates' Web sites on the World Wide Web without telling us who you are or revealing any information about yourself. Our Web servers collect the domain names, not the e-mail addresses, of visitors. This information is aggregated to measure the number of visits, average time spent on the site, pages viewed and similar information. First American uses this information to measure the use of our site and to develop ideas to improve the content of our site.

There are times, however, when we may need information from you, such as your name and email address. When information is needed, we will use our best efforts to let you know at the time of collection how we will use the personal information. Usually, the personal information we collect is used only by us to respond to your inquiry, process an order or allow you to access specific account/profile information. If you choose to share any personal information with us, we will only use it in accordance with the policies outlined above.

Business Relationships

First American Financial Corporation's site and its affiliates' sites may contain links to other Web sites. While we try to link only to sites that share our high standards and respect for privacy, we are not responsible for the content or the privacy practices employed by other sites.

Cookies

Some of First American's Web sites may make use of "cookie" technology to measure site activity and to customize information to your personal tastes. A cookie is an element of data that a Web site can send to your browser, which may then store the cookie on your hard drive.

FirstAm.com uses stored cookies. The goal of this technology is to better serve you when visiting our site, save you time when you are here and to provide you with a more meaningful and productive Web site experience.

Fair Information Values

Fairness We consider consumer expectations about their privacy in all our businesses. We only offer products and services that assure a favorable balance between consumer benefits and consumer privacy.

Public Record We believe that an open public record creates significant value for society, enhances consumer choice and creates consumer opportunity. We actively support an open public record and emphasize its importance and contribution to our economy.

Use We believe we should behave responsibly when we use information about a consumer in our business. We will obey the laws governing the collection, use and dissemination of data.

Accuracy We will take reasonable steps to help assure the accuracy of the data we collect, use and disseminate. Where possible, we will take reasonable steps to correct inaccurate information. When, as with the public record, we cannot correct inaccurate information, we will take all reasonable steps to assist consumers in identifying the source of the erroneous data so that the consumer can secure the required corrections.

Education We endeavor to educate the users of our products and services, our employees and others in our industry about the importance of consumer privacy. We will instruct our employees on our fair information values and on the responsible collection and use of data. We will encourage others in our industry to collect and use information in a responsible manner.

Security We will maintain appropriate facilities and systems to protect against unauthorized access to and corruption of the data we maintain.

NOTICE OF TITLE POLICY DISCOUNTS

Residential Resale and Refinance Transactions – Arizona

Escrow No.: 60013703

Please note certain discounts sometimes apply to reduce title insurance premiums. You should review the possible discounts listed below and tell your escrow officer if you think any apply. For some of the discounts, you may be asked to provide additional information to allow us to verify that the discount is applicable. The discount will be subject to specific formulas filed by the Underwriter with the Arizona Department of Insurance and the location of the property.

SHORT/LONG TERM RESALE RATE:

There are certain discounts available if your purchase was within last 5 years and insured by us or another title company. The discount will vary depending on when you purchased your property and who insured it.

REFINANCE RATE:

There are certain discounts available if your current transaction is a refinance of a prior loan that was insured by us, or another title insurance company. This rate is subject to determination of loan balances in some instances, depending on the formula filed by the Underwriter being used to insure the current transaction.

Please acknowledge your understanding of the foregoing disclosure, even if no discount applies, by signing below.

Date: _____ Date: _____

_____ _____
Signature of Seller/Borrower Signature of Seller/Borrower

_____ _____
Print Name Print Name

DISCLOSURE NOTICES

Good Funds Law
Arizona Revised Statutes Section 6-843 regulates the disbursement of escrow funds by an escrow agent. The law requires that funds be deposited in the escrow agent's escrow account and available for withdrawal prior to disbursement. Funds deposited with the Company by wire transfer may be disbursed upon receipt. Funds deposited with the Company in the form of cashier's checks, certified checks or teller's checks, or checks which are made by an affiliate of a state or federally regulated depository institution when the check is drawn on that institution, may be disbursed the same day as deposited. If funds are deposited with the Company by other methods, recording and/or disbursement may be delayed.

PURCHASER DWELLING ACTIONS NOTICE
Pursuant to Arizona Revised Statutes Section 12-1363.N, notice is hereby provided to the purchaser of a dwelling of the provisions of Arizona Revised Statutes Sections 12-1361, 1362 and 1363. These statutory sections set forth the requirements to be met by a purchaser prior to bringing an action against the seller of a dwelling arising out of or related to the design, construction, condition or sale of the dwelling. "Dwelling" means a single or multifamily unit designed for residential use and common areas and improvements owned or maintained by an association or its members. "Seller" means any person, firm, partnership, corporation, association or other organization engaged in the business of designing, constructing or selling dwellings. The complete statutory sections can be viewed on the Arizona State Legislature's web site: www.azleg.state.az.us/ars/ars.htm.

NOTICE:
Pursuant to Arizona Revised Statutes 11-480, effective January 1, 1991, the County Recorder may not accept documents for recording that do not comply with the following:

a Print must be ten-point type (pica) or larger.

b Margins of at least one-half inch along the left and right sides one-half inch across the bottom and at least two inches on top for recording and return address information.

c Each instrument shall be no larger than 8 ½ inches in width and 14 inches in length.

NOTICE
OF
IMPORTANT CHANGE TO ARIZONA NOTARY LAWS

If your client is a foreign citizen, you will want to be aware of this change.

Arizona law currently provides that "satisfactory evidence of identity" for purposes of a notary's acknowledging signatures or performing jurats includes a "current form of identification issued by a federal, state or tribal government…." (A.R.S. 41-311.11.) Effective August 25, 2004, however, this provision has been amended to provided that the current form of identification must be issued by "the United States government or a state or tribal government…." This change means that a current form of identification issued by a foreign government, such as a foreign driver's license, will **NOT** meet the statutory identification requirements.

To avoid delays in closing transactions involving foreign citizens who may not have appropriate identification, you should determine as soon as possible what form(s) of identification your clients have. If they do not have appropriate identification, then you may wish to suggest, depending on their circumstances, that they apply for and obtain an appropriate form of U.S. or state identification.

Title Security Agency, LLC

AFFILIATION DISCLOSURE
Pursuant to ARS 6-840

This is to give you notice that Title Security Agency of Arizona, a Delaware limited liability company, doing business in the State of Arizona as Title Security Agency, LLC ("Title Security"), has a business relationship with First American Title Insurance Company ("FATCO"), a company that provides title insurance policies. Title Security is also affiliated with and has business relationships with Long Title Agency, LLC ("Long Title"), Catalina Title Agency, LLC ("Catalina Title"), and Signature Title Agency, LLC ("Signature Title") to provide title services. Title Security is a Title Agent for and has business relationships with First American Title Insurance Company, Old Republic National Title Insurance Company and Title Resources Guaranty Company, which underwrite the policies issued by Title Security. Because of these relationships, this referral may provide Title Security with a financial or other benefit.

You are not required to use Title Security, Long Title, Catalina Title, Signature Title, First American Title Insurance Company, Old Republic National Title Insurance Company or Title Resources Guaranty Company, as part of the real estate transaction for this subject property.

THERE ARE FREQUENTLY OTHER SETTLEMENT SERVICE PROVIDERS AVAILABLE WITH SIMILAR SERVICES. YOU ARE FREE TO SHOP AROUND TO DETERMINE THAT YOU ARE RECEIVING THE BEST SERVICES AND THE BEST RATE FOR THESE SERVICES.

The rates for escrow agencies that are also title insurers or title insurance agents are filed with the Arizona Department of Financial Institutions and the escrow agency may not deviate from those filed rates. Title insurance rates are filed with the Arizona Department of Insurance by each title insurer, and the rates are the same for all title insurance issuing agents for each particular insurer. The premium you are charged for your title insurance policy is based upon the purchase price for the property you are purchasing/selling. If you are refinancing, the premium you are charged for your title insurance policy is based upon the loan amount. You may request to review the title insurance rate card which establishes the premium amount from the escrow agent handling your transaction.

Schedule BII (Continued)

Order No.: 60013702-001-P13-BW

8. EASEMENT and rights incident thereto, as set forth in instrument:

Recorded in Docket	2329
Page	198 and
Docket	7312
Page	473
Purpose	ingress and egress

9. EASEMENT and rights incident thereto, as set forth in instrument:

Recorded in Docket	6135
Page	880
Re-recorded in Docket	6266
Page	846
Purpose	electric lines and appurtenant facilities

10. EASEMENT and rights incident thereto, as set forth in instrument:

Recorded in Docket	6137
Page	983
Purpose	communication and other facilities and associated matters

11. EASEMENT and rights incident thereto, as set forth in instrument:

Recorded in Docket	7918
Page	1471
Purpose	ingress and egress

12. Any matters arising by reason of the inclusion of said land within the boundaries of the Town of Marana General Plan as set forth in instrument recorded April 22, 1997 in Docket 10529, page 1892.

13. RIGHTS OF PARTIES in possession.
NOTE: This exception will be amended or deleted upon the submission of the corresponding documents required in Schedule B, Part I.

END OF SCHEDULE BII

TATE OF ARIZONA)
) ss
PIMA)

I hereby certify that the within instrument was filed for record in Pima County, State of Arizona
MAE SMYTH
County Recorder

No. 125547
Book 6137 Page 983-984
OCT 19 1979 -11 10AM
Request of Mountain Bell
Fee: 13.00

PIMA COUNTY ARIZONA

RIGHT-OF-WAY EASEMENT

The Undersigned Grantor (and each and all of them if more than one) for and in consideration of Ten and No/100---------- dollars ($10.00) in hand paid by the Grantee, the receipt whereof is hereby acknowledged, hereby grants, bargains and conveys unto The Mountain States Telephone and Telegraph Company, a Colorado corporation, 931 14th Street, Denver, Colorado, 80202, Grantee, its successors, assigns, lessees, licensees and agents a Right-of-Way Easement and the right to construct, operate, maintain and remove such communication and other facilities, from time to time, as said Grantee may require upon, over, under and across the following described land which the Grantor owns or in which the Grantor has any interest, to-wit:

The North ten (10) feet of the East nine hundred and sixty feet (960) of the West nine hundred and ninety feet (990) of the Northwest quarter (NW 1/4) of the Northwest quarter (NW 1/4) of Section 25, Township 12 South, Range 12 East, Gila and Salt River Base and Meridian Pima County, Arizona

situate in the County of Pima, State of Arizona.
TOGETHER with the right of ingress and egress over and across the lands of the Grantor to and from the above-described property, the right to clear and keep cleared all trees and other obstructions as may be necessary and the right to permit other utility companies to use the right of way jointly with Grantee for their utility purposes.

The Grantor reserves the right to occupy, use, and cultivate said property for all purposes not inconsistent with the rights herein granted.

Signed and delivered this 26th day of SEPTEMBER, A.D., 19 79.

At: TUCSON, ARIZONA

RAYMOND H HAKSHBARGER

LAURA J HAKSHBARGER

(Add below a form of acknowledgment appropriate for the state in which the right-of-way is located and for the party who is granting the right-of-way, see I.R. 172, Sec. 3 for proper form.)

State of ARIZONA }
County of PIMA } ss.

The foregoing instrument was acknowledged before me this 9-26, 1979 by RAYMOND H HAKSHBARGER and LAURA J HAKSHBARGER, his wife.

Notary Public

My commission expires: 8-8-83

NOTARY PUBLIC PIMA CO., ARIZ.

BOOK 6137 PAGE 983

BOOK 6137 PAGE 984

STATE OF ARIZONA)
COUNTY OF PIMA)

I hereby certify that the within instrument was filed for record in Pima County, State of Arizona

JOE BEDARD
County Recorder
By Arvida J. Hebda
Deputy

No. 044873
Book 6266 Page 846-850
Date APR 25 1980 -8 19 PM
Requested by TUCSON ELECTRIC POWER CO.
Fee 3.00

RIGHT OF WAY EASEMENT

RAYMOND H. HARSHBARGER and LAURA J. HARSHBARGER, Husband and Wife

, hereinafter called "Grantor," for good and valuable consideration, the receipt of which is hereby acknowledged, hereby grants and conveys unto TUCSON ELECTRIC POWER CO., an Arizona corporation, its successors and assigns, hereinafter called "Grantee," an easement and right of way to construct, operate, and maintain underground electric lines and appurtenant facilities for the transmission and distribution of electricity upon, through, over, under, and across the lands and any and all parcels and portions thereof hereinafter described.

The lands in which said easement and right of way is hereby granted are owned by Grantor in fee simple, are situated in the County of Pima, State of Arizona, and are particularly described as follows, to wit:

A 10 foot wide easement located within a portion of the NW¼ of the NW¼ of Section 25, Township 12 South, Range 12 East, G&SRB&M, Pima County, Arizona.

The said easement and right of way in the aforesaid land, is shown on Drawing No. 79-08-159-00-2, attached hereto and by this reference made a part hereof.

01

Grantee shall have the right to excavate for, place, lay, construct, operate, use, maintain, repair, replace, reconstruct, enlarge, alter, improve, add to, relocate, and/or remove at any time and from time to time, underground electric facilities therein consisting of conduits, manholes, handholes, pullboxes, and junction boxes with wires and cables placed therein, and above ground structures consisting of transformer pads, transformers, service pedestals, riser poles with required overhead conductors, and appurtenances necessary for the operation of said underground facilities and all miscellaneous equipment and material connected therewith. Grantee shall have the right of ingress to and egress from said easement by a practical route or routes in, upon, over, and across the hereinbefore described lands or any portion or portions thereof, together with the right to clear and keep clear said easement and right of way, from explosives, materials, buildings or other structures, implements, or obstructions, without limiting the generality of the foregoing.

Grantor shall not dig or drill any well, plant any tree, erect, place, or construct any pipeline, irrigation ditch, lake, pond, building, wall, fence or other structure, nor impound or store fluids and/or materials within the boundaries of the above described easement and right of way.

Grantor shall not increase or decrease the ground surface elevations within the boundaries of the above described easement and right of way existing at the date of execution of this instrument, nor shall the said ground surface be penetrated to a depth in excess of 12 inches by any tool or implement, without the previous written consent of the Grantee. If subsequent to construction, the clearance or grade is changed in such way as to require relocation of the underground facilities, the cost of such relocation shall be borne by Grantor or subsequent owner.

All electrical equipment installed by Grantee in and upon the herein described easement shall remain the personal property of the Grantee and shall not be deemed a part of the realty.

Grantee shall have the right to trim and cut trees, foliage, and roots upon and from within the above described easement and right of way whenever in Grantee's judgment the same shall be necessary for the convenient and safe exercise of the right herein granted.

6516 8/20/79

FORM 5090A - 3/79 - CP

Grantor shall not grant or dedicate any other easement on, under, or over the above described easement and right of way without first securing Grantee's written approval, the right to transfer and assign this easement and right of way in whole or in part being hereby granted to the Grantee.

Grantor does hereby grant and convey to Grantee the exclusive right to use and occupy any trenches, conduit, risers, pull-boxes, and/or transformer foundations installed by Grantor as may be more particularly set forth in the electrical distribution underground agreement hereinbefore or hereinafter executed between Grantor and Grantee covering the real property herein described.

Grantee shall have the right during construction of Grantee's initial facilities, to use for the purposes incidental to said construction, a strip of land 10 feet in width adjacent and contiguous to the herein granted easement and right of way, said strip to be in whole or in part on either side of said easement and right of way, said right to use said strip of land ceasing and being terminated at such time as said initial construction is completed.

The terms, covenants and conditions of this easement and right of way shall be binding upon and inure to the benefit of any heirs, executors, administrators, permittees, licensees, agents, or assigns of Grantor and the successors and assigns of the Grantee.

The term "Grantor" shall include the plural if applicable. All terms used in the singular or in the neuter gender shall apply to the plural or the singular or neuter gender as the context herein requires.

IN WITNESS WHEREOF, the Grantor has executed these presents this 6th day of September, 1979.

RAYMOND H. HARSHBARGER

LAURA J. HARSHBARGER

STATE OF Arizona)
: ss.
COUNTY OF Pima)

This instrument was acknowledged before me, the undersigned notary public, by Raymond H. and Laura J. Harshbarger, Husband and Wife on the 6th day of September, 1979.

Notary Public

My Commission expires:
May 6, 1983

6266 PAGE 847

FORM 8060B-1 LOP

-2-

The undersigned, STEWART TITLE AND TRUST OF TUCSON, an Arizona corporation, as Trustee un

Deed of Trust recorded in Book 6062, page 662, on 7/3/79

Deed of Trust,

who hold a [illegible] on the property over which the above easement is granted, do hereby approve the granting of said easement by the Grantor.

This document is accepted and approved and Stewart Title is hereby given permission to sign this document for easement for power.

Willard H. Honsey Date 9/4/79

Abbie O. Honsey Date 9-2-79

Milton C. Honsey Date 8/31/79

STEWART TITLE & TRUST OF TUCSON, as Trustee

BY: Frank C. McElwain Vice Pres.
(name) (title)

STATE OF [illegible])
: ss.
COUNTY OF [illegible])

This instrument was acknowledged before me, the undersigned notary public, by Frank C. McElwain as Vice Pres. for Stewart Title & Trust of Tucson, as Trustee on the 6th day of September, 19 79.

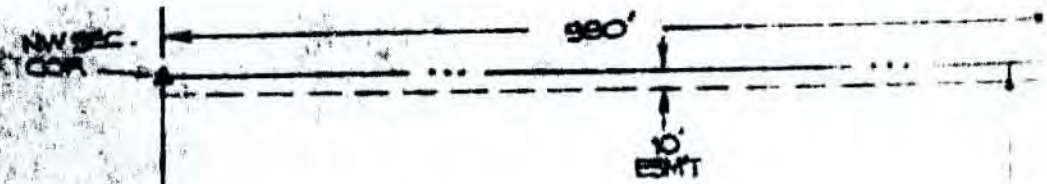
Darlene F. Stapleton
Notary Public

My Commission expires: 12/1/79.

FORM 8090C - 3/79 - CP

6266 PAGE 848

8135 682



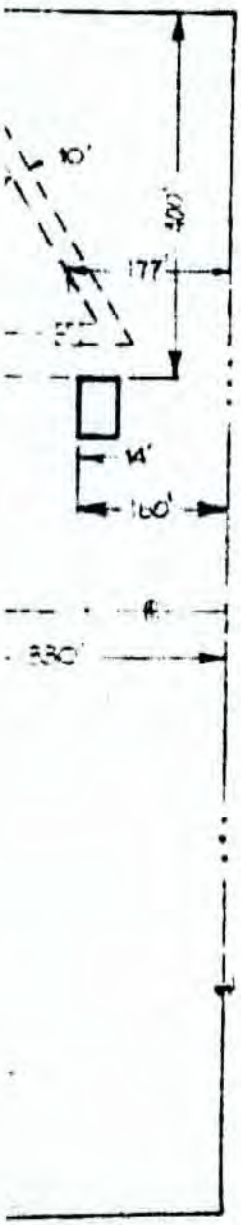
This drawing supersedes that drawing recorded with Right of Way Easement dated September 5, 1979, recorded October 17, 1979 in Book 6135 at pages 880-884 in the Office of the County Recorder of Pima County, Arizona.

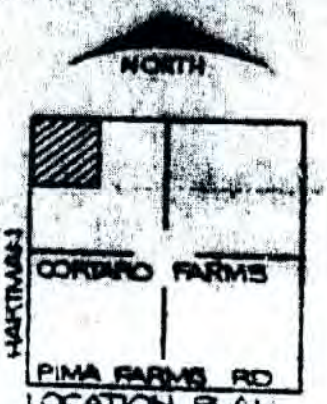
TUCSON ELECTRIC POWER COMPANY, an Arizona corporation

BY: _____

_____
LAURA J. HA[illegible]

_____
RAYMOND H. HA[illegible]





LOCATION PLAN
NO SCALE

REVISIONS

MOVED TRANSF. MJF 3-27-80
HMA 4-3-80

1" = 200'

J. HARPME 8/21/79

MJF

LEGAL DESCRIPTION
A PORTION OF THE NW 1/4 OF THE NW 1/4 OF SEC. 25, T-12S, R-12E, G&SRB&M, PIMA COUNTY, ARIZ.
LSA 8/20/79

LEGEND

[ ]	TRANSF. ESM'T (6'×6' ESM'T.)
— — —	UG DIST. ESM'T (10' ESM'T)
A-6516	FIELD CHECK NO.
100600	TAX DISTRICT

Tucson Electric Power Company

HARTMAN-N CUB

6268 PAGE 850

APPENDIX D — TRAFFIC IMPACT ANALYSIS

Transportation Impact Study

Camino De Oeste Residential Development

Prepared for

Pulte Homes – Arizona (Tucson)

3011 W. Ina Road

Tucson, AZ 85741

And

The Town of Marana, AZ

March 2016

8710 N. Thornydale Road, Suite 140
Tucson, AZ 85742
o: 520.408.1400
f: 520.408.1403

Transportation Impact Study

Camino De Oeste Residential Development

Prepared for:

Pulte Homes – Arizona (Tucson)

3011 W. Ina Road

Tucson, AZ 85741

And

The Town of Marana, AZ

March 31, 2016

Prepared by:

EPS Group, Inc.

8710 N. Thornydale Rd., #140

Tucson, AZ 85742



EXPIRES 9/30/2016

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INTRODUCTION AND PROJECT SUMMARY

This Transportation Impact Study (TIS) was prepared for Pulte Homes – Arizona (Tucson) for the Camino De Oeste subdivision located north of Cortaro Farms Road between Hartman Lane on the west and Camino de Oeste on the east. The development itself is completely within the Town of Marana, Arizona; however, Camino de Oeste on the east side of the development is Pima County owned right-of-way at the access point into the site. This TIS was prepared according to the procedures established by the Town of Marana[1]. A Pre-Submittal Conference with the Town of Marana was held on February 1, 2016. The Town of Marana TIS Checklist was developed as a result of that meeting and was submitted to and approved by the Town. This checklist, which provides the basis of analysis for this study, is provided in the appendix. Based on the number of trips estimated for the peak-hours and the Town of Marana procedures for preparing a TIS, this is a Category A Study, with a Study Horizon of Opening Year (year 2019 build-out).

The specific study objectives are:

- Evaluate intersections in the vicinity of the intersections including:
    - Cortaro Farms Road/Hartman Lane (Signalized)
    - Cortaro Farms Road/Camino De Oeste (Signalized)
- Evaluate the impact of the project on the following streets:
    - Hartman Lane
    - Camino De Oeste
    - Cortaro Farms Boulevard
- Evaluate the operations and safety of the proposed driveway locations with regard to their impacts on Hartman Lane and Camino De Oeste;
- Evaluate the effects the proposed development will have on pedestrian, bicycle and transit activity in the area.
- Provide recommendations to mitigate (if necessary) undesirable traffic conditions that the project may create.

Access

The site will access Hartman Lane on the west side and Camino de Oeste on the east side.

Zoning

The project site is currently zoned as (C) Large Lot Residential, and is proposed to be zoned as (R-6) Residential.

Anticipated Development Phasing and Timing

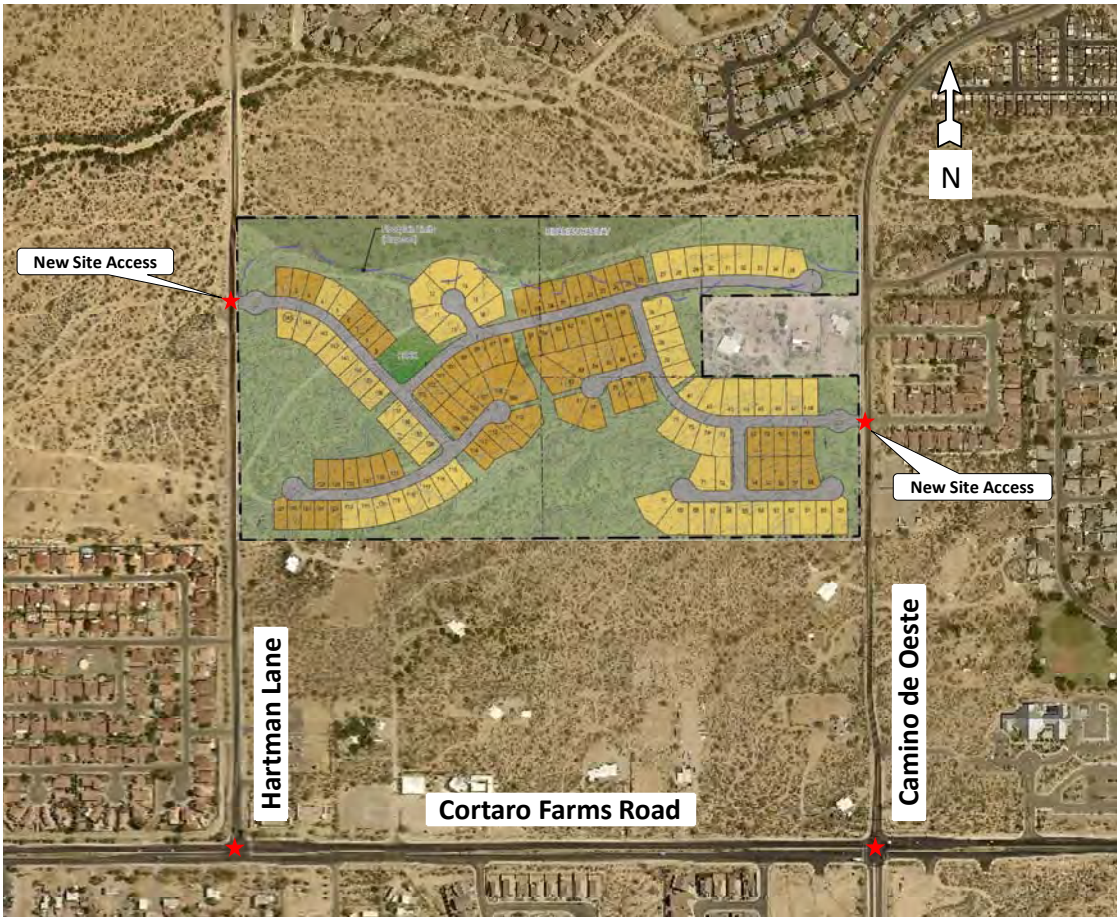
The site is anticipated to be developed in a single phase with build-out completed in year 2019.

Land Use

The Camino De Oeste development site is a 72 acre site which is proposed for a single use as 145 units of single family detached housing. The current land use is a large property with a residence and portions of undisturbed, natural desert. There are three existing homes that have access via Camino De Oeste that will be enveloped by the proposed project. The Project Site Plan is provided in Exhibit 1. The site has been laid out in a way that discourages cut-through traffic by incorporating cul-de-sacs and not providing a roadway that directly connects the two site access points.

[1] *Procedures for Preparation of: Transportation Impact Studies*, July 2006, Town of Marana, Arizona.

Exhibit 1
Project Site Plan



Summary of Major Findings and Recommendations

- The proposed Camino De Oeste Residential development project is projected to generate approximately:
    - 109 morning peak-hour trips,
    - 145 evening peak-hour trips,
    - 1,380 daily weekday trips.
- The proposed site has been laid out in a way that discourages cut-through traffic by incorporating cul-de-sacs and not providing a roadway that directly connects the two site access points. This should effectively "calm" traffic.
- Both of the site access intersections are proposed to be stop-controlled on both the eastbound and westbound single-lane approaches. Neither of these intersections will have turn restrictions.
- A 110' northbound left-turn lane is warranted at the Camino De Oeste/Site Access intersection.
- No other turn lanes are warranted at the two site access locations.
- All project intersections are expected to operate sufficiently at project build-out (2019) with the signalized intersections operating at LOS B or better and all movements operating at LOS D or better
- Cortaro Farms Road to the east of the study area from Thornydale Road to 500 feet east of Camino De Oeste is programmed to be widened to a 4-lane divided roadway with a raised median by the end of 2018. This is currently the last segment of this roadway that has yet to be improved. While not within the impact

area of this development, it is possible that this improvement could increase volumes on Cortaro Farms Road in the future once the roadway capacity is increased on this segment.

- The 95th percentile queue for the southbound approach at the Cortaro Farms Road/Hartman Lane intersection exceeds the existing storage lane length in the AM peak-hour. This is a T-intersection where any spill back of the queue would not impede an adjacent through movement. This condition exists with and without this proposed development for the year 2019. Additionally, signal timing modifications may be made to reduce the queues during the am peak hour if necessary.
- The 95th percentile queue for the southbound left-turn lane at the Cortaro Farms Road/Camino De Oeste intersection exceeds the existing storage lane length in the AM peak-hour. Although the southbound through movement volumes are not very high at this location, spill back of the left-turn queue may occur impeding the adjacent southbound through movement. This condition exists with and without this proposed development for the year 2019. Signal timing modifications may be made to reduce this queue during the am peak-hour if necessary.
- No sight distance issues were observed at the two proposed site access intersections and available sight visibility is expected to be adequate. However, sight distance at the site access intersections should be confirmed according to criteria in the Town of Marana Subdivision Street Standards.
- All signs and pavement markings accompanying the recommended improvements shall follow the MUTCD and Town of Marana requirements and standards.

STUDY AREA CONDITIONS

Study Area/Area of Significant Traffic Impact

Based on the results of the Pre-Submittal Conference held on February 1, 2016, the study area for traffic impacts includes only the analysis of the proposed intersection access points for the site to Hartman Lane and Camino De Oeste as well as the signalized intersections of Cortaro Farms Road/Hartman Lane and Cortaro Farms Road/Camino De Oeste.

Land Uses Adjoining the Project

North of the proposed project site there are predominantly residential land uses as well as an elementary school and a community center. South of the proposed site there are a few low density residential properties, a church and a utility company office. To the west there are more residential land uses and a new residential development that is in the planning stages directly across Hartman Lane from the proposed project site. To the east there are more residential land uses as well as two churches, a park, and an elementary school.

Inventory of Physical Characteristics

The proposed Camino De Oeste development site will have direct site access from Hartman Lane and Camino De Oeste as shown in Exhibit 1. These two access points are proposed to be stop controlled on their approach to the main roadway.

Hartman Lane

Near the proposed development site, Hartman Lane is a two-lane collector roadway (See Exhibit 2 ground level photos at new site access point) with the following characteristics:

- Typical cross section of approximately 40 feet in width consisting of:
    - One 12-foot travel lane in each direction.
    - Painted white 6” edge line just inside of edge of pavement in each direction.
    - 8-foot maintained dirt shoulder in each direction.
- Fair pavement condition in the vicinity of the project site.
- 35 MPH posted speed limit.

The proposed site access from Hartman Lane is located at the crest of a vertical curve. This is an ideal site access location on this road because it provides good sight visibility for left-turning vehicles into and out of the site as well as right-turning vehicles into the site. There are currently no plans to improve Hartman Lane near the project site in the near future.

Camino De Oeste

Near the proposed development site, Camino De Oeste is a two-lane collector roadway (See Exhibit 3 ground level photos at new site access point) with the following characteristics:

- Typical cross section of approximately 40 feet in width consisting of:
    - One 12-foot travel lane in each direction.
    - Painted white 6” edge line just inside of edge of pavement in each direction.
    - 8-foot maintained dirt shoulder in each direction.
- Fair to poor pavement condition in the vicinity of the project site.
- 35 MPH posted speed limit.

South of the proposed access on Camino De Oeste there is a sag in the vertical profile of the road which limits the available sight distance to approximately 550 feet. This is greater than the minimum stopping sight distance

of 250 feet for the design speed of 35 MPH according to the AASHTO Green Book[2]. There are currently no plans to improve Camino De Oeste near the project site in the near future.

Exhibit 2
Hartman Lane Ground Photos at New Site Access



[2] *A Policy on Geometric Design of Highways and Streets,* American Association of State Highway and Transportation Officials, Sixth Edition, 2011, Page No. 3-4.

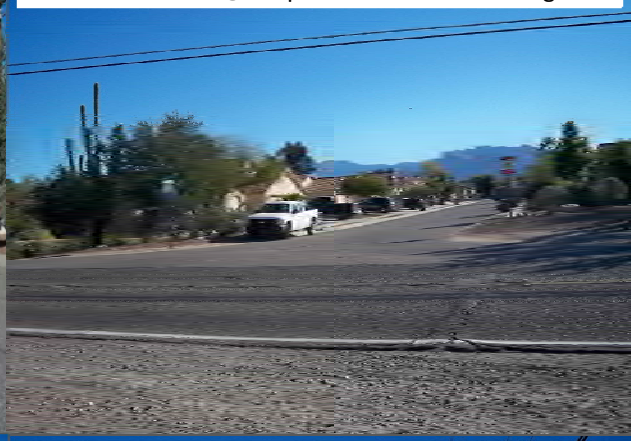
Exhibit 3

Camino De Oeste Ground Photos at New Site Access

Camino De Oeste @ Proposed Site Access looking west

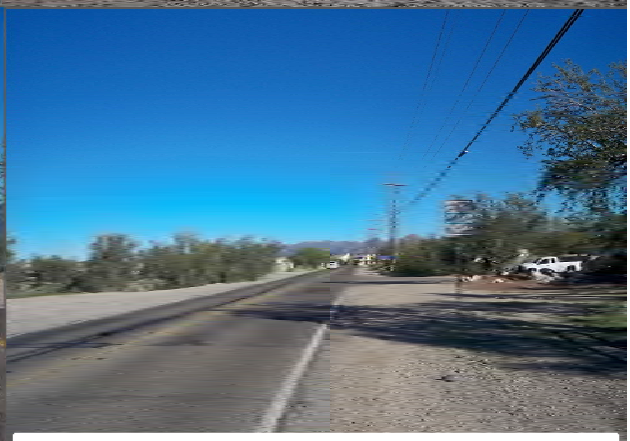


Camino De Oeste @ Proposed Site Access looking east





Camino De Oeste @ Proposed Site Access looking south



Camino De Oeste @ Proposed Site Access looking north

<u>Cortaro Farms Road</u>

This study will also evaluate the signalized intersections of Cortaro Farms Road/Hartman Lane and Cortaro Farms Road/Camino De Oeste. The existing lane configurations of these two signalized intersection are shown in Exhibits 4 and 5. In the vicinity of the project site, Cortaro Farms Road is a 4 lane urban arterial with a raised 20 foot median, 12 foot lanes and 6 foot paved shoulders (See Exhibits 6 and 7 ground level photos). There are also sidewalks and ADA-compliant pedestrian ramps along both sides of Cortaro Farms Road. The posted speed limit along Cortaro Farms Road in the study area is 40 MPH. There are planned capacity improvements to Cortaro Farms Road a 500 feet east of Camino De Oeste to Thornydale Road to be completed in 2018. While not within the impact area of this development, it is possible that this improvement could result in increased traffic volumes on Cortaro Farms Road in the future once the roadway capacity is increased on this segment and users redistribute to this newer, higher capacity corridor.

Exhibit 4

Current Lane Configuration and Traffic Control for Cortaro Farms Road/Hartman Lane Intersection



Exhibit 5

Current Lane Configuration and Traffic Control for Cortaro Farms Road/Camino De Oeste Intersection



Exhibit 6
Cortaro Farms Road / Hartman Lane Intersection Ground Photos



Exhibit 7
Cortaro Farms Road / Camino De Oeste Intersection Ground Photos



Transit Service and Bus Stop Locations

There is no transit service and there are no bus stop locations in the study area.

Bike Lanes

Cortaro Farms Road within the study area has 6 foot paved bike lanes in each direction of travel and is shown as a bike route on the Pima County Regional Bike Map. Both Hartman Lane and Camino De Oeste lack paved bike lanes, but they are both classified as "key connecting streets" on the Pima County Regional Bike Map.

Sidewalks, School Crossings, Pedestrian Crossings

There are no sidewalks or school crossings or marked pedestrian crossings along Hartman Lane or Camino De Oeste within the study area. North of the proposed development site both of these roadways have sidewalks adjacent to the existing residential developments. Cortaro Farms Road has sidewalks along both sides of the roadway within the project area. The signalized intersections of Cortaro Farms Road / Hartman Lane and of Cortaro Farms Road / Camino De Oeste both provide marked pedestrian crosswalks across each leg of each intersection. There are no school crossings within the study area.

Roadway Lighting

There is no roadway lighting along the roadways within the study area, except at the signalized intersections of Cortaro Farms Road / Hartman Lane and of Cortaro Farms Road / Camino De Oeste.

Intersection Sight Distance

Based on a review of aerial imagery and field review, there are no existing intersection or roadway sight distance deficiencies within the study area. As noted previously in this report, south of the proposed site access the Camino De Oeste vertical profile sags limiting the available sight distance to about 550 feet. This is sufficient sight distance for the posted speed limit.

Programmed Roadway Improvements

Cortaro Farms Road to the east of the study area from Thornydale Road to 500 feet east of Camino De Oeste is programmed to be widened to a 4-lane divided roadway with a raised median in the next few years. This is currently the last segment of this roadway that has yet to be improved. Cortaro Farms Road reconstruction near the study area is anticipated to begin construction in early 2017 and be completed during year 2018, approximately one year before the anticipated build-out of the proposed site.

Current Traffic Volumes and System Performance

Current traffic volumes were compiled from various sources for the roadways and intersections within the study area. The Average Daily Traffic (ADT) counts for Cortaro Farms Road, Hartman Lane, and Camino De Oeste were taken from the Pima Association of Governments (PAG) Interactive Traffic Count Map on their Travel Data and Forecasting web page. These were 48 hour two-way weekday traffic counts from the following dates.

- Cortaro Farms Road – 9/19/2012 to 9/20/2012
- Hartman Lane – 11/13/2013 to 11/14/2013
- Camino De Oeste – 10/18/2011 to 10/19/2011

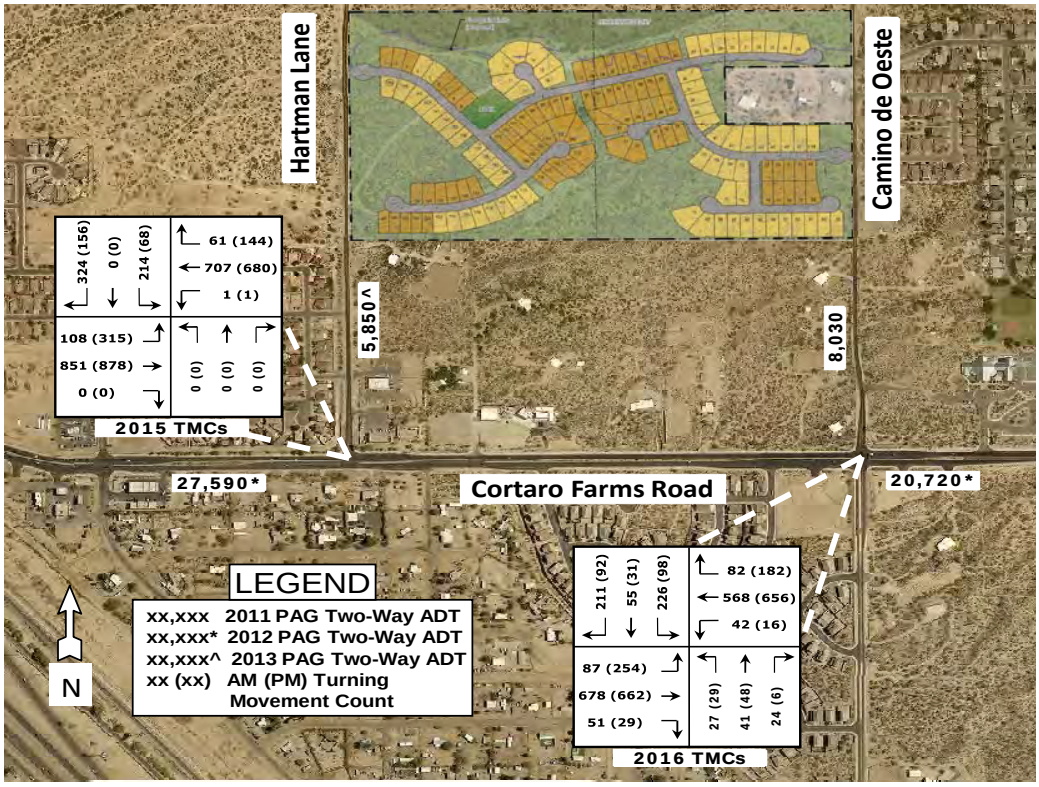
These counts produced ADTs for these three roadway segments as shown in Exhibit 8. These counts were used to project the ADT volumes for the study horizon year (full build-out) of 2019 using an annual growth rate of 3% as directed by the Town of Marana during the Pre-Submittal Conference held on February 1, 2016. These volumes were then compared to the Town of Marana Roadway Level of Service (LOS) Thresholds[3] for 2019 with and without the development site. The 48 hour directional counts were also used to estimate the peak hour traffic at the proposed site access points on Hartman Lane and Camino De Oeste.

[3] *Procedures for Preparation of: Transportation Impact Studies*, July 2006, Town of Marana, Arizona.

The signalized intersections of Cortaro Farms Road / Hartman Lane and of Cortaro Farms Road / Camino De Oeste will be analyzed as part of this study for the peak hours, therefore peak hour turning movement counts (TMCs) were necessary at these locations (see Exhibit 8). The TMCs used for the Cortaro Farms Road / Hartman Lane intersection were taken from the DeAnza Residential Traffic Impact Study[4] for the development that is planned on the west side of the Hartman Lane. The TMCs for the Cortaro Farms Road / Camino De Oeste intersection were collected for this study. The dates of the TMCs for these two intersections are listed below. All traffic count data obtained and collected for this TIS is provided in the appendix.

- Cortaro Farms Road / Hartman Lane – Tuesday, February 3, 2015.
- Cortaro Farms Road / Camino De Oeste – Wednesday, February 10, 2016.

Exhibit 8
Existing Study Area Traffic Volumes



Existing Roadway Performance

The available two-way ADT volumes for the study area roadways are summarized in Exhibit 9. This table shows the ADTs, the year the ADTs were collected, the number of lanes on each roadway, the projected ADT for the study horizon year of 2019 (anticipated full build-out), the Town of Marana roadway capacity thresholds, and the posted speed limit for each roadway. The LOS E thresholds[5] shown in this table are an approximation of the capacity of the roadway. If the roadway volume exceeds these values, it is operating at LOS F and the roadway could experience extremely congested conditions with inconsistent, unstable flows and excessive delay. LOS A through E operate ranging from free flow conditions (A) to unstable flow operating at capacity (E). It should be noted that in urban conditions with a higher density of traffic signals, the LOS and progression of the signals typically dictate the performance of a roadway segment.

[4] *DeAnza Residential Traffic Impact Study*, March 2015, M Esparza Engineering, LLC, Town of Marana, Arizona.
[5] *Procedures for Preparation of: Transportation Impact Studies*, July 2006, Town of Marana, Arizona.

Based on the projected 2019 ADT volumes, Cortaro Farms Road is expected to operate at LOS F from I-10 WB Frontage Road to Hartman Lane and LOS E from Hartman Lane to Thornydale Road. Hartman Lane north of Cortaro Farms Road is expected to operate at LOS C in 2019 and Camino De Oeste is expected to operate at LOS D.

Exhibit 9
Existing Roadway Inventory

Roadway	Segment	Lanes	Year of Recorded ADT	ADT	2019 ADT*	LOS E Threshold (Capacity)	Speed Limit (MPH)	Source
Cortaro Farms Road	I-10 WB Frontage Road to Hartman Lane	4	2012	27,592	33,930	32,900	40	**PAG**
	Hartman Lane to Thornydale Road	4	2012	20,721	25,480	32,900	40	**PAG**
Hartman Lane	Linda Vista Boulevard to Cortaro Farms Road	2	2013	5,849	6,980	15,600	35	**PAG**
Camino De Oeste	Linda Vista Boulevard to Cortaro Farms Road	2	2011	8,032	10,170	15,600	35	**PAG**

* Assumes 3% Annual Growth Rate

Existing Intersection Performance

Using the 2015 and 2016 TMCs collected at the signalized intersections of Cortaro Farms Road/Hartman Lane and of Cortaro Farms Road/Camino De Oeste (shown in Exhibit 8), an analysis of the "existing" conditions was conducted for the AM and PM peak hours. Exhibit 10 shows the results of this analysis. The Cortaro Farms Road/Hartman Lane intersection operates at LOS B in the AM peak hour and LOS A for the PM peak hour with all movements operating at LOS D or better for the existing conditions. The Cortaro Farms Road/Camino De Oeste intersection operates at LOS B in both the AM and PM peak hours with all movements operating at LOS D or better for the existing conditions.

Exhibit 10
Existing Intersection Performance

			HCM Movement Delay (sec/veh) & Level of Service (LOS)												Int Delay/Veh
Intersection	Timing Plan		EBL/U	EBT	EBR	WBL/U	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	(sec/veh)
Cortaro Farms Road & Hartman Lane	AM Peak Hour	Delay (sec/veh)	9.2	10.8		41.5	8.2	3.4				36.1		32.5	15.2
		LOS	A	B		D	A	A				D		C	B
	PM Peak Hour	Delay (sec/veh)	9.4	7.1		52.4	6.2	3.0				37.5		35.6	9.8
		LOS	A	A		D	A	A				D		D	A
Cortaro Farms Road & Camino De Oeste	AM Peak Hour	Delay (sec/veh)	12.3	12.2	17.2	36.3	15.9	20.2	26.3	25.7	25.7	37.8	27.1	27.1	19.5
		LOS	B	B	B	D	B	C	C	C	C	D	C	C	B
	PM Peak Hour	Delay (sec/veh)	7.8	4.2	6.4	37.7	11.8	7.3	33.8	33.6	33.6	37.5	35.3	35.3	12.0
		LOS	A	A	A	D	B	A	C	C	C	D	D	D	B

PROJECTED TRAFFIC

Site Trip Generation

The estimation of the traffic generated by the proposed development is based on the information contained in the *ITE Trip Generation Manual, 9th Edition, 2012* for 145 units of Single-Family Detached Housing. The site traffic estimates were developed for the AM and PM peak-hours of the adjacent street traffic. The number of trips generated is the mathematical product of land use intensity (number of dwelling units) and the trip generation rate. The result is the total number of one-way trips (not round trips) expected to be generated by the project. These trips represent the number of vehicles estimated to enter and leave the project. All of the estimates are based on average trip rates. The trip generation estimates for the site are provided in Exhibit 11. The adjustment of the site traffic for passerby trips is not applicable and was not considered.

Exhibit 11
Site Trip Generation Rates and Trips

	AM Peak-Hour	PM Peak-hour	Daily
Per DU	0.75	1.00	9.52
Entering	27 (25%)	91 (63%)	690 (50%)
Exiting	82 (75%)	54 (37%)	690 (50%)
Total Trips	109	145	1,380

Site Traffic Distribution

Site traffic was distributed to Hartman Lane, Camino de Oeste, and Cortaro Farms Road based on direction received from the Town of Marana during the Pre-Submittal Conference on February 1, 2016. The trip distribution that was established for this study also reflected what was used for the DeAnza Traffic Study for the development across Hartman Lane from this project site. This distribution assumed 50% of site traffic in and out of each site access point, 15% of entering and exiting traffic coming from/going to the north on Hartman Lane and Camino De Oeste. The traffic coming from/going to Cortaro Farms Road was assumed to be 65% to the west and 35% to the east. Additionally direction was given to distribute a small percentage of traffic to the south leg of the Cortaro Farms Road/Camino De Oeste intersection (Sandy Desert Trail). Based on the direction received and verifying the trip distribution percentages add up, the directional distribution of the site traffic in the study area was developed as shown in Exhibit 12. The resultant site traffic volumes are provided in Exhibit 13.

Exhibit 12
Directional Distribution of Site Traffic in Study Area

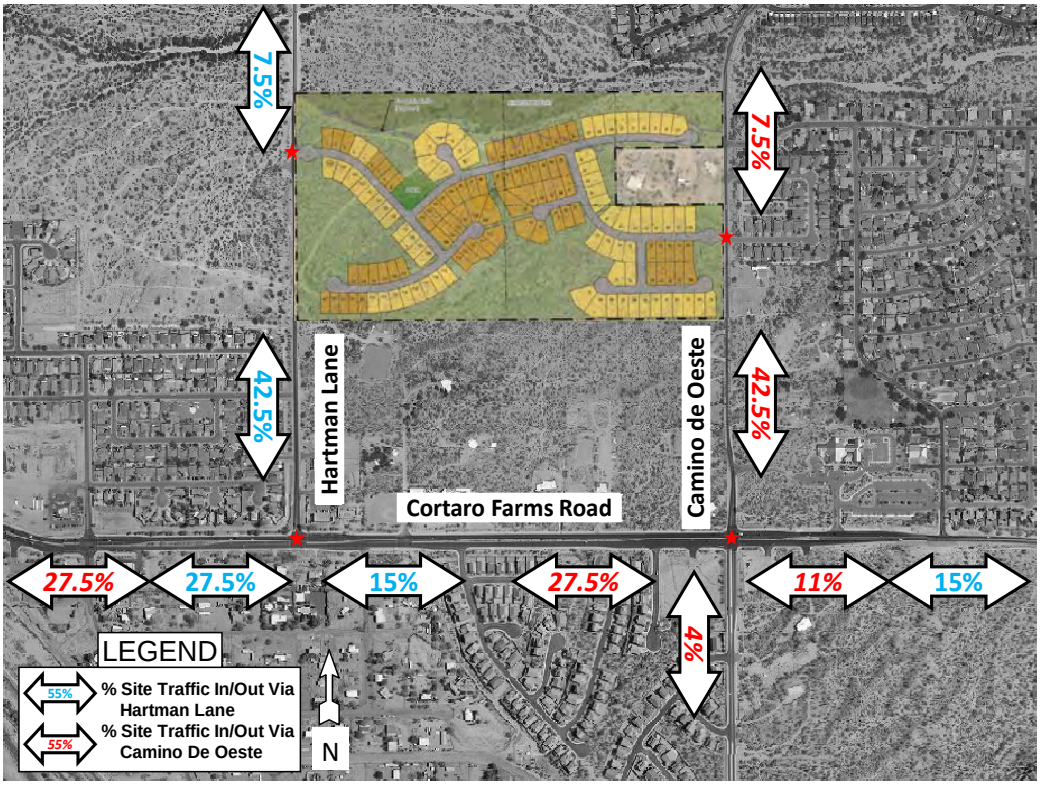
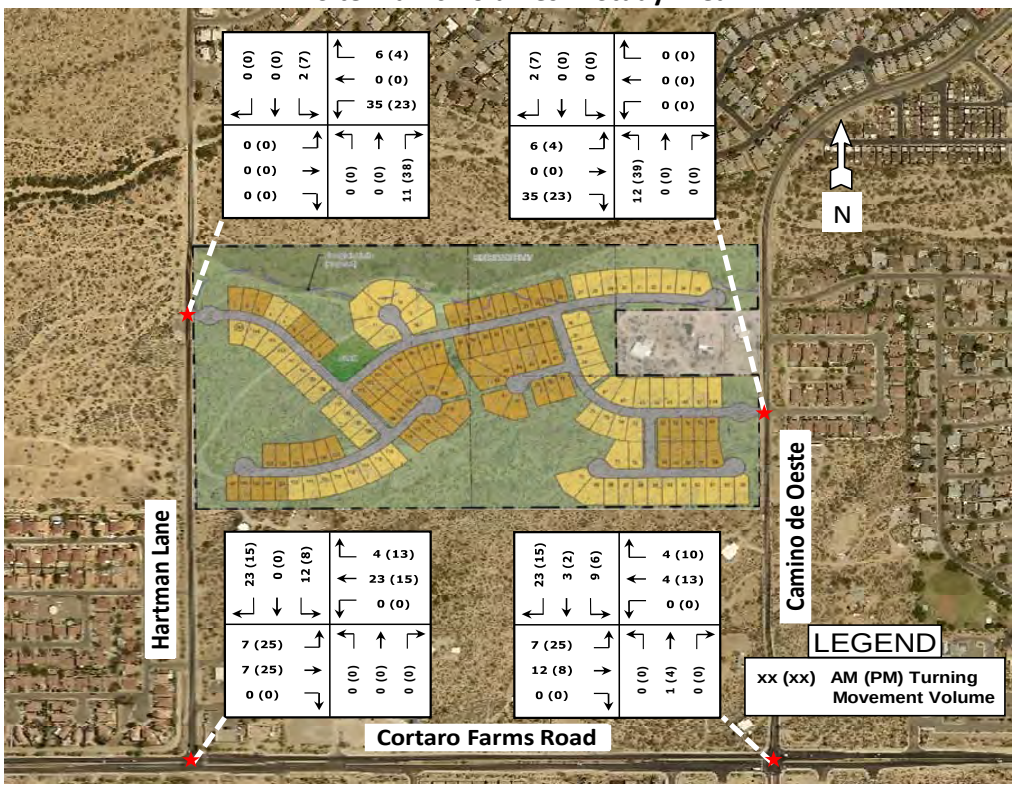


Exhibit 13
Site Traffic Volumes in Study Area



Background Traffic Volumes

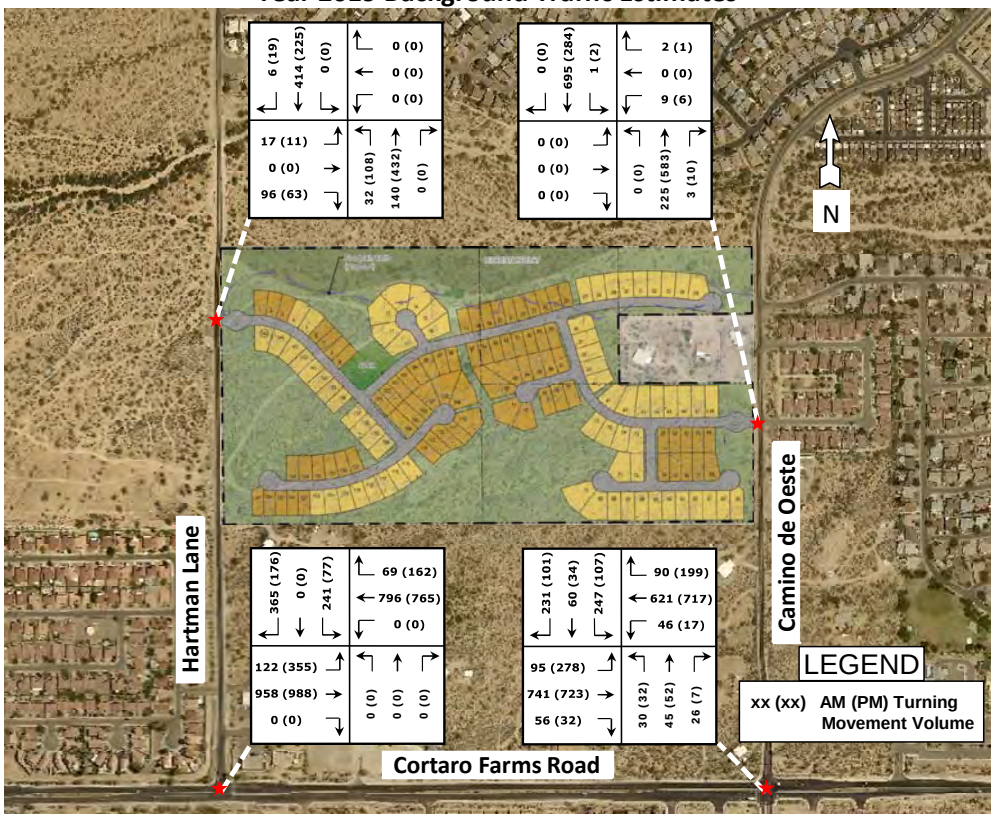
Background traffic volumes for the two site access points were estimated for the site build-out year of 2019 based on the available traffic volumes that were taken from PAG for the roadway segments. The peak hour approach volumes on Hartman Lane and Camino De Oeste were extracted from these 48 hour approach counts. These volumes were increased from the year they were collected to 2019 using a 3% annual growth rate. Additionally, the site traffic volumes for the DeAnza development[6] driveway across Hartman Lane from this proposed development access were added in since that development is expected to be built out in 2018. For the Camino De Oeste site access point the volumes in and out of Rosebay Drive, across Camino De Oeste from this proposed development, were estimated based on the number of rooftops and the trip rate for Single-Family Detached Housing using the *ITE Trip Generation Manual, 9th Edition, 2012*.

The background traffic volumes for the signalized intersections of Cortaro Farms Road/Hartman Lane and Cortaro Farms Road/Camino De Oeste were estimated for the site build-out year of 2019. This was accomplished using the turning movement counts (TMCs) from the DeAnza development traffic study for Cortaro Farms Road/Hartman Lane intersection and those collected for this study at the Cortaro Farms Road/Camino De Oeste intersection. These TMCs were then increased using a 3% annual growth rate. The resultant 2019 background traffic volumes are provided in Exhibit 14.

Total Traffic

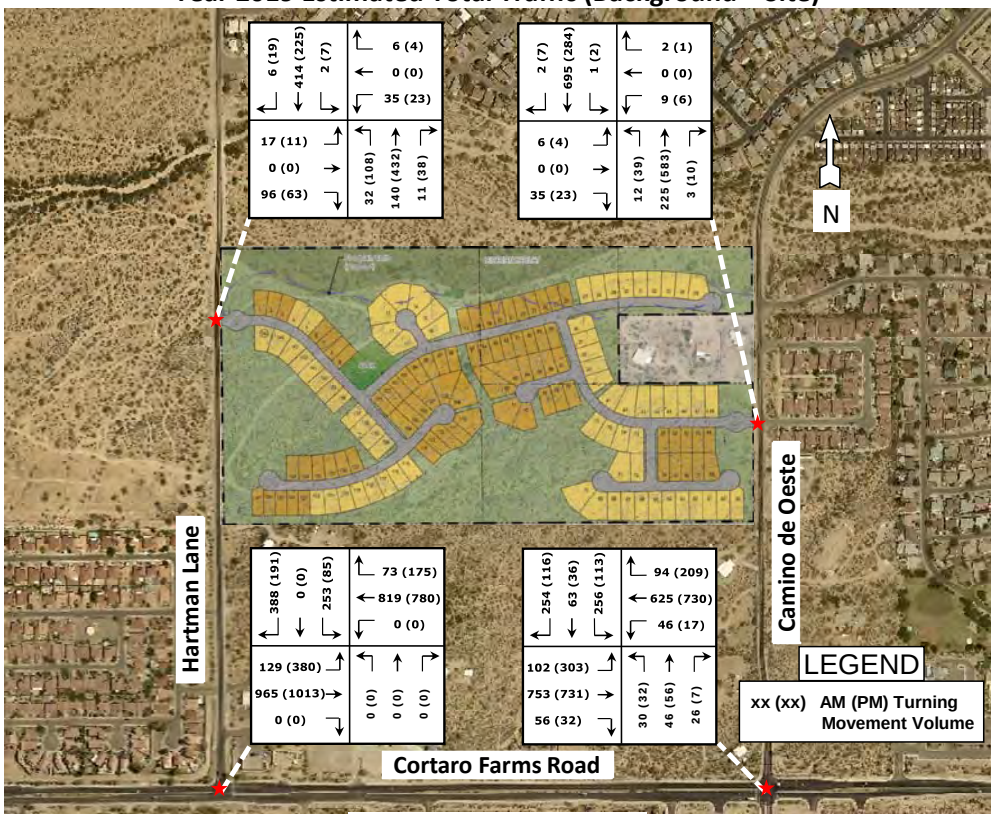
The total traffic for the analysis is the combination of the site traffic and the estimated background traffic. The estimated total traffic is provided in Exhibit 15, which is used in the traffic performance analysis for the two site access intersections as well as the signalized intersections of Cortaro Farms Road/Hartman Lane and Cortaro Farms Road/Camino De Oeste.

Exhibit 14
Year 2019 Background Traffic Estimates



[6] *DeAnza Residential Traffic Impact Study*, March 2015, M Esparza Engineering, LLC, Town of Marana, Arizona.

Exhibit 15
Year 2019 Estimated Total Traffic (Background + Site)



TRANSPORTATION IMPROVEMENT ANALYSIS

Roadway Performance

Exhibit 16 shows the roadway segments that are in the study area and summarizes the ADT and daily volume capacity (LOS E) of these roadway segments with and without the project in 2019. The table shows the projected volumes and LOS E daily volume thresholds from the Town of Marana's Procedures for Preparation of Transportation Impact Studies[7]. The table indicates that the segment of Cortaro Farms Road west of Hartman Lane will exceed its LOS E daily volume capacity in 2019 both with and without the inclusion of the built out site traffic. This site traffic represents approximately 2% of the projected daily traffic on this segment of Cortaro Farms Road in 2019.

Exhibit 16
Year 2019 Roadway Volumes and Capacity

Roadway	Segment	2019 ADT* No Project	Site Traffic	2019 With Site Traffic	LOS E Threshold (Capacity)	Capacity Exceeded?
Cortaro Farms Road	I-10 WB Frontage Road to Hartman Lane	33,930	759	34,689	32,900	***Yes***
	Hartman Lane to Camino De Oeste	25,480	587	26,067	32,900	No
	Camino De Oeste to Thornydale Road	25,480	359	25,839	32,900	No
Hartman Lane	Linda Vista Boulevard to Cortaro Farms Road	6,980	587	7,567	15,600	No
Camino De Oeste	Linda Vista Boulevard to Cortaro Farms Road	10,170	587	10,757	15,600	No

* Assumes 3% Annual Growth Rate

Site Access and Connectivity

As shown in Exhibit 1 – Project Site Plan, access to the development will be from Hartman Lane and Camino De Oeste. The proposed access will have the following characteristics:

- The Hartman Lane access point is approximately 2,200 feet north of Cortaro Farms Road and lines up with a proposed access of the planned DeAnza residential development on the west side of Hartman Lane.
- This Hartman Lane access point has been identified to need a northbound left-turn lane into the De Anza site access in the DeAnza development Traffic Study[8]. This left-turn lane was included in this traffic analysis.
- The Camino De Oeste access point is approximately 1,800 feet north of Cortaro Farms Road and lines up with the existing residential street across Camino De Oeste, Rosebay Drive.
- The turn lane warrant analysis for the Camino De Oeste site access point indicates that a northbound left-turn lane is warranted for this development (see *Turn Lane Warrant Analysis* section of this study). This left-turn lane was included in this traffic analysis.
- Both Hartman Lane and Camino De Oeste are 2-lane roadways with 35 mph posted speed limits.
- The site access road at Hartman Lane will have a single westbound approach lane which will be a shared left/through/right-turn lane. There will be no turn restrictions at this location. The westbound and eastbound approaches are proposed to be stop controlled.

[7] *Procedures for Preparation of: Transportation Impact Studies*, July 2006, Town of Marana, Arizona.
[8] *DeAnza Residential Traffic Impact Study*, March 2015, M Esparza Engineering, LLC, Town of Marana, Arizona.

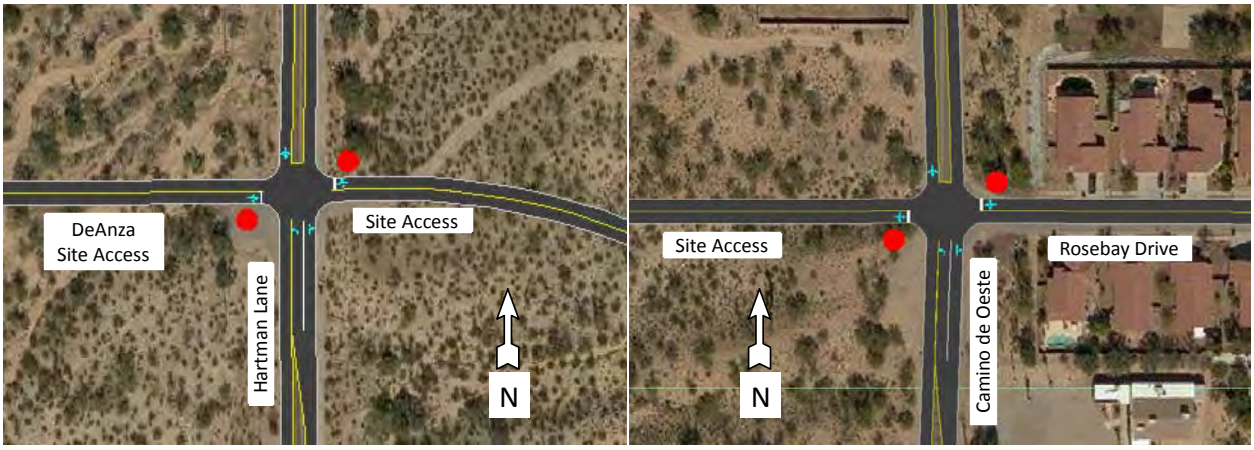
- The site access road at Camino De Oeste will have a single eastbound approach lane which will be a shared left/through/right-turn lane. There will be no turn restrictions at this location. The westbound and eastbound approaches are proposed to be stop controlled.

Intersection Performance

The intersection traffic operations performance for the unsignalized intersections of Hartman Lane/site access and Camino De Oeste/site access was conducted using the Synchro 9 software which employs the Highway Capacity Manual 2010 procedures for stop controlled intersections. The intersection traffic operations performance for the signalized intersections of Cortaro Farms Road/Hartman Lane and Cortaro Farms Road/Camino De Oeste was conducted using the Synchro 9 software also, however the Highway Capacity Manual 2000 procedures for signalized intersections was used because the 2010 version was not able to analyze u-turn volumes which were present at both intersections. The signal timing plans were obtained from the regional Synchro Model for these two signalized intersections.

The traffic operations analysis was conducted for the AM and PM peak-hours for the 2019 Background Traffic using the traffic volumes provided in Exhibit 14 as well as the 2019 Total Traffic using the traffic volumes provided in Exhibit 15. Exhibit 17 indicates the lane configuration and traffic control for each of the proposed stop-controlled site access intersections used in the traffic operations analysis. For the signalized intersections, the existing lane configurations shown in Exhibits 4 & 5 were used in the traffic operations analysis.

Exhibit 17
Lane Configuration and Traffic Control for Proposed Site Access Intersections



The intersection level of service (LOS) and delay estimates are summarized in Exhibit 18 for the 2019 Background Traffic volumes and in Exhibit 19 for the 2019 Total Traffic volumes. The detailed Synchro HCM performance analysis reports are provided in the appendix for the AM and PM peak-hours for all volumes scenarios. The traffic operations results indicate that all of the intersections will operate sufficiently with the 2019 Total Traffic volumes with the signalized intersections operating at LOS B or better and all movements operating at LOS D or better. The proposed site access intersections on Hartman Lane and Camino De Oeste are both expected to operate sufficiently with all movements operating at LOS D or better.

Exhibit 18
Intersection Delay & Level of Service Results for 2019 Background Traffic

HCM 2010 TWSC Delay, LOS, & Queue Analysis		*Hartman Lane and Proposed Site Access*			
		EB Approach	WB Approach	NB Left-Turn	SB Left-Turn
AM	LOS	B	A	A	A
	Delay/Veh (s)	13.4	0.0	8.4	0.0
	95th Percentile Queue (veh)	0.8	0.0	0.1	0.0
PM	LOS	B	A	A	A
	Delay/Veh (s)	12.4	0.0	8.0	0.0
	95th Percentile Queue (veh)	0.5	0.0	0.3	0.0

HCM 2010 TWSC Delay, LOS, & Queue Analysis		*Camino de Oeste and Proposed Site Access*			
		EB Approach	WB Approach	NB Left-Turn	SB Left-Turn
AM	LOS	A	C	A	A
	Delay/Veh (s)	0.0	19.9	0.0	7.7
	95th Percentile Queue (veh)	0.0	0.1	0.0	0.0
PM	LOS	A	C	A	A
	Delay/Veh (s)	0.0	19.5	0.0	8.8
	95th Percentile Queue (veh)	0.0	0.1	0.0	0.0

			HCM Movement Delay (sec/veh) & Level of Service (LOS)												Int Delay/Veh
Intersection	Timing Plan		EBL/U	EBT	EBR	WBL/U	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	(sec/veh)
Cortaro Farms Road & Hartman Lane	AM Peak Hour	Delay (sec/veh)	12.8	12.7		41.7	8.6	3.2				34.8		34.1	16.3
		LOS	B	B		D	A	A				C		C	B
	PM Peak Hour	Delay (sec/veh)	13.2	7.4		54.3	6.3	2.2				37.4		35.4	10.4
		LOS	B	A		D	A	A				D		D	B
Cortaro Farms Road & Camino De Oeste	AM Peak Hour	Delay (sec/veh)	12.2	12.2	7.4	37.5	18.2	19.3	25.3	24.4	24.4	37.1	26.2	26.2	19.6
		LOS	B	B	A	D	B	B	C	C	C	D	C	C	B
	PM Peak Hour	Delay (sec/veh)	9.9	4.4	6.4	39.0	13.4	8.3	33.5	33.1	33.1	37.7	33.2	33.2	12.9
		LOS	A	A	A	D	B	A	C	C	C	D	C	C	B

Exhibit 19
Intersection Delay & Level of Service Results for 2019 Total Traffic

HCM 2010 TWSC Delay, LOS, & Queue Analysis		*Hartman Lane and Proposed Site Access*			
		EB Approach	WB Approach	NB Left-Turn	SB Left-Turn
AM	LOS	B	C	A	A
	Delay/Veh (s)	13.5	19.1	8.4	7.5
	95th Percentile Queue (veh)	0.9	0.5	0.1	0.0
PM	LOS	B	D	A	A
	Delay/Veh (s)	12.6	26.2	8.0	8.4
	95th Percentile Queue (veh)	0.5	0.5	0.3	0.0

HCM 2010 TWSC Delay, LOS, & Queue Analysis		*Camino de Oeste and Proposed Site Access*			
		EB Approach	WB Approach	NB Left-Turn	SB Left-Turn
AM	LOS	C	C	A	A
	Delay/Veh (s)	16.5	22.8	9.3	7.7
	95th Percentile Queue (veh)	0.4	0.2	0.0	0.0
PM	LOS	B	C	A	A
	Delay/Veh (s)	12.3	22.9	8.0	8.8
	95th Percentile Queue (veh)	0.2	0.1	0.1	0.0

Exhibit 19 (continued)
Intersection Delay & Level of Service Results for 2019 Total Traffic

			HCM Movement Delay (sec/veh) & Level of Service (LOS)												Int Delay/Veh
Intersection	Timing Plan		EBL/U	EBT	EBR	WBL/U	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR	(sec/veh)
Cortaro Farms Road & Hartman Lane	AM Peak Hour	Delay (sec/veh)	14.4	13.5		39.7	9.2	3.4				34.0		35.2	17.1
		LOS	B	B		D	A	A				C		D	B
	PM Peak Hour	Delay (sec/veh)	14.3	7.6		51.5	6.8	2.1				37.4		35.2	11.0
		LOS	B	A		D	A	A				D		D	B
Cortaro Farms Road & Camino De Oeste	AM Peak Hour	Delay (sec/veh)	12.6	12.2	4.2	37.5	18.6	19.0	24.9	23.9	23.9	37.0	26.2	26.2	19.7
		LOS	B	B	A	D	B	B	C	C	C	D	C	C	B
	PM Peak Hour	Delay (sec/veh)	11.9	4.6	6.6	39.3	13.7	8.4	33.2	32.8	32.8	37.8	32.9	32.9	13.5
		LOS	B	A	A	D	B	A	C	C	C	D	C	C	B

The 95th Percentile Queue lengths for the unsignalized intersections shown in Exhibit 19 suggest that a northbound left-turn lane on Camino de Oeste meeting the minimum Town of Marana requirements should be sufficient. Therefore, a turn bay with 110' of storage is recommended for the northbound left-turn lane at this location. The 95th percentile queue lengths for the two signalized intersections are shown in Exhibit 20 below. The Synchro queue reports for the signalized intersections are provided in the appendix.

Exhibit 20
95th Percentile Queue Lengths for 2019 Total Traffic

		95th Percentile Queue Lengths (Storage Required in feet)							
Intersection	Timing Plan	EBL/U	EBR	WBL/U	WBR	NBL	NBR	SBL	SBR
Cortaro Farms Road & Hartman Lane	AM Peak Hour	68			5			190	186
	PM Peak Hour	188			2			92	59
Cortaro Farms Road & Camino De Oeste	AM Peak Hour	33	1*	75	33	33		200	
	PM Peak Hour	181	1*	21*	14	42		112	

** Synchro Indicates this queue is metered by an upstream signal*

The 95th percentile queues shown above indicate that the southbound left-turn and right-turn queues at the Cortaro Farms Road/Hartman Lane intersection will exceed the available storage during the AM peak-hour, however this is a T-intersection so the queues will spill back without much consequence (not impeding a through movement). For comparison, the queues for the SBL & SBR at this intersection for the 2019 background traffic volumes are estimated by Synchro to be 187' and 169' respectively so this condition is expected to exist both with and without site traffic from the proposed development. This approach is expected to operate at an acceptable LOS during the AM peak-hour where the queues should clear nearly every cycle.

Similarly the southbound left-turn queue is expected to exceed the available storage at the Cortaro Farms Road/Camino De Oeste intersection in the AM peak hour and equal the available storage in the PM peak hour. For comparison, the queues for the SBL at this intersection for the 2019 background traffic volumes are estimated by Synchro to be 195' in the AM peak-hour and 107' in the AM peak-hour so this condition is expected to exist both with and without site traffic from the proposed development. This approach is expected to operate at an acceptable LOS during the AM peak-hour where the queues should clear nearly every cycle.

Turn Lane Warrant Analysis

A turn lane warrant analysis was conducted to determine whether right-turn lanes or left-turn lanes are warranted at both the Hartman Lane/site access intersection and the Camino De Oeste/site access intersection. The Town of Marana applies turn lane warrant guidelines from Pima County Subdivision and Development Street Standards

for two lane roadways. The warrant analysis is based on these traffic volume warrants provided in Exhibit 21. Additionally, a Pima County turn lane warrant sheet is provided in the appendix.

Exhibit 21
Turn Lane Volume Warrants

Maximum Left-Turn Volume in the Peak-Hour Without a Left-Turn

	ADT (2-way)			
Posted Speed (mph)	<2,500	2,500-5,000	5,000-10,000	>10,000
≤ 35	75	50	30	15
40-50	75	40	20	10
≥ 55	75	30	10	5

Peak-Hour Volume Warrant for Right-Turn Lanes

ADT (2-way)	Max. Peak Hour Right Turn Volume (w/o RT Lane)
2,500-5,000	100
5,000-10,000	70
>10,000	40

Source: *Subdivision and Development Street Standards,* Pima County, April 5, 2005.

The turn lane warrant analysis conditions and results are as follows:

- **Hartman Lane/site access**
  - Southbound Left-Turn Lane
    - Posted speed = 35 mph
    - ADT (2-way) – 5,000 to 10,000
    - Maximum left-turn volume in peak-hour without left-turn lane = 30
    - Estimated maximum peak-hour southbound left-turn volume = 7
    - Is left-turn lane warranted based on volume warrant? – **No.**
  - Northbound Right-Turn Lane
    - ADT (2-way) – 5,000 to 10,000
    - Maximum peak-hour right-turn volume without right-turn lane = 70
    - Estimated maximum peak-hour northbound right-turn volume = 38
    - Is right-turn lane warranted based on volume warrant? – **No.**

- **Camino De Oeste/site access**
  - Northbound Left-Turn Lane
    - Posted speed = 35 mph
    - ADT (2-way) > 10,000
    - Maximum left-turn volume in peak-hour without left-turn lane = 15
    - Estimated maximum peak-hour northbound left-turn volume = 39
    - Is left-turn lane warranted based on volume warrant? – ***Yes*****.**
  - Southbound Right-Turn Lane
    - ADT (2-way) > 10,000
    - Maximum peak-hour right-turn volume without right-turn lane = 40
    - Estimated maximum peak-hour southbound right-turn volume = 7
    - Is right-turn lane warranted based on volume warrant? – **No.**

- **Turn Lane Recommendations:**
    - A northbound left-turn lane should be provided at the Camino de Oeste/site access intersection for opening day of the development. The traffic analysis in this study assumed the provision of this left-turn lane. The queuing analysis indicates the minimum allowable storage of 110 feet[9] would be sufficient for this required left-turn lane.
    - No other turn lanes at the two site access intersections are warranted.

Intersection and Stopping Sight Distance

A visual field inspection and review of aerial and ground photographs did not reveal any intersection or stopping sight distance issues within the study area related to the horizontal or vertical geometry of the existing roadway. However, as noted previously in this report, the vertical profile on Camino De Oeste south of the proposed site access has a sag which limits sight distance to approximately 550 feet which is greater than the minimum stopping sight distance of 250 feet for the design speed of 35 MPH according to the AASHTO Green Book[10]'.

Pavement Condition

There are no extreme pavement condition issues within the study area, however both Hartman Lane and Camino De Oeste have pavement that is in fair to poor condition. The pavement on Camino de Oeste will require widening for the provision of the new northbound left-turn lane.

[9] *Pavement Marking and Design Manual,* Pima County Department of Transportation and City of Tucson Department of Transportation, Second Edition, August 2008, Sheet No. 4-6.

[10] *A Policy on Geometric Design of Highways and Streets,* American Association of State Highway and Transportation Officials, Sixth Edition, 2011, Page No. 3-4.

CONCLUSIONS AND RECOMMENDATIONS

- The proposed Camino De Oeste Residential development project is projected to generate approximately:
    - 109 morning peak-hour trips,
    - 145 evening peak-hour trips,
    - 1,380 daily weekday trips.
- The proposed site has been laid out in a way that discourages cut-through traffic by incorporating cul-de-sacs and not providing a roadway that directly connects the two site access points. This should effectively "calm" traffic.
- Both of the site access intersections are proposed to be stop-controlled on both the eastbound and westbound single-lane approaches. Neither of these intersections will have turn restrictions.
- A 110' northbound left-turn lane is warranted at the Camino De Oeste / Site Access intersection.
- No other turn lanes are warranted at the two site access locations.
- All project intersections are expected to operate sufficiently at project build-out (2019) with the signalized intersections operating at LOS B or better and all movements operating at LOS D or better
- Cortaro Farms Road to the east of the study area from Thornydale Road to 500 feet east of Camino De Oeste is programmed to be widened to a 4-lane divided roadway with a raised median by the end of 2018. This is currently the last segment of this roadway that has yet to be improved. While not within the impact area of this development, it is possible that this improvement could increase volumes on Cortaro Farms Road in the future once the roadway capacity is increased on this segment.
- The 95th percentile queue for the southbound approach at the Cortaro Farms Road/Hartman Lane intersection exceeds the existing storage lane length in the AM peak-hour. This is a T-intersection where any spill back of the queue would not impede an adjacent through movement. This condition exists with and without this proposed development for the year 2019. Additionally, signal timing modifications may be made to reduce the queues during the am peak hour if necessary.
- The 95th percentile queue for the southbound left-turn lane at the Cortaro Farms Road/Camino De Oeste intersection exceeds the existing storage lane length in the AM peak-hour. Although the southbound through movement volumes are not very high at this location, spill back of the left-turn queue may occur impeding the adjacent southbound through movement. This condition exists with and without this proposed development for the year 2019. Signal timing modifications may be made to reduce this queue during the am peak-hour if necessary.
- No sight distance issues were observed at the two proposed site access intersections and available sight visibility is expected to be adequate. However, sight distance at the site access intersections should be confirmed according to criteria in the Town of Marana Subdivision Street Standards.
- All signs and pavement markings accompanying the recommended improvements shall follow the MUTCD and Town of Marana requirements and standards.

APPENDIX

- *Town of Marana TIA Checklist*
- *Traffic Count Data*
- *Synchro HCM Traffic Performance Reports*
- *Synchro Queue Reports*
- *Pima County Turn Lane Warrant Sheet*

7-5-2006

TOWN OF MARANA ARIZONA
TRANSPORTATION IMPACT STUDY
CHECKLIST AND SUBMITTAL FORM

Please complete this form and return to Marana Development Services, Traffic Engineering Division, for review and acceptance. Submit the completed and accepted form with your study. Studies will not be reviewed without this checklist attached. (Acceptance of this form does **not** constitute acceptance of the study.)

Project Name: PULTE HOMES - CAMINO DE OESTE RESIDENTIAL DEVELOPMENT

Project Location: NORTH OF CORTARO FARMS RD BETWEEN HARTMAN LANE & CAMINO DE OESTE

Applicant/Developer PULTE GROUP

Consultant: EPS GROUP, INC.

Address 8710 N. Thorngdale Rd, Ste 140 **Phone** (520) 408-1400

City/Town TUCSON

State AZ **E-mail** james.beier@epsgroupinc.com

Arizona Civil Engineering Registrant? JAMES BEIER, AZ PE # 51304

Was the consultant actively involved in the site circulation, roadway layout, and selection of access locations? No

Brief description of project:
RESIDENTIAL SUBDIVISION - 145 units of SINGLE FAMILY DETACHED HOUSING DEVELOPMENT PROPOSES NEW ACCESS POINTS ON HARTMAN LANE and CAMINO DE OESTE. SINGLE PHASE DEVELOPMENT.

Current and proposed zoning:
CURRENT - (C) LARGE LOT RESIDENTIAL ; PROPOSED - R-6 RESIDENTIAL

☑ **Pre-submittal Meeting Held on** 2/1/16

Summary of Meeting:
DRIVEWAY on HARTMAN LANE SHALL LINE UP WITH DEANZA SITE ACCESS. TIA completed PRIOR TO REZONE, TIA FINDINGS TO REZONE CONDITIONS. BUILD OUT YEAR = 2019. GROW BACKGROUND TRAFFIC AT 3% PER YEAR. EVALUATE SITE ACCESS DRIVEWAYS/ INTERSECTIONS AND CORTARO FARMS RD / HARTMAN LN & CORTARO FARMS RD / CMO DE OESTE SIGNALIZED INTS. MINIMAL (NEGLIGIBLE) CUT-THROUGH TRAFFIC. WILL NEED TO COORDINATE WITH PIMA COUNTY REGARDING ACCESS OFF CAMINO DE OESTE. TOWN PROVIDED TRIP DISTRIBUTION ESTIMATES.

Nature of Transportation Study		
Rezoning study?	☑ Yes	☐ No
Development Plan?	☐ Yes	☑ No
Block Plat?	☐ Yes	☑ No
Subdivision Plat?	☐ Yes	☑ No

Proposed access locations: HARTMAN LANE, CAMINO DE OESTE

New Median Openings requested?	☐ Yes	☑ No	
Access via Non-Town Roadways?	☐ Yes	☑ No	
Coordination with Non-Town Agency(s)?	☑ Yes	☐ No	PIMA COUNTY

KEB

7-5-2006

Transportation Study Parameters

Trip Generation — Land Use Categories and Rates: SINGLE-FAMILY DETACHED HOUSING (210)

Horizon Year(s) — 2019 (Full Build-out)

Trip Distribution — To/From North: 15% East: 35% South: 85% West: 65% Other:

Passer-by Traffic & Internal Capture — Rate(s) No PASS-BY TRIP REDUCTIONS WILL BE APPLIED.

Alternate Modes Considerations — Bike - CORTARO FARMS RD is a BIKE ROUTE, HARTMAN & CMO DE OESTE "KEY Connecting Streets". Pedestrian - SIDEWALKS ALONG CORTARO FARMS RD; HARTMAN & CDO north of Proposed SITE. Transit - No BUS ROUTES ON CORTARO FARMS RD, HARTMAN LN, or CDO.

Traffic Data and Preliminary Trip Generation — ITE LAND USE CODE 210 FOR 145 UNITS WILL GENERATE 109 am peak hour, 145 pm peak hour, and 1,380 daily trips AT BUILD-OUT (OPENING YEAR IS 2019).

Analysis Elements and Methods

Roadways — HARTMAN LANE, CAMINO DE OESTE, CORTARO FARMS ROAD WILL BE EVALUATED BEFORE AND AFTER ADDITION OF SITE TRAFFIC BASED ON LOS THRESHOLDS in TOWN OF MARANA PROCEDURES FOR PREPARATION OF TRANSPORTATION IMPACT STUDIES (2006).

Intersections — LEVEL OF SERVICE ANALYSIS FOR PROJECT ACCESS INTERSECTIONS ON HARTMAN LANE & CMO DE OESTE AND FOR SIGNALIZED INTERSECTIONS, CORTARO FARMS RD/HARTMAN LN & CORTARO FARMS RD/CMO DE OESTE USING Synchro 9 HCM Methodologies.

Traffic Safety and other Special Considerations — WILL EVALUATE NEED FOR RIGHT-TURN LANE & LEFT-TURN LANE at SITE ACCESS ROAD INTERSECTIONS OFF OF HARTMAN LN & CMO DE OESTE.

We concur that the information above is correct and that the study will include the parameters and elements described above.

Consultant Concurrence in Study Requirements — **Consultant signature:** JDBeier

Printed name: JAMES BEIER, PE, PTOE

Title: SENIOR TRANSPORTATION ENGINEER — **Date:** 2/5/2016

***Checklist Accepted** — **Town of Marana authorized signature:**

Printed name: Keith Brann

Title: T.E. — **Date:** 2-5-16

MARANA USE ONLY:

** As there may be instances when one or more study requirements are inadvertently not discussed during the pre-submittal meeting, additional study parameters or elements (other than those discussed in this Checklist) may be required following the first submittal of the study if the Town deems that they are critical to the study findings.*

Project: **Cortaro Farms at Hartman**

Date: **Tuesday, February 03, 2015**

Count period: 0:15

Count Starts at

	7:00 AM	SB Hartman			EB Cortaro Farms		WB Cortaro Farms				Total				END	
	END Time	Left Turn	Right Turn	RTOR	Left Turn	THRU	U-Turn	THRU	Right Turn	RTOR	SB	EB	WB	Total	Time	
	7:15 AM	40	27	60	20	176	2	148	4	1	127	196	155	478	7:15 AM	
	7:30 AM	65	62	48	26	186	1	163	5	6	175	212	175	562	7:30 AM	
	7:45 AM	72	34	42	27	218	0	193	1	14	148	245	208	601	7:45 AM	
	8:00 AM	37	46	27	27	213	0	186	6	12	110	240	204	554	8:00 AM	
	8:15 AM	40	41	24	28	234	0	165	8	9	105	262	182	549	8:15 AM	
	8:30 AM	33	26	23	16	135	0	135	5	3	82	151	143	376	8:30 AM	
	8:45 AM	18	18	28	35	251	0	123	4	2	64	286	129	479	8:45 AM	
	9:00 AM	21	7	28	20	162	0	114	0	1	56	182	115	353	9:00 AM	
7:00 AM	8:00 AM	214	169	177	100	793	3	690	16	33	560	893	742	2195	7:00 AM	8:00 AM
7:15 AM	8:15 AM	214	183	141	108	851	1	707	20	41	538	959	769	2266	7:15 AM	8:15 AM
7:30 AM	8:30 AM	182	147	116	98	800	0	679	20	38	445	898	737	2080	7:30 AM	8:30 AM
7:45 AM	8:45 AM	128	131	102	106	833	0	609	23	26	361	939	658	1958	7:45 AM	8:45 AM
8:00 AM	9:00 AM	112	92	103	99	782	0	537	17	15	307	881	569	1757	8:00 AM	9:00 AM
7:00 AM	9:00 AM	326	261	280	199	1575	3	1227	33	48	867	1774	1311	3952	7:00 AM	9:00 AM
										PHF	0.77	0.92	0.92			

Count Starts at

	4:00 PM	SB Hartman			EB Cortaro Farms		WB Cortaro Farms				Total				END	
	END Time	Left Turn	Right Turn	RTOR	Left Turn	THRU	U-Turn	THRU	Right Turn	RTOR	SB	EB	WB	Total	Time	
	4:15 PM	10	16	20	71	160	0	150	13	8	46	231	171	448	4:15 PM	
	4:30 PM	19	23	18	80	183	2	175	20	19	60	263	216	539	4:30 PM	
	4:45 PM	19	26	22	86	182	0	168	11	10	67	268	189	524	4:45 PM	
	5:00 PM	22	34	13	89	187	1	151	6	14	69	276	172	517	5:00 PM	
	5:15 PM	15	28	22	69	192	1	177	22	13	65	261	213	539	5:15 PM	
	5:30 PM	17	12	15	86	244	0	181	25	9	44	330	215	589	5:30 PM	
	5:45 PM	13	20	22	80	218	0	160	30	8	55	298	198	551	5:45 PM	
	6:00 PM	23	14	23	80	224	0	162	21	16	60	304	199	563	6:00 PM	
4:00 PM	5:00 PM	70	99	73	326	712	3	644	50	51	242	1038	748	2028	4:00 PM	5:00 PM
4:15 PM	5:15 PM	75	111	75	324	744	4	671	59	56	261	1068	790	2119	4:15 PM	5:15 PM
4:30 PM	5:30 PM	73	100	72	330	805	2	677	64	46	245	1135	789	2169	4:30 PM	5:30 PM
4:45 PM	5:45 PM	67	94	72	324	841	2	669	83	44	233	1165	798	2196	4:45 PM	5:45 PM
5:00 PM	6:00 PM	68	74	82	315	878	1	680	98	46	224	1193	825	2242	5:00 PM	6:00 PM
4:00 PM	6:00 PM	138	173	155	641	1590	4	1324	148	97	466	2231	1573	4270	4:00 PM	6:00 PM
											0.86	0.90	0.96			

AM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND					
	NB CAMINO DE OESTE				SB CAMINO DE OESTE				EB CORTARO RI				WB CORTARO RI					
	UT	LT	THRU	RT	UT	LT	THRU	RT	UT	LT	THRU	RT	UT	LT	THRU	RT	TOTAL	PEAK HOUR
7:00 AM - 7:15 AM	-	3	8	3	-	43	6	47	7	24	136	3	-	1	105	15	401	2062
7:15 AM - 7:30 AM	-	4	9	8	-	72	16	69	7	9	161	15	2	6	113	12	503	2123
7:30 AM - 7:45 AM	-	7	7	12	-	69	21	53	2	26	213	16	10	23	160	32	651	2018
7:45 AM - 8:00 AM	-	7	11	1	-	43	14	38	4	25	168	12	2	11	147	24	507	1772
8:00 AM - 8:15 AM	-	9	14	3	-	42	4	51	4	27	136	8	-	2	148	14	462	1614
8:15 AM - 8:30 AM	-	6	4	2	-	30	2	44	5	20	128	7	3	2	133	12	398	
8:30 AM - 8:45 AM	-	5	2	2	-	47	6	34	5	13	131	7	-	2	136	15	405	
8:45 AM - 9:00 AM	-	5	3	2	-	24	5	26	1	14	119	3	-	3	127	17	349	
7:00 - 8:00	0	21	35	24	0	227	57	207	20	84	1192	46	14	41	1069	83		
7:15 - 8:15	0	27	41	24	0	226	55	211	17	87	678	51	14	42	568	82		
7:30 - 8:30	0	29	36	18	0	184	41	186	15	98	645	43	15	38	588	82		
7:45 - 8:45	0	27	31	8	0	162	26	167	18	85	563	34	5	17	564	65		
8:00 - 9:00	0	25	23	9	0	143	17	155	15	74	514	25	3	9	544	58		

2/10/2016 AM Peak (7am to 9am)

PM	NORTHBOUND				SOUTHBOUND				EASTBOUND				WESTBOUND					
	NB CAMINO DE OESTE				SB CAMINO DE OESTE				EB CORTARO RI				WB CORTARO RI					
	UT	LT	THRU	RT	UT	LT	THRU	RT	UT	LT	THRU	RT	UT	LT	THRU	RT	TOTAL	PEAK HOUR
4:00 PM - 4:15 PM	-	13	13	2	-	30	5	19	2	43	127	8	-	4	117	26	409	1803
4:15 PM - 4:30 PM	-	3	8	5	-	24	4	15	2	52	136	8	-	2	121	39	419	1903
4:30 PM - 4:45 PM	-	11	8	2	-	32	8	28	1	55	152	8	-	-	138	42	485	2013
4:45 PM - 5:00 PM	-	5	11	3	-	34	9	27	5	55	149	10	-	-	133	49	490	2051
5:00 PM - 5:15 PM	-	5	16	-	-	25	6	24	1	64	162	6	1	5	148	46	509	2113
5:15 PM - 5:30 PM	-	6	9	4	-	31	7	19	3	60	182	5	2	2	159	40	529	
5:30 PM - 5:45 PM	-	10	10	1	-	18	9	22	1	59	144	10	-	5	188	46	523	
5:45 PM - 6:00 PM	-	8	13	1	-	24	9	27	2	71	174	8	-	4	161	50	552	
4:00 - 5:00	0	32	40	12	0	120	26	89	10	205	564	34	0	6	509	156		
4:15 - 5:15	0	24	43	10	0	115	27	94	9	226	599	32	1	7	540	176		
4:30 - 5:30	0	27	44	9	0	122	30	98	10	234	645	29	3	7	578	177		
4:45 - 5:45	0	26	46	8	0	108	31	92	10	238	637	31	3	12	628	181		
5:00 - 6:00	0	29	48	6	0	98	31	92	7	254	662	29	3	16	656	182		

2/10/2016 PM Peak (4pm to 6pm)

Location Info	
Location ID	N-5_NB
Type	LINK
Functional Class	
Located On	CAMINO DE OESTE
Between	LINDA VISTA BL AND CORTARO FARMS RD
Direction	NB
Community	-
MPO_ID	
HPMS ID	
Agency	Pima Association of Governments

Count Data Info	
Start Date	10/18/2011
End Date	10/19/2011
Start Time	12:00 AM
End Time	12:00 AM
Direction	NB
Notes	
Count Source	
File Name	
Weather	
Study	
Owner	pag

Interval: 15 mins

Time	15 Min				Hourly Count
	1st	2nd	3rd	4th	
00:00 - 01:00	9	4	9	7	29
01:00 - 02:00	5	7	3	5	20
02:00 - 03:00	5	5	4	3	17
03:00 - 04:00	2	4	1	3	10
04:00 - 05:00	4	1	2	1	8
05:00 - 06:00	2	7	7	8	24
06:00 - 07:00	10	12	14	18	54
07:00 - 08:00	22	34	29	58	143
08:00 - 09:00	67	51	34	26	178
09:00 - 10:00	36	33	31	39	139
10:00 - 11:00	31	41	37	28	137
11:00 - 12:00	31	43	37	44	155
12:00 - 13:00	41	45	49	46	181
13:00 - 14:00	56	47	51	69	223
14:00 - 15:00	33	63	54	52	202
15:00 - 16:00	82	82	99	78	341
16:00 - 17:00	82	93	101	95	371
17:00 - 18:00	99	123	130	135	487
18:00 - 19:00	120	133	106	92	451
19:00 - 20:00	79	63	79	48	269
20:00 - 21:00	62	50	52	53	217
21:00 - 22:00	37	38	35	38	148
22:00 - 23:00	31	21	27	24	103
23:00 - 24:00	15	23	11	9	58
TOTAL					3965

Location Info	
Location ID	N-5_NB
Type	LINK
Functional Class	
Located On	CAMINO DE OESTE
Between	LINDA VISTA BL AND CORTARO FARMS RD
Direction	NB
Community	-
MPO_ID	
HPMS ID	
Agency	Pima Association of Governments

Count Data Info	
Start Date	10/19/2011
End Date	10/20/2011
Start Time	12:00 AM
End Time	12:00 AM
Direction	NB
Notes	
Count Source	
File Name	
Weather	
Study	
Owner	pag

Interval: 15 mins

Time	15 Min				Hourly Count
	1st	2nd	3rd	4th	
00:00 - 01:00	8	14	15	7	44
01:00 - 02:00	2	10	8	2	22
02:00 - 03:00	3	0	3	2	8
03:00 - 04:00	4	4	0	4	12
04:00 - 05:00	1	3	4	2	10
05:00 - 06:00	3	3	6	10	22
06:00 - 07:00	7	10	19	26	62
07:00 - 08:00	25	28	29	49	131
08:00 - 09:00	66	70	31	36	203
09:00 - 10:00	26	37	38	32	133
10:00 - 11:00	29	40	41	36	146
11:00 - 12:00	34	41	34	43	152
12:00 - 13:00	45	48	61	47	201
13:00 - 14:00	51	49	43	54	197
14:00 - 15:00	47	70	53	63	233
15:00 - 16:00	69	78	79	82	308
16:00 - 17:00	81	99	101	105	386
17:00 - 18:00	99	112	129	109	449
18:00 - 19:00	119	123	84	108	434
19:00 - 20:00	97	95	84	74	350
20:00 - 21:00	89	66	60	62	277
21:00 - 22:00	61	62	60	46	229
22:00 - 23:00	23	31	27	26	107
23:00 - 24:00	23	17	10	17	67
TOTAL					4183

Location Info	
Location ID	N-5_SB
Type	LINK
Functional Class	
Located On	CAMINO DE OESTE
Between	LINDA VISTA BL AND CORTARO FARMS RD
Direction	SB
Community	-
MPO_ID	
HPMS ID	
Agency	Pima Association of Governments

Count Data Info	
Start Date	10/18/2011
End Date	10/19/2011
Start Time	12:00 AM
End Time	12:00 AM
Direction	SB
Notes	
Count Source	
File Name	
Weather	
Study	
Owner	pag

Interval: 15 mins

Time	15 Min				Hourly Count
	1st	2nd	3rd	4th	
00:00 - 01:00	5	5	2	1	13
01:00 - 02:00	3	5	1	6	15
02:00 - 03:00	2	6	2	2	12
03:00 - 04:00	2	3	4	5	14
04:00 - 05:00	5	6	14	15	40
05:00 - 06:00	11	20	24	33	88
06:00 - 07:00	38	44	61	65	208
07:00 - 08:00	88	111	124	155	478
08:00 - 09:00	131	86	92	82	391
09:00 - 10:00	58	56	48	54	216
10:00 - 11:00	51	50	59	56	216
11:00 - 12:00	46	43	48	53	190
12:00 - 13:00	42	47	61	49	199
13:00 - 14:00	44	46	44	45	179
14:00 - 15:00	56	66	62	54	238
15:00 - 16:00	54	45	52	67	218
16:00 - 17:00	66	54	55	56	231
17:00 - 18:00	50	55	55	53	213
18:00 - 19:00	59	56	62	68	245
19:00 - 20:00	52	36	36	27	151
20:00 - 21:00	26	16	33	24	99
21:00 - 22:00	21	13	17	11	62
22:00 - 23:00	16	16	13	15	60
23:00 - 24:00	12	7	5	2	26
TOTAL					3802

Location Info	
Location ID	N-5_SB
Type	LINK
Functional Class	
Located On	CAMINO DE OESTE
Between	LINDA VISTA BL AND CORTARO FARMS RD
Direction	SB
Community	-
MPO_ID	
HPMS ID	
Agency	Pima Association of Governments

Count Data Info	
Start Date	10/19/2011
End Date	10/20/2011
Start Time	12:00 AM
End Time	12:00 AM
Direction	SB
Notes	
Count Source	
File Name	
Weather	
Study	
Owner	pag

Interval: 15 mins

Time	15 Min				Hourly Count
	1st	2nd	3rd	4th	
00:00 - 01:00	4	4	5	4	17
01:00 - 02:00	2	1	10	2	15
02:00 - 03:00	1	3	2	3	9
03:00 - 04:00	1	1	1	6	9
04:00 - 05:00	9	14	9	15	47
05:00 - 06:00	17	22	28	38	105
06:00 - 07:00	47	63	76	77	263
07:00 - 08:00	108	130	141	178	557
08:00 - 09:00	128	99	92	78	397
09:00 - 10:00	81	49	45	65	240
10:00 - 11:00	68	49	61	48	226
11:00 - 12:00	53	57	38	51	199
12:00 - 13:00	55	40	55	42	192
13:00 - 14:00	57	53	47	43	200
14:00 - 15:00	54	66	70	45	235
15:00 - 16:00	49	58	56	60	223
16:00 - 17:00	65	44	46	53	208
17:00 - 18:00	68	62	53	54	237
18:00 - 19:00	44	46	66	67	223
19:00 - 20:00	56	49	42	37	184
20:00 - 21:00	47	25	32	31	135
21:00 - 22:00	27	20	24	23	94
22:00 - 23:00	26	13	17	12	68
23:00 - 24:00	5	9	4	9	27
TOTAL					4110

Location Info	
Location ID	B-100_NB
Type	LINK
Functional Class	
Located On	HARTMAN LN
Between	LINDA VISTA BL AND CORTARO FARMS RD
Direction	NB
Community	-
MPO_ID	
HPMS ID	
Agency	Pima Association of Governments

Count Data Info	
Start Date	11/13/2013
End Date	11/14/2013
Start Time	12:00 AM
End Time	12:00 AM
Direction	NB
Notes	
Count Source	
File Name	
Weather	
Study	
Owner	pag

Interval: 15 mins

Time	15 Min				Hourly Count
	1st	2nd	3rd	4th	
00:00 - 01:00	6	5	3	2	16
01:00 - 02:00	3	1	1	4	9
02:00 - 03:00	0	5	9	5	19
03:00 - 04:00	2	2	5	2	11
04:00 - 05:00	9	4	6	6	25
05:00 - 06:00	2	4	8	7	21
06:00 - 07:00	8	8	8	19	43
07:00 - 08:00	21	26	23	25	95
08:00 - 09:00	23	22	14	15	74
09:00 - 10:00	23	18	21	17	79
10:00 - 11:00	15	24	36	30	105
11:00 - 12:00	20	23	33	23	99
12:00 - 13:00	35	30	36	48	149
13:00 - 14:00	53	38	51	43	185
14:00 - 15:00	45	38	32	41	156
15:00 - 16:00	45	58	49	72	224
16:00 - 17:00	72	83	91	98	344
17:00 - 18:00	85	87	96	91	359
18:00 - 19:00	85	90	78	76	329
19:00 - 20:00	64	54	47	45	210
20:00 - 21:00	37	41	46	46	170
21:00 - 22:00	32	23	20	14	89
22:00 - 23:00	15	14	15	5	49
23:00 - 24:00	4	5	5	6	20
TOTAL					2880

Location Info	
Location ID	B-100_NB
Type	LINK
Functional Class	
Located On	HARTMAN LN
Between	LINDA VISTA BL AND CORTARO FARMS RD
Direction	NB
Community	-
MPO_ID	
HPMS ID	
Agency	Pima Association of Governments

Count Data Info	
Start Date	11/14/2013
End Date	11/15/2013
Start Time	12:00 AM
End Time	12:00 AM
Direction	NB
Notes	
Count Source	
File Name	
Weather	
Study	
Owner	pag

Interval: 15 mins

Time	15 Min				Hourly Count
	1st	2nd	3rd	4th	
00:00 - 01:00	3	3	5	1	12
01:00 - 02:00	3	1	7	5	16
02:00 - 03:00	3	2	6	3	14
03:00 - 04:00	4	1	6	3	14
04:00 - 05:00	6	1	2	3	12
05:00 - 06:00	3	3	9	6	21
06:00 - 07:00	9	14	14	21	58
07:00 - 08:00	24	26	33	35	118
08:00 - 09:00	34	37	28	24	123
09:00 - 10:00	21	15	19	26	81
10:00 - 11:00	24	26	31	25	106
11:00 - 12:00	33	31	41	43	148
12:00 - 13:00	37	37	46	45	165
13:00 - 14:00	39	47	45	38	169
14:00 - 15:00	41	45	47	47	180
15:00 - 16:00	50	63	68	83	264
16:00 - 17:00	86	78	75	83	322
17:00 - 18:00	90	91	85	82	348
18:00 - 19:00	75	81	79	71	306
19:00 - 20:00	60	53	48	31	192
20:00 - 21:00	34	27	25	17	103
21:00 - 22:00	10	12	16	13	51
22:00 - 23:00	18	20	17	5	60
23:00 - 24:00	7	8	9	8	32
TOTAL					2915

Location Info	
Location ID	B-100_SB
Type	LINK
Functional Class	
Located On	HARTMAN LN
Between	LINDA VISTA BL AND CORTARO FARMS RD
Direction	SB
Community	-
MPO_ID	
HPMS ID	
Agency	Pima Association of Governments

Count Data Info	
Start Date	11/13/2013
End Date	11/14/2013
Start Time	12:00 AM
End Time	12:00 AM
Direction	SB
Notes	
Count Source	
File Name	
Weather	
Study	
Owner	pag

Interval: 15 mins

Time	15 Min				Hourly Count
	1st	2nd	3rd	4th	
00:00 - 01:00	3	3	14	2	22
01:00 - 02:00	3	3	2	5	13
02:00 - 03:00	3	1	5	3	12
03:00 - 04:00	3	2	5	14	24
04:00 - 05:00	10	8	12	17	47
05:00 - 06:00	13	16	23	33	85
06:00 - 07:00	41	46	60	65	212
07:00 - 08:00	79	95	77	86	337
08:00 - 09:00	85	80	64	58	287
09:00 - 10:00	49	35	39	37	160
10:00 - 11:00	53	32	33	32	150
11:00 - 12:00	33	35	32	37	137
12:00 - 13:00	40	32	38	37	147
13:00 - 14:00	45	54	50	57	206
14:00 - 15:00	74	56	40	31	201
15:00 - 16:00	41	33	43	46	163
16:00 - 17:00	41	41	43	48	173
17:00 - 18:00	43	49	41	47	180
18:00 - 19:00	48	52	40	37	177
19:00 - 20:00	26	36	26	32	120
20:00 - 21:00	26	23	23	19	91
21:00 - 22:00	15	14	11	7	47
22:00 - 23:00	9	14	10	5	38
23:00 - 24:00	4	4	5	5	18
TOTAL					3047

Location Info	
Location ID	B-100_SB
Type	LINK
Functional Class	
Located On	HARTMAN LN
Between	LINDA VISTA BL AND CORTARO FARMS RD
Direction	SB
Community	-
MPO_ID	
HPMS ID	
Agency	Pima Association of Governments

Count Data Info	
Start Date	11/14/2013
End Date	11/15/2013
Start Time	12:00 AM
End Time	12:00 AM
Direction	SB
Notes	
Count Source	
File Name	
Weather	
Study	
Owner	pag

Interval: 15 mins

Time	15 Min				Hourly Count
	1st	2nd	3rd	4th	
00:00 - 01:00	3	3	7	3	16
01:00 - 02:00	3	3	4	2	12
02:00 - 03:00	3	8	5	3	19
03:00 - 04:00	5	3	6	5	19
04:00 - 05:00	7	9	11	10	37
05:00 - 06:00	12	15	23	37	87
06:00 - 07:00	45	51	65	69	230
07:00 - 08:00	78	82	88	96	344
08:00 - 09:00	71	66	59	52	248
09:00 - 10:00	42	43	33	37	155
10:00 - 11:00	39	37	31	29	136
11:00 - 12:00	40	33	27	34	134
12:00 - 13:00	50	43	33	31	157
13:00 - 14:00	43	43	40	30	156
14:00 - 15:00	27	24	31	34	116
15:00 - 16:00	37	44	37	54	172
16:00 - 17:00	51	43	47	45	186
17:00 - 18:00	39	43	56	44	182
18:00 - 19:00	59	45	43	33	180
19:00 - 20:00	31	31	20	26	108
20:00 - 21:00	17	18	14	9	58
21:00 - 22:00	16	13	11	7	47
22:00 - 23:00	14	9	10	4	37
23:00 - 24:00	4	4	5	6	19
TOTAL					2855

Location Info	
Location ID	A-348
Type	LINK
Functional Class	
Located On	CORTARO FARMS RD
Between	I-10 WB FRONTAGE RD AND HARTMAN LN
Direction	2-WAY
Community	-
MPO_ID	
HPMS ID	
Agency	Pima Association of Governments

Count Data Info	
Start Date	9/19/2012
End Date	9/20/2012
Start Time	12:00 AM
End Time	12:00 AM
Direction	2-WAY
Notes	
Count Source	
File Name	
Weather	
Study	
Owner	pag

Interval: 15 mins

Time	15 Min				Hourly Count
	1st	2nd	3rd	4th	
00:00 - 01:00	39	32	26	27	124
01:00 - 02:00	23	20	16	19	78
02:00 - 03:00	22	23	25	26	96
03:00 - 04:00	24	28	23	37	112
04:00 - 05:00	49	58	76	89	272
05:00 - 06:00	103	135	236	233	707
06:00 - 07:00	262	326	377	453	1418
07:00 - 08:00	558	541	544	576	2219
08:00 - 09:00	494	500	408	388	1790
09:00 - 10:00	392	328	327	315	1362
10:00 - 11:00	308	295	328	290	1221
11:00 - 12:00	249	331	309	335	1224
12:00 - 13:00	312	333	346	396	1387
13:00 - 14:00	298	359	311	402	1370
14:00 - 15:00	428	375	407	492	1702
15:00 - 16:00	460	485	540	516	2001
16:00 - 17:00	522	546	624	606	2298
17:00 - 18:00	527	661	558	609	2355
18:00 - 19:00	514	540	424	423	1901
19:00 - 20:00	347	392	296	309	1344
20:00 - 21:00	315	298	289	239	1141
21:00 - 22:00	237	214	175	151	777
22:00 - 23:00	117	106	97	100	420
23:00 - 24:00	76	58	59	53	246
TOTAL					27565

Location Info	
Location ID	A-348
Type	LINK
Functional Class	
Located On	CORTARO FARMS RD
Between	I-10 WB FRONTAGE RD AND HARTMAN LN
Direction	2-WAY
Community	-
MPO_ID	
HPMS ID	
Agency	Pima Association of Governments

Count Data Info	
Start Date	9/20/2012
End Date	9/21/2012
Start Time	12:00 AM
End Time	12:00 AM
Direction	2-WAY
Notes	
Count Source	
File Name	
Weather	
Study	
Owner	pag

Interval: 15 mins

Time	15 Min				Hourly Count
	1st	2nd	3rd	4th	
00:00 - 01:00	34	28	25	21	108
01:00 - 02:00	18	18	19	17	72
02:00 - 03:00	17	18	26	27	88
03:00 - 04:00	21	27	33	42	123
04:00 - 05:00	48	66	86	108	308
05:00 - 06:00	126	217	219	235	797
06:00 - 07:00	301	374	436	565	1676
07:00 - 08:00	608	587	634	535	2364
08:00 - 09:00	499	451	362	365	1677
09:00 - 10:00	402	336	340	341	1419
10:00 - 11:00	294	301	309	280	1184
11:00 - 12:00	255	335	298	320	1208
12:00 - 13:00	295	338	362	352	1347
13:00 - 14:00	324	356	357	425	1462
14:00 - 15:00	379	371	431	493	1674
15:00 - 16:00	467	508	513	509	1997
16:00 - 17:00	511	541	628	605	2285
17:00 - 18:00	548	609	538	568	2263
18:00 - 19:00	491	509	372	417	1789
19:00 - 20:00	370	367	334	318	1389
20:00 - 21:00	307	294	260	224	1085
21:00 - 22:00	232	190	163	123	708
22:00 - 23:00	107	87	94	99	387
23:00 - 24:00	69	53	54	33	209
TOTAL					27619

Location Info	
Location ID	A-241
Type	LINK
Functional Class	
Located On	CORTARO FARMS RD
Between	HARTMAN LN AND THORNYDALE RD
Direction	2-WAY
Community	-
MPO_ID	
HPMS ID	
Agency	Pima Association of Governments

Count Data Info	
Start Date	9/25/2012
End Date	9/26/2012
Start Time	12:00 AM
End Time	12:00 AM
Direction	2-WAY
Notes	
Count Source	
File Name	
Weather	
Study	
Owner	pag

Interval: 15 mins

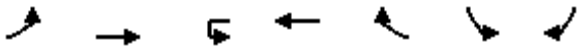
Time	15 Min				Hourly Count
	1st	2nd	3rd	4th	
00:00 - 01:00	39	36	23	20	118
01:00 - 02:00	9	17	15	14	55
02:00 - 03:00	19	14	15	18	66
03:00 - 04:00	21	16	19	23	79
04:00 - 05:00	32	28	33	43	136
05:00 - 06:00	41	56	78	117	292
06:00 - 07:00	105	140	148	225	618
07:00 - 08:00	253	327	376	360	1316
08:00 - 09:00	397	331	310	313	1351
09:00 - 10:00	316	301	265	257	1139
10:00 - 11:00	243	249	258	269	1019
11:00 - 12:00	251	244	305	266	1066
12:00 - 13:00	301	262	311	288	1162
13:00 - 14:00	274	265	271	327	1137
14:00 - 15:00	307	328	331	350	1316
15:00 - 16:00	362	358	333	422	1475
16:00 - 17:00	410	402	435	419	1666
17:00 - 18:00	397	472	534	414	1817
18:00 - 19:00	439	404	357	361	1561
19:00 - 20:00	268	280	257	218	1023
20:00 - 21:00	218	209	217	210	854
21:00 - 22:00	197	165	148	148	658
22:00 - 23:00	127	98	85	90	400
23:00 - 24:00	67	54	44	31	196
TOTAL					20520

Location Info	
Location ID	A-241
Type	LINK
Functional Class	
Located On	CORTARO FARMS RD
Between	HARTMAN LN AND THORNYDALE RD
Direction	2-WAY
Community	-
MPO_ID	
HPMS ID	
Agency	Pima Association of Governments

Count Data Info	
Start Date	9/26/2012
End Date	9/27/2012
Start Time	12:00 AM
End Time	12:00 AM
Direction	2-WAY
Notes	
Count Source	
File Name	
Weather	
Study	
Owner	pag

Interval: 15 mins

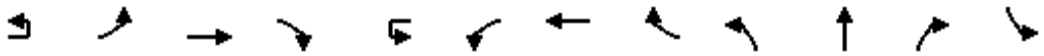
Time	15 Min				Hourly Count
	1st	2nd	3rd	4th	
00:00 - 01:00	40	37	27	19	123
01:00 - 02:00	9	17	16	18	60
02:00 - 03:00	20	15	18	22	75
03:00 - 04:00	24	18	23	27	92
04:00 - 05:00	32	36	40	43	151
05:00 - 06:00	47	58	85	125	315
06:00 - 07:00	122	145	170	227	664
07:00 - 08:00	280	331	408	408	1427
08:00 - 09:00	423	363	311	316	1413
09:00 - 10:00	289	289	284	265	1127
10:00 - 11:00	234	265	277	276	1052
11:00 - 12:00	262	258	311	289	1120
12:00 - 13:00	311	286	311	265	1173
13:00 - 14:00	267	274	281	316	1138
14:00 - 15:00	297	301	320	358	1276
15:00 - 16:00	323	344	357	381	1405
16:00 - 17:00	410	419	428	422	1679
17:00 - 18:00	377	467	529	441	1814
18:00 - 19:00	458	419	327	394	1598
19:00 - 20:00	303	305	273	192	1073
20:00 - 21:00	210	221	216	200	847
21:00 - 22:00	203	159	151	169	682
22:00 - 23:00	141	86	86	89	402
23:00 - 24:00	66	57	49	44	216
TOTAL					20922



Movement	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Configurations							
Traffic Volume (vph)	108	851	1	707	61	214	324
Future Volume (vph)	108	851	1	707	61	214	324
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.3	5.3	5.3	5.3	5.3	5.1	5.1
Lane Util. Factor	1.00	0.95	1.00	0.95	1.00	1.00	1.00
Frt	1.00	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	3539	1770	3539	1583	1770	1583
Flt Permitted	0.31	1.00	0.95	1.00	1.00	0.95	1.00
Satd. Flow (perm)	570	3539	1770	3539	1583	1770	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	117	925	1	768	66	233	352
RTOR Reduction (vph)	0	0	0	0	33	0	194
Lane Group Flow (vph)	117	925	1	768	33	233	158
Turn Type	pm+pt	NA	Prot	NA	Perm	Prot	Perm
Protected Phases	5	2	1	6		4	
Permitted Phases	2				6		4
Actuated Green, G (s)	59.9	52.4	1.2	44.3	44.3	17.7	17.7
Effective Green, g (s)	60.9	53.4	2.2	45.3	45.3	18.7	18.7
Actuated g/C Ratio	0.68	0.59	0.02	0.50	0.50	0.21	0.21
Clearance Time (s)	6.3	6.3	6.3	6.3	6.3	6.1	6.1
Vehicle Extension (s)	2.0	5.0	2.0	5.0	5.0	3.0	3.0
Lane Grp Cap (vph)	523	2099	43	1781	796	367	328
v/s Ratio Prot	c0.03	c0.26	0.00	0.22		c0.13	
v/s Ratio Perm	0.13				0.02		0.10
v/c Ratio	0.22	0.44	0.02	0.43	0.04	0.63	0.48
Uniform Delay, d1	9.1	10.1	42.9	14.2	11.3	32.5	31.4
Progression Factor	1.00	1.00	0.97	0.56	0.30	1.00	1.00
Incremental Delay, d2	0.1	0.7	0.1	0.3	0.0	3.6	1.1
Delay (s)	9.2	10.8	41.5	8.2	3.4	36.1	32.5
Level of Service	A	B	D	A	A	D	C
Approach Delay (s)		10.6		7.9		33.9	
Approach LOS		B		A		C	

Intersection Summary			
HCM 2000 Control Delay	15.2	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.49		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	15.7
Intersection Capacity Utilization	53.5%	ICU Level of Service	A
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	17	87	678	51	14	42	568	82	27	41	24	226
Future Volume (vph)	17	87	678	51	14	42	568	82	27	41	24	226
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.1	5.1	5.1		5.1	5.1	5.1	4.6	4.6		4.6
Lane Util. Factor		1.00	0.95	1.00		1.00	0.95	1.00	1.00	1.00		1.00
Frt		1.00	1.00	0.85		1.00	1.00	0.85	1.00	0.95		1.00
Flt Protected		0.95	1.00	1.00		0.95	1.00	1.00	0.95	1.00		0.95
Satd. Flow (prot)		1770	3539	1583		1770	3539	1583	1770	1760		1770
Flt Permitted		0.37	1.00	1.00		0.95	1.00	1.00	0.38	1.00		0.71
Satd. Flow (perm)		692	3539	1583		1770	3539	1583	703	1760		1324
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	18	95	737	55	15	46	617	89	29	45	26	246
RTOR Reduction (vph)	0	0	0	27	0	0	0	46	0	19	0	0
Lane Group Flow (vph)	0	113	737	28	0	61	617	43	29	52	0	246
Turn Type	pm+pt	pm+pt	NA	Perm	pm+pt	Prot	NA	Perm	Perm	NA		Perm
Protected Phases	5	5	2		1	1	6			8		
Permitted Phases	2	2		2	6			6	8			4
Actuated Green, G (s)		51.3	44.2	44.2		5.8	42.9	42.9	22.2	22.2		22.2
Effective Green, g (s)		53.3	45.2	45.2		6.8	43.9	43.9	23.2	23.2		23.2
Actuated g/C Ratio		0.59	0.50	0.50		0.08	0.49	0.49	0.26	0.26		0.26
Clearance Time (s)		6.1	6.1	6.1		6.1	6.1	6.1	5.6	5.6		5.6
Vehicle Extension (s)		2.0	6.0	6.0		2.0	6.0	6.0	3.0	3.0		3.0
Lane Grp Cap (vph)		506	1777	795		133	1726	772	181	453		341
v/s Ratio Prot		0.02	c0.21			c0.03	0.17			0.03		
v/s Ratio Perm		0.11		0.02				0.03	0.04			c0.19
v/c Ratio		0.22	0.41	0.03		0.46	0.36	0.06	0.16	0.11		0.72
Uniform Delay, d1		11.3	14.1	11.3		39.8	14.3	12.1	25.9	25.5		30.5
Progression Factor		1.08	0.82	1.50		0.89	1.08	1.65	1.00	1.00		1.00
Incremental Delay, d2		0.1	0.7	0.1		0.9	0.5	0.1	0.4	0.1		7.3
Delay (s)		12.3	12.2	17.2		36.3	15.9	20.2	26.3	25.7		37.8
Level of Service		B	B	B		D	B	C	C	C		D
Approach Delay (s)			12.6				18.0			25.8		
Approach LOS			B				B			C		

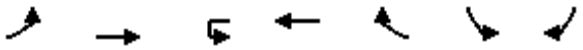
Intersection Summary			
HCM 2000 Control Delay	19.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	14.8
Intersection Capacity Utilization	57.7%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Movement	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	55	211
Future Volume (vph)	55	211
Ideal Flow (vphpl)	1900	1900
Total Lost time (s)	4.6	
Lane Util. Factor	1.00	
Frt	0.88	
Flt Protected	1.00	
Satd. Flow (prot)	1641	
Flt Permitted	1.00	
Satd. Flow (perm)	1641	
Peak-hour factor, PHF	0.92	0.92
Adj. Flow (vph)	60	229
RTOR Reduction (vph)	170	0
Lane Group Flow (vph)	119	0
Turn Type	NA	
Protected Phases	4	
Permitted Phases		
Actuated Green, G (s)	22.2	
Effective Green, g (s)	23.2	
Actuated g/C Ratio	0.26	
Clearance Time (s)	5.6	
Vehicle Extension (s)	3.0	
Lane Grp Cap (vph)	423	
v/s Ratio Prot	0.07	
v/s Ratio Perm		
v/c Ratio	0.28	
Uniform Delay, d1	26.7	
Progression Factor	1.00	
Incremental Delay, d2	0.4	
Delay (s)	27.1	
Level of Service	C	
Approach Delay (s)	32.0	
Approach LOS	C	

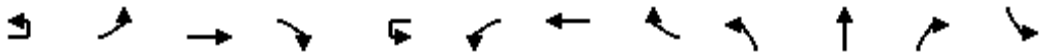
Intersection Summary



Movement	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Configurations							
Traffic Volume (vph)	315	878	1	680	144	68	156
Future Volume (vph)	315	878	1	680	144	68	156
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.3	5.3	5.3	5.3	5.3	5.1	5.1
Lane Util. Factor	1.00	0.95	1.00	0.95	1.00	1.00	1.00
Frt	1.00	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	3539	1770	3539	1583	1770	1583
Flt Permitted	0.31	1.00	0.95	1.00	1.00	0.95	1.00
Satd. Flow (perm)	578	3539	1770	3539	1583	1770	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	342	954	1	739	157	74	170
RTOR Reduction (vph)	0	0	0	0	83	0	150
Lane Group Flow (vph)	342	954	1	739	74	74	20
Turn Type	pm+pt	NA	Prot	NA	Perm	Prot	Perm
Protected Phases	5	2	1	6		4	
Permitted Phases	2				6		4
Actuated Green, G (s)	67.9	59.6	2.0	41.4	41.4	9.7	9.7
Effective Green, g (s)	68.9	60.6	3.0	42.4	42.4	10.7	10.7
Actuated g/C Ratio	0.77	0.67	0.03	0.47	0.47	0.12	0.12
Clearance Time (s)	6.3	6.3	6.3	6.3	6.3	6.1	6.1
Vehicle Extension (s)	2.0	5.0	2.0	5.0	5.0	3.0	3.0
Lane Grp Cap (vph)	723	2382	59	1667	745	210	188
v/s Ratio Prot	c0.11	0.27	0.00	0.21		c0.04	
v/s Ratio Perm	c0.25				0.05		0.01
v/c Ratio	0.47	0.40	0.02	0.44	0.10	0.35	0.11
Uniform Delay, d1	9.2	6.6	42.1	15.9	13.2	36.5	35.4
Progression Factor	1.00	1.00	1.25	0.34	0.21	1.00	1.00
Incremental Delay, d2	0.2	0.5	0.0	0.8	0.3	1.0	0.3
Delay (s)	9.4	7.1	52.4	6.2	3.0	37.5	35.6
Level of Service	A	A	D	A	A	D	D
Approach Delay (s)		7.7		5.7		36.2	
Approach LOS		A		A		D	

Intersection Summary			
HCM 2000 Control Delay	9.8	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.48		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	15.7
Intersection Capacity Utilization	56.0%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	7	254	662	29	3	16	656	182	29	48	6	98
Future Volume (vph)	7	254	662	29	3	16	656	182	29	48	6	98
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.1	5.1	5.1		5.1	5.1	5.1	4.6	4.6		4.6
Lane Util. Factor		1.00	0.95	1.00		1.00	0.95	1.00	1.00	1.00		1.00
Frt		1.00	1.00	0.85		1.00	1.00	0.85	1.00	0.98		1.00
Flt Protected		0.95	1.00	1.00		0.95	1.00	1.00	0.95	1.00		0.95
Satd. Flow (prot)		1770	3539	1583		1770	3539	1583	1770	1830		1770
Flt Permitted		0.33	1.00	1.00		0.95	1.00	1.00	0.60	1.00		0.72
Satd. Flow (perm)		617	3539	1583		1770	3539	1583	1112	1830		1338
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	8	276	720	32	3	17	713	198	32	52	7	107
RTOR Reduction (vph)	0	0	0	12	0	0	0	97	0	6	0	0
Lane Group Flow (vph)	0	284	720	20	0	20	713	101	32	53	0	107
Turn Type	pm+pt	pm+pt	NA	Perm	pm+pt	Prot	NA	Perm	Perm	NA		Perm
Protected Phases	5	5	2		1	1	6			8		
Permitted Phases	2	2		2	6			6	8			4
Actuated Green, G (s)		65.5	55.4	55.4		4.0	44.7	44.7	12.8	12.8		12.8
Effective Green, g (s)		66.5	56.4	56.4		5.0	45.7	45.7	13.8	13.8		13.8
Actuated g/C Ratio		0.74	0.63	0.63		0.06	0.51	0.51	0.15	0.15		0.15
Clearance Time (s)		6.1	6.1	6.1		6.1	6.1	6.1	5.6	5.6		5.6
Vehicle Extension (s)		2.0	6.0	6.0		2.0	6.0	6.0	3.0	3.0		3.0
Lane Grp Cap (vph)		657	2217	992		98	1797	803	170	280		205
v/s Ratio Prot		c0.08	0.20			0.01	0.20			0.03		
v/s Ratio Perm		c0.24		0.01				0.06	0.03			c0.08
v/c Ratio		0.43	0.32	0.02		0.20	0.40	0.13	0.19	0.19		0.52
Uniform Delay, d1		8.4	7.9	6.4		40.6	13.7	11.6	33.2	33.2		35.1
Progression Factor		0.91	0.49	1.00		0.92	0.82	0.61	1.00	1.00		1.00
Incremental Delay, d2		0.2	0.4	0.0		0.3	0.5	0.3	0.5	0.3		2.4
Delay (s)		7.8	4.2	6.4		37.7	11.8	7.3	33.8	33.6		37.5
Level of Service		A	A	A		D	B	A	C	C		D
Approach Delay (s)			5.3				11.4			33.6		
Approach LOS			A				B			C		

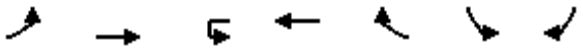
Intersection Summary			
HCM 2000 Control Delay	12.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.47		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	14.8
Intersection Capacity Utilization	62.7%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Movement	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	31	92
Future Volume (vph)	31	92
Ideal Flow (vphpl)	1900	1900
Total Lost time (s)	4.6	
Lane Util. Factor	1.00	
Frt	0.89	
Flt Protected	1.00	
Satd. Flow (prot)	1654	
Flt Permitted	1.00	
Satd. Flow (perm)	1654	
Peak-hour factor, PHF	0.92	0.92
Adj. Flow (vph)	34	100
RTOR Reduction (vph)	85	0
Lane Group Flow (vph)	49	0
Turn Type	NA	
Protected Phases	4	
Permitted Phases		
Actuated Green, G (s)	12.8	
Effective Green, g (s)	13.8	
Actuated g/C Ratio	0.15	
Clearance Time (s)	5.6	
Vehicle Extension (s)	3.0	
Lane Grp Cap (vph)	253	
v/s Ratio Prot	0.03	
v/s Ratio Perm		
v/c Ratio	0.19	
Uniform Delay, d1	33.3	
Progression Factor	1.00	
Incremental Delay, d2	0.4	
Delay (s)	33.6	
Level of Service	C	
Approach Delay (s)	35.3	
Approach LOS	D	

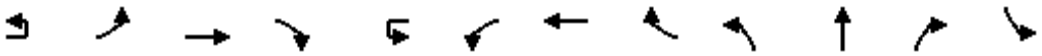
Intersection Summary



Movement	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Configurations							
Traffic Volume (vph)	122	958	1	796	69	241	365
Future Volume (vph)	122	958	1	796	69	241	365
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.3	5.3	5.3	5.3	5.3	5.1	5.1
Lane Util. Factor	1.00	0.95	1.00	0.95	1.00	1.00	1.00
Frt	1.00	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	3539	1770	3539	1583	1770	1583
Flt Permitted	0.25	1.00	0.95	1.00	1.00	0.95	1.00
Satd. Flow (perm)	465	3539	1770	3539	1583	1770	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	133	1041	1	865	75	262	397
RTOR Reduction (vph)	0	0	0	0	40	0	174
Lane Group Flow (vph)	133	1041	1	865	35	262	223
Turn Type	pm+pt	NA	Prot	NA	Perm	Prot	Perm
Protected Phases	5	2	1	6		4	
Permitted Phases	2				6		4
Actuated Green, G (s)	57.9	50.3	1.3	40.5	40.5	19.7	19.7
Effective Green, g (s)	58.9	51.3	2.3	41.5	41.5	20.7	20.7
Actuated g/C Ratio	0.65	0.57	0.03	0.46	0.46	0.23	0.23
Clearance Time (s)	6.3	6.3	6.3	6.3	6.3	6.1	6.1
Vehicle Extension (s)	2.0	5.0	2.0	5.0	5.0	3.0	3.0
Lane Grp Cap (vph)	479	2017	45	1631	729	407	364
v/s Ratio Prot	c0.04	c0.29	0.00	0.24		c0.15	
v/s Ratio Perm	0.14				0.02		0.14
v/c Ratio	0.28	0.52	0.02	0.53	0.05	0.64	0.61
Uniform Delay, d1	12.7	11.8	42.8	17.3	13.4	31.3	31.1
Progression Factor	1.00	1.00	0.97	0.46	0.24	1.00	1.00
Incremental Delay, d2	0.1	0.9	0.1	0.6	0.1	3.5	3.0
Delay (s)	12.8	12.7	41.7	8.6	3.2	34.8	34.1
Level of Service	B	B	D	A	A	C	C
Approach Delay (s)		12.7		8.2		34.4	
Approach LOS		B		A		C	

Intersection Summary			
HCM 2000 Control Delay	16.3	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.55		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	15.7
Intersection Capacity Utilization	57.9%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	19	95	741	56	15	46	621	90	30	45	26	247
Future Volume (vph)	19	95	741	56	15	46	621	90	30	45	26	247
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.1	5.1	5.1		5.1	5.1	5.1	4.6	4.6		4.6
Lane Util. Factor		1.00	0.95	1.00		1.00	0.95	1.00	1.00	1.00		1.00
Frt		1.00	1.00	0.85		1.00	1.00	0.85	1.00	0.95		1.00
Flt Protected		0.95	1.00	1.00		0.95	1.00	1.00	0.95	1.00		0.95
Satd. Flow (prot)		1770	3539	1583		1770	3539	1583	1770	1761		1770
Flt Permitted		0.33	1.00	1.00		0.95	1.00	1.00	0.36	1.00		0.71
Satd. Flow (perm)		614	3539	1583		1770	3539	1583	665	1761		1317
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	21	103	805	61	16	50	675	98	33	49	28	268
RTOR Reduction (vph)	0	0	0	31	0	0	0	55	0	20	0	0
Lane Group Flow (vph)	0	124	805	30	0	66	675	43	33	57	0	268
Turn Type	pm+pt	pm+pt	NA	Perm	pm+pt	Prot	NA	Perm	Perm	NA		Perm
Protected Phases	5	5	2		1	1	6			8		
Permitted Phases	2	2		2	6			6	8			4
Actuated Green, G (s)		52.1	42.7	42.7		5.6	38.9	38.9	23.9	23.9		23.9
Effective Green, g (s)		54.1	43.7	43.7		6.6	39.9	39.9	24.9	24.9		24.9
Actuated g/C Ratio		0.60	0.49	0.49		0.07	0.44	0.44	0.28	0.28		0.28
Clearance Time (s)		6.1	6.1	6.1		6.1	6.1	6.1	5.6	5.6		5.6
Vehicle Extension (s)		2.0	6.0	6.0		2.0	6.0	6.0	3.0	3.0		3.0
Lane Grp Cap (vph)		502	1718	768		129	1568	701	183	487		364
v/s Ratio Prot		c0.03	c0.23			c0.04	0.19			0.03		
v/s Ratio Perm		0.12		0.02				0.03	0.05			c0.20
v/c Ratio		0.25	0.47	0.04		0.51	0.43	0.06	0.18	0.12		0.74
Uniform Delay, d1		12.4	15.4	12.1		40.1	17.2	14.3	24.8	24.3		29.6
Progression Factor		0.98	0.74	0.61		0.90	1.01	1.33	1.00	1.00		1.00
Incremental Delay, d2		0.1	0.8	0.1		1.4	0.8	0.2	0.5	0.1		7.6
Delay (s)		12.2	12.2	7.4		37.5	18.2	19.3	25.3	24.4		37.1
Level of Service		B	B	A		D	B	B	C	C		D
Approach Delay (s)			11.9				19.8			24.7		
Approach LOS			B				B			C		

Intersection Summary			
HCM 2000 Control Delay	19.6	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.56		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	14.8
Intersection Capacity Utilization	61.9%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Movement	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	60	231
Future Volume (vph)	60	231
Ideal Flow (vphpl)	1900	1900
Total Lost time (s)	4.6	
Lane Util. Factor	1.00	
Frt	0.88	
Flt Protected	1.00	
Satd. Flow (prot)	1641	
Flt Permitted	1.00	
Satd. Flow (perm)	1641	
Peak-hour factor, PHF	0.92	0.92
Adj. Flow (vph)	65	251
RTOR Reduction (vph)	174	0
Lane Group Flow (vph)	142	0
Turn Type	NA	
Protected Phases	4	
Permitted Phases		
Actuated Green, G (s)	23.9	
Effective Green, g (s)	24.9	
Actuated g/C Ratio	0.28	
Clearance Time (s)	5.6	
Vehicle Extension (s)	3.0	
Lane Grp Cap (vph)	454	
v/s Ratio Prot	0.09	
v/s Ratio Perm		
v/c Ratio	0.31	
Uniform Delay, d1	25.8	
Progression Factor	1.00	
Incremental Delay, d2	0.4	
Delay (s)	26.2	
Level of Service	C	
Approach Delay (s)	31.2	
Approach LOS	C	

Intersection Summary

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Vol, veh/h	0	0	0	9	0	2	0	225	3	1	695	0
Future Vol, veh/h	0	0	0	9	0	2	0	225	3	1	695	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	110	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	10	0	2	0	245	3	1	755	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1005	1006	755	1004	1004	246	755	0	0	248	0	0
Stage 1	758	758	-	246	246	-	-	-	-	-	-	-
Stage 2	247	248	-	758	758	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	220	241	409	220	242	793	855	-	-	1318	-	-
Stage 1	399	415	-	758	703	-	-	-	-	-	-	-
Stage 2	757	701	-	399	415	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	219	241	409	220	242	793	855	-	-	1318	-	-
Mov Cap-2 Maneuver	219	241	-	220	242	-	-	-	-	-	-	-
Stage 1	399	415	-	758	703	-	-	-	-	-	-	-
Stage 2	755	701	-	399	415	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	19.9	0	0
HCM LOS	A	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	855	-	-	-	253	1318	-	-
HCM Lane V/C Ratio	-	-	-	-	0.047	0.001	-	-
HCM Control Delay (s)	0	-	-	0	19.9	7.7	0	-
HCM Lane LOS	A	-	-	A	C	A	A	-
HCM 95th %tile Q(veh)	0	-	-	-	0.1	0	-	-

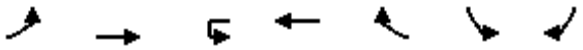
Intersection	
Int Delay, s/veh	2.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Vol, veh/h	17	0	96	0	0	0	32	140	0	0	414	6
Future Vol, veh/h	17	0	96	0	0	0	32	140	0	0	414	6
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	110	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	18	0	104	0	0	0	35	152	0	0	450	7

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	675	675	453	727	679	152	457	0	0	152	0	0
Stage 1	453	453	-	222	222	-	-	-	-	-	-	-
Stage 2	222	222	-	505	457	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	368	376	607	339	374	894	1104	-	-	1429	-	-
Stage 1	586	570	-	780	720	-	-	-	-	-	-	-
Stage 2	780	720	-	549	568	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	359	364	607	274	362	894	1104	-	-	1429	-	-
Mov Cap-2 Maneuver	359	364	-	274	362	-	-	-	-	-	-	-
Stage 1	567	570	-	755	697	-	-	-	-	-	-	-
Stage 2	755	697	-	455	568	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	13.4	0	1.6	0
HCM LOS	B	A		

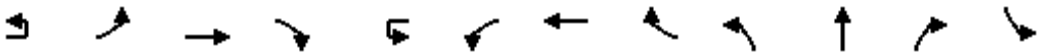
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1104	-	-	550	-	1429	-	-
HCM Lane V/C Ratio	0.032	-	-	0.223	-	-	-	-
HCM Control Delay (s)	8.4	-	-	13.4	0	0	-	-
HCM Lane LOS	A	-	-	B	A	A	-	-
HCM 95th %tile Q(veh)	0.1	-	-	0.8	-	0	-	-



Movement	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Configurations							
Traffic Volume (vph)	355	988	1	765	162	77	176
Future Volume (vph)	355	988	1	765	162	77	176
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.3	5.3	5.3	5.3	5.3	5.1	5.1
Lane Util. Factor	1.00	0.95	1.00	0.95	1.00	1.00	1.00
Frt	1.00	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	3539	1770	3539	1583	1770	1583
Flt Permitted	0.27	1.00	0.95	1.00	1.00	0.95	1.00
Satd. Flow (perm)	502	3539	1770	3539	1583	1770	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	386	1074	1	832	176	84	191
RTOR Reduction (vph)	0	0	0	0	92	0	167
Lane Group Flow (vph)	386	1074	1	832	84	84	24
Turn Type	pm+pt	NA	Prot	NA	Perm	Prot	Perm
Protected Phases	5	2	1	6		4	
Permitted Phases	2				6		4
Actuated Green, G (s)	67.5	59.9	1.3	42.0	42.0	10.1	10.1
Effective Green, g (s)	68.5	60.9	2.3	43.0	43.0	11.1	11.1
Actuated g/C Ratio	0.76	0.68	0.03	0.48	0.48	0.12	0.12
Clearance Time (s)	6.3	6.3	6.3	6.3	6.3	6.1	6.1
Vehicle Extension (s)	2.0	5.0	2.0	5.0	5.0	3.0	3.0
Lane Grp Cap (vph)	666	2394	45	1690	756	218	195
v/s Ratio Prot	c0.13	0.30	0.00	0.24		c0.05	
v/s Ratio Perm	c0.31				0.05		0.01
v/c Ratio	0.58	0.45	0.02	0.49	0.11	0.39	0.12
Uniform Delay, d1	12.4	6.8	42.8	16.0	13.0	36.3	35.1
Progression Factor	1.00	1.00	1.27	0.33	0.14	1.00	1.00
Incremental Delay, d2	0.8	0.6	0.1	1.0	0.3	1.1	0.3
Delay (s)	13.2	7.4	54.3	6.3	2.2	37.4	35.4
Level of Service	B	A	D	A	A	D	D
Approach Delay (s)		8.9		5.6		36.0	
Approach LOS		A		A		D	

Intersection Summary			
HCM 2000 Control Delay	10.4	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	15.7
Intersection Capacity Utilization	60.6%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	8	278	723	32	3	17	717	199	32	52	7	107
Future Volume (vph)	8	278	723	32	3	17	717	199	32	52	7	107
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.1	5.1	5.1		5.1	5.1	5.1	4.6	4.6		4.6
Lane Util. Factor		1.00	0.95	1.00		1.00	0.95	1.00	1.00	1.00		1.00
Frt		1.00	1.00	0.85		1.00	1.00	0.85	1.00	0.98		1.00
Flt Protected		0.95	1.00	1.00		0.95	1.00	1.00	0.95	1.00		0.95
Satd. Flow (prot)		1770	3539	1583		1770	3539	1583	1770	1828		1770
Flt Permitted		0.30	1.00	1.00		0.95	1.00	1.00	0.57	1.00		0.71
Satd. Flow (perm)		552	3539	1583		1770	3539	1583	1054	1828		1331
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	9	302	786	35	3	18	779	216	35	57	8	116
RTOR Reduction (vph)	0	0	0	13	0	0	0	110	0	7	0	0
Lane Group Flow (vph)	0	311	786	22	0	21	779	106	35	58	0	116
Turn Type	pm+pt	pm+pt	NA	Perm	pm+pt	Prot	NA	Perm	Perm	NA		Perm
Protected Phases	5	5	2		1	1	6			8		
Permitted Phases	2	2		2	6			6	8			4
Actuated Green, G (s)		64.9	55.4	55.4		3.4	43.3	43.3	13.4	13.4		13.4
Effective Green, g (s)		65.9	56.4	56.4		4.4	44.3	44.3	14.4	14.4		14.4
Actuated g/C Ratio		0.73	0.63	0.63		0.05	0.49	0.49	0.16	0.16		0.16
Clearance Time (s)		6.1	6.1	6.1		6.1	6.1	6.1	5.6	5.6		5.6
Vehicle Extension (s)		2.0	6.0	6.0		2.0	6.0	6.0	3.0	3.0		3.0
Lane Grp Cap (vph)		627	2217	992		86	1741	779	168	292		212
v/s Ratio Prot		c0.09	0.22			0.01	0.22			0.03		
v/s Ratio Perm		c0.27		0.01				0.07	0.03			c0.09
v/c Ratio		0.50	0.35	0.02		0.24	0.45	0.14	0.21	0.20		0.55
Uniform Delay, d1		11.0	8.1	6.4		41.2	14.9	12.4	32.8	32.8		34.8
Progression Factor		0.88	0.50	1.00		0.94	0.85	0.64	1.00	1.00		1.00
Incremental Delay, d2		0.2	0.4	0.0		0.5	0.7	0.3	0.6	0.3		2.9
Delay (s)		9.9	4.4	6.4		39.0	13.4	8.3	33.5	33.1		37.7
Level of Service		A	A	A		D	B	A	C	C		D
Approach Delay (s)			6.0				12.8			33.3		
Approach LOS			A				B			C		

Intersection Summary			
HCM 2000 Control Delay	12.9	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.53		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	14.8
Intersection Capacity Utilization	66.5%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Movement	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	34	101
Future Volume (vph)	34	101
Ideal Flow (vphpl)	1900	1900
Total Lost time (s)	4.6	
Lane Util. Factor	1.00	
Frt	0.89	
Flt Protected	1.00	
Satd. Flow (prot)	1654	
Flt Permitted	1.00	
Satd. Flow (perm)	1654	
Peak-hour factor, PHF	0.92	0.92
Adj. Flow (vph)	37	110
RTOR Reduction (vph)	92	0
Lane Group Flow (vph)	55	0
Turn Type	NA	
Protected Phases	4	
Permitted Phases		
Actuated Green, G (s)	13.4	
Effective Green, g (s)	14.4	
Actuated g/C Ratio	0.16	
Clearance Time (s)	5.6	
Vehicle Extension (s)	3.0	
Lane Grp Cap (vph)	264	
v/s Ratio Prot	0.03	
v/s Ratio Perm		
v/c Ratio	0.21	
Uniform Delay, d1	32.8	
Progression Factor	1.00	
Incremental Delay, d2	0.4	
Delay (s)	33.2	
Level of Service	C	
Approach Delay (s)	35.2	
Approach LOS	D	

Intersection Summary

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Vol, veh/h	0	0	0	6	0	1	0	583	10	2	284	0
Future Vol, veh/h	0	0	0	6	0	1	0	583	10	2	284	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	150	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	0	0	0	7	0	1	0	634	11	2	309	0

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	953	958	309	952	952	639	309	0	0	645	0	0
Stage 1	313	313	-	639	639	-	-	-	-	-	-	-
Stage 2	640	645	-	313	313	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	239	257	731	239	259	476	1252	-	-	940	-	-
Stage 1	698	657	-	464	470	-	-	-	-	-	-	-
Stage 2	464	467	-	698	657	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	238	256	731	238	258	476	1252	-	-	940	-	-
Mov Cap-2 Maneuver	238	256	-	238	258	-	-	-	-	-	-	-
Stage 1	698	655	-	464	470	-	-	-	-	-	-	-
Stage 2	463	467	-	696	655	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0	19.5	0	0.1
HCM LOS	A	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1252	-	-	-	256	940	-	-
HCM Lane V/C Ratio	-	-	-	-	0.03	0.002	-	-
HCM Control Delay (s)	0	-	-	0	19.5	8.8	0	-
HCM Lane LOS	A	-	-	A	C	A	A	-
HCM 95th %tile Q(veh)	0	-	-	-	0.1	0	-	-

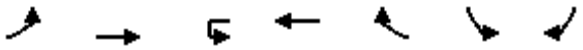
Intersection	
Int Delay, s/veh	2.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Vol, veh/h	11	0	63	0	0	0	108	432	0	0	225	19
Future Vol, veh/h	11	0	63	0	0	0	108	432	0	0	225	19
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	110	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	12	0	68	0	0	0	117	470	0	0	245	21

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	959	959	255	993	969	470	265	0	0	470	0	0
Stage 1	255	255	-	704	704	-	-	-	-	-	-	-
Stage 2	704	704	-	289	265	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	237	257	784	224	254	594	1299	-	-	1092	-	-
Stage 1	749	696	-	428	440	-	-	-	-	-	-	-
Stage 2	428	440	-	719	689	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	221	234	784	190	231	594	1299	-	-	1092	-	-
Mov Cap-2 Maneuver	221	234	-	190	231	-	-	-	-	-	-	-
Stage 1	682	696	-	389	400	-	-	-	-	-	-	-
Stage 2	389	400	-	656	689	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	12.4	0	1.6	0
HCM LOS	B	A		

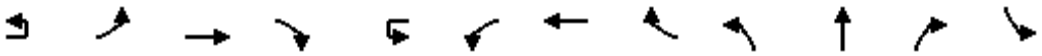
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1299	-	-	569	-	1092	-	-
HCM Lane V/C Ratio	0.09	-	-	0.141	-	-	-	-
HCM Control Delay (s)	8	-	-	12.4	0	0	-	-
HCM Lane LOS	A	-	-	B	A	A	-	-
HCM 95th %tile Q(veh)	0.3	-	-	0.5	-	0	-	-



Movement	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Configurations							
Traffic Volume (vph)	129	965	1	819	73	253	388
Future Volume (vph)	129	965	1	819	73	253	388
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.3	5.3	5.3	5.3	5.3	5.1	5.1
Lane Util. Factor	1.00	0.95	1.00	0.95	1.00	1.00	1.00
Frt	1.00	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	3539	1770	3539	1583	1770	1583
Flt Permitted	0.23	1.00	0.95	1.00	1.00	0.95	1.00
Satd. Flow (perm)	435	3539	1770	3539	1583	1770	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	140	1049	1	890	79	275	422
RTOR Reduction (vph)	0	0	0	0	43	0	168
Lane Group Flow (vph)	140	1049	1	890	36	275	254
Turn Type	pm+pt	NA	Prot	NA	Perm	Prot	Perm
Protected Phases	5	2	1	6		4	
Permitted Phases	2				6		4
Actuated Green, G (s)	56.9	49.3	1.3	39.1	39.1	20.7	20.7
Effective Green, g (s)	57.9	50.3	2.3	40.1	40.1	21.7	21.7
Actuated g/C Ratio	0.64	0.56	0.03	0.45	0.45	0.24	0.24
Clearance Time (s)	6.3	6.3	6.3	6.3	6.3	6.1	6.1
Vehicle Extension (s)	2.0	5.0	2.0	5.0	5.0	3.0	3.0
Lane Grp Cap (vph)	465	1977	45	1576	705	426	381
v/s Ratio Prot	c0.04	c0.30	0.00	0.25		0.16	
v/s Ratio Perm	0.15				0.02		c0.16
v/c Ratio	0.30	0.53	0.02	0.56	0.05	0.65	0.67
Uniform Delay, d1	14.3	12.4	42.8	18.5	14.2	30.7	30.9
Progression Factor	1.00	1.00	0.93	0.46	0.24	1.00	1.00
Incremental Delay, d2	0.1	1.0	0.1	0.7	0.1	3.3	4.3
Delay (s)	14.4	13.5	39.7	9.2	3.4	34.0	35.2
Level of Service	B	B	D	A	A	C	D
Approach Delay (s)		13.6		8.8		34.8	
Approach LOS		B		A		C	

Intersection Summary			
HCM 2000 Control Delay	17.1	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	15.7
Intersection Capacity Utilization	58.8%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	19	102	753	56	15	46	625	94	30	46	26	256
Future Volume (vph)	19	102	753	56	15	46	625	94	30	46	26	256
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.1	5.1	5.1		5.1	5.1	5.1	4.6	4.6		4.6
Lane Util. Factor		1.00	0.95	1.00		1.00	0.95	1.00	1.00	1.00		1.00
Frt		1.00	1.00	0.85		1.00	1.00	0.85	1.00	0.95		1.00
Flt Protected		0.95	1.00	1.00		0.95	1.00	1.00	0.95	1.00		0.95
Satd. Flow (prot)		1770	3539	1583		1770	3539	1583	1770	1762		1770
Flt Permitted		0.33	1.00	1.00		0.95	1.00	1.00	0.32	1.00		0.71
Satd. Flow (perm)		605	3539	1583		1770	3539	1583	604	1762		1316
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	21	111	818	61	16	50	679	102	33	50	28	278
RTOR Reduction (vph)	0	0	0	32	0	0	0	58	0	20	0	0
Lane Group Flow (vph)	0	132	818	29	0	66	679	44	33	58	0	278
Turn Type	pm+pt	pm+pt	NA	Perm	pm+pt	Prot	NA	Perm	Perm	NA		Perm
Protected Phases	5	5	2		1	1	6			8		
Permitted Phases	2	2		2	6			6	8			4
Actuated Green, G (s)		51.4	42.0	42.0		5.6	38.2	38.2	24.6	24.6		24.6
Effective Green, g (s)		53.4	43.0	43.0		6.6	39.2	39.2	25.6	25.6		25.6
Actuated g/C Ratio		0.59	0.48	0.48		0.07	0.44	0.44	0.28	0.28		0.28
Clearance Time (s)		6.1	6.1	6.1		6.1	6.1	6.1	5.6	5.6		5.6
Vehicle Extension (s)		2.0	6.0	6.0		2.0	6.0	6.0	3.0	3.0		3.0
Lane Grp Cap (vph)		493	1690	756		129	1541	689	171	501		374
v/s Ratio Prot		c0.03	c0.23			c0.04	0.19			0.03		
v/s Ratio Perm		0.13		0.02				0.03	0.05			c0.21
v/c Ratio		0.27	0.48	0.04		0.51	0.44	0.06	0.19	0.12		0.74
Uniform Delay, d1		13.2	16.0	12.5		40.1	17.7	14.8	24.4	23.8		29.2
Progression Factor		0.95	0.71	0.33		0.90	1.00	1.27	1.00	1.00		1.00
Incremental Delay, d2		0.1	0.9	0.1		1.4	0.9	0.2	0.6	0.1		7.8
Delay (s)		12.6	12.2	4.2		37.5	18.6	19.0	24.9	23.9		37.0
Level of Service		B	B	A		D	B	B	C	C		D
Approach Delay (s)			11.8				20.1			24.2		
Approach LOS			B				C			C		

Intersection Summary			
HCM 2000 Control Delay	19.7	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.57		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	14.8
Intersection Capacity Utilization	62.2%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Movement	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	63	254
Future Volume (vph)	63	254
Ideal Flow (vphpl)	1900	1900
Total Lost time (s)	4.6	
Lane Util. Factor	1.00	
Frt	0.88	
Flt Protected	1.00	
Satd. Flow (prot)	1639	
Flt Permitted	1.00	
Satd. Flow (perm)	1639	
Peak-hour factor, PHF	0.92	0.92
Adj. Flow (vph)	68	276
RTOR Reduction (vph)	172	0
Lane Group Flow (vph)	172	0
Turn Type	NA	
Protected Phases	4	
Permitted Phases		
Actuated Green, G (s)	24.6	
Effective Green, g (s)	25.6	
Actuated g/C Ratio	0.28	
Clearance Time (s)	5.6	
Vehicle Extension (s)	3.0	
Lane Grp Cap (vph)	466	
v/s Ratio Prot	0.11	
v/s Ratio Perm		
v/c Ratio	0.37	
Uniform Delay, d1	25.7	
Progression Factor	1.00	
Incremental Delay, d2	0.5	
Delay (s)	26.2	
Level of Service	C	
Approach Delay (s)	31.1	
Approach LOS	C	

Intersection Summary

Intersection	
Int Delay, s/veh	1.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Vol, veh/h	6	0	35	9	0	2	12	225	3	1	695	2
Future Vol, veh/h	6	0	35	9	0	2	12	225	3	1	695	2
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	110	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	7	0	38	10	0	2	13	245	3	1	755	2

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1032	1033	757	1050	1032	246	758	0	0	248	0	0
Stage 1	759	759	-	272	272	-	-	-	-	-	-	-
Stage 2	273	274	-	778	760	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	211	232	408	205	233	793	853	-	-	1318	-	-
Stage 1	399	415	-	734	685	-	-	-	-	-	-	-
Stage 2	733	683	-	389	414	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	208	228	408	184	229	793	853	-	-	1318	-	-
Mov Cap-2 Maneuver	208	228	-	184	229	-	-	-	-	-	-	-
Stage 1	393	415	-	723	675	-	-	-	-	-	-	-
Stage 2	720	673	-	352	414	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	16.5	22.8	0.5	0
HCM LOS	C	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	853	-	-	358	214	1318	-	-
HCM Lane V/C Ratio	0.015	-	-	0.124	0.056	0.001	-	-
HCM Control Delay (s)	9.3	-	-	16.5	22.8	7.7	0	-
HCM Lane LOS	A	-	-	C	C	A	A	-
HCM 95th %tile Q(veh)	0	-	-	0.4	0.2	0	-	-

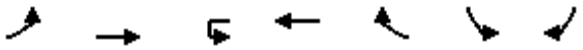
Intersection	
Int Delay, s/veh	3.4

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Vol, veh/h	17	0	96	35	0	6	32	140	11	2	414	6
Future Vol, veh/h	17	0	96	35	0	6	32	140	11	2	414	6
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	110	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	18	0	104	38	0	7	35	152	12	2	450	7

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	689	692	453	738	689	158	457	0	0	164	0	0
Stage 1	458	458	-	228	228	-	-	-	-	-	-	-
Stage 2	231	234	-	510	461	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	360	367	607	334	369	887	1104	-	-	1414	-	-
Stage 1	583	567	-	775	715	-	-	-	-	-	-	-
Stage 2	772	711	-	546	565	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	348	355	607	269	357	887	1104	-	-	1414	-	-
Mov Cap-2 Maneuver	348	355	-	269	357	-	-	-	-	-	-	-
Stage 1	565	566	-	750	692	-	-	-	-	-	-	-
Stage 2	742	688	-	451	564	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	13.5	19.1	1.5	0
HCM LOS	B	C		

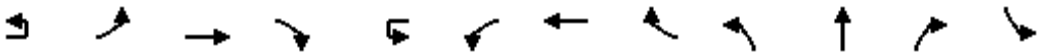
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1104	-	-	546	300	1414	-	-
HCM Lane V/C Ratio	0.032	-	-	0.225	0.149	0.002	-	-
HCM Control Delay (s)	8.4	-	-	13.5	19.1	7.5	0	-
HCM Lane LOS	A	-	-	B	C	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.9	0.5	0	-	-



Movement	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Configurations							
Traffic Volume (vph)	380	1013	1	780	175	85	191
Future Volume (vph)	380	1013	1	780	175	85	191
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)	5.3	5.3	5.3	5.3	5.3	5.1	5.1
Lane Util. Factor	1.00	0.95	1.00	0.95	1.00	1.00	1.00
Frt	1.00	1.00	1.00	1.00	0.85	1.00	0.85
Flt Protected	0.95	1.00	0.95	1.00	1.00	0.95	1.00
Satd. Flow (prot)	1770	3539	1770	3539	1583	1770	1583
Flt Permitted	0.26	1.00	0.95	1.00	1.00	0.95	1.00
Satd. Flow (perm)	487	3539	1770	3539	1583	1770	1583
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	413	1101	1	848	190	92	208
RTOR Reduction (vph)	0	0	0	0	100	0	182
Lane Group Flow (vph)	413	1101	1	848	90	92	26
Turn Type	pm+pt	NA	Prot	NA	Perm	Prot	Perm
Protected Phases	5	2	1	6		4	
Permitted Phases	2				6		4
Actuated Green, G (s)	67.2	59.6	1.3	41.6	41.6	10.4	10.4
Effective Green, g (s)	68.2	60.6	2.3	42.6	42.6	11.4	11.4
Actuated g/C Ratio	0.76	0.67	0.03	0.47	0.47	0.13	0.13
Clearance Time (s)	6.3	6.3	6.3	6.3	6.3	6.1	6.1
Vehicle Extension (s)	2.0	5.0	2.0	5.0	5.0	3.0	3.0
Lane Grp Cap (vph)	658	2382	45	1675	749	224	200
v/s Ratio Prot	c0.14	0.31	0.00	0.24		c0.05	
v/s Ratio Perm	c0.33				0.06		0.02
v/c Ratio	0.63	0.46	0.02	0.51	0.12	0.41	0.13
Uniform Delay, d1	12.9	7.0	42.8	16.4	13.2	36.2	34.9
Progression Factor	1.00	1.00	1.20	0.35	0.13	1.00	1.00
Incremental Delay, d2	1.4	0.6	0.1	1.0	0.3	1.2	0.3
Delay (s)	14.3	7.6	51.5	6.8	2.1	37.4	35.2
Level of Service	B	A	D	A	A	D	D
Approach Delay (s)		9.4		5.9		35.9	
Approach LOS		A		A		D	

Intersection Summary			
HCM 2000 Control Delay	11.0	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.62		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	15.7
Intersection Capacity Utilization	62.4%	ICU Level of Service	B
Analysis Period (min)	15		

c Critical Lane Group



Movement	EBU	EBL	EBT	EBR	WBU	WBL	WBT	WBR	NBL	NBT	NBR	SBL
Lane Configurations												
Traffic Volume (vph)	8	303	731	32	3	17	730	209	32	56	7	113
Future Volume (vph)	8	303	731	32	3	17	730	209	32	56	7	113
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		5.1	5.1	5.1		5.1	5.1	5.1	4.6	4.6		4.6
Lane Util. Factor		1.00	0.95	1.00		1.00	0.95	1.00	1.00	1.00		1.00
Frt		1.00	1.00	0.85		1.00	1.00	0.85	1.00	0.98		1.00
Flt Protected		0.95	1.00	1.00		0.95	1.00	1.00	0.95	1.00		0.95
Satd. Flow (prot)		1770	3539	1583		1770	3539	1583	1770	1830		1770
Flt Permitted		0.29	1.00	1.00		0.95	1.00	1.00	0.52	1.00		0.71
Satd. Flow (perm)		538	3539	1583		1770	3539	1583	973	1830		1326
Peak-hour factor, PHF	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92	0.92
Adj. Flow (vph)	9	329	795	35	3	18	793	227	35	61	8	123
RTOR Reduction (vph)	0	0	0	13	0	0	0	116	0	7	0	0
Lane Group Flow (vph)	0	338	795	22	0	21	793	111	35	62	0	123
Turn Type	pm+pt	pm+pt	NA	Perm	pm+pt	Prot	NA	Perm	Perm	NA		Perm
Protected Phases	5	5	2		1	1	6			8		
Permitted Phases	2	2		2	6			6	8			4
Actuated Green, G (s)		64.4	55.0	55.0		3.3	43.0	43.0	13.9	13.9		13.9
Effective Green, g (s)		65.4	56.0	56.0		4.3	44.0	44.0	14.9	14.9		14.9
Actuated g/C Ratio		0.73	0.62	0.62		0.05	0.49	0.49	0.17	0.17		0.17
Clearance Time (s)		6.1	6.1	6.1		6.1	6.1	6.1	5.6	5.6		5.6
Vehicle Extension (s)		2.0	6.0	6.0		2.0	6.0	6.0	3.0	3.0		3.0
Lane Grp Cap (vph)		614	2202	984		84	1730	773	161	302		219
v/s Ratio Prot		c0.10	0.22			0.01	0.22			0.03		
v/s Ratio Perm		c0.30		0.01				0.07	0.04			c0.09
v/c Ratio		0.55	0.36	0.02		0.25	0.46	0.14	0.22	0.21		0.56
Uniform Delay, d1		12.8	8.3	6.5		41.3	15.2	12.6	32.5	32.4		34.5
Progression Factor		0.89	0.50	1.00		0.94	0.86	0.64	1.00	1.00		1.00
Incremental Delay, d2		0.6	0.4	0.0		0.5	0.8	0.3	0.7	0.3		3.3
Delay (s)		11.9	4.6	6.6		39.3	13.7	8.4	33.2	32.8		37.8
Level of Service		B	A	A		D	B	A	C	C		D
Approach Delay (s)			6.7				13.1			32.9		
Approach LOS			A				B			C		

Intersection Summary			
HCM 2000 Control Delay	13.5	HCM 2000 Level of Service	B
HCM 2000 Volume to Capacity ratio	0.58		
Actuated Cycle Length (s)	90.0	Sum of lost time (s)	14.8
Intersection Capacity Utilization	69.3%	ICU Level of Service	C
Analysis Period (min)	15		

c Critical Lane Group



Movement	SBT	SBR
Lane Configurations		
Traffic Volume (vph)	36	116
Future Volume (vph)	36	116
Ideal Flow (vphpl)	1900	1900
Total Lost time (s)	4.6	
Lane Util. Factor	1.00	
Frt	0.89	
Flt Protected	1.00	
Satd. Flow (prot)	1649	
Flt Permitted	1.00	
Satd. Flow (perm)	1649	
Peak-hour factor, PHF	0.92	0.92
Adj. Flow (vph)	39	126
RTOR Reduction (vph)	105	0
Lane Group Flow (vph)	60	0
Turn Type	NA	
Protected Phases	4	
Permitted Phases		
Actuated Green, G (s)	13.9	
Effective Green, g (s)	14.9	
Actuated g/C Ratio	0.17	
Clearance Time (s)	5.6	
Vehicle Extension (s)	3.0	
Lane Grp Cap (vph)	273	
v/s Ratio Prot	0.04	
v/s Ratio Perm		
v/c Ratio	0.22	
Uniform Delay, d1	32.5	
Progression Factor	1.00	
Incremental Delay, d2	0.4	
Delay (s)	32.9	
Level of Service	C	
Approach Delay (s)	35.0	
Approach LOS	D	

Intersection Summary

Intersection	
Int Delay, s/veh	0.9

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Vol, veh/h	4	0	23	6	0	1	39	583	10	2	284	7
Future Vol, veh/h	4	0	23	6	0	1	39	583	10	2	284	7
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	150	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	4	0	25	7	0	1	42	634	11	2	309	8

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	1041	1046	312	1053	1045	639	316	0	0	645	0	0
Stage 1	317	317	-	724	724	-	-	-	-	-	-	-
Stage 2	724	729	-	329	321	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	208	228	728	204	229	476	1244	-	-	940	-	-
Stage 1	694	654	-	417	430	-	-	-	-	-	-	-
Stage 2	417	428	-	684	652	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	202	220	728	191	221	476	1244	-	-	940	-	-
Mov Cap-2 Maneuver	202	220	-	191	221	-	-	-	-	-	-	-
Stage 1	671	652	-	403	415	-	-	-	-	-	-	-
Stage 2	402	414	-	659	650	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	12.3	22.9	0.5	0.1
HCM LOS	B	C		

Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1244	-	-	525	209	940	-	-
HCM Lane V/C Ratio	0.034	-	-	0.056	0.036	0.002	-	-
HCM Control Delay (s)	8	-	-	12.3	22.9	8.8	0	-
HCM Lane LOS	A	-	-	B	C	A	A	-
HCM 95th %tile Q(veh)	0.1	-	-	0.2	0.1	0	-	-

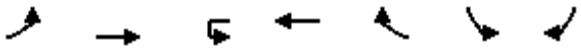
Intersection	
Int Delay, s/veh	2.7

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Traffic Vol, veh/h	11	0	63	23	0	4	108	432	38	7	225	19
Future Vol, veh/h	11	0	63	23	0	4	108	432	38	7	225	19
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Stop	Stop	Stop	Stop	Stop	Stop	Free	Free	Free	Free	Free	Free
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	110	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	2	2	2	2	2	2	2	2	2	2	2	2
Mvmt Flow	12	0	68	25	0	4	117	470	41	8	245	21

Major/Minor	Minor2			Minor1			Major1			Major2		
Conflicting Flow All	997	1016	255	1029	1005	490	265	0	0	511	0	0
Stage 1	270	270	-	725	725	-	-	-	-	-	-	-
Stage 2	727	746	-	304	280	-	-	-	-	-	-	-
Critical Hdwy	7.12	6.52	6.22	7.12	6.52	6.22	4.12	-	-	4.12	-	-
Critical Hdwy Stg 1	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Critical Hdwy Stg 2	6.12	5.52	-	6.12	5.52	-	-	-	-	-	-	-
Follow-up Hdwy	3.518	4.018	3.318	3.518	4.018	3.318	2.218	-	-	2.218	-	-
Pot Cap-1 Maneuver	223	238	784	212	241	578	1299	-	-	1054	-	-
Stage 1	736	686	-	416	430	-	-	-	-	-	-	-
Stage 2	415	421	-	705	679	-	-	-	-	-	-	-
Platoon blocked, %								-	-		-	-
Mov Cap-1 Maneuver	205	215	784	179	217	578	1299	-	-	1054	-	-
Mov Cap-2 Maneuver	205	215	-	179	217	-	-	-	-	-	-	-
Stage 1	670	680	-	379	391	-	-	-	-	-	-	-
Stage 2	375	383	-	638	673	-	-	-	-	-	-	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	12.6	26.2	1.5	0.2
HCM LOS	B	D		

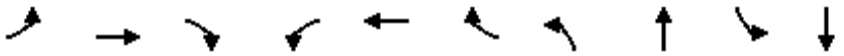
Minor Lane/Major Mvmt	NBL	NBT	NBR	EBLn1	WBLn1	SBL	SBT	SBR
Capacity (veh/h)	1299	-	-	552	199	1054	-	-
HCM Lane V/C Ratio	0.09	-	-	0.146	0.147	0.007	-	-
HCM Control Delay (s)	8	-	-	12.6	26.2	8.4	0	-
HCM Lane LOS	A	-	-	B	D	A	A	-
HCM 95th %tile Q(veh)	0.3	-	-	0.5	0.5	0	-	-



Lane Group	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Group Flow (vph)	140	1049	1	890	79	275	422
v/c Ratio	0.36	0.48	0.01	0.50	0.10	0.64	0.77
Control Delay	15.6	12.9	35.0	8.6	1.3	36.8	23.6
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	15.6	12.9	35.0	8.6	1.3	36.8	23.6
Queue Length 50th (ft)	27	140	1	72	0	142	107
Queue Length 95th (ft)	68	344	m2	105	5	190	186
Internal Link Dist (ft)		1195		2590		2204	
Turn Bay Length (ft)	360		150		150		125
Base Capacity (vph)	393	2173	151	1773	831	627	704
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.36	0.48	0.01	0.50	0.10	0.44	0.60

Intersection Summary

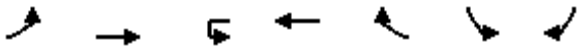
m Volume for 95th percentile queue is metered by upstream signal.



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	132	818	61	66	679	102	33	78	278	344
v/c Ratio	0.28	0.47	0.07	0.44	0.43	0.13	0.19	0.15	0.75	0.54
Control Delay	12.8	13.4	0.5	44.4	19.4	5.5	24.2	15.0	40.8	10.7
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	12.8	13.4	0.5	44.4	19.4	5.5	24.2	15.0	40.8	10.7
Queue Length 50th (ft)	33	194	2	37	132	0	14	21	143	45
Queue Length 95th (ft)	33	144	m1	75	213	33	33	46	200	103
Internal Link Dist (ft)		2590			457			420		1726
Turn Bay Length (ft)	450		650	175		175	125		125	
Base Capacity (vph)	476	1738	831	159	1590	769	244	729	531	805
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.28	0.47	0.07	0.42	0.43	0.13	0.14	0.11	0.52	0.43

Intersection Summary

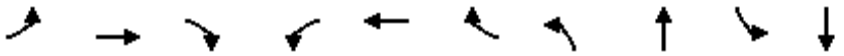
m Volume for 95th percentile queue is metered by upstream signal.



Lane Group	EBL	EBT	WBU	WBT	WBR	SBL	SBR
Lane Group Flow (vph)	413	1101	1	848	190	92	208
v/c Ratio	0.71	0.43	0.01	0.45	0.20	0.41	0.54
Control Delay	22.7	6.5	46.0	5.3	0.7	41.2	10.9
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	22.7	6.5	46.0	5.3	0.7	41.2	10.9
Queue Length 50th (ft)	58	90	0	38	0	49	0
Queue Length 95th (ft)	#188	244	m2	61	2	92	59
Internal Link Dist (ft)		1195		2590		2204	
Turn Bay Length (ft)	360		150		150		125
Base Capacity (vph)	585	2578	151	1872	927	627	695
Starvation Cap Reductn	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0
Reduced v/c Ratio	0.71	0.43	0.01	0.45	0.20	0.15	0.30

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.



Lane Group	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	SBL	SBT
Lane Group Flow (vph)	338	795	35	21	793	227	35	69	123	165
v/c Ratio	0.62	0.34	0.03	0.14	0.42	0.24	0.22	0.22	0.56	0.44
Control Delay	17.4	4.7	0.1	37.4	11.7	1.6	33.8	29.2	43.6	13.3
Queue Delay	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Total Delay	17.4	4.7	0.1	37.4	11.7	1.6	33.8	29.2	43.6	13.3
Queue Length 50th (ft)	36	32	0	12	96	3	18	30	65	19
Queue Length 95th (ft)	#181	39	m1	m21	137	14	42	62	112	69
Internal Link Dist (ft)		2590			457			420		1726
Turn Bay Length (ft)	450		650	175		175	125		125	
Base Capacity (vph)	548	2345	1084	166	1877	946	393	745	536	741
Starvation Cap Reductn	0	0	0	0	0	0	0	0	0	0
Spillback Cap Reductn	0	0	0	0	0	0	0	0	0	0
Storage Cap Reductn	0	0	0	0	0	0	0	0	0	0
Reduced v/c Ratio	0.62	0.34	0.03	0.13	0.42	0.24	0.09	0.09	0.23	0.22

Intersection Summary

95th percentile volume exceeds capacity, queue may be longer.
Queue shown is maximum after two cycles.
m Volume for 95th percentile queue is metered by upstream signal.

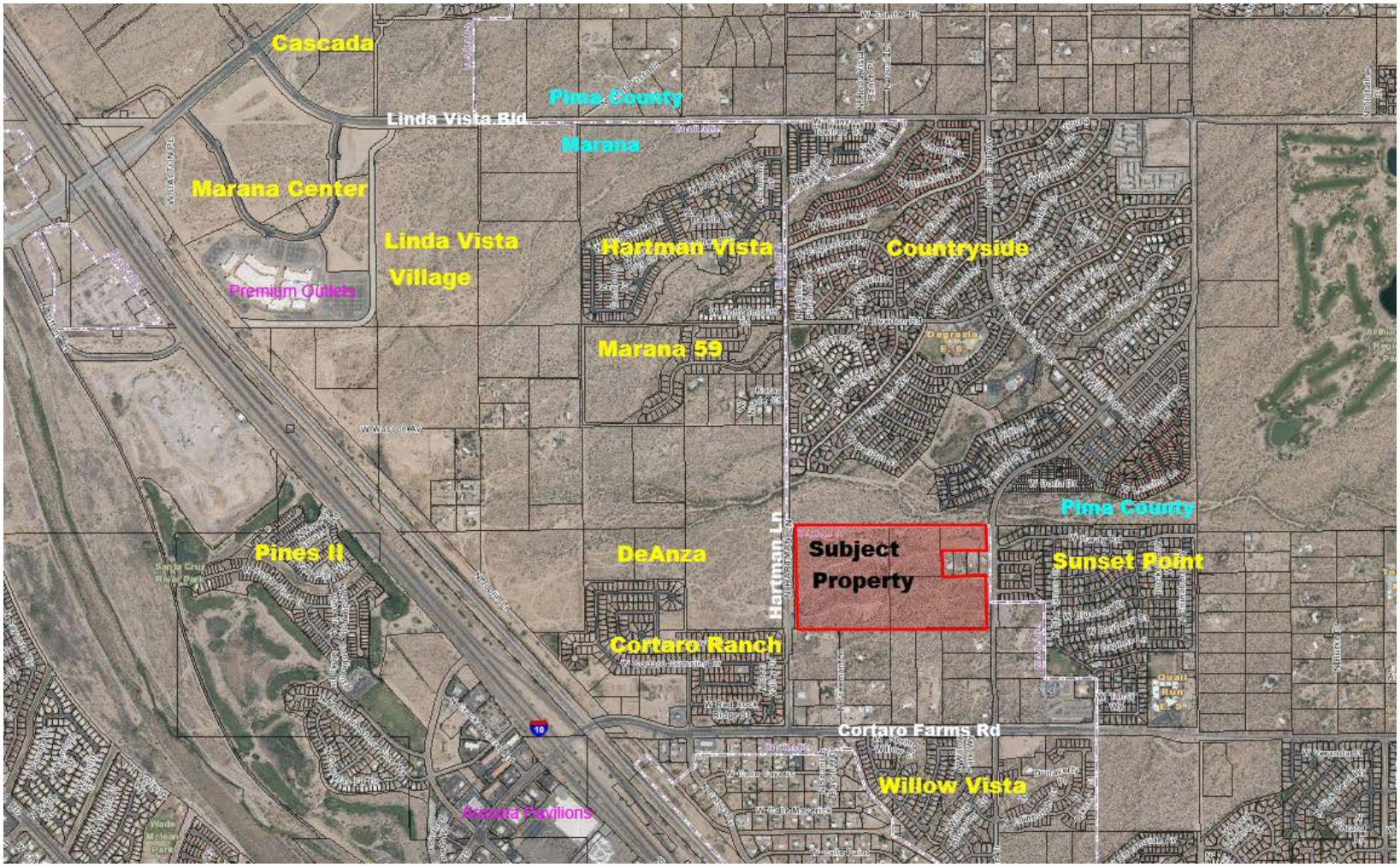
Pima County
Turn Lane Warrant Calculator for Traffic Memorandum Only
Per SDSS 3.1.3.1 & 3.1.3.2

Last Revision 10/31/2013

Instructions: Fill in the information requested in the white boxes. For Land Use in rows 9, 20 and 31 there is a dropdown list to select from. **Important:** if there is no land use 2 or 3, leave "Select From Drop Down" in the box. For the number of "units" in the project (spreadsheet rows 11, 22, and 33), enter the total square feet of the land use, e.g. if Land Use 1 is a 24-hour Convenience Store with 4,500 square feet, enter 4,500. If Land Use 2 is an apartment complex with 120 dwelling units (DU), enter 120. A completed sample form can be found on the sample form tab of this excel file

	Street 1		Street 2		Street 3		Street 4	
Name of Street Adjacent to Development	Hartman Lane		Camino De Oeste					
Posted Speed Limit of Street (mph)	35	MPH	35	MPH		MPH		MPH
ADT of Street:2-way	6980	VPD	10170	VPD		VPD		VPD
Project Land Use 1								
Land Use Per SDSS Table 3.2	Single Family							
Land Use Code	210							
Total Development Units in Project	145	DU						
Land Use Unit	1	DU						
Peak Hr Trips/Land Use Unit	1.02							
Total Peak Hour Trips (Row 11/Row 12 * Row 13)	148							
% Entering Per Trip Generation Manual 9th edition	63%							
Total Peak Hour Entering Trips	93							
Enter % of Land Use using this street	50%		50%					
Peak Hour Entering Trips this street	47		47		0		0	
Project Land Use 2								
Land Use Per SDSS Table 3.2	Select From Drop Down							
Land Use Code								
Total Development Units in Project		0						
Land Use Unit	0	0						
Peak Hr Trips/Land Use Unit	0							
Total Peak Hour Trips (Row 22/Row 23 * Row 24)	0							
% Entering Per Trip Generation Manual 9th edition	0%							
Total Peak Hour Entering Trips	0							
Enter % of Land Use using this street								
Peak Hour Entering Trips This Street	0		0		0		0	
Project Land Use 3								
Land Use Per SDSS Table 3.2	Select From Drop Down							
Land Use Code								
Total Development Units in Project		0						
Land Use Unit	0	0						
Peak Hr Trips/Land Use Unit	0							
Total Peak Hour Trips (Row 33/Row 34 * Row 35)	0							
% Entering Per Trip Generation Manual 9th edition	0%							
Total Peak Hour Entering Trips	0							
Enter % of Land Use using this street								
Peak Hour Entering Trips This Street	0		0		0		0	
Grand Total Peak Hour Entering Trips per Street	47		47		0		0	
Your Trip Generation is 100 or greater and a Traffic Impact Study is Required								
Trip Distribution Assumptions								
Percentage of Vehicles Entering the Development by Making a Right Turn	85%		15%		60%		60%	
Percentage of Vehicles Entering the Development by Making a Left Turn	15%		85%		40%		40%	
Note: Applicant may deviate from the Trip Distribution Assumptions above by providing justification.								
Results								
Total Number of Vehicles Entering the Development by Making a Right Turn	40		7		0		0	
Right Turn Lane Warrant Threshold	70		40		n/a		n/a	
Right Turn Lane Required?	No		No		n/a		n/a	
Total Number of Vehicles Entering the Development by Making a Left Turn	7		40		0		0	
Left Turn Lane Warrant Threshold	30		15		n/a		n/a	
Left Turn Lane Required?	No		**Yes**		n/a		n/a	

Location Map



Case Number: PCZ1602-001

Title: Camino de Oeste Rezoning

Request: A recommendation to the Marana Town Council for approval to rezone approximately 72 acres of land from "C" (Large Lot Zone) to "R-6" (Single-Family Residential).

MARANA
PLANNING

TOWN OF MARANA SUBMITTAL APPLICATION

Type of Application (Check One)

- ☐ Annexation
- ☒ Rezone
- ☐ Specific Plan
- ☐ Variance
- ☐ Improvement Plan (Specify Type): _____
- ☐ Preliminary Plat
- ☐ Final Plat
- ☐ Development Plan
- ☐ Minor Land Division
- ☐ General Plan Amendment
- ☐ Landscape Plan
- ☐ Native Plant Permit
- ☐ Native Plant Exception
- ☐ Conditional Use Permit
- ☐ Significant Land Use Change
- ☐ Storm Water (SWPP)
- ☐ Other: _____

General Data Required

Project Name: Camino de Oeste Parcel #(s): 221-14-009A, 221-14-011B, 221-14-0100, 221-14-002F, and

Description of Project: Residential Rezoning Gross Area (Acres): 72.0

Project Address/Location: 1/4 mile N. of Cortaro Farms Road, bound by Hartman Lane, Camino de Oeste, and the Hardy Wash on the north

Property Owner: Laura Harshbarger & Redwing Investments LLC Contact Person: Ben Becker

Street Address: 3719 North Campbell Avenue Email: ben.becker@cbre.com

City: Tucson State: AZ Zip Code: 85719

Phone #: (520) 323-5149 Fax #: (520) 323-5156 Cell #: (520) 909-2302

Applicant: Pulte Homes Contact Person: Sam Mills

Street Address: 3011 West Ina Road Email: sam.mills@pultegroup.com

City: Tucson State: AZ Zip Code: 85741

Phone #: (520) 837-0275 Fax #: _____ Cell #: _____

Agent/Representative: Norris Design Contact Person: Stacey Weaks

Street Address: 418 North Toole Avenue Email: sweaks@norris-design.com

City: Tucson State: Arizona Zip Code: 85701

Phone #: (520) 622-9565 Fax #: _____ Cell #: _____

Authorization of Property Owner

I, the undersigned, certify that all of the facts set forth in this application are true and correct to the best of my knowledge and that I am either the owner of the property or that I have been authorized in writing by the owner to file this application. **(If applicant is not the owner, attach written authorization from the owner).**

Sam Mills
Print Name of Owner/Applicant

Signature

2/10/16
Date

Internal Use Only:

Project No. _____ Date Received _____ Signature _____

PHIL W. NEILSON
PEGGY A. NEILSON

P. O. Box 554
Cortaro, AZ 85652
Phone (520) 744-2816
pneilson9@comcast.net

Norris Design
418 North Toole Ave.
Tucson , AZ 85701

Subject : Camino De Oeste [Marana] rezone PC Z 1602-001

We are property owners adjacent to the rezoning property , requesting to intensify density of structures allowed.

We were unable to attend the neighborhood meeting on April 21 ,2016 because of health reasons.

We object to this downsizing rezoning for the following reasons:

Need for medication based on increased density that would bring harm to both animals and people. Increased Density would cause migration of wild life to adjacent acreages. We have had numerous contacts with the following:

1. **Large herds of Javalina with problems of rabies and assault.**
2. **Several urban coyotes**
3. **Territory for local bob cats**
4. **Large dens of Pack Rats living in the desert and chocha cactus. I have already had trapped over 50 and many killed on my property. They have caused damage to three of our vehicles that cost over $2000. Damage.**
5. **Rattle snake dens**
6. **Gila Monoester territory**
7. **Coyatomonda [at one time Pima county was seeking a wild life corridor to the Santa Cruz river ; will this be closed off??]**
8. **Owl's live here [size small and large ??]**

Also of great concern is the effect of increased population using the scarce under-ground water supply. From what out side source will the water come from. We have already had to deepen the depth of our water well pump because the static level of the ground water in declining. Our pump appears to be sucking air again. There is not enough water to meet the demand of a large subdivision.

When Camino De Oeste was first paved , the sub dividers said that their home owners would commute to the free-way by another route rather then to the Cortaro Farms Road . This didn't happen and Camino de Oeste went several decades before it was repaved. How many accidents or deaths will this new subdivision cause??

Sincerely,



Phil W. Neilson

May 7, 2016

Mr. Gilbert Davidson
Town Manager
11555 W. Civic Center Drive
Marana, AZ 85653

Subject: PROTEST: Rezoning Request by Pulte Home PCZ1602-001

Dear Sir:

We currently reside in the Countryside Terrace Subdivision at 5257 W. Peridot Street and we will be seriously impacted if the rezoning of the Camino de Oeste property is approved. Our two main entrance and exit roads to our property are Camino de Oeste on the east and Hartman Road on the west and there are no plans by Pulte Homes to widen either of these roads to accommodate the increased traffic which will occur if the rezoning is approved from Zonc C to R-6. We are also concerned that the wash that currently goes through the property will be impacted which could result in our homes being subject to flooding during the monsoon season. Our home faces south and during the time we have lived in our residence, we have seen this wash flowing with so much water that Hartman road has been closed to traffic. At one time we were unable to get out of our subdivision in any direction because of the water. We are requesting that you disapprove this request by Pulte Homes.

Sincerely
George + Julia Sheehan
George and Julia Sheehan
5257 W. Peridot Street
Tucson, AZ 85742
520-449-7269

STAR GLASS COMPANY
service that shines

Please disregard letter dated May 6, 2016. I had neglected to put the word PROTEST in the subject line.

Thank you.
George + Julie Sheehan

Tucson: 520-620-0011 • Phoenix: 602-753-4166

RECEIVED
MAY 11 2016
Town of Marana
Clerk's Office

May 6, 2016

Marana Municipal Complex
11555 W Civic Center Drive
Marana, AZ 85653

RE: Camino de Oeste Rezone –PCZ1602-001 2 comments

Dear Planning Commission members,

Recently I attended a Neighborhood meeting regarding the project site of 72 acres and 145 lots.

The Pulte Homes representative said that if Pulte builds, the blue prints they are planning to use are for one story houses. However, the zoning request is for one or **TWO** story single residence houses. Builders do have the option of a two-story home without a zoning change.

1. Please limit the height of the new houses to 22 ft. That should accommodate most roof lines for a single story house. It will also allow the current residence in the area to enjoy the mountain views, Marana sunsets, and distant lights of the Town. Looking at the side of a building will only be a disappointment for us & probably a few mumbled choice words.

The site plan showed the exit roads onto Camino De Oeste directly across from Rosebay Drive.

2. I hope the final project follows that plan allowing for eye contact.
   After 16 years in this area, I would estimate the majority of the traffic on Camino de Oeste is during a 12-14 hr. period and heavier than the 24hr study indicated.

I look forward to hearing your comments at the May Planning & Zoning meeting.

Kind Regards,

Kathy Price

Kathy Price

Gilbert Davidson

Town of Marana

11555 W. Civic Center Dr.

Marana, AZ 85653

RE: the proposed re-zoning of Camino de Oeste

Good Day Mr. Davidson,

I am writing to protest the proposed rezoning of Camino de Oeste from rural to single family housing

There is no reason to rezone it that would benefit our area. We are purchased our properties in this area for the scenic wonderful views, enjoyment of our horses and our privacy.

I am concerned about preserving the natural habitat from overbuilding.

And with the congested traffic and housing comes more crime. The schools will be over crowded and our resources are not keeping up with the sudden increase of housing in this area.

I look forward to meeting you at the meeting and discussing different options that are available.

Sincerely

Darlene Snyder

Darlene Snyder

8510 N. Freeman Lane

Tucson, AZ 85742

520-303-8403

Planning Commission

Meeting Date: 06/29/2016

To: Planning Commission

From: Cynthia Ross, Planner II

Date: June 29, 2016

Strategic Plan Focus Area:
Community

Subject: **PCZ1606-001 Twin Peaks Oasis Specific Plan** Recommendation to the Town Council regarding a request to rezone approximately 36.79 acres of land from "R-144 Residential" to "F Specific Plan" for the purpose of establishing the Twin Peaks Oasis Specific Plan, a master-planned single-family residential development. The request will be accompanied by a minor General Plan amendment to amend the current land use category from "LDR Low Density Residential" to "MPA Master Plan Area," to accommodate the proposed Specific Plan. The property is located at the northeast corner of Twin Peaks Road and Oasis Road. (Cynthia Ross)

Discussion:

Summary of Application

An application submitted by AJS Oasis, LLC, represented by The Planning Center, to rezone approximately 36.79 acres of land from "R-144 Residential" to "F Specific Plan" for the purpose of establishing the Twin Peaks Oasis Specific Plan, a master-planned development. The request will be accompanied by a minor General Plan amendment to amend the current land use category from "LDR Low Density Residential" to "MPA Master Plan Area." The General Plan land use designation for this property is Low Density Residential, 0.5-2.0 residences per acre (RAC). The proposed RAC for Twin Peaks Oasis is two dwelling units per acre and is in conformance with the 2010 General Plan.

Land Use

The specific plan proposes 74 single family residential units. Minimum lot widths are 60' and typical lot depths are 125'. The minimum lot size is 6,000 square feet, but lots will vary with the typical lot size at 7,200 square feet. Lots will accommodate both one- and two-story homes. All homes along the perimeter of the site will be one-story to ensure the privacy of adjacent property owners and to minimize the visual impact of the development from Twin Peaks Road and Oasis Road. Maximum building heights for one-story homes are 20 feet. Maximum building heights for two-story homes are 30 feet.

The Twin Peaks Oasis Specific Plan has two land use designations: Residential Area (RA) and Open Space (OS). The RA designation represents approximately 36.84% of the specific plan area and the OS designation represents approximately 53.03%, of which 41.8% is natural undisturbed open space. The public streets represent approximately 10.13% of the specific plan, and will meet current Town standards for a local street section. Maximum lot coverage is 70%.

Background

This project was previously heard by the Planning Commission at a public hearing on October 29, 2014 and voted 5-0 (Miklosi and Miller absent) to recommend that the Council approve the Twin Peaks Oasis Specific Plan. The project was scheduled to go Council on November 18, 2014, but the applicant withdrew the project prior to the Council public hearing.

Evolution of the Plan

The plan has evolved since it was first submitted in May of 2013. The lot count has been reduced,

quality of life enhancements have been added and measures to ensure sensitivity to adjoining neighbors have been developed.

The number of lots has been reduced from 91 lots to 74 lots to yield a density of 2 RAC. Quality of life enhancements include the addition of a one acre neighborhood park, on-site trails and a small reflection area. Removal of the southeast cul-de-sac was instrumental in creating a quality community because it clustered development away from washes and surrounding neighbors and preserved the entire southeast corner as open space.

Measures to ensure the privacy of adjacent neighbors, and provide a buffer to the Twin Peaks Corridor, include the requirement that all homes on the perimeter of the development be single story with a maximum height of 20', and the removal of some of the lots from the east, west and south boundaries. Additionally, the lots on the east have been pulled back from the property boundary to create a minimum buffer of 120 feet.

2016 – Neighborhood Feedback & Impact Mitigation

This submittal contains further measures to address adjacent property owner concerns. The applicant held a series of meetings at the homes of adjacent property owners in February and March to better understand each property owner's concerns with the project. Privacy, the visual impact of the additional homes on the surrounding areas, traffic, a perception of the impact of the proposed development on flood elevations, were among the concerns. A letter from the applicant, dated 6/2/16 (attached), summarizes the meetings with each property owner. The letter outlines each property owner's concerns, and the applicant's efforts to mitigate them. The following measures have been added:

- Screen walls and enhancement landscaping have been added to mitigate the impacts to the neighbors on the south. The enhanced landscaping will run the entire length of the development on Oasis Road.
- While concern of the increased traffic onto Oasis Road was voiced, the applicant's remedy to restrict access onto Oasis Road by making it "emergency access only" was not supported by staff. Residents of Twin Peaks Oasis will have full access to Oasis Road for ingress/egress for east/west travel. Without Oasis Road access, travelers wishing to go south, would be forced to head north on Twin Peaks Road and make a "U" turn.
- Concern that the proposed development could impact flood elevations or change wash patterns, effecting the existing home at the southeast corner of the project, was addressed with a memo, prepared by Erik Beam, CFM, a hydrologic/hydraulic designer with the WLB Group, that explains that the proposed development is downstream of this home and would not have a hydrology impact on the property.

Twin Peaks Corridor Study

The Twin Peaks Oasis Specific Plan complies with the Twin Peaks Corridor Study, which prescribes guidelines that includes provisions for recreational amenities, monument signage, wildlife linkages/open space and landscaping in the Twin Peaks corridor area. Recreation amenities in the Twin Peaks Oasis Specific Plan include trails, a neighborhood park, and a reflection area. Monument entry signage will have a design theme comprised of a combination of natural, desert themed materials and will be designed to complement the natural desert surroundings. The development will include the Twin Peaks moniker in its entry monumentation. The developer will dedicate land on the southwest corner of the development for the purpose of siting a Twin Peaks gateway monument and will be responsible for the construction of the monument. The monument will mark the entry and establish a "brand" for the Twin Peaks Corridor.

The configuration of lots will be designed to maintain wildlife linkages and minimize impacts to on-site washes by clustering development in the central portion of the site to protect the major washes in the northwest and southeast portions of the property as important wildlife corridors.

The overall landscape theme for the Twin Peaks Oasis Specific Plan will reflect the best attributes of the Sonoran Desert and the site’s surrounding environment. Native and desert-adapted plant material as well

as regionally appropriate hardscape materials will be used within the landscape buffers and common areas. Minimum sizes for trees, shrubs and ground cover plants have been set to ensure that homes will be adequately screened in a timely manner.

Utilities

Wastewater

The development will be served by the Pima County Regional Wastewater Reclamation Department. The project site is tributary to the Ina Road Wastewater Reclamation Facility via the Continental Ranch Interceptor. An 8" gravity main sewer line connects to the project site from the south at Oasis Road and Crook Lane. A Sewer Service Agreement will be needed prior to development.

Water

The water supply for the Twin Peaks Oasis will be provided by the Town of Marana Water Department which has been designated by the State of Arizona Department of Water Resources as having an assured water supply. Off-site improvements to connect to the existing system to the south from the Oasis Hills I & II subdivision along Oasis Road include oversizing mains to accommodate regional requirements. Well sites and storage tanks will need to be considered along with the infrastructure to serve the proposed development. Additionally, an 8" water line is available from Twin Peaks Road at the southwest corner of the property.

Other Utilities

Electricity and telecommunications will be extended to the project site at the time of development through agreements with individual utility companies. Utilities that currently serve this area are Tucson Electric Power, Southwest Gas, Century Link and Comcast.

Assess and Circulation

The community will include two access points; one on Oasis Road at the Niobrara Way alignment and one on Twin Peaks Road near the middle of the western property boundary. The majority of the site traffic will drive towards Twin Peaks Road, away from existing residences. In doing so, Twin Peaks Oasis residents will have direct access to Interstate 10 (west) and other east-west and north-south major arterials, providing a range of alternate routes for shopping, work, and leisure activities.

Citizen Participation

The Planning Center held a series of meetings this past February and March at the homes of adjacent property owners. Meetings with property owners included all three neighbors to the east of the project, a neighbor to the south and several nearby property owners.

Prior to this 2016 submittal, two community neighborhood meetings were held:

The applicants conducted a neighborhood meeting on September 11, 2014, at the Wheeler Taft Library. Twenty-three residents and others interested in the proposed plan attended. The predominant concerns included project density, increased traffic on Oasis Road, decrease in home values, privacy and the visual impact of the homes upon surrounding areas. Other concerns included water availability and the impact to the aquifer and private wells, wildlife migration, and loss of the rural lifestyle they currently enjoy.

An earlier neighborhood meeting was held on August 29, 2014 during the processing of the annexation. The purpose of this meeting was to explain the annexation process. Thirteen people attended. Concerns mirrored the concerns of the later September meeting.

Letters of Protest

As of the date of this report, staff has received four letters of protest (attached).

Public Notification

The required notice for this public hearing was properly noticed in *The Daily Territorial* newspaper, and

all property owners within 300 feet of the proposed specific plan were noticed by the United States Mail of the date, time, and topic of the public hearing. Notice was also posted at various locations within the community.

Recommended Findings of Fact

1. The property is currently zoned ‘R-144 Residential.' The proposed change in zoning from ‘R-144’ to ‘F’ Specific Plan will require a minor amendment to the Marana General Plan from the existing designation of Low Density Residential (LDR) to Master Plan Area (MPA).
2. With the acceptance of the recommended conditions, the proposed rezoning is in compliance with all other development standards of the Land Development Code related to this zoning classification.
3. This proposal, with acceptance of the recommended conditions, does not appear to be detrimental to the immediate area or to the health, safety and welfare of the inhabitants of the area and the Town of Marana.

CASE ANALYSIS AND REVIEW CRITERIA

1. Ability to comply with development regulations, i.e. water, sanitation, access, developable parcel, etc.:With the acceptance of the recommended conditions, the development complies with the requirements of all agencies.
2. Ability to comply with requirements of the zoning regulations, i.e. lot size, frontage, setbacks,etc.: With the acceptance of the recommended conditions this proposal complies with the requirements of ‘F’ Specific Plan zoning and the purpose and intent of the Land Development Code.
3. Consistent with the purpose of the regulations and with the intent of the General Plan: This proposal is consistent with the purpose and intent of the Land Development Code and the Town of Marana General Plan Master Plan Area (MPA) land use designation.
4. Compatible with the surrounding area, harmonious with the character of the neighborhood, not detrimental to the immediate area or the development of the area, and not detrimental to the health, safety, or welfare of the inhabitants of the area and the Town: Based upon the requirements and conditions, this proposal does not appear to be detrimental to the immediate area or to the general health, safety, and welfare of the inhabitants of the area and the Town of Marana.

Staff Recommendation:

Staff recommends that the Planning Commission recommend to the Town Council approval of PCZ1606-001 based on the recommended findings and subject to the following conditions:

1. The maximum number of residential lots within the Rezoning Area shall not exceed 74.
2. Homes on lots 1-7, 22, 23, 37-58, 68, 69 and 74 as designated on Exhibit III.D.1: Tentative Development Plan will be single-story.
3. The maximum building height of single-story homes is 20 feet.
4. This Rezoning is subject to the design standards outlined in the Twin Peaks Corridor Study adopted by Marana Resolution 2014-013.
5. The Property Owners shall dedicate land at the southwest corner of the Rezoning Area to the Town for the purpose of siting the Twin Peaks Gateway Monument, approximate location as depicted on Exhibit III.D.1: Tentative Development Plan.
6. The Property Owners shall construct the Twin Peaks Gateway Monument.
7. Before the Town issues the first residential building permit for the Rezoning Area, the Property Owners shall make pavement structural section improvements to that portion of Oasis Road located within the “Annexation Area” as defined in Marana Ordinance 2013.024. The pavement structural section improvements to Oasis Road shall be consistent with the Town-approved findings of a site geotechnical investigation submitted by the Property Owners.
8. The Property Owners shall install a 4 foot wall at the south end of Street E, at the edge of the cul-de-sac, and a 5 foot wall on the south side of Lot 58 extending to and adjoining the 4 foot wall, as shown on Exhibit III.D.1 - Tentative Development Plan.
9. The Property Owners shall provide enhanced landscaping on Oasis Road, as shown on Exhibit

III.D.1: Tentative Development Plan. The number of landscape buffer plantings will be greater than the required plantings cited in the Town of Marana Land Development Code 17.03.07.This enhanced vegetation will be achieved through consultation with the Landscape Architect prior to the Landscape Plan submittal.

10. Compliance with all applicable provisions of the Town's codes and ordinances current at the time of any subsequent development including, but not limited to, requirements for public improvements and payment of application fees and applicable development impact fees.
11. Any preliminary plat or development plan for any portion of the Rezoning Area shall be in general conformance with the tentative development plan presented to and approved by the Town Council as part of this Rezoning.
12. The Property Owners must design and construct any roadway, drainage, water, and wastewater improvements, and dedicate or acquire any property rights associated with those improvements, that the Town requires based on the data and findings of the accepted traffic impact analysis, the accepted master drainage study, the accepted WIP, the accepted master sewer plan, and other studies approved in connection with the approval of a preliminary plat or development plan for any portion of the Rezoning Area.
13. The final design of all streets and circulation facilities, including gated access (if applicable) and emergency access, must be accepted by the Mountain Vista Fire District prior to Town Council consideration of a final plat for any portion of the Rezoning Area.
14. The Property Owners shall not cause any lot split of any kind without the written consent of the Town of Marana.
15. No approval, permit or authorization by the Town of Marana authorizes violation of any federal or state law or regulation or relieves the Property Owners from responsibility to ensure compliance with all applicable federal and state laws and regulations, including the Endangered Species Act and the Clean Water Act. The Property Owners should retain appropriate experts and consult appropriate federal and state agencies to determine any action necessary to assure compliance with applicable laws and regulations.
16. A water infrastructure and phasing plan (WIP) must be submitted by the Property Owners and accepted by [the Marana Utilities Department/Tucson Water] (the "water provider") prior to approval of a preliminary plat for any portion of the Rezoning Area. The WIP shall identify all on-site and off-site water facilities needed to serve the proposed development. The WIP shall include all information required by the water provider, such as (but not limited to) analysis of water use and fire flow requirements, and well source, reservoir, and booster station infrastructure needed to serve the proposed development. If the water provider requires a water service agreement as a condition of service to the proposed development, the Property Owners must enter into a water service agreement with the water provider consistent with the accepted WIP.
17. The Property Owners shall transfer to Marana, by the appropriate Arizona Department of Water Resources form, those water rights being IGR, Type I or Type II for the Town providing designation of assured water supply and water service to the Rezoning Area. If Type I or Type II is needed on the Rezoning Area, the Town and the Property Owners shall arrive at an agreeable solution to the use of those water rights appurtenant to the affected portion of the Rezoning Area.
18. A master sewer plan must be submitted by the Property Owners and accepted by the Pima County Regional Wastewater Reclamation Department (the "wastewater utility") prior to the approval of any final plat or development plan for the Rezoning Area. The master sewer plan shall identify all on-site and off-site wastewater facilities needed to serve the proposed development, and shall include all information required by the wastewater utility. If the wastewater utility requires a sewer service agreement as a condition of service to the proposed development, the Property Owners must enter into a sewer service agreement with the wastewater utility consistent with the accepted master sewer plan.
19. Prior to the issuance of any grading permits, the Property Owners shall submit evidence to the Town that all federal permit requirements have been met through the Corps of Engineers and the State Historic Preservation Office, if federal permits are required for the development of the Rezoning Area.
20. A 100% desert tortoise survey shall be completed by a qualified biologist at the Property Owners' expense and approved by the Town prior to the issuance of any grading permits in the Rezoning

Area. Any Sonoran Desert tortoises found on the Rezoning Area shall be relocated at the Property Owners' expense.

21. The Property Owners shall submit an annual report within 30 days of the anniversary of the Town Council's approval of the Twin Peaks Oasis Specific Plan in accordance with the requirements defined in the Land Development Code.
22. A master drainage study must be submitted by the Property Owners and accepted by the Town Engineer prior to Town approval of a preliminary plat or development plan for any portion of the Rezoning Area.
23. A detailed traffic impact analysis must be submitted by the Property Owners and accepted by Town staff prior to approval of a preliminary plat or development plan for any portion of the Rezoning Area.
24. Within 60 days after the adoption of this ordinance, the Property Owners shall provide the Planning Department wit 10 bound copies, three electronic CD copies in PDF format which will also include graphics of the tentative development plan in JPEG or other suitable format of the Twin Peaks Oasis Specific Plan as amended by this ordinance.

Suggested Motion:

I move to recommend approval of PCZ1606-001, Twin Peaks Oasis Specific Plan, subject to the recommended conditions.

Attachments

Application
Location Map
Twin Peaks Oasis
Neighborhood Meeting Summary Letter
Protest Letters
Hydrology & FEMA Floodplain Letter

MARANA
PLANNING

1. TYPE OF APPLICATION (Check One)

☐ Preliminary Plat	☐ Final Plat	☐ General Plan Amendment	☐ Variance
☐ Development Plan	☐ SWPP	☐ Landscape Plan	☐ Native Plant Permit
☐ Specific Plan Amendment	☐ Conditional Use Permit	☑ Rezone/Specific Plan	☐ Native Plant Exception
☐ Significant Land Use Change	☐ Minor Land Division	☐ Water Plan	☐ Annexation

☐ Improvement Plan (specify type in Description of Project box*) ☐ Other _____

2. GENERAL DATA REQUIRED

Assessor's Parcel Number(s)	216-32-057M			**General Plan Designation (To be confirmed by staff)**	Low Density Residential (LDR)
Gross Area (Acre/SF)	36.79 acres			**Current Zoning (To be confirmed by staff)**	R-144 (Single Family Residential)
Development / Project Name	Twin Peaks Oasis			**Proposed Zoning**	F (Specific Plan)
Project Location	Northeast corner of Twin Peaks Road and Oasis Road Township 12 South, Range 12 East, Section 14				
Description of Project*	Single-family residential one- and two-story subdivision with 74 lots				
Property Owner	AJS Oasis, LLC				
Street Address	905 West Calle Catavinos				
City Tucson	**State** AZ	**Zip Code** 85704-4609	**Phone #** 520-245-4808	**Fax #**	**E-Mail Address**
Contact Person	Alfred Sciuto			**Phone Number / E-mail** 520-245-4808	
Applicant	AJS Oasis, LLC				
Street Address	905 West Calle Catavinos				
City Tucson	**State** AZ	**Zip Code** 85704-4609	**Phone #** 520-245-4808	**Fax #**	**E-Mail Address**
Contact Person	Alfred Sciuto			**Phone Number / E-mail** 520-245-4808	
Agent/Representative	The Planning Center				
Street Address	110 South Church Ave, Suite 6320				
City Tucson	**State** AZ	**Zip Code** 85701	**Phone #** 520-623-6146	**Fax #** 520-622-1950	**E-Mail Address** lmorales@azplanningcenter.com
Contact Person	Linda Morales			**Town of Marana Business License No.**	125638

3. AUTHORIZATION OF PROPERTY OWNER

I, the undersigned, certify that all of the facts set forth in this application are true to the best of my knowledge and that I am either the owner of the property or that I have been authorized in writing by the owner to file this application and checklist. **(If not owner of record, attach written authorization from the owner.)**

Linda Morales — Print Name of Applicant/Agent

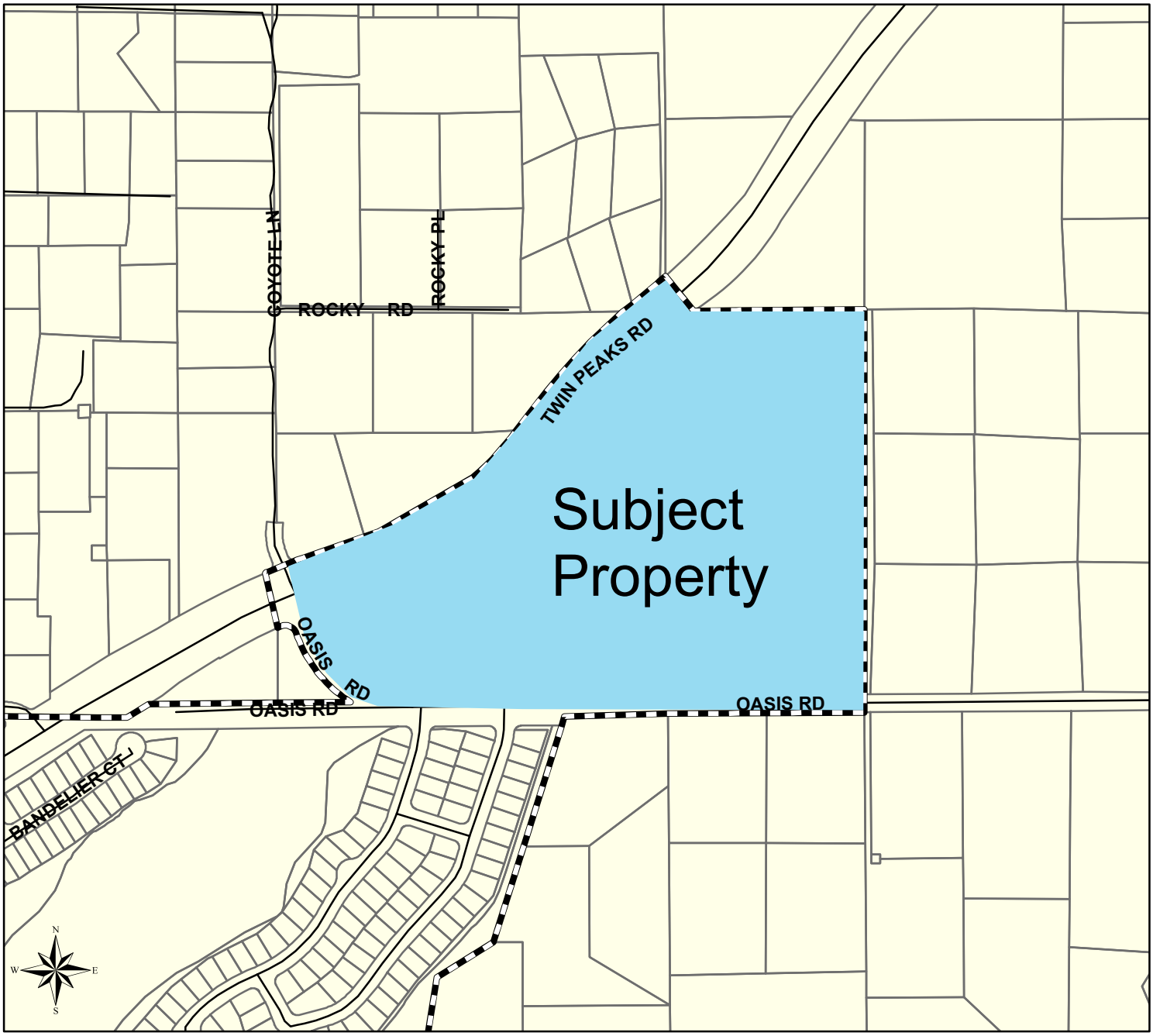
Signature

6/2/16 — Date

CaseLog# N/A Date Received 6/3/16 Signature

CRW# PC2-16006-001

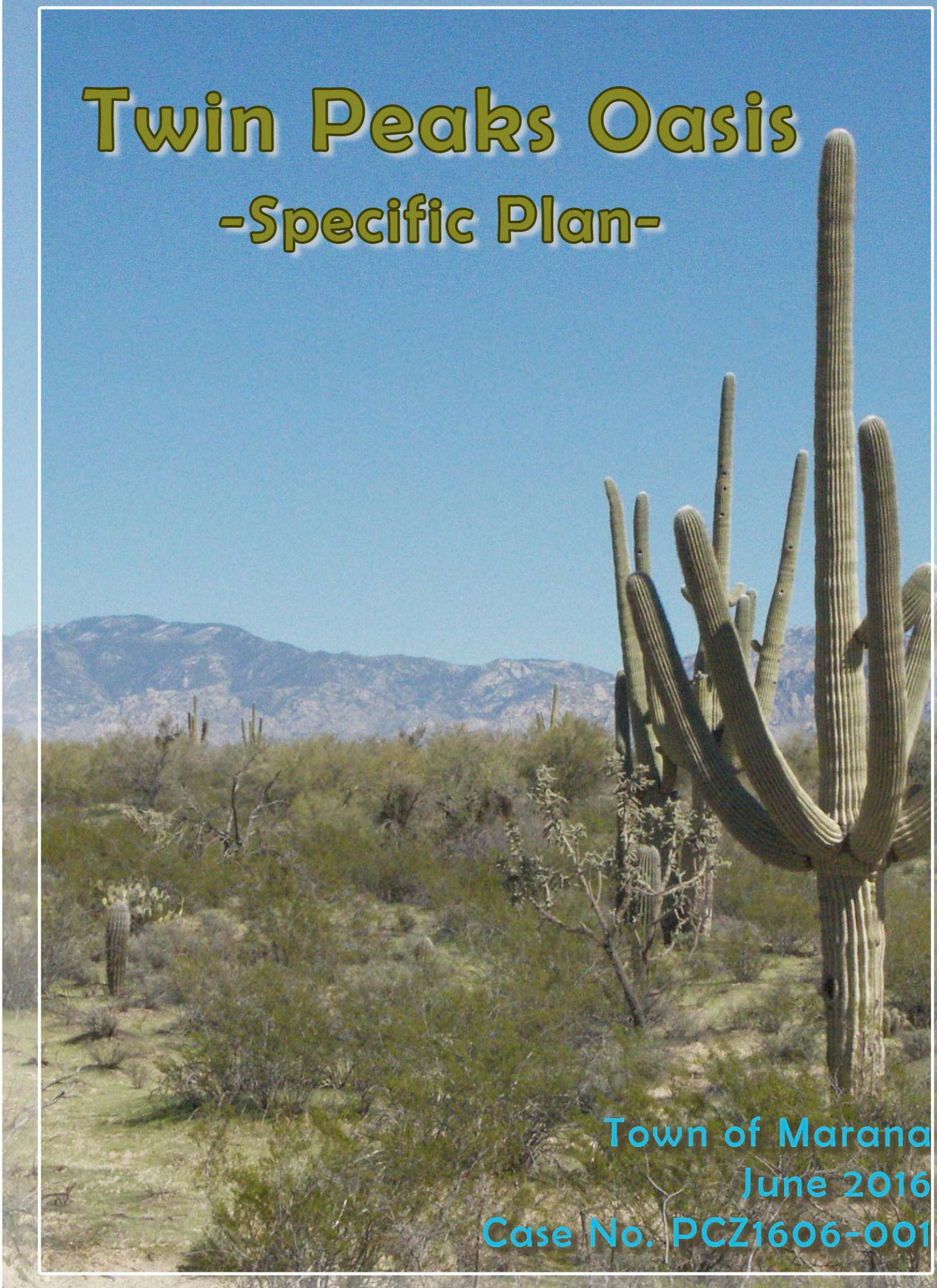
Twin Peaks Oasis Specific Plan and Minor General Plan Amendment PCZ1606-001 and GPA1606-001



A request by AJS Oasis LLC to rezone approximately 36.79 acres from "R-144" to "F" Specific Plan. This case includes a request for a Minor General Plan Amendment from "LDR" (Low Density Residential) to "MPA" (Master Plan Area).

Twin Peaks Oasis

-Specific Plan-



Town of Marana
June 2016
Case No. PCZ1606-001

Twin Peaks Oasis Specific Plan

Marana, Arizona

Submitted to:

Town of Marana
Planning Department
11555 West Civic Center Drive
Marana, Arizona 85653

Prepared for:

AJS Oasis LLC
905 West Calle Catavinos
Tucson, Arizona 85704

Prepared by:

The Planning Center
110 South Church Avenue, Suite 6320
Tucson, Arizona 85701

With assistance from:

WestLand Resources, Inc.
4001 E. Paradise Falls Drive
Tucson, Arizona 85712

And:

APEX Development Consultants, PC
2141 N. Alvernon Way, Suite C
Tucson, Arizona 85712

June 2016
Town of Marana Case No. PCZ1606-001

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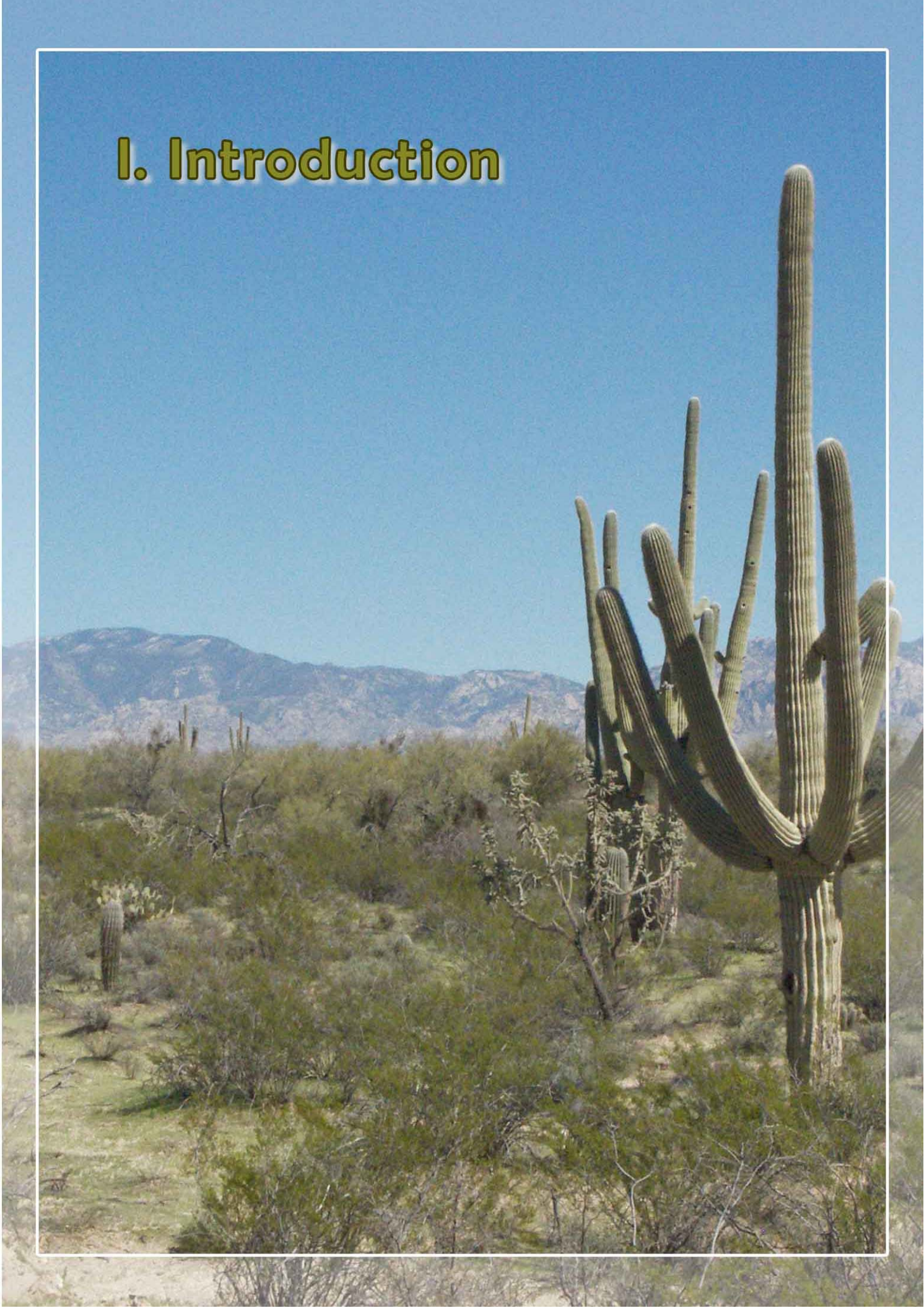
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I. Introduction



A. Background

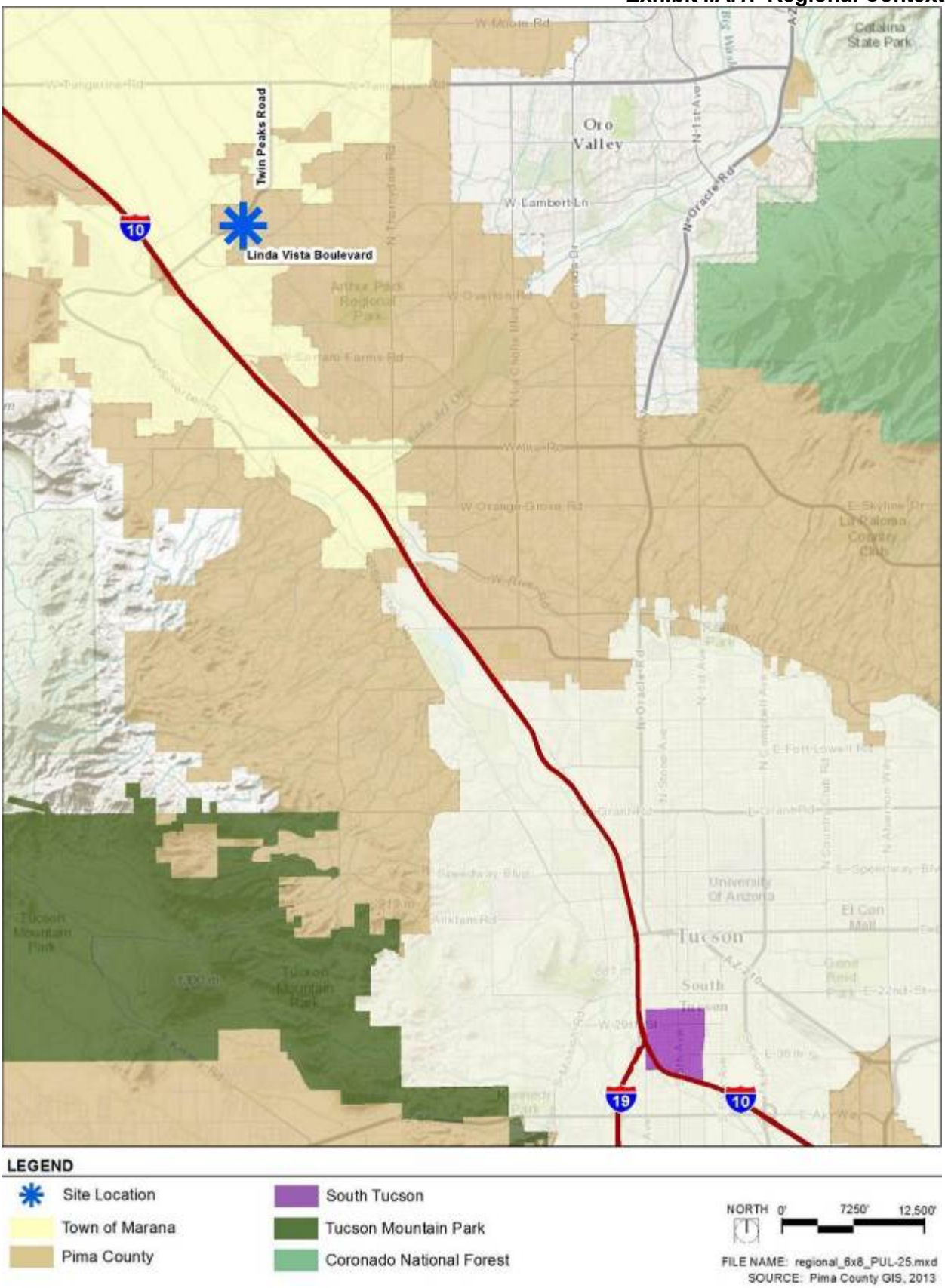
The Twin Peaks Oasis Specific Plan, referred to as "Twin Peaks Oasis", is a planned development located in the Town of Marana, northwest of Tucson and southwest of the Tortolita Mountains. The site is located between Twin Peaks Road and vacant land (north), Twin Peaks Road (west), unsubdivided single-family residential development (east), and Oasis Road (south). Land to the east of the site is located within Pima County. In total, the specific plan includes approximately 36.79-acres.

The property has been annexed into the Town of Marana with a translational zoning designation of "R-144", Single Family Residential, which allows for one home per 144,000 feet of land. A zoning designation of "F", Specific Plan is requested in order to develop the site in an environmentally conscious, yet economically responsible, way by utilizing the specific plan as a mechanism to modify the development standards to fit the characteristics of the site and its surroundings. Additionally, there are existing FEMA floodplain delineation challenges that will require a CLOMR/LOMR to develop the site.

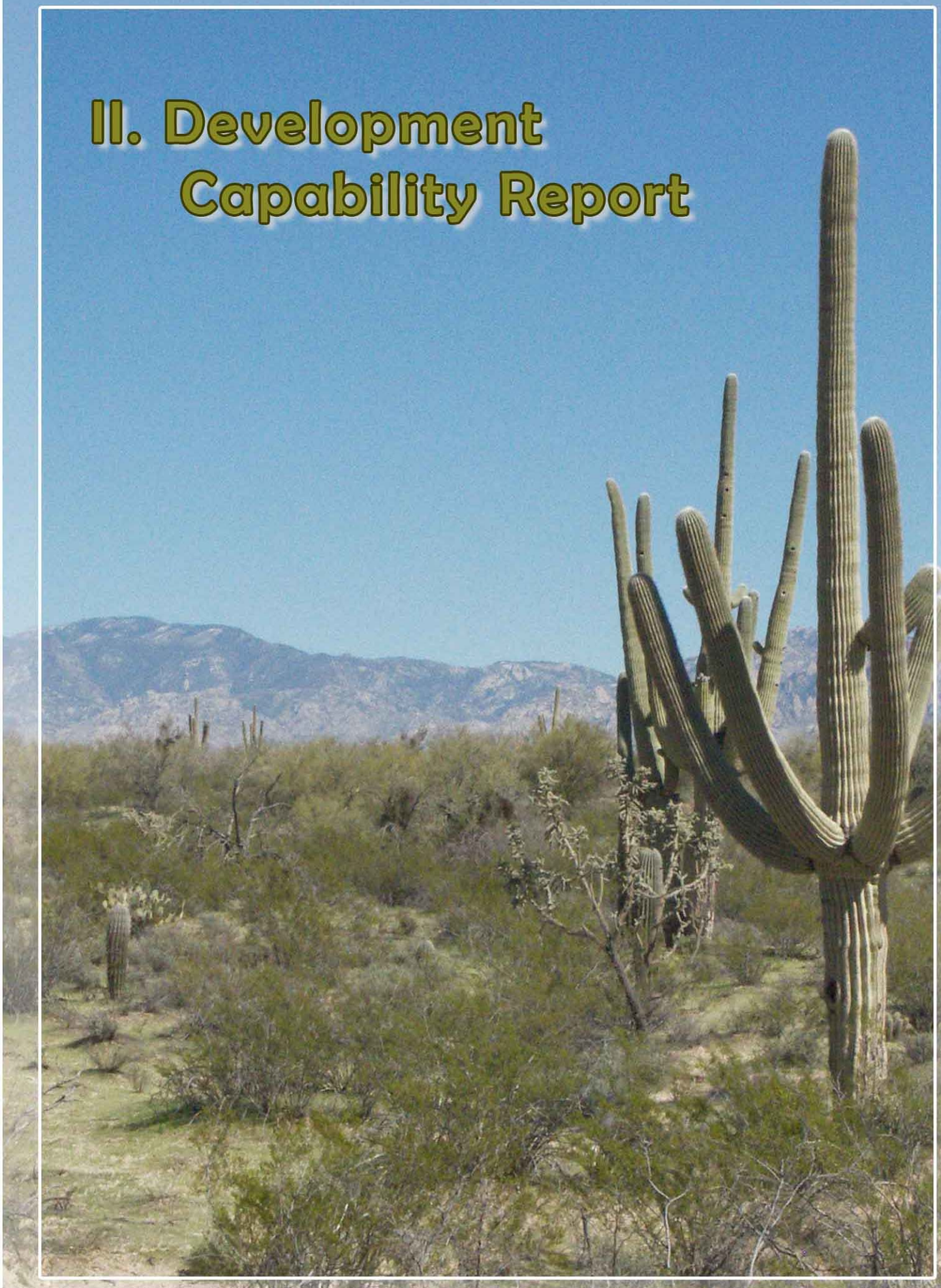
The Twin Peaks corridor is a unique desert setting that should be purposefully built-out and cherished for generations to come, capitalizing on the best attributes of its desert environment and the fantastic investment in transportation infrastructure to improve Twin Peaks Road.

See Exhibit I.A.1: Regional Context.

Exhibit I.A.1: Regional Context



II. Development Capability Report



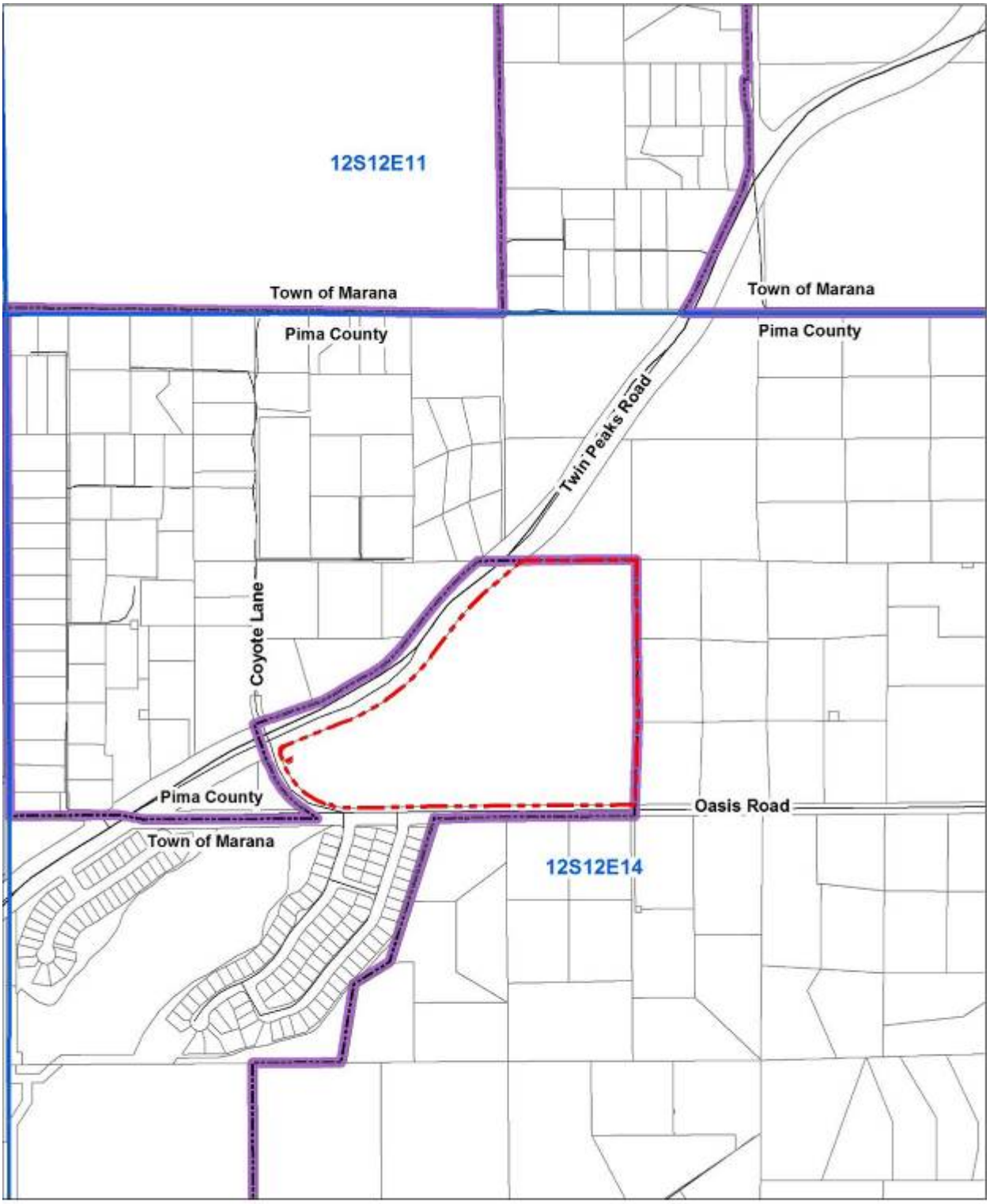
A. Existing Land Uses

This section of the Development Capability Report identifies existing zoning, land use and structures on-site and on surrounding properties, as well as other proposed development in the project vicinity.

1. Site Location

The project is situated in the East-Central portion of the Town of Marana near the middle of Section 14, Township 12, Range 12 East at the northeast corner of Twin Peaks Road & Oasis Road. The property lies approximately 1.2 miles east of Interstate 10. In total, the site area is approximately 36.79-acres. *See Exhibit II.A.1: Site Location*.

Exhibit II.A.1: Site Location



2. Existing On-Site Land Use and Zoning

The site is currently vacant with no existing structures on-site. There is a concrete culvert along the western boundary adjacent to Twin Peaks Road and two large concrete and riprap drainage inlets at the northeast corner of Twin Peaks Road and Oasis Road. An existing 20'x20' utility box located at the northeast corner of Twin Peaks Road and Oasis Road is located within the site boundary, but is listed under a separate assessor's parcel tax code. The site was recently annexed into the Town and the current zoning designation on the property is "R-144," Single Family Residential. *See Exhibit II.A.3.a: Existing Zoning*.

3. Existing Conditions on Properties within a One-Quarter Mile Radius

a. Zoning

The zoning designations of surrounding properties, as depicted in *Exhibit II.A.3.a: Existing Zoning* are as follows:

North: Pima County SR (Suburban Ranch Zone) and GR-1 (Rural Residential Zone)

South: Pima County SR (Suburban Ranch Zone) and Town of Marana F (Cascada Specific Plan)

East: Pima County SR (Suburban Ranch Zone)

West: Pima County SR (Suburban Ranch Zone) and GR-1 (Rural Residential Zone)

b. Land Use

The land uses of surrounding properties within one-quarter mile, as depicted in *Exhibit II.A.3.b: Existing Land Uses* are as follows:

North: Vacant

South: Oasis Hills I & II (Single-Family Residential Subdivisions)

East: Single Family Residential

West: Vacant & Single-Family Residential

Also, as shown on *Exhibit II.A.3.b: Existing Land Uses*, there is one planned single family residential subdivision, Camino Vaquero, approximately 0.5 miles north of the site with 56 lots and a gross density of 2.15 residences per acre (RAC), #PCZ-12026.

c. Number of Stories of Existing Structures

There are no existing structures currently on the site. South of the site, the Oasis Hills is developing with one- and two-story homes. However, more two-story development is possible within the Cascada Specific Plan. All other homes within one-quarter mile of the site are single-story.

d. Pending and Conditional Rezonings

According to the Town of Marana's Planning and Zoning Activity most recent map dated January 2013, there are no pending or conditional rezonings within a one-quarter mile radius of the project site. Two rezonings along Twin Peaks Road are located approximately 0.5 miles north of the site, Camino Vaquero Specific Plan and Twin Peaks 100 Specific Plan.

e. Subdivision/Development Plans Approved

There are three subdivision plats approved within a one-quarter mile radius of the project site: Oasis Hills (lots 1-90), Oasis Hills II (lots 1-40) and Cascada Village I (lots 1-430).

f. Architectural Styles of Adjacent Development

Homes to the west of the site are a mixture of manufactured and site-built homes. Homes in the Oasis Hills I & II subdivision, south of the site, are currently under construction by TJ Bednar Homes and DR Horton Homes.

4. Well Sites within 100 Feet of the property

According to Pima County Geographic Information Systems and the Arizona Department of Water Resources, well #807934 is located near the center of the southern property boundary within 100 feet of the property. There are no other wells located on or within 100 feet of the property. *See Exhibit II.A.3.b: Existing Land Uses*.

Exhibit II.A.3.a: Existing Zoning

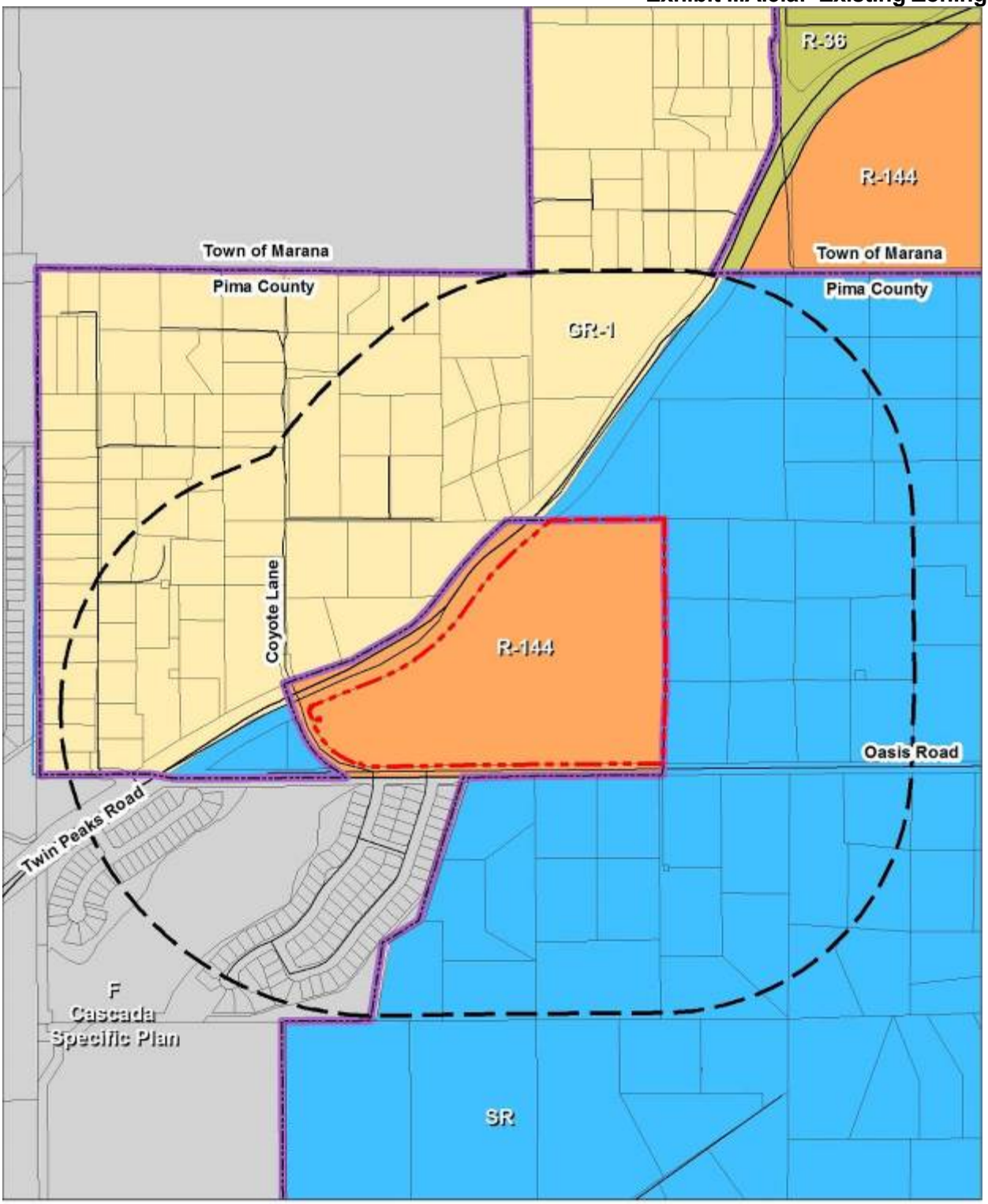
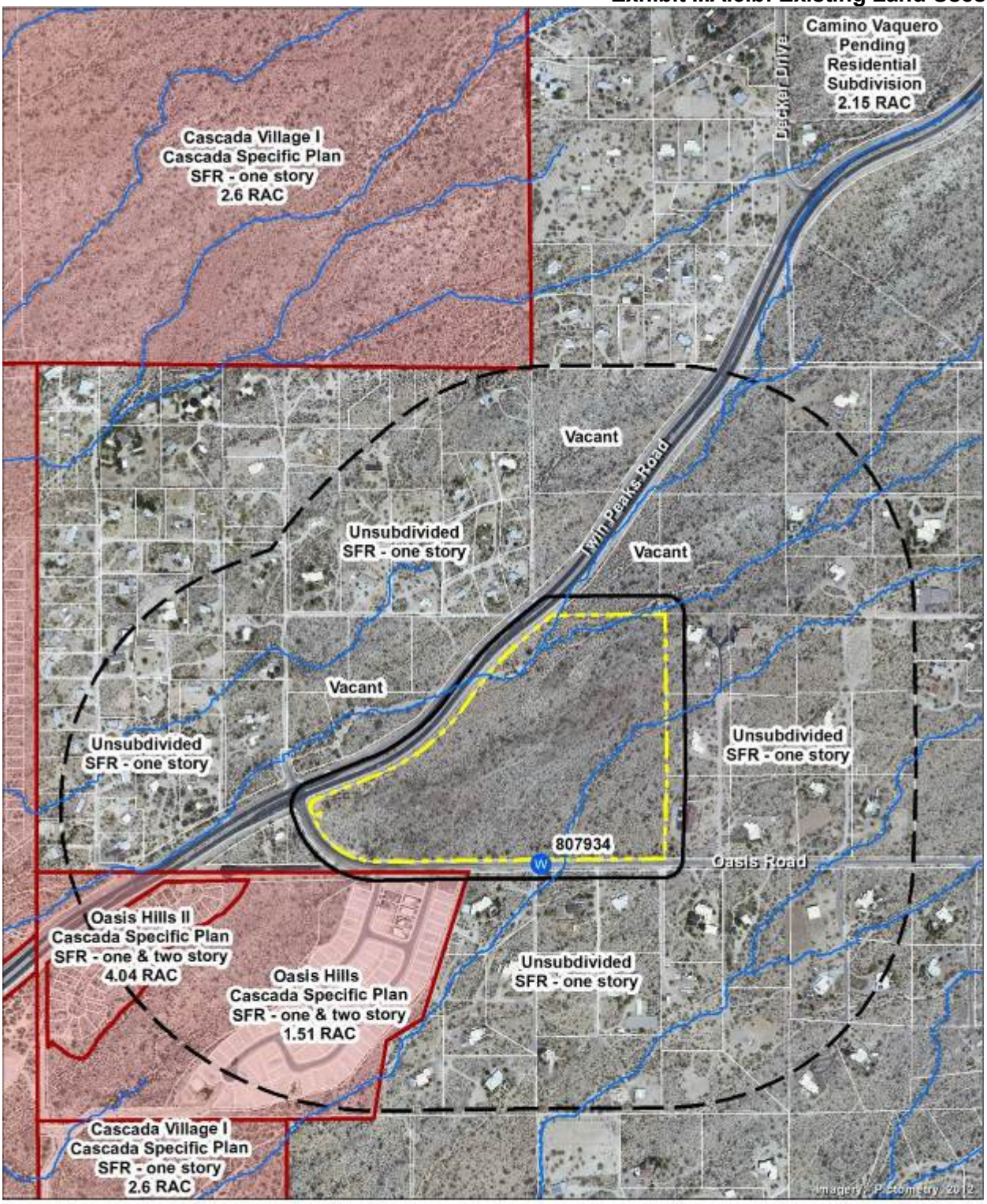


Exhibit II.A.3.b: Existing Land Uses



B. Topography and Slope

The elevations on the property range from approximately 2314 feet at the northeastern corner to approximately 2260 feet at the southwestern corner. An un-named wash enters the property along the northeast corner with flows between 500 and 600 CFS. An additional un-named wash enters the property along the eastern boundary with flows between 1000 and 2000 CFS. Existing topography at 2' contour intervals is shown on *Exhibit II.B.1: Topography and Slope*.

1. Hillside Conservation Areas

There are no Hillside Conservation areas on the subject property.

2. Rock Outcrops

There are no rock outcrops on the subject site.

3. Slopes of 15% or Greater

There are only small areas adjacent and immediate to the washes that have 15% or greater slopes. The surface slope of the property is shown on *Exhibit II.B.1: Topography and Slope*.

4. Other Significant Topographic Features

There are no other significant topographic features such as peaks or ridges on the project site.

5. Pre-Development Cross-Slope

The average cross-slope of the property is approximately 7.1% from the northeast boundary of the site to the southwest corner.

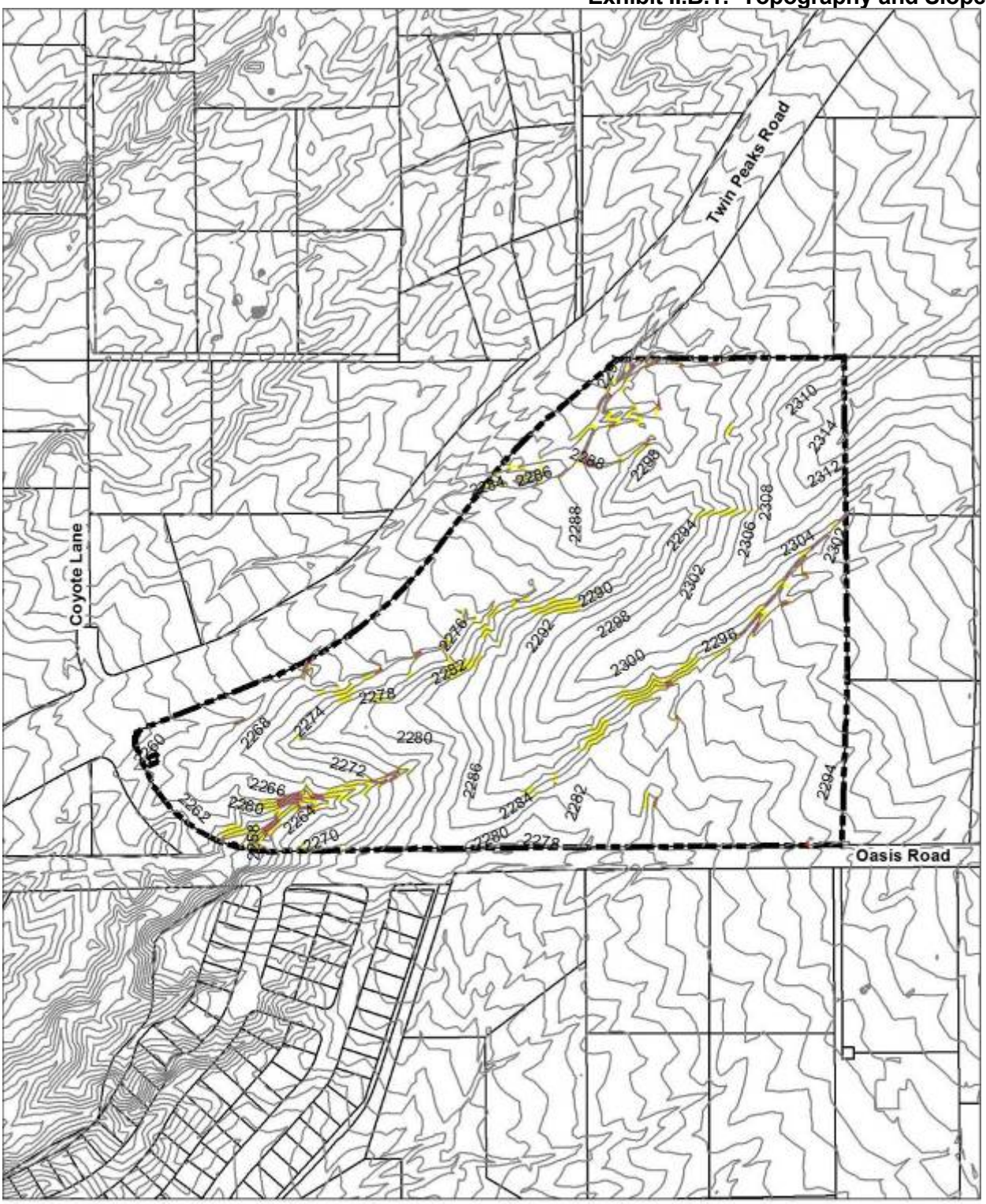
The pre-development cross slope calculation and values used are as follows:

Cross-slope = (I x L x 0.0023) / A

Where:

I = contour interval (2')
L = total length of contours (56,674')
0.0023 = conversion of "square feet" into "acres x 100"
A = total site area in acres (36.79 AC)

Exhibit II.B.1: Topography and Slope



C. Hydrology, Water Resources and Drainage

The following site hydrology information was analyzed and prepared by APEX Development Consultants, PC.

1. Off-Site Watersheds

There are four watersheds affecting the site discharging to two primary washes. Wash A and Wash C traverse the site and carry the flows of OFF 1 and OFF 2 in Wash A and OFF 3 in Wash C. OFF 4 is sheet flow through the site and drains into Wash C. OFF 1 watershed discharges onto the north property line into a well-defined wash. Total area is 45.7 acres and 100 year discharge is 294 cfs. OFF 2 watershed discharges to the northeast corner of the property in a braided wash area. Total area is 42.0 acres and 100 year discharge is 272 cfs. OFF 3 watershed begins at the base of the Tortolita Mountains and discharges to the east property line of the site in a well-defined wash. Total area is 797 acres and 100 year discharge is 1,198 cfs. OFF 4 watershed is directly east of the site and discharges within a braided wash area along the eastern boundary of the site. Total area is 45 acres and 100 year discharge is 164 cfs. Q's were calculated using the Pima County Hydrologic Data calculator PC-Hydro. Please see Exhibit II.C.1.a and Exhibit II.C.1.b.

Acreage of Upstream Off-site Watersheds with 100-year Discharge Greater Than 100 CFS

Table II.C.1: Off-Site Watersheds

Off-Site	Calculated Flow (cfs)	Drainage Area (Acres)
OFF1	294	45.7
OFF2	272	42
OFF3	1,198	797
OFF4	164	45

1. Off-Site Natural and Man-made Features

Upstream

Offsite features include the continuation of Wash A and Wash C from the site. The features of these washes directly affect the site development through the floodplain created across the site. These washes are currently natural washes with well-defined flow patterns. The upstream offsite watersheds were considered as suburban-valley with less than 1 house/acre with desert brush cover and soils from group B and C. The watershed slope is approximately 2.1%. OFF 1 and OFF 2 are accepted into Wash A and OFF 3 and 4 are accepted into Wash C. Wash A has a previously

accepted Q100 of 566 CFS at the 8.5' x 28' con arch beneath Twin Peaks Road. This value is being accepted for the purpose of this plan.

Downstream

Wash A and C discharge to an arch culvert under Twin Peaks Road and a dip crossing in Oasis Road respectively. The culvert is an 8.5'x28' arch culvert. The remaining onsite watersheds discharge to 3 24" RCP's under Oasis Road on the southwest corner and 2 30" RCP's under Oasis Road on the southern portion of the site. The 24" RCP's discharge to a man-made channel. The 30" RCP's discharge to a large undevelopable ravine.

A full drainage report and analysis will be necessary to show the existing downstream culverts at Oasis Road and Twin Peaks Road have sufficient capacity to convey flows from this project. This study must show that the downstream properties are not impacted by more than a tenth of a foot of cumulative water surface elevation rise due to the development of this project or supply proof of offsite mitigation and/or development agreements with offsite property owners.

2. On-Site Hydrology

a. On-site drainage flow conditions are characterized by:

The onsite drainage exhibit represents the onsite watersheds. These watersheds are broken into four sub watersheds. ON1E is 5.5 acres and produces 31 cfs. ON2E is 12.1 acres and produces 68 cfs during the 100 year event. This area is isolated and does not accept any flows from offsite and discharges through Wash B. This area terminates at the southwest corner of the site into three 24" Reinforced Concrete Pipes (RCP's) under Oasis Road and then into a constructed channel. ON3E is 6.5 acres and produces 37 cfs during the 100 year event. This area terminates into two 30" RCP's under Oasis Road that discharge into a large natural ravine adjacent to the Oasis Hills subdivision. ON4E is 12.6 acres and produces 71 cfs in the 100 year event. This area accepts flows from OFF3 and OFF 4. ON4E discharges in a large well-defined wash at Oasis Road with a total Q100 of 1,224 cfs. Please see *Exhibit II.C.2.a: On-Site Hydrology*.

b. Federally Mapped Floodways and Floodplains:

The property is located within FEMA Insurance Rate Map 04019C1065L. The site is heavily affected by an AO non-studied, general floodplain with depths of 1' and velocities of 4 fps. *Please see Exhibit II.C.2.b*

c. Areas of Sheet Flooding with Average Depth:

The FEMA AO zone designates a large portion of the site as sheet flooding. The reality is that there are well-defined washes within the site that need detailed studies to be performed.

d. 100-Year Peak Discharge Exceeding 50 cfs:

Wash A, B and C will be regulated flood plains. ON2E and ON4E both produce 100-year event discharge above the 50 cfs which is the Marana threshold for regulatory discharge. All on-site existing discharges are tabulated in Table II.C.2.d.

Table II.C.2.d: 100 Year Peak Discharge

On-site	Calculated Flow (cfs)	Drainage Area (Acres)
ON1E	31	5.5
ON2E	68	12.1
ON3E	37	6.5
ON4E	71	12.6

See *Exhibit II.C.2.a*

3. Existing Drainage Conditions along Downstream Property Boundary

The downstream concentration points are defined as CP5, 6, 7, and 8. Wash A and ON1E discharges to CP8 at an 8.5x28' arch culvert. ON2E discharges to CP7 which is three 24" RCP's under Oasis Road. ON3E discharges to CP6 to 2 30" RCP's under Oasis Road. Wash C and ON4E discharge to CP5 which is a dip section in Oasis Road. Downstream concentration point flows are delineated in Table II.C.3.

Table II.C.3: 100 Year Peak Discharge

On-site	Calculated Flow (cfs)
CP 5	1224
CP 6	37
CP 7	68
CP 8	566

Exhibit II.C.1.a: Off-Site Watersheds

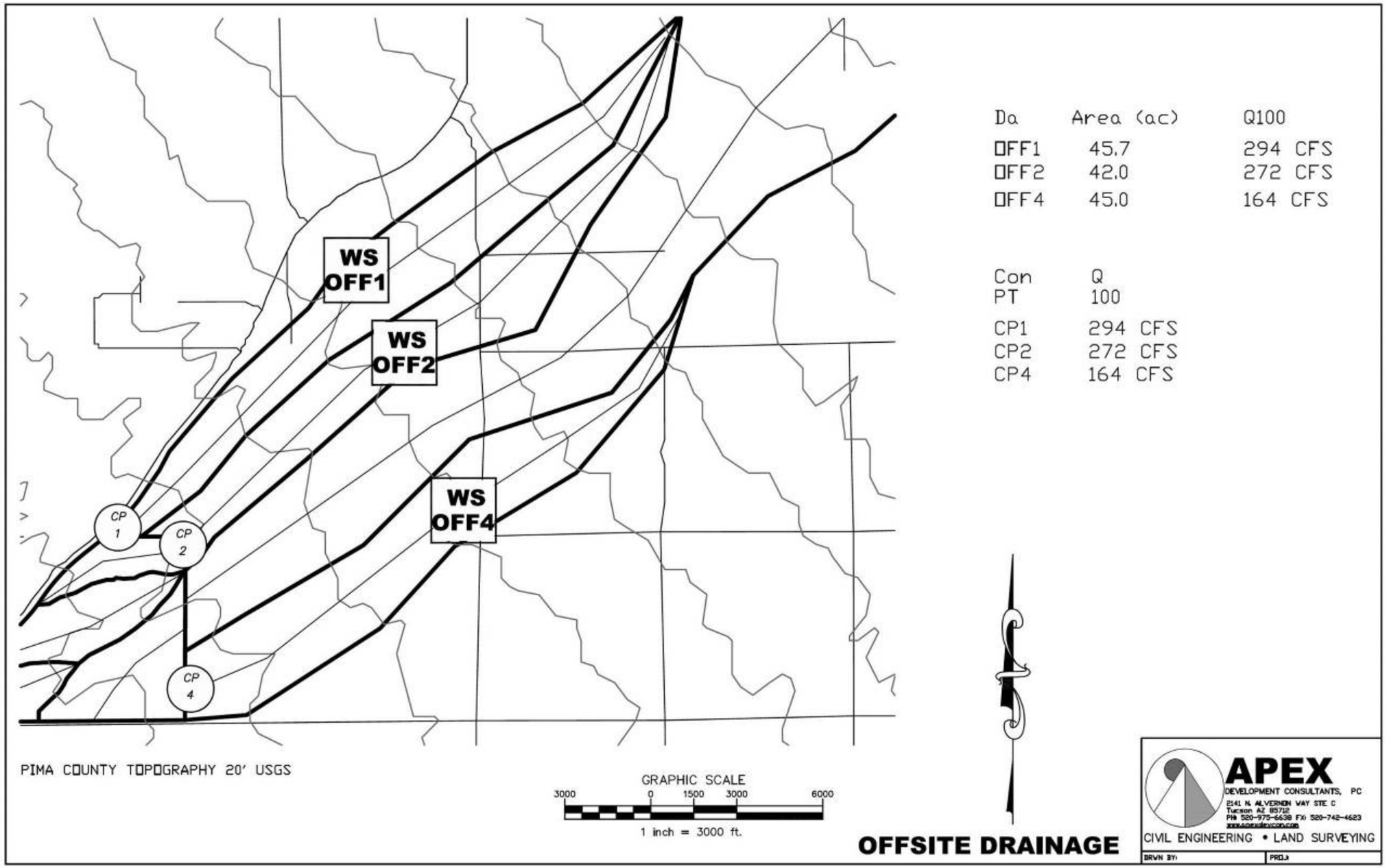
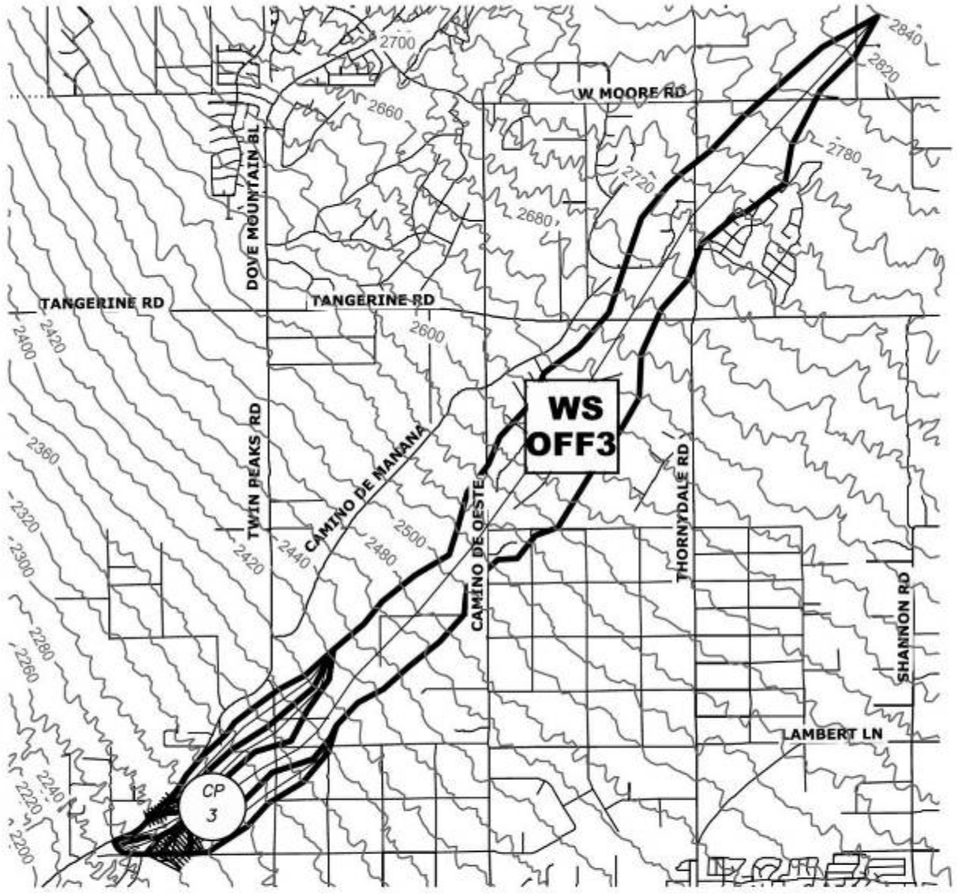


Exhibit II.C.1.b: Off-Site Watersheds



Da	Area (ac)	Q100
OFF3	797	1198 CFS

Con	Q
PT	100
CP3	1198 CFS

PIMA COUNTY TOPOGRAPHY 20' USGS

GRAPHIC SCALE
3000 0 1500 3000 6000
1 inch = 3000 ft.

OFFSITE DRAINAGE

APEX
DEVELOPMENT CONSULTANTS, PC
2141 N. ALVERNON WAY STE C
Tucson AZ 85712
PH 520-975-6638 FX: 520-742-4623
www.apexdevcon.com
CIVIL ENGINEERING • LAND SURVEYING

DRVN BY: PROJ:

Exhibit II.C.2.a: On-Site Hydrology

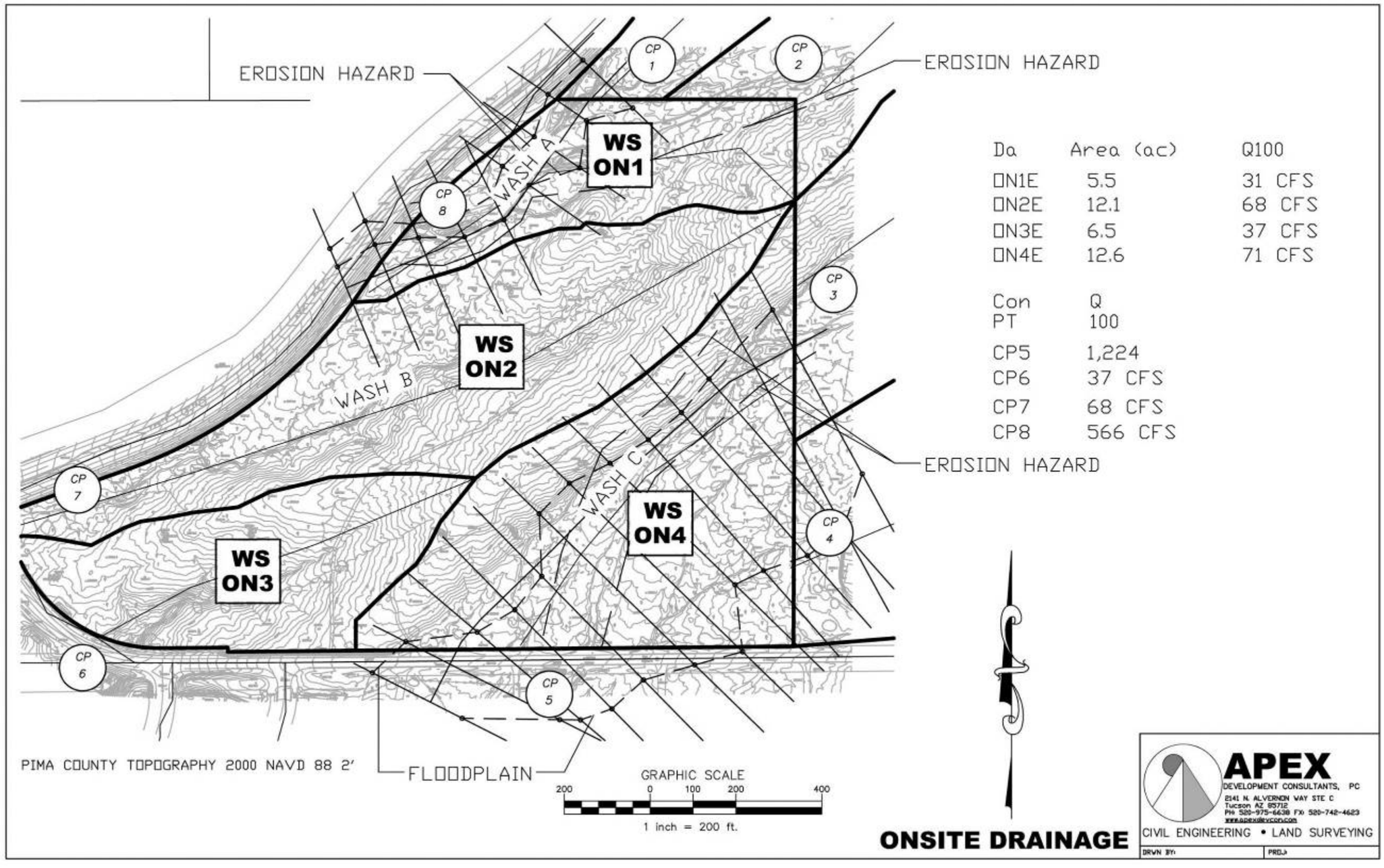


Exhibit II.C.2.b: FEMA Floodplain



PIMA COUNTY 2012 AERIAL
FEMA MAP 04019C1065L JUNE 16, 2011

GRAPHIC SCALE
200 0 100 200 400
1 inch = 200 ft.

FEMA

APEX
DEVELOPMENT CONSULTANTS, PC
2141 N. ALVERNON WAY STE C
Tucson AZ 85712
PH 520-975-6638 FX 520-742-4623
CIVIL ENGINEERING • LAND SURVEYING
DRVN BY: PROJ:

D. Vegetation

1. Vegetative Communities and Associations On-Site

The property is located on the Tortolita Fan approximately 4.5 miles from the nearest slopes of the Tortolita Mountains. Site drainage is from the northeast to the southwest, with a low ridge crossing from the northeast to southwest corners of the property. Several wash channels cross the property, including a braided system along the northwestern toe of the ridge, another braided channel along the southeastern toe of the ridge, a smaller pair of channels further southeast from this braided channel, and a channel that develops on the ridge near the center of the property and discharges at the southwest corner.

The area is within the Arizona Upland subdivision of the Sonoran Desertscrub biotic community (Brown and Lowe 1980[1]), and the property contains native vegetation that is typical of that found in Arizona's Sonoran Desert. Overall vegetation density and diversity on the property is moderate. The Pima County GIS (2013) identifies three vegetation types on the property; Palo Verde – Mixed Cacti in the uplands; Sonoran Riparian Scrub along the northern and southeastern washes, not including the wash that develops on the property; and a mix of the two communities in the southeast corner of the property. See *Exhibit II.D.1.a: SDCP Vegetative Communities, Associations and Densities*

a. Arizona Upland Subdivision, Palo Verde-Mixed Cactus series:
A Site Resource Inventory was completed in accordance with Town of Marana requirements (*See Exhibit II.D.2*). Dominant species on the uplands include foothill palo verde (*Parkinsonia microphylla*), creosotebush (*Larrea tridentata*), triangle-leaf bursage (*Ambrosia deltoidea*), burroweed (*Isocoma tenuisecta*), and saguaro (*Carnegiea gigantea*). Smaller numbers of blue palo verde (*Parkinsonia florida*) and desert ironwood (*Olneya tesota*) trees are also present. Few healthy, mature ironwoods were noted on the property. Numerous species of cacti were recorded on the property, but aside from saguaros, they were generally not prominent in the vegetation community.

b. Sonoran Riparian Scrub vegetation:
Sonoran Riparian Scrub vegetation is associated with the northern and southeastern ephemeral washes running through the property (Pima County GIS 2013). The wash that develops near the center of the property and discharges at the southwest corner also supports xeroriparian vegetation distinct from the upland vegetation, although Pima County GIS does not map it as Sonoran Riparian Scrub. The community along these washes has denser and more diverse vegetation than on the adjacent uplands. Palo verde and desert ironwood trees are found at higher density along the washes than on the uplands, and several other species are found almost exclusively in the vicinity of the washes, including velvet mesquite (*Prosopis velutina*), whitethorn acacia (*Vachellia constricta*), desert hackberry (*Celtis pallida*) and catclaw acacia (*Senegalia greggii*). The wash that develops near the center of the property supports the largest stand of ironwood trees. These trees have not reached full maturity.

Table II.D.1 presents a list of plants observed during an April 2013 site visit. Also observed, but not listed, were various bunch grasses and forbs.

Table II.D.1: Species list of plant species observed on site

SCIENTIFIC NAME	COMMON NAME
Ambrosia ambrosioides	Canyon ragweed
Ambrosia deltoidea	Triangle-leaf bursage
Carnegiea gigantea	Saguaro cactus
Celtis pallida	Desert hackberry
Echinocereus sp.	Hedgehog cactus
Ferocactus wislizenii	Barrel cactus
Hymenoclea salsola	Cheeseweed
Isocoma tenuisecta	Burroweed
Jatropha cardiophylla	Limberbush

[1] Brown, D.E., and C. Lowe, 1980. Biotic communities – Southwestern United States and Northwestern Mexico. Map. University of Utah Press. Salt Lake City, Utah.

Larrea tridentata	Creosotebush
Mammillaria microcarpa	Pincushion cactus
Olneya tesota	Desert ironwood
Opuntia engelmannii	Prickly pear cactus
Opuntia fulgida	Chain fruit cholla
Opuntia leptocaulis	Christmas cholla
Opuntia versicolor	Staghorn cholla
Parkinsonia microphylla	Foothills palo verde
Parkinsonia florida	Blue palo verde
Prosopis velutina	Velvet mesquite
Senegalia greggii	Catclaw acacia
Vachellia constricta	White thorn acacia
Ziziphus obtusifolia	Graythorn

2. Significant Cacti and Groups of Trees

The saguaro population appears typical for the area, with a stable age structure ranging from many young plants scattered throughout the site to plants well over 30 feet in height. The wash that develops near the center of the property was noted to support the most ironwoods on the property, but did not appear to be especially unique or significant relative to other open lands noted in the vicinity.

3. Special-Status Plant Species

The U.S. Fish and Wildlife Service (USFWS) identifies four plant species in Pima County that have protection under the Endangered Species Act (ESA), one plant species that has been proposed for listing and protection under the ESA, and one plant species that has a conservation agreement in place to preclude it from listing (Table II.D.3.a)[2]. Based on past experience working in the vicinity of the property, none of these species are expected to occur on the property.

The Arizona Game and Fish Department's (AGFD) Heritage Data Management System (HDMS) was accessed via their On-line Environmental Review Tool, to search for records of occurrence of these species within 3 miles of the property. The HDMS also includes records for numerous other species that do not have ESA protection (special-status species), and of lands of environmental concern, such as critical habitat for species with ESA protection and wildlife linkage corridors. In support of the assertion that these six species are not expected to occur on the property, the HDMS report for the property does not include records for any of the six plant species (Table II.D.3.b). The summary page from the HDMS review has been included as *Exhibit: II.E.1: AGFD Online Environmental Review*.

The HDMS does identify one plant species within 3 miles of the property; the Tumamoc globeberry (*Tumamoca macdougalii*). The species has no status under the ESA, but is salvage restricted under the Arizona Native Plant Law.

Marana's draft Habitat Conservation Plan (HCP) (2009) does not include any plant species to consider.

[2] http://www.fws.gov/southwest/es/arizona/Documents/CountyLists/Pima.pdf

Table II.D.3.a: USFWS List of Special-Status Plant Species for Pima County

Common and Scientific Name	ESA Status	AGFD HDMS Records within 3 Miles of the Property
Acuña cactus (*Echinomastus erectocentrus var. acunensis*)	Proposed Endangered	No
Goodding's onion (*Allium gooddingii*)	Conservation Agreement	No
Huachuca water umbel (*Lilaeopsis schaffneriana* ssp. *recurva*)	Endangered	No
Kearney's blue star (*Amsonia kearneyana*)	Endangered	No
Pima pineapple cactus (*Coryphantha scheeri* var. *robustispina*)	Endangered	No
Nichol Turk's head cactus (*Echinocactus horizonthalonius* var. *nicholii*)	Endangered	No

Table II.D.3.b: Special Status Species

Common Name	Scientific Name	FWS	USFS	BLM	State
Aquila chrysaetos	Golden Eagle	BGA		S	
Coyote - Ironwood - Tucson Linkage Design	Wildlife Corridor				
Dendrocygna bicolor	Fulvous Whistling-Duck	SC			
Glaucidium brasilianum cactorum	Cactus Ferruginous Pygmy-owl	SC	S	S	WSC
Tucson - Tortolita - Santa Catalina Mountains Linkage Design	Wildlife Corridor				
Tumamoca macdougalii	Tumamoc Globeberry		S	S	SR

Source: Arizona State Game and Fish Department

Definitions: FWS (U.S. Fish and Wildlife Service), USFS (U.S. Forest Service), BLM (U.S. Bureau of Land Management), State (Arizona Department of Agriculture), BGA (Bald and Golden Eagle Protection Act), SC (Species of Concern), S (Sensitive; those occurring on National Forests in Arizona which are considered sensitive by the Regional Forests), SR (Salvage Restricted: collection only with permit.), WSC (Wildlife of Special Concern in Arizona). Species whose occurrence in Arizona is or may be in jeopardy, or with known or perceived threats or population declines, as described by the Arizona Game and Fish Department's listing of Wildlife of Special Concern in Arizona (WSCA)

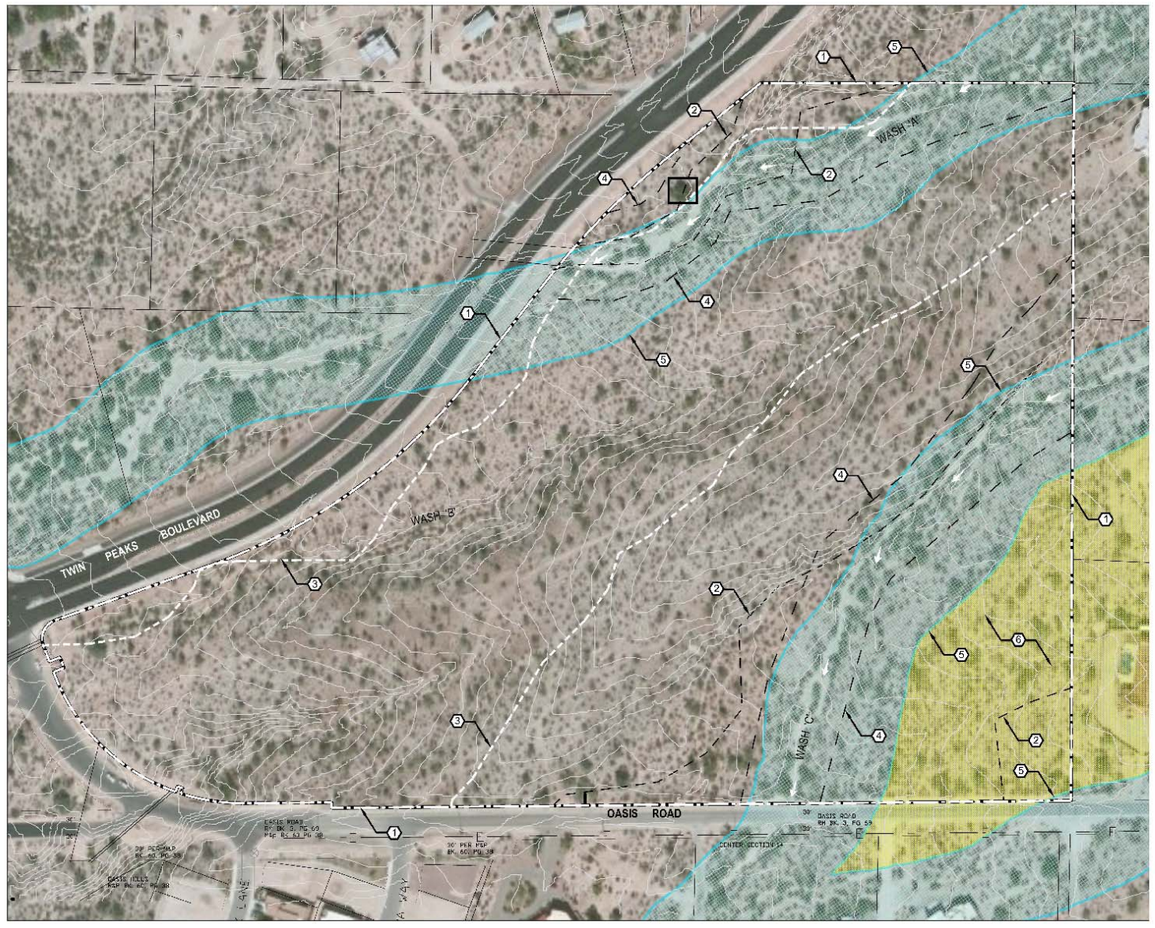
4. Vegetative Densities by Percentage of Plant Cover

The Pima County GIS (2013) categorizes the upland, Palo Verde – Mixed Cactus vegetation on the property as medium density, and both the Sonoran Riparian Scrub vegetation along the washes and the combined Palo Verde – Mixed Cactus and Sonoran Riparian Scrub vegetation in the southeast corner of the property as high density. On the site, the high density vegetation appeared restricted to the edge of the drainage channels. *Exhibit II.D.3: Vegetation Densities*, illustrates the vegetative community densities found on the property.

Exhibit II.D.1.a: SDCP Vegetative Communities, Associations and Densities


Twin Peaks Road
Oasis Road
Imagery: Pictometry 2012
LEGEND
Specific Plan Boundary
Parcels
Vegetation
Sonoran Desertscrub
Pima County Special Elements
Palo Verde - Mixed Cacti
Sonoran Riparian Scrub
NORTH
0'
200'
400'
FILE NAME: Vegetation_6x8_PUL-25.mxd
SOURCE: Pima County GIS, 2013

Exhibit II.D.2: Site Resource Inventory



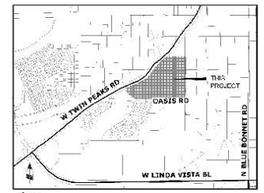
KEY NOTES

1. PROPERTY LINE
2. EROSION HAZARD SETBACK
3. FEMA FLOODPLAIN
4. EXISTING WATER SURFACE ELEVATION
5. COUNTY MAPPED RIPARIAN LIMITS-IMPORTANT RIPARIAN AREA
6. COUNTY MAPPED RIPARIAN LIMITS-XERORIPARIAN 'C'

LEGEND

- PROJECT BOUNDARY
- STEEP HILLSIDE SLOPES BETWEEN 15 TO 25 PERCENT
- UNIQUE VEGETATION
- RIPARIAN = IMPORTANT RIPARIAN AREA (IRA) PER PIMA COUNTY MAPGUIDE.
- RIPARIAN = XERORIPARIAN 'C' PER PIMA COUNTY MAPGUIDE.
- 100-YEAR FEMAFLOODPLAIN.
- EXISTING WATER SURFACE ELEVATION
- EROSION HAZARD SETBACK
- DIRECTION OF FLOW

LOCATION MAP



LOCATION MAP
A PORTION OF SECTION 14 T12S – R12E, G.&S.R.M. PIMA COUNTY, ARIZONA.

NOTES

GENERAL
The vegetation on the property is characterized as Arizona upland subdivision of the Sonoran desert-scrub biotic community. The dominant tree species is foothills palo verde, most of which appear to be mature and in good health. The site also contains a much smaller number of ironwoods, some of which show signs of decline, perhaps due to drought. One ironwood appears to be healthy and near full maturity. Dominant shrub species include burrow bush and creosote bush. There are also a large number of saguaro cacti represented on site in a wide range of ages, most of which appear to be in good health. As illustrated in the accompanying plans, there are two ephemeral washes (Washes A and C) that cross the site and a third wash (Wash B) that originates on site. Vegetation associated with these drainages is slightly denser and the diversity of species is slightly greater than the surrounding areas, particularly Wash B.

A list of dominant plants noted across the site is listed in the table below.

COMMON NAME	SPECIES	COMMON NAME	SPECIES
Chain fruit cholla	*Opuntia fulgida*	Iron wood	*Olneya tesota*
Stag horn cholla	*Opuntia Versicolor*	Triangle leaf bursage	*Ambrosia deltoidea*
Prickly pear cactus	*Opuntia sp.*	Desert hackberry	*Cletis pallida*
Hedge hog cactus	*Echinocereus sp.*	White thorn acacia	*Acacoa constricta*
Fish hook barrel cactus	*Ferocactus wislizenii*	Limber bush	*Jatropha cardiophylla*
Fish hook pincushion cactus	*Mammillaria microcarpa*	Velvet mesquite	*Prosopis. velutina*
Saguaro cactus	*Carnegiea gigantea*	Cat claw acacia	*Acacia greggii*
Christmas cholla	*Opuntia leptocaulis*	Canyon rag weed	*Ambrosia ambrosioides*
Grey thorn	*Ziziphus obtusifolia*	Cheese weed	*Hymenoclea salsola*
Foothills palo verde	*Cercidium microphyllum*	Burrow bush	*Isocoma tenuisecta*
Blue palo verde	*Cercidium floridum*	Creosote bush	*Larrea tridentata*

UNIQUE SIGNIFICANT VEGETATION
There is one ironwood tree associated with Wash A that appears to be near maturity and in good health. It may be termed significant. There is also a healthy ironwood-saguaro plant community in association with the lower reach of Wash B. The ironwoods in this location are not yet fully mature and only one saguaro is of significant size. Therefore, although noteworthy, this area is not considered a significant vegetative community. Vegetation elsewhere on the site is typical of the Sonoran desert-scrub biotic community.

RIPARIAN AREAS
There are no hydro-riparian areas present. As noted above and shown on the adjacent plan, there are three ephemeral washes on the site. Two of these washes are identified as Important Riparian Areas by Pima County Mapguide. Also as noted above, the vegetation associated with these drainages is slightly denser than the surrounding upland areas and is slightly more varied in terms of species diversity.

WILDLIFE CORRIDORS
The washes present on site are sandy-bottomed for most of their lengths. On the downstream ends, the Washes A and B are interrupted by box culverts under West Twin Peaks Road before they continue through residential development on the north side of the roadway. Washes A and B terminate at Interstate 10 approximately one mile away. Wash C continues across West Oasis Road and through residential properties before it is interrupted by a box culvert under Lambert Lane. It also ends at Interstate 10. On the upstream side, Wash B originates on site and Washes A and C appear to originate less than one mile upstream from the project site. Given the relatively isolated nature of these washes, it seems unlikely that they serve as significant wildlife corridors. None of the site washes are included in the 2009 Draft Town of Marana Habitat Conservation Plan.

UNIQUE ROCK OUTCROPPINGS and STEEP HILLSIDE SLOPES
There are no unique rock outcroppings on site. There are no slopes steeper than 15% on site.

100-YEAR REGULATORY FLOOD LIMITS
The 100-year floodplains are shown on the plans.

PROPERTY BOUNDARIES (AND RIGHTS OF WAY)
Property lines and ROW's are shown on the plans.

LOCATION MAP, GRAPHIC SCALE & NORTH ARROW
Please refer to the plans.

N W E S

100' 0' 100'
SCALE: 1" = 100'

WestLand Resources, Inc.
Engineering and Environmental Consultants
4001 E. Paradise Falls Drive
Tucson, AZ 85712 (520) 206-9585

Two working days before you dig CALL FOR THE BLUESTAKES 1-800-782-5348 1-800-STAKE IT (Blue Stake, Inc.) Only COLLECT

DATE	REVISION	NO.

Ex 06-04-13

Twin Peaks & Oasis Subdivision
SITE RESOURCE INVENTORY

DESIGNED BY: JSA/KAS	DRAWN BY: JSA/KAS	CHECKED BY: RHS	SHEET
DATE: 04/26/13	PROJECT NO.: 1799.03	SCALE:	L1.0 OF 4
WESTLAND RESOURCES DRAWING PATH:			

Exhibit II.D.3: Vegetation Densities



LEGEND

Specific Plan Boundary
Parcels
Medium Density
High Density

NORTH 0' 200' 400'

FILE NAME: Veg_Dens_6x8_PUL-25.mxd
SOURCE: Pima County GIS, 2013

E. Wildlife

1. Letter from Habitat Specialist

The USFWS identifies 12 animal species in Pima County that have protection under the ESA, and another eight species that do not have protection but are included on their list as either candidates for listing, having a conservation agreement in place to preclude their listing, or having been delisted (Table II.E.1)[3]. The following review of these species does not constitute a determination of potential for the species to occur on the property, but only a preliminary evaluation: analysis for the potential of these species to occur on the property included only a search of the AGFD HDMS to locate records of occurrence, experience working on other properties in the vicinity, and review of Marana's draft Habitat Conservation Plan (HCP) modeled habitat (2009) available for some of the species. Although the property is not currently within Marana, and was not include in modeled habitat analysis in the HCP, the property is adjacent to Marana lands that were included in the modeled habitat analysis.

The AGFD HDMS was accessed via their On-line Environmental Review Tool, to locate records of occurrence of wildlife species within 3 miles of the property. The HDMS also includes records for species with ESA protection, as well as numerous species that do not have ESA protection (special-status species), and of lands of environmental concern, such as critical habitat for species with ESA protection and wildlife linkage corridors. The summary page from the HDMS review has been included as *Exhibit: II.E.1: AGFD Online Environmental Review*.

There are no records in the HDMS of occurrence of any of the 12 species with ESA protection within 3 miles of the property, but there is a record for one of the delisted species on the USFWS list for Pima County: the cactus ferruginous pygmy-owl (*Glaucidium brasilianum cactorum*) (Table II.E.1). Habitat on the property is potentially suitable for the cactus ferruginous pygmy-owl. Modeled habitat for the cactus ferruginous pygmy-owl is adjacent to the south of the property, and when the species was listed, several projects in the vicinity of the property went through consultation for the species with the USFWS. Although not protected by the ESA, as with most bird species in the United States, the cactus ferruginous pygmy-owl receives the protections provided by the Migratory Bird Treaty Act (MBTA).

The HDMS includes a record for two species that are not on the USFWS list for Pima County: the golden eagle (*Aquila chrysaetos*), and the fulvous whistling duck (*Dendrocygna bicolor*). The golden eagle has federal protection under the Bald and Golden Eagle Protection Act,and both species are protected under the MBTA.

[3] http://www.fws.gov/southwest/es/arizona/Documents/CountyLists/Pima.pdf

However, there is little potential for the golden eagle to use habitat on the property, and no potential for the fulvous whistling duck to occur on the property.

Aside from the HDMS, from past experience on projects in the vicinity of the property, only one of the 12 wildlife species with ESA protection is expected to have reasonable potential to occur on the property. The lesser long-nosed bat (*Leptonycteris curasoae yerbabuenae*), listed endangered, may forage on saguaros at the property. In addition, Marana's draft HCP (2009) depicts modeled habitat for the lesser long-nosed bat within Marana's boundaries adjacent to the south of the property.

Of the species that are on the USFWS list for Pima County, but do not have ESA protection, the Sonoran desert tortoise (*Gopherus morafkai*), a candidate for ESA protection, has the potential to be found on the property. Although the HDMS search did not find any records of the species within 3 miles of the property, and Marana's draft HCP (2009) does not include modeled habitat for the species within Marana's lands adjacent to the property, it is a resident of the Tortolita Mountains, approximately 4.5 miles away, and is known to wander down the Tortolita Fan. While there is potential for desert tortoises to use the property, their occurrence at the property would likely be rare and transient.

Marana's draft HCP (2009) includes six species that are not on the USFWS list for Pima County (Table II.E.1). Those six species are listed in Table II.E.1 as "None" under the ESA Status column. This document does not consider the potential for those species to occur on the property beyond review of the draft HCP maps depicting modeled habitat for those species. Modeled habitat is depicted on Marana's lands adjacent to the property for one of these species, the pale Townsend's big-eared bat (*Corynorhinus townsendii pallescens*), and modeled habitat for the Marriam's mesquite mouse (*Peromyscus merriami*) is depicted on Marana's lands within a few hundred feet to the south of the property.

Table II.E.1: USFWS List of Wildlife Species for Pima County			
Common Name	**Scientific Name**	**ESA Status**	**Marana Draft HCP Status**
Invertebrates			
San Xavier talussnail	*Sonorella eremita*	Conservation Agreement	Not Covered
Talussnail	*Sonorella* spp.	None	Covered
Fish			
Desert pupfish	*Cyprinodon macularius*	Endangered	Not Covered
Gila chub	*Gila intermedia*	Endangered	Not Covered
Gila topminnow	*Poeciliopsis occidentalis occidentalis*	Endangered	Not Covered
Reptiles			
Ground snake (valley form)	*Sonora semiannulata*	None	Covered
Northern Mexican gartersnake	*Thamnophis eques megalops*	Candidate	Covered
Sonoran desert tortoise	*Gopherus morafkai*	Candidate	Covered
Sonoyta mud turtle	*Kinosternon sonoriense longifemorale*	Candidate	Not Covered
Tucson shovel-nosed snake	*Chionactis occipitalis klauberi*	Candidate	Covered
Amphibians			
Lowland leopard frog	*Lithobates [Rana] yavapaiensis*	None	Covered
Chiricahua leopard frog	*Lithobates [Rana] chiricahuensis*	Threatened	Not Covered
Birds			
American Peregrine Falcon	*Falco peregrinus anatum*	Delisted	Not Covered
Cactus ferruginous pygmy-owl	*Glaucidium brasilianum cactorum*	Delisted	Covered
California least tern	*Sterna antillarum browni*	Endangered	Not Covered
Masked bobwhite	*Colinus virginianus ridgwayi*	Endangered	Not Covered
Mexican spotted owl	*Strix occidentalis lucida*	Threatened	Not Covered
Southwestern willow flycatcher	*Empidonax traillii extimus*	Endangered	Covered
Western Burrowing Owl	*Athene cunicularia hypugaea*	None	Covered
Yellow-billed cuckoo	*Coccyzus americanus*	Candidate	Covered
Mammals			
Jaguar	*Panther onca*	Endangered	Not Covered
Lesser long-nosed bat	*Leptonycteris curasoae yerbabuenae*	Endangered	Covered
Merriam's mesquite mouse	*Peromyscus merriami*	None	Covered
Ocelot	*Leopardus pardalis*	Endangered	Not Covered
Pale Townsend's big-eared bat	*Corynorhinus townsendii pallescens*	None	Covered
Sonoran Pronghorn	*Antilocapra americana sonoriensis*	Endangered	Not Covered

2. High Densities of Wildlife Species

There is no evidence that unusually high densities of any wildlife species occur on the property.

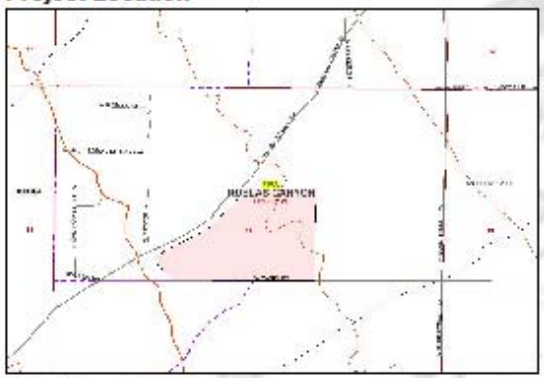
3. High Densities of a Given Species

There is no evidence that high densities of a given species exist within the project area.

Exhibit II.E.1: AGFD Online Environmental Review

Arizona's On-line Environmental Review Tool
Search ID: 20130501020271
Project Name: PUL-25
Date: 5/1/2013 8:29:41 AM

Project Location



Project Name: PUL-25
Submitted By: Brian Underwood
On behalf of: CONSULTING
Project Search ID: 20130501020271
Date: 5/1/2013 8:29:36 AM
Project Category: Development Within Municipalities (Urban Growth),Residential subdivision and associated infrastructure,New construction
Project Coordinates (UTM Zone 12-NAD 83): 491669.055, 3583643.103 meter
Project Area: 45.945 acres
Project Perimeter: 1860.339 meter
County: PIMA
USGS 7.5 Minute Quadrangle ID: 1683
Quadrangle Name: RUELAS CANYON
Project locality is currently being scoped

Location Accuracy Disclaimer

Project locations are assumed to be both precise and accurate for the purposes of environmental review. The creator/owner of the Project Review Receipt is solely responsible for the project location and thus the correctness of the Project Review Receipt content.

The Department appreciates the opportunity to provide in-depth comments and project review when additional information or environmental documentation becomes available.

Special Status Species Occurrences/Critical Habitat/Tribal Lands within 3 miles of Project Vicinity:

Name	Common Name	FWS	USFS	BLM	State
Aquila chrysaetos	Golden Eagle	BGA		S	
Coyote - Ironwood - Tucson Linkage Design	Wildlife Corridor				
Dendrocygna bicolor	Fulvous Whistling-Duck	SC			
Glaucidium brasilianum cactorum	Cactus Ferruginous Pygmy-owl	SC	S	S	WSC
Tucson - Tortolita - Santa Catalina Mountains Linkage Design	Wildlife Corridor				
Tumamoca macdougalii	Tumamoc Globeberry		S	S	SR

Page 1 of 7 APPLICATION INITIALS: _____

F. Viewsheds

1. Viewsheds Onto and Across the Site

The Twin Peaks Oasis project area is located in a developing area within the Town of Marana limits. Residential development exists south and east of the site. Topography within the project area is gently sloping to the southwest. There are no steep hills or significant topographic features on the site. The general landscape is dominated by natural desert upland vegetation with two braided washes, varying in width from 6-40 feet, crossing the project area. Viewsheds onto and across the site are dominated by mature native trees, cacti, and shrubs. Views of the middle ground are partially obstructed by vegetation in the foreground. Views of the background (greater than eight miles) include the Tortolita, Tucson, and Catalina Mountains.

See *Exhibit II.F.1.a: Photo Key Map* and *Exhibit II.F.1.b: Site Photos*.

2. Area of High Visibility from Adjacent Off-Site Uses

The areas of high visibility from adjacent off-site uses are mainly along the boundaries. The main areas of high off-site visibility are along the western boundary when travelling Twin Peaks Road. Twin Peaks Road is slightly higher than the elevation of the site and therefore you can see along the site frontage. The topographical changes along the southern half of the site prohibit high visibility with the exception of the immediate site property lines. The native trees and topography changes significantly reduce views across the site.

See Exhibit II.F.2: Visibility.

Exhibit II.F.1.a: Photo Key Map



LEGEND

Specific Plan Boundary

Photo ID & location photo was taken

NORTH 0' 300' 600'

FILE NAME: PhotoKeyMap_6x8_PUL-25.mxd
SOURCE: Pima County DOT GIS, 2013

Exhibit II.F.1.b: Site Photos



Photo 1: View looking north onto the site from Crook Lane and Oasis Road near the southwest corner of the property.



Photo 2: View looking northeast along Twin Peaks Road from the southwest corner of the site.



Photo 3: View looking north onto the site at a large wash along the southern property boundary.



Photo 4: View looking southeast along the southern property boundary near the southwest corner of the site.



Photo 5: View looking northeast at a large wash from Twin Peaks Road near the northwest corner of the site.



Photo 6: View looking northeast onto the site at a concrete culvert located towards the southwest corner of the site.

Exhibit II.F.1.b: Site Photos, continued



Photo 7: View looking south from the middle of the southern property boundary.



Photo 8: View looking northwest at a home near the southeast corner of the site.

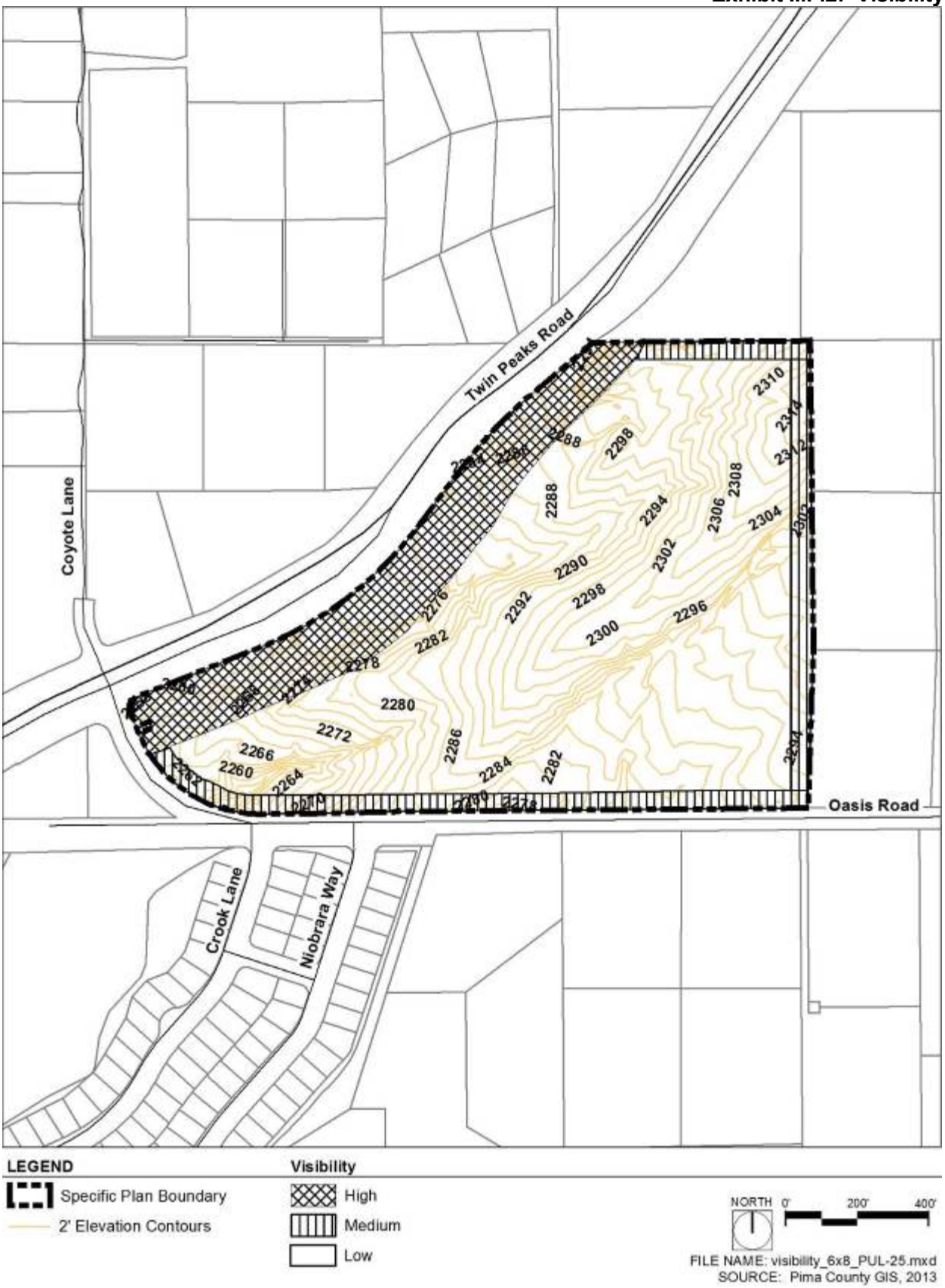


Photo 9: View looking northwest from the northwest corner of the site.



Photo 10: View looking west from the southeast corner of the site.

Exhibit II.F.2: Visibility



G. Traffic Circulation and Road System

A Twin Peaks Oasis Traffic Impact Analysis by Kimley-Horn & Associates, Inc. has been submitted under separate cover.

1. Existing and Proposed Off-Site Streets

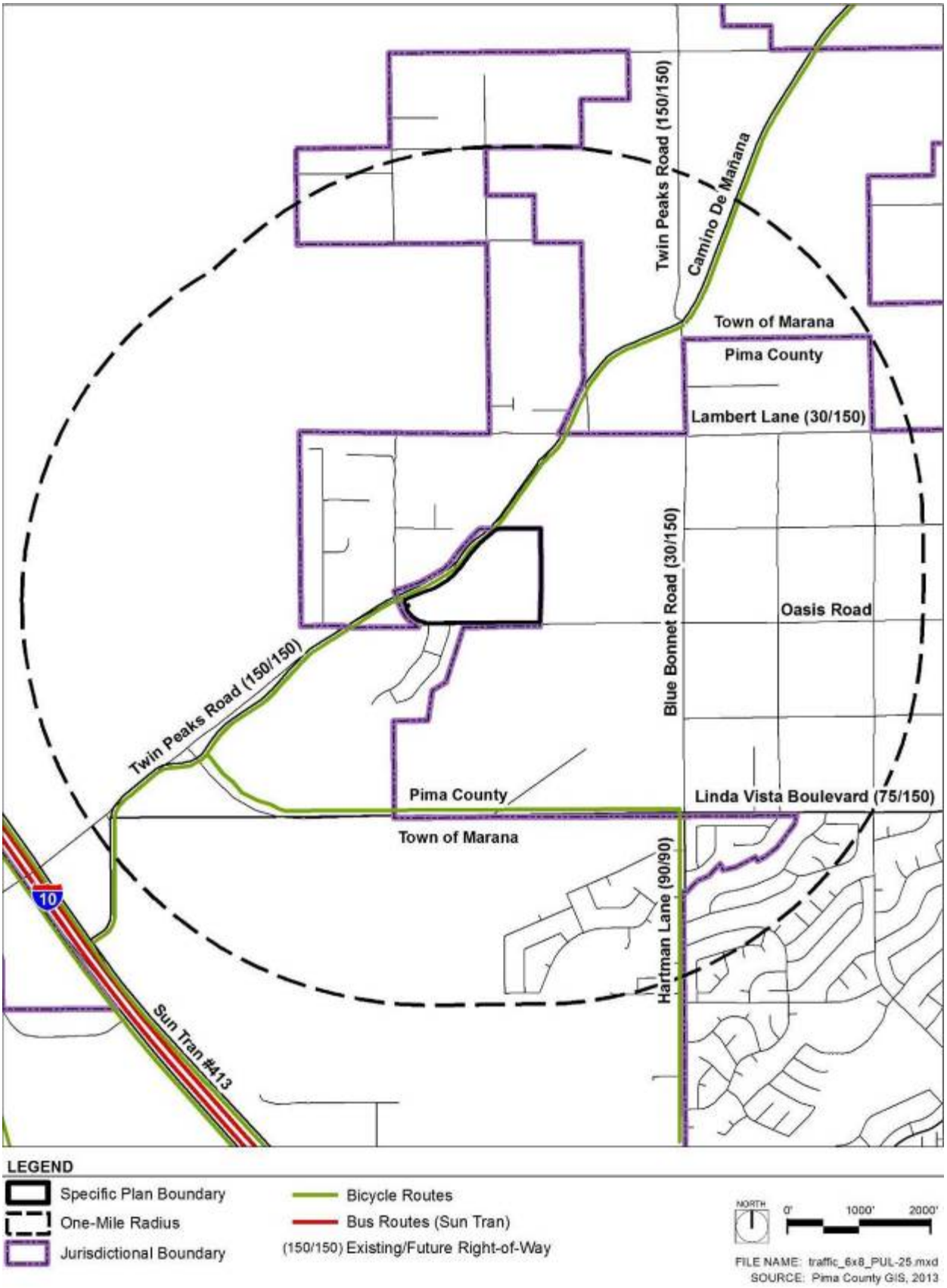
Twin Peaks Road is adjacent to the western boundary of the project area. Oasis Road intersects Twin Peaks Road, providing access to the site from the south.

No off-site roads are proposed as a part of this project. Existing roadways within the project area are shown on *Exhibit I.G.1: Traffic*.

Twin Peaks Road
Twin Peaks Road is a 4-lane principal arterial with a 150' right-of-way (R-O-W). The posted speed limit is 45 MPH. The current average daily trip (ADT) generation is approximately 12,000 with a projected ADT of 28,500 in the year 2040. It would be expected that the Town of Marana would have already evaluated future development immediate to the proposed site, and therefore, would have accounted for the impact associated with the site. It is anticipated that no additional studies are necessary.

Oasis Road
Oasis Road is a 2-lane street with a 60' R-O-W.

Exhibit II.G.1: Traffic



2. Existing Access and Rights-of-Way

A roadway inventory was conducted to obtain the following information:

- Existing and Proposed Right-of-Way;
- Whether or not said widths conform to minimum requirements;
- Ownership;
- Whether or not rights-of-way jog or are continuous;
- Number of travel lanes and theoretical capacity and design speed for existing roads;
- Present average daily traffic for existing streets; and
- Based on a preliminary visual assessment, a description of the surface conditions of existing roadways providing access to the site:

Table II.G.2: Roadway Inventory

	Twin Peaks Road	Oasis Road	Linda Vista Boulevard	Lambert Lane	Blue Bonnet Road	Hartman Lane	Camino De Mañana
Major Routes Classification	Arterial	Minor Collector	Major Collector	Minor Collector	Minor Collector	Minor Collector	Minor Collector
Existing R.O.W. (Feet)	150	60	75	30	30	90	60
Future R.O.W. (Feet)	150	60	150	150	150	90	60
Current Number of Lanes (proposed)	4	2	2	2	2	2	2
Speed Limit	45	35	45	25	25	35	35
Ownership	Marana	Marana	Marana	Marana	Marana	Marana	Marana
ADT (Source, Year)	12,000 (KHA, 2013)	1,000 (PAG, 2007)	1,000 (PAG, 2007)	Not Available	Not Available	7,000 (PAG, 2010)	1,000 (PAG, 2010)
Capacity (Florida Dept. of Transportation, 2002)	32,900	15,600	15,600	15,600	15,600	15,600	15,600
Conforms to Width Standards	Yes	Yes	No	No	No	Yes	Yes
Surface Conditions	Paved	Paved	Paved	Dirt	Dirt	Paved	Paved

Source: Pima Association of Governments (PAG), Town of Marana General Plan, and Site Visit – 3.11.13

3. Roadway Improvements

There are two projects listed in the adopted 2040 Pima Association of Governments Regional Transportation Plan (PAG RTP) within the project area. One project is for improvements to Camino De Mañana, which has recently been completed, while the remaining project is for the Linda Vista Boulevard. These projects are:

- Camino De Mañana/Dove Mountain Extension - Interstate 10 to Tangerine Road, Widen roadway to 4-lanes, add bike lanes and drainage, Early Timeframe (2010-2020), Marana, $26,480,000 - COMPLETED
- Linda Vista Boulevard – Camino De Mañana (Twin Peaks Road) to eastern town limits, Widen to 4-lane divided roadway, add curbs and sidewalks, Middle Timeframe (2020-2030), Marana, $8,793,000

4. Existing and Proposed Intersections on Arterials within One Mile and Most Likely to be Used by Traffic from this Site

Twin Peaks Road at Oasis Road will be used by vehicles generated by the project. From there, traffic is expected to be distributed 80% south on Twin Peaks Road, 15% north along Twin Peaks Road and 5% east on Oasis Road.

5. Existing Bicycle and Pedestrian Ways Adjacent to the Site and Their Connections with Arterial Streets, Parks and Schools

Three of the project area roads that are within one mile of the project site are designated on the Tucson Bike Map as bike routes. Twin Peaks Road has a shared-use path and a bike route with a striped shoulder that connects to Linda Vista Boulevard which is listed as a key connecting street. The Linda Vista Boulevard bike route leads to a bike route on Hartman Lane also listed as a key connecting street.

See Exhibit II.G.1: Traffic.

H. Recreation and Trails

1. Open Space, Recreation Facilities, Parks and Trails

According to Pima County GIS and as shown in *Exhibit II.H.1*, there are no existing parks within one-mile of the project site. However, there is a newly built neighborhood park located at the southern end of the Oasis Hills subdivision. There are four small neighborhood parks proposed for the Cascada Specific Plan, located to the west, that are within a one-mile radius of the project site. These four parks are intended to be connected via trails, and will provide areas for both active and passive recreation. Additionally, the proposed Cascada District Park is located approximately one-mile southwest of the project area. According to the Cascada Specific Plan, the district park will include sports fields, park amenities such as picnic areas and an integrated system of nature study, archaeological interpretation, mountain biking and hiking trails providing connectivity to the regional trail system. The Tortolita State Land Reform Addition, located north of the site, is a proposal to set aside 12,470 additional acres of park land between the Tortolita Mountains and the Central Arizona Project (CAP). This proposed park space is located approximately 1.25-miles north of the project area.

According to the Town of Marana's Comprehensive Parks, Recreation, Trails and Open Space Master Plan, there are no existing trails within one-mile of the project site. West of Interstate 10 and southwest of the project site, is a completed portion of the Multi-Use Anza Trail. There is also a proposed greenway trail along Camino De Mañana. Additional unpaved trails are planned for Potvin Lane, Twin Peaks Road north of the intersection with Camino De Mañana as well as several other singletrack trails that do not follow any roads or boundaries. The Pima Regional Trail System Master Plan, revised May 2012, shows the proposed Scottie's Loop Trail (Pima County Trail #164) crossing onto the site along a wash in the southeastern portion of the property and connecting to the proposed El Camino de Mañana Wash Trail (Pima County Trail #158). A trail easement with signage at both boundaries of the trail will be provided by the developer.

See Exhibit II.H.1: Recreation and Schools.

Exhibit II.H.1: Recreation and Schools



I. Cultural Resources

1. Location of Resources On-Site

As shown in Exhibit II.I.1, The Arizona State Museum (ASM) Archaeological Records Search on the site did not identify any archaeologically significant resources located within the rezoning parcel.

However, WestLand surveyed the site for cultural resources on May 17, 2013. Two new sites and 11 isolated archaeological occurrences were recorded during the survey. The two sites, AZ AA:12:1137(ASM) and AZ AA:12:1138(ASM), are recommended eligible for inclusion in the National Register of Historic Places (NRHP). The 11 isolated occurrences are all recommended ineligible for inclusion in the NRHP.

Exhibit II.I.1: Archaeological Records Search

THE UNIVERSITY OF ARIZONA.

Arizona State Museum

P.O. Box 210026
Tucson, AZ 85721-0026
Tel: (520) 621-6302
Fax: (520) 621-2976

PIMA COUNTY ARCHAEOLOGICAL SITE RECORDS SEARCH *RESULTS**

**This report documents the results of an archaeological site-records check. It does not constitute a cultural resources clearance.*

E-mail **Request Received:** 5/9/2013 **Search Completed:** 5/17/2013

Requester Name and Title: Brian Underwood, Planner
Company: The Planning Center
Address: 110 South Church, Suite 6320
City, State, Zip Code: Tucson, AZ 85701
Phone/FAX/or E-mail: 623-6146

Project Name and/or Number
PUL-25 Twin Peaks & Oasis / Parcel 216-32-057M

Project Description
Residential development on 37 acres

Project Area Location: NEC of Linda Vista Blvd & Twin Peaks Rd, Pima County, Arizona.

Legal Description: a portion of the S½, N½, S14, T12S, R12E, G&SR B&M, Pima County, Arizona.

Search Results: According to a search of the archaeological site files and records retained at the Arizona State Museum (ASM), the project area was inspected for historic properties in 1981. No historic properties are identified within the project area. Ten additional archaeological inspections were completed within a mile radius of the project area between 1979 and 2005. Ten archaeological properties are identified within a 1-mile radius of the project area. A color orthophotograph taken of the proposed project area in 2012, enclosed, depicts an undeveloped parcel that is covered with native vegetation. Dirt trails and a dry wash crisscross the property.

Sites in Project Area: None

Recommendations: Because Pima County has jurisdiction in this project area, the county will make recommendations for archaeological mitigation in the project area using its own search results and it may use the ASM's search results and / or others. Should the county require additional archaeological work in this parcel, you will need to contact a qualified archaeological contractor whose name is maintained on a list posted on the ASM website at the following link:
http://www.statemuseum.arizona.edu/crservices/permits/index.shtml.

Pursuant to *Arizona Revised Statutes* §41-865 *et seq.*, if any human remains or funerary objects are discovered during your project work, all effort will stop within the area of the remains and Dr. Todd Pitezel, ASM assistant curator of archaeology, will be contacted immediately at (520) 621-4795.

If you have any questions about the results of this records search, please contact me at the letterhead address or the phone number or e-mail address as follows.

Sincerely,

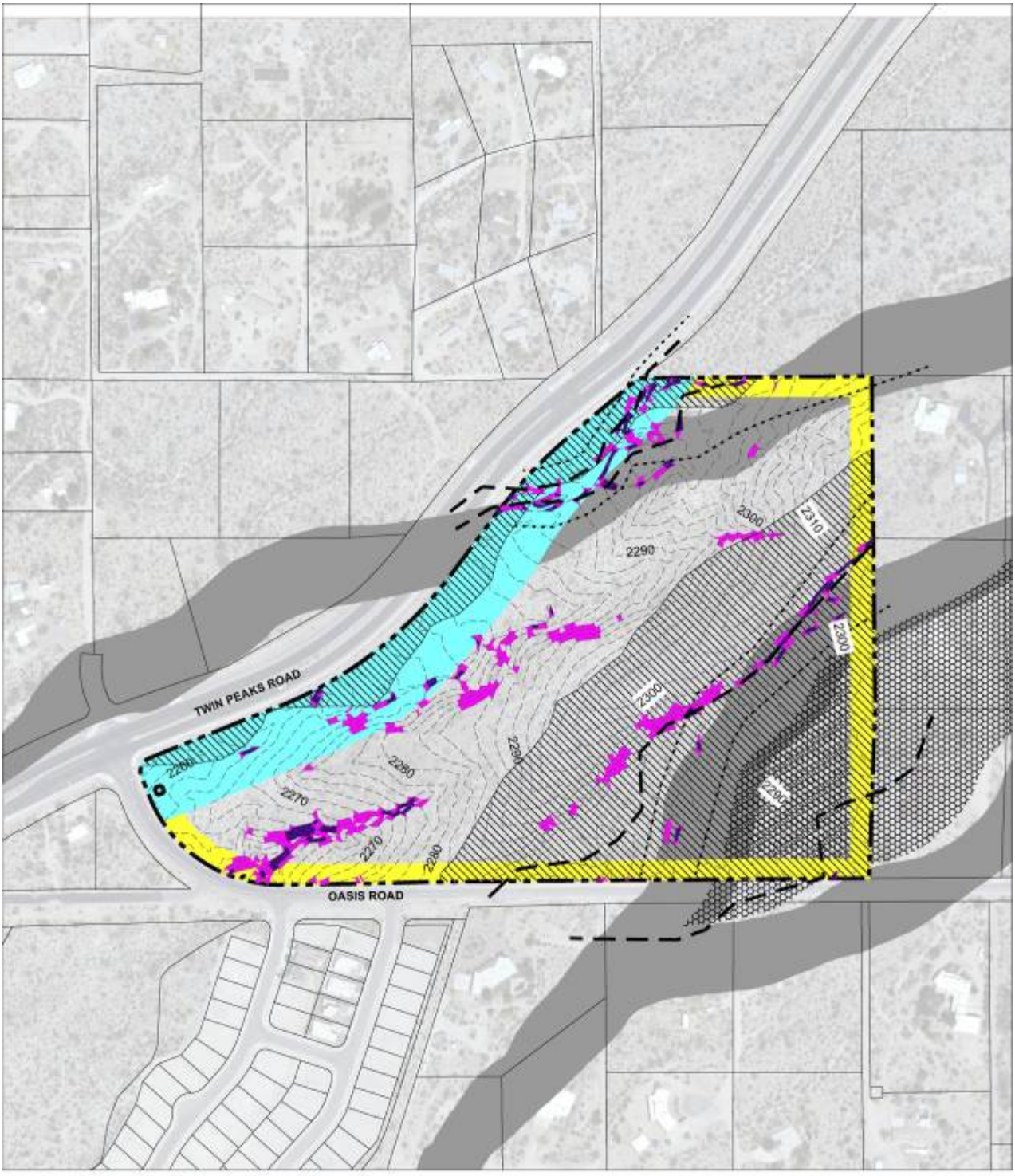
Nancy E. Pearson
Assistant Permits Administrator
(520) 621-2096
nepearso@email.arizona.edu

☐ This project occurs within or close to the boundary of a known cultural resource. This project requires Pima County Office of Archaeology & Historic Preservation review.

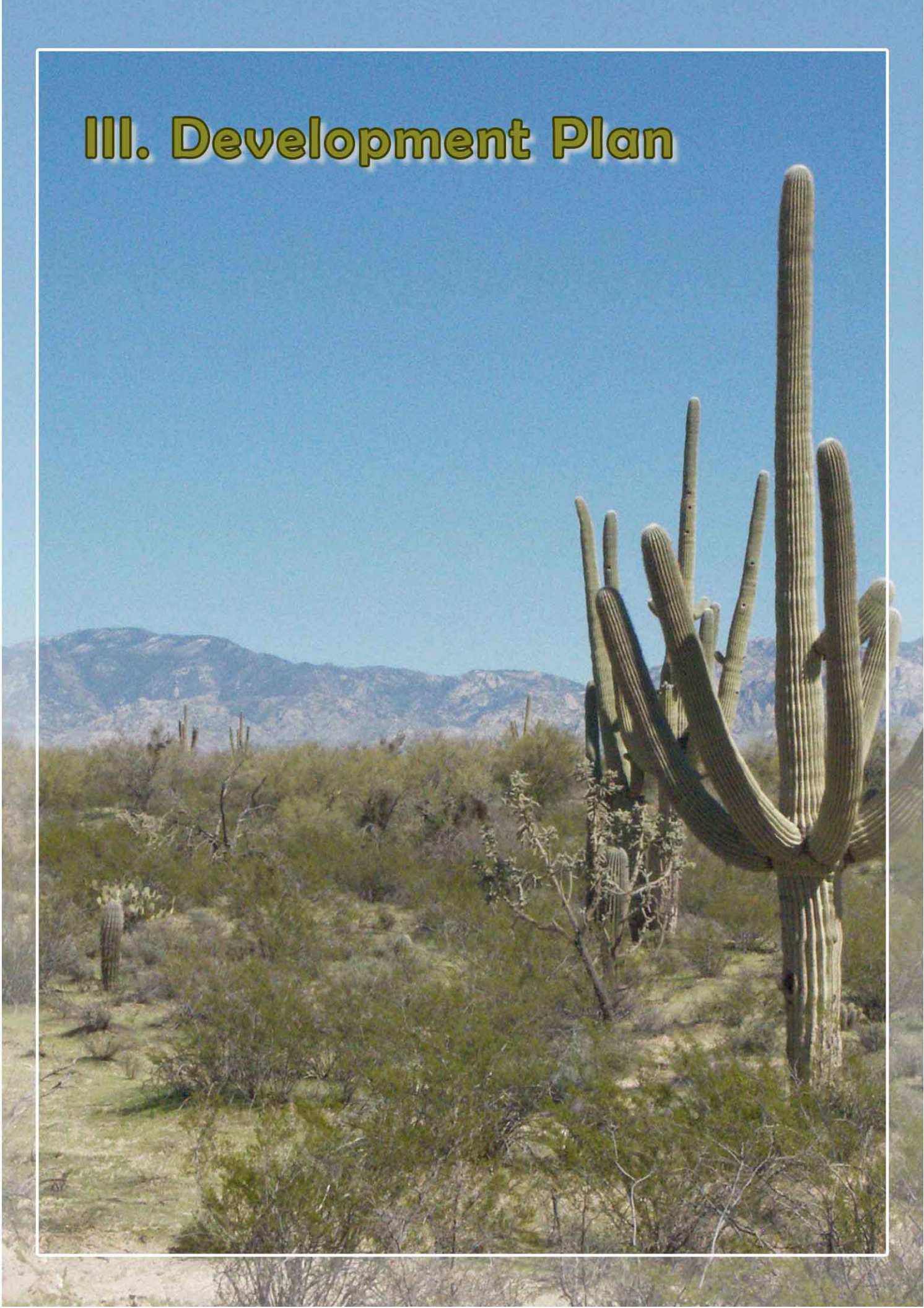
J. McHarg Composite Map

Information regarding topography, hydrology, vegetation, wildlife and views has been combined to form the McHarg Composite Map, displayed as *Exhibit II.J.1*. The purpose of the McHarg Composite Map is to highlight areas that are available for development. Refer to Section III Development Plan for more information on how the site plan responds to the site's physical constraints.

Exhibit II.J.1: McHarg Composite Map



III. Development Plan



A. Purpose and Intent

The Twin Peaks Oasis Specific Plan, referred to as "Twin Peaks Oasis", establishes the framework for the development of a 36.79-acre residential community within the Town of Marana, Pima County, Arizona. The Specific Plan provides a method for applying standards and guidance to ensure that this development meets the needs of the community while appropriately responding to and considering adopted plans, adjacent development, the environment and site-specific conditions.

This Development Plan responds to the site analysis, technical research, and community values through the use of regulations or controls to resolve any potential development-related issues. Once approved, the Specific Plan describes the planning considerations for parcels, imposes controls on the development of such parcels and is detailed accordingly in the final plat. The boundaries of this Specific Plan are shown on *Exhibit III.D.1*.

B. Relationship to Adopted Plans

1. Marana General Plan

The proposed Specific Plan will conform to the Town of Marana General Plan and the recommendations set forth by regulatory agencies involved in permitting.

Twin Peaks Oasis is located within the Planning Area boundary of the Town's General Plan. Designed to help meet the current and future needs of the Town, the Specific Plan establishes goals and polices that are in line with the Town's General Plan and Strategic Plan.

The Twin Peaks Oasis Specific Plan is in agreement with the overall General Plan, including the following highlighted goals, policies and actions:

General Plan Goal, Land Use and Growth Element: Adopt sustainable development as a unifying goal to secure Marana's future

Marana's quality of life must be sustained for many generations to come. This can be accomplished through the preservation of open space and natural resources that provide valuable scenic and recreational amenities to residents in the community. Often this means protecting native plant species, especially in areas of denser riparian habitat. Safeguarding the community's natural resources also plays a vital role in minimizing urban heat island effect and promoting water conservation and land stewardship.

General Plan Policy: Preserve and protect our natural resources in order to promote a sustainable community.
General Plan Action: Preserve the Sonoran Desert character by evaluating appropriate site disturbance standards and preserving native plants.

General Plan Action: Provide opportunities for both onsite and offsite riparian habitat restoration.

Specific Plan Conformance: The Twin Peaks Oasis Specific Plan leaves a considerable amount of the site in a natural state, preserving nearly 35% of the native vegetation on-site and minimizing the impact on washes. Development of the property will occur in between washes, avoiding the northwest corner and wash corridors in the southeast corner of the property.

General Plan Goal, Land Use and Growth Element: Provide opportunities for diverse developments that maximize the benefits to the community

The provision of a range of housing types and affordability is necessary to create a thriving community that can accommodate residents of any socio-economic class. By providing a variety of housing types for residents of all income levels, land uses such as industrial, commercial and office space are complemented with both a diverse and skilled workforce; thus, attracting future development and employment opportunities in the Town.

General Plan Policy: Promote new development that is compatible with existing land uses.
General Plan Action: Establish appropriate land development designations with densities and intensities that complement existing natural conditions and residential areas.
General Plan Action: Develop guidelines for enhancing new development and mitigating potential impacts on existing neighborhoods.

General Plan Policy: Provide opportunities for a variety of housing types and economic levels.
General Plan Action: Designate a wide range of residential development densities from low density rural to multifamily urban.

Specific Plan Conformance: Twin Peaks Oasis is located within the designated Planning Area Boundary of the Town of Marana's 2010 General Plan in the Northeast Growth Area and is listed as Low Density Residential, 0.5-2.0 residences per acre (RAC). The proposed RAC for Twin Peaks Oasis is 2 dwelling units per acre. Marana's 2010 General Plan states that a two-step increase change of the current land use designation will result in a major amendment to the General Plan. The 2 RAC for Twin Peaks Oasis changes the land use designation on the property to Medium Density Residential, 2.0-8.0 RAC, which is a one-step increase change of the current land use designation and is therefore considered a minor amendment to the General Plan.

Twin Peaks Oasis will feature high-quality design and development that is compatible with what exists in the area, as well as, a variety of housing types and economic levels. The site is positioned between unsubdivided low density single-

family residences to the east and west and directly north of new, currently under construction, one- and two-story single-family low density residential (LDR) development in the Oasis Hills I subdivision which includes 90 residential units with 1.51 residences per acre. Oasis Hills II will feature medium density residential (MDR) development with 4.04 RAC and 40 single-family residential units. In addition, according to the 2010 General Plan there is Low Density Residential planned north, east and west of the site and Master Planned Areas expected south and further west of the site as part of the Cascada Specific Plan. Cascada includes a variety of residential densities that range from Low Density Residential (LDR) with a proposed 1 RAC, Medium Density Residential (MDR) with a target RAC of 5, Medium-High Density Residential (MHDR) with a proposed 7 RAC, High Density Residential (HDR) with a target RAC of 10 and Village Center (VC) with a proposed 20 RAC. LDR single-family detached large lot development is located north of the Lambert Lane alignment and is the largest acreage land use included in the Cascada Specific Plan.

General Plan Goal, Open Space and Trails Element: Protect and preserve natural open space.
The vast array of wildlife species that persist along the Tortolita Fan of the Sonoran Desert help to create the unique desert landscape so beloved by those in the Town of Marana. Maintaining critical wildlife habitat and linkages for species movement is an important part of their persistence in the future, especially considering that each species has its own unique habitat requirements, migration patterns and range.

General Plan Policy: Develop a connected system of natural open space preserves that protect wildlife habitat, wildlife linkages, and cultural resources.
General Plan Action: Preserve, protect, or conserve areas of high-value habitat and wildlife movement linkages as identified in the Marana Draft Habitat Conservation Plan (HCP) and the Marana Parks, Recreation, Trails, and Open Space Master Plan.
General Plan Action: Preserve Natural Undisturbed Open Space (NUOS) to maintain wildlife access and movement within and through development sites that are subject to discretionary land use actions, as described in the Draft HCP.
General Plan Action: Preserve and protect existing natural drainage systems as identified in the Marana Draft HCP riparian map.

General Plan Policy: Create protected continuous open space linkages and viable wildlife corridors throughout the community.
General Plan Action: Protect the viability of wildlife corridors mapped in the Draft HCP, using innovative site planning and design.

Specific Plan Conformance: Twin Peaks Oasis is a residential cluster design with lots situated in between two on-site washes in order to protect the densest pockets of native vegetation and provide open space amenity to residents. Therefore, large concentrations of natural vegetation are being preserved on-site, as shown on

Exhibit III.D.1: Tentative Development Plan. The total amount of natural undisturbed open space in Twin Peaks Oasis is 41.8%.

2. Twin Peaks Corridor Study

The proposed Specific Plan reflects the following guidelines set forth in the Twin Peaks Corridor Study:

Recreation

Guideline #2 – Trail alignments may be located in landscape buffer yards so long as the required screening can be achieved and access easements are obtained.

- A 10-foot wide trail easement with signage at both boundaries of the trail will be provided along the wash in the southeast portion of the site to accommodate future development of the proposed Scottie's Loop Trail (Pima County Trail #164). Additionally, a trail will be provided along the wash in the northwest portion of the site to connect to the sidewalk and bicycle lane along the east side of Twin Peaks Road. A trail will then connect to the proposed on-site park through a small Reflection Area fronting onto Twin Peaks

Guideline #3 – Paved access from each new development shall connect with the existing pedestrian improvements (sidewalk, multi-use path) along Twin Peaks Road.

- A primary paved access with sidewalk along both sides will be located off Twin Peaks Road and will connect to the existing sidewalk on the east side of the Twin Peaks ROW.

Guideline #4 – Recreation features should be designed to front onto Twin Peaks Road.

- A neighborhood park will be provided for the residents of this 36.79-acre community. The proposed 1.1-acre park was designed along the perimeter of the development in order to allow the lifestyle component of the project to be visible from Twin Peaks Road and provide a break in the housing along Twin Peaks.

- A small Reflection Area with bench seating and landscape plantings will front onto Twin Peaks Road in the mid-western portion of the site and will connect to the neighborhood park within Twin Peaks Oasis via a proposed 10-foot wide trail alignment. The Reflection Area will offer a respite for those recreating along the Twin Peaks Corridor. Since the proposed Reflection Area is a private improvement within the public Twin Peaks right of way, an approved License Agreement that includes a planting, irrigation and maintenance plan shall be required.

Monument Signage

Overall Guideline – Monument entry signage shall be comprised of a combination of natural, desert themed materials and should be designed to complement the natural desert surroundings. Monument design shall be approved by the Planning Director prior to construction.

- Developer will dedicate land at the southwest corner of the development for the purpose of siting the Twin Peaks Gateway Monument, approximate location depicted on Exhibit III.D.1: Tentative Development Plan.
- Developer will be responsible for the construction of the Twin Peaks Gateway Monument.

Wildlife Linkages/Open Space

Guideline #1 – Development shall incorporate open space that avoids interference with and maintains functionality of wildlife crossings.

Guideline #2 – Development shall incorporate continuous open space within developments and with adjacent properties and/or developments.

- The proposed layout was designed to minimize impacts to on-site washes by clustering development in the central portion of the site to protect the major washes in the northwest and southeast portions of the property as important wildlife corridors. The preservation of these washes will allow for species migration and linkages to planned wildlife crossings to the north and will help to ensure future persistence of wildlife in the area. Large lot development to the north, and east of Twin Peaks Road, provides continuous open space for wildlife habitat.

Landscaping

Guideline #1 – Landscaped buffer yards shall be a minimum depth of twenty (20) feet with a target screening effect of approximately seventy-five percent of the objects behind the buffer yard.

- Only four to five lots will sit within 25 feet of the property boundary. Several perimeter lots will sit as far away as 350 feet from the closest property boundary. Future residences will also be screened by 5-foot patio walls and canopy trees on the lots.

Guideline #2 – Plants, shrubs and trees shall be of substantial enough size such that the desired screening effect can be achieved in a reasonable amount of time.

- Minimum sizes for trees, shrubs and ground cover plants have been set to ensure that new homes will be adequately screened in a timely manner, especially for those homes closest to the property boundary and existing residential development. Please see sections III.I: Landscaping & Buffering,

IV.C.2 and IV.C.3 for information on proposed landscaping and screening as well as details on required landscape standards and materials.

Color Treatments

Guideline #1 – The maximum LRV for perimeter walls, utility cabinets and perimeter houses shall not exceed 35%.

- Screening will be accomplished through 5 foot masonry walls which will either be painted, stained or contain integral color that do not exceed 35% light reflectivity value.

Guideline #2 – The color palette used to achieve the LRV limit shall be earth tone colors. Trim colors shall not exceed an LRV of 40%.

- Homes within Twin Peaks Oasis will consist of earth tone colors that reflect the plant palette and appearance of the native desert so as to blend new development into the natural landscape.

C. Compatibility with Adjoining Development and Location Restrictions

1. Adjoining Development Compatibility

Historically, development in the Town of Marana and unincorporated Pima County has largely been single-family homes on large lots. Today, the region is undergoing a significant growth change, especially in the southern and eastern parts of the Town. For instance, the Cascada Specific Plan, located to the south and west of Twin Peaks Oasis, is a planned 1,454-acre mixed-use development with 3,806 proposed residential units and a gross density of 2.6 residences per acre. Cascada features a variety of land uses and intensities. In terms of residential land uses, it consists of Low Density Residential (LDR) up to High Density Residential (HDR) and Village Center (VC) which is intended to be a mixed-use zone with community-oriented commercial, retail, employment, residential, live/work units, civic, cultural, entertainment, daycare and recreational uses connected by pedestrian walkways, gathering places and courtyards. Cascada also features an Employment Center land use designation and large areas of open space. The density/intensity of development within Cascada gradually increases as it approaches the mixed-use village center.

Twin Peaks Oasis is located on vacant land with a 4-lane major arterial, Twin Peaks Road, directly adjacent to the western property boundary. Oasis Road is a minor collector street located along the southern property boundary. There is single-family residential development in the Oasis Hills I & II subdivision, currently under construction, to the south of the property (Cascada Specific Plan, one- and two-story) as well as unsubdivided single-family residential development. Land to the west and north is primarily vacant with a few scattered single-family residences. Additional

unsubdivided single-family residential development is located along the eastern property boundary.

D. Land Use Concept Plan

The Twin Peaks Oasis land use concept plan responds to site-specific conditions and environmental constraints as identified in the site analysis. The plan consists of 74 single family residential units with a density of 2 designated units per acre *(See Exhibit III.D.1: Tentative Development Plan*). Lot sizes will vary slightly, but the typical lot size is 7,200 square feet with dimensions of 60'x120'. Lots will accommodate both one- and two-story homes. All homes along the perimeter of the site will be single story. *Exhibit III.D.2: Homesite Lotting*, depicts how proposed homesites will be positioned on each lot.

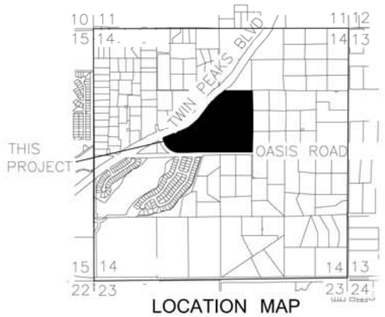
The site for Twin Peaks and Oasis consists of two large washes with designated riparian areas. The proposed development of Twin Peaks Oasis includes setting aside a large portion of land, over 15-acres or 41.8% of the site; the total open space value is 53.03% including the functional open space, park and 10' trail area. This development has been designed such that the washes running through the site will be avoided, thus preserving the densest and most diverse pockets of native vegetation. Native vegetation along the washes will remain undisturbed and will be the responsibility of the Homeowner's Association to ensure future preservation. Native plant species left intact will serve as prime habitat for Sonoran Desert fauna while also providing visual amenity to residents in Twin Peaks Oasis. Most lots will have their backyards facing natural desert open space. This is important because backyards facing a more open and natural environment give residents a sense of place, in addition to staying cooler during warmer parts of the year. These open space areas along the backs of homes also allow for species migration and opportunities for wildlife viewing.

The community will feature two access points; one along Oasis Road at the Niobrara Way alignment and one along Twin Peaks Road near the middle of the western property boundary. The majority of the site traffic will drive towards Twin Peaks Road, away from existing residences. In doing so, Twin Peaks Oasis residents will have direct access to Interstate 10 (west) and other east-west and north-south major arterials, providing a range of alternate routes for shopping, work, and leisure activities.

Homes in Twin Peaks Oasis will be designed with features that can lower utility use and save residents money. Homesites will be up to 30 percent more energy efficient than the average existing home. In order to improve home energy-efficiency, new homes will be designed with features, construction techniques and materials to help reduce energy usage. Some examples may include: the installation of high-efficiency HVAC systems, programmable thermostats, compact fluorescent lights, and home care guides. Features listed above may be included with the home, may be an option that is available for an additional cost, or may not be available on all homes. However, all homes will be built to meet or exceed current energy-efficiency requirements in the Town code.

Exhibit III.D.1: Tentative Development Plan





LOCATION MAP
SECTION 14 T12S R12E
G&SRM PIMA COUNTY ARIZONA

60' WIDE LOTS

* LIMITED TO SINGLE STORY

FUNCTIONAL OPEN SPACE

PARK

5' SCREEN WALL

4' SCREEEN WALL

10' TRAIL

10' TRAIL EASEMENT

REFLECTION AREA

ENTRY MONUMENT

TWIN PEAKS GATEWAY MONUMENT

GRAPHIC SCALE
200 0 100 200 400

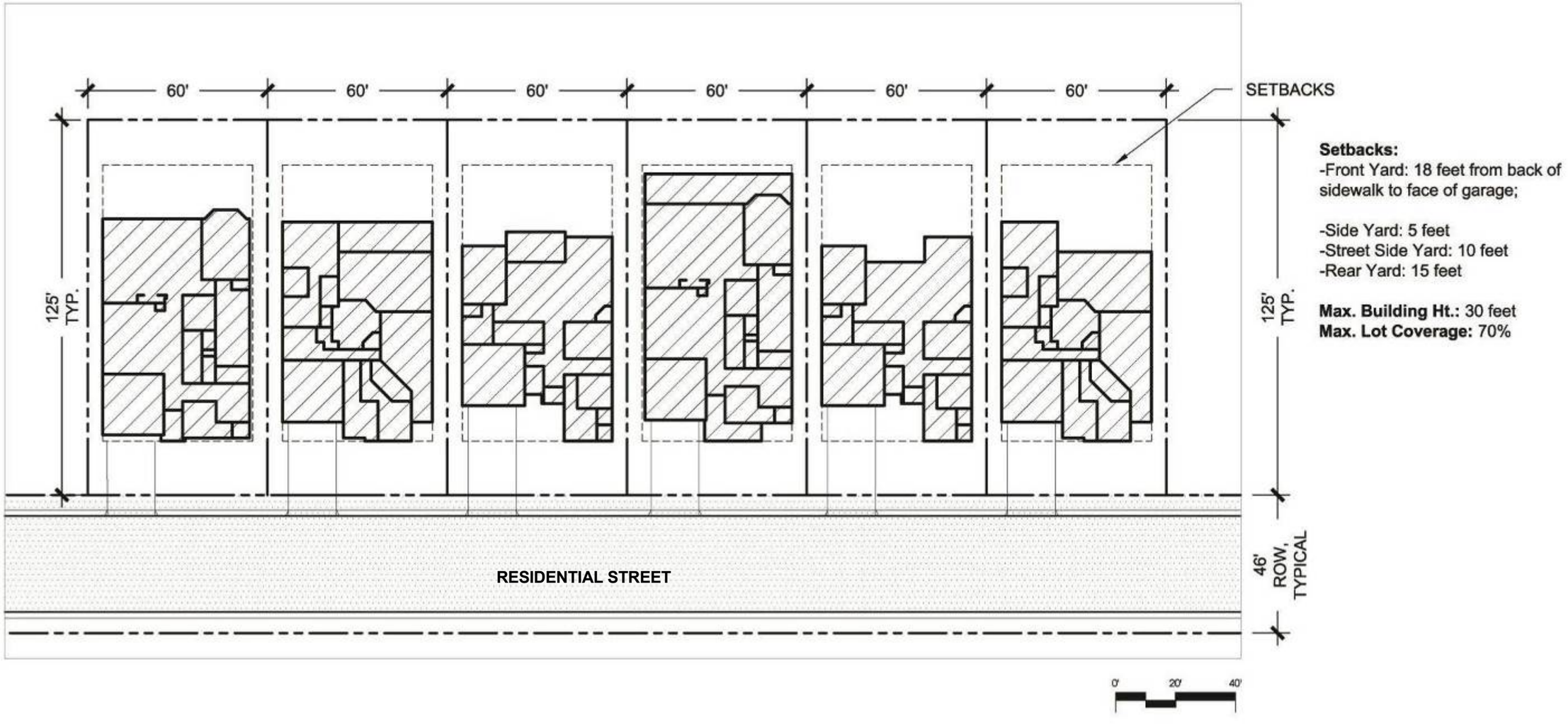


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APEX
DEVELOPMENT CONSULTANTS, PC
CIVIL ENGINEERING • LAND SURVEYING

TWIN PEAKS & OASIS SUBDIVISION
A PORTION OF
SECTION 14 T12S R12E
G&SRM PIMA COUNTY ARIZONA

Exhibit III.D.2: Homesite Lotting



E. Circulation Plan

Ingress/Egress will be provided via two locations; the first at the intersection of Oasis Road and Niobrara Way and the second along Twin Peaks Road. The development will be serviced by Twin Peaks Road northeast and southwest of the site. Interstate 10 is approximately 1.25 miles southwest of the site. East/west movements can be made by utilizing Tangerine Road and Linda Vista Boulevard, north and south of the project area respectively. North/south movements can be made by utilizing Camino de Mañana and Thornydale Road.

The internal streets are considered public and will be maintained by the Town of Marana. The total width is 46 feet with two 16-foot travel lanes, 2-foot roll curbs, 5-foot sidewalks and 10-foot public utility, roadway maintenance and signage easement on each side of the public roadway. In the event the developer builds a gated community, the interior roadways shall be private and maintained by the homeowner's association.

A Traffic Impact Study prepared by Kimley-Horn & Associates, Inc. and submitted under separate cover is intended to support the land-use proposal for this rezoning project. The study addresses the potential traffic impacts associated with the proposed Twin Peaks Oasis. Any roadway improvements required by the Town based on the findings of the Traffic Impact Study (as approved by the Town) will be the responsibility of the developer.

F. Grading Element

Grading will take place on selected areas in order to preserve the sensitive areas of the site. Portions of the property will be left in their natural state, and grading will occur on approximately 47% of the site. The following indicates the size of each area graded and the percentage of the site. The overall allowable grading and related disturbance includes internal roadways and their right-of-way, building pads, driveways, accessory structures, utility crossings of natural washes, emergency access and other areas needed for infrastructure and utilities. Barriers such as temporary silt fencing will be provided for machinery in order to ensure that the grading limits will not be exceeded. In addition, the grading will be done in conformance with the Land Use Concept Plan and the Development Regulations of Twin Peaks Oasis. In accordance with Title 25 of the Town of Marana *Land Development Code*, a Stormwater Pollution Prevention Plan (SWPPP) and Notice of Intent (NOI) to ADEQ for coverage under the Arizona Pollution Discharge Elimination System (AZPDES) Construction General Permit is required to be submitted to the Town for review and acceptance prior to commencement of grading activities.

Table III.F: Site Grading Information

Area Description	Area (acres)	Percent Area
Total Site Area	36.79	100
Residential Lots	13.55	36.84
OPEN SPACE	19.51	53.03
• N.U.O.S.	15.4	41.8
• Functional Open Space	3.46	9.4
• 10’ Trail Area	0.29	0.8
• Park	0.36	1.0
Public Streets	3.73	10.13

G. Post Development Hydrology

1. Tentative Development Plan Response to Hydrologic Characteristics

The proposed development is planned to minimize impacts to the main wash areas and 100-year flood prone areas. Detention and retention is a requirement for the site. Marana code allows an in depth study to propose an in lieu of fee to meet this requirement, but a study showing no downstream impact must be completed. A preliminary analysis has shown that the offsite watersheds have large times to peaks, the flow from the subdivision will be passed downstream prior to the primary peaks

flowing through the site. The downstream channels have capacity for any minor increase that the subdivision will create for the peaks.

The developed site has been split into four watersheds; ON1D is 8.8 acres and has an impervious percentage of 15% and total discharge of 55 cfs. ON2D is 8.1 acres and has an impervious percentage of 40% and has a total discharge of 58 cfs. ON3D is 8.7 acres, has an impervious percentage of 40% and total discharge of 63 cfs. ON4D is 11.2 acres, has an impervious of 15% and total discharge of 69 cfs. A full study will be required to ensure that there is not a potential for any downstream complications because of development as required by Marana Ordinance. See *Exhibits II.C.1.a II.C.1.b, II.C.2.a and II.C.2.b*.

Culverts at the entry of Street A are proposed to carry drainage. This culvert, CL 1 is proposed to be three 30" reinforced concrete pipes. In the event the interior roadway becomes private, alternative HDPE pipes may be utilized.

A portion of this site is located within FEMA Floodplain AO and a CLOMR/LOMR will be required to develop the site. This amendment will require improvements to the Wash A and B. A detailed study will be required to ascertain the nature of these improvements. (See *Exhibit III.G.1: Post Development Hydrology)*

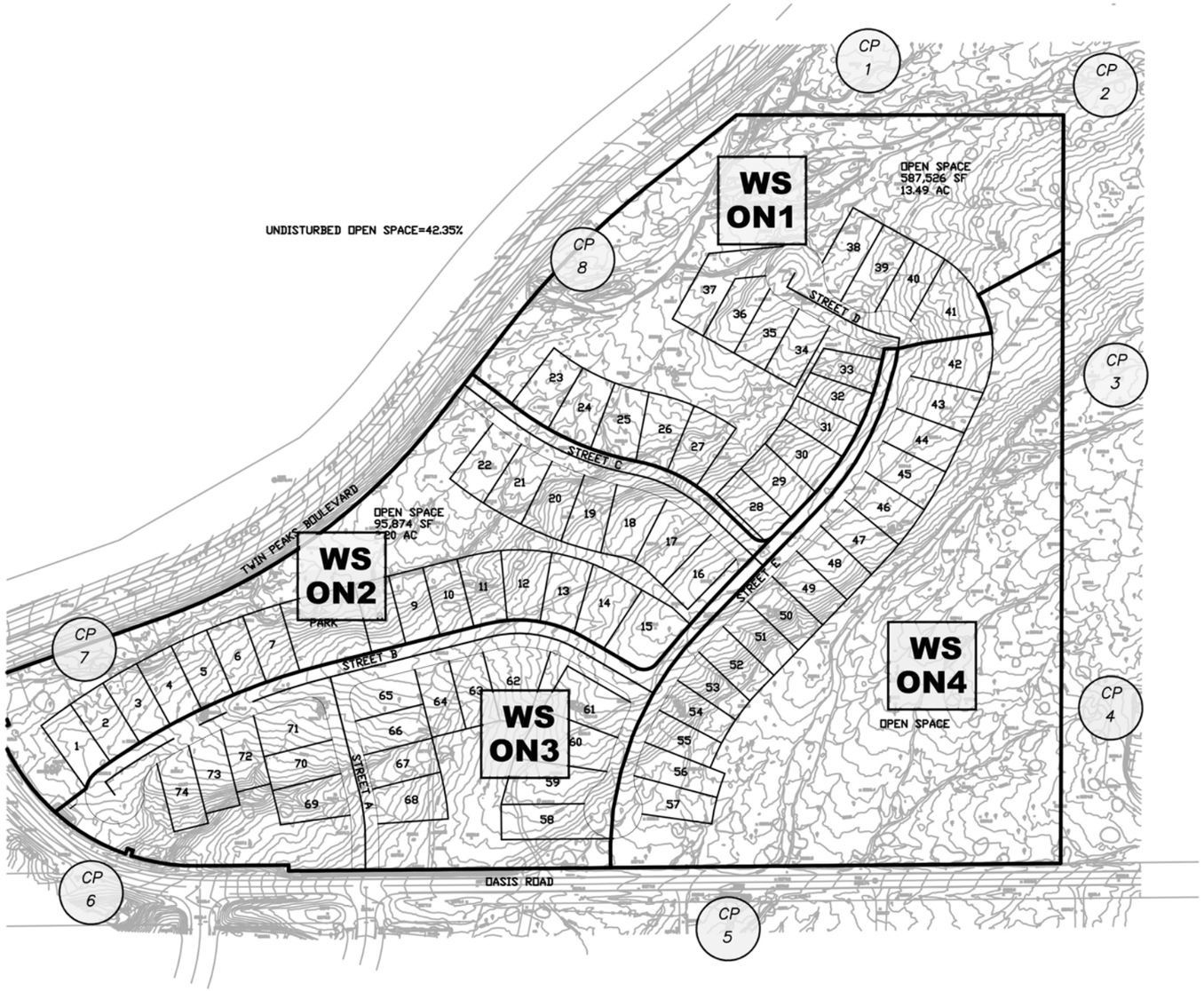
Table III.G: On-site Developed Watersheds

On-site	Calculated Flow (cfs)	Drainage Area (Acres)
ON1D	55	8.8
ON2D	58	8.1
ON3D	63	8.7
ON4D	69	11.2

2. Information and Substantiation for Encroachment/Modification of Drainage Patterns

The proposed lots and grading encroach into a previously recorded drainage easement adjacent to Twin Peaks Road. The developer will be required to analyze the flows from the existing culvert and to abandon the appropriate portions of said easements during the Final Plat process.

Exhibit III.G.1: Post Development Hydrology



Da	Area (ac)	Q100
ON1	8.8	55 CFS
ON2	8.1	58 CFS
ON3	8.7	63 CFS
ON4	11.2	69 CFS

Con PT	Q 100
CP5	1224 CFS
CP6	66 CFS
CP7	43 CFS
CP8	325.8 CFS

PIMA COUNTY TOPOGRAPHY 2000 NAVD 88 2'

GRAPHIC SCALE
200 0 100 200 400
1 inch = 200 ft.

ONSITE DRAINAGE DEVELOPED

APEX
DEVELOPMENT CONSULTANTS, PC
2141 N. ALVERNON WAY STE C
Tucson AZ 85712
PH: 520-975-6638 FX: 520-742-4623
www.apexdevcon.com
CIVIL ENGINEERING • LAND SURVEYING

DRWN BY: | PROJ:

H. Environmental Resources

1. Waters of the United States

The applicant is currently preparing a request to the U.S. Army Corps of Engineers (Corps) for a preliminary jurisdictional determination (PJD) under Regulatory Guidance Letter (RGL) 08-02, in which the Corps determines only which features have the potential to be waters of the U.S. (Waters), and does determine the jurisdictional status of those features.

In the event the project requires a 404 Clean Water permit, the project will have a federal nexus which may necessitate consultation with the U.S. Fish & Wildlife Service for the lesser long-nosed bat, which is listed as an endangered species.

2. Habitat Conservation Plan

The Town of Marana's Habitat Conservation Plan (HCP) maps endangered species and outlines conservation and mitigation strategies. The overall objectives of the HCP include:

- Facilitating compliance with the Endangered Species Act for planned urban development and capital improvement projects;

- Promoting achievement of regional economic objectives including the orderly and efficient development of certain lands, while recognizing property rights and legal and physical land use constraints; and

- Complementing other regional conservation planning efforts such as Pima County's Sonoran Desert Conservation Plan and the City of Tucson's HCP project.

A draft of the HCP became available for public review in 2009. It is currently under revision, and we are not aware of an expected date for finalization of the HCP. However, the Town of Marana is currently implementing portions of the plan.

3. Wildlife

The search of the AGFD HDMS identified the presence of the Tucson – Tortolita – Santa Catalina Mountains Link and the Coyote – Ironwood – Tucson Link as wildlife corridors within 3 miles of the property. This link is depicted by Beier et al. (2006)[4] as covering broad areas, without specific paths through the areas defined. Marana's draft Habitat Conservation Plan (2009) does not define a wildlife corridor on the property.

Due to the AZ Game & Fish Department's identification of several desert tortoises in the area, a 100% area survey for the Sonoran Desert Tortoise must be completed by



a qualified wildlife biologist at least 30 days prior to commencement of grading. A copy of the survey form must be sent to the Town prior to issuance of a grading permit.

I. Landscape & Buffering

The overall landscape theme for Twin Peaks Oasis will reflect the best attributes of the Sonoran Desert and the site's surrounding environment. Native and desert-adapted plant material as well as regionally appropriate hardscape materials will be used within the landscape buffers, and common areas. Nearly 42 percent of the site will be preserved as natural undisturbed open space while the total open space within Twin Peaks Oasis is over 53%. Buffers and common areas will reflect the plant palette and appearance of the native desert that dominates the site. A 30' landscape buffer currently exists between the western site boundary and the Twin Peaks Road alignment.

The conservation of water will be an important priority with the landscape design. Underground drip irrigation will serve the low water use plants within the common areas. Some common and buffer areas will utilize native plants requiring no additional irrigation and meet their water needs through rain water harvesting.

Along the perimeter of the community where native vegetation will not already be preserved, particularly along Twin Peaks and Oasis Roads where homes are proposed closest to the property boundary or existing residential development, trees and ground cover plantings will be used to blend Twin Peaks Oasis into the desert environment. An opportunity also exists to screen the homes nearest Oasis Road to minimize the visual impact on the existing residences to the south, reflect the best attributes of our desert setting and provide aesthetic appeal from the roadway while transitioning smoothly from the natural desert that will be preserved along the eastern portion of the boundary.

Screening will be accomplished through 5' masonry walls, new low water use vegetation and existing native vegetation that will remain on the site. Homes backing up to natural areas will have the option of installing view fences along the rear of the lot, with the exception of lots whose backyards face Twin Peaks Road. Landscape buffers will consist of natural desert enhanced with new low water use plants or new native plants with rain water harvesting.

1. Native Plant Preservation

A Native Plant Preservation Plan (NPPP) shall be prepared in accordance with the provisions set forth in the Town of Marana *Land Development Code*. Since over 35 percent of the site will be preserved as Natural Undisturbed Open Space (NUOS), the Set Aside Methodology will likely be used for the NPPP. The site layout has been designed with concern for the site's topography, hydrology, and the washes running through the site.

J. Cultural Resources

WestLand surveyed the site for cultural resources on May 17, 2013. Two new sites and 11 isolated archaeological occurrences were recorded during the survey. The two sites, AZ AA:12:1137(ASM) and AZ AA:12:1138(ASM), are recommended eligible for inclusion in the National Register of Historic Places (NRHP). The 11 isolated occurrences are all recommended ineligible for inclusion in the NRHP.

Avoidance of sites AZ AA:12:1137(ASM) and AZ AA:12:1138(ASM) is recommended. If avoidance is not feasible, it is recommended that the developer take actions to resolve the adverse effects of the planned residential development on AZ AA:12:1137(ASM) and AZ AA:12:1138(ASM). Given the nature of the proposed undertaking, if avoidance is not feasible, data recovery is recommended as the appropriate treatment, with preparation of a Historic Properties Treatment Plan (HPTP) prior to the proposed activities.

K. Utilities

1. Water

The project site is located outside the Town of Marana Water Department Water Service Area, but it is expected that the Town of Marana Water Department will provide water service for the project. A Water Service Agreement is required to establish service to the property. Please see *Exhibit III.K.1: Water Service Letter.*

As shown on *Exhibit II.B.2 Existing Land Uses*, there is one well located within 100-feet of the site. There are no wells are located on-site.

As stated above, the water supply for the Twin Peaks Oasis will be provided by the Town of Marana Water Department which has been designated by the State of Arizona Department of Water Resources as having an assured water supply, therefore water supply is assured. Off-site improvements to connect to the existing system to the south from the Oasis Hills I & II subdivision along Oasis Road, oversizing on mains to accommodate regional requirements, well sites and storage tanks will need to be considered along with the infrastructure to serve the proposed development. Additionally, an 8” water line is available from Twin Peaks Road at the southwest corner of the property.

Exhibit III.K.1: Water Service Letter

MARANA

TOWN OF MARANA
WATER DEPARTMENT

March 15, 2013

Derek M. Roberts, P.E.
Apex Development Consultants P.C.
2141 N Alvernon Way Ste C
Tucson, AZ 85712

Project: AJS Oasis LLC
950 W. Calle Catavinos
Tucson, AZ 85704-4609
Parcel number 216-32-057M

Dear Mr. Roberts:

WATER SUPPLY

The Town of Marana has been designated by the State of Arizona, Department of Water Resources, as having an assured water supply. This does not mean that water service is currently available to the proposed development.

The development lies within the intended boundary of the Town of Marana water service area. Once the development has been annexed into the Town of Marana water supply is assured.

WATER SERVICE

The approval of water meter applications is subject to the availability of water service at the time an application is made. The developer shall be required to submit a water development agreement identifying water use, fire flow requirements and all major on-site and off-site water facilities.

The developer shall construct a water distribution system to serve the development and transfer title of the system to the Town of Marana, in consideration the Town of Marana shall operate, maintain and service the system. The developer shall have the cost responsibility to construct both the onsite and offsite facilities required to serve the potable water and fire protection demands for your development.

The comments herein made are valid for a period of one year only. If you have any questions, please call our office at 520-382-2570.

Sincerely,

John Kmiec
Utilities Director

5100 W. INA ROAD TUCSON, ARIZONA 85743 PH: (520) 382-2570 FAX: 382-2590 TTY: 382-3409

2. Wastewater

The plan is to be served by public sewer. The project site is tributary to the Ina Road Wastewater Reclamation Facility via the Continental Ranch Interceptor. An 8" gravity main sewer line, G-2005-042, connects to the project site from the south at Oasis Road and Crook Lane.

A Sewer Service Agreement will be needed prior to development, see *Exhibit III.K.2.a: Existing Sewer Facilities* and *Exhibit III.K.2.b: Wastewater Capacity Response*.

3. Other Utilities

Electricity and telecommunications will be extended to the project site at the time of development through agreements with individual utility companies. The following utility companies currently serve this area:

Electricity:	Tucson Electric Power
Natural Gas:	Southwest Gas Corporation
Telephone:	Century Link
Cable:	Comcast

Tucson Electric Power (TEP) provides electricity to this area of Pima County. It is anticipated that TEP will provide power to the site.

It is anticipated that Century Link will extend phone service to the site. Alternatively, the site may use wireless communications that can be provided by any number of service providers.

Natural gas service will not be required at the site. Should natural gas service be required in the future, it is anticipated that service would be provided by Southwest Gas located within the Oasis Road right of way.

4. Sanitation and Recycling Services

A number of private sanitation service providers may be contracted to serve the site with comprehensive trash and waste removal, recycling and environmentally safe waste management services.

Exhibit III.K.2.a: Existing Sewer Facilities

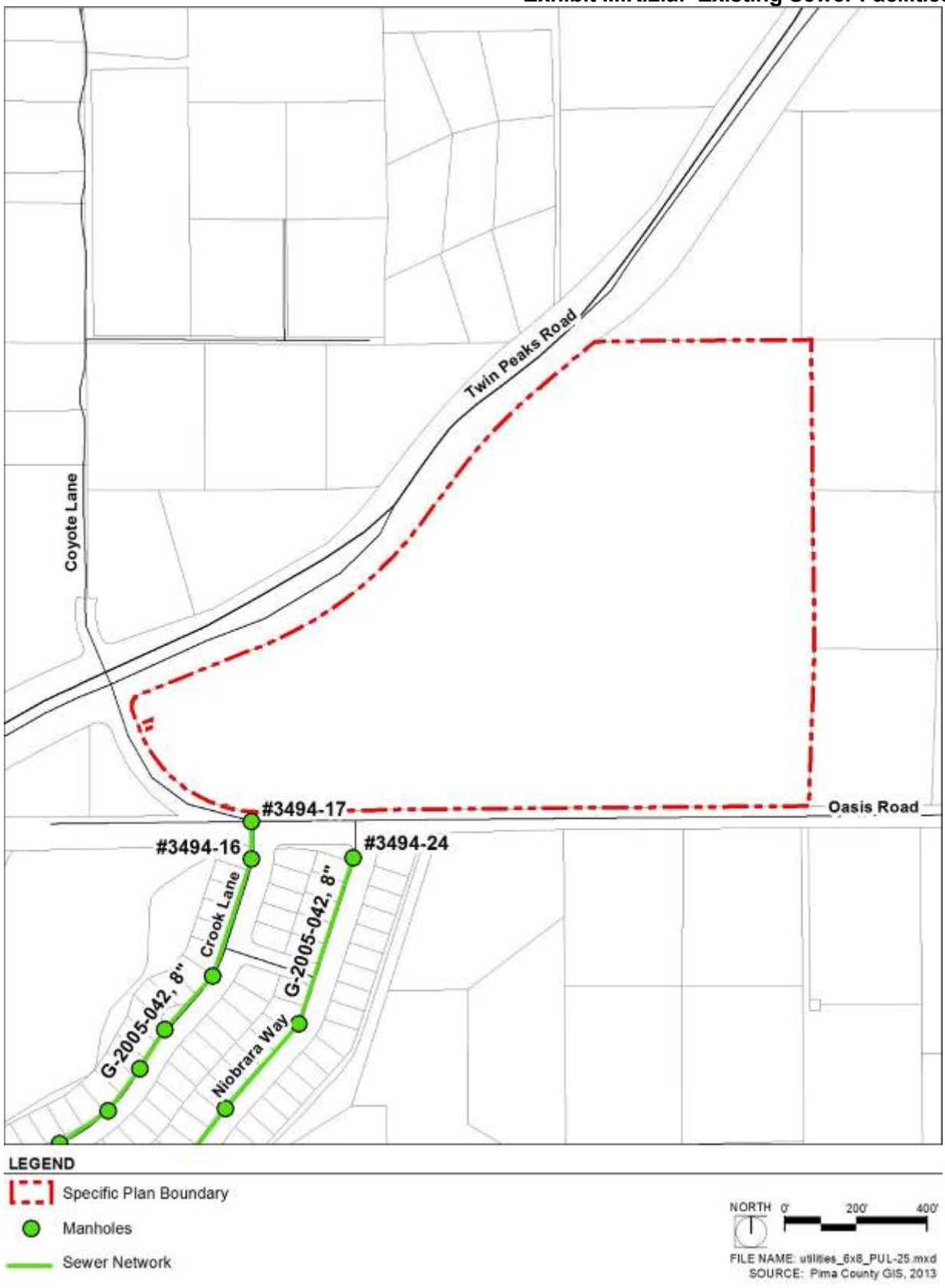


Exhibit III.K.2.b: Wastewater Capacity Response

Pima County
Regional Wastewater Reclamation Department
201 N. Stone Ave., 8th Floor
Jackson Jenkins
Director
Tucson, Arizona 85701
(520) 740-6500
Website:
http://www.pima.gov/wwm

March 4, 2013

Derek Roberts
Apex Development Consultants
2141 N. Alvernon Way, Suite C
Tucson, AZ 85712

Sewerage Capacity Investigation No. 13-031 Type I

RE: **Twin Peaks and Oasis, 89 Residential Lots on Parcel # 216-32-057M. Estimated Flow 19,224 gpd (ADWF).**

Greetings:

The above referenced project is tributary to the Ina Road Wastewater Reclamation Facility via the Continental Ranch Interceptor.

Capacity is currently available for this project in the 8-inch public sewer G-2005-042, downstream from manhole 3494-17.

This letter is not a reservation or commitment of treatment or conveyance capacity for this project. It is an analysis of the system as of this date and valid for one year. Allocation of capacity is made by the Type III Sewerage Capacity Allocation.

Note: Conditions within the public sewer system constantly change. An update to this letter must be obtained to verify that capacity exists in the downstream public sewer system just prior to submitting the development plan or subdivision plat for review and approval.

If further information is needed, please feel free to contact us at (520) 740-6534.

Respectfully,

Ben Fyock, P.E.
PCRWRD Planning Section

MH:ks

c: T12, R12, Sec. 14

O. Public Services

1. Police Service

The project site will utilize the Town of Marana's police service. The nearest Town of Marana police station is the Town of Marana Police Headquarters located approximately 8.1 miles northwest of the project site at 11555 West Civic Center Drive.

2. Schools

There are no schools located within one-mile of the project site. *See Exhibit II.H.1: Recreation and Schools*. The nearest school, DeGrazia Elementary School, is a K-6 public school approximately 1.4 miles southeast of the site at 5051 West Overton Road. The nearest public middle and high schools in the Marana Unified School District are Tortolita Middle School, approximately 2.7 miles southeast of the site at 4101 West Hardy Road, Mountain View High School, approximately 2.5 miles west-southwest of the site at 3901 West Linda Vista Boulevard.

Table III.O.2: School Capacities & Enrollments

School	School Capacity	Current Enrollment (2012-2013)
Mountain View High School	1900-2200	1760
Tortolita Middle School	1100	960
DeGrazia Elementary School	1100	550

It is anticipated that this project will generate approximately 74 residential units if fully developed at the target residential densities. Twin Peaks Oasis is located within the Marana Unified School District (MUSD).

MUSD provided the following multipliers to use for student enrollment projections. (MUSD multipliers do not distinguish between different housing products):

Elementary: 0.25 students per home (0.25 x 74) = 18 students
Junior High & High School: .0.10 students per home (0.10 x 74) = 7 students

The site will be served by Mountain View High School, Tortolita Middle School and DeGrazia Elementary School. In the future, other school sites could serve the Twin Peaks Oasis.

Per preliminary discussions with the MUSD, there are plans for a school site in the Dove Mountain area and/or along the Tangerine Road Corridor. MUSD is also

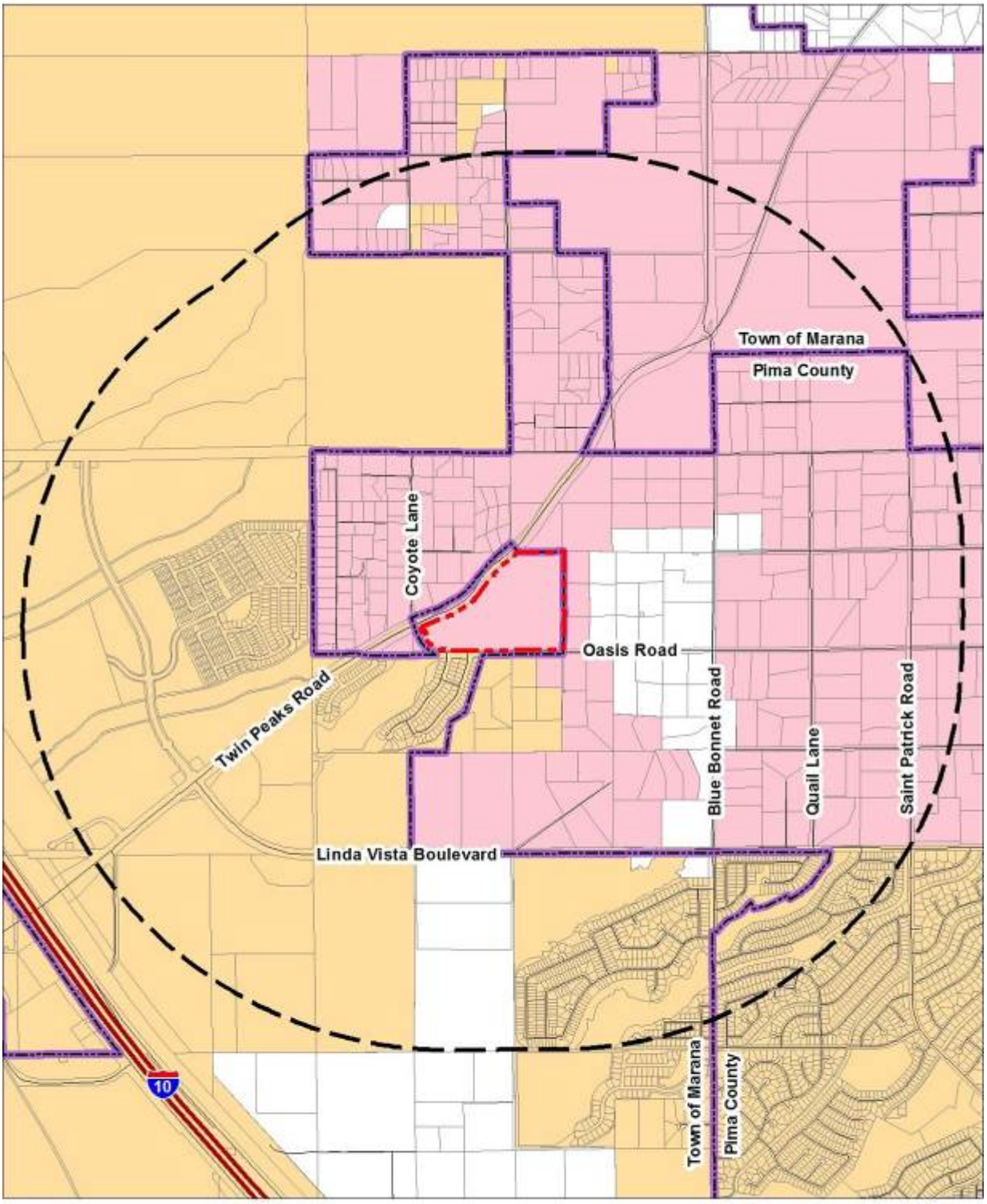
considering the establishment of a district sponsored charter school to help serve the need for quality schools in this growing area of town. There is adequate existing school capacity within Ironwood Elementary School and the DeGrazia Elementary School site. Additionally, there is capacity available within Tortolita Middle School and Mountain View High School; therefore, no middle school or high school sites are warranted within the site boundaries.

3. Fire Service

The entire project site is currently within the Mountain Vista Fire District. The Mountain Vista Fire District serves areas to the north, east and west of the project area. The Northwest Fire District serves immediately adjacent areas south of the site and further west in the master planned community, Cascada.

As depicted in *Exhibit III.O.3: Fire Service*, there are no fire stations within one mile of the project site. The nearest fire station (Mountain Vista Fire District Station #620) is located at 9310 North Shannon Road, approximately 3.7 miles east of the site.

Exhibit III.O.3: Fire Service



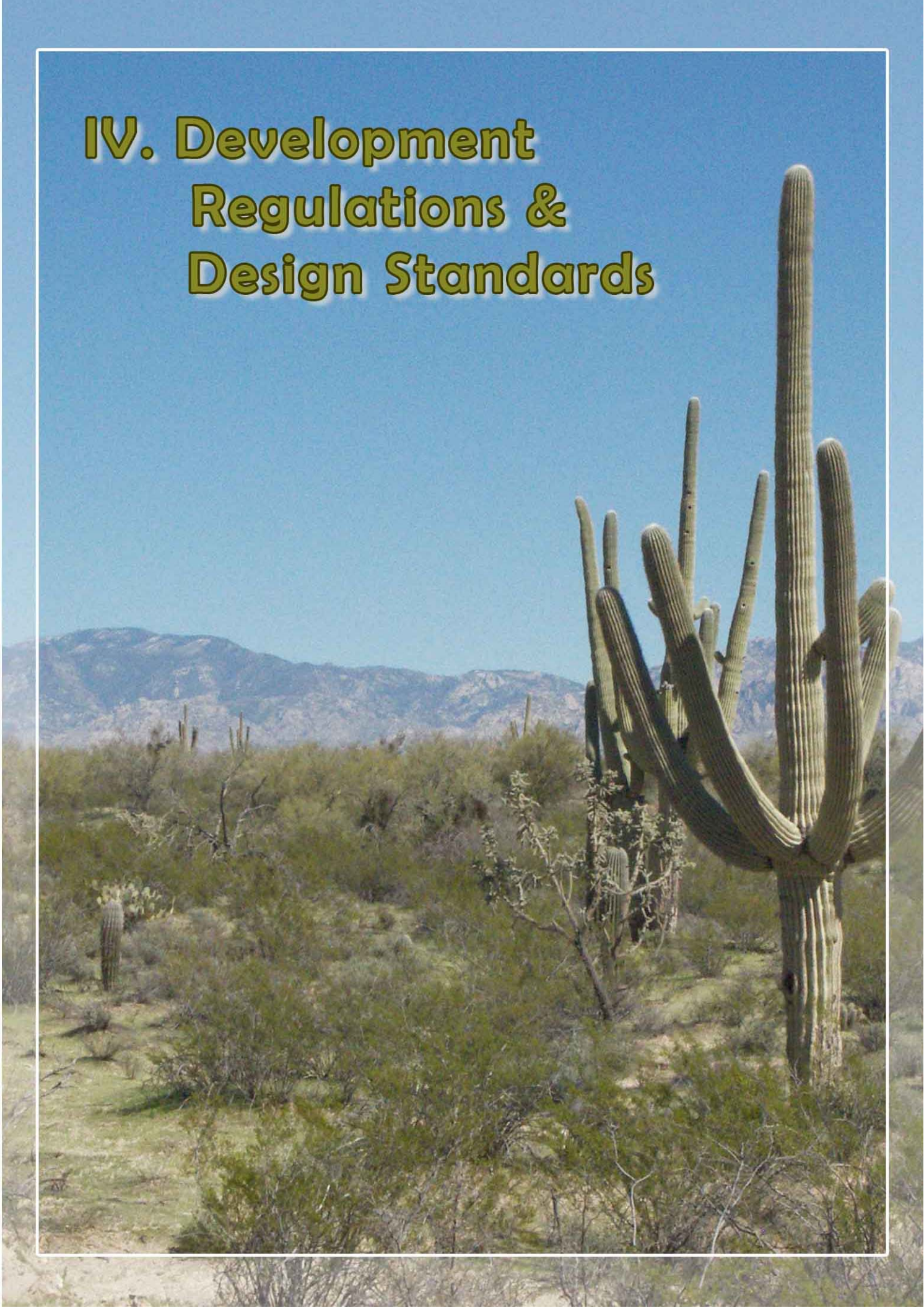
LEGEND

- Specific Plan Boundary
- One-Mile Radius
- Jurisdiction Boundary
- Parcels
- Northwest Fire District
- Mountain Vista Fire District

NORTH 0' 1,000' 2,000'

FILE NAME: PUL-25_public_facilities.mxd
SOURCE: Pima County GIS, 2013

IV. Development Regulations & Design Standards



A. Purpose and Intent

These regulations will serve as the primary mechanism for the implementation of the Twin Peaks Oasis Specific Plan. The Twin Peaks Oasis Specific Plan Development Regulations apply to the development of buildings, landscape borders and performance criteria for all permitted uses within the Specific Plan. The regulations contained within this section provide visual mitigation strategies to ensure appropriate transitioning to surrounding development.

These development regulations apply to the 36.79 acres of land in the Twin Peaks Oasis Specific Plan. Land use designations within the Specific Plan shall be as follows:

- Residential Area (RA)
- Open Space (OS)

The development regulations will govern and provide regulatory zoning provisions for the land use intensities and location criteria within the Twin Peaks Oasis Specific Plan. This section includes standards related to land use, building setbacks, height restrictions and lot coverage. The intent of these standards is to establish clear minimum development regulations, allow for the orderly progression of development, and to provide flexibility over time without compromising the goals and objectives for this specific plan.

B. General Provisions

1. Applicable Codes

If an issue, situation, or condition arises that is not addressed by this Specific Plan, the applicable portions of the Town of Marana *Land Development Code* that are in place at the time of development shall apply.

All construction and development within the Specific Plan area shall comply with applicable provisions of various codes and regulations adopted by the Town of Marana including, but not limited to, mechanical codes, electrical codes, plumbing codes, fire codes, and grading and excavation codes current at the time of development.

The Town of Marana has performed an extensive development design study along the Twin Peaks Road corridor between the I-10 interchange and Tangerine Road. The study considered various design elements such as color and reflective values of buildings, roof materials, and perimeter screen walls, as well as design elements of features common to the development including entry monumentation, and site landscaping. The Marana Mayor and Town Council adopted Resolution 2014-013 on February 18, 2014 approving the Twin Peaks Corridor Study, which defines development and design standards and guidelines applicable to new development

along the Twin Peaks corridor. The Twin Peaks Oasis development will be subject to the standards and guidelines defined within the Twin Peaks Corridor Study.

2. Additional Uses

Whenever a use has not been specifically listed as being a permitted use in the particular zone classification within the Specific Plan, it shall be the duty of the Town Planning Director to determine if said use is consistent with the intent of the designation and compatible with other listed permitted uses.

C. Development Standards

1. Land Use Standards

a. Residential Area Designation (RA)

Residential Area regulations shall apply to the Residential Area Designation (total land outside of the open space (OS) Area). The lands within the Residential areas may be developed with the following permitted uses.

Permitted Uses:

- Site Built Residential Dwelling Units
- Community Recreation Facilities
- Parking
- Utilities
- Emergency Access Drive
- Lift Station

Accessory Uses:

Accessory buildings located on the same lot within the permitted dwelling, provided that any permanent building or structure shall be harmonious with the architectural style of the main building and further provided that all residential uses are compatible with the residential character of the neighborhood.

- Children's Playhouse
- Greenhouse
- Non-commercial hobby shops
- Patios and cabanas
- Swimming pools, spas and related structures
- Tool sheds

Project Accessory Uses:

- Community recreation uses
- One temporary nursery

- Neighborhood Park

Development Standards — Residential

- Minimum Lot Area: 6,000 sf
- Minimum Lot Width: 50 feet
- Minimum Lot Depth: 110 feet

- Setbacks:
  - Front yard: 20 feet from the back of sidewalk to face of garage; 10 feet for side entry garages and/or live-able and architectural components
  - Side yard: 5 feet
  - Street side yard: 10 feet
  - Rear yard: 15 feet

- Maximum Building Height: 30 feet
- Maximum Building Height for Single Story Homes: 20 feet
- Homes on lots 1-7, 22, 23, 37-58, 68, 69 and 74 of *Exhibit III.D.1: Tentative Development Plan* will be single story.
- Maximum Lot Coverage: 70%

The Town of Marana *Land Development Code* defines Lot Coverage as "the area of a site occupied by buildings, storage areas, and areas allocated to vehicular parking, maneuvering, and service."

Development Standards — Accessory Uses

- Setbacks:
  - Front yard: 20 feet
  - Side yard: 5 feet
  - Street side yard: 5 feet
  - Rear yard: 5 feet

b. Open Space (OS)

Open Space regulations shall apply to the Open Space Designation (total land outside of the developed portion of the RA Area). The lands within the Open Space areas shall be preserved as natural areas.

Permitted Uses:

- Trails
- Stormwater Basin
- Landscaping
- Utility Crossings

Environmental Standards

- The Open Space land use designation shall be preserved for habitat mitigation.
- All disturbed areas will be landscaped and re-vegetated in accordance with the Twin Peaks Oasis Landscape Preservation Plan.
- Natural Undisturbed Open Space Areas of vegetation designated to be preserved shall be protected during grading and construction activities by fencing and flagging and in accordance with the Twin Peaks Oasis Landscape Preservation Plan.

Maintenance

- A Homeowners Association regulated by CC&R's shall manage all Open Space areas and undeveloped Residential Areas to ensure continued preservation of these lands.

Development Standards- Open Space

- Minimum Lot Area: None
- Minimum Lot Depth: None
- Minimum Lot Width: None
- Maximum Lot Coverage: None

2. Landscaping & Screening

Natural Undisturbed Open Space (NUOS) will cover nearly 42 percent of the site. The majority of the Landscape Buffers will be comprised of Natural Desert. Disturbed areas will be revegetated with native and low water use plants. Landscape Buffers may not require supplemental irrigation based upon the plant species installed within the disturbed areas. A 5' masonry wall or view fence will be constructed on the sides and rear of each residential lot. However, view fencing is prohibited on the rear of residential lots facing Twin Peaks Road.

a. Landscape Buffers will be comprised of Natural Undisturbed Open Space (NUOS) and natural desert.

b. Due to the irregular shape of the property, natural site constraints, and layout of the site design, the Natural Undisturbed Open Space (NUOS) around the perimeter of the site will function as natural landscape buffer between developable lots and the property boundary. Natural vegetation

will remain in place, and may be augmented with mitigation plantings for protected native plant species. Several unnamed washes will remain in their natural state throughout the site and will enhance buffering between developable lots and the property boundary.

c. Any disturbed areas will be revegetated with native plants or desert adapted plants. Disturbed areas shall be planted with (2) plants per 100 square feet. Plants shall be a minimum of 5 gallons in size.

d. All walls and fences shall be painted, stained, or contain integral color. Uncolored gray block walls will not be permitted.

3. Landscape Standards

a. Minimum plant sizes shall be - trees: 15 gallon, shrubs & accents: 5 gallon, ground covers: 1 gallon.

b. All plants shall be drought tolerant and low water use.

c. Plants requiring irrigation shall be irrigated via an underground drip irrigation system.

4. Parking Standards

Parking in the Twin Peaks Oasis will provide at a minimum a two car garage and driveway parking. Parking will also be accommodated along both sides of the street in accordance with the *Land Development Code*, *Title 22 Off-Street Parking*.

5. Lighting

Lighting at the Twin Peaks Oasis shall comply with the Town of Marana Outdoor Lighting Code.

6. Signage

a. All signage will comply with Title 16 of the Town of Marana Land Development Code.

b. Developer will be responsible for the construction of the Twin Peaks Gateway Monument.

c. Developer will work with the Planning Director to design the Twin Peaks Gateway Monument. Said monument will have an approximate dimension

of 6 feet in height, 15 feet in length and use a combination of materials as permitted in the Twin Peaks Corridor Study.

D. Single Family Residential Detached Housing Design Standards

The Residential Design Standards contained within the Town of Marana Land Development Code for all single family residential lots measuring 16,000 square feet or smaller shall apply.

E. Minimum Roadway Development Standards

1. Application

These minimum street standards are per Town of Marana street standards. All internal roadways shall be public roadways and maintained by the Town of Marana. In the event the site becomes a gated community, the roadways will be private and shall be maintained by the homeowner's association

2. Cul-de-sacs

Restrictions on the length of cul-de-sacs contained within the Town of Marana Street Standards do not apply to Twin Peaks Oasis. There is no restriction on cul-de-sac length. The minimum turnaround right-of-way radius shall be 48 feet to the back face of roll curb. "T" and "Y" shaped turnarounds may be used without curbs.

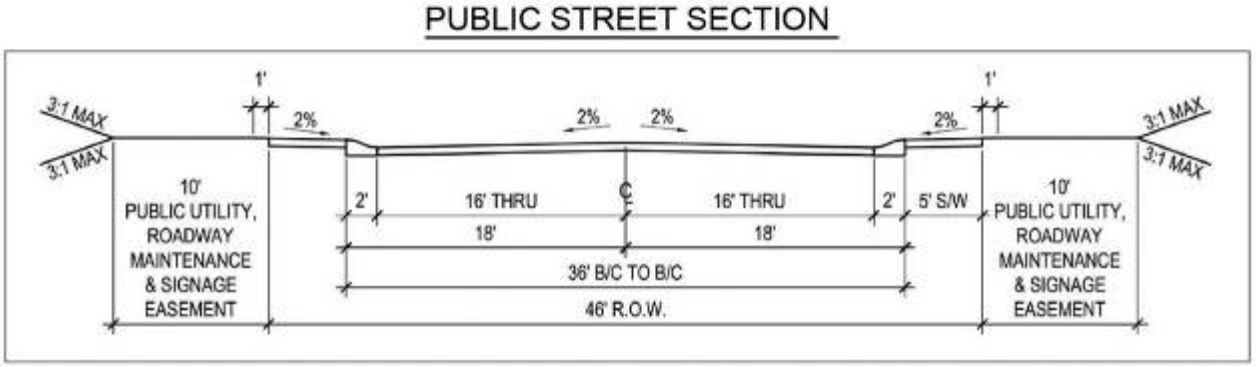
3. Curbing and Sidewalks

Roadways layouts in Twin Peaks Oasis should have minimum effect on existing drainage patterns in either sheet flow areas or defined channels. Roll curbs are appropriate for Twin Peaks Oasis and will be a minimum of 1.0 foot wide. Five-foot sidewalks are planned along both side of the internal roadway for this development. Landscape or revegetation in accordance with the Twin Peaks Oasis landscape Preservation Plan shall be employed to revegetate back to the edge of curb.

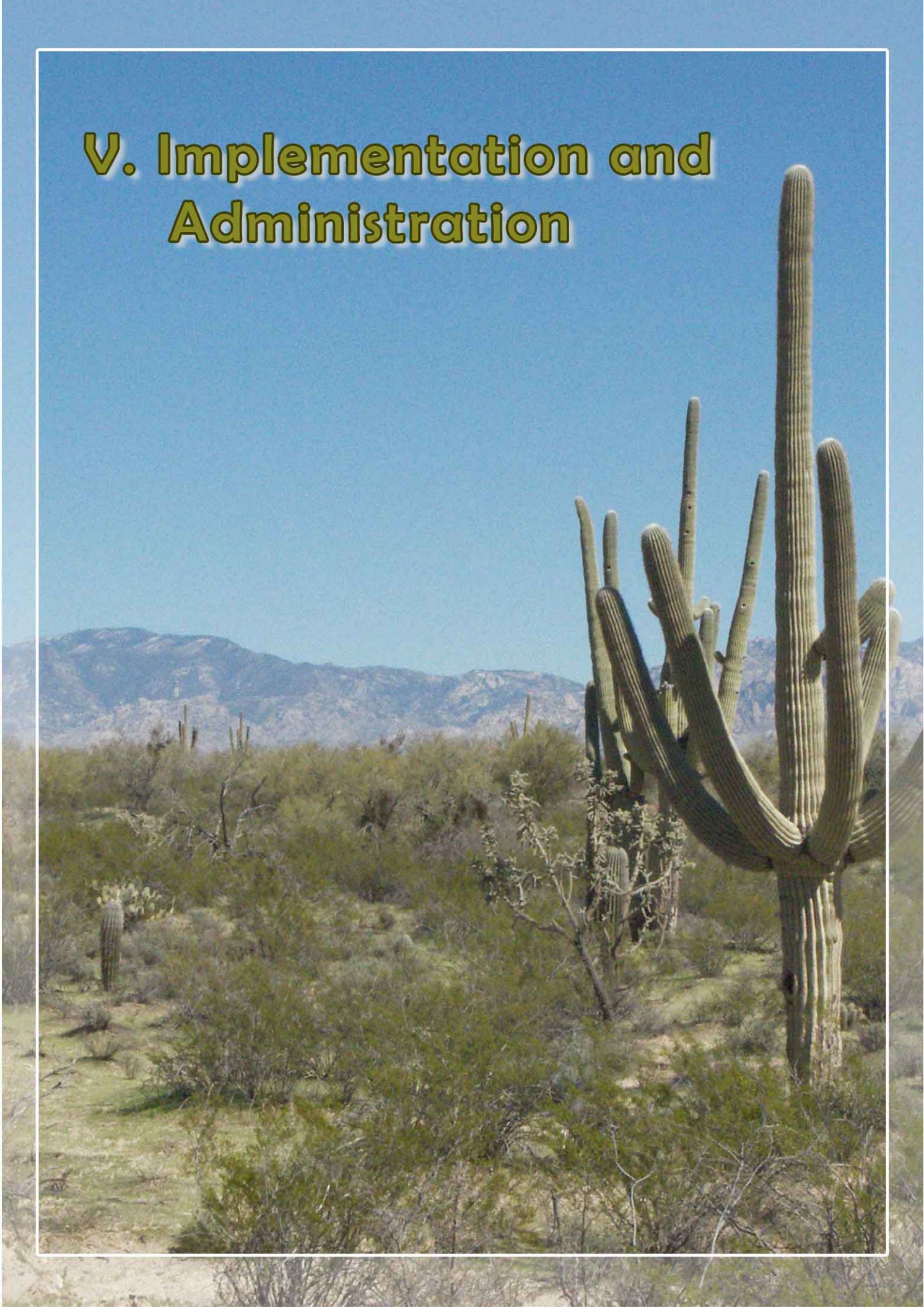
4. Travel Lanes

The internal street section shown on *Exhibit IV.E.4: Public Street Section* is considered a public street and will be maintained by the Town of Marana. In Twin Peaks Oasis, vehicular travel lanes are to a minimum 16.0 feet pavement section with 2-foot roll curbing, 5-foot sidewalks for a total width of 46 feet.

Exhibit IV.E.4: Public Street Section



V. Implementation and Administration



A. Purpose

This section of the Specific Plan is intended to provide regulatory procedures designed to guide the implementation for the Specific Plan throughout the duration of the project. This section also provides guidance regarding the general administration of amendment procedures to the Specific Plan. The Provisions below shall apply to the entire project site as defined in this Specific Plan.

1. Extent of the Specific Plan to Supplement or Supersede Adopted Town Zoning Regulations

The Development Regulations section of the Specific Plan addresses only those areas that differ from the Town of Marana *Land Development Code*. If an issue, condition or situation arises that is not covered or provided for in this Specific Plan, those regulations of the Town of Marana *Land Development Code* that are in place at the time of development shall be used by the Planning Director as the guidelines to resolve the unclear issue, condition or situation.

Appeals to the Planning Director's interpretation may be made to the Board of Adjustment within 15 days of the date of interpretation.

2. General Implementation Responsibilities

The implementation of the Twin Peaks Oasis Specific Plan is the responsibility of the Master Developer and the Town of Marana.

The Master Developer is the entity responsible for providing the basic infrastructure needs, including roads and utilities, buildings, improvements and site development.

At any time, the Master Developer may relinquish its rights and assign any or all rights to one or more successors. Associated responsibilities of the Master Developer would also be transferred to the future Homeowner's Association at that time.

The Town of Marana Development Services Department will be responsible for ensuring all policies and standards laid out in the Specific Plan are adhered to during the review of all development in the Specific Plan.

3. Interpretation

The Planning Director shall be responsible for interpreting the provisions of this Specific Plan. Appeals to the Planning Director's interpretation may be made to the Town Council within fifteen (15) days from the date of the interpretation.

4. Development Review Procedures

All development shall be conducted substantially in accordance with the development regulations outlined in Section IV of this document. All development plans and subdivision plats for Twin Peaks Oasis shall be subject to and implemented through the review and approval process adopted by the Town of Marana *Land Development Code*. In addition, all development is subject to the building permit process as outlined by the Town of Marana.

5. Specific Plan Amendments

Amendments to the Twin Peaks Oasis Specific Plan may become necessary for various reasons including but not limited to responding to changes resulting from new development conditions, financial conditions, and/or to respond to the requirements of potential users or builders of the property. The Master Developer, the Town of Marana, other developers, or agents representing either may request amendments to the approved Specific Plan.

6. Administrative Change

Certain changes to the explicit provisions in the Specific Plan may be made administratively by the Town of Marana Planning Director, provided such changes are not in conflict with the overall intent as expressed in the Twin Peaks Oasis Specific Plan.

The Planning Director's decision regarding administrative changes and determination of substantial change, as outlined below, shall be subject to appeal to the Town Council. Categories of administrative changes include, but are not limited to:

- The addition of new information to the Specific Plan maps or text that does not change the effect of any regulations or guidelines, as interpreted by the Planning Director;
- Changes to infrastructure, such as drainage and utilities, which do not change the overall intent of the Specific Plan.
- Any comparable interpretations of the list of permitted and temporary uses of the property set forth in the Specific Plan.
- Changes in land use designation boundaries, division of plan areas or combinations of areas.
- Minor modifications or adjustments to intrusions, encroachments, easements, rights-of-way, or open spaces, so long as the modifications do not conflict with the overall intent of the Specific Plan.

- The determination that a use may be allowed which is not specifically listed as permitted, but which may not be determined as analogous and/or accessory use explicitly listed as permitted, as made by the Planning Director.

7. Substantial Change

This Specific Plan may be substantially amended by the procedure outlined in the Town of Marana *Land Development Code*, Title 17 Section 05.06.07, Specific Plan Changes. The owner or agent of the property may submit to the Planning Director a written application to amend one or more of the Specific Plan regulations. Depending on the type of request, the Planning Director may determine the request to be a substantial change to the Specific Plan. A substantial change requires the applicant to submit all sections or portions of the Twin Peaks Oasis Specific Plan that are affected by the change(s). After review, the Planning Director shall refer the request to amend with his recommendations to the Planning Commission for noticed public hearing. The Planning Commission shall make its recommendation to the Town Council which, after public hearing, shall approve, reject, or modify the proposed amendment.

B. Bibliography

Aerial Photographs, Pima Association of Governments, Pictometry, 2012.

Town of Marana Land Development Code, Title 8 - General Development Regulations, revised May 2011.

Town of Marana Land Development Code, Title 6 - Subdivision Requirements, revised March 2011.

Town of Marana Land Development Code, Title 5 - Zoning, revised May 2011.

Town of Marana General Plan, 2010.

Town of Marana Parks, Recreation, Trails, and Open Space Master Plan, 2010.

FEMA Flood Insurance Rate Map, Pima County, Arizona.

Institute of Transportation Engineers, Trip Generation Manuals, 7th Edition, Volumes 1 & 3, 2003.

MapGuide, Pima County Department of Transportation, 2013.

THE PLANNING CENTER
a division of TPC Group, Inc.
"Doing business in Tucson for over 25 years"

June 2, 2016

Town of Marana
Planning Department
Attn: Ryan Mahoney
11555 West Civic Center Drive
Marana, AZ 85653

Subject: **Twin Peaks Oasis Specific Plan – PCZ-13018**
Project: SCU-01

Dear Mr. Mahoney:

We are in the process of preparing a resubmittal for the Twin Peaks Oasis Specific Plan. The following will provide a summary of our efforts to address adjacent neighbors' concerns with the proposed development.

Twenty-foot tall PVC poles were installed in three locations to indicate the approximate location and maximum height of the proposed homes as a means of demonstrating the potential impact for the closest properties adjacent to the development's eastern boundary. Upon installation of the poles, The Planning Center held a series of meetings at the homes of adjacent property owners to better understand and address their concerns associated with development of the subject property.

We met with the following property owners:

- Tom & Sherry Potter – 5805 W Oasis Road (216-34-065H)
- Gordon & Peggy Prentis – 5620 W Oasis Road (216-32-057D)
- Jessie & Leslie Munoz – 5626 W Oasis Road (216-32-057E)
- Keith Arnold – 5630 W Oasis Road (216-32-057H)
- John Holley – 5556 W Oasis Road (216-32-058H)
- Ron Isaacson – 5542 W Oasis Road (216-32-058J)

The Potter property is located south of the proposed site, across Oasis Road just east of the Oasis Hills development. They have concerns about the traffic on Oasis. Earlier plans had a proposed street adjacent to their property, and they were concerned about traffic as they try to exit their driveway, as well as the potential for car lights to shine into their home. The current version of the plan has the street connection to the west to align with Niobrara Way. There is, however, still a cul-de-sac across the street from the Potter property. To mitigate for potential headlight trespass, the property owner has agreed to install a four-foot wall at the edge of the cul-de-sac to block vehicle headlights from shining directly across the street. Additionally, enhanced landscaping will be provided along Oasis Road to act as an additional barrier to reduce light trespass onto the Potter property and to help beautify the project frontage on Oasis Road.

The Prentis property is located just east of the proposed site along Oasis Road. Their primary concern is associated with the proximity of the proposed development to their property and the fact that they will be able to see homes where there is now open space. We met with the

a 110 s church ste 6320 tucson az 85701
o 520.623.6146
f 520.622.1950
w azplanningcenter.com

Prentis's at their home and pointed out the PVC poles. A map was also given to them to show that the closest proposed home is approximately 700-feet away from their property. We also discussed their concerns with the wash that sits between their property and the proposed homes. They were concerned that the development could impact flood elevations or change wash patterns. When they developed their home they had to bring in a significant amount of fill to raise their building pad above the flood elevation, and they are still required to pay for flood insurance. We provided them with a memo about the hydrology prepared by the WLB Group that explains that the proposed development is downstream from their home and will not have a negative hydrology impact on their property. This memo is attached.

Mr. and Mrs. Munoz's property is located east of the proposed development just north of the Prentis property. Their property is situated approximately 430-feet from the nearest proposed home. They did not express concerns about the development.

The Arnold property is located just east of the northeastern corner of the proposed site. Their main concerns relate to their views, privacy and the project's impact on their property values. The home sits approximately 380 feet from the closest proposed home. They recently listed their home for sale.

Mr. Isaacson's property is located east of the subject property along Oasis Road, two properties east of Mr. Prentis' property. Mr. Isaacson's primary concern is associated with the density of the proposed development. He would like to see the property developed with acre lots. Additionally, he mentioned that he did not like the idea of seeing several houses as he drives past the property on Oasis. In response to this, we agreed to provide further plantings along Oasis Road to provide more screening of the proposed homes.

The Holley residence is directly north of Isaacson's. He did not express any concerns of his own, but echoed those that he had heard from his neighbors.

If you have any questions, please do not hesitate to contact me: bunderwood@azplanningcenter.com or (520) 623-6146.

Sincerely,

THE PLANNING CENTER

Brian Underwood

Brian Underwood
Project Manager

a 110 s church ste 6320 tucson az 85701
o 520.623.6146
f 520.622.1950
w azplanningcenter.com

June 6, 2016

Cynthia L Ross, AICP
Planner II, Planning Department
Development Services
Town of Marana
11555 W. Civic Center Drive
Marana, AZ 85653

Re: Letter of Protest-Plan PCZ-1606-001

Dear Ms Ross,

Please consider this a Letter of Protest. We own the property located at 5626 W Oasis Road in Tucson, Arizona which is adjacent to the area proposed for rezoning and is within 150' of the planned rezoning of the Twin Peaks & Oasis Road Specific Plan PCZ-1606-001.

We feel that the rezoning and building of high density properties by any developer will result in an increase in traffic and noise, alter the natural migration of wild animals and affect the natural scenery of the area. It will also decrease our property value, the property values in the immediate area and decrease our quality of life. It may potentially jeopardize the existing flood plain.

We urge the council members to vote **NO** on the rezoning of Twin Peaks and Oasis Rd.

Respectfully,

Name: Jesse and Leslie Muñoz

Address: 5626 West oasis Road

Tucson, AZ 85742

Signature: Jesse K Muñoz Date: 6/6/16

Cynthia Ross

From: Stuart Haiken <cboy1112@aol.com>
Sent: Tuesday, June 07, 2016 2:45 PM
To: Cynthia Ross
Subject: PCZ-1606-001

I would like to protest this inappropriate rezoning from low density to extremely high density. I know my letter will have absolutely no impact on the decision as I'm sure the developers & the Town of Marana will make a few cosmetic tweaks & the plan will pass.
Thank you for your consideration.

Stuart Haiken
10991 N. Camino de Oeste
Tucson

June 13, 2016

To: Mayor and Council, Marana Planning Commission

C/O: Cynthia L. Ross, AICP
Planner II, Planning Department
Development Services
Town of Marana
11555 W. Civic Center Drive
Marana, AZ 85653

We are opposed to the Twin Peaks & Oasis Rd Development #PCZ-1606-001.

We like most of our neighbors are deeply concerned about the impact of a large housing development and its effects on our community. When we purchased our home in 2008, we did our research and found the adjacent zoning to be in harmony with ours and expected that the area would develop in kind. We were aware of the new Twin Peaks Road to come and expected this would enhance our area and bring many new homes, but developed per the zoning that exists now.

When we learned of the size and density of the new proposed Twin Peaks Oasis development, we were devastated and torn with emotion about the numerous effects and potential negative impacts that would come as a result. One of our primary concerns was about what the impact would be on our home value. You can find many examples in Tucson of track house rows tightly packed together along and adjacent to large home lots. The striking negative appearance and impact of this is the result of poor city planning and/or lack of community involvement in the development process. We are determined not to let this happen here.

One of our primary and repeated concerns about this has been how the development will blend and compliment (or not) the surrounding area. With rows of track house lots of 7,200 sq. ft. up against 3.3 acre or larger properties, there is no compliment to value or harmony for those who live here now.

Then there is the effect on the local wildlife and the pristine undisturbed desert in this area. One thing you cannot dispute about the current zoning and that of the surrounding area, is that most of the homes are very much in harmony with the desert as it exists. The custom homes on large lots here preserve the desert far better than the clear cut style of the subdivision proposed. We are strongly encouraging the town to stand by their HCP draft plan as close as possible in order to preserve the desert and the life that exists here. You should not use the same standards that are used for farm-field and wasteland developments in this area.

Sincerely,

Teri Carpenter

Grey & Teri Carpenter
5225 W. Spectacular Way
Tucson, AZ 85742
520-631-6159
teri@greycoelectric.com

Cynthia L Ross, AICP
Planner II, Planning Department
Development Services
Town of Marana
11555 W. Civic Center Drive
Marana, AZ 85653

June 15, 2016

Dear Ms Ross,

This Letter of Protest is in response to the proposed rezoning and subsequent development described in the Twin Peaks Oasis Specific Plan PCZ-1606-001.

Rezoning to encourage building on small lots is in stark contrast to the existing community where the minimum lot size is 3.3 acres. The proposed development would increase traffic and noise, and decrease property values. The level of density envisioned would destroy the habitat of desert wild life and the natural beauty of the area. This project would jeopardize water wells and could increase the likelihood of flooding.

We urge the council members to vote No on the rezoning of Twin Peaks and Oasis Rd.

Respectfully,

Susan D. Parrish PhD
Ronald L. Isaacson

Address: 5542 W. Oasis Road, Tucson, AZ 85742

Signature: _____ Date: 6-15-16

Signature: Ronald L. Isaacson Date: 6/15/2016

The WLB Group Inc.

Engineering • Planning
Surveying • Urban Design
Landscape Architecture

February 3, 2016

Linda Morales
The Planning Center
110 S Church Ste 6320
Tucson, AZ 85701

Re: Twin Peaks Oasis Hydrology and FEMA Floodplain
WLB No. 116001-A001-0400

Dear Linda:

This letter has been prepared at your request regarding the Twin Peaks Oasis site development encroaching into the FEMA floodplain located in the southeastern portion of the site and the potential impacts to the existing residential adjacent home sites. We see no issue with being able to demonstrate that the very minimal encroachment of the Twin Peaks Oasis lots into the southeast floodplain is acceptable. The southeast wash is a wide broad sheet flowing floodplain and the proposed encroachment limits will comply with the Town of Marana and FEMA's requirements. The planned encroachment will not raise the flood depth more than 0.1 foot in the wash water surface elevation and will not cause a velocity increase beyond the allowable 10%. These are the encroachment standards set forth by the Town and FEMA.

I've provided the enclosed attachment containing technical background information regarding the Town of Marana and FEMA LOMR-F and LOMA processes for new and existing structures within the floodplain. I've also enclosed an exhibit depicting the FEMA floodplain.

We look forward to assisting The Planning Center in the preparation of the detailed encroachment analysis as the development process progresses. If you should have any other questions, please feel free to contact me or David Little. Thank you.

Sincerely,

The WLB Group, Inc.

Erik Beam, CFM
Hydrologic/Hydraulic Designer

Enclosures: Attachment 1 – Marana/FEMA Technical Background Information
Attachment 2 – Floodplain Exhibit

Letter Attachment - Town of Marana and FEMA Technical Background Information

Twin Peaks Oasis Site (LOMR-F Discussion)

The site has been designated as being located within a Zone AO1, a special flood hazard area subject to sheet flow on sloping terrain for areas of alluvial fan flooding. Flood depth and velocities for the project site have been determined by CMG engineering and FEMA using a computer program called FLO-2D in the report titled "*FLO-2D Model Report For The Tortolita Piedmont, Volume 3*" prepared by CMG Drainage Engineering dated July 2008, revised December 2008. This floodplain inundates portions of the northwest and southeast corners of the Twin Peaks Oasis site. The remaining areas of the site is located within FEMA Zone X, which is designated as a non-flood hazards area.

A FEMA LOMR-F (Letter of Map Revision based on Fill) will be required to remove any new structure out of the floodplain. The northwestern and southeastern portion of the Twin Peaks Oasis site is shown in a Special Flood Hazard Area (SFHA) and is subject to inundation by the base (1-percent-annual-chance) flood. The Finish Floor Elevation (FFE) of the structures will need to be a minimum of 1 foot above the base flood elevation. In the case of a Zone AO1, which identifies flood depths of one foot, the finished floor elevation will need to be a minimum of two feet above the Highest Adjacent Grade (HAG) of the existing ground. The structure (or parcels of land) should be raised above the base flood by the placement of fill and the landowner may request a LOMR-F. The fill is defined as material from any source placed to raise the ground (natural grade) to or above the Base Flood Elevation (BFE). The building pad will need to extend around the structure. All elevation information will need to be certified by a Licensed Land Surveyor or Registered Professional Engineer, and FEMA charges a fee for the review and processing of LOMR-F requests. This LOMR-F process is approved by both the Town of Marana and FEMA. Once approved, FEMA will release the LOMR-F on the FIRM (Flood Insurance Rate Maps) Maps and this action will remove the structures from the floodplain on the maps.

Neighboring Properties (LOMA Discussion)

The wash floodplain affects numerous neighboring properties to the south and east of the Oasis project. As previously stated in our letter, we do not see the Twin Peaks Oasis southeast wash floodplain encroachment adversely impacting the neighboring properties.

The landowners of existing structures within the floodplain could elect to have a LOMA (Letter of Map Amendment) prepared to remove their structures out of the floodplain provided the structures meet certain criteria. The detailed floodplain calculations that will be required to be provided by the Twin Peaks Oasis developer to complete the LOMR-F process can be utilized by the neighbors to drastically reduce the effort and cost associated with filing their own LOMAs.

For a LOMA to be issued by FEMA to remove one or more structures from the SFHA, the NFIP regulations require that the lowest adjacent grade (the lowest ground touching the structure) be at or above the BFE. The structures need to be detached; otherwise the LOMA would take into account the furthest most upstream Base flood Elevation (BFE) adjacent to the structure.

The issuance of a LOMA or LOMR-F eliminates the Federal flood insurance purchase requirement as a condition of Federal or federally backed financing. The mortgage lender, however, retains the right to require flood insurance as a condition of providing financing, regardless of the location of a structure.

LEGEND:

100-YR FLOODPLAIN LIMITS
FEMA ZONE AO1

PROPERTY BOUNDARY

PROPOSED LOTS

EXISTING POLE STAKE LOCATION

DIRECTION OF FLOW

PROJECT BOUNDARY

OPEN SPACE
587,526 SF
13.49 AC

OPEN SPACE
97,124 SF
2.23 AC

OPEN SPACE

UNDISTURBED OPEN SPACE=42.35%

PARK

STREET A

STREET B

STREET C

TWIN PEAKS BOULEVARD

OASIS ROAD

KEITH RESIDENCE

JACKSON RESIDENCE

HOLLEY RESIDENCE

MUNOZ RESIDENCE

PARRISH RESIDENCE

BRENTIS RESIDENCE

RUMSLEY RESIDENCE

OBERIN RESIDENCE

POTTER RESIDENCE

HALL RESIDENCE

JENOTT RESIDENCE

KLINE RESIDENCE

ONKKA RESIDENCE

CRISS RESIDENCE

BEZTEL RESIDENCE

TIERNEY RESIDENCE

CANTRELL RESIDENCE

OASIS AT TWIN PEAKS

FLOODPLAIN MAP

0' 300' 600' 900'

The WLB Group INC.

WLB

Offices located in Tucson, Phoenix and Las Vegas, NV
4444 East Broadway
Tucson, Arizona 85711 (520) 881-7480

WLB JOB # 112026-A001-0400 FEBRUARY 2015

Plotted: Feb 03, 2016

Q:\1116001\03 Hydro\Reference Studies\ACAD-Pretty Layout 082614k_PoleLocs-Model.dwg

Planning Commission

Meeting Date: 06/29/2016

To: Planning Commission

From: Brian Varney, Planner II

Date: June 29, 2016

Strategic Plan Focus Area:
Commerce

Strategic Plan Focus Area Additional Info:
Principle Statement 1 within the Commerce focus area of the Strategic Plan states that the town will support commerce and business by being creative and flexible in order to produce innovative solutions that exceed customer expectations. The amendments to the Land Development Code proposed in this request address Initiative 1, which mandates updates to the Land Development Code to enhance simplicity, understanding, and ease of use of the document. Although the entire Land Development Code will be comprehensively amended in 2016 - 2017, this interim amendment is necessary to address an immediate need with respect to the term of validity of approved preliminary plats.

Subject: **PCM1605-001 Amendment to Marana Town Code Title 17 (Land Development), Chapter 17-5 Subdivisions.**
Recommendation to the Town Council to approve an amendment to the Marana Town Code, Title 17 (Land Development)
pertaining to comprehensive revisions to the procedures and provisions for processing subdivision plats including the pre-application conference and the submittal, review, and approval of preliminary subdivision plats. (Brian D. Varney)

Discussion:

The Planning and Legal departments have identified some recurring challenges within the Land Development Code with respect to the procedures for processing preliminary subdivision plat applications. The challenges include the significance of preliminary plat approval, specifically, the duration for which an approved preliminary plat remains valid without a subsequent submittal and approval of a final plat. Additionally, the procedures and provisions defined within the Land Development Code pertaining to the processing of preliminary plat applications are outdated, confusing, and contradictory to current procedural standards. This proposed amendment addresses both the immediate need to revise the regulations as they pertain to the expiration of approved preliminary plats, as well as the need to clarify and simplify the procedural requirements for the submittal, review, and approval of forthcoming preliminary plats.

On February 15, 2011, the Town Council adopted Ordinance No. 2011.04 approving a temporary amendment to Title 6 Subdivisions of the Land Development Code. (Title 6 is the former location for the subdivision standards within the Land Development Code. The subdivision standards have since been integrated into the Marana Town Code as Chapter 17-5.) Ordinance No. 2011.04 temporarily amended Section 06.02.02.D of the Land Development Code to extend the period for which an approved preliminary plat remains valid to seven years (or December 31, 2017, whichever is sooner), by which time a final plat shall have been recorded. If a final plat was not recorded within this period of time, the approved preliminary plat would expire. In order to proceed with the platting of the subdivision, an applicant would be required to submit a new application and application fees. This temporary

amendment applied to all preliminary plats approved after July 1, 2006. The Ordinance was adopted with the stipulation that it would terminate, and be of no further force and effect, on December 31, 2015.

Upon the termination of Ordinance No. 2011.04, the language within Section 06.02.02.D reverted back to the previous standards. The current standards provide for a preliminary plat to expire after a period of two years from the date of approval if a final plat is not recorded. An applicant may submit a written request to the Town Council requesting a one-year extension and pay an extension fee. The approval of a preliminary plat shall be valid for no more than a total of three (3) years.

Given the recent economic climate and current market conditions, the Planning department is proposing a more reasonable time frame in which an applicant is required to follow up a preliminary plat with a final plat, landscape plans and improvement plans. The proposed revisions to Chapter 17-5, as they apply to preliminary plats, are attached to this report. The proposed revisions indicate that a preliminary plat shall expire two years from the date of town council approval unless a final plat has been submitted for all, or a portion, of the property included in the preliminary plat, or an extension has been granted by the council. An applicant may submit a written request to extend the approval of the preliminary plat for a period of two (2) years. The Planning Director and Town Engineer shall evaluate whether the preliminary plat and supporting documents remain in compliance with all applicable town standards and shall base their recommendation on their findings. The proposed amendment also provides for an automatic extension of a preliminary plat for a period of two years upon submission of a final plat application. If a final plat is approved for a portion of the land area included in a preliminary plat, the remainder of the approved preliminary plat shall remain valid for a period of two years from the date of council approval. If a preliminary plat expires, and an applicant wishes to continue with the platting process, the submittal of a new preliminary plat application and application fees in the amount of 50 percent of the initial application fees will be required. If approved, the proposed amendment to Chapter 17-5 Subdivisions will also apply to previously expired plats for which the submittal of a final plat is pending.

Additional Revisions
Opening up this section of Chapter 17-5 afforded an opportunity to clean up the remainder of the text pertaining to preliminary plats and relocating the majority of the procedural requirements to a more appropriate location. The Planning department has been in the process of updating our procedural guides and checklists, which are intended to be comprehensive instructional documents designed to provide the necessary direction for the submittal, review, and approval of various land use applications. The procedural requirements for preliminary plats have been integrated into the appropriate procedural document and are proposed to be removed from the Land Development Code. This format will enable minor revisions to be made to the procedural requirements, administratively, without necessitating a formal amendment to the Land Development Code.

Staff Recommendation:

Staff recommends that the Planning Commission forward the proposed amendment to the Marana Town Code Title 17 (Land Development), Chapter 17-5 Subdivisions to the Town Council with a recommendation for approval.

Suggested Motion:

I move to recommend approval of PCM1605-001 Amendment to to Marana Town Code Title 17 (Land Development), Chapter 17-5 Subdivisions.

Attachments

Chapter 17-5 Text Amendment
Redline old to new

17-5-2 Procedure

A. Overview.

1. Except as provided otherwise elsewhere in this code, the preparation, submittal, review and approval of subdivision plats shall proceed through the following progressive steps:
    a. Pre-application meeting with the town.
    b. Preliminary plat submittal, review, and approval.
    c. The submittal and approval of engineering plans for the required subdivision improvements.
    d. Final plat submittal, review, and approval.
    e. Recordation of the approved final plat with the county recorder.
2. The following shall be processed in accordance with section 17-5-6:
    a. Land splits.
    b. Minor land divisions.

B. Pre-application meeting

1. The pre-application meeting provides an opportunity for the town and the applicant to review and exchange information regarding a proposed subdivision prior to the preparation and formal submittal of a subdivision plat application.
2. All applications for subdivision plats shall be prepared and processed in accordance with procedures and requirements defined in the preliminary plat application checklist, which town staff will provide to the applicant at the pre-application meeting.

C. Preliminary plat

1. The applicant shall submit a preliminary plat application in accordance with the preliminary plat application checklist.
2. The procedures for review and approval of a preliminary plat shall be as follows, as supplemented by the preliminary plat application checklist.
    a. Once a preliminary plat has been accepted by town staff and the appropriate review agencies, the planning commission shall consider the plat and make a recommendation to the council that the preliminary plat be approved, approved with conditions, or denied.
    b. After the planning commission's consideration, the council shall review and consider the preliminary plat and the planning commission's recommendation. The council shall approve, approve with conditions, or deny the preliminary plat application. Decisions of the council shall be final.
3. Preliminary plat approval constitutes authorization for the applicant to proceed with preparation and submittal of the final plat, landscape plan, and engineering improvement plans and specifications.
4. Preliminary plat approval is subject to the following conditions:

a. Changes in conditions such as the land's physical attributes, title conditions, ownership and similar changes that make development of the affected land in accordance with the approved plat infeasible shall require the submission of a new or revised preliminary plat.

b. A preliminary plat expires two years from the date of council approval unless:

   i. A final plat has been submitted for all or a portion of the property included in the preliminary plat, or

   ii. The council grants an extension.

c. The applicant may submit a written request for a two-year extension of a preliminary plat approval, which shall be reviewed and considered as follows:

   i. The planning director and the town engineer shall evaluate whether the preliminary plat and supporting documents remain in compliance with all applicable town standards and requirements~~.~~ and shall make a written recommendation to the council based upon their evaluation.

   ii. The request for extension shall be considered by the council, whose decision shall be final.

d. Preliminary plat approval shall be automatically extended for a period of two years upon submission of a final plat application for any portion of the land area shown on a preliminary plat.

e. Once a final plat has been approved for a portion of the land area included within an approved preliminary plat, the approval of the preliminary plat shall be extended for the balance of the land area for a period of two years from the date of council approval of the final plat.

f. If a preliminary plat expires prior to the submittal of an application for a final plat or prior to the submittal of a request for an extension of the preliminary plat approval, the preliminary plat shall be resubmitted as a new application. If the resubmitted preliminary plat has substantially the same design and configuration as the previously approved plat and no substantive changes have occurred in the standards and requirements, the fees associated with the new application shall be 50% of the original application fees.

g. The preliminary plat shall not be recorded.

D. Final plat [No revisions]

17-5-2 Procedure

A. Overview.

1. ~~The~~Except as provided otherwise elsewhere in this code, the preparation, submittal, review and approval of ~~all subdivisions located within the town limits~~subdivision plats shall proceed through the following progressive steps~~, except when otherwise provided by approval of the town~~:

   a. Pre-application ~~conference~~meeting with the town.

   b. Preliminary plat submittal, review, and approval.

   c. The submittal and approval of engineering plans for the required subdivision improvements.

   d. Final plat submittal, review, and approval ~~only after the preliminary plat is approved by the council~~.

   e. Recordation of the approved final plat with the county recorder.

2. The following ~~subdivision acts shall not be deemed a subdivision within the context of sections 17-5-2 and 17-5-3, and shall, therefore,~~shall be processed in accordance with section 17-5-6:

   a. Land splits.

   b. Minor land divisions.

B. Pre-application ~~conference~~meeting

1. The pre-application ~~conference for subdivision~~meeting provides an opportunity for the town and the applicant to review ~~is an investigatory~~and exchange information ~~exchange period~~regarding a proposed subdivision prior to the preparation and formal submittal of a ~~preliminary~~subdivision plat application ~~by the subdivider. Pre-application review shall proceed in the manner set forth in this section~~.

2. ~~At least seven days before the pre-application meeting, the subdivider shall request a pre-application meeting with the planning department and shall submit at least five copies of the general concept of the proposal, which shall include:~~All applications for subdivision plats shall be prepared and processed in accordance with procedures and requirements defined in the preliminary plat application checklist, which town staff will provide to the applicant at the pre-application meeting.

   ~~a. Sketch plans at no larger scale than one inch equals 100 feet;~~

   ~~b. Narrative ideas regarding land use, street and lot arrangement, lot sizes and dimensions;~~

   ~~c. Tentative proposals regarding water supply, sewage disposal, grading and drainage, stormwater retention, and street improvements;~~

   ~~d. The site resource inventory (section 17.01.02, "site resource inventory," of the Marana land development code); and~~

~~c. A vicinity plan, showing streets and utilities in the surrounding area within at least one-quarter mile of the proposed subdivision.~~

~~3. Planning staff shall advise the subdivider of:~~

~~a. Specific town objectives, standards, and regulations related to the subject property;~~

~~b. The subdivision design expectations; details and suggestions regarding subdivision platting procedures and requirements;~~

~~c. Citizen participation requirements; and~~

~~d. Related issues.~~

~~4. If appropriate, planning staff may request the subdivider to revise the initial proposal and present the revised proposal to the planning department for additional review.~~

~~5. Following the pre-application conference with the planning department, the subdivider may prepare a preliminary plat containing the information and data required for preliminary plats specified in subsection 17-5-2-C below.~~

C. Preliminary plat

1. ~~Preliminary plat submittal: The subdivider shall submit the following materials to the planning department~~The applicant shall submit a preliminary plat application in accordance with the preliminary plat application checklist.

~~a. Twelve copies of the preliminary plat reproduced in the form of blue or black line prints on a white background. Plan sheets shall not exceed 24 inches by 36 inches in overall size.~~

~~b. A completed application and supplemental forms. If the subdivider is not the current land owner of all of the subject real property, a signed and notarized statement shall also be filed attesting that the owner grants to the subdivider authority to represent the owner in this matter.~~

~~c. A nonrefundable preliminary plat filing fee to compensate the Town for the costs of examining and processing the subdivision plat and subsequent field investigations. The required fee for subdivision plats shall be approved by resolution of the council. The fees shall cover the cost of the filing of one amended or revised preliminary plat handled as the same case. If preliminary plat approval expires prior to application for final plat approval, the plat shall be resubmitted for preliminary approval as a new case, and the subdivider shall pay the required fee.~~

~~d. Twenty-eight copies of 11 inch by 17 inch reductions of the preliminary plat.~~

~~e. Three copies of a preliminary grading plan.~~

~~f. All submittals shall be reviewed by the development coordinator for completeness and assigned a project number. If incomplete as to the requirements set forth in this chapter, the submittal will be rejected and returned to the subdivider for completion and submittal.~~

~~g. The development coordinator will send copies of the preliminary plat to applicable town staff members for review and comment. In addition the development coordinator will send copies of the preliminary plat to applicable reviewing agencies, including utilities, cable television companies, school districts, county offices, state and federal offices, and any adjacent municipalities. Written recommendations from the review agencies shall be transmitted to the development coordinator.~~

2. ~~Preliminary plat approval~~The procedures for review and approval of a preliminary plat shall be as follows, as supplemented by the preliminary plat application checklist.

~~a. An applicant shall submit all of the documents, information, data, and other requirements for preliminary plat approval to the planning department, and shall furnish all information and materials required to satisfy the requirements of this chapter.~~

~~b. An applicant shall also submit a plan showing proposed conceptual landscape and streetscape proposals. The conceptual streetscape and landscape plans shall be for open spaces, entryways and streets, and shall note the requirement to obtain a license agreement if any materials are installed in the public right-of-way.~~

~~c. In addition to the requirements of the preceding subsections, the applicant shall provide to the planning department any additional information, documents, or other material relevant to the application that planning staff reasonably believes is necessary for the planning commission to evaluate, analyze, and understand the subject matter of the application.~~

~~d. An application for preliminary plat approval shall not be deemed to have been filed or properly submitted until payment of all fees and compliance with all of the above listed requirements. Compliance shall be determined by the planning director.~~

~~e. A preliminary plat application may be denied if the town determines that all or part of the subject property has adverse topography, periodic inundation, adverse soils, subsidence of the earth's surface, high water table, lack of water, or other natural or manmade hazards to life or property.~~

~~f. The town may approve a preliminary plat for land with adverse topography, periodic inundation, adverse soils, subsidence of the earth's surface, high water table, lack of water, or other natural or manmade hazards to life or property subject to special requirements relating to lot size, special grading and drainage requirements, or other conditions the town deems reasonable and necessary for the public health, safety or general welfare.~~

~~g. The procedure for approval, amendment, or denial of preliminary plat applications shall be as follows:~~

a. ~~i. The planning commission shall recommend to the council that a preliminary plat be conditionally approved or denied no more than 45 days after initial consideration. The planning commission shall recommend that a preliminary plat be conditionally approved or denied after reviewing the application and conducting a public meeting. In cases of conditional approval, the specific conditions shall be included by reference in the minutes of the planning commission meeting. If the preliminary plat is denied, the planning commission shall cite specific reasons for doing so. This will not be~~

~~construed, however, to preclude the planning commission from rejecting plans for other or additional reasons. If the preliminary plat is denied, the subdivider may resubmit revised preliminary plats until approval is obtained from the planning commission or may move forward to the council with a recommendation of denial. If the council upholds the planning commission's rejection, then the subdivider must file a new application for the preliminary plat for that specific subdivision.~~Once a preliminary plat has been accepted by town staff and the appropriate review agencies, the planning commission shall consider the plat and make a recommendation to the council that the preliminary plat be approved, approved with conditions, or denied.

b. ~~ii. Within 60 days~~After the planning commission's consideration, the council shall review and consider the preliminary plat and the planning commission's recommendation~~ and hold its own public meeting hearing regarding the preliminary plat~~. The council ~~may uphold, deny or modify the planning commission action~~shall approve, approve with conditions, or deny the preliminary plat application. Decisions of the council shall be final.

~~iii. Upon approval of a preliminary plat, by the council, the applicant shall provide copies of the plat on mylars, signed by all applicable agencies within 45 days. If, not submitted, such approval shall be deemed to have expired.~~

~~iv. The approved preliminary plat shall be submitted to the town engineer and the public utilities that will serve the subdivision for their review and the preparation of cost estimates for the improvements required under section 17-5-3 of this code. The town engineer shall review the preliminary plat for consistency with accepted engineering standards and the requirements of this code, and shall prepare an estimate of the cost of all required improvements that are not to be installed by or for public utilities.~~

~~v. A new preliminary plat application can be refiled at any time. Revisions to the plat will need to resolve the reasons for the denial as originally proposed, if substantially the same. The new filing of a preliminary plat application for the same area, or any portion thereof, shall follow the procedures and requirements specified in this section.~~

3. ~~Significance of preliminary~~Preliminary plat approval~~. The preliminary plat approval by the council, with the completion of the required signatures,~~ constitutes authorization for the ~~subdivider~~applicant to proceed with preparation and submittal of the final plat, landscape plan, and engineering improvement plans and specifications ~~(may be done concurrently). preliminary~~.

4. Preliminary plat approval is subject to the following conditions:

a. ~~The conditions under which approval of the preliminary plat is granted will not be changed prior to expiration date unless by application for a~~Changes in conditions such as the land's physical attributes, title conditions, ownership and similar changes that make development of the affected land in accordance with the approved plat infeasible shall require the submission of a new or revised preliminary plat.~~ The application shall follow the same procedures as the original approval.~~

b. ~~Approval is valid for a period of two years from the date of approval. After two years, the approval shall be deemed to have expired if a final plat is not recorded.~~A preliminary plat expires two years from the date of council approval unless:

i. A final plat has been submitted for all or a portion of the property included in the preliminary plat, or

ii. The council grants an extension.

c. ~~Upon the subdivider's written application to the council and payment of the applicable application fee, preliminary plat approval may be extended for an additional one year if, in the opinion of the council, there is no change in conditions within or adjoining the preliminary plat which would warrant its revision and the applicant demonstrates to the council's satisfaction that substantial effort is being applied to create a final plat.~~The applicant may submit a written request for a two-year extension of a preliminary plat approval, which shall be reviewed and considered as follows:

i. The planning director and the town engineer shall evaluate whether the preliminary plat and supporting documents remain in compliance with all applicable town standards and requirements~~.~~ and shall make a written recommendation to the council based upon their evaluation.

ii. The request for extension shall be considered by the council, whose decision shall be final.

d. ~~In no case shall~~Preliminary plat approval shall be automatically extended for a period of two years upon submission of a final plat application for any portion of the land area shown on a preliminary plat ~~approvals exceed a total of three years~~.

e. Once a final plat has been approved for a portion of the land area included within an approved preliminary plat, the approval of the preliminary plat shall be extended for the balance of the land area for a period of two years from the date of council approval of the final plat.

f. ~~e.~~ If a preliminary plat ~~approval~~ expires prior to the submittal of an application for a final plat or prior to the submittal of a request for an extension of the preliminary plat approval, ~~-~~the preliminary plat shall be resubmitted ~~for preliminary approval as a new case and the subdivider shall be required to pay a new fee.~~as a new application. If the resubmitted preliminary plat has substantially the same design and configuration as the previously approved plat and no substantive changes have occurred in the standards and requirements, the fees associated with the new application shall be 50% of the original application fees.

g. ~~f.~~ The preliminary plat shall not be recorded.

D. Final plat [No revisions]

Document comparison by Workshare Compare on Friday, June 17, 2016 8:57:55 AM

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Document 1 ID	file://X:\WDOX\TNATDOCS\DEVELOP\LDC\00047087.DOCX
Description	00047087
Document 2 ID	file://C:\Users\fcassidy\AppData\Local\Temp\WDGX\6748\OPEN\001\MSC 20160616 Preliminary plat LDC revision clean (00047086-2xA96C7).docx
Description	MSC 20160616 Preliminary plat LDC revision clean (00047086-2xA96C7)
Rendering set	Standard

Legend:	
Insertion	
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~~Moved from~~	
Moved to	
Style change	
Format change	
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Inserted cell	
Deleted cell	
Moved cell	
Split/Merged cell	
Padding cell	

Statistics:	
	Count
Insertions	44
Deletions	67
Moved from	3
Moved to	3
Style change	0

Format changed	0
Total changes	117

Planning Commission

Meeting Date: 06/29/2016

To: Planning Commission

From: Brian Varney, Planner II

Date: June 29, 2016

Strategic Plan Focus Area:
Commerce

Strategic Plan Focus Area Additional Info:
Although not directly tied to the Land Development Code, the Continental Ranch Specific Plan serves a very similar function in terms of regulating land use and guiding land use decisions. The Principle Statement 1 within the Commerce focus area of the Strategic Plan states that the town will support commerce and business by being creative and flexible in order to produce innovative solutions that exceed customer expectations. The amendments to the Continental Ranch Specific Plan proposed in this request address this principle statement as well as the intent of Initiative 1, by enhancing simplicity, understanding, and ease of use of the Continental Ranch Specific Plan.

Subject: **SPA1605-001: Amendments to the Continental Ranch Specific Plan, Chapter V. Development Regulations and Chapter VII. Specific Plan Implementation.**
Recommendation to the Town Council to amend the Continental Ranch Specific Plan including revisions to the authorization and procedure for the interpretation of unclear regulations of the specific plan as well as for approving administrative changes. The amendments also include revisions to allow low-intensity medical-related uses in the Commercial land use designation, and to revise the authorization and procedure for allowing additional permitted uses within the various land use designations. (Brian D. Varney)

Discussion:
Planning Department staff has identified a number of recurring challenges and outdated administrative provisions within the Continental Ranch Specific Plan and is recommending the approval of amendments to address these issues.

Planning staff proposes the following revisions:

- Revision to Chapter V. Development Regulations to authorize the Planning Director to make interpretations as to any unclear or ambiguous provisions within the specific plan. Section V.C.3. (Page V-2) of the specific plan currently authorizes the town council to make such interpretations. It has become very common for this authority to be granted to the Planning Director allowing such interpretations to be made administratively in an expeditious manner rather than through the more time-consuming process of town council action. Virtually all of the specific plans approved by the town council in the past 15-20 years have granted this authority to the Planning Director.

- Revision to Chapter V. Development Regulations to authorize the Planning Director to determine whether or not a proposed land use not currently listed as a permitted use within a particular land use designation is similar in nature, characteristic and intensity to existing permitted uses in the land use designation and should be allowed as a permitted use. For obvious reasons it is not possible to list all conceivable land uses that are similar in nature and intensity within a particular land use designation. Section V.C.6 (Page V-2) of the Continental Ranch Specific Plan authorizes the town council to determine whether or not a proposed use, not currently listed as a

permitted use, is consistent with the intent of the land use designation as well as with the listed permitted uses in that land use designation. In accordance with the specific plan, the council's decision is appealable to the Planning Commission. It has become very common for this authority to be granted to the Planning Director allowing such determinations to be made administratively in an expeditious manner rather than through the more time-consuming process of town council action. Virtually all of the specific plans approved by the town council in the past 15-20 years have granted this authority to the Planning Director.

- Revision to Chapter V Development Regulations to approve the addition of certain low-intensity medical uses within the Commercial land use designation of the Continental Ranch Specific Plan (Page V-7). This request is more of a clarification in the text, as there have been similar medical uses including the 'minute clinics' often located within Walgreens and CVS stores approved in this land use designation in recent years. Planning staff is proposing to list the uses of medical clinics, urgent care facilities, medical and dental offices, and similar low-intensity medical uses as permitted uses in this land use designation.

- Revision to Chapter VII. Specific Plan Implementation to authorize the Planning Director to approve minor administrative changes to approved site plans. Section VII.D. (Page VII-7) of the specific plan currently grants this authority to the Town Manager; however, staff also believes this authority should be vested in the Planning Director.Significant changes would remain subject to Planning Commission approval.

- Revision to Chapter VII. Specific Plan Implementation to authorize the Planning Director to make certain administrative changes to explicit provisions in the specific plan. Section VII.E. of the specific plan (Page VII-8) currently grants this authority to the Town Manager.It has become very common for this authority to be granted to the Planning Director. Virtually all of the specific plans approved by the town council in the past 15-20 years have granted this authority to the Planning Director.

Staff Recommendation:

Staff recommends that the Planning Commission forward the proposed amendments to the Continental Ranch Specific Plan to the Town Council with a recommendation for approval.

Suggested Motion:

I move to recommend approval of SPA1605-001, amendments to the Continental Ranch Specific Plan.

Attachments

CR SP text amendments

Continental Ranch Specific Plan

Proposed Text Amendments

(Note: Only paragraphs and text which are affected by the proposed revisions are included in this exhibit. The unaffected text will remain as part of the final version of the document).

Chapter V. Development Regulations

C. General Provisions (*Page V-2*)

3. If an issue, condition, or situation arises or occurs that is not sufficiently ~~covered or provided for~~ addressed by this specific plan, or ~~to be clearly understandable~~ if regulations are not clear and understandable, ~~those~~ the regulations of the Marana Land Development Code that are applicable for the most similar issue, condition, or situation shall be used by the ~~Town Council~~ Planning Director as ~~guidelines~~ guidance ~~to~~ in resolving~~e~~ the ~~unclear~~ issue, condition, or situation. Any person aggrieved by the Planning Director's interpretation may request an appeal to the Board of Adjustment within 15 days from the date of the interpretation.

6. Whenever a use has not been specifically ~~been~~ listed as ~~being~~ a permitted use in a particular ~~zone classification~~ land use designation within the Specific Plan, it shall be the duty of the ~~Town Council~~ Planning Director to determine if ~~said~~ the use is ~~(1)~~ consistent with the intent of the ~~zone~~ land use designation and ~~(2) the said use is~~ compatible with ~~other~~ the listed permitted uses. Any person aggrieved by the Planning Director's determination may request an appeal ~~that decision~~ to the ~~Planning Commission~~ Board of Adjustment within 15 days from the date of the determination.

F. Commercial Site Development Standards (*Page V-7*)

1. Commercial Use
    a) Permitted Uses:
        Commercial
        Retail Commercial
        Commercial Recreation
        Office
        Financial Institutions
        Tourist Commercial
        Restaurant
        Medical clinics; urgent care facilities; medical / dental offices, and similar low-intensity medical related uses

Chapter VII. Specific Plan Implementation

D. Site Plan Review Procedures (Revisions, Page VII-7)

Revisions that are minor in nature or reasonable extensions other than those applied as a condition of approval shall be submitted for review and approval administratively by the ~~Town Manager~~ Planning Director. Significant changes, additions or omissions shall be submitted for review and approval by the Planning Commission.

E. General Administration (Page VII-8)

Certain changes to explicit provisions in the Specific Plan may be made administratively by the ~~Town Manager~~ Planning Director, subject to appeal to the Board of Adjustment. Authorized administrative changes to the specific plan may include the following:

a. The addition of new information to the specific plan maps or text that does not change the effect of any regulations or guidelines.
b. Changes to the community infrastructure, such as drainage, water, and sewer systems which do not have the effect of increasing or decreasing development capacity in the Specific Plan area, nor change the concepts or the Plan.
c. The determination that a use be allowed which is not specifically listed as permitted but which may be determined to be similar in nature to those uses explicitly listed as permitted.

Any person aggrieved by the Planning Director's determination may request an appeal to the Board of Adjustment within 15 days from the date of the determination.