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**Planning & Zoning Commission Draft**

**P15RZ00005**  
**Site Inventory & Land Use Proposal**

**NWC Thornydale Road @ Cortaro Farms Road  
(Rezoning Application from SR to CB-1)**



**Submitted By:**

**Red Point Development, Inc.  
(Developer)**

**In Association With:**

**Pacific International Properties, LLP  
(Property Ownership Entity)**

**Pima County Case No. P15RZ00005**

**October, 2015**

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**P15RZ00005**  
**Pacific International Properties, LLP --**  
**Thornydale Road Rezoning**

**Rezoning Request from SR to CB-1**  
**Pima County, Arizona**

**Submitted to:**

Pima County Development Services Department  
Planning Division  
201 N. Stone Avenue  
Tucson, Arizona 85701

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October, 2015

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**SECTION I:**  
**Site Inventory**

## **A. EXISTING LAND USES**

### **1. Site Location and Context**

The subject property being evaluated in conjunction with this rezoning request is located in the NE ¼ of Section 30, T12S, R13E, being more particularly located at the immediate northwest corner of Cortaro Farms Road and Thornydale Road. The subject property consists of a two contiguous parcels (Assessors Parcel Nos. 225-33-032a and 225-33-032d) totaling 54.9 acres. See Exhibit I-A.1: Location & Regional Context.

The property sits within an urbanizing context. Cortaro Farms Road a major east-west arterial and is designated as both a “Major Street” and a “Scenic Route” on the *Pima County Major Streets & Routes Plan*. The segment of this roadway lying east of Thornydale Road was recently improved to a full four-lane divided cross-section with curbs, medians, bike lines, and sidewalks extending eastward all the way to La Canada Drive. The portion of Cortaro Farms Road lying west of Thornydale is a transitional segment where the aforementioned four-lane section is returning to a two-lane roadway.

Thornydale Road is a major north-south arterial and is also designated as both a “Major Street” and a “Scenic Route” on the *Pima County Major Streets & Routes Plan*. The segment of this roadway lying south of Cortaro Farms Road is a full four-lane divided cross-section with curbs, medians, bike lines, and sidewalks extending southward all the way to its connection with River Road. The portion of Thornydale Road lying north of Cortaro Farms Road is a transitional segment where the aforementioned four-lane section is returning to a three-lane roadway with a continuous center left-turn lane. This segment is earmarked as a 4-lane Regional Transit Authority (RTA) bond project that will continue the same full roadway cross-section lying south of Cortaro Farms Road.

In terms of land use, the subject property is bordered by fully developed residential subdivisions to the adjacent west, northeast, and southwest. An existing office complex also lies to the northeast. A convenience store, vacant land, and a commercial plant nursery lie to the east. A rental home project and another convenience store lie to the south. The Tucson Audubon Society preserve and, further, Arthur Pack Regional Park lie north of the subject site.

### **2. Description of Existing Land Uses**

#### **a. Existing Land Uses On-Site**

The site is vacant, natural desert (see Exhibit I-A.2a-b, 4b: Existing Land Use).

b. Easements

The subject property is encumbered by the following recorded easements:

- Per Docket 8261 @ Page 1993, the subject property was once encumbered by a 30' right-of-way easement granted to Tucson Electric Power for the installation and maintenance of electric lines and other appurtenant facilities. This easement was ultimately obviated by the condemnation and establishment of the west one-half right-of-way (75' width) for Thornydale Road. The former 30' easement fall within this 75' half right-of-way.
- Per Docket 1224 @ Page 128, a slope easement, granted to Pima County, survives over the east 20' of the subject property; it was established in conjunction with the County's 2004 construction of the Thornydale Road improvements along the property's frontage. This easement contemplates and allows for the development of the subject property. The need for it will, in practical terms, be obviated by the grading and development of the site; it will be accommodated along the project's Thornydale Road frontage in what will become a designated landscape bufferyard and adjacent parking area.

The title report for the property also shows a variety of miscellaneous outdated easements that once applied to the subject property, but which were obviated with the establishment of the full 150' rights-of-way (75' half rights-of-way along the subject property frontage) for both Thornydale Road and Cortaro Farms Road.

c. Comprehensive Plan Designation

The Comprehensive Plan designation for the subject property is MIU (Medium Intensity Urban) and NAC (Neighborhood Activity Center) as per approved Comprehensive Plan amendment Case No. Co7-13-04 and adopted Resolution No. 2014-115 (please refer to Exhibit I-A.2c, 4e for a graphic depiction of surrounding Plan designations). The following rezoning policies apply to this rezoning site:

- A. Post-development floodplains and riparian habitat shall be preserved as open space and be identified on the rezoning preliminary development plan, subdivision plat, and development plan. This open space shall be protected by a covenant and management responsibility shall be identified on the subdivision plat or development plan.
- B. Future development shall be in full compliance with the Special Species Management Areas conservation objectives as established by the Conservation Lands System – Regional Environment Element. Subsequent rezoning(s) will be considered in conformance with this policy when all of the following are met:

1. Natural open space set-asides will either be provided entirely within the amendment area or as a combination of on-site and off-site areas;
2. The site areas of plan amendment cases Co7-13-03, 05, and 06 are not eligible to serve as set-asides;
3. The approximate minimum total natural open space (NOS) set-aside is 46 acres; the approximate minimum off-site NOS set-aside is 0 acres.

### 3. Aerial Photograph

An aerial photo (showing the site and surrounding properties within 600' of the site) is provided as Exhibit I-A.3.

### 4. Property Characteristics Within ¼ Mile

#### a. Existing Zoning & Overlay Zones

The subject property is zoned SR (Suburban Ranch). See Exhibit I-A.4a-d: Existing Zoning. The property and its surrounding area within ¼ mile are not subject to any of the following overlay zones: the Buffer Overlay Zone, Gateway Overlay Zone, Hillside Development Zone, Cluster Development Option, Historic Zone, or Airport Environs Zone.

Existing Zoning to the <b>North:</b>	SR, CR-4 & CB-1
Existing Zoning to the <b>South:</b>	CR-4, CR-5, SR & CB-1
Existing Zoning to the <b>East:</b>	CB-1, CR-5, & SR
Existing Zoning to the <b>West:</b>	CR-4

In referring to the above list of surrounding zoning classifications, the abbreviations used therein respectively denote the following:

**CB-1** denotes a Business Zone  
**CR-5 & CR-4** denote Residential Zones  
**SR** denotes the Suburban Ranch Zone

#### b. Existing Land Uses

The lands within ¼ mile of the subject property are a mixture of: 1) developed single-family residential subdivisions of low and medium densities; 2) a professional office complex; 3) a rental home project; 4) a commercial plant nursery; 5) convenience stores and a neighborhood shopping center with grocery anchor; 6) the Tucson Audubon preserve; and 7) vacant land. Please refer to Exhibit I-A.2a-b, 4b (Existing Land Use).

c. Stories & Heights of Existing Structures

The adjacent single-family detached residences within ¼ mile are both single-story and two-story structures and range in height from approximately 12' - 22'. The non-residential structures within ¼ mile are primarily comprised of one-story buildings ranging from approximately 16' to 24' in height, with heights being slightly taller in the aforementioned neighborhood shopping center, where the grocery anchor exceeds 30'.

d. Pending or Conditionally Approved Rezonings, etc.

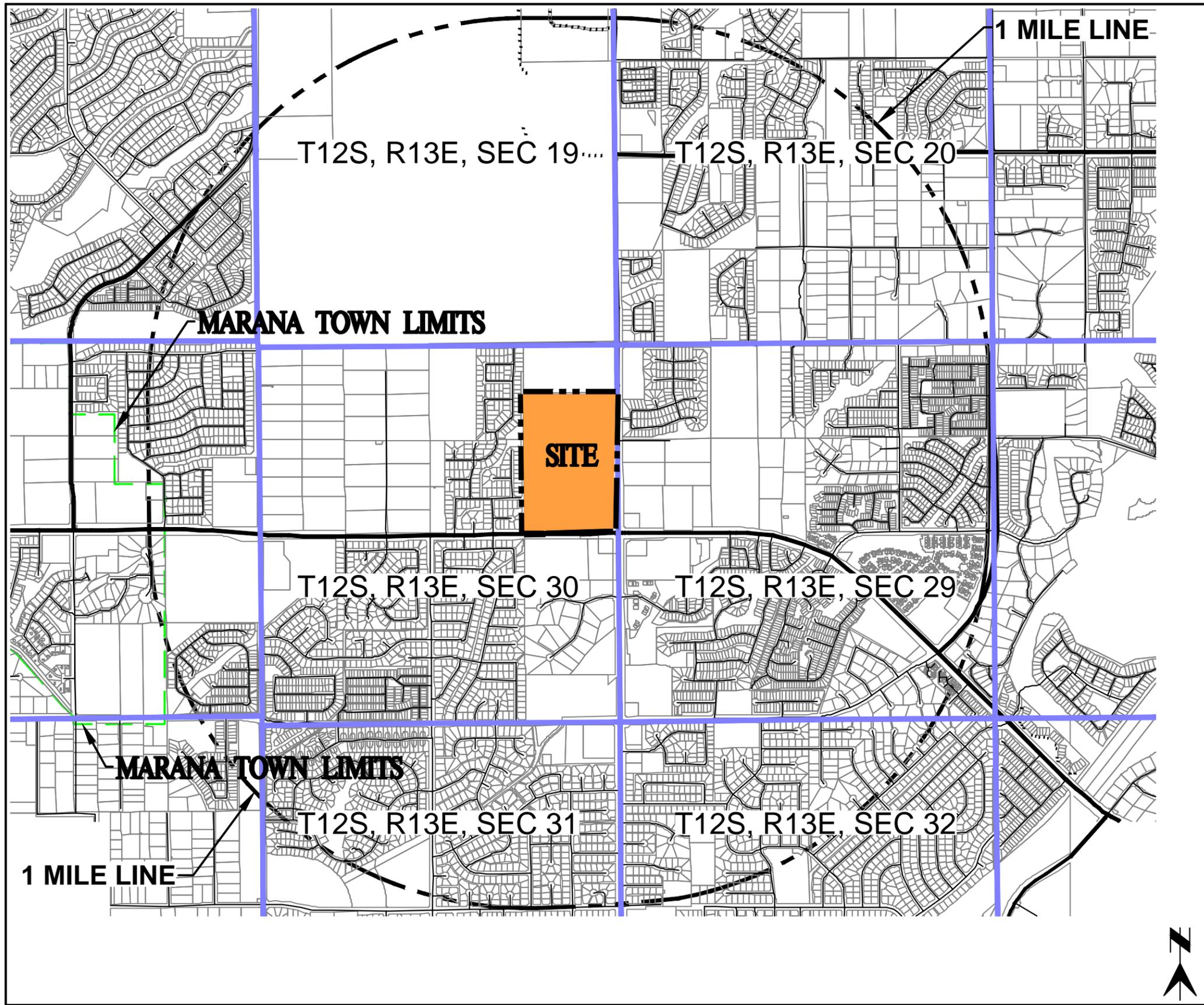
One (1) other pending rezoning is proceeding within ¼ mile of the property, this being the 30-acre site located ¼ mile to the east, on the south side of Hardy Road, and which is being processed concurrently by Red Point Development. This rezoning request is from SR to CR-5, with the proposed land use being a single-family detached residential subdivision.

e. Comprehensive Plan Designations

The surrounding properties are a mix of the following Pima County Comprehensive Plan designations: LIU (Low Intensity Urban), MIU (Medium Intensity Urban), and NAC (Neighborhood Activity Center). Please refer to Exhibit I-A.2c, 4e (Comprehensive Plan Designations).

To the <b>North:</b>	LIU 0.3
To the <b>South:</b>	LIU 0.3, MIU & CAC
To the <b>East:</b>	LIU 0.3, MIU & CAC
To the <b>West:</b>	MIU

**Exhibits to Follow**



**LEGEND**



Subject Property



Section Boundary  
(e.g. T12S, R13E, SEC 30)



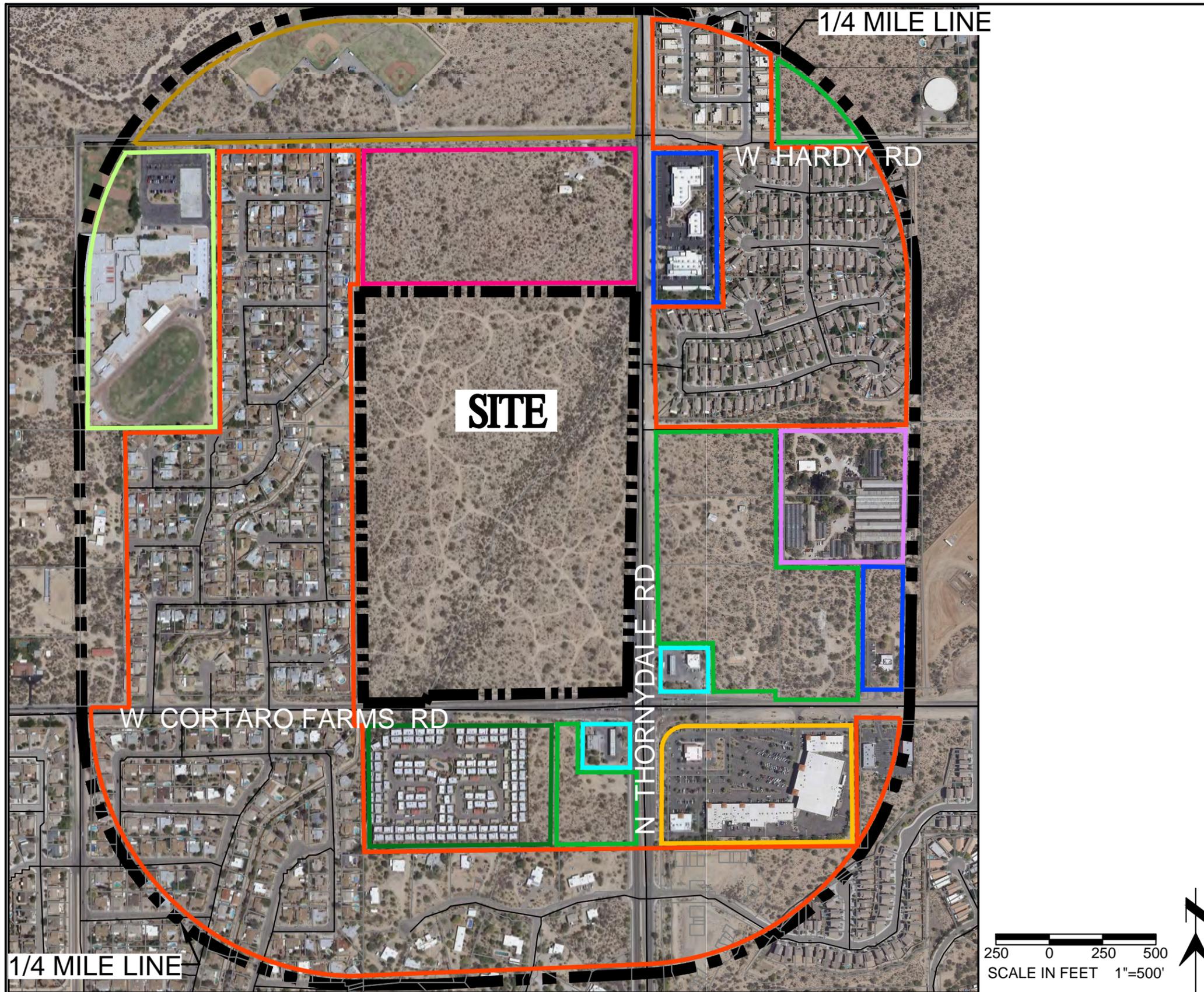
Marana Town Limits

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 520 850-0917



**Red Point Development, Inc.**  
 NWC CORTARO & THORNYDALE ROADS  
 (Ownership Entity: Pacific International Properties, LLP)  
 REZONING: SR to CB-1

**EXHIBIT I-A.1**  
 LOCATION & REGIONAL  
 CONTEXT  
 PAGE 5



**LEGEND**

-  Subject Property
-  Residential Subdivisions
-  Rental Homes
-  Convenience Store
-  Shopping Center with Grocery Store Anchor
-  Public Middle School (Tortolita Middle School)
-  Tucson Audubon Society
-  Arthur Pack Regional Park
-  Offices
-  Vacant Land
-  Commercial Plant Nursery

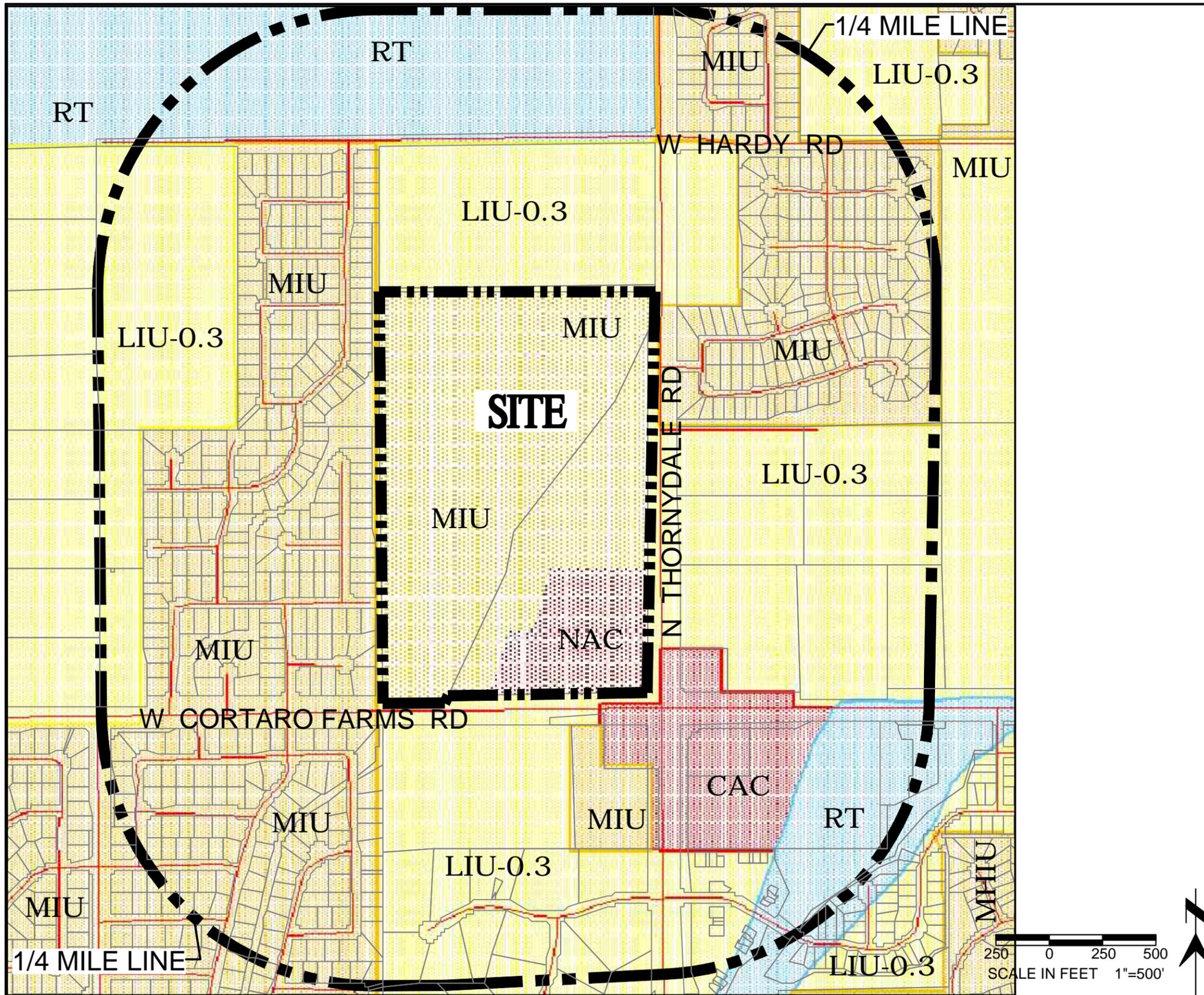
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**PROJECTS INTERNATIONAL, Inc.**  
 STRATEGIC GUIDANCE  
 ENTITLEMENT PROCESSES  
 LOCAL ADVICE & COUNSEL

**GRS**  
 LANDSCAPE ARCHITECTS, LLC

**Red Point Development, Inc.**  
 NWC CORTARO & THORNYDALE ROADS  
 (Ownership Entity: Pacific International Properties, LLP)  
 REZONING: SR to CB-1

EXHIBIT I-A.2a-2b, 4b  
 EXISTING LAND USE  
 PAGE 6



**LEGEND**

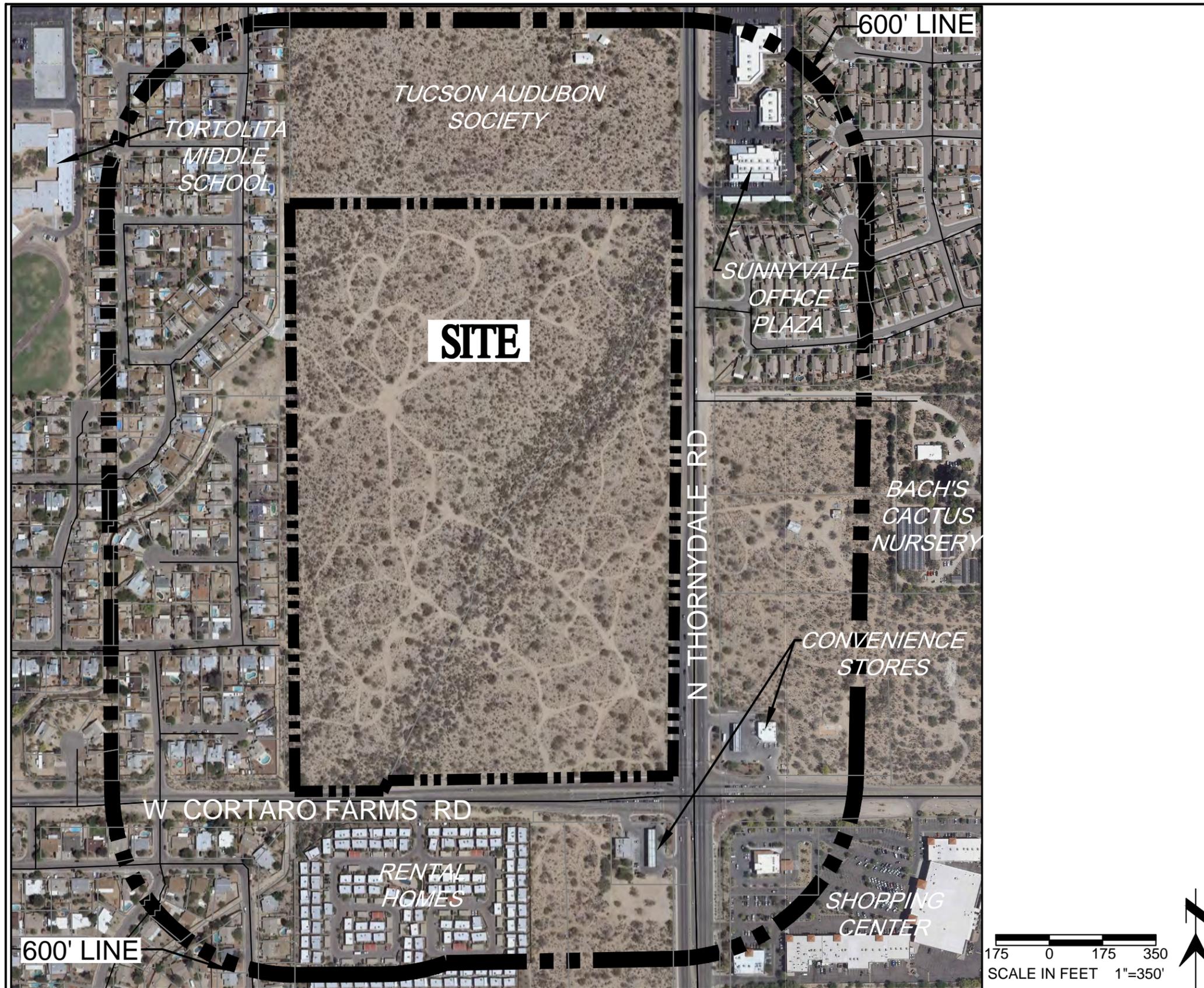
-  Subject Property  
Medium Intensity Urban (MIU) and  
Neighborhood Activity Center (NAC)  
Comprehensive Plan Designation
-  CAC -- Community Activity Center
-  NAC -- Neighborhood Activity Center
-  MHIU -- Medium High Intensity Urban
-  MIU -- Medium Intensity Urban
-  LIU-0.3 -- Low Intensity Urban 0.3
-  RT -- Resource Transition



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 (Ownership Entity: Pacific International Properties, LLP)  
 REZONING: SR to CB-1

EXHIBIT I-A.2c, 4e  
 COMPREHENSIVE PLAN  
 DESIGNATIONS  
 PAGE 7



**LEGEND**



Subject Property

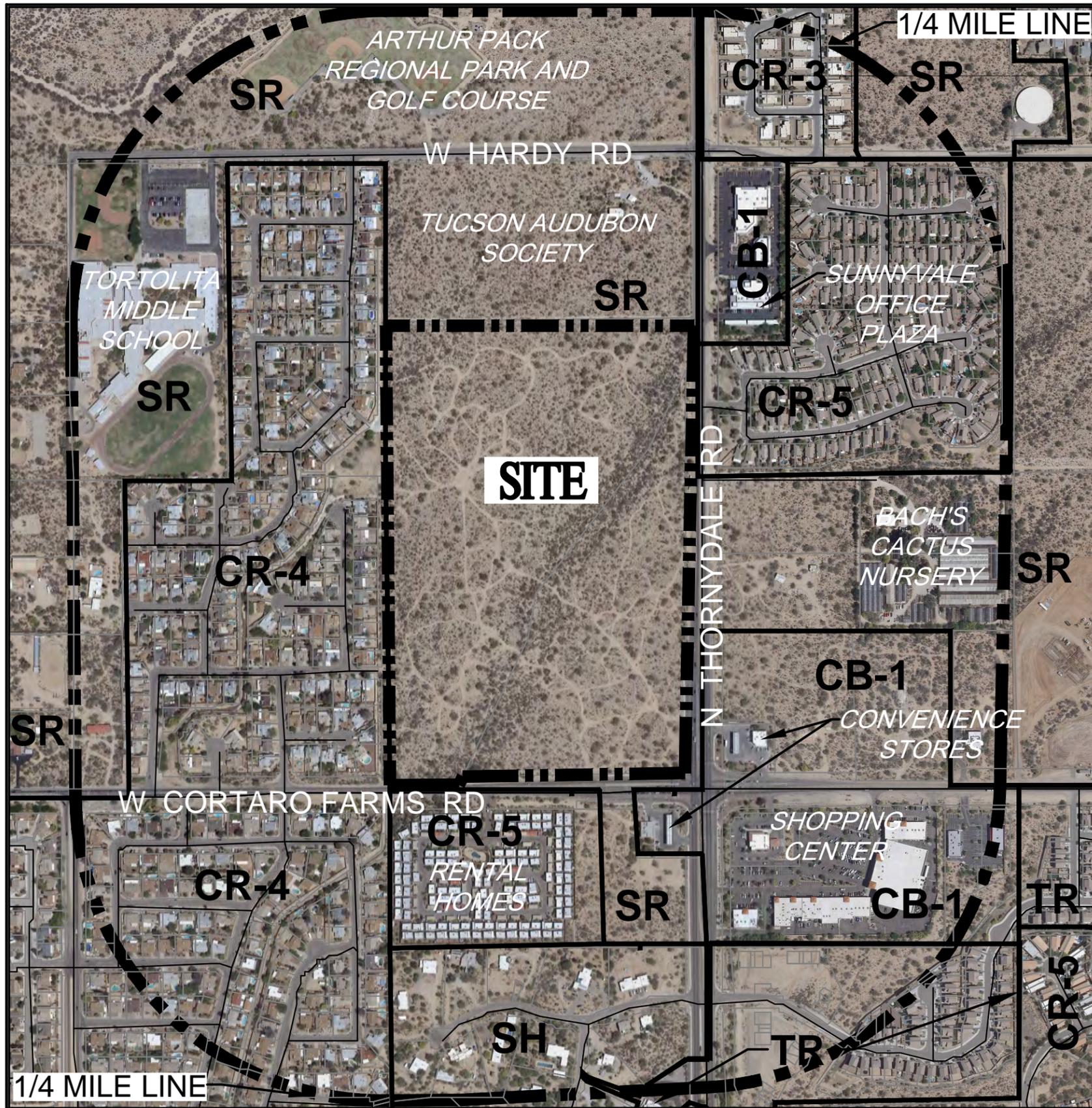
Year of Aerial Photo: 2011

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 520 850-0917



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 REZONING: SR to CB-1

EXHIBIT I-A.3  
 AERIAL PHOTO



**LEGEND**



Subject Property  
(Existing Zoning: SR)

**CR-4**

Existing Zoning, typ.



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EXHIBIT I-A.4a-d  
 EXISTING ZONING

**B. TOPOGRAPHY & GRADING**

**1. Topographic Characteristics**

The rezoning site is relatively flat, with a uniform downward slope across the property from northeast to southwest; it is traversed by one (1) well-defined natural drainage swale that diagonally bisects the property and by one (1) marginally defined swale at its extreme northwest corner. Both of these flow in the same northeast-to-southwest direction. These drainages are discussed in more detail in Section I.C (Hydrology) of this Site Analysis. See Exhibit I-B.1a-e for existing-condition topography.

a. Restricted Peaks & Ridges

There are no restricted peaks or ridges on the property.

b. Rock Outcroppings, etc.

There are no rock outcroppings, etc. on the subject property.

c. Slope of 15% or Greater

The rezoning site contains no (0) slopes of fifteen percent (15%) or greater, and which are both longer than fifty feet (50') when measured in any horizontal direction, and taller than seven and one half feet (7.5') when measured vertically.

d. Other Significant Topographic Features

Other than the two aforementioned natural drainage swales that traverse the site, there are no significant or remarkable topographic features on the property.

e. Existing Grading and/or Ground Disturbance

The majority of the site is natural desert. Some minor ground disturbance has occurred along the street frontages, as well as within the site from unauthorized occupation and off-road vehicles.

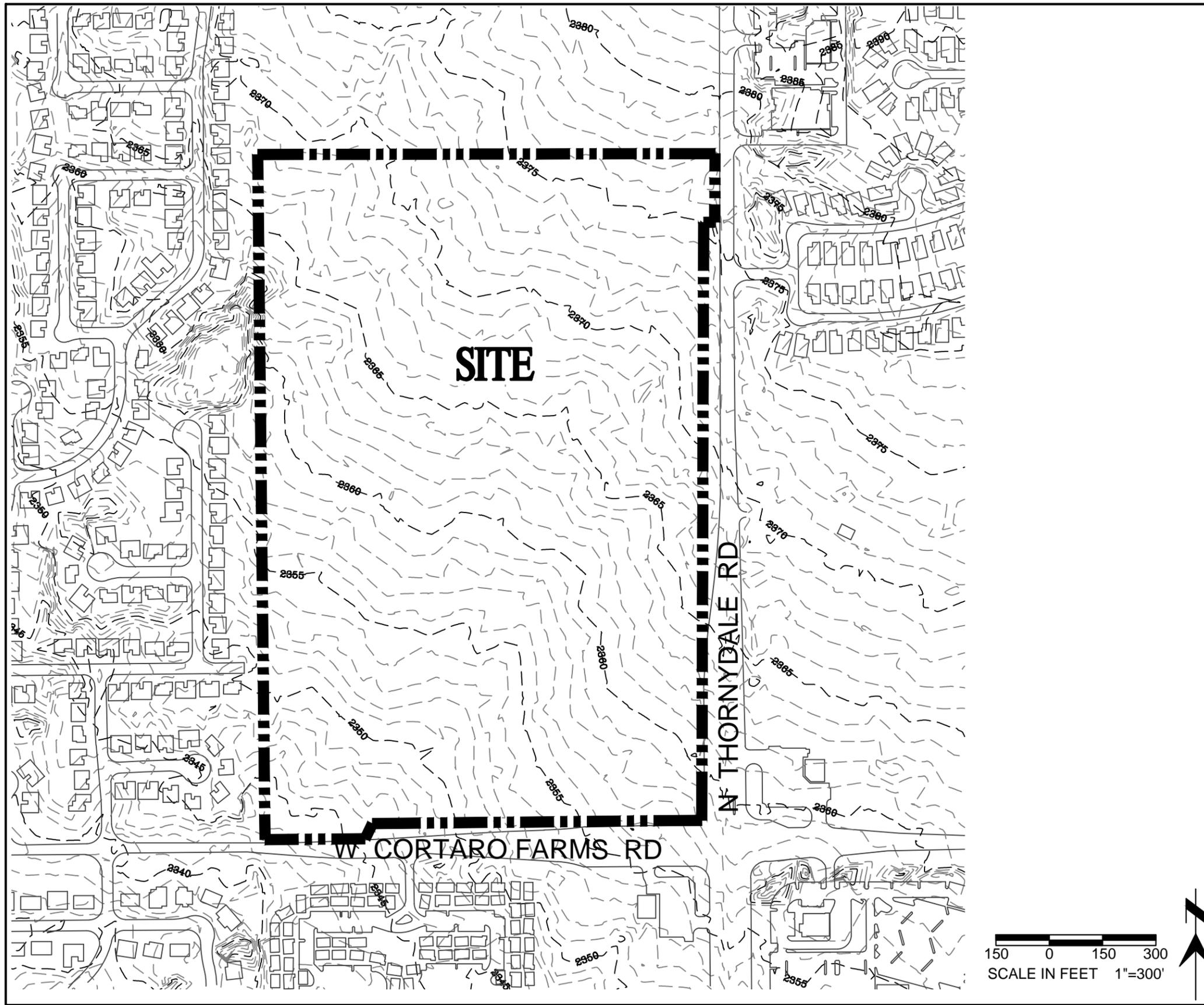
**2. Pre-Development Average Cross-Slope**

The average cross-slope calculation for the subject property, in accordance with Chapter 18.61 (Hillside Development Zone), is as follows:

$$\frac{(1' \text{ Contour Interval}) \times (43,489' \text{ Total Length of Contours}) \times (0.0023 \text{ Conversion})}{\text{-----}}$$

(54.95 AC Total Site Area)

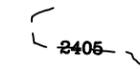
The resultant Average Cross Slope (ACS) = 1.82%.



**LEGEND**



Subject Property



Existing Condition Topographic Contour  
(1' Interval)

Average Cross Slope = 1.82%

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EXHIBIT I-B.1a-e  
 TOPOGRAPHIC  
 CHARACTERISTICS  
 PAGE 11

## **C. HYDROLOGY**

### **1. Off-Site Watersheds**

CMG Drainage Engineering, Inc. (CMG) has completed a comprehensive preliminary drainage assessment for four (4) specific properties controlled by Red Point Development, all of which are concurrently proceeding through the rezoning process. This CMG assessment is the source work used in this Site Analysis to present the specific hydrologic findings pertaining to the subject Cortaro Farms Road/Thornycdale Road property. For this reason, the numbering of concentration points (e.g. CP-6) indicated in the Table below and on the accompanying exhibits has been taken as-is from the original CMG source work.

The findings presented here are based on the above assessment, the results of previous study information, such as FEMA/FIRM flood insurance mapping, as well as more recent hydrologic computations using the PC Hydro method.

Three (3) offsite watersheds contribute flow to, and were delineated for, the subject property (see Exhibit I-C.1). Surface drainage flows originate from the northeast or east and enter the site along its respective north and east property boundaries. All of the washes exist in a natural condition, but some constructed channels are present within the upstream watersheds, most notably within the upstream Sunnyvale subdivision, where a fully-lined, man-made channel conveys flow for a significant distance before returning it to natural conditions.

CP-7 enters along the east property line. The upstream drainage area at CP-7 is 182.4 acres. CP-7 combines with CP-13 and then flows to CP-6, at the southwest corner of the property. The upstream drainage area at CP-6 is 258.8 acres.

CP-13 enters at the northeast property corner via a dip section in Thornycdale Road, then drains to CP-6. The upstream drainage area at CP-13 is 32.5 acres.

CP-14 is the concentration point for a small onsite watershed that exits along the west property boundary. The upstream drainage area at CP-14 is 48.3 acres.

CP-15 enters the property along the north property boundary, then exits along the west boundary a short distance downstream at CP-14. The upstream drainage area at CP-15 is 34.0 acres. CP-14 and CP-15 drain across a dip section in Cortaro Farms Road, then into an existing detention basin that was built in conjunction with the rental homes project located there.

### **2. Off-Site Natural or Man-Made Features**

There is a small number of constructed channels and detention basins within the upstream contributing watersheds. Other than that, there are no other remarkable natural or man-made features within them. No offsite features will be affected by the surface drainage traversing this property.

### 3. Acreages & Discharges of Watersheds

The upstream areas of the offsite watersheds contributing to this property were described above in Item 1. They are summarized in the following Table, along with their existing (pre-development) 100-year peak discharges.

<b>Summary of 100-Year Peak Discharges</b>		
Concentration Point Number	Q <sub>100</sub> (cfs)	Drainage Area (Acres)
6	646	258.8
7	548	182.4
13	189	32.5
14	225	48.3
15	171	34.0

### 4. On-Site Hydrology

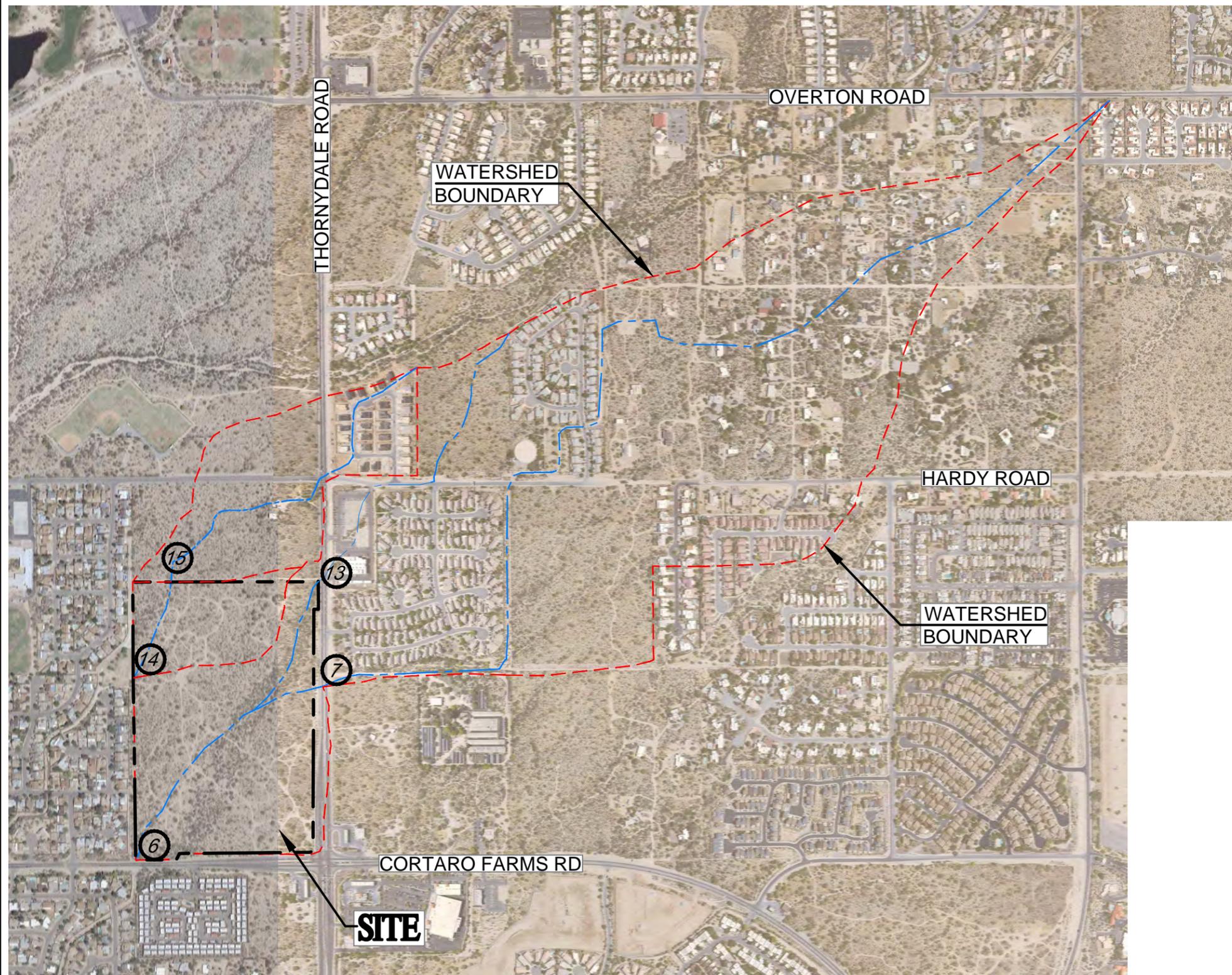
The rezoning site is vacant and undeveloped in the existing condition. The project parcel consists of 100% pervious soils of hydrologic soil Types A, B & C. See Exhibit I.C.4a-g in support of the following:

- a. The approximate 100-year regulatory floodplains have been delineated on the Exhibit for the washes in excess of 100 cfs traversing the site. Pima County Regional Flood Control District flood hazard maps show the entire property as subject to sheet flooding at an average depth of 0.5 feet.
- b. No FEMA mapped floodplains exist on this property.
- c. The site features three (3) incoming concentration points (CP-7, 13 & 15) with peak discharges in excess of 100 cfs entering the property. Peak discharges were determined by the Pima County Regional Flood Control District (PCRFCDD) hydrology methods and the PC-Hydro computer program.
- d. The existing washes traversing the site exit the property in their natural state.
- e. The site contains riparian habitat area regulated per the Pima County RFCDD Flood Hazard Map; same is delineated on Exhibit I-C.2.
- f. The site contains no existing hydraulic structures or manmade hydraulic features.
- g. There are no sources of perennial surface water located on the site.
- h. According to Pima County Ordinance No. 2010 FC-5, 16.28.030, erosion hazard and building setback distances are required for the above-described watercourses traversing the property.

**5. Qualitative Description of Downstream Drainage Conditions**

The on-site washes exit the subject site in their natural condition, but then enter man-made drainage features either within the existing residential subdivision to the west or within the existing rental-home project and residential subdivision to the south/southwest

**Exhibits to Follow**



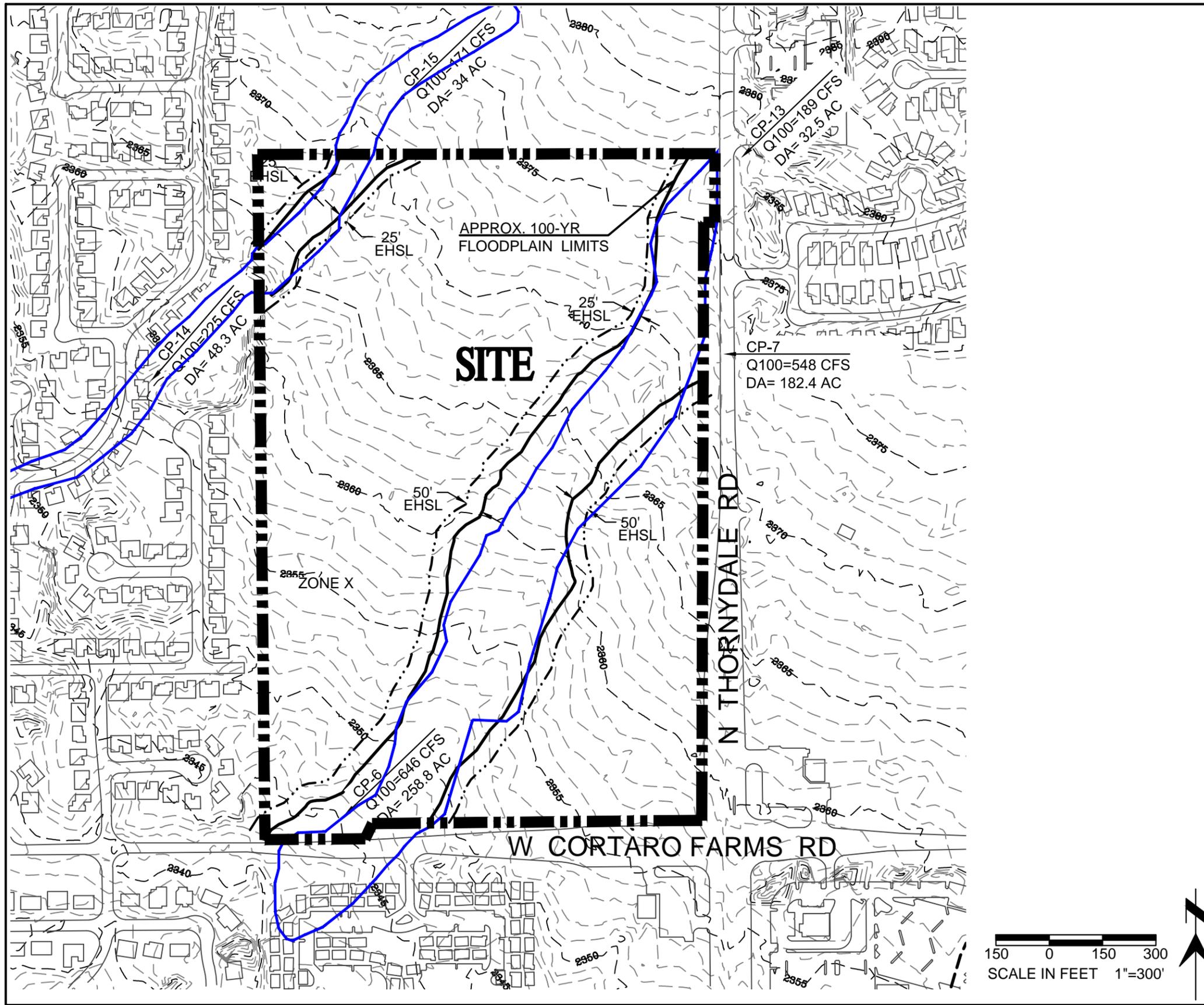
## LEGEND

-  Subject Property
-  Watershed Boundary
-  Flow Centerline
-  Concentration Point (CP)

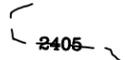
### WATERSHED SUMMARY TABLE

CONCENTRATION POINT ID	Q100 (CFS)	DA (AC)
6 (incl. CP-7)	646	258.8
7	548	182.4
13	189	32.5
14 (incl. CP-15)	225	48.3
15	171	34.0

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**LEGEND**

-  Subject Property
-  Existing Condition Topographic Contour (1' Interval)
-  Approximate Erosion Hazard Setback Limit (EHSL)
-  Approximate 100-Year Floodplain Limit
-  Mapped Riparian Habitat -- Xeroriparian "C"

NOTE:  
The entire subject property is shown on RFCO Flood Hazard maps as a sheet flow zone with an average depth of 0.5 feet.



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LOCAL ADVICE & COUNSEL



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EXHIBIT I-C.4a-e  
ONSITE HYDROLOGY  
  
PAGE 16

**D. BIOLOGICAL RESOURCES**

**1. Conservation Lands System**

The entire site (54.95 AC) falls within the Maeveen Marie Behan Conservation Lands System (MMBCLS) and is classified as CLS *Multiple Use Management Area* and *Special Species Management Area (SSMA)*. While not a CLS designation, it should be noted that the site is also underlaid, in part, by Xeroriparian “C” regulated habitat. Exhibit I-D.1.2 shows the limits of these areas within the property.

**2. Critical Landscape Linkages**

There are no Critical Landscape Linkages on or near this property.

**3. Pima Pineapple Cactus**

No portion of the site is designated as Priority Conservation Area (PCA) for the Pima Pineapple cactus.

**4. Needle-Spined Pineapple Cactus**

No portion of the site is designated as Priority Conservation Area (PCA) for the needle-spined pineapple cactus.

**5. Cactus Ferruginous Pygmy Owl/Western Burrowing Owl**

a. Cactus Ferruginous Pygmy Owl

The entire site is designated as part of Priority Conservation Area (PCA) #1 for the Cactus Ferruginous Pygmy Owl. No site surveys have been performed.

b. Western Burrowing Owl

No portion of the site is designated as Priority Conservation Area (PCA) for the Western Burrowing Owl.

**6. Arizona Game & Fish Special-Status Species**

An HDMS report from the Arizona Department of Game & Fish has been obtained for the subject property and is included in Appendix A of this Site Analysis. Seven (7) *Special Status Species* are listed in this report.

**7. Saguaro and Ironwood Inventory**

Saguaro Cactus (*Carnegiea gigantea*) have been field surveyed and mapped on the subject property (See Exhibit I-D.3). A total of nine hundred seventy-four (974) saguaros were found on the property. Five hundred fifty-four (554) of these saguaros are six feet (6') tall or less in height, three hundred sixty-seven (367) are greater than six feet, up to eighteen feet (>6' to 18') tall, and fifty-three (53) are greater than eighteen feet (>18') tall.

The subject property has also been field surveyed for Ironwood Trees. Six hundred fourteen (614) Ironwoods were found on the property; see Exhibit I-D.3.

**8. Open Space Acquisition Status**

The property is designated on the 2015 Proposed Conservation Bond Program as a *Secondary Priority Habitat Conservation Parcel*. The property is currently eligible for acquisition under the 2004 Conservation Bond Program. No acquisition efforts are currently underway by Pima County.

**9. Vegetation of Note for Scenic Value, Buffering, etc.**

There are significant areas on the site with vegetation of generally good quality and aesthetic value. These areas are depicted on Exhibit I-D.3. There has been some prior disturbance on the property due to unauthorized occupation and off-road vehicles.

**10. On-Site Vegetative Communities**

Vegetation on the property is in generally good condition, with some minor destructive impacts as mentioned immediately above. The following two (2) vegetative zones have been mapped on the subject site (see Exhibit I-D.3,7-10).

**Zone I: Riparian Vegetation – 403,133 SF (approximately 16.8% of the Site)**

This zone represents the most densely vegetated portion of the site. This vegetation is in generally good condition. Many of the specimens are of large size for their particular species. The predominant species within this Zone are:

- Foothills Palo Verde – *Cercidium microphyllum*
- Blue Palo Verde – *Cercidium floridum*
- Mesquite – *Prosopis velutina*
- Whitethorn Acacia – *Acacia constricta*
- Catclaw Acacia – *Acacia greggii*
- Hackberry – *Celtis palida*
- Ironwood – *Olneya tesota* (limited population)
- Saguaro -- *Carnegiea gigantea* (limited population)

**Zone II: Upland Vegetation & Ironwood/Saguaro Association - 1,944,150 SF  
(81.2% of the Site)**

The vegetation within this zone is also in generally good condition. The predominant species within the Zone are the following:

Foothills Palo Verde – *Cercidium microphyllum*

Ironwood – *Olneya tesota*

Blue Palo Verde – *Cercidium floridum*

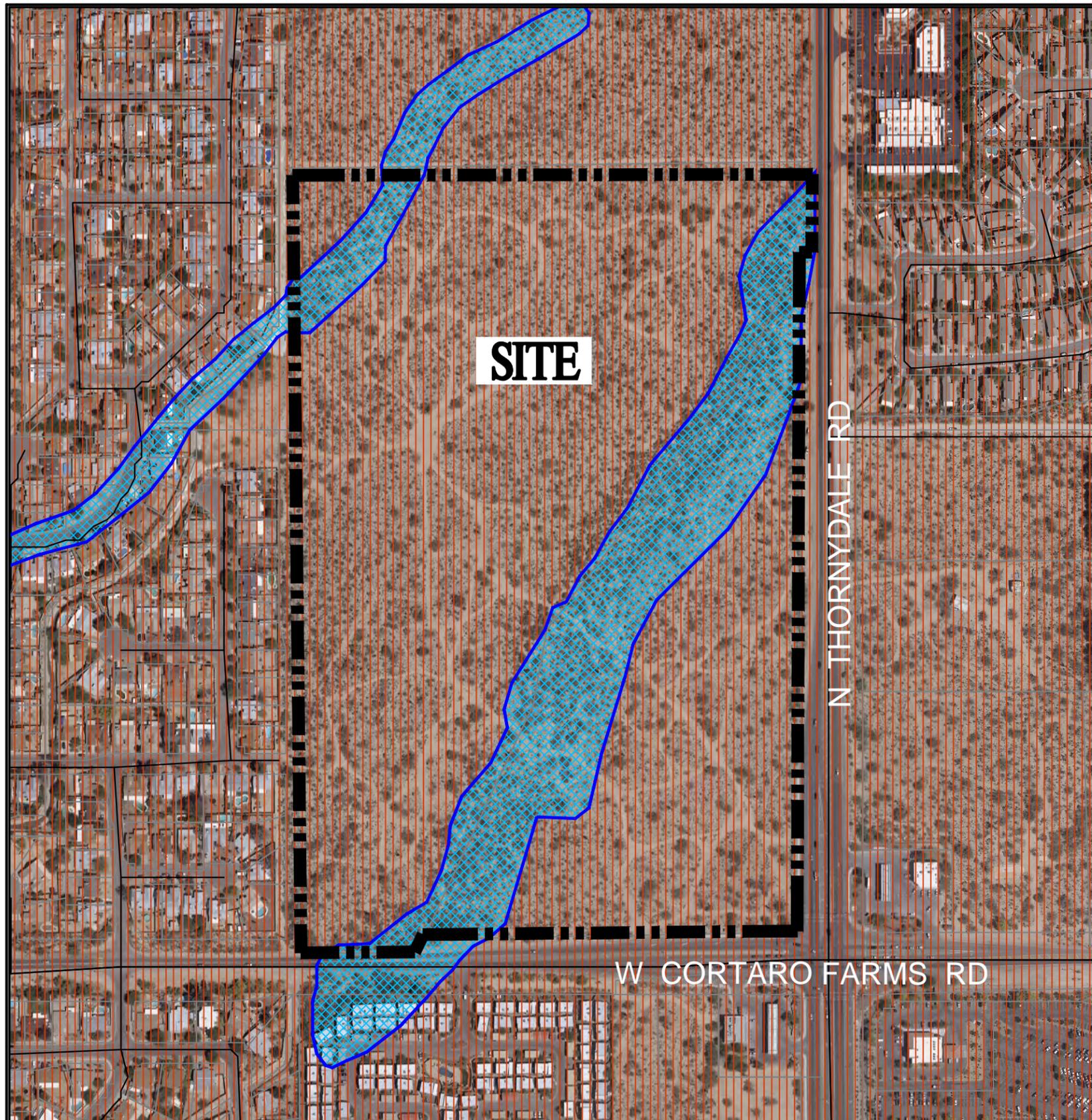
Saguaro – *Carnegiea gigantea*

Barrel Cactus – *Ferrocactus spp.*

Prickly Pear – *Opuntia spp.*

Cholla – *Opuntia spp.*

**Exhibits to Follow**



**LEGEND**

 Subject Property  
 Entire site and surrounding area falls within  
 Multiple Use Management Area (MUMA) and  
 Special Species Management Area (SSMA)  
 CLS Designation.  
 (Approximately 54.9 AC)

 Multiple Use Management Area (MUMA) and  
 Special Species Management Area (SSMA) with  
 underlying Xeroriparian "C" Riparian Area  
 Approx. 10.7 AC

 Multiple Use Management Area (MUMA)  
 and Special Species Management Area (SSMA)  
 Approx. 44.2 AC

Entire Rezoning Site falls within  
 MUMA and SSMA CLS Designation

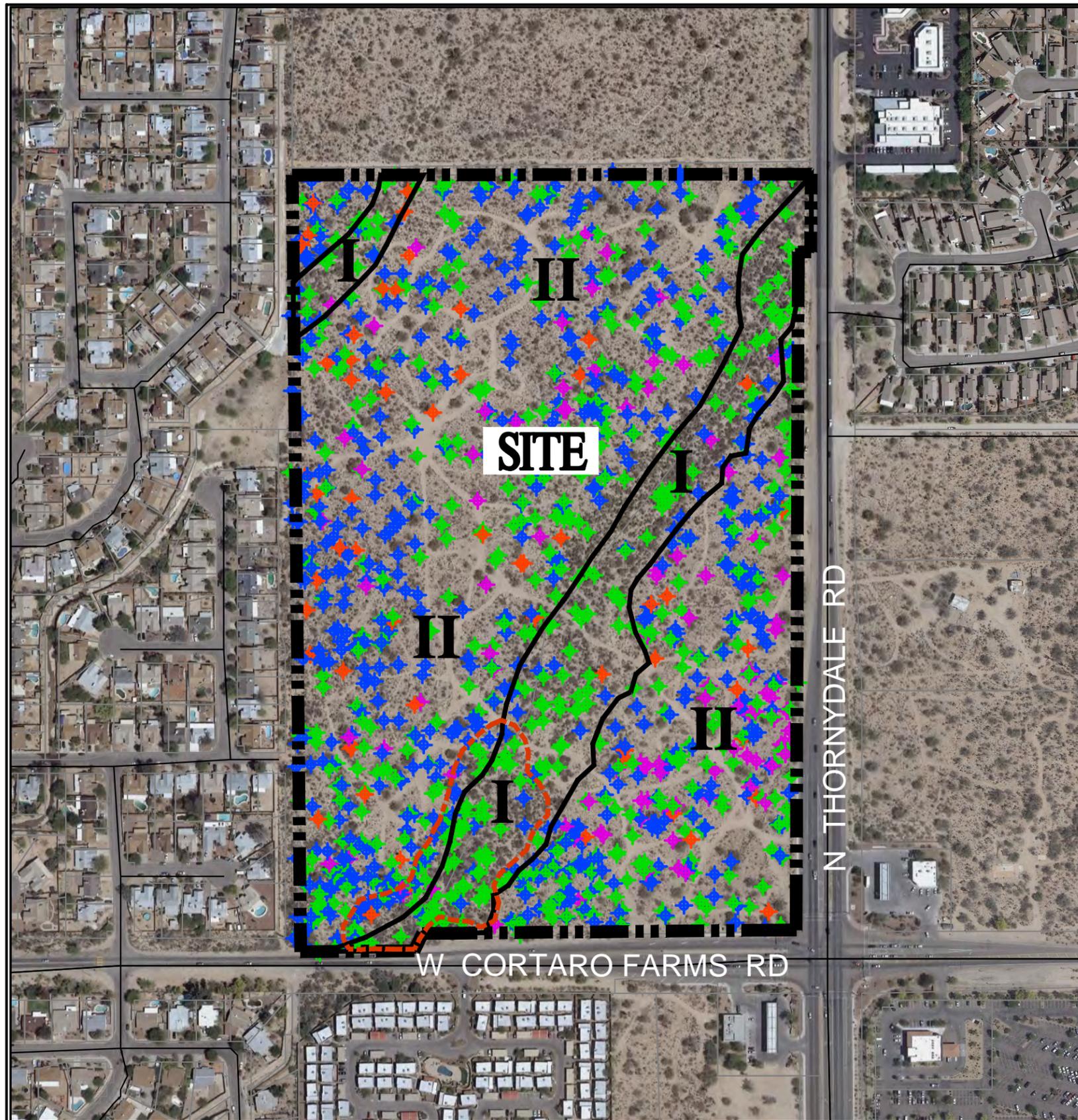


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EXHIBIT I-D.1,2  
 PIMA COUNTY CONSERVATION  
 LANDS SYSTEM  
 PAGE 20



**LEGEND**

-  Subject Property
-  Riparian Vegetation
-  Upland Vegetation with Saguaro - Ironwood - Palo Verde Association
-  Saguaro ≤ 6' in height
-  Saguaro >6' - 18' in height
-  Saguaro >18' in height
-  Ironwood Tree
-  Vegetation of Special Note for Scenic Value or Buffering

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EXHIBIT I-D.3,7-10  
 VEGETATIVE COMMUNITIES  
 PAGE 21

**E. VIEWSHEDS**

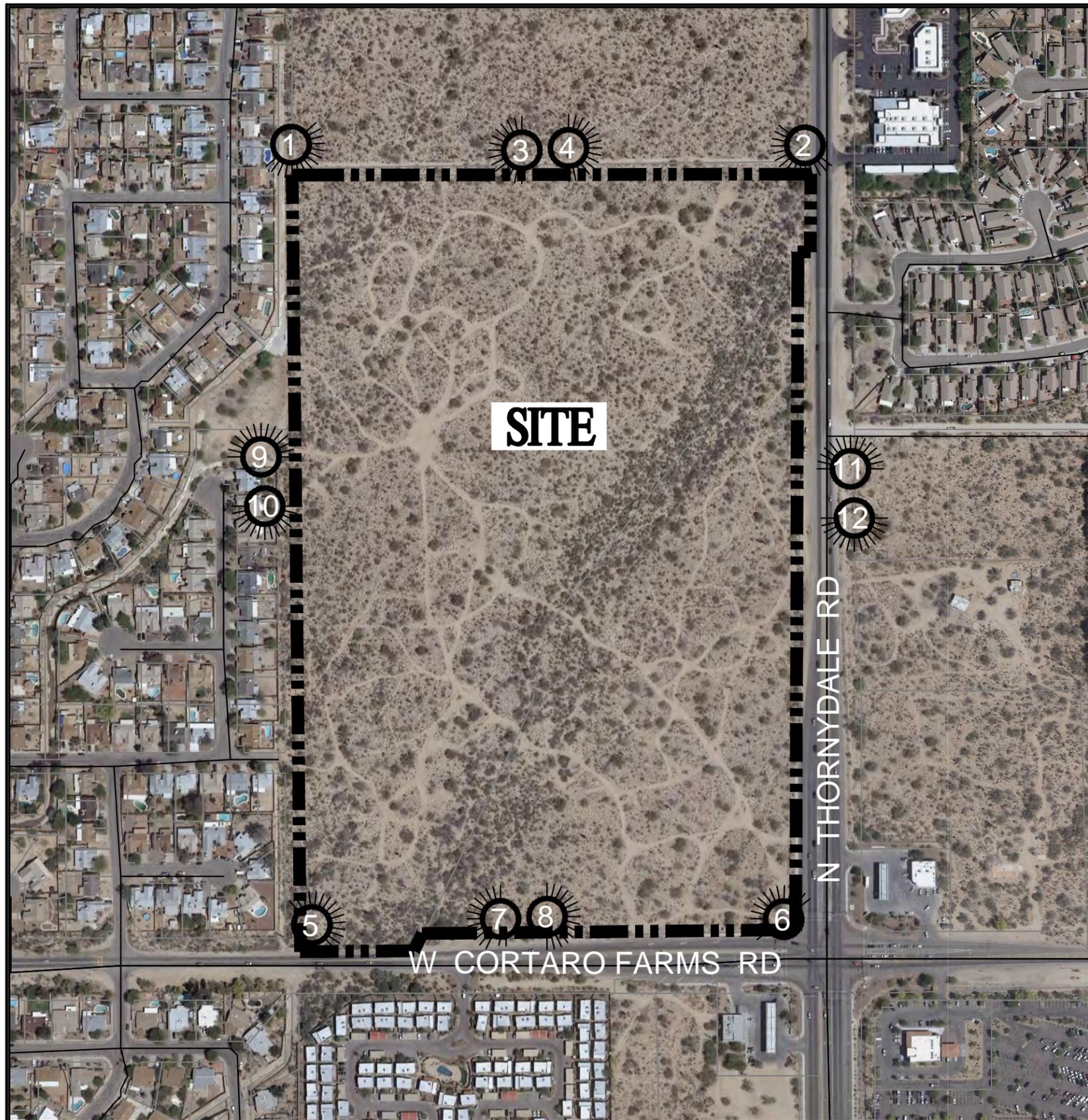
**1. Cluster Development Option**

The proposed project will not be developed under the Cluster Development. As such, no criteria are required nor provided to determine areas of high, medium and low visibility.

**2. Photographic Depiction**

Ground level photographic mosaics have been provided at pertinent boundary locations surrounding the subject property. The photo location points are depicted on Exhibit I-E.2a. The photographic mosaics are depicted on Exhibits I-E.2b through I-E.2g. In general, the views across the site are unremarkable in the foreground and mid-ground ranges. The most notable and high-quality views are northward in the direction of the distant Tortolita Mountains, westward toward the distant Tucson Mountains, eastward in the direction of the distant Santa Catalina Mountains.

**Exhibits Follow**



## LEGEND



Subject Property

### Key to Photo Locations & Orientation

1. Looking southeast.
2. Looking southwest.
3. Looking west.
4. Looking east.
5. Looking northeast.
6. Looking northwest.
7. Looking west.
8. Looking east.
9. Looking north.
10. Looking south.
11. Looking north.
12. Looking south.



Radial Lines indicate Direction and Extent of Photo View; see subsequent exhibits for pictorial survey.

150 0 150 300  
SCALE IN FEET 1"=300'



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EXHIBIT I-E.2a  
EXISTING VIEWSHEDS  
AND PHOTO LOCATIONS  
PAGE 23



PHOTO LOCATION 1: View from northwest corner of the project, looking southeast at the property.



PHOTO LOCATION 2: View from northeast corner of the project, looking southwest at the property.

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PHOTO LOCATION 3: View from north midpoint of the project, looking west.

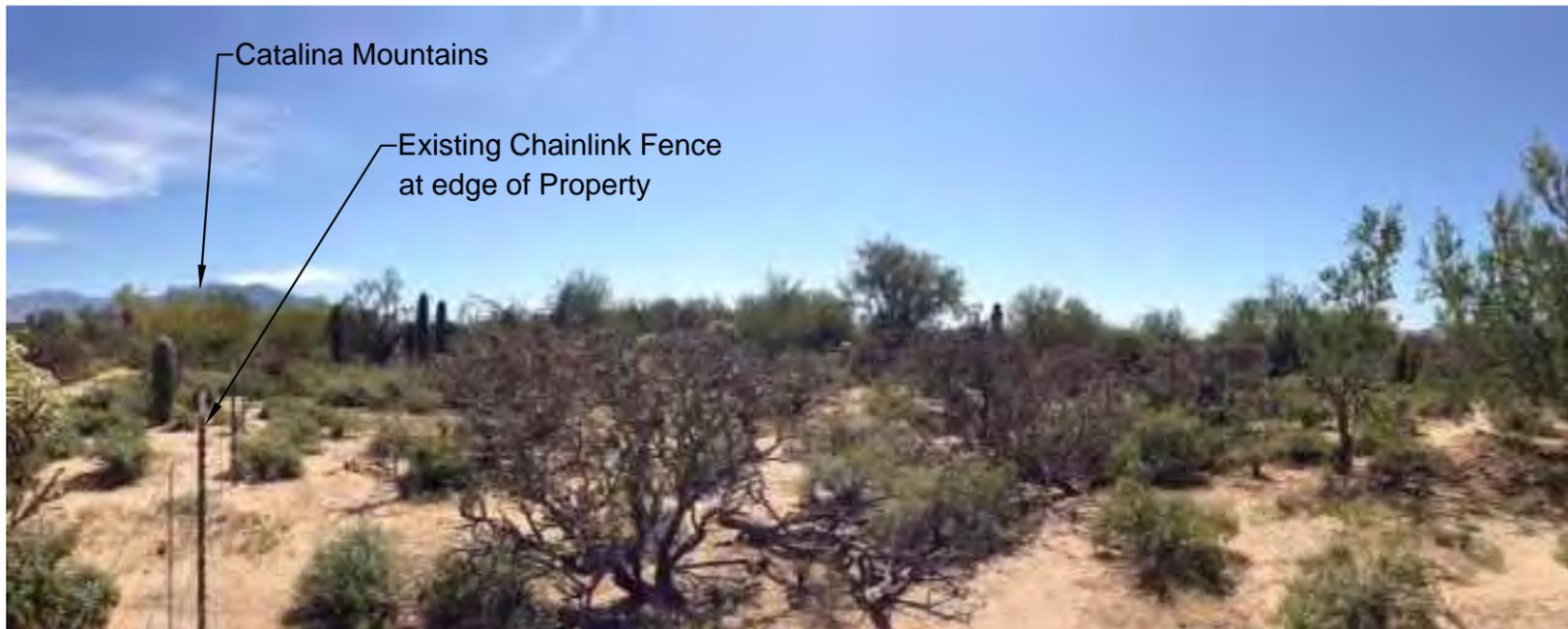


PHOTO LOCATION 4: View from north midpoint of the project, looking east.

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PHOTO LOCATION 5: View from southwest corner of the project, looking northeast at the property.



PHOTO LOCATION 6: View from southeast corner of the project, looking northwest at the property.

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PHOTO LOCATION 7: View from south midpoint of the project, looking west.



PHOTO LOCATION 8: View from south midpoint of the project, looking east.

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PHOTO LOCATION 9: View from west midpoint of the project, looking north.



PHOTO LOCATION 10: View from west midpoint of the project, looking south.

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PHOTO LOCATION 11: View from east midpoint of the project, looking north.



PHOTO LOCATION 12: View from east midpoint of the project, looking south.

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## **F. TRANSPORTATION**

The subject property is located at the immediate northwest corner of Thornydale Road at Cortaro Farms Road, which is a signalized intersection. Both of these roadways are paved public streets that are designated “major streets” (medium volume arterials) and “scenic routes” on the *Pima County Major Streets & Scenic Routes Plan (MSSRP)* per its May 19, 2015 update.

Complete four-lane divided improvements (curbs, sidewalks, medians, bike lanes, landscaping) are in place on Cortaro Farms Road east of Thornydale Road. The same full improvements are in place on Thornydale Road south of Cortaro Farms Road. The latter transitions to two-lane, uncurbed cross-section (no curbs, no sidewalks, no bike lanes) west of Thornydale Road, while Thornydale transitions to a three-lane section (continuous center left-turn lane, no curbs, no sidewalks, no bike lanes) north Cortaro Farms Road. Please refer to Exhibit I-F.1a-e (Transportation-Access) for a graphic depiction of the above particulars.

### **1. Existing & Proposed Off-Site Streets**

#### **a. Existing Rights-of-Way**

The full one hundred fifty foot (150') right-of-way (75' half rights-of-way) are already in place for both Thornydale Road and Cortaro Farms Road along nearly all of the subject property frontage.

#### **b. Compliance with Pima County Width Standards**

The aforementioned 150' rights-of-way for Thornydale Road and Cortaro Farms Road are in compliance with MS&R requirements. Small dedications may be required at the extreme north end of the site (on Thornydale Road) and at the extreme west end of the site (on Cortaro Farms Road), respectively.

#### **c. Right-of-Way Uniformity/Continuity**

The current rights-of-way are generally uniform and the physical roadway improvements are centered within them.

#### **d. Rights-of-Way for Proposed Off-Site Roadways**

No new off-site roadways are proposed with this project. On-site improvements will be limited to private drives, service lanes, and parking improvements, as will be depicted on the *Preliminary Development Plan (PDP)* presented in Section II (Land Use Proposal).

e. Travel Lanes, Capacity, etc.

**Cortaro Farms Road:** Complete, four-lane divided improvements (curbs, sidewalks, medians, bike lanes, landscaping) are presently in place east of Thornydale Road; the roadway transitions to two-lane, uncurbed cross-section (no curbs, no sidewalks, no bike lanes) west of Thornydale Road,

**Thornydale Road:** Complete, four-lane divided improvements (curbs, sidewalks, medians, bike lanes, landscaping) are presently in place south of Cortaro Farms Road; the roadway transitions to a three-lane section (continuous center left-turn lane, no curbs, no sidewalks, no bike lanes) north Cortaro Farms Road.

Both roadways have a posted speed limit of 35 MPH. The capacity of the two streets in their full, four-lane cross-sections is estimated at 29,160 VPD. The capacity of the two streets in their reduced cross-sections are estimated at 13,122 VPD for their two-lane segments and 14,000 VPD for their three-lane portions. The pavement condition of both streets is in generally very good condition along the frontage of the subject property.

f. Average Daily Trips (ADT)

The proposed project will generate, at full build-out, more than 2,500 ADT. As such, the appropriate ADT volumes are provided in Table 2 for those streets within three (3) miles of the subject property. The ADT figures presented therein are the most recent available from the Pima County Department of Transportation (Traffic Engineering Division) website (see Bibliography for citations and website addresses).

**Table 2 to Follow**

<b>TABLE 2: ADT VOLUMES FOR MAJOR STREETS WITHIN THREE (3) MILES</b>	
<b>Street Name</b>	<b>Average Daily Trip (ADT) Volume</b>
Thornydale Road	23,093 (south of Cortaro Farms Road) 19,959 (Cortaro Farms to Overton Road) 18,193 (Overton to Linda Vista) 7,985 (Linda Vista to Lambert Lane) 7,495 (north of Lambert Lane)
Cortaro Farms Road	18,749 (west of Thornydale Road) 13,181 (Thornydale to Shannon Road)
Linda Vista Boulevard	10,675 (west of Thornydale Road) No data available for east of Thornydale (street dead ends ½ mile east of Thornydale)
Lambert Lane	934 (west of Thornydale Road) 5,610 (east of Thornydale Road)
W. Overton Road	6,701 (Thornydale Road to Shannon Road) 8,653 (Shannon Road to N. La Cholla Blvd.)
Hardy Road	No Counts Available for the Segment east of Thornydale Road
Magee Road	5,488 (west of Thornydale Road) 6,257 (Thornydale Road to Shannon) 16,444 (Shannon Road to N. La Cholla Blvd.)
Camino de Oeste	4,441 (Cortaro Farms Rd. to Linda Vista Blvd.) 1,069 (north of Linda Vista)
N. Shannon Road	10,220 (Magee Road to W. Overton Road) 7,896 (north of Overton Road)
La Cholla Boulevard	11,905 (south of Overton Road) 14,240 (north of Overton Road)

g. Existing Bicycle & Pedestrian Ways

There are no existing bicycle or pedestrian ways in place along either Thornydale Road or Cortaro Farms Road along the frontage of the subject property. Bike lanes and sidewalks are in place on Thornydale Road south of Cortaro Farms Road and on Cortaro Farms Road east of Thornydale Road.

h. Planned Roadway Improvement Schedules

Thornydale Road is an approved Regional Transit Authority (RTA) bond project which is planned to commence construction in 2018. Under this approved bond project, Thornydale Road will be fully reconstructed into a four-lane divided urban arterial (complete with curbs, sidewalks, landscaped medians, and dual bike lanes) from Cortaro Farms Road northward to Lambert Lane.

Cortaro Farms Road is planned for improvement to four-lanes from Camino de Oeste to Thornydale Road. This project is currently at the 60% design stage.

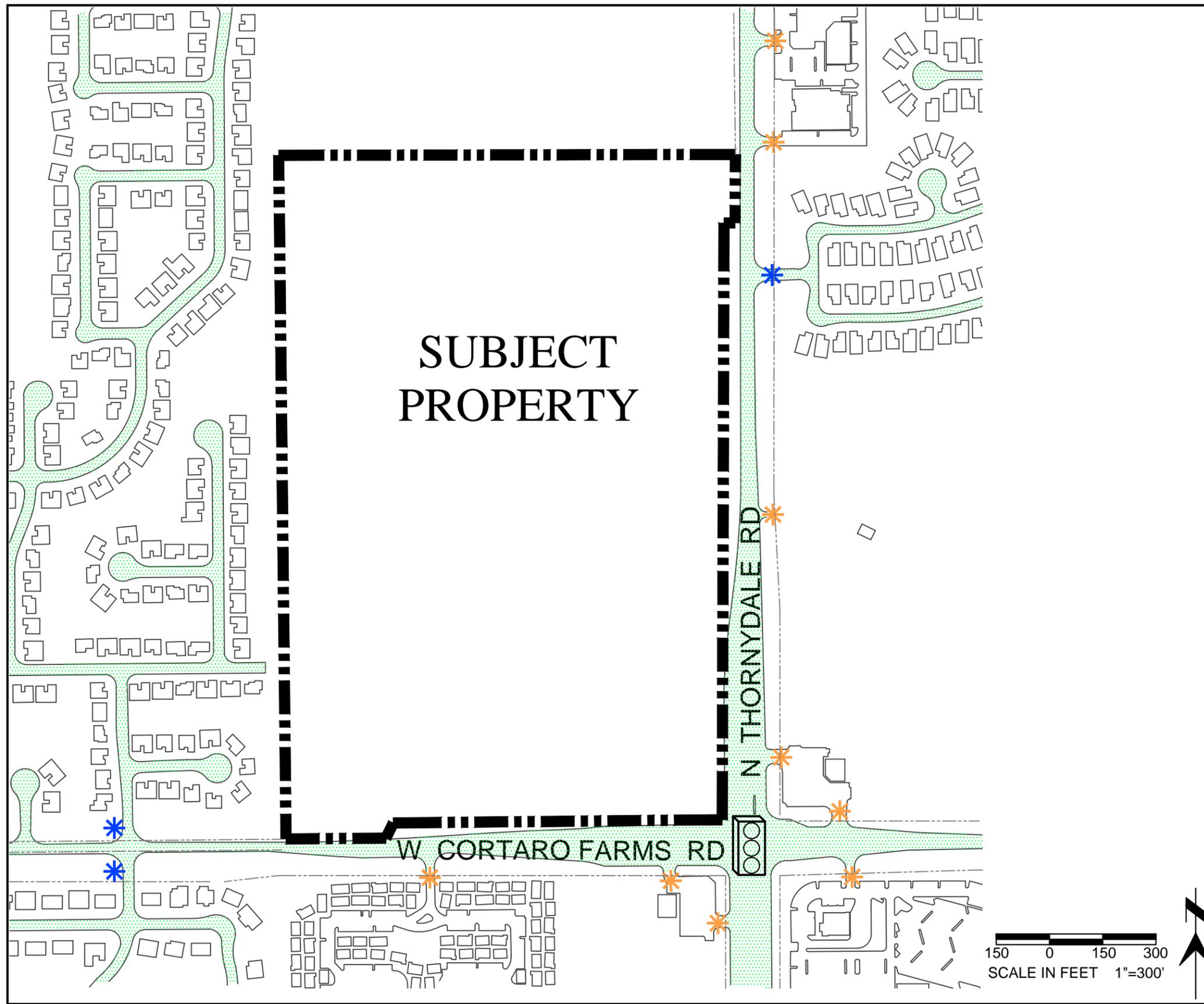
**2. Distances from Site to Existing Nearby Driveways & Intersections**

Nearby private driveways and street intersections in the vicinity of the subject property have been illustrated on Exhibit I-F.2 (Adjacent Driveways & Street Intersections).

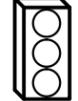
**3. Existing & Planned Transit Routes**

There is one (1) current transit route on Thornydale Road, this being Sun Shuttle Route No. 412, which connects Tangerine Road, on its north end, with downtown Tucson. This Sun Shuttle route makes designated stops available on Thornydale Road at Lambert Lane, Linda Vista Boulevard, and Cortaro Farms Road, respectively. Please refer to Exhibit I-F.3: Public Transit.

**Exhibits to Follow**



**LEGEND**

-  Subject Property
-  Public Street R.O.W. Line
-  Existing Curb or Edge of Pavement
-  Existing Public Street Paving Improvements
-  Existing Private Driveway Location
-  Existing Public Street Intersection
-  Signalized Intersection

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 LOCAL ADVICE & COUNSEL

**GRS**  
 LANDSCAPE ARCHITECTS, LLC

**Red Point Development, Inc.**  
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 (Ownership Entity: Pacific International Properties, LLP)  
 REZONING: SR to CB-1

EXHIBIT I-F.1a-e  
 TRANSPORTATION - ACCESS  
 PAGE 34



**LEGEND**



Subject Property



Existing Private Driveway Intersection



Existing Public Street Intersection



Signalized Intersection

325' Dimension between Driveways or Streets, Typ.

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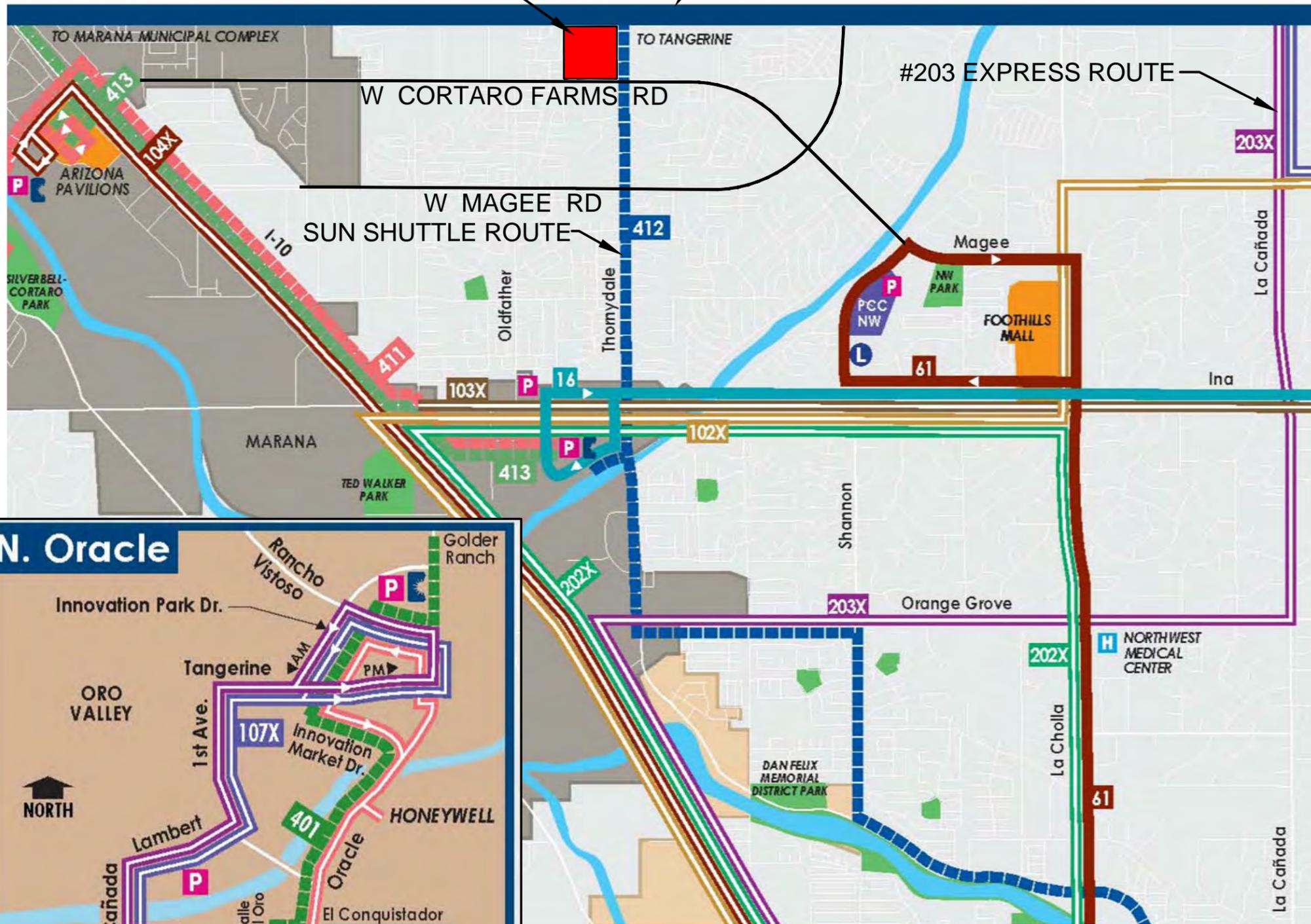
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 (Ownership Entity: Pacific International Properties, LLP)  
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**EXHIBIT I-F.2**  
 ADJACENT DRIVEWAYS AND  
 STREET INTERSECTIONS  
 PAGE 35

# SUBJECT PROPERTY

NORTHERN LIMIT OF SUNTRAN MAPPING

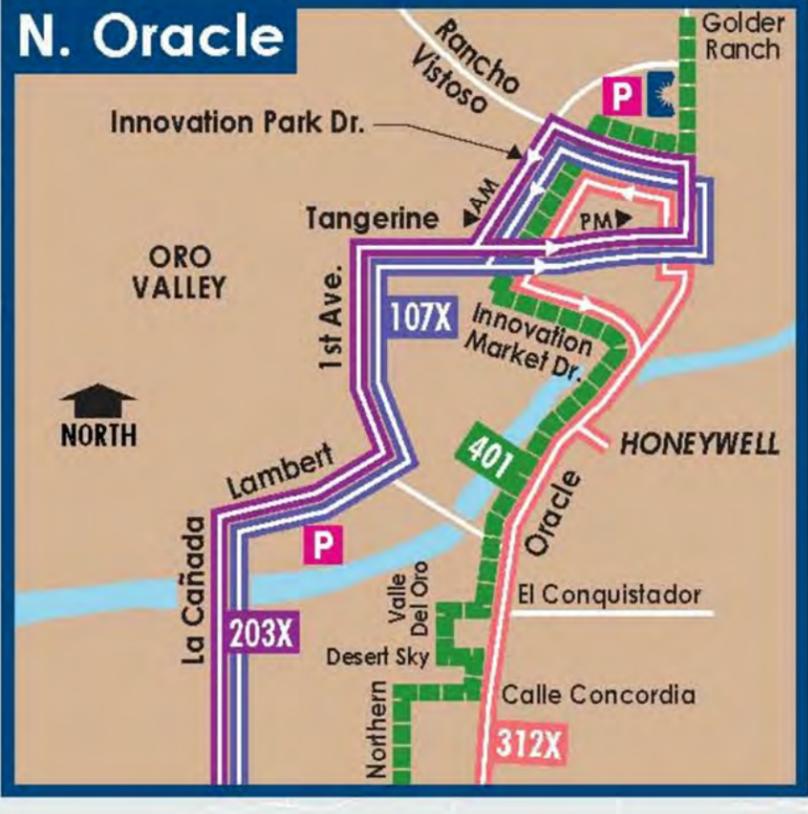
See N. Oracle Inset, Lower Left



## LEGEND

- 34 Sun Tran Route Indicator, Typ.
- P Park & Ride Lot
- #203 Express Route
- Sun Shuttle Route # 412 (Provides a designated stop on Thornydale at Cortaro Farms Road.)

### N. Oracle



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EXHIBIT I-F.3  
 PUBLIC TRANSIT

**G. SEWERS**

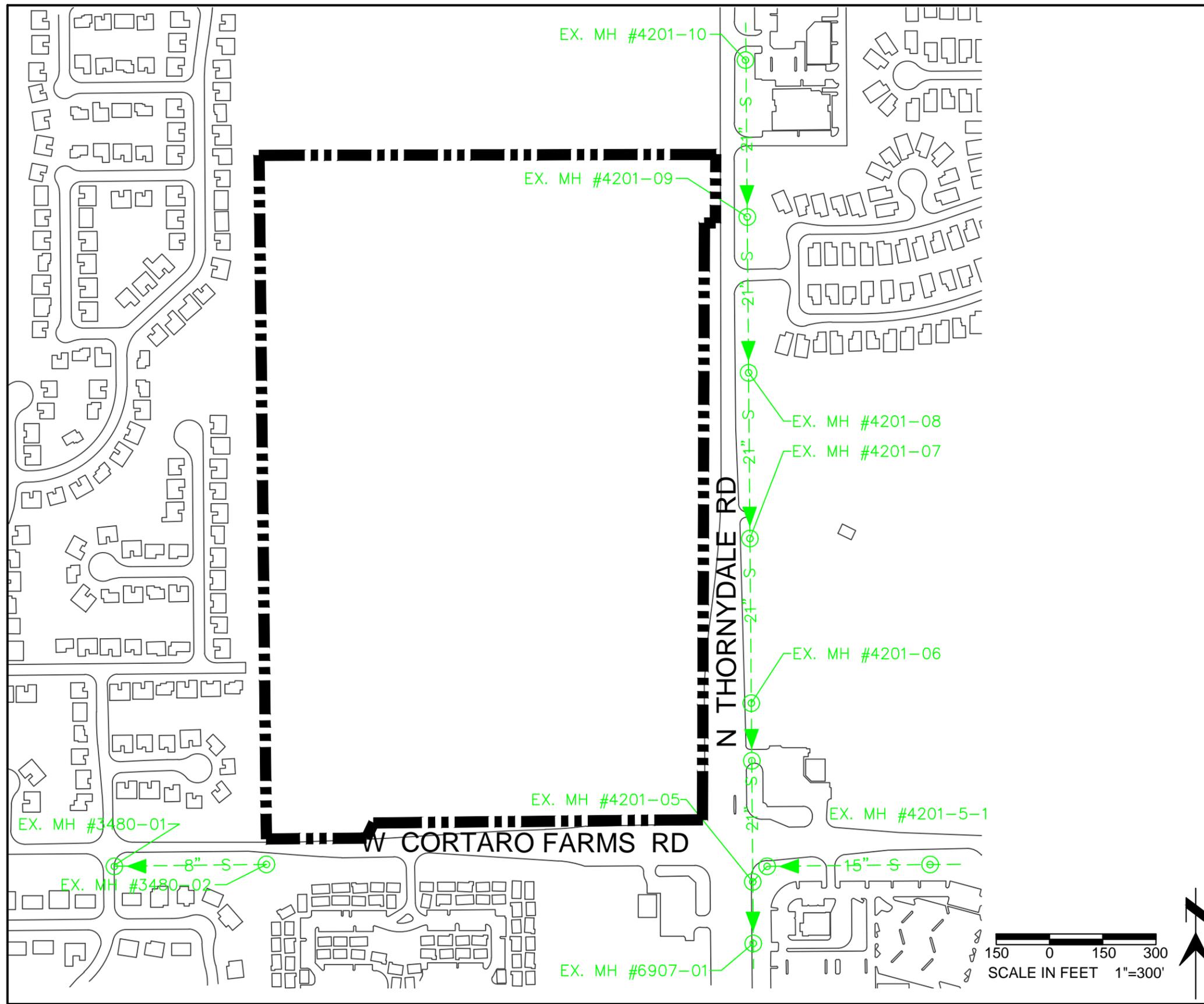
**1. Size & Location of Existing Sewers**

The rezoning site is served by: 1) an existing 21" public sewer, located on the east side of Thornydale Road, along the entire project frontage; and 2) by an existing 8" public sewer located near the extreme southwest corner of the property. Please refer to Exhibit I-G.1,2 (Sewer) for the location of these existing sewers and their associated manhole numbers.

**2. Any Constraints to Gravity Service**

It does not appear that there are any constraints to providing gravity sewer service for the project nor in connecting its new sewers to one of the aforementioned public lines. Given the topography of the site, together with the proposed *Preliminary Development Plan (PDP)* presented in Section II (Land Use Proposal), it is anticipated that proposed project will drain into the existing 21" sewer located along Thornydale Road.

**Exhibit to Follow**



**LEGEND**



Subject Property



Existing Sewer, Flow Direction, Manhole Number & Line Size

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EXHIBIT I-G.1,2  
 SEWERS  
 PAGE 38

## **H. RECREATION & TRAILS**

### **1. Public Parks, Recreation Areas & Trails within One (1) Mile**

See Exhibit I-H.1 for mapping of the various trails and park facilities located in the vicinity of the rezoning site.

Immediately north of the subject property is the Tucson Audubon Society, a private nature preserve with on-site nature trails and an interpretive center.

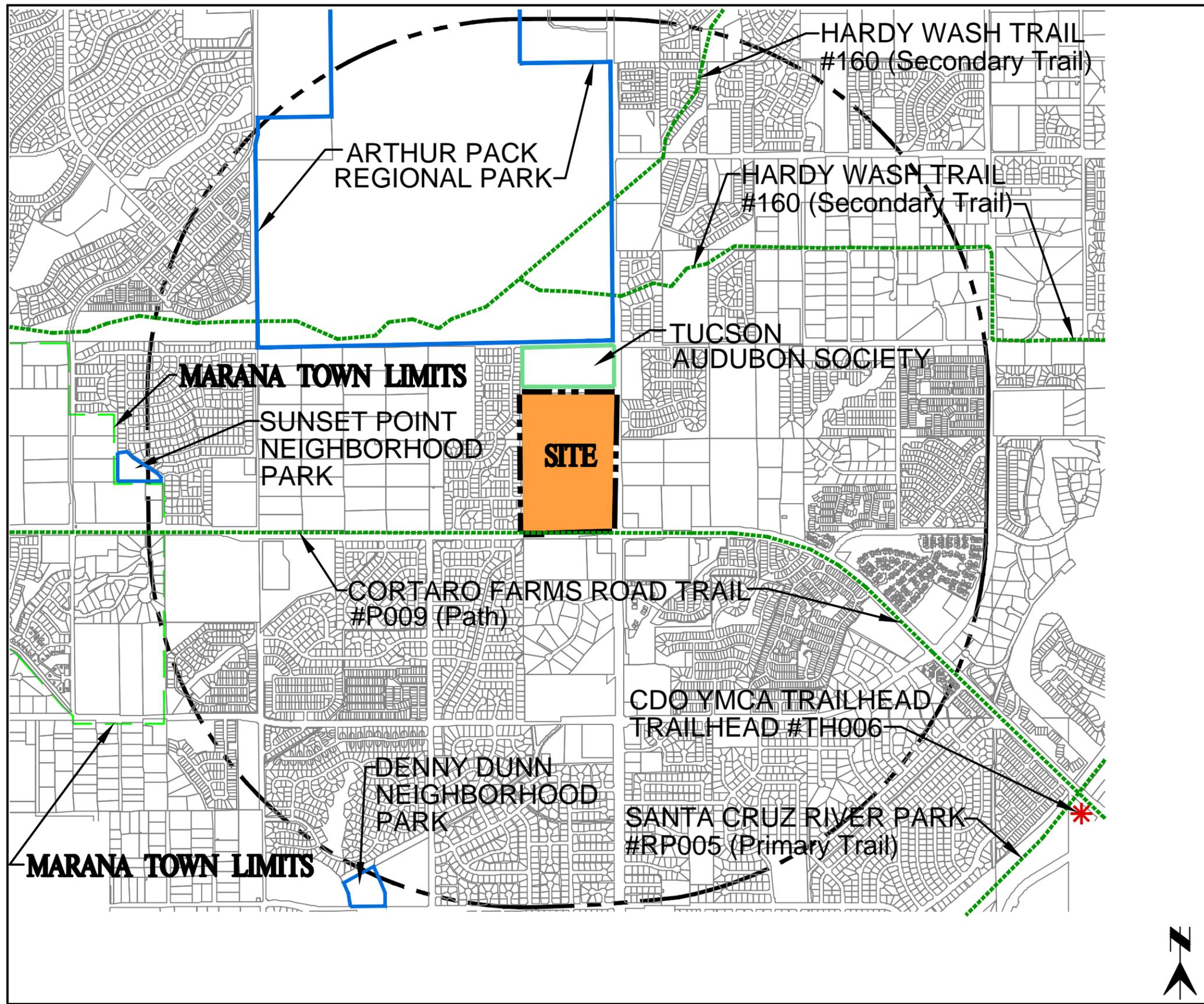
North of the Tucson Audubon Society preserve is Arthur Pack Regional Park, a Pima County facility managed and maintained by the Department of Natural Resources, Parks & Recreation (DNRPR). This Park has natural desert elements together with fully-developed athletic fields, a golf course, improved trails, and various activity facilities.

### **2. Pima Regional Trails System Master Plan (PRTSMP)**

A conceptual alignment for Trail # 160 (Hardy Wash Trail) is currently depicted on the 2010 Pima Regional Trails System Masterplan, together with the Cortaro Farms Road Path (#P009). The Hardy Wash Trail is a dedicated secondary trail whose conceptual alignment traverses several existing residential subdivisions lying to the northeast of the subject property, then continuing into Arthur Pack Regional Park.

The designated Cortaro Farms Road Path #009 runs along the subject property's entire south boundary and continues both westward and eastward within the Cortaro Farms Road public right-of-way.

**Exhibit to Follow**



**LEGEND**

-  Subject Property
-  Designated Pima County Trail from Pima County Regional Trail System Master Plan
-  Public Park
-  Designated Pima County Trailhead from Pima County Regional Trail System Master Plan
-  Tucson Audubon Society
-  Marana Town Limits

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**EXHIBIT I-H.1**  
 RECREATION AND TRAILS  
 PAGE 40

## **I. CULTURAL RESOURCES, ARCHAEOLOGICAL & HISTORIC SITES**

### **1. Records Check and Letter Report**

A cultural resources records review was completed for subject property by SWCA Environmental Consultants in October, 2014. The search reviewed the existing records in the AZSITE database, as well as the National Register of Historic Properties (NRHP). These sources indicate that no archaeological sites had been previously documented on the subject property. The summary findings from the SWCA records review is included here as Exhibit I-I.1.

#### **a. Prior Field Surveys**

Per the above, the only prior archaeological survey that included the property was the Northern Tucson Basin Survey (NTBS) conducted by the Arizona State Museum (ASM) and the University of Arizona (UA) in the early/mid 1980's.

#### **b. Previously Recorded Archaeological or Historic Resources**

No archaeological or historic sites of significance were found in the aforementioned records review.

#### **c. Probability of Buried Resources**

There is a low probability of buried resources based upon the aforementioned records review.

#### **d. Recommendation as to Future Surveys**

Due to the fact that the prior NTBS survey methodology would not be considered adequate by current State Historic Preservation Office (SHPO) standards, the SWCA study recommends that a new survey, meeting currently accepted survey standards and protocols, be completed for the property. It is the developer's intent to complete this survey at the time of subdivision platting.

### **2. On-Site Archaeological or Historic Resources**

Not applicable per the above findings.

**Exhibit to Follow**

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## Section I - Site Inventory

---



October 16, 2014

Larry Kreis  
Red Point Development  
8710 North Thornydale Road, Suite 120  
Tucson, Arizona 85742

Re: Cultural Resources Records Review for the Hillcrest Property, Unincorporated Pima County, Arizona

Dear Larry:

On behalf of Red Point Development, Inc., SWCA Environmental Consultants (SWCA) has completed a cultural resources records review of the Hillcrest property (Parcels 225-33-032A and 225-33-032D) located on North Thornydale Road, north of West Cortaro Farms Road, in unincorporated Pima County, Arizona. The purpose of the study is to provide information on whether the property has been previously surveyed for cultural resources, to identify any known archaeological or historical resources on the property, to assess whether the property may contain buried archaeological resources not visible from the surface, and to make an informed recommendation as to whether archaeological survey of the properties is warranted. We understand that this study is a required component of the Site Analysis report that is to be provided to Pima County as part of an application to rezone the property.

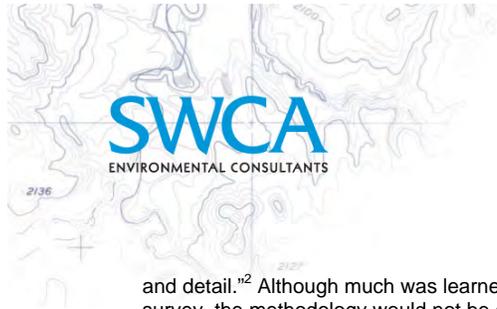
The 58-acre Hillcrest property is a privately held parcel in Section 30, Township 12 South, Range 13 East, Gila and Salt River Baseline and Meridian, Pima County, Arizona, and can be found on the Jaynes, AZ 7.5-minute U.S. Geological Survey topographic quadrangle (Figure 1). Although only 8 acres of the property is proposed for development—specifically the southeastern corner of the property, east of the drainage that crosses the property—this study evaluates the entire 58-acre property.

SWCA consulted the AZSITE database for previously conducted surveys and previously recorded sites within the subject property. The National Park Service National Register Information Systems Database was also consulted for National Register of Historic Properties (NRHP)—listed properties or districts. The records search showed that no archaeological sites have been previously documented in the project area.

The only archaeological survey of the property took place as part of the Northern Tucson Basin Survey (NTBS), which was conducted by the Arizona State Museum (ASM) and the University of Arizona in the early to middle 1980s, and consisted of a 1,800-square kilometer (695-square mile) study area that stretched from the northern edge of the Tucson Mountains to Picacho Peak.<sup>1</sup> The description of NTBS field methods states that "In obtaining large-scale patterns, speed and efficiency in the field observation occasionally required compromise with precision

<sup>1</sup> Madsen, J.H., P.R. Fish, and S.K. Fish (eds). 1993. Northern Tucson Basin Survey: Research Directions and Background Studies. Archaeological Series No. 182. Tucson: Arizona State Museum, University of Arizona.

**Exhibit I-I.1 (Page 1 of 2)**  
**SWCA Records Review Summary Letter of Findings**



and detail.<sup>2</sup> Although much was learned about the regional archaeology as a result of the survey, the methodology would not be considered adequate to rely on for current review by the State Historic Preservation Office (SHPO)<sup>3</sup> and most other review agencies. Although the Hillcrest property is within the portion of the NTBS area that was subject to full-coverage survey, the transect spacing for survey was 30 meters,<sup>4</sup> and the ASM currently specifies a maximum spacing of 20 meters for full-coverage survey. The crews were equipped with topographic maps and aerial photographs, but not more modern mapping technologies (e.g., global positioning system [GPS] units), and the project was not focused on evaluating the historical significance (i.e., NRHP eligibility) of individual sites.

Based on Arizona Geological Survey maps, the Hillcrest property lies upon middle to late Pleistocene Piedmont alluvium.<sup>5,6</sup> The potential for intact buried archaeological resources not visible on the surface is low.

Given that the one previous survey of the Hillcrest parcel was part of a project which would not adequately meet SHPO requirements, we recommend that an archaeological survey that meets the currently accepted survey standards be conducted of the portion of the property that is proposed for development.

Thank you for providing us with the opportunity to work with you again. Please contact me at (520) 325-9194 if you have any questions at all regarding this work.

Sincerely,

A handwritten signature in blue ink, appearing to read "Jerome Hesse", is written over a light blue rectangular background.

Jerome Hesse  
Cultural Resources Lead, Tucson

Attachment A: Figure 1.

<sup>2</sup> Madsen et al., 1993, pp. 13.

<sup>3</sup> State Historic Preservation Office (SHPO). 2004. *SHPO Position on Relying on Old Archaeological Survey Data*. Guidance Point 5. Phoenix: Arizona State Parks.

<sup>4</sup> Madsen et al., 1993, pp. 21.

<sup>5</sup> McKittrick, M.A. 1988. *Surficial Geologic Maps of the Tucson Metropolitan Area*. Open-File Report No. 88-18. Tucson: Arizona Geological Survey.

<sup>6</sup> Pearthree, P.A., and T.H. Biggs. 1999. *Surficial Geology and Geologic Hazards of the Tucson Mountains, Pima County, Arizona*. Open-File Report No. 99-22. Tucson: Arizona Geological Survey.

**J. AIR QUALITY**

**1. Proposed Industrial Facilities**

Not applicable; there are no Industrial facilities planned or proposed for this development.

**K. COMPOSITE MAP**

**1. Description of Major Characteristics**

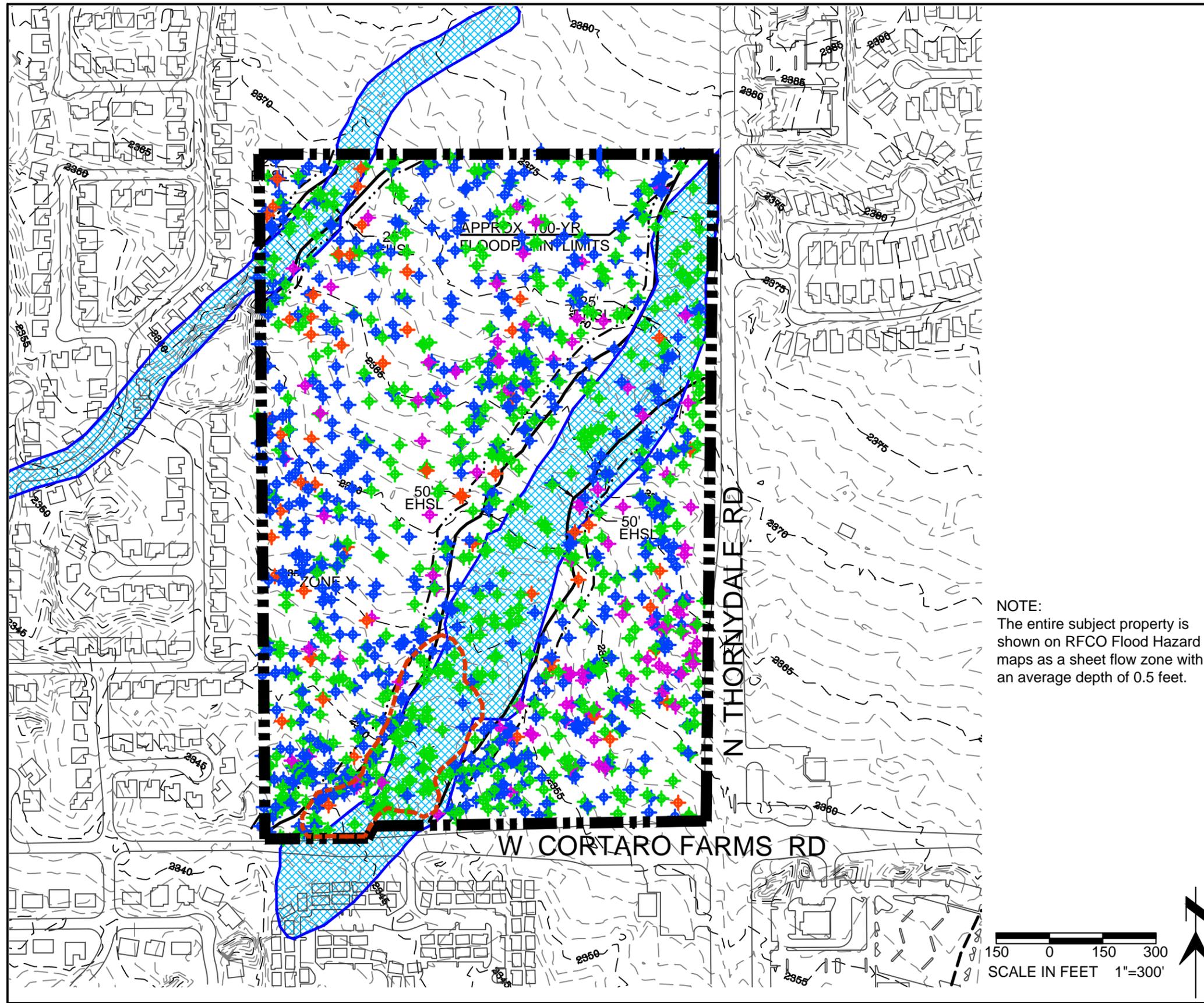
The site is generally unremarkable in terms of landform or significant features, except for the fact that it possesses a rich stand of natural desert vegetation and Xeroriparian "C" riparian habitat. The specific characteristics cited in the Site Analysis Guidelines are respectively addressed on Exhibit I-K.1-3 (Composite Map) as follows:

1. **Topography.** There are no restricted peaks and ridges, rock outcrops, talus slopes, or slopes of 15% or greater. As such, none of these topographic features are depicted on the Composite Map exhibit. The Exhibit will contain only the 1' contour interval mapping of the site.
2. **Hydrology.** The Composite Map exhibit will contain the following identified items from the checklist: (a) the 100-year regulatory floodplains traversing the site in the existing condition; (b) sheet flow areas (the entire site); and (d) the regulated riparian habitat areas.

The following items from the checklist do not exist on the property and so will not be depicted on the Composite Map: (c) federally mapped floodplains and floodways; and (e) lakes, ponds, springs, wetlands, etc.

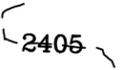
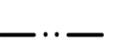
3. **Biological Resources.** The Composite Map exhibit will contain only the following three (3) identified items from the checklist: (a) all saguaros, mapped and categorized based upon their height; (b) ironwood trees; and (e) areas of significant or important vegetation.

The following items from the checklist do not exist on the property and so will not be depicted on the Composite Map: (c) pima pineapple cactus; and (d) needle-spined pineapple cactus.



NOTE:  
The entire subject property is shown on RFCO Flood Hazard maps as a sheet flow zone with an average depth of 0.5 feet.

**LEGEND**

-  Subject Property
-  Existing Condition Topographic Contour (1' Interval)
-  Erosion Hazard Setback Limit (EHSL)
-  Approximate 100-Year Floodplain Limit
-  Mapped Riparian Habitat -- Xeroriparian "C"
-  Saguaro ≤ 6' in height
-  Saguaro >6' - 18' in height
-  Saguaro >18' in height
-  Ironwood Tree
-  Vegetation of Special Note for Scenic Value or Buffering

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**Red Point Development, Inc.**  
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 REZONING: SR to CB-1

EXHIBIT I-K.1-3  
 COMPOSITE MAP  
 PAGE 45

**SECTION II:**  
**Land Use Proposal**

## **A. PROJECT OVERVIEW**

The proposed rezoning site constitutes only a portion of the overall 54.9-acre property that was analyzed in Section I of this Site Analysis document. During the property's comprehensive plan amendment application in 2013/2014, the applicant represented that approximately eight (8) acres of the subject property would ultimately be developed, while the remainder would be preserved as natural, undeveloped open space. The proposed *Preliminary Development Plan (PDP)* presented herein follows through on this same concept, depicting the development of 8.2 acres as a neighborhood shopping center, with the balance of the original subject property (46.7 AC) being set-aside as a residual parcel and remaining in its present state. See Exhibit II-A, which is a Key Map that delineates the respective rezoning and residual parcels.

The proposed rezoning constitutes an infill development that will fit well within its established land-use context. The proposed 8.2-acre rezoning site is located at the immediate NWC of two major transportation corridors (Thornycroft Road and Cortaro Farms Road), it will make efficient use of the existing public and utility infrastructure that is already in-place, and it will be consistent with the intensity of commercial uses already in the immediate context and which are appropriate at a major arterial street intersection.

### **1. Requested Zoning Designation**

Because the Project is not proposed to include multiple zoning districts, the Site Analysis requirements of Section II-A.1. do not apply. The requested zoning designation for the 8.2-acre rezoning site is CB-1. The balance of the overall property will remain SR.

### **2. Characteristics of Proposed Development**

The site will be developed as a neighborhood shopping center, the intent of which is to provide the type of anchor store, junior-anchor stores, and comparable goods and services generally needed by the surrounding residents on a weekly basis. Optimally, the main anchor store would be a neighborhood-scale grocer of approximately 40,000 SF in size. This would constitute a full-service grocery and would help enhance the limited major-grocer options that exist for area residents.

Preserving the balance of the property (more than 46 acres) in its present natural condition constitutes a significant and meaningful step in implement Pima County's Regional Environmental Policies as outlined in the *Conservation Lands System (CLS)*. This substantial property represents a material expansion in habitat critical mass when combined with the adjacent Tucson Audubon Society preserve and Arthur Pack Regional Park.

Beyond these basic features of the rezoning application, the following particulars apply:

a. Project Design & Response to Site Constraints

The major constraints detailed in the Site Analysis are natural and environmental ones, most notably pertaining to habitat conservation and the presence of significant natural washes that traverse the property.

The entire site is designated as *Multiple Use Management Area (MUMA)* under the Maeveen Marie Behan Conservation Lands System (CLS), with portions of it classified as *Xeroriparian "C" Riparian Area*. The property further subject to the CLS Special-Species Management overlay, thereby requiring that an 80% preservation threshold be met for the site.

Beyond these habitat considerations, the site contains numerous saguaros and ironwood trees, thereby necessitating special care in applying and executing the Native Plant Preservation Ordinance (NPPO).

The *Preliminary Development Plan (PDP)* presented below in Section II.B responds to these natural constraints and resources by setting aside 80% of the original subject property as natural open space and drainageways. The proposed neighborhood shopping center is confined to the immediate intersection of Thornydale Road and Cortaro Farms Road, where its impact upon these resources is minimized.

b. Conformance with Comprehensive Plan (Pima Prospers), etc.

This Project, as proposed, will comply with Pima Prospers (the Pima County Comprehensive Plan) and all applicable Rezoning Policies.

***This Project complies with its Designated Land Use Intensity Category.***

The rezoning site is designated as Neighborhood Activity Center (NAC) per approved comprehensive plan amendment Case No. Co7-13-04 and adopted Resolution No. 2014-115. The complete rezoning policies attendant to this approval have been provided in Section I.A.2.c (p. 2) of this Site Analysis. The Project will provide a neighborhood shopping center, the size and character of which is appropriate for the intersection of two major transportation corridors. The attendant CB-1 zoning request is permitted under the NAC category and, further, is consistent with the established zoning construct already surrounding the rezoning site..

***This Project complies with the County's Pima Prospers Use of Land (Chapter 3) and Physical Infrastructure Connectivity (Chapter 4) policies.*** The pertinent policies are as follows: Land Use Element (Section 3.1), Environmental Element (Section 3.4), Housing & Community Design Element (Section 3.5), and Transportation Element (Section 4.1).

Land Use Element (Section 3.1)

The proposed project works substantially toward the established Goal 1 objective (p.3.2) of integrating land use with physical infrastructure and resource conservation to insure long-range viability of the region. The requested rezoning integrates with the existing, established, or already-planned transportation, wastewater, potable water, and recreational infrastructure resources present adjacent to the property and within the larger Thornydale Road and Cortaro Farms Road corridors. It represents a quintessential infill development that, by definition, works off of this existing infrastructure rather than requiring the further expansion of it. The continued residential densification of the Thornydale Road corridor through infill projects such as this one takes advantage of these available efficiencies and enhances the opportunity for expanded multi-modal transportation and transit options.

Environmental Element (Section 3.4)

The proposed project is in full compliance with the Conservation Lands System (CLS), its stated Goal 1 (p.3.23) objective of conserving and protecting natural resources, together with its enumerated Policies (pp. 3.23 thru 3.31). The subject property was part of an extensive exercise, during the comprehensive plan amendment phase, to establish site-specific thresholds for on-site and off-site CLS mitigation so as to insure full compliance with all established thresholds associated the Special Species Management overlay of the System. Four (4) separate properties (including the subject site) were evaluated in holistic fashion to integrate both CLS parameters and neighborhood concerns into a global solution that recognized and addressed both. The proposed 8.2-acre rezoning is the next step in effectuating this holistic solution and bringing it to fruition.

In many respects, the overall 54.9-acre subject property was, from a habitat and CLS perspective, the most significant and valuable of the four properties alluded to above. The proposed preservation of more than 46 contiguous acres of quality habitat within it achieves a material and contiguous expansion of the habitat resources already in place within the adjacent Tucson Audubon Society preserve and Arthur Pack Regional Park.

Housing and Community Design Element (Section 3.5)

The proposed project furthers the Goal 8 (p. 3.45) objective of providing new development that is generally compatible and scale-appropriate, as well as the Goal 10 (p. 3.46) objective of ensuring development that reflects the character and sense of place of its given area. This infill project has, from the onset, pursued a very simple goal: provide a use that, as best as possible, generally fits within, respects, and essentially mirrors the type, character, and intensity of use that already surrounds it.

The development of a neighborhood shopping center at the intersection of the two primary transportation corridors in the area (Thornydale Road and Cortaro Farms Road) is arguably the most appropriate land use that could possibly be effectuated, especially when considering that the surrounding residential areas are presently underserved in terms of the type, breadth, and diversity of commercial retail and services needed by residents on a daily and weekly basis.

Transportation Element (Section 4.1)

The proposed project furthers the Goal 1 (p. 3.45) objective of promoting a comprehensive and multi-modal transportation system. The Thornydale Road corridor is clearly one of the most significant north-south transportation arteries within the overall County transportation system. Multi-modal objectives can only be met by fostering the growth, intensification, and residential densification of such corridors. At present, this important corridor is, somewhat remarkably, served by one and only one public transit route. And this route is only a Sun *Shuttle* service, i.e. not a full-size Sun Tran bus. One's personal views on growth and development notwithstanding, it is simple fact that achieving truly multi-modal, transit-rich corridors can only be achieved by significant growth and intensification of use. The proposed rezoning is one small step in that direction, with the need for many more in the future.

***This Project complies with the County's applicable Rezoning Policies.*** As mentioned in Section I.A.2.c (pp. 1-2) of this Site Analysis, the subject property was approved for a combination of Neighborhood Activity Center (NAC) and Medium Intensity Urban (MIU) under Case No. Co7-13-04. Two (2) rezoning policies were stipulated for the site via this approved amendment. The proposed commercial use for the project, its design and its open space/habitat set-aside of the majority of the original property are all in accordance with the prescribed policies.

c. Neighbor Issues & Response

The current property owner and applicant (Pacific International Properties, LLP and Red Point Development, Inc.) heard and accommodated neighboring property owner concerns during the recent Comprehensive Plan Amendment process for this property (Case No. Co7-13-04), the application of which was ultimately approved by the Board of Supervisors in February, 2014. While individual neighborhood opposition was sparse and was not significantly organized, there was a general appreciation as to the value of the overall subject property in terms of its habitat resources and significant stands of quality desert vegetation in close proximity to Arthur Pack Regional Park and the Tucson Audubon Society. The conditions of approval attached to the approved amendment (which were enumerated in Section I.A of this Site Analysis) have been reflected in this rezoning

proposal and attendant PDP by concentrating the proposed commercial development at the immediate Thornydale/Cortaro Farms Road intersection, as well as by setting aside the majority of the overall/original property as a habitat conservation area and CLS mitigation.

The rezoning applicant is committed to further working further with neighborhood representatives and leaders as necessary during the rezoning process so as to fully inform them of the proposed application and the basic particulars of the proposed commercial development. These discussions and interactions will be on-going through the rezoning process and we will insure that Pima County staff is kept abreast of their progress.

d. Impact on Existing Land Uses in the Surrounding ¼ Mile Area

The proposed *Preliminary Development Plan (PDP)* depicts a neighborhood shopping center that is generally similar in type and character to the existing commercial uses that are already in place to the east, south, and southeast. Given this consistency, the impacts on these nearby uses is negligible.

e. Contribution to Smart Growth Principles

The proposed rezoning is consistent with, or furthers, several of the Smart Growth Principles as identified by the Smart Growth Network (SGN). These are individually discussed below:

Mix of Land Uses

Given the emerging urbanization trend in the area and taking into account the property's immediate context, the site is best developed as a neighborhood shopping center. The Thornydale and Cortaro Farms Road corridors are an emerging mix of residential and non-residential uses, the variety of which is synergistic and works towards the type of intensification and densification that will ultimately make these corridors true multi-modal elements within the larger regional transportation network.

Take Advantage of Compact Building Designs

The project will promote a higher intensity of use within the Thornydale Road and Cortaro Farms Road corridors. The proposed commercial shopping center is clustered closely around the existing intersection of these two major arterials, while preserving the balance of the overall/original property in its natural state. All in all, the project represents a healthy mix of appropriate land development and significant resource preservation.

Multi-Modal Transportation Opportunities

Higher intensity of development always contributes to larger regional opportunities for multi-modal transportation. The Thornydale and Cortaro

Farms Road corridors function as important north-south and east-west transportation arteries and are suitable for a continuation and expansion of the limited bicycle routes and public transit elements that presently exist in the area. Higher intensity development is essential in creating the demand needed to support and further such multimodal opportunities.

#### Rational Infrastructure Expansion and Improvements

The proposed rezoning and commercial development adheres closely to this principle. Intelligent and efficient growth demands the intelligent and efficient use of established infrastructure. The proposed rezoning site represents an important infill opportunity that will utilize existing public utility and planned transportation infrastructure, while contributing its fair share of costs that might be needed to expand same to serve the proposed development.

#### Conservation of Natural Resources

As detailed previously, the rezoning site falls within the *Multiple Use Management Area (MUMA)* classification of the Conservation Lands System (CLS), with portions of the property classified as *Xeroriparian "C" Riparian Area*. In addition, the Special-Species Management aspect of the CLS also applies, thereby increasing the CLS's established conservation and mitigation guidelines.

As part of the aforementioned approved Comprehensive Plan Amendment (Case No. Co7-13-04), specific performance measures and expectations were established for the set-aside of significant areas of the property so as to insure full compliance with all CLS thresholds. These expectations are met with the proposed PDP. The CLS topic is discussed further below in Section 3.b (Open Space Element, Environmental Element) and Section 3.f (Compatibility with Conservation Lands System).

### **3. Applicability and/or Conformance with the Pima County Zoning Code**

This Project does not require compliance with the Buffer Overlay Zone, Gateway Overlay Zone, Hillside Development Zone, Cluster Development Option, Historic Zone, or Airport Environs Zone. The Project will be in compliance with the Native Plant Preservation Ordinance (Chapter 18.72).

- a. Buffer Overlay Zone  
Not applicable.
- b. Gateway Overlay Zone  
Not applicable.

- c. Hillside Development Overlay Zone

Not applicable.

- d. Cluster Development Option

Not applicable.

- e. Native Plant Preservation

The project will comply with Pima County Zoning Code Section 18.72 (Native Plant Preservation).

- f. Historic Zone

Not applicable.

- g. Airport Environs Zone

Not applicable.

## **B. PRELIMINARY DEVELOPMENT PLAN (PDP)**

### **1. PDP Map and Overlay**

A Preliminary Development Plan (PDP), in accordance with Section II-B.1a-p of the Site Analysis Checklist, is provided as Exhibit II-B.1a-p (an acetate overlay of same is also included). This PDP illustrates a proposed commercial development that effectively confines the project to the immediate northwest corner of the Thornydale/Cortaro Farms Road intersection (it is labeled as the “Rezoning Parcel” on the exhibits so as to distinguish from the residual property that is being left as a natural open space set-aside).

In terms of timing and phasing, it is most desirable and intelligent that the project be developed concurrently with the RTA comprehensive street improvements planned for the segment of Thornydale Road located north of Cortaro Farms Road.

### **2. Support Data**

The following support data is provided here and is also reflected in notes on the PDP as appropriate:

- a. Gross Floor Area of Structures.

As shown on the Preliminary Development Plan (PDP), the proposed neighborhood shopping center is envisioned as having a total gross retail floor area (GFA) of approximately 102,000 SF. Final GFA and final site

layout will ultimately be determined by: 1) future lease negotiations with specific anchor stores, junior anchors, and retail/service tenants; and 2) the overall carrying capacity of the site in terms of applicable parking and loading, etc. requirements necessary to serve those anchor stores, etc.

Final site layout and all necessary calculations required to demonstrate compliance with applicable development standards and Code requirements will be furnished at the time of the future Site Development Package as submitted to the Development Services Departments.

b. Building Heights

The will contain largely one-story buildings, with the understanding that commercial shopping centers often contain structures that approach heights greater than conventional one-story buildings. The maximum building height will not exceed that allowed under the requested CB-1 zoning, i.e. thirty-nine feet (39').

c. Dwelling Units

Not applicable; this is a commercial development.

d. Maximum Residential Densities

Not applicable; this is a commercial development

e. Total Number of Parking Spaces

Parking for this project will be in accordance with Zoning Code Section 18.75, to be verified at the time of future Site Development Package.

f. Type of Landscaping

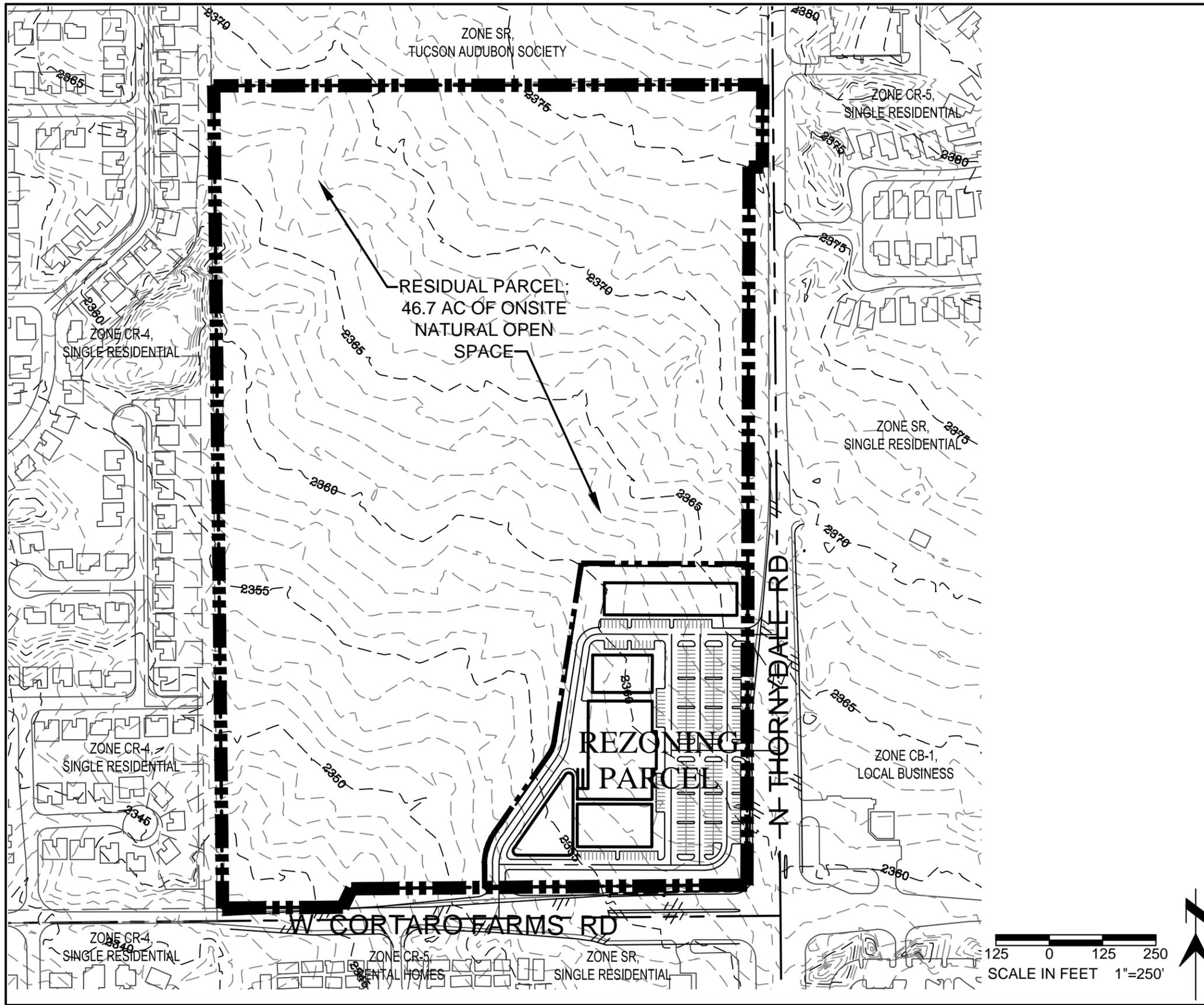
Landscaping will be a mixture of native preserved desert and xero-riparian landscape species. The proposed landscape program for the site is described more fully in Sections II.E. (Biological Resources) and II.F (Landscape & Buffer Plan).

g. Size & Description of Recreation Areas, Natural/Functional Open Space

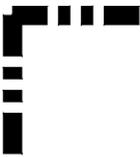
Not applicable; this is a commercial development.

h. Other Supplemental Information

There is no other written material that is applicable or that is not already shown on the PDP.



## LEGEND

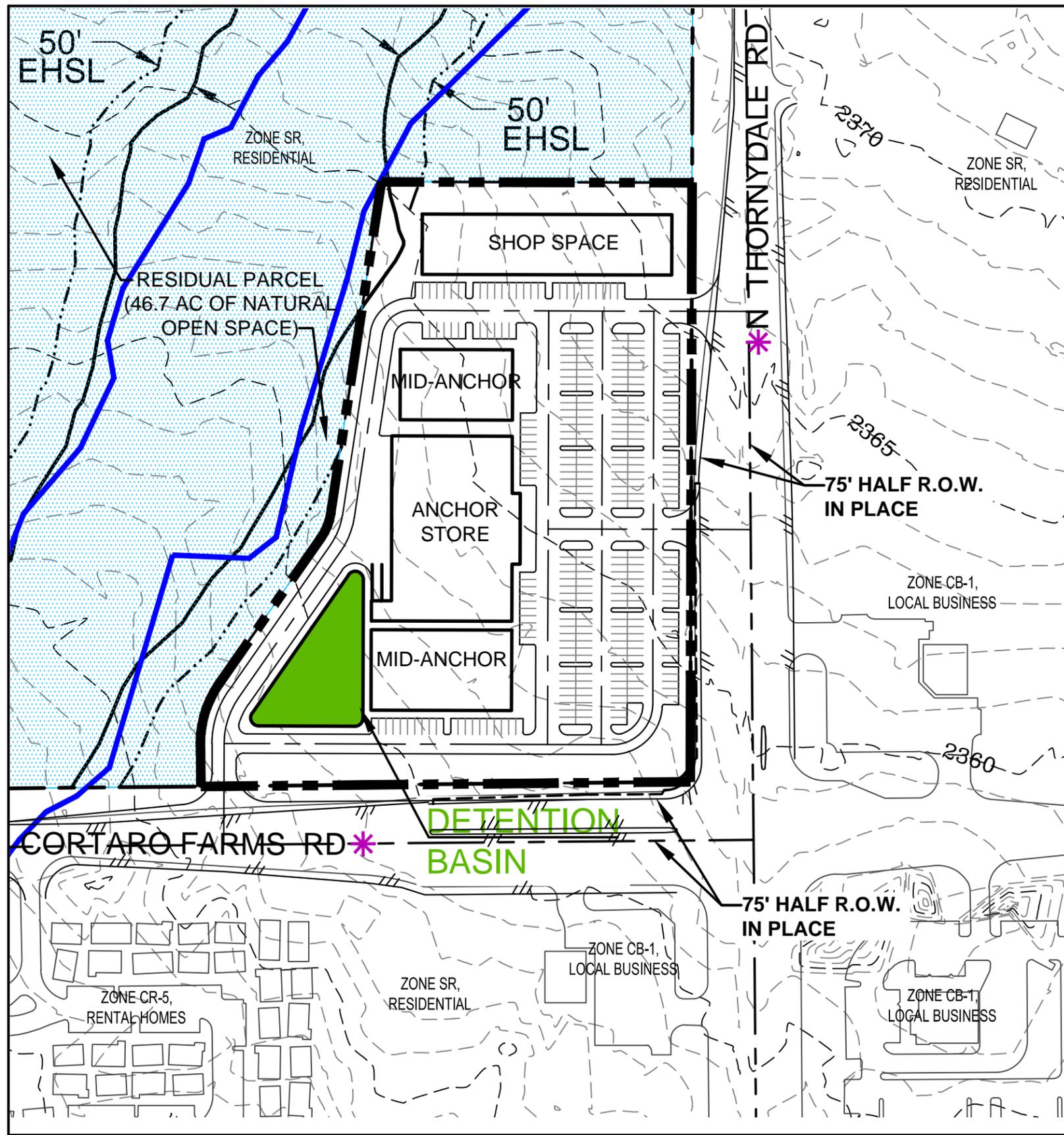
 PDP Boundary & Limit of Rezoning Parcel

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 520 850-0917



**Red Point Development, Inc.**  
 NWC CORTARO & THORNYDALE ROADS  
 (Ownership Entity: Pacific International Properties, LLP)  
 REZONING: SR to CB-1

**EXHIBIT II-A**  
 KEY MAP OF REZONING SITE &  
 RESIDUAL AREA  
 PAGE 54

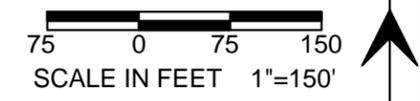


### LEGEND

- PDP Boundary & Limit of Rezoning Parcel
- Existing Condition Topographic Contour (1' Interval)
- CLS Set-Aside Area (Natural Open Space)
- Approximate 100-Year Post-Development Floodplain Limit
- Erosion Hazard Setback Limit
- Detention Basin
- Edge of Existing Street Pavement
- Mapped Riparian Habitat -- Xeroriparian "C"

NOTES:  
The entire subject property is shown on RFCO Flood Hazard maps as a sheet flow zone with an average depth of 0.5 feet.

\* Thornydale Road and Cortaro Farms Road are designated Major Streets and Scenic Routes.



<b>PROJECT AREA</b>	
Overall/Original Subject Property:	54.9 AC (Approximate)
Rezoning Parcel:	8.2 AC (Approximate)
Residual Parcel:	46.7 AC (Approximate)

<b>PROJECT PARTICULARS</b>	
Existing Zoning:	SR
Proposed Zoning of Rezoning Parcel:	CB-1
Proposed Zoning of Residual Parcel:	SR (No Change)
Comprehensive Plan Designation (Rezone Parcel):	NAC
Comprehensive Plan Designation (Residual Parcel):	MIU

**PROPOSED USE (REZONING PARCEL)**  
A Commercial Shopping Center containing a primary anchor, supporting mid-size/junior anchors and shop space. Total Retail Area is estimated at approximately 102,000 sf.  
**NOTE:** The PDP layout presented here is conceptual in nature and subject to change and refinement at the time actual anchors and tenants emerge. The intent of this rezoning and PDP is to depict a conventional anchored shopping center with accompanying and supporting retail uses and complimentary neighborhood services.

**PROPOSED USE (RESIDUAL/REMAINING PARCEL)**  
The remaining 46.7 ac of the original subject property lying outside of the rezoning parcel shall remain as Natural Open Space.

**BUILDING HEIGHT**  
Maximum 39' Permitted. Proposed commercial buildings will be at or below this prescribed CB-1 height.

**PARKING & LOADING**  
Parking will be in accordance with Sec. 18.75, Parking & Loading Standards. Final design and compliance with same will be demonstrated at the time of Site Development Package review.

**BUFFER YARDS**  
Bufferyard "D" required along north and west boundaries, and along Thornydale and Cortaro frontages.

<b>CONSERVATION LANDS SYSTEM (CLS)</b>	
On-Site Natural Open Space on Rezoning Parcel:	0.0 AC
On-Site Natural Open Space on Residual Parcel:	46.7 AC

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(Ownership Entity: Pacific International Properties, LLP)  
REZONING: SR to CB-1

**EXHIBIT II-B.1a-p**  
PRELIMINARY DEVELOPMENT  
PLAN  
PAGE 55

## **C. TOPOGRAPHY & GRADING**

Please refer to Exhibit II.C.1-5 (Topography and Grading) for an illustration of the various grading and design features of the proposed development. In addition, the following required information is also provided:

### **1. Development Features on Slopes of 15% or Greater**

There are no slopes greater than 15% located anywhere on the proposed development; no special measures are therefore necessary.

### **2. Natural Areas Used for HDZ Allowances**

There are no areas being set aside as natural open space for average cross slope, HDZ calculation, or any other purposes on the 8.19-acre rezoning site.

### **3. Mapped Areas & Associated Site Percentages**

The site is characterized by the following topography/grading facts:

#### **a. Natural Open Space**

Considering that more than 46.7 acres of the original 54.9-acre subject property will be set aside, approximately eighty percent (80%) of the original site will be natural open space.

#### **b. Revegetated Areas**

No revegetation areas are proposed for this project, other than the landscaping of the landscape buffers and parking areas associated with the planned neighborhood shopping center.

#### **c. Graded/Disturbed**

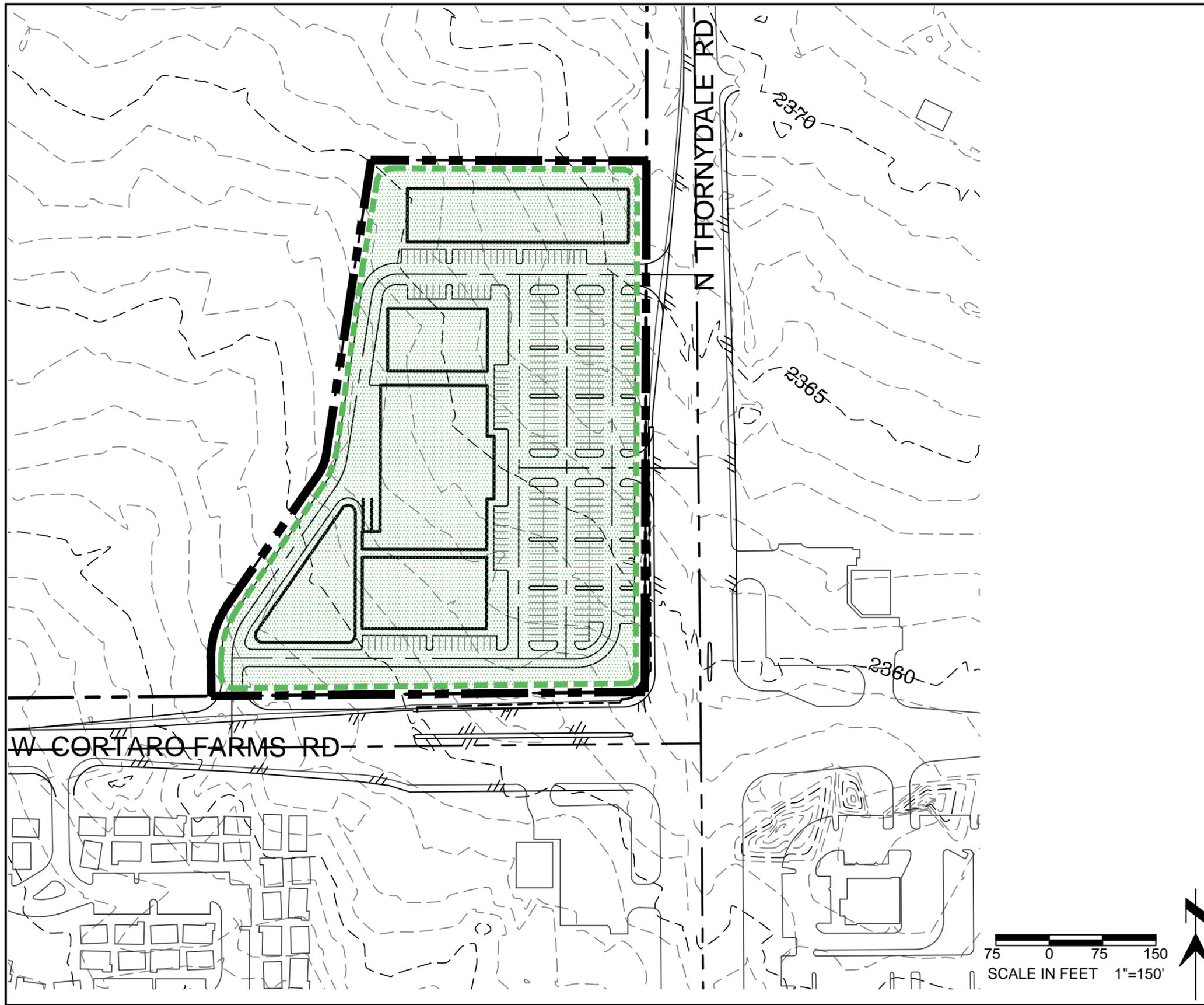
The entire 8.19-acre rezoning site will be essentially mass graded. The 46.7 acres outside of the rezoning site will remain undisturbed.

### **4. Maximum Grade Change; Areas By More than 5' of Cut or Fill**

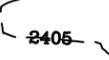
No areas of the site will be cut or filled more than 5' from existing grade.

### **5. Engineering & Design Features for Cluster Projects**

Not applicable; this is not a Cluster Project.



**LEGEND**

-  PDP Boundary & Limit of Rezoning Parcel
  -  Existing Condition Topographic Contour (1' Interval)
  -  Approximate Limit of Grading
- NOTE: Entire Rezoning Parcel will be mass graded.

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**EXHIBIT II-C.1-5**  
 TOPOGRAPHY AND GRADING  
 PAGE 57

## **D. HYDROLOGY**

Refer to Exhibit II-D (Proposed Hydrology) in conjunction with the following:

### **1. PDP Design Response to Hydrologic Constraints**

A combination of natural open space and setbacks will be used to address surface drainage in facilitating the proposed commercial development. The wash passing through the property between CP-13 (189 cfs) and CP-6 (646 cfs) will remain in its natural condition. Site development encroachment into this wash will be limited or non-existent. Bank protection will be installed at any location where building pads may encroach into the 100-year floodplain or applicable erosion setbacks. This same approach will be used for the wash draining between CP-7 (548 cfs) and CP-6. Flows will be released along the downstream boundary at the location, depth and velocity of the existing condition.

The wash passing through the property between CP-15 (171 cfs) and CP-14 (225 cfs) will remain entirely in its natural condition. No site development will occur within the floodplain an erosion setback of this wash.

Onsite detention volume will comply with critical-basin requirements and is estimated to be approximately one (1) acre-foot. At least one (1) detention basin is anticipated.

### **2. Explanation of Encroachments (Floodplains, EHS's, etc.)**

The land use plan for this property accommodates the primary wash corridors with natural, set-aside open space. Any encroachment into the existing floodplains will be extremely minor and is anticipated to be into EHS's, not the regulatory floodplain limits. Slope protection will be provided where these limited encroachments occur into the fringe areas. Mitigation measures to address the downstream impacts on wash stability will not be required.

### **3. Post-Development Discharges and Nature of Flows**

Post-Development discharges flowing onto the overall 54.9-acre property will not change as a result of this commercial development. Post-Development discharges flowing off of the developed commercial site also will not change as a result of the project. In most cases, the existing incoming flows (from off-site, upstream areas) will essentially pass through the property within natural channels, subject to the minor impacts described above.

Post-development onsite storm water runoff generated from the proposed commercial development will be conveyed to a detention basin and metered accordingly into the existing nearby natural channel. This post-development discharge of onsite storm water runoff will be reduced to comply with critical-basin requirements.

**4. Engineering & Design Features to Mitigate Drainage Impacts**

The proposed commercial development will provide on-site detention in accordance with Pima County Regional Flood Control District policies and standards. Stormwater flows will be detained as necessary to comply with Critical Basin standards. It is anticipated that one primary basin will be provided, which will send metered outflow into the existing nearby natural channel.

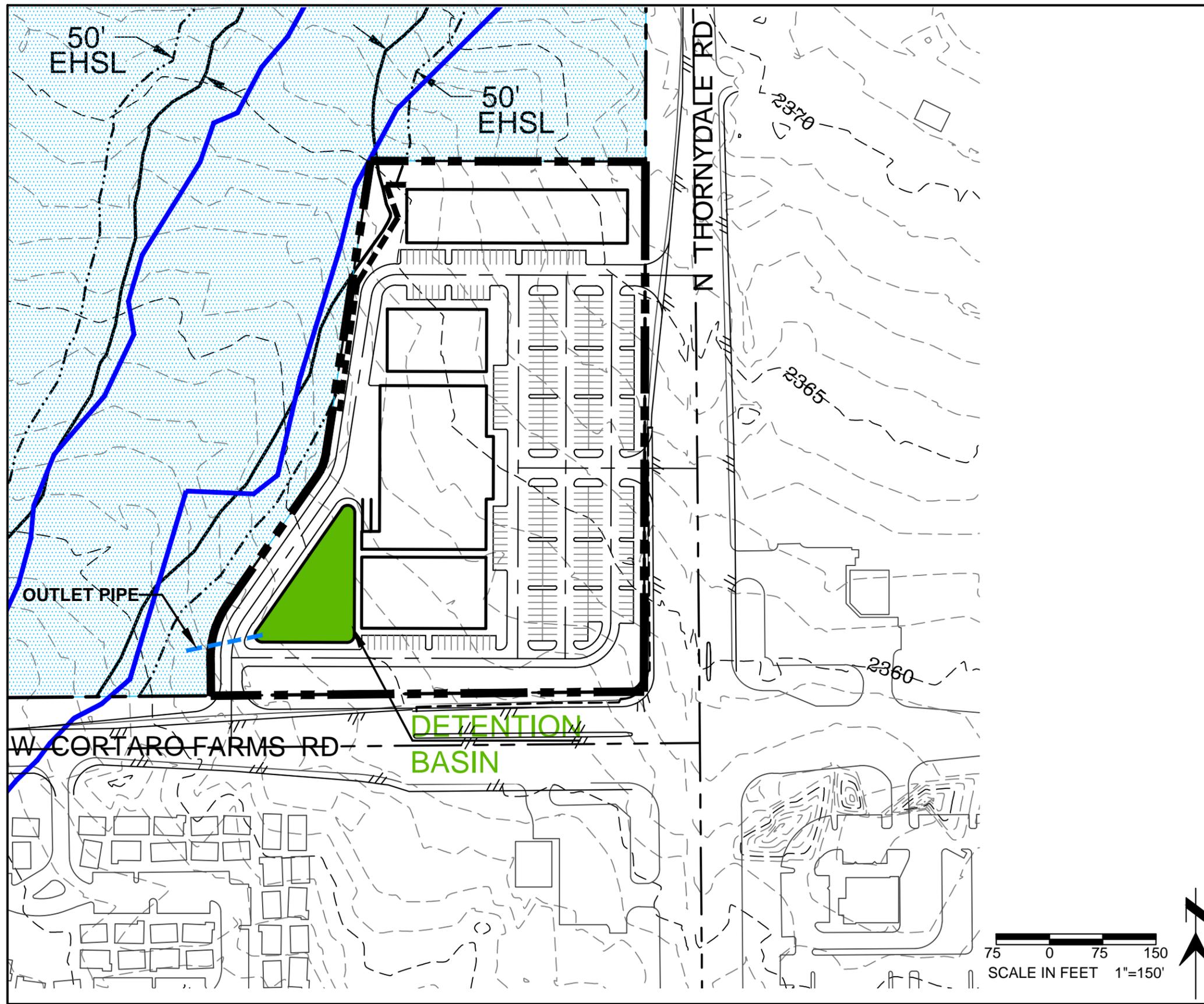
The post-development drainage plan will comply with first-flush retention requirements. This will be accomplished via the use of small water harvesting basins throughout the landscape areas, as well as within the detention basin to be located at the southwest corner of the developed area.

All building pads will be designed to be a minimum of one foot (1') above adjacent 100-year flood elevations, as determined by detailed engineering calculations to be conducted in conjunction with the final drainage report.

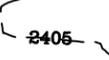
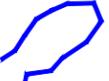
**5. Conformance with Applicable Basin Management Policies**

On-site generated stormwater will be conveyed to the on-site detention basin via surface drainage and by storm drains (if necessary), scuppers, curb openings, etc. On-site detention volume will be as required to comply with critical-basin policy. These features will be designed and detailed during the Site Development Package (SDP) process. Unless exceptions are agreed upon during the SDP process, on-site stormwater conveyance will adhere to current Pima County Regional Flood Control District development standards and applicable basin management plans.

**Exhibit to Follow**



**LEGEND**

-  PDP Boundary & Limit of Rezoning Parcel
-  Existing Condition Topographic Contour (1' Interval)
-  Erosion Hazard Setback Limit
-  Approximate 100-Year Post-Development Floodplain Limit
-  Detention Basin
-  Outlet Pipe for Detention Basin
-  Mapped Riparian Habitat -- Xeroriparian "C"
-  CLS Set-Aside Area
-  Necessary Protection/Fortification to allow reduction in EHSL

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**EXHIBIT II-D**  
 PROPOSED HYDROLOGY  
 PAGE 60

## **E. BIOLOGICAL RESOURCES**

### **1. Description & Mapping of Expected Impacts**

#### **a. Conservation Lands System (CLS) Compliance**

The entire (54.9-acre) subject property falls within the CLS *Multiple Use Management Area (MUMA)* category, including approximately 10.7 acres of underlying Xeroriparian Class “C” habitat. This overall subject property, as well as the entire 8.2-acre rezoning site within it, is subject to the *Special Species Management Area (SSMA)* thresholds of the CLS.

In setting aside the balance of the overall property, the proposed PDP preserves approximately 46.7 acres of the *MUMA/SSMA*. Per the conceptual framework plan approved with the site’s comprehensive plan amendment (Case No. Co7-13-04) and the rezoning policies adopted with same, this site will comply with the CLS through this program of commercial development and attendant on-site set-aside. See Exhibit II-E.1.a for a graphic depiction of the above. Final figures and calculations for the above will be detailed and finalized at the time of future Site Development Package filing.

#### **b. Native Plant Preservation Ordinance (NPPPO) Compliance**

The project will demonstrate compliance with the Native Plant Preservation Ordinance (NPPPO) at the time of future Site Development Package submittal to the Development Services Department (DSD). Compliance will be achieved through the use of both on-site and off-site natural open space areas. Final NPPPO inventories and mitigation calculations will be provided at that time.

#### **c. Saguaros**

Saguaro Cactus were field surveyed and mapped on the entire 54.9-acre property. The inventory numbers of this fieldwork were provided in Section I.D of this Site Analysis. Approximately two hundred fifty-three (253) saguaros are located with the 8.2-acre rezoning parcel (proposed disturbed area). Of these, one hundred eighty-five (185) are six feet (6’) tall or less, fifty seven (57) are greater than 6’ tall (>6’) up to eighteen feet (18’) tall, and eleven (11) are taller than eighteen feet (>18’). Refer to Exhibit II-E.1.b for saguaro mapping and other applicable resources described below.

#### **d. Ironwood Trees**

Ironwood trees were also field surveyed. There are a total of six hundred fourteen (614) Ironwood trees on the subject property, some of which are non-viable. Approximately ninety-two (92) of all the Ironwoods fall within

the proposed rezoning parcel (disturbed area) and five hundred twenty-two (522) fall within the proposed on-site preservation area (residual parcel). See Exhibit II-E.1.b.

e. Pima Pineapple Cactus

No (0) Pima Pineapple Cactus have been located on the property. The site is not a Priority Conservation Area (PCA) for this species.

f. Needle-Spined Pineapple Cactus

No (0) Needle Spined Pineapple Cactus have been located on the property. The site is not a Priority Conservation Area (PCA) for this species.

g. Other Areas of Significant or Particularly Important Vegetation

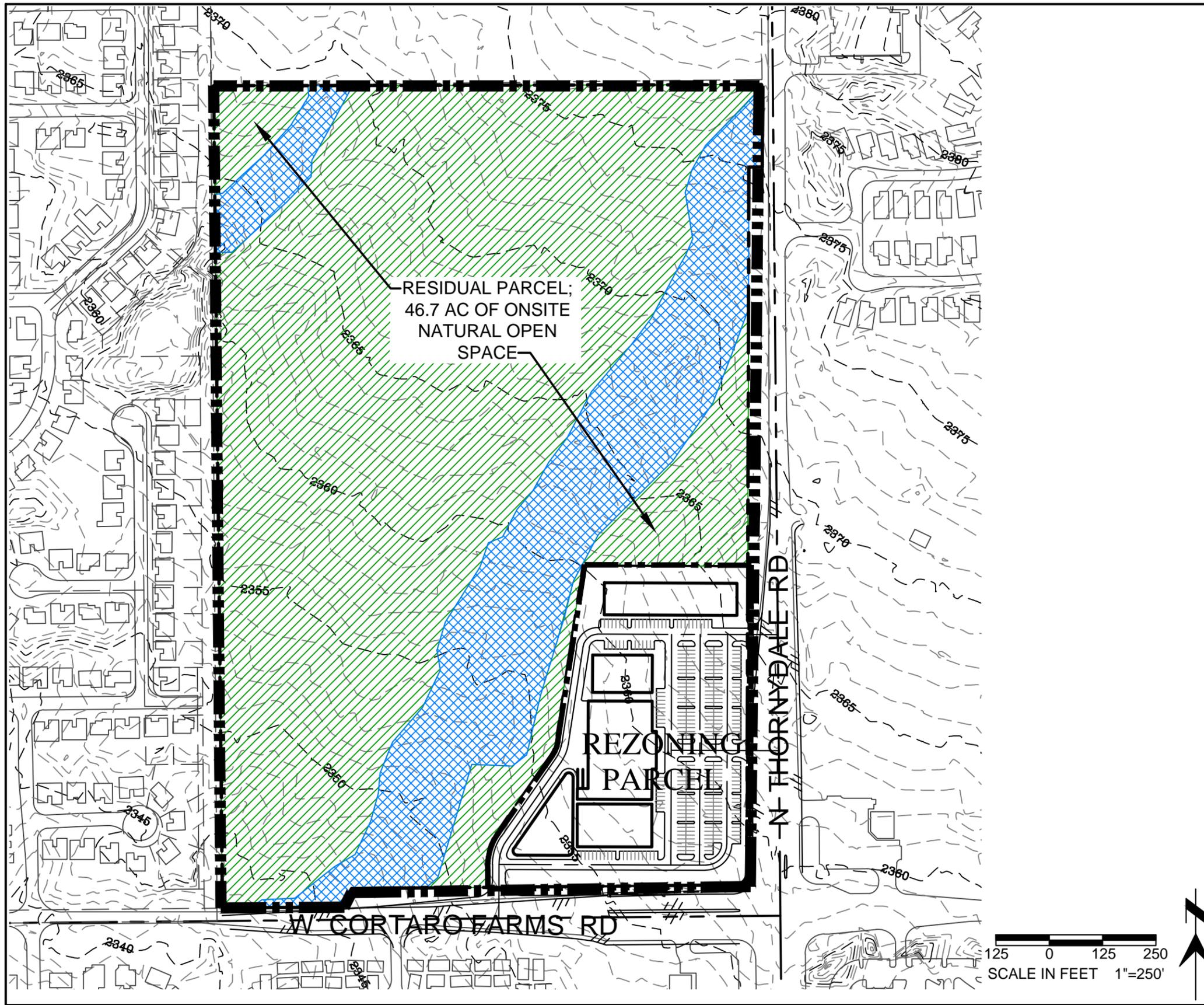
There are no other areas of significant or important vegetation on the site above and beyond the numerous specimens detailed above and the significant acreage (46.7 AC) that will be preserved as a natural area set-aside .

## 2. **Affect on CLS or Critical Landscape Linkages**

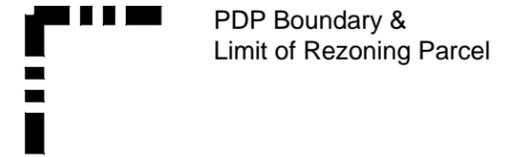
As mentioned earlier, there are no Critical Landscape Linkages in the vicinity of the rezoning site.

The project will fully comply with the applicable CLS preservation thresholds through the PDP and the set-aside of the remaining undeveloped balance of the property. Final figures and calculations for the satisfaction of these thresholds will be provided at the time of future Site Development Package filing.

### **Exhibits to Follow**



## LEGEND



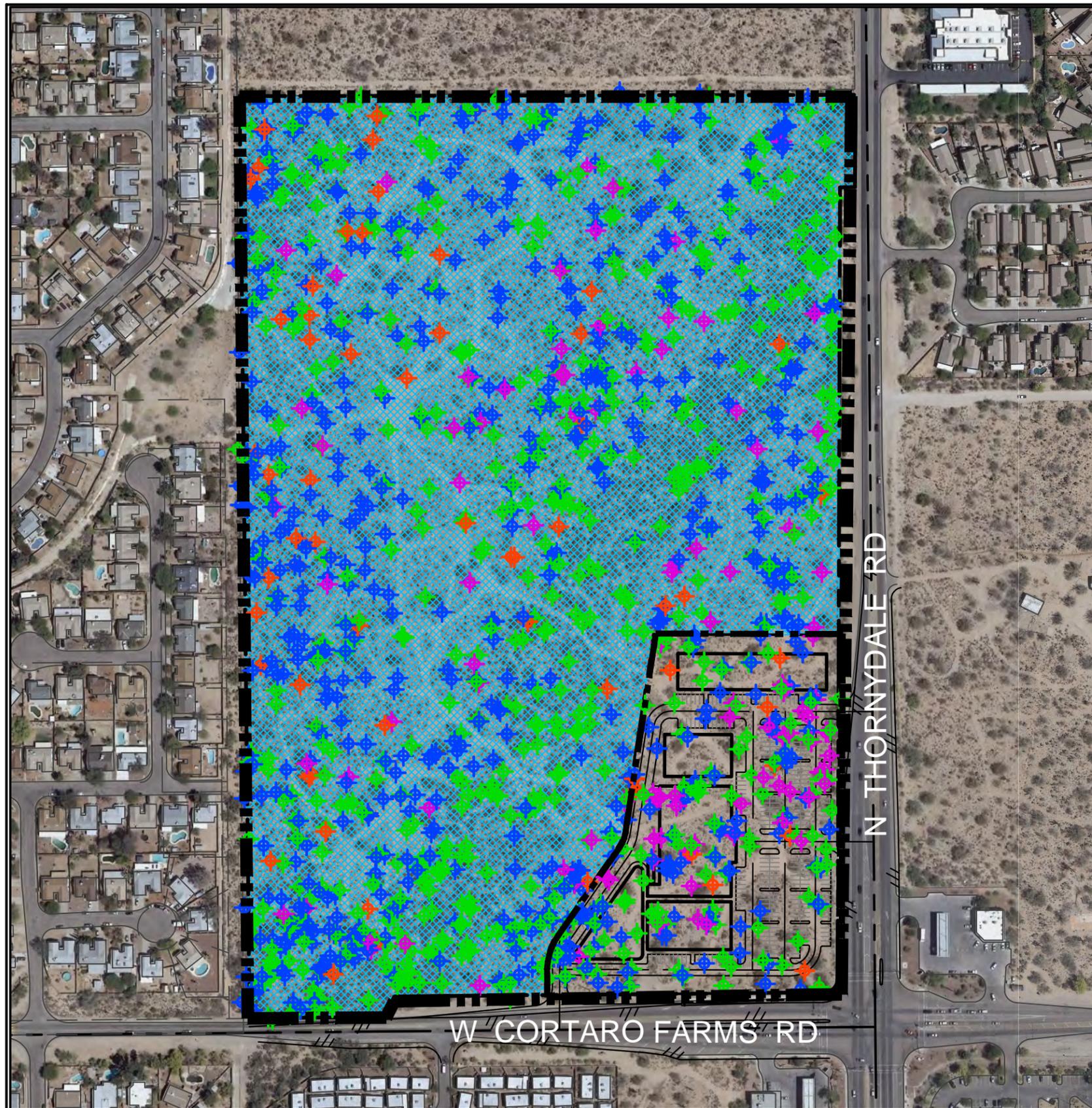
Preserved Multiple Use Management Area (MUMA) and  
Special Species Management Area (SSMA) with  
Underlying Xeroriparian "C" Riparian Area  
Approx. 10.7 AC

Preserved Multiple Use Management Area and  
Special Species Management Area  
Approx. 36.0 AC

Total On-Site Preservation on Rezoning Parcel:  
Approximately 0.0 AC

Total Preservation on Residual Parcel:  
Approximately 46.7 AC

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## LEGEND

-  PDP Boundary & Limit of Rezoning Parcel
-  On-Site Areas Being Preserved as Natural Open Space (Approx. 46.7 AC)
-  Saguaro ≤ 6' in height
-  Saguaro > 6' - 18' in height
-  Saguaro > 18' in height
-  Ironwood Tree

125 0 125 250  
SCALE IN FEET 1"=250'



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**F. LANDSCAPE & BUFFER PLAN**

**1. Bufferyards in Accordance with Chapter 18.73**

Exhibit II F.1-3 depicts the location of required landscape bufferyards in compliance with Chapter 18.73 (Landscape & Screening) of the Pima County Zoning Code. The determination of each particular bufferyard option (with the attendant width and plant-density requirements) will be made at the time of future Site Development Package filing. All bufferyard plants, densities and screening elements will be in accordance with Chapter 18.73 for the particular bufferyard type and width option ultimately selected.

Because of the substantial natural set-aside area proposed on the residual portion of the subject property, bufferyards are not required along the north or west boundaries of the original/overall 54.9-acre parcel. Bufferyards are required and provided on all sides of the anticipated 8.2-acre commercial development site.

Due to the adjacent 46.7 acres of natural area set-aside that will border the proposed rezoning parcel on its north and west boundaries, it is our intent, at the time of future Site Development Package, to seek satisfaction of the applicable Bufferyard "D" requirements (along the north and west boundary of the proposed commercial development) by utilizing forty feet (40') of the adjacent 46.7-acre natural open space set-aside.

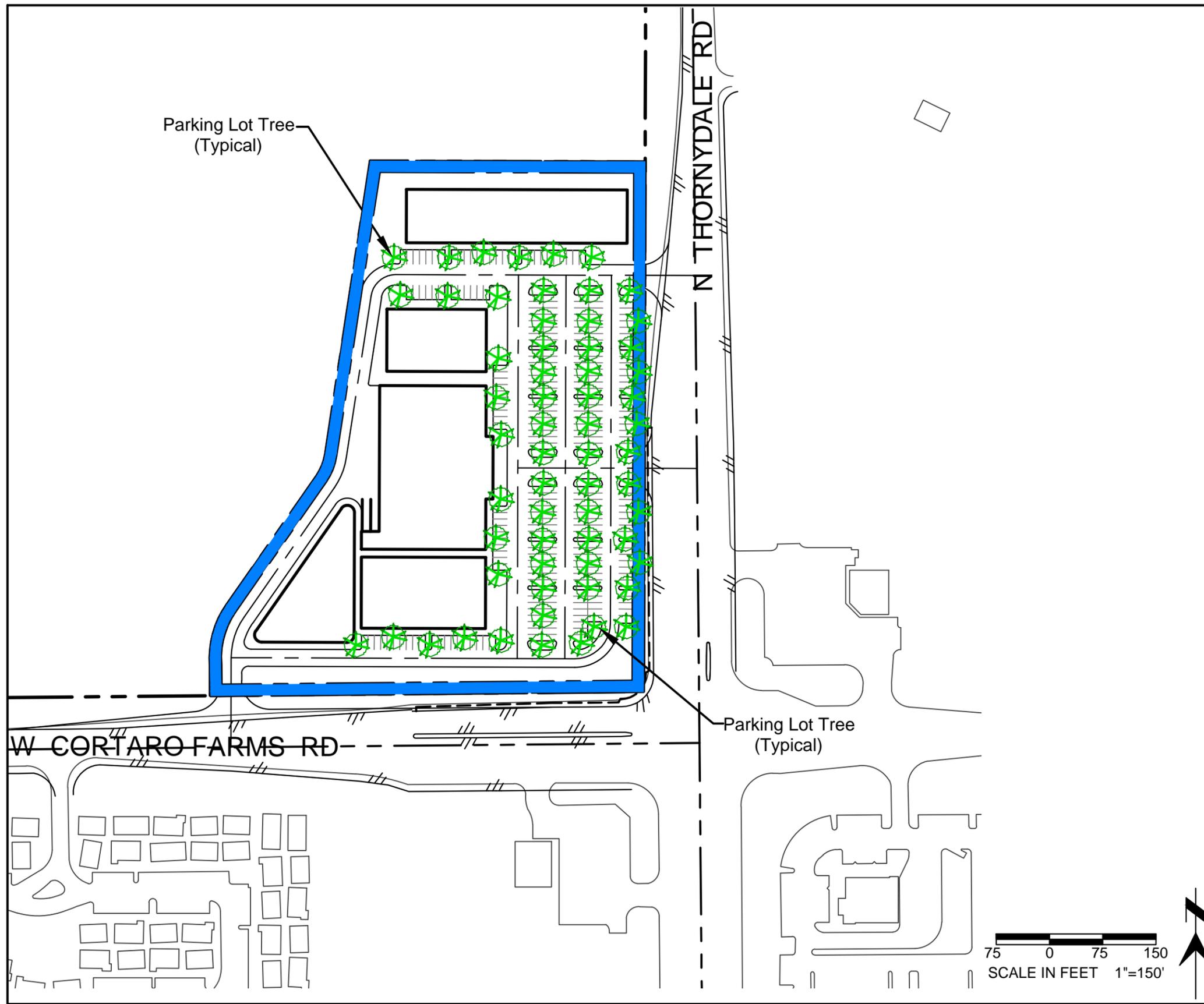
**2. Conflicts with Bufferyards Due to Easements, Rights-of-Way, etc.**

There are no conflicts with required bufferyards due to easements or rights-of-way.

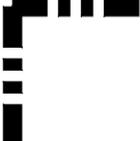
**3. Use & Viability of Transplanted/Salvaged Vegetation in Bufferyards**

Salvaged vegetation from on-site will be incorporated, as feasible, into bufferyards, within the proposed Code-required landscape buffers surrounding the planned commercial development.

**Exhibit to Follow**



**LEGEND**

-  PDP Boundary & Limit of Rezoning Parcel
-  Bufferyard 'D'
-  Parking Lot Shade Tree

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EXHIBIT II-F.1-3  
 LANDSCAPE & BUFFERYARD  
 PLAN  
 PAGE 66

## **G. VIEWSHEDS**

### **1. Off-Site Views Onto & Across Site**

In reading the following discussion of anticipated view impacts, it is helpful to refer back to Exhibit I-E.2a (from the Site Inventory Section of this Site Analysis) to see the locations of the respective view locations discussed herein.

In general, however, it is important to stress that all views across and associated with this particular parcel are essentially unimpacted due to the fact that 80% of its gross acreage will be preserved in its natural condition.

#### Views from the East

- Foreground and mid-ground views will be marginally impacted by the removal of vegetation along Thornydale Road. The new/required landscape bufferyard will help mitigate this impact.
- The northern portion of the view from the east will not be impacted due to the preservation of the natural desert in this portion of the overall site.
- Background views are largely non-existent due to existing vegetation.

#### Views from the South

- Foreground and mid-ground views will be marginally impacted by the removal of vegetation along Cortaro Farms Road. The new/required landscape bufferyard will help mitigate this impact.
- The western portion of the view from the south will not be impacted due to the preservation of the natural desert in this portion of the overall site.
- Background views are largely non-existent due to existing vegetation.

#### Views from the West and from the North

- Views from the west and from the north will not be impacted at all due to the preservation of the entire western and northern portions of the site as natural desert.

### **2. Proposed Mitigation Measures for View Impacts**

Again, it is helpful to refer back to Exhibit I-E.2a (from the Site Inventory Section of this Site Analysis) for the appropriate view locations. Also, see Exhibit II-G.1a-b (Viewshed Mitigation) provided further below.

#### **a. Affected Views as Identified in Above Section II-G.1**

##### Views from the North

- There is no impact to views due to the preservation of the entire northern portion of this parcel as natural desert area.

Views from the East

- There is no impact to the views along the northern portion of the eastern boundary due to the preservation of the entire northern portion of the parcel as natural desert. Where commercial development is proposed, a bufferyard "D", the densest of the bufferyard options, will be installed.

Views from the South

- There is no impact to the views along the western portion of the southern boundary due to the preservation of the entire western portion of the parcel as natural desert. Where commercial development is proposed, a bufferyard "D", the densest of the bufferyard options, will be installed.

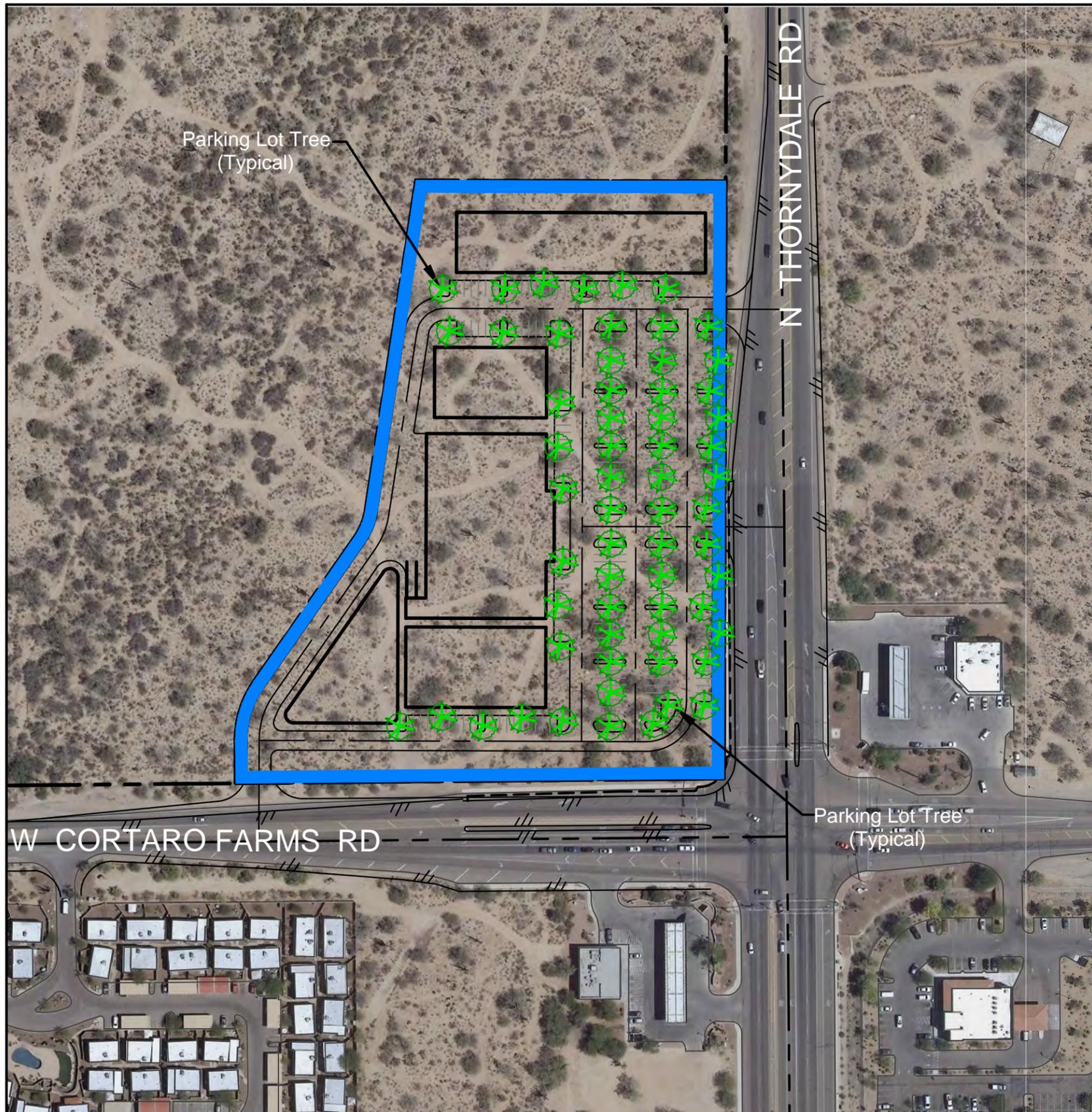
Views from the West

- There is no impact to views due to the preservation of the entire western portion of this parcel as natural desert area.

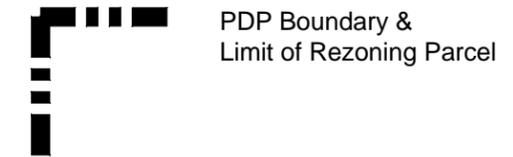
b. Cluster Development Visibility

Not applicable; this project is not being developed as a residential cluster project.

**Exhibit to Follow**



## LEGEND



PDP Boundary &  
Limit of Rezoning Parcel



Bufferyard 'D'  
Provides screening as required by code.



Parking Lot Shade Tree

### NOTE:

Due to the preservation of the 46.7 AC to the north and west of the rezoning site as Natural Open Space, it is our intent to satisfy the Bufferyard "D" option along these boundaries using 40' of the aforementioned Natural Open Space.

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## **H. TRANSPORTATION**

### **1. Configuration of Proposed Ingress/Egress and Its Rationale**

The vehicular ingress/egress points for the proposed commercial development were located in general conformance with the conceptual framework plan associated with Comprehensive Plan amendment Case No. Co7-13-04 for this site. Two (2) access points are proposed on Thornydale Road and one (1) access point is proposed on Cortaro Farms Road. Final design of these driveway locations will occur at the time of the future Site Development Package filing in coordination with PCDOT review and approval.

### **2. Associated Off-Site Roadway Improvements and Completion Schedule**

As mentioned previously, the segment of Thornydale Road north of Cortaro Farms Road is an approved Regional Transit Authority (RTA) bond project, the construction timetable for which has not yet been jointly determined by the RTA and Pima County DOT. Under this approved bond project, Thornydale Road will be fully reconstructed into a four-lane divided urban arterial, complete with curbs, sidewalks, landscaped medians, and dual bike lanes.

### **3. Change in ADT and Level of Service (LOS) for Public Streets**

The trip-generation calculations for this Site Analysis were made using the accepted Institute of Transportation Engineers (ITE), trip generation rates for a commercial shopping center is as follows:

- Shopping Center (Code 820): 42.94 Trips per Every 1,000 SF GFA

Based upon the above, and in consideration of the Preliminary Development Plan (PDP) indicating approximately 102,000 SF GFA, the anticipated total trip generation for the project at full build-out is as follows:

$$102,000 \text{ GFA} @ 42.94 \text{ trips per every } 1,000 \text{ SF} = 4,380 \text{ Trips}$$

ITE parameters also indicate that, with shopping centers, upwards of 34% of total trips associated with the use may fall into the pass-by category, i.e. motorists who are on their way to or from somewhere else and enter/exit the shopping center on their way to/from their other destination. With this circumstance in mind, the resultant range of trips generated directly by the project could be, theoretically, as low as 2,890 trips per day.

All things considered, it is most appropriate to state that the total trips generated by the proposed shopping center, at full build-out, will be in the range of 2,890 to 4,380 trips per day.

Based upon the project layout, its location at the intersection of the most important north-south and east-west transportation corridors, respectively, in the surrounding area, it is a practical and reasonable rough assumption that the total trips generated will be effectively split between Thornydale Road and Cortaro Farms Road. With this in mind, the range of 1,445 to 2,190 additional trips per day could be apportioned to Thornydale Road and Cortaro Farms Road, respectively.

With the expected increase in ADT resulting from this project at full build-out, there is the clear potential for impacts upon the intersection Level of Service (LOS) at the Cortaro Farms Road/Thornydale Road intersection. That being said, this impact is potentially mitigated and further complicated by the fact that the aforementioned Thornydale Road RTA street improvement project will bring significant capacity improvements to this same major intersection.

In consideration of all of the above, it is prudent to prepare a detailed Traffic Impact Study (TIS) at the actual time of future site development, at which time the specific anchor stores, supporting junior anchors, etc. will be known commodities in the equation and the final site layout for the project will be more definitively known.

#### **4. Mitigation of Impacts on Local Streets**

All of the project's generated trips will be directed onto the adjacent arterial streets. There will be no impacts upon nearby local streets.

#### **5. Proposed Bicycle & Pedestrian Pathways**

There are no existing sidewalks or bicycle lanes on Cortaro Farms Road or Thornydale Road along the frontage of the proposed 8.2-acre rezoning site. Sidewalks and bike lanes are included in the full arterial cross-section improvements proposed for Thornydale Road (north of Cortaro Farms Road) in the aforementioned RTA bond project.

#### **6. Proposed On-Site Rights-of-Way**

No new public street rights-of-way will be required on-site for the proposed commercial development. Site vehicular improvements will be confined to driveways, service drives, parking areas, and parking area access lanes (PAAL's).

#### **7. Conformance with Pima County Concurrency Requirements**

As is clear from all of the above, the surrounding major arterials are presently in a dynamic state, wherein four-lane, divided arterial improvements to Cortaro Farms Road were just recently completed, and wherein the segment of Thornydale Road north of Cortaro Farms Road is already earmarked as a four-lane RTA bond project commencing in 2018. Furthermore, additional four-lane improvements to Cortaro Farms Road west of Thornydale Road (extending to Camino de Oeste) are already at the 60% design stage.

With all of the above in consideration, Pima County DOT considers the proposed rezoning a secondary concurrency concern. While Thornydale Road is presently over-capacity, its impending four-lane improvements will increase its capacity to 34,000 ADT and allow it to absorb the anticipated traffic from the proposed rezoning site and commercial development.

Given these dynamics, the issue of concurrency can only be definitively addressed at the time of future/actual site development in conjunction with a detailed Traffic Impact Study (TIS), to be prepared by the developer, once the specific anchor stores, junior anchors, and retail tenants for the shopping center have been identified.

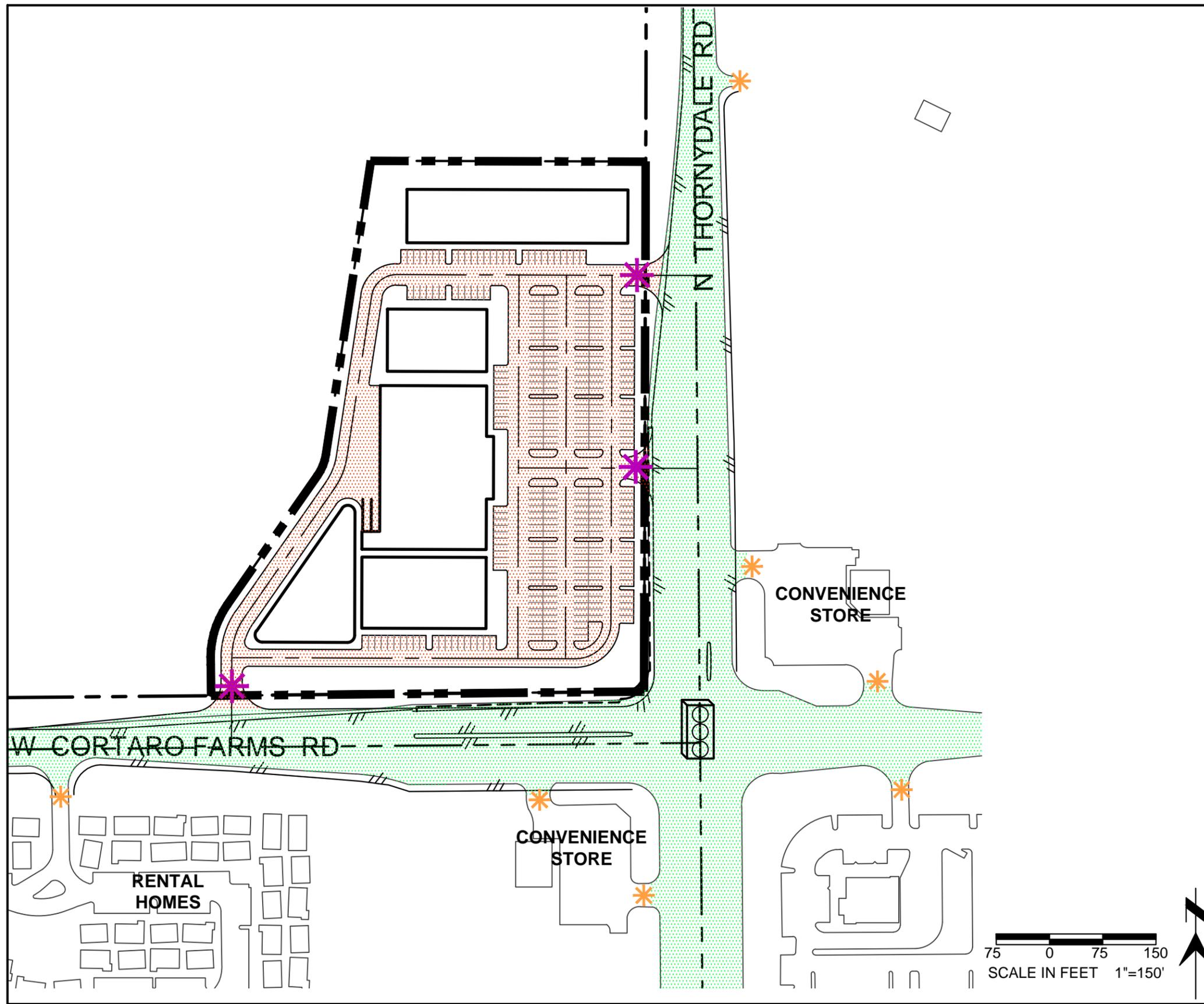
**8. Applicability & Timing of Traffic Impact Study (TIS)**

Given the overall anticipated trip generation resulting from this project, a full Traffic Impact Study (TIS) is clearly required of the developer. As stated above, it is prudent to have the developer prepare the TIS at the actual time of future site development, when the specific anchor stores, supporting junior anchors, etc. will be known commodities in the equation and when the final site layout for the project is more definitively known.

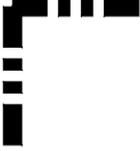
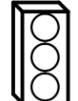
**9. Alternative Modes & Reduction in Auto Dependency**

Due to a general lack of demand, the Thornydale Road corridor is currently served only by a single Sun Tran Route (No. 412), this being a Sun *Shuttle* service and not a full-size Sun Tran bus. This Shuttle has a designated stops at Hardy Road, Cortaro Farms Road, and Magee Road. Continued urbanization, residential densification, and commercial intensification within the corridor, the latter of which is proposed with this rezoning request, will have a positive effect toward generating the kind of sustainable ridership demand that will foster and support expanded transit services.

**Exhibit to Follow**



## LEGEND

-  PDP Boundary & Limit of Rezoning Parcel
-  Public Street R.O.W. Line
-  Existing Curb or Edge of Pavement
-  Existing Public Street Paving Improvements
-  Existing Private Driveway Location
-  Existing Public Street Intersection
-  Signalized Intersection
-  New Entry Point for Proposed Shopping Center
-  24" wide (Minimum) private driveways, service drives, PAAL's and parking areas.

Jim Portner, Agent for Owner  
**PROJECTS INTERNATIONAL, INC.**  
 10836 E. ARMADA LANE  
 TUCSON, ARIZONA 85749  
 520 850-0917

**PROJECTS INTERNATIONAL, Inc.**  
 STRATEGIC GUIDANCE  
 ENTITLEMENT PROCESSES  
 LOCAL ADVICE & COUNSEL

**GRS**  
 LANDSCAPE ARCHITECTS, LLC

**Red Point Development, Inc.**  
 NWC CORTARO & THORNYDALE ROADS  
 (Ownership Entity: Pacific International Properties, LLP)  
 REZONING: SR to CB-1

EXHIBIT II-H.1,5  
 TRANSPORTATION  
 PAGE 73

**I. ON-SITE WASTEWATER TREATMENT & DISPOSAL**

**1. Soil Evaluations**

Not applicable; no on-site wastewater treatment is proposed with this project.

**2. Rationale for Non-Connection to Public System**

Not applicable; no on-site wastewater treatment is proposed with this project.

**3. Reserve Disposal Areas**

Not applicable; no on-site wastewater treatment is proposed with this project.

**J. SEWERS**

**1. Capacity Response Letter**

Capacity Response Letter No. 2015-128 (Type I), from the Pima County Regional Wastewater Reclamation Department (PCRWRD) is attached as Exhibit II-J.1

**2. Method of Sewer Service and Point of Connection to Public System**

The development will most likely connect to the existing 21" public sewer located parallel to the site's entire east boundary, on the east side of Thornydale Road. See Exhibit II-I.2

**3. Sewers Located in Non-Paved Areas**

All proposed onsite sewers will be public and all will be located beneath pavement or beneath surfaces stabilized per RWRD standards.

**4. Constraints to Providing Gravity Service**

There are no constraints to providing gravity service on this project.



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

**JACKSON JENKINS**  
DIRECTOR

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

June 22, 2015

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

**Sewerage Capacity Investigation No. 2015-128 Type I**

**RE: Cortaro Farms & Thornydale Rezoning, Parcels 22533032D, 22533032A  
Estimated Flow 8,908 gpd (ADWF).**

Greetings:

The above referenced project is tributary to the Tres Rios Water Reclamation Facility via the Cañada Del Oro Interceptor.

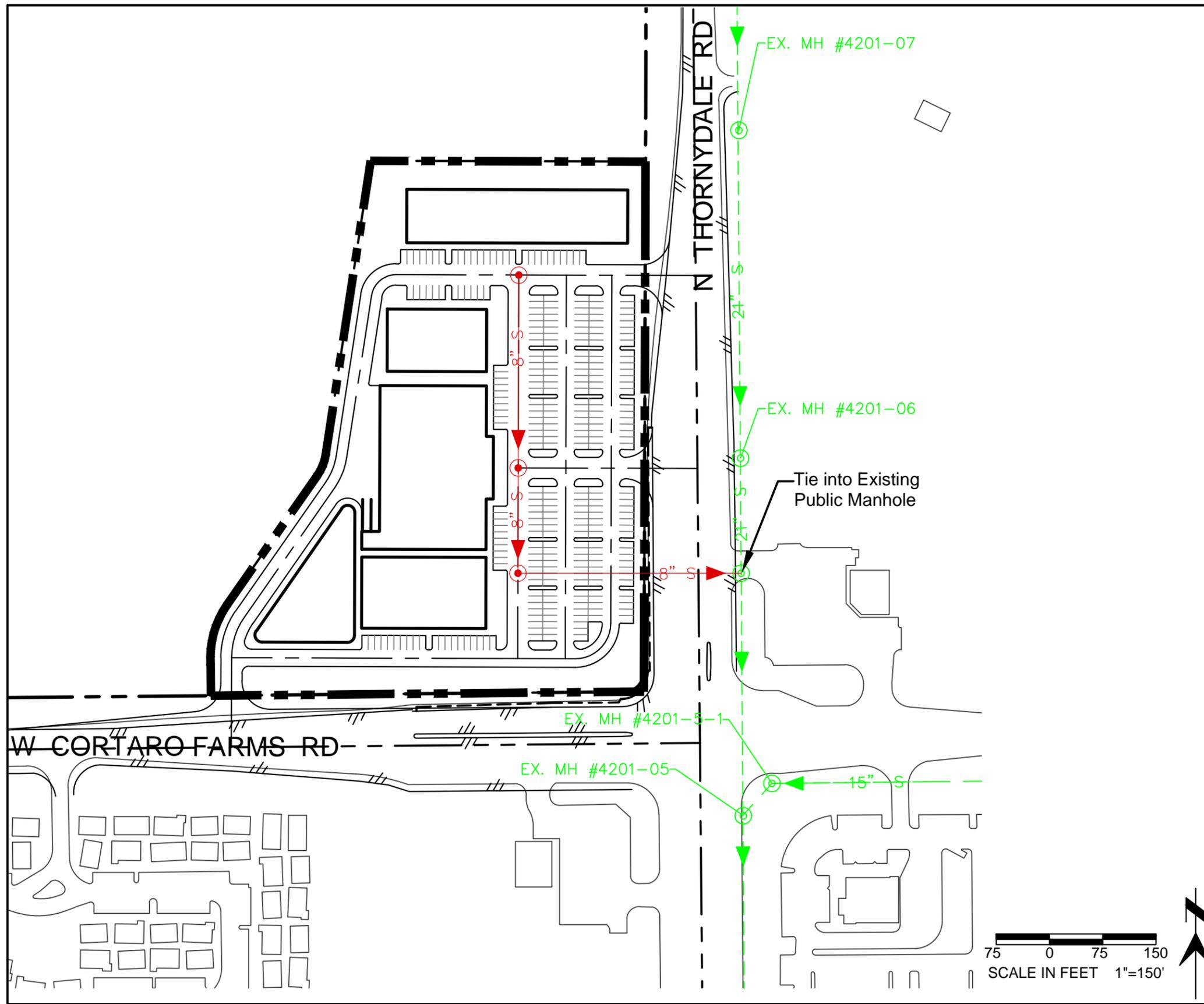
Capacity is currently available for this project in the public sewer G-87-140, downstream from manhole 4877-01.

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 Capacity Response.

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

Reviewed by: Kurt Stemm, CEA

**Exhibit II-J.1  
Type I Capacity Response Letter**



### LEGEND

-  PDP Boundary & Limit of Rezoning Parcel
-  Existing Sewer, Flow Direction, Manhole Number & Line Size
-  New 8" Sewer & Manhole (Conceptual Depiction; to be finalized at time of Subdivision Platting in Coordination with PC RWRD)

Jim Portner, Agent for Owner  
**PROJECTS INTERNATIONAL, INC.**  
 10836 E. ARMADA LANE  
 TUCSON, ARIZONA 85749  
 520 850-0917



**PROJECTS INTERNATIONAL, Inc.**  
 STRATEGIC GUIDANCE  
 ENTITLEMENT PROCESSES  
 LOCAL ADVICE & COUNSEL



**GRS**  
 LANDSCAPE ARCHITECTS, LLC

***Red Point Development, Inc.***  
 NWC CORTARO & THORNYDALE ROADS  
 (Ownership Entity: Pacific International Properties, LLP)  
 REZONING: SR to CB-1

EXHIBIT II-J.2  
 SEWERS  
 PAGE 76

## K. WATER

The following information is provided in accordance with Attachment A of the Site Analysis checklist:

1. Water Context Map

Please refer to Exhibit II-K.1a. The property lies wholly within the obligated service area of the Metropolitan Domestic Water Improvement District.

2. The Subject Property's Existing and Historic Water Use

The site is currently vacant with no structures. As such, there is no existing water use on this property and there has, historically, been none.

3. The Subject Property's Proposed Water Use

Proposed land use:

- A neighborhood shopping center; approximately 102,000 SF of gross floor area (GFA)

Potable water will be used to provide for domestic and fire flow service. The project will incorporate passive rainwater harvesting techniques. However, it is probable that potable water will be used to initially establish landscaping. The project does not propose the use of any outdoor swimming pools or water features.

4. Description of Water Supply Options & Proposed Method of Delivery

A. The rezoning site is within the established Metropolitan Water District Service Area:

(1) Metropolitan Water District has legal and physical access to a potable water supply. The subject property, as stated above, is within their current defined obligated service area and will be served by same. The District's *Annual Water Level Monitoring Report* has been provided in Appendix B and includes pertinent data on well locations and water levels in the vicinity of the project.

(2) Metropolitan Water's will-serve letter (Exhibit II-K.4a) states that this municipal provider will provide potable water service on demand from the developer.

(3) Water service for the project will be provided off of the existing water mains within Thornydale Road.

B. Not applicable; service will be provided by Metropolitan Water District, a municipal water provider.

5. Water Demand Projections

A. The proposed shopping is projected, at full build-out, to contain approximately 102,000 SF of gross floor area (GFA). This GFA will be comprised of a single anchor store, along with supporting junior anchors, retail services and shop space. Based on typical usage for the particular uses proposed, the annual base water demand for the overall project, which has a rezoning area of 8.2 acres and will be zoned CB-1, is calculated to be approximately 5.20 AC-FT.

This demand calculation is based on the ADWR, Tucson AMA Assured Water Supply Calculator Table, which is provided in Appendix B.

B. With respect to Pima County's adopted *Table B – Water Conservation Measures*, the developer is willing at this time to commit to achieving three (3.0) outdoor points and twelve (12.0) indoor points, for a total of 15.0 points. The developer is also committed to working further with Metropolitan Water, throughout the rezoning, subdivision platting, and permitting processes, in order to further define the specialized conservation measures employed.

See Appendix B for the particulars of *Table B – Water Conservation Measures* and for a copy of our *Project Demand Table*.

6. Proximity to Renewable and Potable Water Supplies

This project will be served by Metropolitan Water, which has established and fully-committed renewable and potable water supplies and facilities sufficient to meet its Service Area obligations.

7-11. Groundwater-Dependent Ecosystems, Etc.

Items 7 thru 11 are not required for the following reasons: 1) water service for this project will be provided by a municipal water provider (Metropolitan Water); 2) no new wells will be drilled on the property or within ¼ mile of it; and 3) there will be no increase in pumping of existing wells within ¼ mile to serve this development.

12. Drawdown Analysis

As this project will be served by Metropolitan Water and the estimated baseline water demand is less than 50 acre-ft/year, a detailed drawdown analysis will not be required with this Site Analysis.



July 14, 2015

Larry Kreis  
Red Point Development, Inc.  
8710 N. Thornydale Road, Suite 120  
Tucson, AZ 85742

**Re: ±35.72 Acres and ±19.23 Acres at the NWC of Thornydale and Cortaro Roads  
(PN 225-33-032A and PN 225-32-032D)  
CAP15-04**

Dear Mr. Kreis,

The above property lies within the legal boundary of the Metropolitan Domestic Water Improvement District (MDWID) obligated service area. Water service is potable and will be supplied upon demand.

Any onsite or offsite requirements deemed necessary to provide the domestic and fire flow water supply will be determined at the time of improvement plan submittal or whenever application for water service is received, and will be the financial responsibility of the owner or those developing the property. Pipe sizing and system augmentation, if necessary, will be based on calculated demand for both domestic and fire flows as needed to adequately supply this area.

If an improvement plan has not been submitted within 2 years after the date of this letter, a reevaluation and reissuance of this will-serve letter will be necessary.

Please let me know if you have any questions or concerns at 575-8100.

Sincerely,

A handwritten signature in blue ink, appearing to read "Timothy Dinkel".

Timothy Dinkel  
Development Supervisor

TD/td

c: Project File / Charlie A. Maish, District Engineer  
Signature File

**Metropolitan Domestic Water Improvement District**  
P.O. Box 36870 Tucson, Arizona 85740  
(520) 575-8100 • [www.metrowater.com](http://www.metrowater.com) • (520) 575-8454 fax

**Exhibit II-K.1a (Page 1 of 2)**  
**Metropolitan Domestic Water Improvement District Will-Serve Letter &  
District Context Map**

Section II - Land Use Proposal



**Exhibit II-K.1a (Page 2 of 2)**  
**Metropolitan Domestic Water Improvement District Will-Serve Letter & District Context Map**

**L. SCHOOLS**

**1. Access to Internal or Abutting Schools.**

No public schools are located within or adjacent to the subject property.

**2. Capacity Analysis by Marana Unified School District.**

A capacity analysis is not required for this rezoning, since it is a commercial shopping center and will therefore generate no new students.

Nonetheless, the Marana Unified School District No. 6 has been consulted with respect to all of the concurrent rezoning applications on which Red Point Development is presently proceeding. MUSD has considered the impacts and anticipated number of students that will be generated by all of these projects and has concluded that it has sufficient capacity to accommodate the anticipated growth in student population. See Exhibit II-L.1 (MUSD Capacity Letter).

**3. Communication with MUSD Regarding Mitigation of Impacts.**

As stated above, MUSD has indicated it possesses the capacity to absorb the anticipated number of students being generated by all of the simultaneous rezoning currently being processed by Red Point Development. No special mitigation measures are warranted.

**Exhibit to Follow**

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Section II - Land Use Proposal

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**GOVERNING BOARD**

Dan Post, President  
John Lewandowski, Vice President  
Tom Carlson, Member  
Suzanne Hopkins, Member  
Maribel Lopez, Member



**ADMINISTRATION**

Doug Wilson, Ed.D., Superintendent  
Carolyn Dumler, Ed.D., Assistant Superintendent  
Pamela Beine, Assistant Superintendent  
Dan Contorno, Chief Financial Officer  
Brett Kramer, Ph.D., Executive Director

June 23, 2015

Mr. Jim Portner  
PROJECTS INTERNATIONAL, INC.  
10836 E. Armada Lane  
Tucson, AZ 85749

RE: REZONING OF FOUR PROPERTIES WITHIN MARANA UNIFIED SCHOOL DISTRICT NO. 6

Dear Mr. Portner

Thank you for informing us of the four properties on which Red Point Development, Inc. is proceeding with rezoning applications to Pima County.

We recall that the same four sites were the subject of Comprehensive Plan amendment applications in 2013. At that time, we indicated that MUSD had no opposition to the four requests and that the District had sufficient capacity to accommodate the proposed development. We now understand that, as part of preparing your rezoning materials, you have further developed the concept designs for these four properties, which can now be more particularly summarized as follows:

SEC Linda Vista @ Thornydale Road (former Comp Plan Case No. Co7-13-03): Proposed use is thirty-six (36) single-family, detached residences.

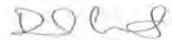
NWC Cortaro Farms Road @ Thornydale Road (former Comp Plan Case No. Co7-13-04): Proposed use is a commercial shopping center (no residences of any kind).

NWC Magee Road @ Thornydale Road (former Comp Plan Case No. Co7-13-05): Proposed uses are: 1) twenty-eight (28) single-family, detached residences; and 2) approximately thirty-six (36) multi-family units (apartments).

Hardy Road east of Thornydale Road (former Comp Plan Case No. Co7-13-06): Proposed use is eighty-four (84) single-family, detached residences.

After considering the above numbers and the anticipated students that will result from these developments, please be advised that the Marana Unified School District has the capacity to accommodate the future students at the District schools serving the area. We are pleased at the potential growth in our student population and wish you the best of luck with your projects.

Sincerely,  
MARANA UNIFIED SCHOOL DISTRICT NO. 6



Daniel J. Contorno, MBA  
Chief Financial Officer

cc: Russell Federico

*Inspiring students to learn today and lead tomorrow.*

11279 W. Grier Road • Marana, Arizona 85653 • (520) 682-3243 • www.maranausd.org

**Exhibit II-L.1**  
**Marana Unified School District No. 6 Capacity Letter**

**M. RECREATION & TRAILS**

**1. On-Site Recreation Elements**

Not applicable. This is a proposed commercial development.

**2. Ownership & Maintenance of Recreation Elements & Natural Areas**

Not applicable. This is a proposed commercial development.

**3. Proposed Public Trails In or Adjacent to the Development**

As stated in the Section I (Site Analysis Inventory), the Cortaro Farms Road Path #009 lies directly adjacent to the proposed rezoning site.

**N. CULTURAL RESOURCES: ARCHAEOLOGICAL/HISTORIC SITES**

**1. Mitigation Measures for Already Identified/Known Resources**

As indicated in Section I-I (Inventory) of this Site Analysis, a records search was conducted for the site in 2014 by SWCA Environmental Consultants. No cultural resources or sites have been documented on the property. Given the dated nature of past surveys on the property, SWCA has recommended that an updated survey, using current procedures and protocols acceptable by the Arizona State Office of Historic Preservation (SHPO) be completed prior to ultimate development. This updated survey will be done at the time of the future Site Development Package so as to eliminate any question as to the validity of the non-findings of past surveys.

**2. Measures Employed if Archaeological Survey is Recommended**

The survey standards and protocols used will be those acceptable to SHPO at the time of the survey's completion.

**3. Submittal Timing, etc. of Mitigation Plan**

Not applicable. The SWCA recommendation for a future survey does not stem from any findings or data that anticipates the presence of cultural resources on the subject property. An updated survey is recommended only to meet current survey methods and protocols.

a. Outline of Resource Assessment Program

Not applicable for the same reasons stated directly above.

- b. Effective Preservation Plan or Data Recovery  
Not applicable for the same reasons stated directly above.
- c. Schedule of Mitigation Plan Implementation  
Not applicable for the same reasons stated directly above.

## **O. ENVIRONMENTAL QUALITY**

### **1. Dust Control During Construction**

During construction, a Stormwater Pollution Prevention Plan (SWPPP), along with a Notice of Intent (NOI), will be prepared in accordance with Arizona Department of Environmental Quality (ADEQ) regulatory permit requirements. The SWPPP and NOI will discuss, among other items, the proposed dust-control and erosion-control measures that must be undertaken and suitably performed by the project's contractor as stipulations of the grading permit.

### **2. Department of Environmental Quality (DEQ) Issues**

- a. Applicable Air Quality Standards if Class I, II or III Facility  
The site will not be developed as a Class I, II or III Facility. The project is a single-family residential subdivision.
- b. Particulars under CB-2 Commercial Development  
Not applicable; this project will be developed under the CB-1 (Commercial) Zoning District. Nonetheless, please note the following:
  - 1. Maximum Quantities of Hazardous Materials  
There will be no hazardous materials generated by the project.
  - 2. Maximum Quantities of Hazardous Wastes  
There will be no hazardous waste generated by the project or regulated under Arizona Administrative Code Title 18.
  - 3. Reporting Requirements Per EPCRA  
Given the above, the Community Right-To-Know Act (EPCRA) does not apply to this project.

**P. AGREEMENTS**

**1. Specific Agreements with Neighboring Property Owners**

No specific or formal agreements are in place with the neighboring property owners at the time of this Site Analysis submittal. No separate agreements or memorialized understandings resulted from the neighborhood interactions that occurred during the previously approved Comprehensive Plan Amendment application (Co7-13-04) governing the property, other than the several conditions of approval that were attached to the Amendment to address pertinent neighbor concerns. In the event that future neighborhood interactions result in new issues or agreements, Pima County will be duly appraised as to their nature and content.

## Bibliography

Pima County Department of Transportation, Traffic Engineering Division website for current traffic counts; <http://dot.pima.gov/trafeng/trafcnt/adt.htm>.

Pima County Major Streets & Scenic Routes Plan. *Pima County Ordinance No. 1995-42, as amended. Case No. Co14-79.* Web address: <http://gis.pima.gov/maps/majscenic/mssr.pdf>

Institute of Transportation Engineers (ITE). 2008. *Trip Generation, 8<sup>th</sup> Edition: An ITE Informational Report.*

The Smart Growth Network website, *Smart Growth Principles*, <http://www.smargrowth.org/engine/index.php/principles>

## **APPENDICES**

**Appendix A:**  
**Arizona Game & Fish Department**  
**Report**

# 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:**

Red Point Cortaro

**Project Description:**

New commercial project with associated infrastructure.

**Project Type:**

Development Outside Municipalities (Rural Development), Commercial/industrial (mall) and associated infrastructure, New construction

**Contact Person:**

Linda Weaver

**Organization:**

GRS Landscape Architects, LLC

**On Behalf Of:**

None Selected

**Project ID:**

HGIS-01512

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

**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:**

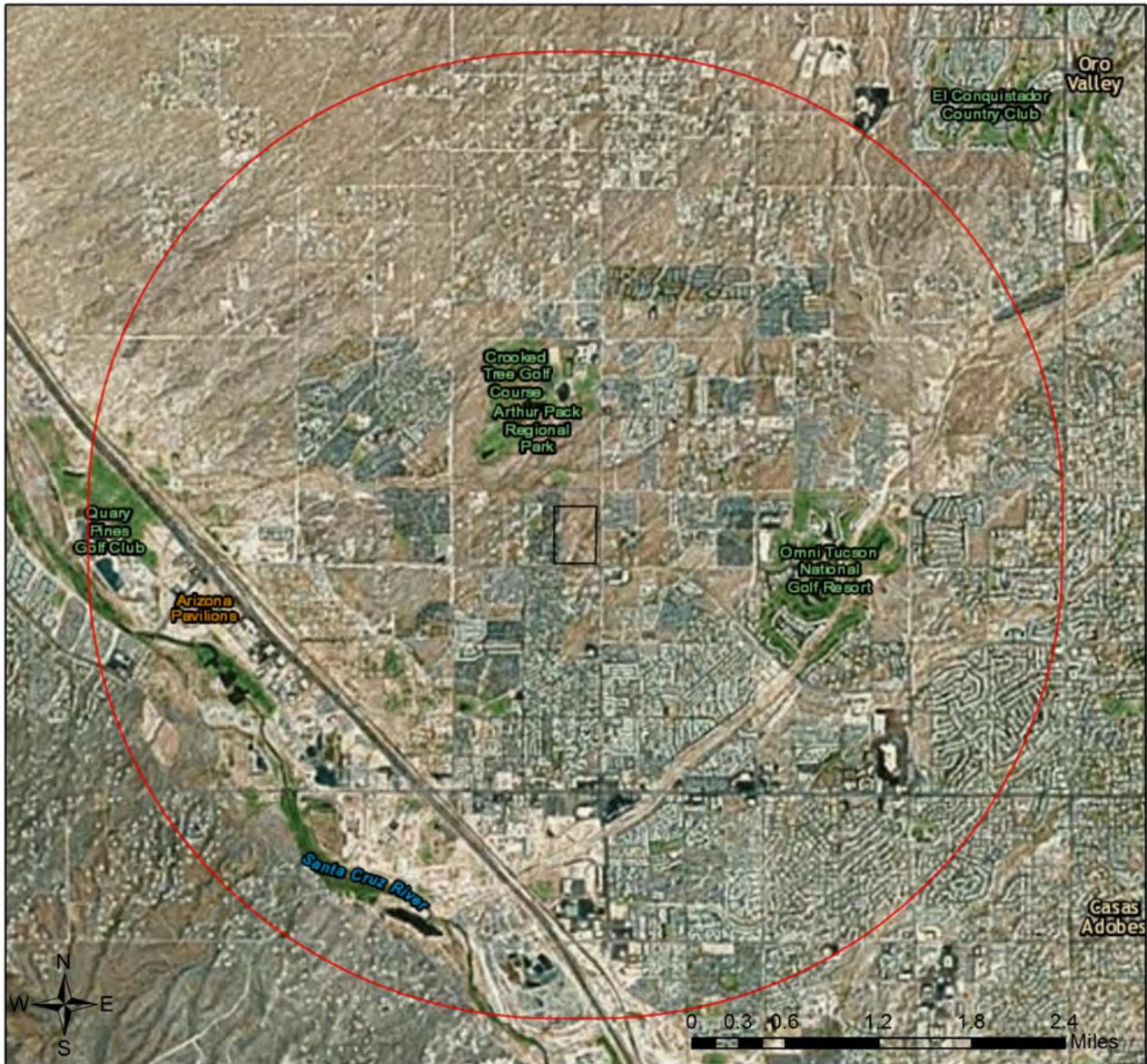
Project locations are assumed to be both precise and accurate for the purposes of environmental review. The creator/owner of the Project Review Report is solely responsible for the project location and thus the correctness of the Project Review Report content.

**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](mailto: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

# Red Point Cortaro

## Aerial Image Basemap With Locator Map



-  Project Boundary
-  Buffered Project Boundary

Project Size (acres): 65.20

Lat/Long (DD): 32.3618 / -111.0492

County(s): Pima

AGFD Region(s): Tucson

Township/Range(s): T12S, R13E

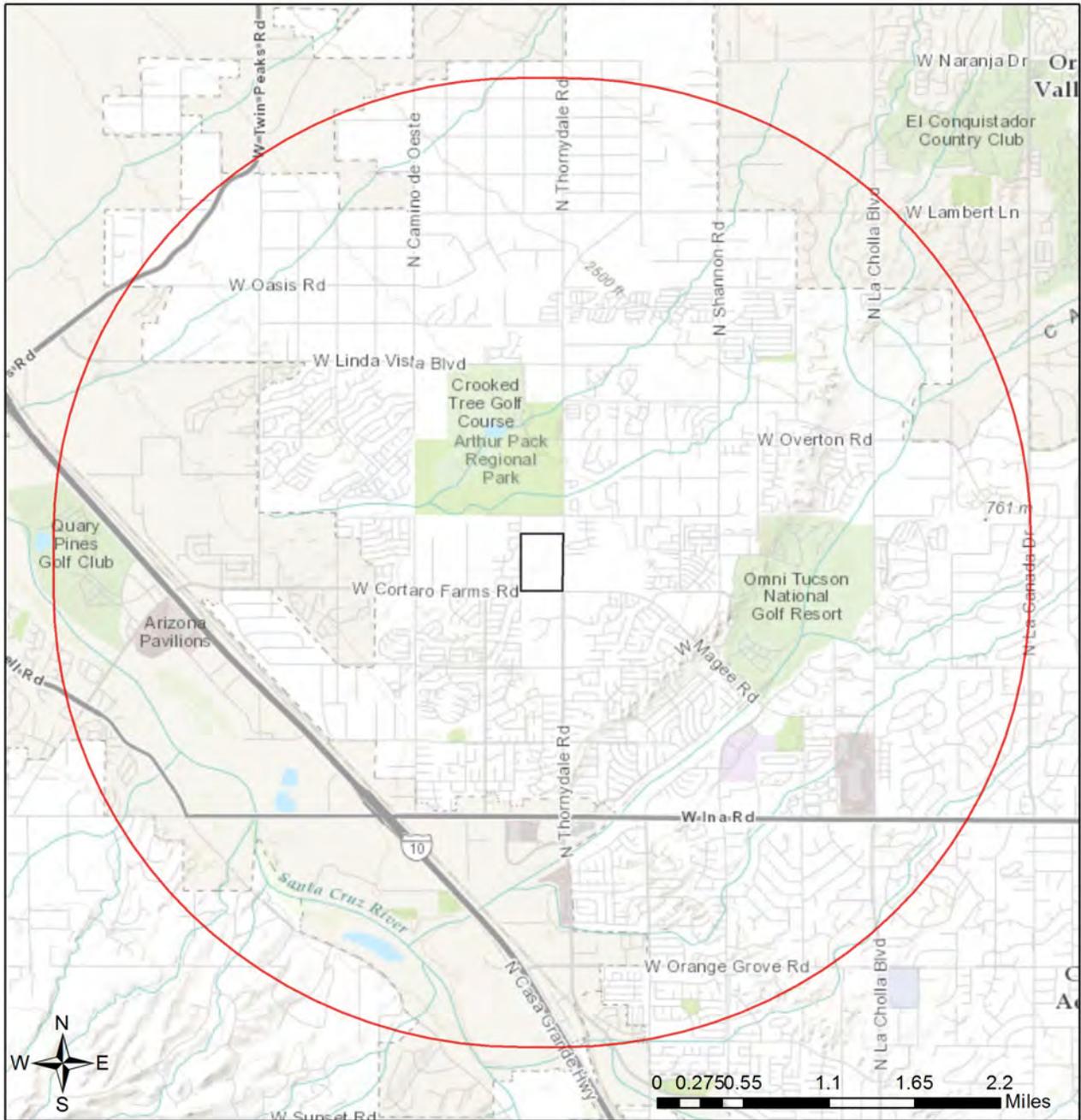
USGS Quad(s): JAYNES

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),



# Red Point Cortaro

## Web Map As Submitted By User



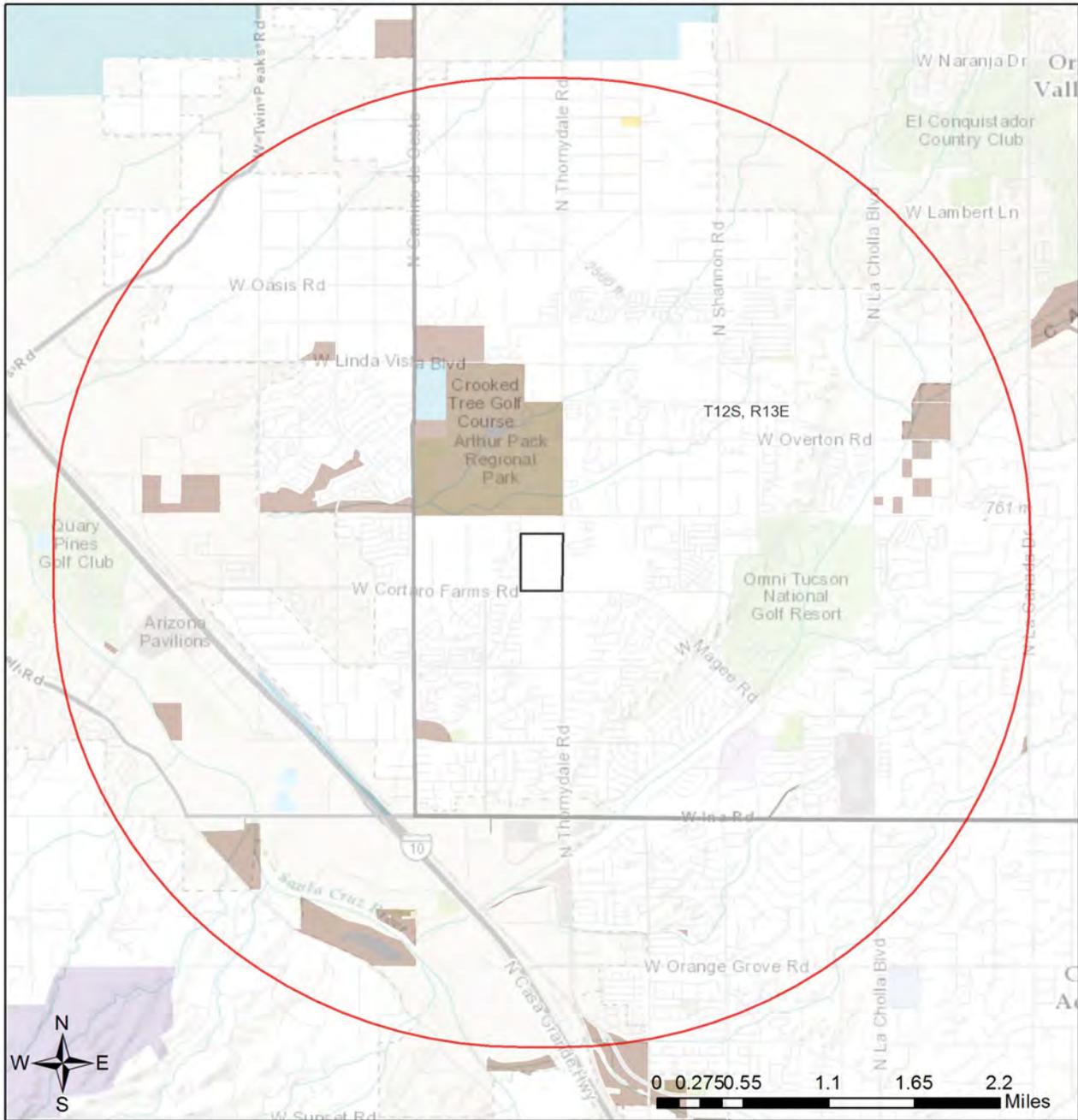
- Project Boundary
- Buffered Project Boundary

Project Size (acres): 65.20  
Lat/Long (DD): 32.3618 / -111.0492  
County(s): Pima  
AGFD Region(s): Tucson  
Township/Range(s): T12S, R13E  
USGS Quad(s): JAYNES

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), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

## Red Point Cortaro

### Topo Basemap With Township/Ranges and Land Ownership



- |  |                           |  |                          |
|--|---------------------------|--|--------------------------|
|  | Project Boundary          |  | Mixed/Other              |
|  | Buffered Project Boundary |  | National Park/Mon.       |
|  | Township/Ranges           |  | Private                  |
|  | AZ Game and Fish Dept.    |  | State and Regional Parks |
|  | BLM                       |  | State Trust              |
|  | BOR                       |  | US Forest Service        |
|  | Indian Res.               |  | Wildlife Area/Refuge     |
|  | Military                  |  |                          |

Project Size (acres): 65.20  
 Lat/Long (DD): 32.3618 / -111.0492  
 County(s): Pima  
 AGFD Region(s): Tucson  
 Township/Range(s): T12S, R13E  
 USGS Quad(s): JAYNES

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), swisstopo, MapmyIndia, © OpenStreetMap contributors, and the GIS User Community

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

Scientific Name	Common Name	FWS	USFS	BLM	NPL	SGCN
Antilocapra americana sonoriensis	10J area for Sonoran Pronghorn	LE,XN				
Bat Colony						
Canis lupus baileyi	10J area Zone 2 for Mexican gray wolf	LE,XN				
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
Tumamoca macdougallii	Tumamoc Globeberry		S	S	SR	

Note: Status code definitions can be found at [http://www.azgfd.gov/w\\_c/edits/hdms\\_status\\_definitions.shtml](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 harrisi	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 cucularia 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
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
Falco peregrinus anatum	American Peregrine Falcon	SC	S	S		1A

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

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

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

Scientific Name	Common Name	FWS	USFS	BLM	NPL	SGCN
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 Outside Municipalities (Rural Development), Commercial/industrial (mall) and associated infrastructure, New construction**

**Project Type Recommendations:**

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.

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](http://www.azgfd.gov/h_f/hunting_rules.shtml)

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 herpetofauna (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>.

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.

***The Department requests further coordination to provide project/species specific recommendations, please contact Project Evaluation Program directly. [PEP@azgfd.gov](mailto: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>

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**

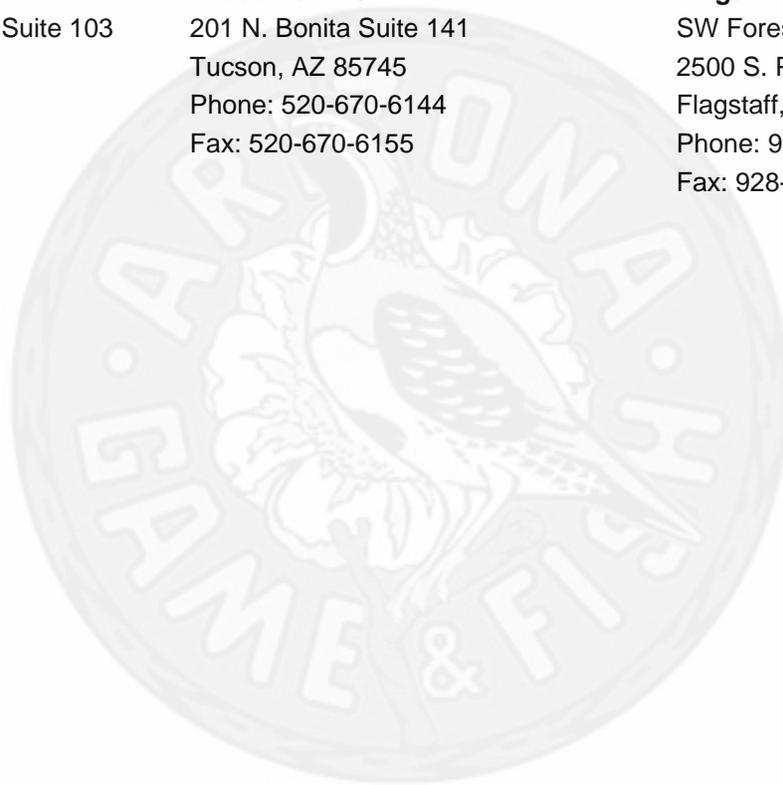
2321 W. Royal Palm Rd, Suite 103  
Phoenix, AZ 85021  
Phone: 602-242-0210  
Fax: 602-242-2513

**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



## **Appendix B:**

### **Project Demand Calculator Arizona Department of Water Resources (ADWR)**

### **Table B – Water Conservation Measures (Pima County Form)**

### **Annual Water Level Monitoring Report Metropolitan Domestic Water Improvement District**

October 4, 2015

**PROJECT DEMAND CALCULATOR**

Name of Proposed Project:

**Cortaro Farms Road Rezoning**

**INSTRUCTIONS:** This spreadsheet is designed to help you calculate the water demand for your proposed development for purposes of applying for a Certificate of Assured Water Supply, Water Adequacy Report or Analysis of Assured (or Adequate) Water Supply. Please enter information into the blue boxes as applicable. If you need help with this form, please contact the Office of Assured and Adequate Water Supply at (602) 771-8599.

**NOTE:** This sheet, when completed, does not constitute approval of the demand estimate for your proposed development. It is intended for general estimation purposes only. The final, official demand estimates will be determined by the Department upon review of your complete application.

Enter the AMA the subdivision is located in\*: **TUC** \* Enter PHX for Phoenix, TUC for Tucson, PIN for Pinal, PRE for Prescott or SCR for Santa Cruz.  
 If you are not sure if you are located inside or outside of an AMA, contact the Office of Assured and Adequate Water Supply at (602) 771-8599.

Enter the COUNTY the subdivision is located in: **PIMA** \* Enter either APACHE, COCHISE, COCONINO, GILA, GRAHAM, GREENLEE, LA PAZ, MARICOPA, MOHAVE, NAVAJO, PIMA, PINAL, SANTA CRUZ, YAVAPAI, or YUMA.

**Residential Usage\***

Category	PPHU	GPCD or per house/day	Demand/HU/YR (af/yr)	No. HU (Lots)	Residential Demand/Yr (af/yr)
Single Family (int)		57.00	0.00		0.00
Multi-Family (int)		57.00	0.00		0.00
Single Family Landscape (ext)	1.00	118.00	0.13	0.00	0.00
Multi-Family Landscape (ext)	0.00	21.00	0.00	0.00	0.00
Single family Demand/HU/YR			0.13		
Multifamily Demand/HU/YR			0.00		

	Square Feet	Acres	Demand Factor (af/yr)	No. HU (Lots)	Large Lot Adjustment Demand/Yr (af/yr)
Average Lot Size (sq. ft)**	0.00	0.00			
TMP Model Lot Size (sq. ft)	7,500 - 10,000	0.17 - 0.23			
Large Lot Adjustment	0.00	0.00			
1/2 low water use	0.00	0.00	1.50	0.00	0.00
1/2 turf	0.00	0.00	4.60	0.00	0.00

\*\*NOTE: If the subdivision contains several groupings of lot sizes, the large lot adjustment needs to be calculated for each grouping of large lot sizes.  
 If CC&Rs with landscaping restrictions for the residential lots will be adopted, a modified large lot adjustment can be calculated based on the specific landscaping restrictions.  
 Contact the Office of Assured and Adequate Water Supply for assistance in calculating the large lot adjustment for subdivisions with several groupings of large lot sizes or if CC&Rs limiting landscaping within the residential lots will be adopted.

**Total Residential Demand** **0.00**

**Non-Residential Usage\*\*\***

For each category please enter either square feet or acres of land for that type of non-residential use within your subdivision.

Category	Square Feet	Acres	Demand Factor (af/ac)	Non-Residential Demand (af/yr)
Common Area1		2.25	1.50 low water use	3.38
Common Area2		0.00	4.60 turf	0.00
Right of Way		0.00	1.50 low water use	0.00
Golf Course		0.00	AMA Turf Program - contact AMA	0.00
Commercial use	102000.00	0.00	2.25 all acres	0.00
Public Pool (length x width = square feet)		0.00	Based on closest AMA pool	0.00
Parks1		0.00	1.50 low water use	0.00
Parks2		0.00	4.60 turf	0.00
Retention/Detention Basins		0.90	1.50 low water use	1.35
Retention/Detention Basins		0.00	4.60 turf	0.00
School Landscape1		0.00	1.50 low water use	0.00
School Landscape2		0.00	4.60 turf	0.00
Elementary school interior use	Number of students		25 GPCD interior demand	0.00
Middle/High School interior use			43 GPCD interior demand	0.00

\*\*\*NOTE: If your application is for a change of ownership from a previously issued Certificate of Assured Water Supply, and is for only a portion of the original Certificate, contact the Office of Assured and Adequate Water Supply to pro-rate non-residential area acreage.

**Total Non-Residential Demand** **4.73**

**Distribution Losses**

	Residential	Non-Residential	Total	Loss Factor %	Distribution Losses (af/yr)
Demand af/yr	0.00	4.73	4.73	10.00	0.47

**Construction**

	No. of Lots	Demand (gals/lot)	100 yr demand (af)	Construction Demand (af/yr)
	0.00	10000.00	0.42	0.00

**Total Demand Per Year**

Residential Usage af/yr	Non-Residential Usage	Lost & Unaccounted for	Construction	Total Non-Res	Total Demand Per Year (af/yr)
0.00	4.73	0.47	0.00	5.20	5.20

Residential Usage GPCD

#DIV/0!

Total Demand GPCD

#DIV/0!

Annual Build Out Demand

5.20

**Table B - Water Conservation Measures**  
**Indoor and Outdoor Options**  
**(15-point Minimum; Must include at least one Outdoor Conservation Measure)**

Indoor Options	Possible Points	Points Achieved
* I-1 Install grey water plumbing lines, labeled and stubbed out to exterior of residence	1	1
I-2 Install a "central-core" plumbing system with all water-using fixture fittings ≤5 ft. from HW heater	1	
I-3 Install a manifold "home run" structured plumbing system; with fixtures ≤ 10 ft. of circulation loop & branch lines ≤ 1/2" in diameter	2	
* I-4 Install a manual or motion activated on-demand hot water circulation pumping system	2	1/2
I-5 Install a point-of-use tankless hot water heater that uses only cold water supply or solar-assisted preheating for any fixture > 20 pipe run feet from water heater	3	
* I-6 Install lavatory faucets that meet the proposed EPA's WaterSense™ criteria or have a maximum flow rate of 1.5 gpm @ 80 psi of pressure	3	3
* I-7 Install showerheads that meet the proposed EPA's WaterSense™ criteria or have a maximum flow rate of 1.5 gpm @ 80 psi of pressure	3	3
I-8 Install toilets that meet the EPA's WaterSense™ rating (1.28 gpf) OR	3	3
* I-9 Install dual flush toilets with 1.6 gpf/1.8 gpf or less water use	3	
I-10 Install a washing machine with a water factor of 6.0 or less	2	
I-11 Install composting toilet(s), 2 pts/fixture; no maximum	2	
I-12 Install a refrigerator with an in-door filtered water system	0.5	
I-13 Install excess flow check valves or excess water shutoff connectors at fixtures	3	
I-14 No garbage disposal	1	
<b>Outdoor Options</b>		
O-1 Install a rainwater harvesting system capable of retaining and storing 50% or more of the average annual available rainfall on the catchment surface. (min. Catchment Area = 500 ft.)	6	
O-2 Install a rainwater harvesting system capable of retaining and storing 25% or more of the average annual available rainfall on the catchment surface. (min. Catchment Area = 500 ft.)	4	
O-3 Install a rainwater harvesting system capable of retaining and storing 10% or more of the average annual available rainfall on the catchment surface. (min. Catchment Area = 500 ft.)	2	
O-4 Install a gutter and downspout system or canals that tie to storm water infiltration trenches, bioswales, or rain gardens	2	
O-5 Install grey water plumbing lines, labeled and stubbed out to exterior of residence, but with connection to an onsite landscaping drip irrigation system	2	
O-6 No swimming pool	2	
* O-7 No decorative water features or mister systems that use potable water.	1	1
O-8 Impervious driveway & walkway surfaces shall be <5% of total site area (≤ 5 acres); OR 1% of the site area (over 5 acres)	2	
O-9 Construct no impervious surfaces outside the building footprint	2	
O-10 Install a vegetative roof system (min 50% of roof area) to reduce impervious surfaces	3	
O-11 Install drought-tolerant, non-irrigated landscaping design by a licensed landscape professional	3	
O-12 Install drought-tolerant, non-irrigated landscaping design by a licensed landscape professional. Plant species limited to native plants only.	4	
* O-13 Irrigation system designed and installed by an EPA WaterSense™ certified professional	1	1
O-14 Provide recharge/retention plan for rainwater	1	
* O-15 Install a high efficiency irrigation system that uses:		
a. "Smart Controllers" (w/ moisture sensor and rain delay controllers) & high efficiency nozzles;	0.5	
b. Check valves in heads and heads matched to the beds distinct watering needs;	0.5	
c. Separate sprinkler zones for beds, with plants grouped based on watering needs (hydrozoning);	0.5	
* d. A timer/controller that irrigates during the hours of 1- pm-8am to minimize evaporation;	0.5	0.5
* e. Drip irrigation for all planting beds;	0.5	0.5

**TOTAL POINTS: 15.0**

**Metropolitan Domestic Water Improvement District  
Board of Directors Meeting**

**March 9, 2015**

**Annual Water Level Monitoring Report**

**Synopsis**

The Board of Directors is requested to review with staff the water level information obtained from the recently completed annual water level monitoring effort. This report gives an important review of the aquifers and wells that provide water to District customers.

**Background**

The District began the annual groundwater level monitoring program in 1993. The initial purpose was to track the annual declines in the Metro Main service area at its 36 wells to help with the design of pump replacements. The monitoring program now includes 57 wells, both active and inactive, within five of the District's service areas to meet operational and regulatory requirements.

After Metro Main received its 100-Year Designation of Assured Water Supply (DAWS) from the Arizona Department of Water Resources (ADWR) in 1996, ADWR required Metro to measure and report annual groundwater levels from within the service area. Metro also uses the water level change information to determine if its CAP recovery wells in Metro Main are in compliance with ADWR's decline limit of 4 feet per year averaged over a five year period for each of our four wellfield areas. Annual water level measurements at Metro Hub wells were added to the monitoring program in 1999 when Metro Hub was purchased. Metro West was added in 2006 when it received its DAWS. Water levels for Metro Southwest Diablo Village were added in 2011, and Metro Southwest E&T were added in 2012. Water levels for Metro Southwest-Lazy B are not taken due to the small size of the well that does not allow access for water measurements.

Water Sustainability staff manually measures each of the 57 wells that are part of the annual monitoring program. To improve efficiencies and gather additional data throughout the year, water level monitoring systems (water level transducer and continuous data logger) have been installed at eight locations in Metro Main and one in Metro Hub. Figure 1 depicts the locations of the eight automated monitoring locations in Metro Main, and Figure 2 shows the same for Metro Hub.

## **Groundwater Levels**

### *Metro Main*

Depth to water in the south half of Metro Main in the Western CDO Wash and Rillito Creek Wellfields ranged from 163 feet to 332 feet below land surface (Table 1). Groundwater level changes varied at the wells from a 9 foot rise to a decline of 6.6 feet since last year. The variation in water level change is a function of the amount of pumpage at Metro Main wells and the amount of recharge over the past year. The average well field change was a 1.0 foot decline. The water level hydrographs for the La Colina and Las Palmas East Wells show water levels continue to decline (Figure 3).

Depth to water in the north half of the service area in the Catalina Foothills and Eastern CDO Wash Wellfields varied from 274 feet to 448 feet (Table 1). The northern portion also experienced a wide range of water level changes from a rise of 2.4 feet to a decline of 10.5 feet. The average change was a decrease of 2.8 feet. Water levels at Tucson National North Well have remained fairly stable, but show the influence of nearby Metro wells when they are operating (Figure 4). However, water levels to the north at Stiller Well continue to have a steady decline as shown in Figure 5.

The 5-year change table shows that Metro's four wellfield areas met ADWR's less than 4 foot decline criteria for recovery well use (Table 2).

For the entire service area, groundwater levels over the last ten years have declined on the average 2.0 feet per year (Table 3). Well productivity has continued to decline as the water table drops. This information highlights the importance of the District pursuing its CAP Water Recharge, Recovery & Delivery System by utilizing a renewable supply and reducing groundwater pumping and the associated costs with a depleting groundwater supply.

### *Metro Hub*

Depth to water at the five active and three inactive Hub wells ranged from 49 feet to 94 feet below land surface (Table 4). The average groundwater level change at the six Hub wells was an increase of 0.7 feet within the service area since last year. Groundwater level changes ranged from a decline of 4.9 feet to a rise of 8.3 feet.

Table 5 shows that Metro Hub had an average rise of 0.9 foot per year over five years. For the entire service area, groundwater levels over the last ten years have risen on the average 0.4 feet per year (Table 6). The aquifer appears sensitive to natural recharge and pumpage as demonstrated by annual rises and declines.

### *Metro West*

Depth to water at the two Metro West wells varied from 208 feet to 214 feet below land surface. The groundwater level changes at the two wells varied from an increase of 0.6 feet to an increase

of 1.3 feet since last year. The average was a one foot rise. Metro West had an average decline of 0.2 foot per year over five years. A ten year change calculation is not possible for comparison because annual measurements only began in 2006. Water Sustainability staff schedules the annual measurement at these two wells with the required monthly water level monitoring at the Avra Valley Recharge Project, since the two facilities are in proximity.

#### *Metro Southwest*

Depth to water at the two Diablo wells varied from 463 feet to 504 feet below land surface. The average water level change from the last year was a rise of 6.3 feet. These increases are assumed to reflect the rising water levels from the nearby City of Tucson's Southern Avra Valley Recharge and Recovery Project. A transducer and an automated recorder are waiting to be installed in this service area because of its remoteness.

Depth to groundwater beneath the E&T service area is comparable to that in the Hub service area. Water levels varied from 68 to 75 feet below land surface. The average water level change from the last year was a rise of 1.8 feet.

#### *Avra Valley Recharge Project*

Depth to water is measured monthly at the Avra Valley Recharge Project monitor well (AVMW-01) (Figure 6). The winter measurement was 190 feet below land surface. The change from last year was an increase of 0.8 feet. Water levels at this site constantly fluctuate and are influenced by monthly recharge volumes at the site, the adjacent Lower Santa Cruz Recharge Project owned by the Central Arizona Water Conservation District, and nearby irrigation well pumpage. Since the operation of the Avra Valley Recharge Project began in 1997, groundwater levels have increased 5 feet per year.

#### **Future Monitoring Efforts**

Since groundwater is currently the only source of drinking water that the District serves its customers, it is imperative that we continue to monitor the state of the aquifer. Staff will continue to manually measure groundwater levels annually at each well. Additional measurements are collected via transducers that log continual water-level measurements at select wells throughout the year, which provides further information about the aquifer. Transducers measure pressure of water within a well and the data loggers convert pressure to groundwater levels in feet below land surface. The data loggers continually record the water level measurements so that Water Sustainability staff only needs to visit those well sites three times a year to download the data and monitor the charge of the data logger battery rather than doing monthly manual measurements.

The Water Sustainability staff would like to expand the use of transducers. A transducer is awaiting installation at Metro Southwest Diablo Village. Likewise, in the Hub service area, the transducer from the HEX-2 test well will be redeployed to inactive Hub Well No. 1 this fiscal year now that Hub Well No. 1A is active. Staff is proposing a transducer installation in Metro

E&T for next fiscal year. To save money, several existing transducers are being repurposed. The new active wells of Old Magee Trail, Riverside Crossing, and Hub No. 1A have been outfitted with pressure transducers to display continuously both static and pumping water levels.

The inactive Rasmussen well is situated in Metro Main's Western CDO Wash Wellfield. The Rasmussen well is in a strategic location to monitor groundwater levels in this very productive wellfield. Unfortunately, a stuck and collapsed section of column pipe within the well prevents water level measurements. Water Sustainability staff will propose for the next fiscal year to have a driller open the blockage in the Rasmussen well to resume water level measurements and install a pressure transducer and data logger. In a subsequent fiscal year, the self-powered transducer that was in the once-inactive Riverside Crossing Well will be redeployed at the inactive Estes Well to monitor the Rillito Creek Wellfield.

### **Summary**

The Board of Directors is requested to discuss with staff this water level monitoring update. Long-term water level trends continue to show the importance of the District working with the other Northwest Water Providers and Tucson Water to treat and directly deliver its CAP allocation. No motion is required for this agenda item.

Respectfully submitted,

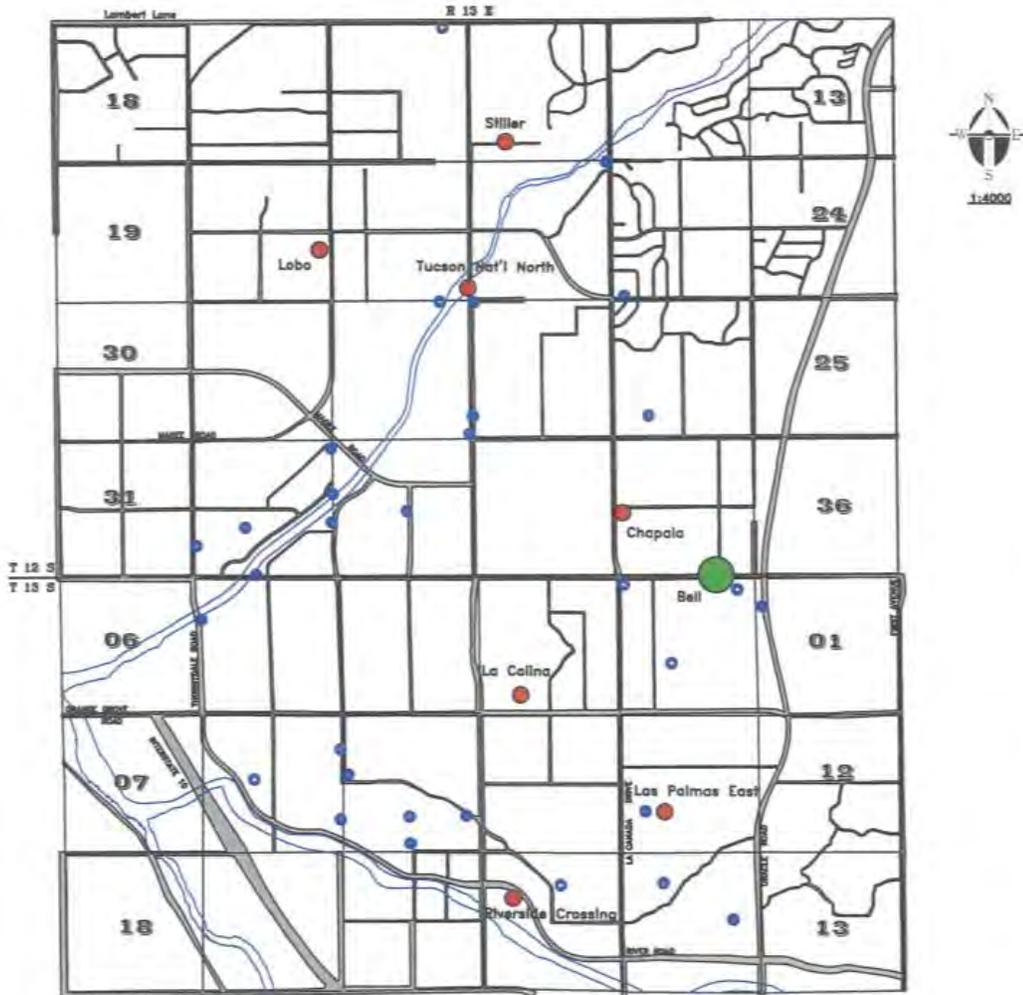
Warren Tenney  
Assistant General Manager

I concur with staff's recommendation.

Respectfully submitted,

Joseph Olsen, P.E.  
General Manager

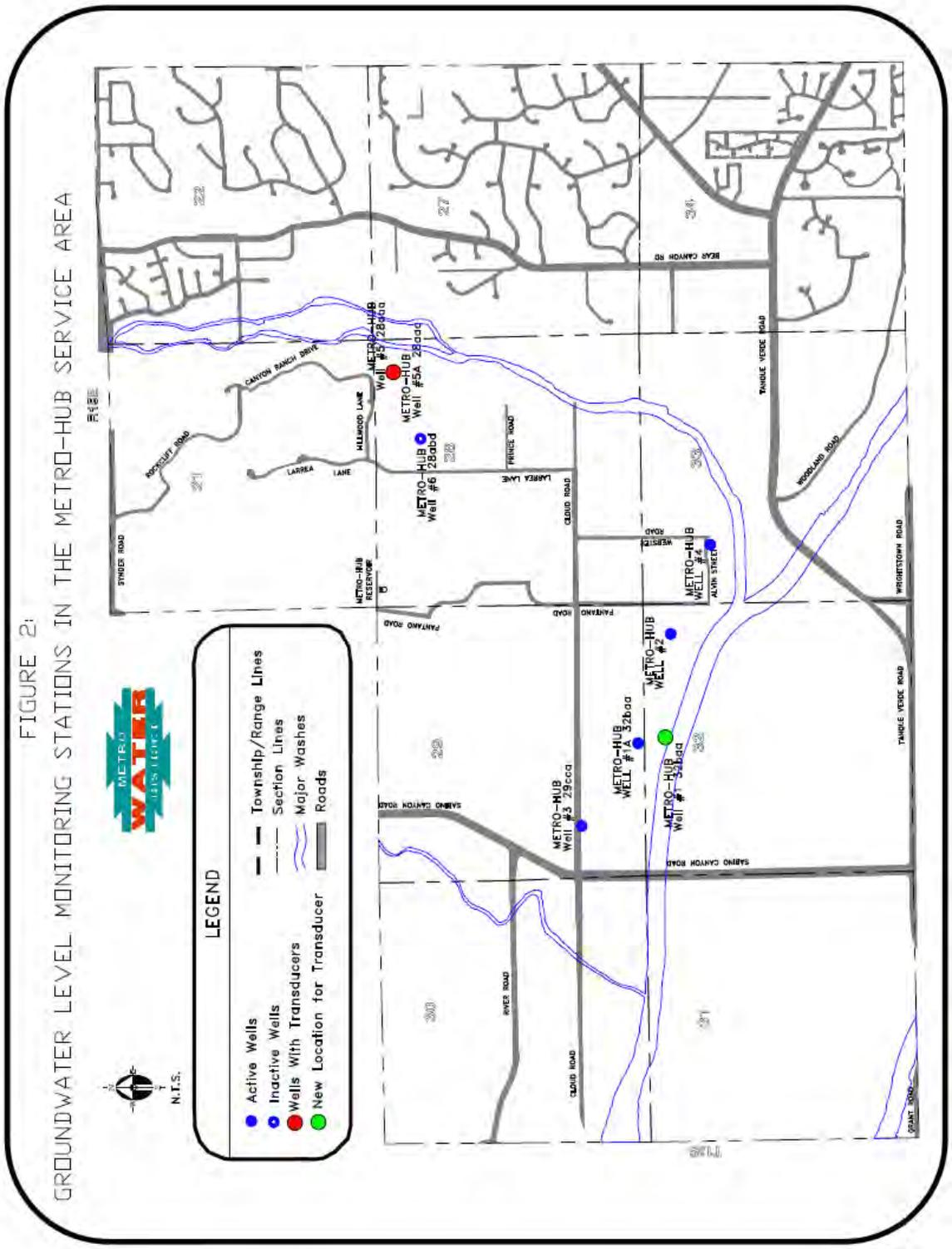
Figure 1  
Continuous Groundwater  
 Monitoring Stations  
Metro Main



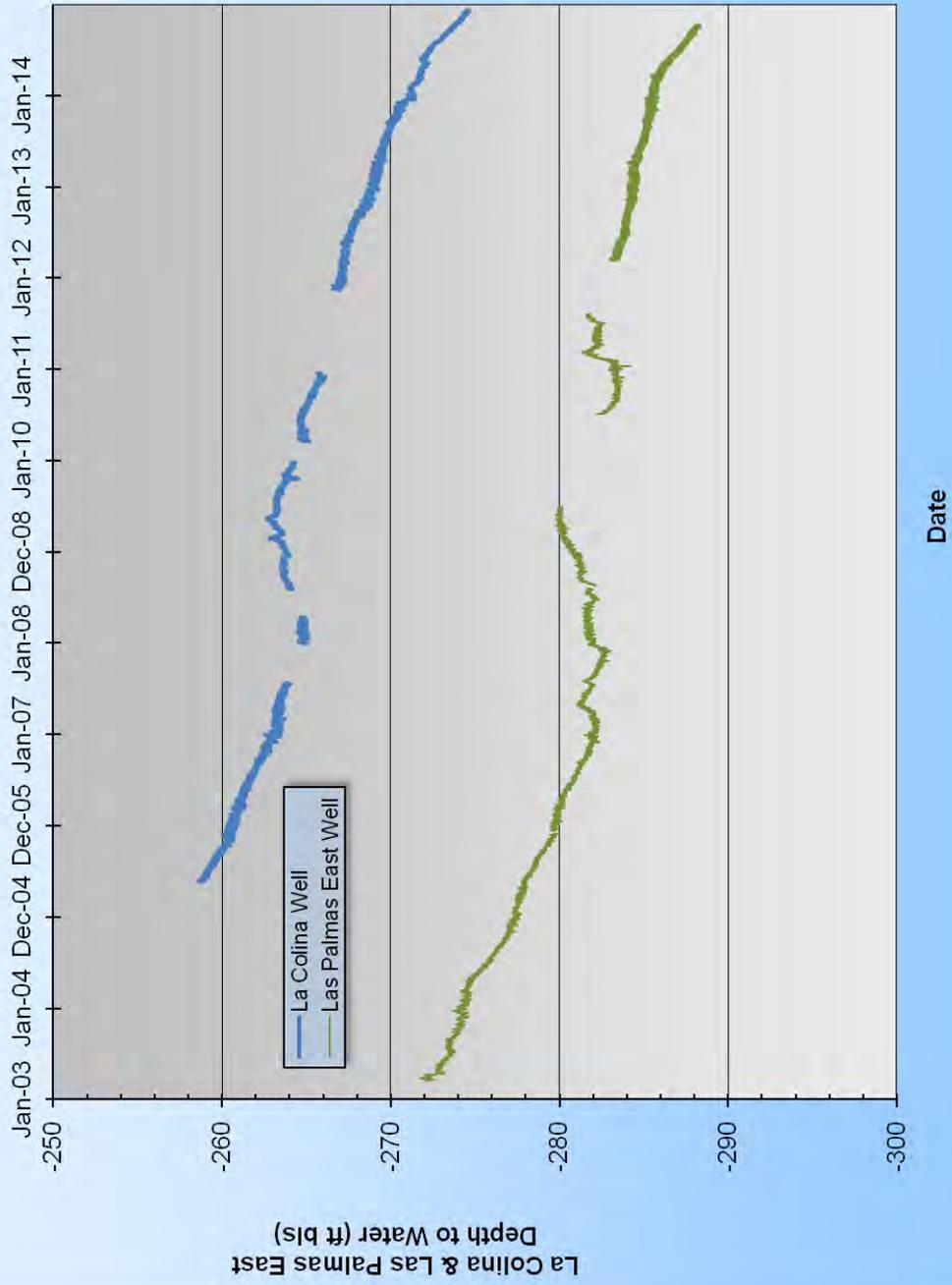
**LEGEND**

● Active Wells	— Township/Range Lines
● Inactive Wells	— Section Lines
● Wells With Transducers	— Major Washes
● New Location for Transducer	— Roads

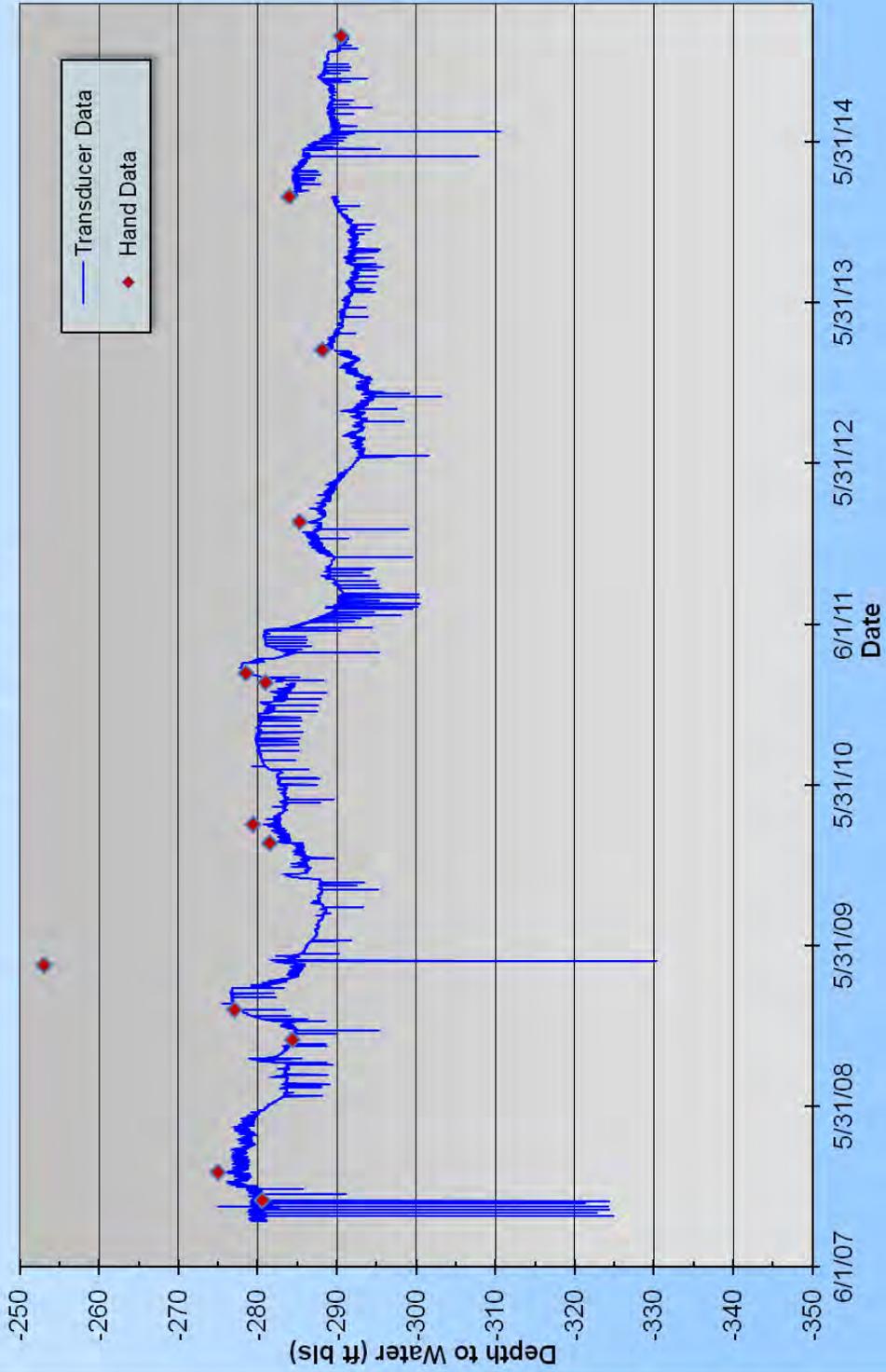




**Figure 3: Average Water Level Hydrographs  
Metro-Main Service Area**



**Figure 4:**  
**Tucson National North Average Water Level Hydrograph**  
**12-13-21 DDD**



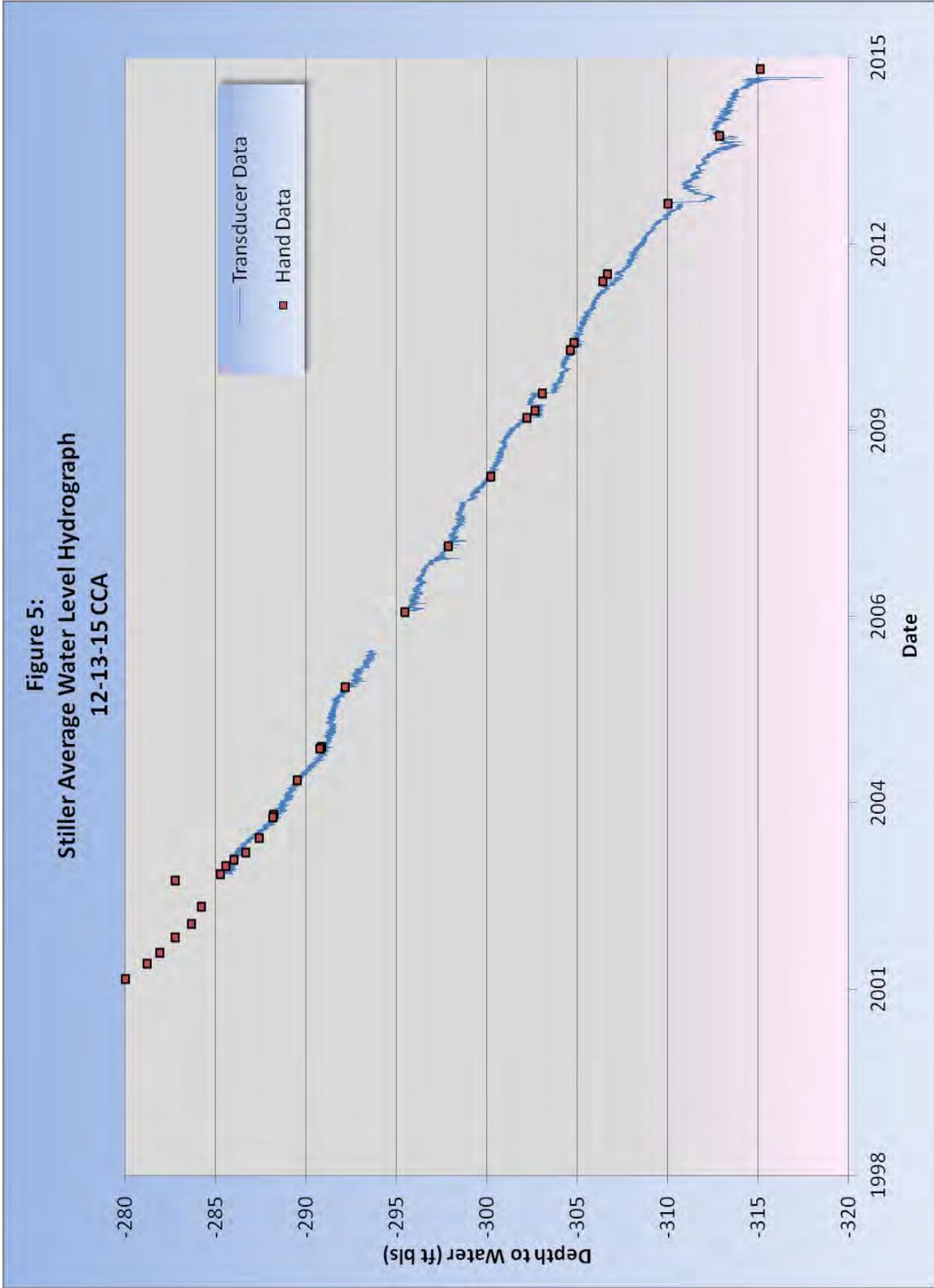


Figure 6: Avra Valley Recharge Project  
Depth to Water at AVMW-1

