RITA 10

PLANNED COMMMUNITY DEVELOPMENT

TUCSON, ARIZONA

3/28/2025

The WLB Group WLB

WLB NO. 123013-A-001

PROJECT TEAM

PROPERTY OWNER:

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CONTENTS

SECTION I | INTRODUCTION

A. Background Information and Introduction

The Arizona State Land Department (ASLD) manages over 9.2 million acres of State Trust Land (STL) in Arizona. Since 1915, ASLD has managed the assets of a multi-generational perpetual trust in alignment with the interests of the Trust's 13 beneficiaries and Arizona's future. The mission statement of ASLD is as follows:

To responsibly manage the assets of a multi-generational perpetual Trust in alignment with the interests of the Beneficiaries and Arizona's future.

ASLD, serving as the fiduciary for the Trust, is required by the Arizona Constitution to receive maximum value for the sale or lease of STL for the benefit of the Trust. Given this Constitutional mandate, it is incumbent upon ASLD to carefully plan these properties to maximize their ultimate value. Accordingly, ASLD is in the process of re-evaluating the existing zoning for the STL in this area and working with the City of Tucson to develop entitlements that are appropriate for the area and will meet market demands.

B. Rationale for Using the Planned Community Development (PCD)

ASLD operates differently than private property owners when it comes to planning and entitlement of land. The Trust realizes greater value when land is sold with a level of entitlement that assures the buyer of allowable land uses. Since ASLD is not the ultimate developer or end user of the property, detailed site planning is best achieved after the land has been acquired by the developer. Once sold, the ultimate development plans still must proceed through the jurisdiction's site planning and permitting process.

This PCD presents a two-step process to the planning and entitlement of the property. This PCD tool establishes initial zoning for the property and is uniquely appropriate for STL intended for a future end user that is not yet determined. It provides a flexible zoning entitlement that enables the land to best meet market demand and ASLD to meet its fiduciary mandate. The PCD in large part relies on the existing City of Tucson Unified Development Code and Subdivisions Regulations and provides supplemental regulations to provide a regulatory framework for future development. The property within this PCD has been divided into development areas, or District Areas.

The second step identified in this PCD is Secondary Planning. This step acknowledges that further planning beyond that completed in this PCD must be undertaken by purchasers of STL to adhere to the approval processes of ASLD and the City of Tucson. This step requires more detailed planning of individual District Areas, and the preparation of Master Plans to be prepared prior to development of a District Area or portion of a District Area.

The following Master Plans will be prepared as part of the Secondary Planning process:

- Vehicular and Pedestrian Circulation
- Surface Drainage/Environmental Resources
- Water

- Wastewater
- Trails
- Architectural and Landscape Architectural Design Guidelines and Standards

Together, this PCD and the Secondary Planning process provide for the orderly development of the STL after it is auctioned and provide ASLD and the City with final site approval and the City with development review and permitting authority.

C. Goals and Objectives

There are several overarching reasons for the creation of this PCD which benefit both the City of Tucson as it grows and evolves, and ASLD in meeting its statutory commitments to its beneficiaries. These reasons are described below:

- Establish a framework that allows for development of industrial, commercial, employment and residential uses to meet market demand.
- Facilitate the opportunity to create manufacturing/industrial jobs paying a living wage.
- Contribute to the tax base of the City of Tucson and Pima County through the generation of future sales and property tax revenue.
- Provide land use entitlements compatible with surrounding development.
- Create the opportunity for ASLD to sell land and generate proceeds for the beneficiaries of STL.

D. Benefits to the Tucson Community

This PCD provides the following benefits to the Tucson community:

- It creates an inventory of readily available industrial land that can meet market demand and respond to economic conditions at the local, national, or international level.
- It expands Tucson's economic base and provides a foundation for new employment opportunities, additional office and expanded commercial uses
- It provides opportunities for housing of a variety of different types and densities.
- It creates a Protected Riparian Area Mitigation and Wash Enhancement Plan that will enhance wash corridors.
- It establishes standards and measures to ensure future development within this PCD is compatible with the surrounding area.

E. Compliance with the Rincon Southeast Subregional Plan (RSSP) and Plan Tucson

Rincon Southeast Subregional Plan (RSSP)

The Rincon Southeast Sub-Regional Plan was recently amended to include this PCD in Special Policy Area 1-05, Rita 10 – State Trust Land. This RSSP Amendment was approved by Mayor and Council on April 25, 2024 (case TP-AMD-0523-0003).

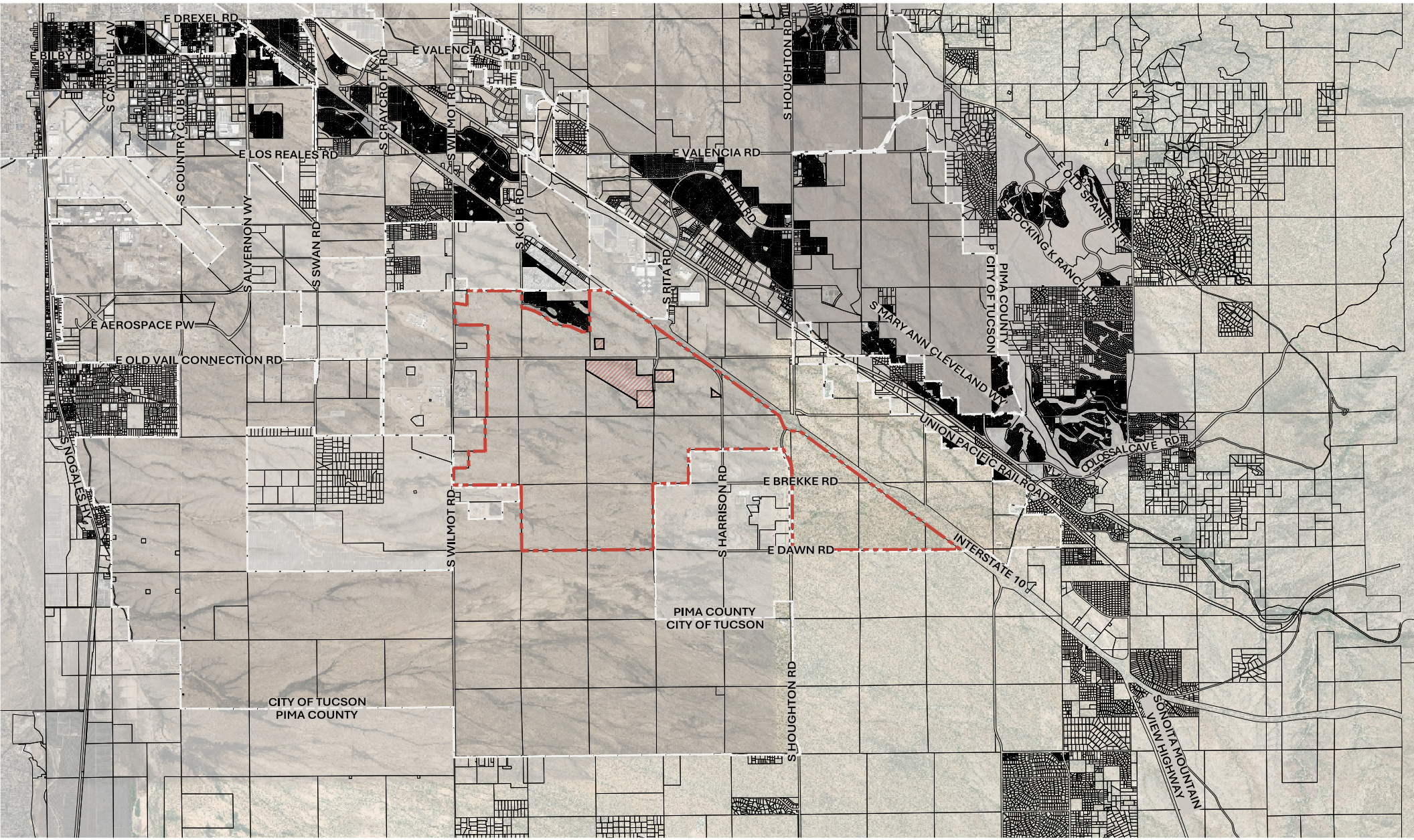
The purpose of Special Policy Area 1-05 is to provide special policies and conditions of approval that guide future development of ASLD holdings, promote orderly phased development within the Southlands, and attract a wide variety of uses, including major industry and employment generators to the region.

The Special Area Policy Area 1-05 is aligned with the City's long-term growth strategy to promote innovative and sustainable growth within the Southlands. It encompasses phasing, performance and review criteria for any future development. It provides the necessary flexibility for the assessment of floodplain management with continued oversight through future secondary planning which will establish evaluation methods and flood control parameters.

Plan Tucson

This PCD is designated as Southlands in Plan Tucson, a Special Planning Area intended as a long-term growth area. This PCD is compliant with Plan Tucson.

EXHIBIT A: REGIONAL LOCATION MAP



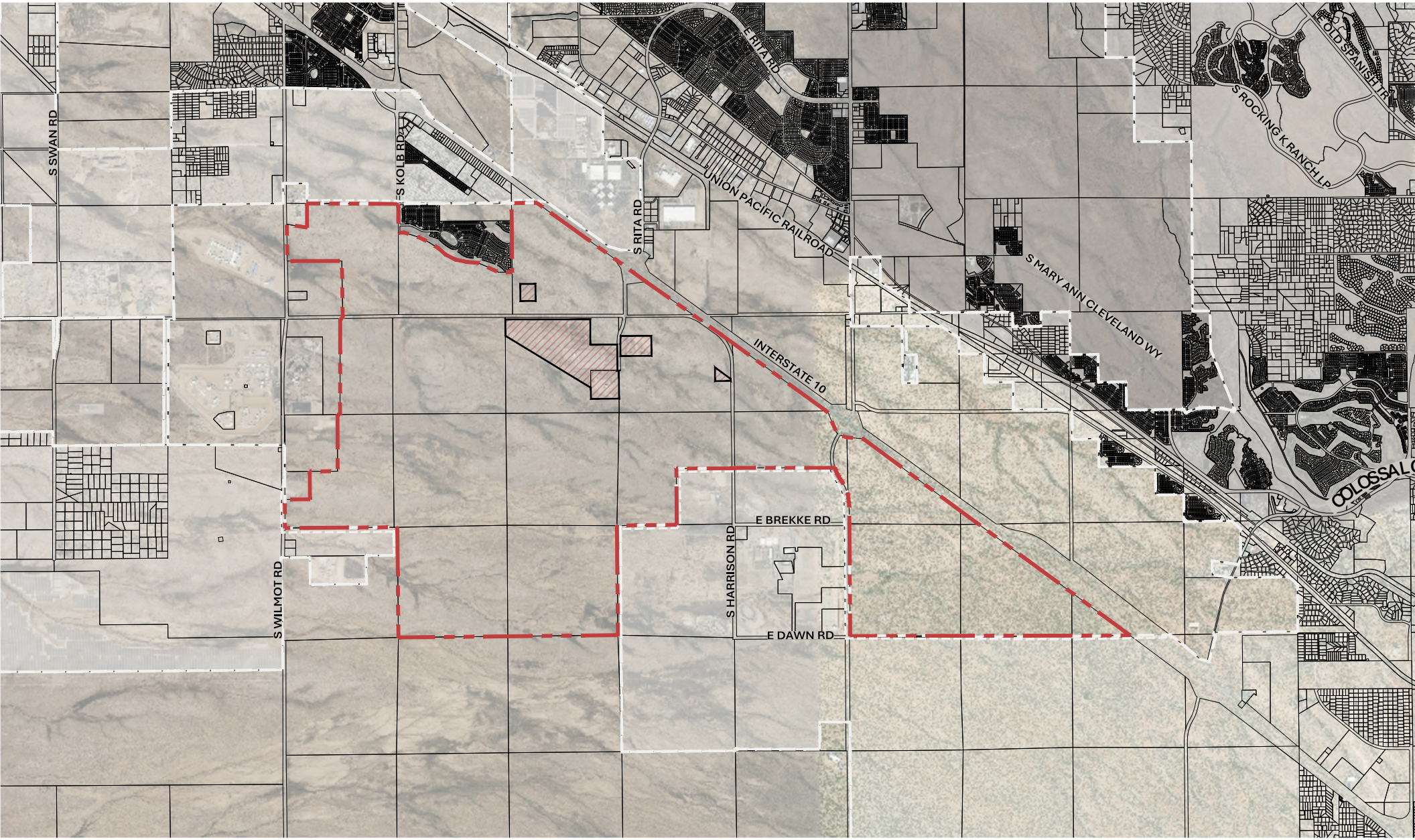
LEGEND

PROPERTY BOUNDARY

PRIVATE OUT PARCELS

0' 5000' 10,000'

EXHIBIT B: LOCATION MAP



LEGEND

PROPERTY BOUNDARY

OUT PARCELS

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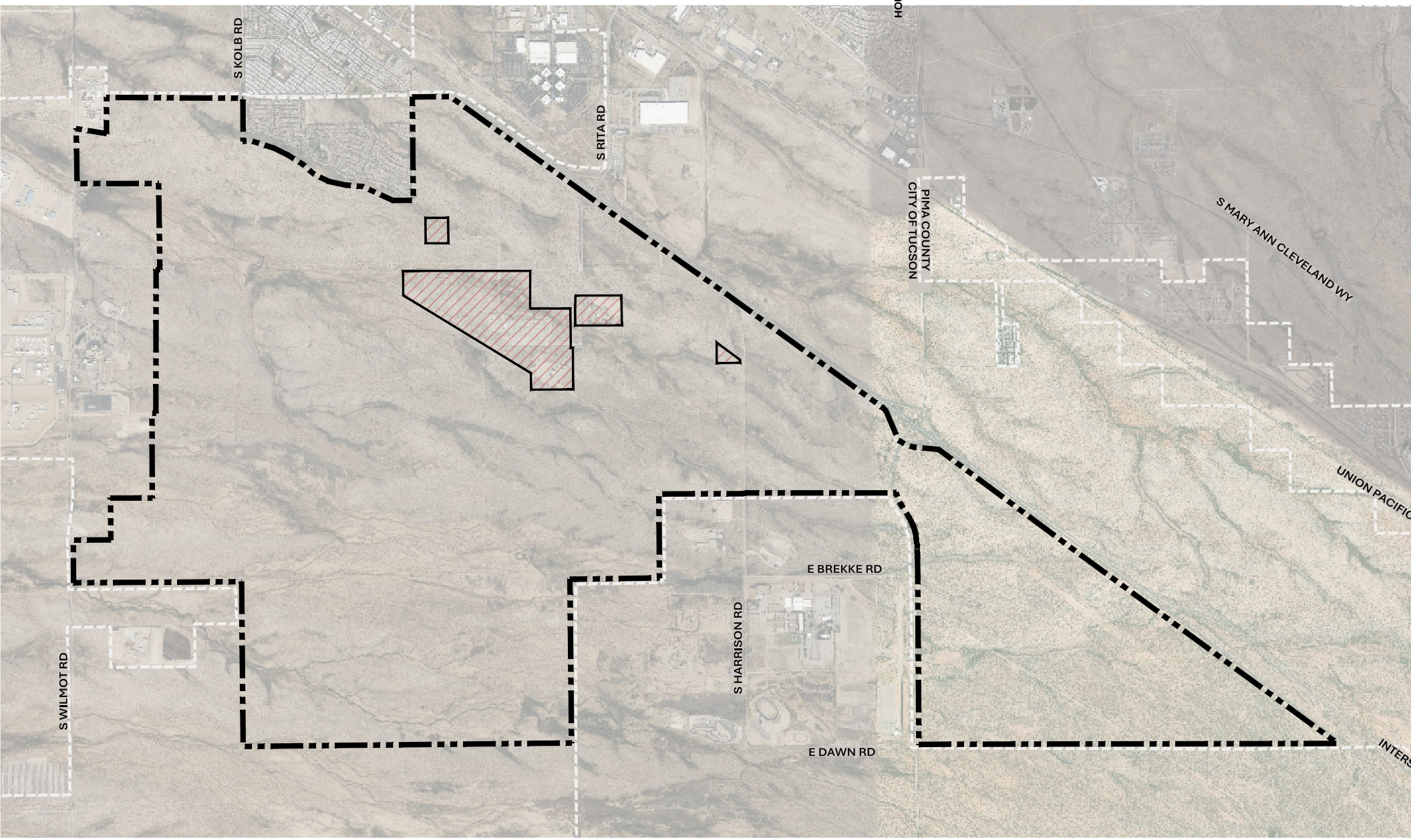
EXHIBIT C: AERIAL PHOTOGRAPH



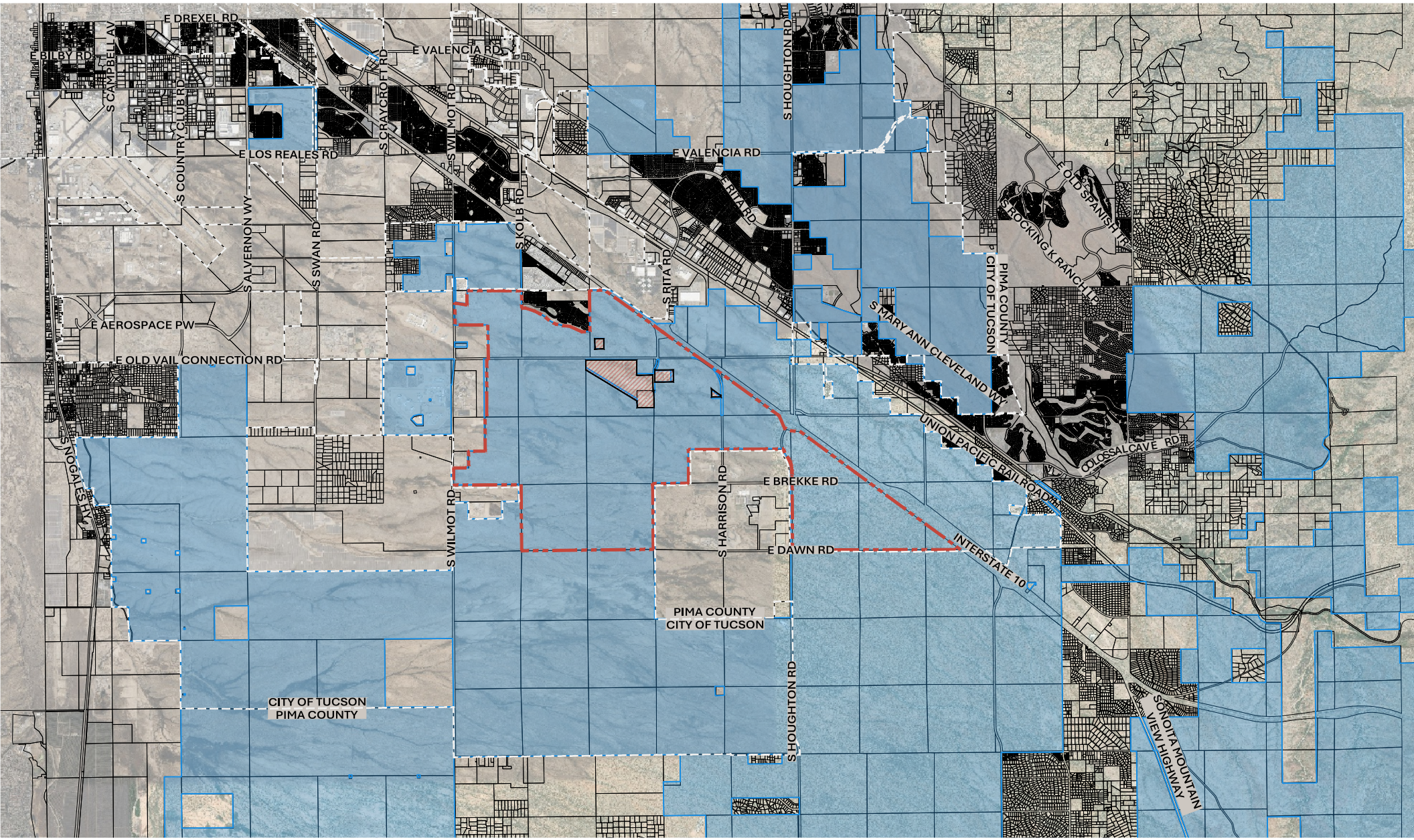
LEGEND

PROPERTY BOUNDARY

OUT PARCELS

0' 2000' 4000'

EXHIBIT D: STATE LAND OWNERSHIP IN PCD AREA



LEGEND

PROPERTY BOUNDARY

ARIZONA STATE LAND DEPARTMENT OWNED PROPERTIES

OUT PARCELS

0' 5000' 10,000'

SECTION II | DEVELOPMENT INVENTORY REPORT

A. Project Location

This PCD consists of 8,361± acres within the incorporated limits of the City of Tucson. The subject site consists of the following tax parcel numbers:

- 141-25-004A
- 305-03-004D
- 305-03-005A
- 141-25-005A
- 305-03-0030
- 305-03-0070
- 305-03-0120
- 305-03-0110
- 305-03-0080
- 305-01-0160
- 141-25-006A
- 141-25-0080
- 305-03-002A
- 305-01-0080
- 305-02-0060
- 305-01-0100
- 305-03-0090
- 305-01-0110
- 305-03-010A
- 305-13-009A
- 305-07-0080
- 305-13-0080
- 305-01-005B

This PCD is within all or portions of the following sections of the Gila Salt River Base and Meridian, Pima County, Arizona:

Township 15 South, Range 15 East

- Sections 31, 32 and 33

Township 16 South, Range 15 East

- Sections 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 16 and 17

Township 16 South, Range 16 East

- Sections 7, 17 and 18

This PCD lies within the City of Tucson and within Wards 4 and 5. Ward 4 is currently represented by Council Member Nikki Lee. Ward 5 is currently represented by Council Member Richard G. Fimbres. Properties adjacent to the subject site in unincorporated Pima County west of Wilmot Road are in Supervisor District 2, currently represented by Dr. Matt Heinz. Properties adjacent to the subject site in unincorporated Pima County east of Wilmot Road are in Pima County Supervisor District 4, currently represented by Steve Christy.

Exhibit A: Regional Location Map and Exhibit B: Location Map show the location of this PCD and an aerial photograph is included as Exhibit C: Aerial Photograph.

B. Existing Land Uses

This PCD consists primarily of vacant and undeveloped land except for an interstate natural gas pipeline which crosses the site from northwest to southeast, and major electric transmission lines. The existing surrounding land uses are as follows:

North: Single-family subdivision (Sycamore Park), Voyager RV Resort, University of Arizona Tech Park (north of Interstate 10) and vacant land.

East: Pima County Fairgrounds, Tucson Speedway, Southeast Regional Park Shooting Range, Pima County Clay Target Center, Musselman Honda Circuit, Tucson Kart Speedway and vacant land.

South: Vacant land.

West: Federal and State Prison facilities, Tucson Police Training facility with construction underway for a shooting range on the north side of the facility (shooting direction to the north), Tucson Fire Station 6 and vacant land.

Out Parcels: TEP Substation, El Paso Natural Gas Company facilities, Pima County Regional Training Center and a vacant City of Tucson parcel.

Please refer to Exhibit F: Existing Land Use.

C. Existing Zoning

The current zoning of the property within this PCD consists of RH (Rural Homestead) and RX-1 (Residence). The zoning on surrounding properties is as follows:

North: City of Tucson RH, RX-1, R-1, and PAD 45. Pima County GR-1, SH, and CI-1.

South: City of Tucson RH; Pima County RH, and GR-1.

East: City of Tucson RH, RX-1, and PAD-45. Pima County CI-1

West: City of Tucson RH, RX-1, and I-2. Pima County RH and SP.

Please refer to Exhibit E: Existing Zoning.

1. Applicable Overlay Zones

a. Airport Environs Zone (AEZ)

A portion of this PCD is located within the environs of the Davis - Monthan Air Force Base. More specifically, Approach Departure Corridor Two (ADC-2), Approach Departure Corridor Three (ADC-3) and a small area within Noise Control District A.

Please refer to Exhibit H: Airport Environs Zone (AEZ), Avigation Easements and Davis Monthan ADC and to Section III.A.3 for exceptions to the existing ADC 3 Overlay Standards.

b. Major Street & Routes Setback Zone (MS&R)

This PCD is subject to Unified Development Code Article 5.3 Scenic Corridor Zone and Article 5.4 Major Street & Routes Setback Zone (MS&R).

- Wilmot Road.
- Kolb Road.
- Rita Road.

- Harrison Road.
- Voyager Road.
- Pantano Road.
- Brekke Road.
- Sonoran Corridor.

Houghton Road is the only road within this PCD that is identified as a Scenic Arterial Street.

The Sonoran Corridor alignment is shown on the MS&R Plan and connects with Interstate 10 at the Rita Road traffic interchange.

c. Scenic Corridor Zone (SCZ)

This PCD is subject to Unified Development Code Article 5.3 Scenic Corridor Zone (SCZ). The City of Tucson Major Streets & Routes (MS&R) Plan map designates Houghton Road adjacent to and within the site as a Scenic Arterial Route. While other streets within or adjacent to the PCD are designated as Major Streets and Routes, none except for Houghton Road are designated as Scenic.

2. Natural and Built Constraints

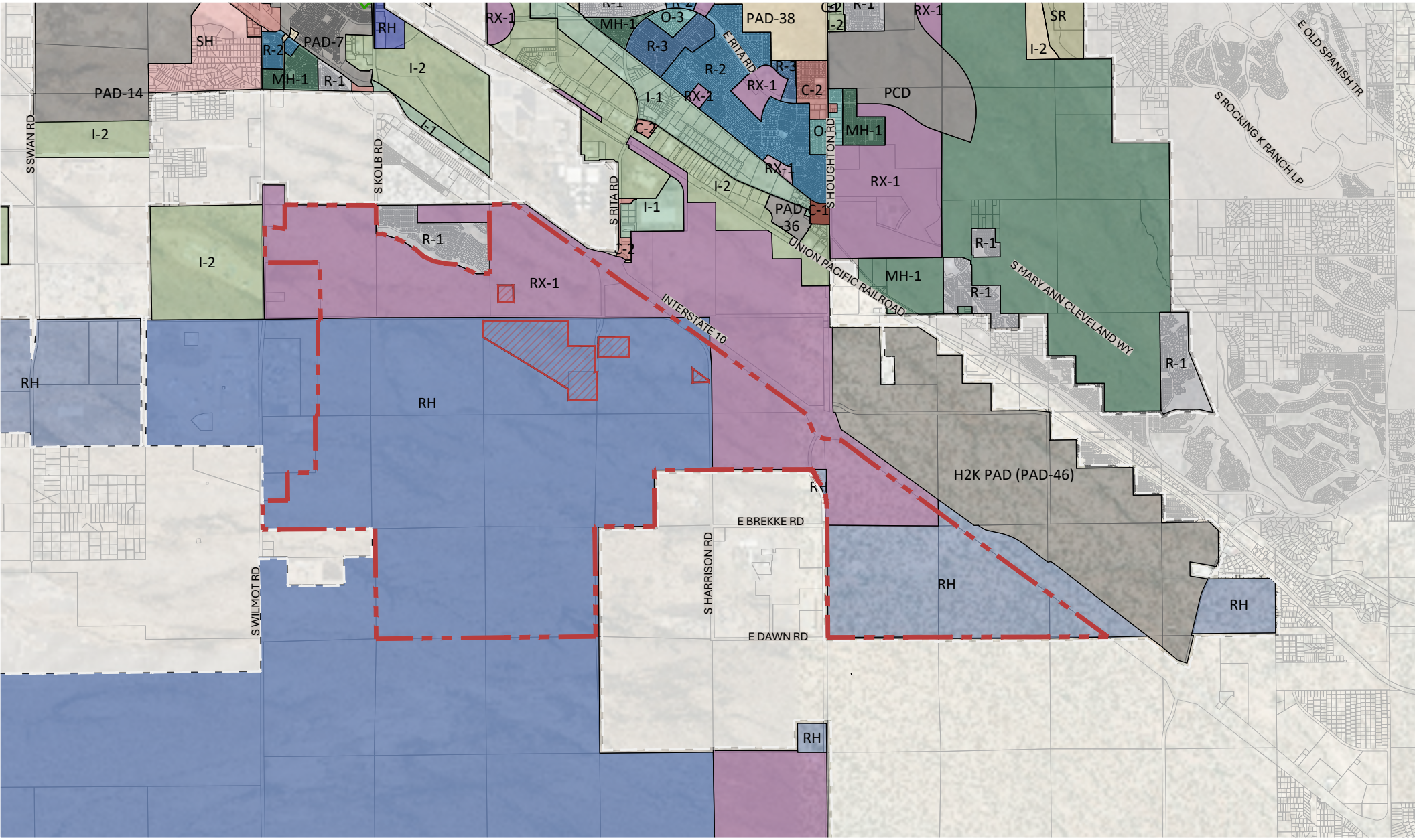
The following is a description of the natural and built constraints within this PCD.

a. Easements and Utilities

El Paso Natural Gas Company maintains a high-pressure natural gas transmission line that runs roughly parallel with I-10 approximately one mile southwest of I-10. No buildings, structures, or walls are allowed within the right-of-way, but utilities, roads, and drainage channels can cross it. Decomposed granite trails and paths are also allowed but trees and shrubs over five feet in height are prohibited.

Major electric transmission lines cross the site, parallel with Old Vail Connection Road and just southwest of I-10. There is a Unisource Energy Corp substation located about one mile south of the I-10/Rita Road traffic interchange.

EXHIBIT E: EXISTING ZONING



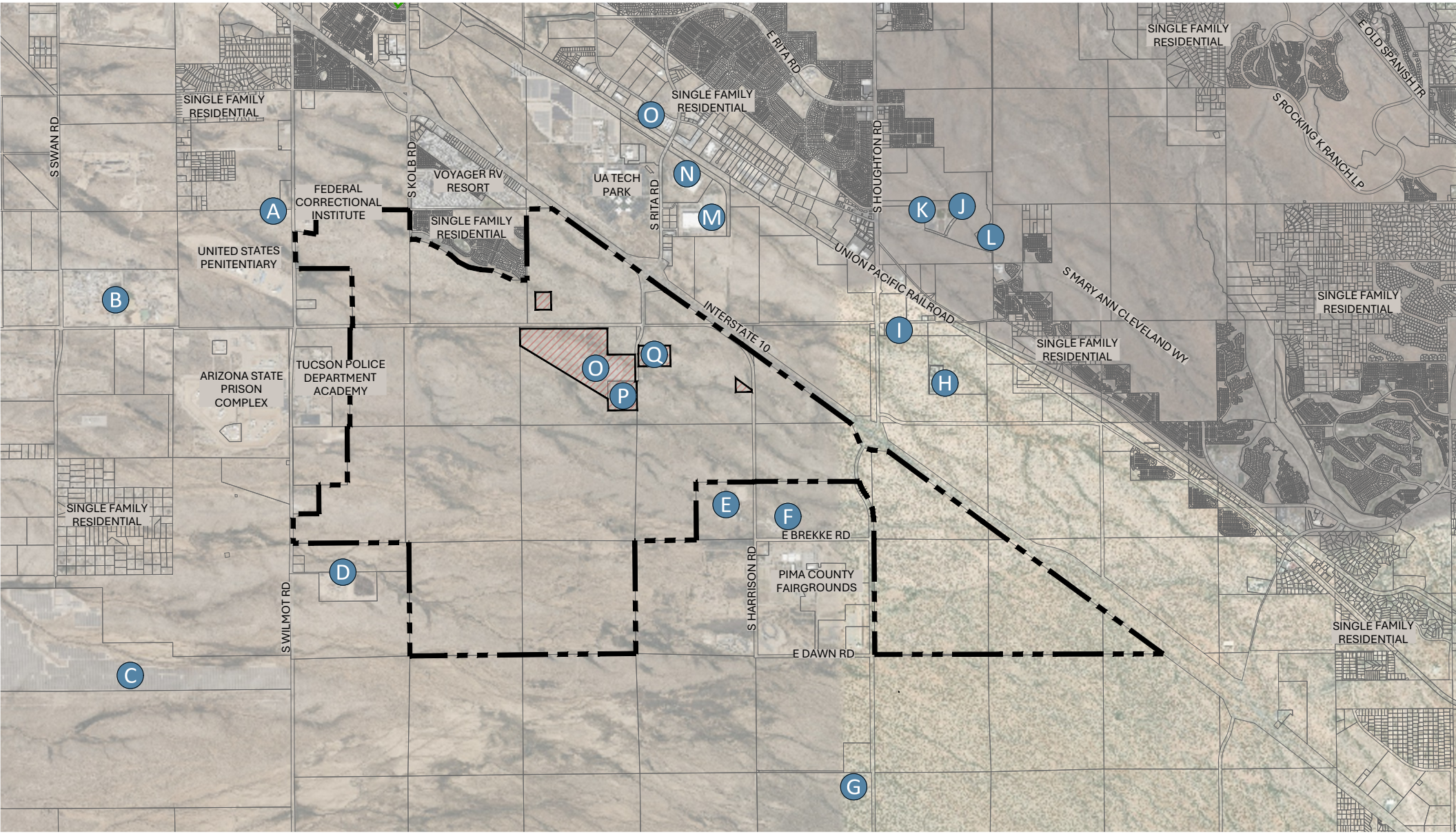
LEGEND

PROPERTY BOUNDARY

PRIVATE OUT PARCELS

0' 3000' 6000'

EXHIBIT F: EXISTING LAND USE

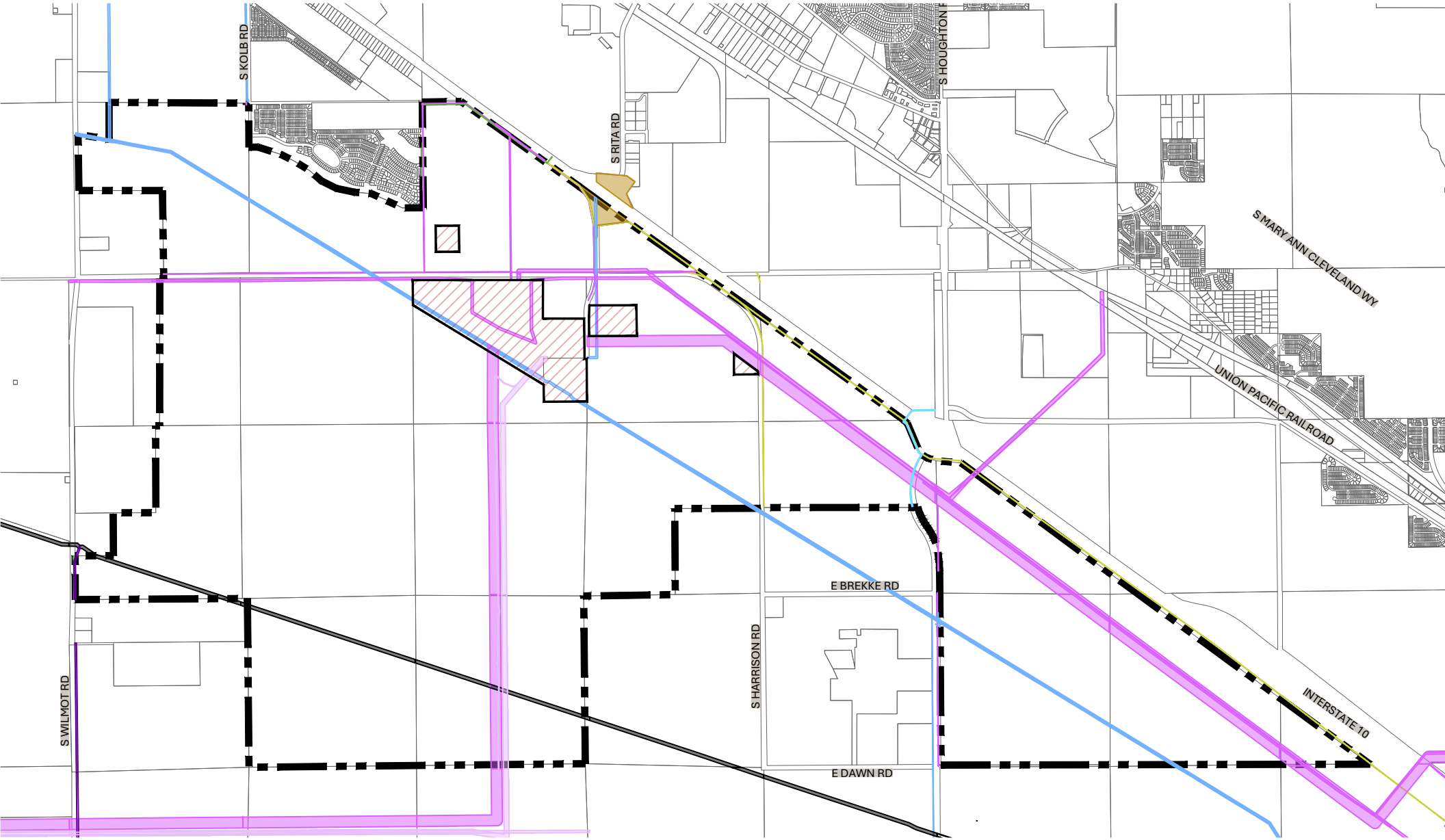


LEGEND

- PROPERTY BOUNDARY
- OUTPARCELS
- A FEDERAL CORRECTIONAL INSTITUTE - FIRING RANGE
- B GRANITE CONSTRUCTION CO.
- C WILMOT SOLAR ENERGY CENTER
- D TANK'S WILMOT RECYCLING & LANDFILL
- E SOUTHEAST REGIONAL PARK SHOOTING RANGE
- F PIMA COUNTY CLAY TARGET CENTER
- G ANDRADA POLYTECHNIC HIGH SCHOOL
- H CACTUS COUNTY RV RESORT
- I GRABBE INDUSTRIAL
- J VAIL INNOVATION CENTER
- K EMPIRE HIGH SCHOOL
- L W. ANNE GIBSON-EDMOND STATION LIBRARY TARGET DISTRIBUTION CENTER
- M FAIRBAULT FOODS DISTRIBUTION CENTER
- N HONEY BEE RV STORAGE
- O TEP SUBSTATION
- P EL PASO NATURAL GAS FACILITY
- Q PIMA COUNTY REGIONAL TRAINING FACILITY

0' 3000' 6000'

EXHIBIT G: EXISTING ONSITE EASEMENTS

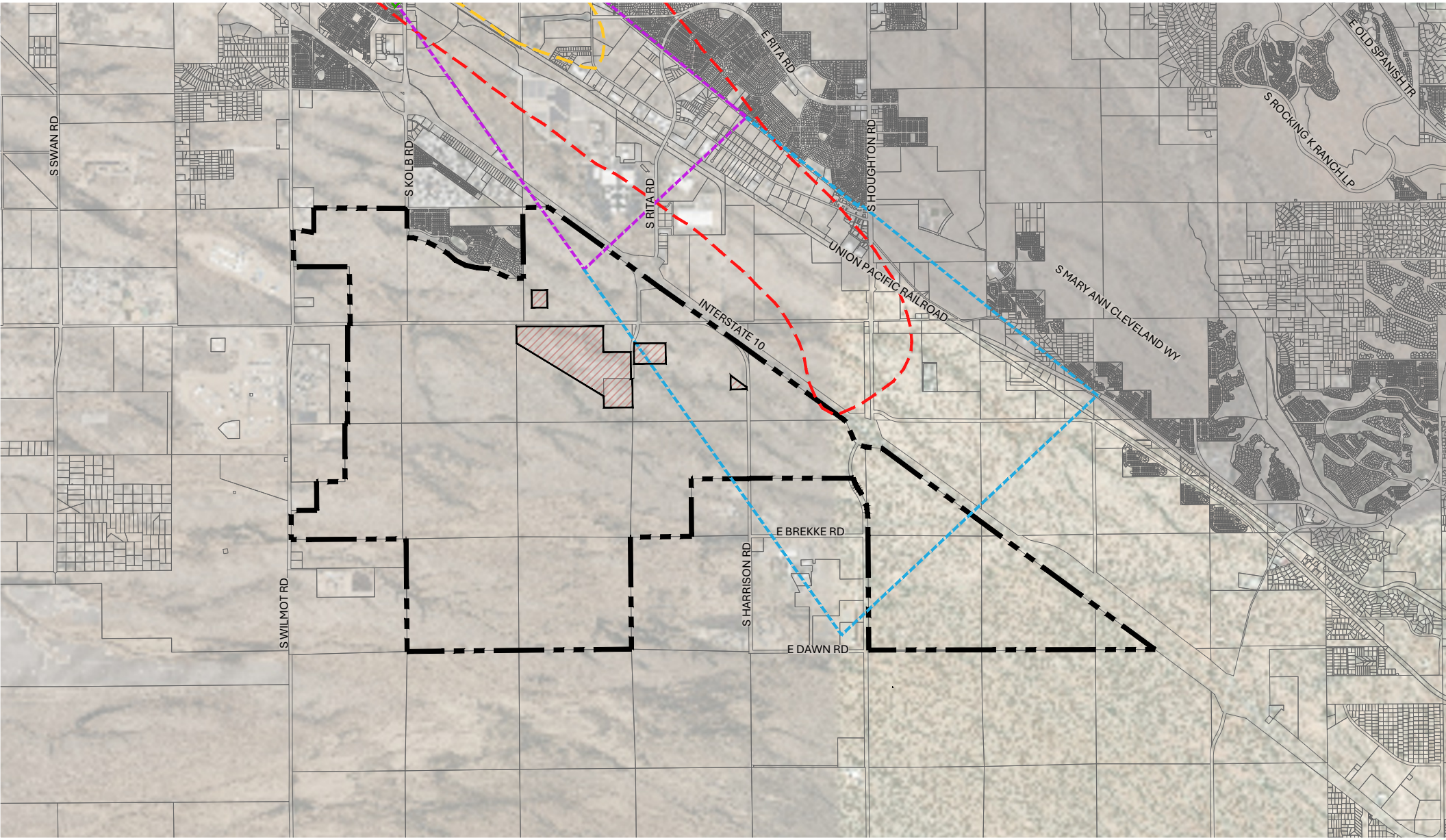


LEGEND

- PROPERTY BOUNDARY
- TUCSON ELECTRIC POWER TRANSMISSION LINE EASEMENTS
- EL PASO GAS PIPELINE EASEMENT
- AMERICAN ELECTRIC POWER EASEMENT
- BUREAU OF RECLAMATION EASEMENT
- WATER LINES
- QUEST COMMUNICATION LINE
- OTHER COMMUNICATION LINE
- ADOT INTERCHANGE EASEMENT
- UNS ENERGY CORPORATION
- OUT PARCELS

0' 5000' 10,000'

EXHIBIT H: AIRPORT ENVIRONS ZONE, AVIGATION EASEMENTS AND DAVIS MONTHAN ADC



LEGEND

- PROPERTY BOUNDARY
- DAVIS MONTHAN AFB APPROACH DEPARTURE CORRIDOR 2
- DAVIS MONTHAN AFB APPROACH DEPARTURE CORRIDOR 3
- DAVIS MONTHAN AFB NOISE CONTROL DISTRICT - A
- DAVIS MONTHAN AFB NOISE CONTROL DISTRICT - B

0' 5000' 10,000'

D. Existing Educational and Community Resources

1. School District Facilities

This PCD is in the Vail Unified School District and is currently served by two elementary schools, a middle school and two high schools. Please refer to Exhibit I: Public Services.

2. Libraries

There are no public libraries located within one mile of this PCD. The nearest library is the W. Anne Gibson Esmond Station Library located at 10931 E Mary Ann Cleveland Way.

3. Health Care Facilities

The nearest health care facilities are as follows:

- Northwest Emergency Center at Vail, 10146 E Old Vail Road, 1.5 miles north and west of this PCD.
- St. Joseph's Hospital Annex, 7401 S Wilmot Rd, two miles north of this PCD.
- Banner – University Medicine Primary Care Clinic, 8290 S. Houghton Road, 3.5 miles north and west of this PCD.
- TMC Urgent Care, 10350 E Drexel Road, 5.5 miles north of this PCD.

4. Fire/Emergency/Law Enforcement

This PCD is served by City of Tucson Police and Fire Departments and is within the City of Tucson Police Department Operations Division East Division.

Rincon Substation, located at 9670 E. Golf Links Road and approximately 7.5 miles north of this PCD, is the nearest City of Tucson Police Department facility. There is also a Pima County Sherriff department Substation located within the Pima County Fair Grounds.

Tucson Fire Department Station 6 is located approximately one mile west of this PCD on the east side of Wilmot Road and is the nearest Tucson Fire Department facility. Tucson Fire Department Station 19 is located at 9700 E. Esmond Loop approximately two and a half miles north of this PCD.

It is anticipated that the Tucson Fire Department and the Tucson Police Department will be able to serve this PCD.

Please refer to Exhibit I: Public Services.

E. Existing Open Space, Recreation & Trails

1. Existing On-Site Open Space and Trails

Any trails and/or recreational spaces on STL require application to ASLD and will be evaluated for impact to the Trust. Trails that may informally exist on the property are not currently permitted or managed uses on STL. Pending an IGA, regional trails would be dedicated to the City of Tucson and/or Pima County.

The Pima Regional Trail System Master Plan identifies seven proposed trail elements within this PCD as described below:

The Houghton Greenway (G025)

This Greenway is adjacent to Houghton Road within and adjacent to this PCD. Greenways are a corridor that typically features a path and trail, preserved native vegetation and/or landscape plantings, and pedestrian amenities. The Houghton Greenway is approximately 21 miles long.

Old Vail/Harrison Road Greenway (G032)

The proposed 12.6 mile long Old Vail/Harrison Greenway begins at the intersection of Old Vail Connection Road and the UPRR Greenway. It continues east on Old Vail Connection Road and turns south at the Harrison Road alignment continuing south to the proposed Franco Wash Greenway. Approximately five miles of the Old Vail/Harrison Road Greenway are within this PCD.

Kolb Road South Greenway (G029)

The Kolb South Greenway is a 3.7 mile long greenway which extends south from the Julian Wash Greenway at Via Rio Pico to a location in the interior of this PCD one mile south of the Old Vail Road/Harrison Road Greenway.

Franco Wash Greenway (G021)

The Franco Wash Greenway is a proposed greenway that trends west to east from Old Vail Road through the site connecting to Houghton Road, a distance of 11.4 miles. It crosses through the Southeast Regional Park.

Sarnoff Drive Greenway (G045)

The proposed 9.7 mile Sarnoff Drive Greenway would follow the Sarnoff Drive alignment south from Julian Wash Greenway through this PCD to Sahuarita Greenway.

Power Line Greenway (G034)

The proposed Power Line Greenway is a continuation of the Railroad Wash Trail beginning at the Houghton Road Greenway and extending east for six miles where it intersects with Sonoita Greenway.

Railroad Wash Trail (T024)

The Railroad Wash Trail extends west from the west end of the Power Line Greenway approximately 12 miles following the El Paso Natural Gas pipeline alignment west through this PCD, ending at Old Nogales Highway.

36th Street Trail Park(T001)

The five-mile long Airport Wash North Fork Trail travels from northwest to the southeast, from the Hughes/Alvernon Path to the Sarnoff Drive alignment. It crosses the Swan Road, Wilmot Road, and Kolb Road south greenways.

Please refer to Exhibit J: Parks and Trails.

2. Off-Site Recreation & Spaces

The following recreational/open space amenities are adjacent to or in close proximity to this PCD:

Southeast Regional Park/Fairgrounds (TH073)

This 2,950-acre multiuse facility is adjacent to this PCD on three sides and is home to shooting and archery ranges, multiple motor sports venues, and the Pima County Fairgrounds

Cienega Creek Natural Preserve

The 4,151-acre preserve is located approximately four miles east of this PCD. It was established by Pima County in 1986 to protect the Creek's sensitive and increasingly rare riparian ecosystem, as well as to promote natural aquifer recharge and provide flood protection.

Please refer to Exhibit J: Parks and Trails.

3. Off-Site Public & Neighborhood Parks

Purple Heart Park

Purple Heart Park is situated roughly one-quarter mile north of this PCD, just west of Houghton Road and south of Rita Road across from Desert Sky Middle School. The park is approximately 37 acres and contains 3 little league fields, 1 softball field, a skate park, a dog park, 3 playgrounds, 1 splash pad and 3 ramadas.

Esmond Station Park

Esmond Station Park is a 274-acre regional park in Pima County located at the northeast corner of Mary Anne Cleveland Way and Houghton Road. 16 acres of the park are developed with exercise stations, a ramada, a walking trail and water stations.

Please refer to Exhibit J: Parks and Trails.

F. Existing Transportation & Circulation

1. Relevant Public Streets

Current physical access to this PCD is available from the existing Rita Road, Kolb Road, Houghton Road and Wilmot Road. The northeastern boundary of the site is primarily formed by Interstate 10.

The following is a description of the existing and planned roads surrounding this PCD:

- *Rita Road.* Rita Road travels south from Interstate 10 and provides access to the Rita Road/I-10 traffic interchange.

- *Rita Road/I-10 Traffic Interchange.* This interchange is to be reconstructed per the PAG Region 2045 Regional Mobility and Accessibility Plan's reserve project list. This means that it has been identified as needing updates but has not yet been scheduled or funded.

- *Kolb Road.* This road travels south from an interchange at Interstate 10 and terminates at a northern boundary of this PCD adjacent to the Sycamore Park Village subdivision. Per the MS&R Plan this road is planned for realignment along the west boundary of this PCD.

- *Kolb Road/I-10 Traffic Interchange.* This interchange is approximately 1-mile north of this PCD. Per the PAG Region 2045 Regional Mobility and Accessibility Plan this traffic interchange is scheduled to be reconstructed between 2036 and 2045.

- *Houghton Road (north of Interstate 10)*. The Regional Transportation Authority Houghton Road Corridor project was recently completed between Mary Ann Cleveland Road and Interstate 10. When fully completed, the improved corridor will extend north to Tanque Verde Road. The roadway has six travel lanes, bicycle lanes in each direction, and a 12-foot multi-use path along the east side. As determined by the Pima Association of Governments, the 2023 Annual Average Daily Traffic for this stretch of Houghton Road is between 14,000 and 20,000 trips.

- *Houghton Road* (south of Interstate 10). A 3-mile portion lying south of Interstate 10 has been improved to four travel lanes, bicycle lanes in each direction, a 12-foot multi-use path on the west side and a landscaped center median. As determined by the Pima Association of Governments, the 2023 Annual Average Daily Traffic for this stretch of Houghton Road is approximately 10,000 trips.

- *Houghton Road/I-10 Traffic Interchange*. The Houghton Road/I-10 traffic interchange has recently been reconstructed by the Arizona Department of Transportation. The improvements include six-travel lanes, new on and off ramps, access for bicycles and pedestrians and landscaping.

- *Sonoran Corridor.* The Sonoran Corridor, also known as State Route 410, is a proposed freeway that would connect Interstate 19 and Interstate 10, south of Tucson International Airport. The Sonoran Corridor would help improve the local transportation system by providing a new, faster connection to the airport and other activity centers, reducing traffic congestion and shortening east-west freight movement between southern Arizona and Mexico. The proposed right-of-way width is 400 feet. The current preferred route has the proposed corridor crossing through this PCD along the Old Vail Connection Road alignment, connecting to Interstate 10 at the Rita Road interchange.

- *Wilmot Road.* Wilmot Road is approximately one half mile to the west of this PCD. It is scheduled to be widened to 4 lanes with bike lanes, medians, and sidewalks between 2027-2035.

- *Dawn Road.* The Dawn Road alignment is located near the southern boundary of this PCD.

2. Major Streets & Routes

The following streets are located within this PCD and identified on the City of Tucson's Major Streets & Routes Plan.

- Wilmot Road, Arterial Street (150')
- Kolb Road, Future Arterial Street (300')
- Pantano Road, Future Arterial Street (120')
- Rita Road, Arterial Street and Future Arterial Street (150')
- Harrison Road, Arterial Street (150')
- Houghton Road, Scenic Arterial Street (300')
- Voyager Road, Arterial Street (90')
- Sonoran Corridor (400')
- Aerospace Parkway (300')
- Old Vail Connection Road, Arterial Street (150')
- Rocket Stravenue, Arterial Street (150')
- Dawn Road, Arterial Street (150')

Please refer to Exhibit K: Existing Roads and MSR Designations.

3. Public Transportation

There is no scheduled bus service to this PCD. It is served by Sun Van (on-demand) Service Area Premium which serves areas beyond what is required by the Americans with Disabilities Act including trips beyond the typical 3/4-mile maximum distance to the nearest regular Sun Tran stop.

Please refer to Exhibit L: Bus Routes.

4. Bicycle Routes

The bicycle routes near this PCD are as follows:

- A shared use path along Houghton Road which is located between the eastern edge of the Southeast Regional Park and the eastern section of this PCD.

- A painted bike lane on Wilmot Road that stretches between Interstate 10 and Sahuarita Road.

Please refer to Exhibit M: Existing Water & Sewer.

G. Existing Utility Infrastructure

1. Existing Utilities

Water

This PCD is located within the Obligated Service Area for Tucson Water. Tucson Water maintains water lines in the area of this PCD described as follows:

- 12" water line (PN 008-2009) in Wilmot Road.
- 36" ductile iron water line (PN 223-2002) in Wilmot Road.
- 24" water line in Houghton Road that extends south of Interstate 10.

This PCD lies within the following Tucson Water pressure zones Pressure Zone E (2700' – 2805'), Pressure Zone F (2805' – 2910'), Pressure Zone G (2910' – 3015'), Pressure Zone H (3015' – 3120') and Pressure Zone I (3120' – 3225').

Electric

Tucson Electric Power will provide electric power to this PCD.

Gas

Southwest gas will provide natural gas to this PCD. There is an existing 6' high pressure gas line in Wilmot Road.

Sewer

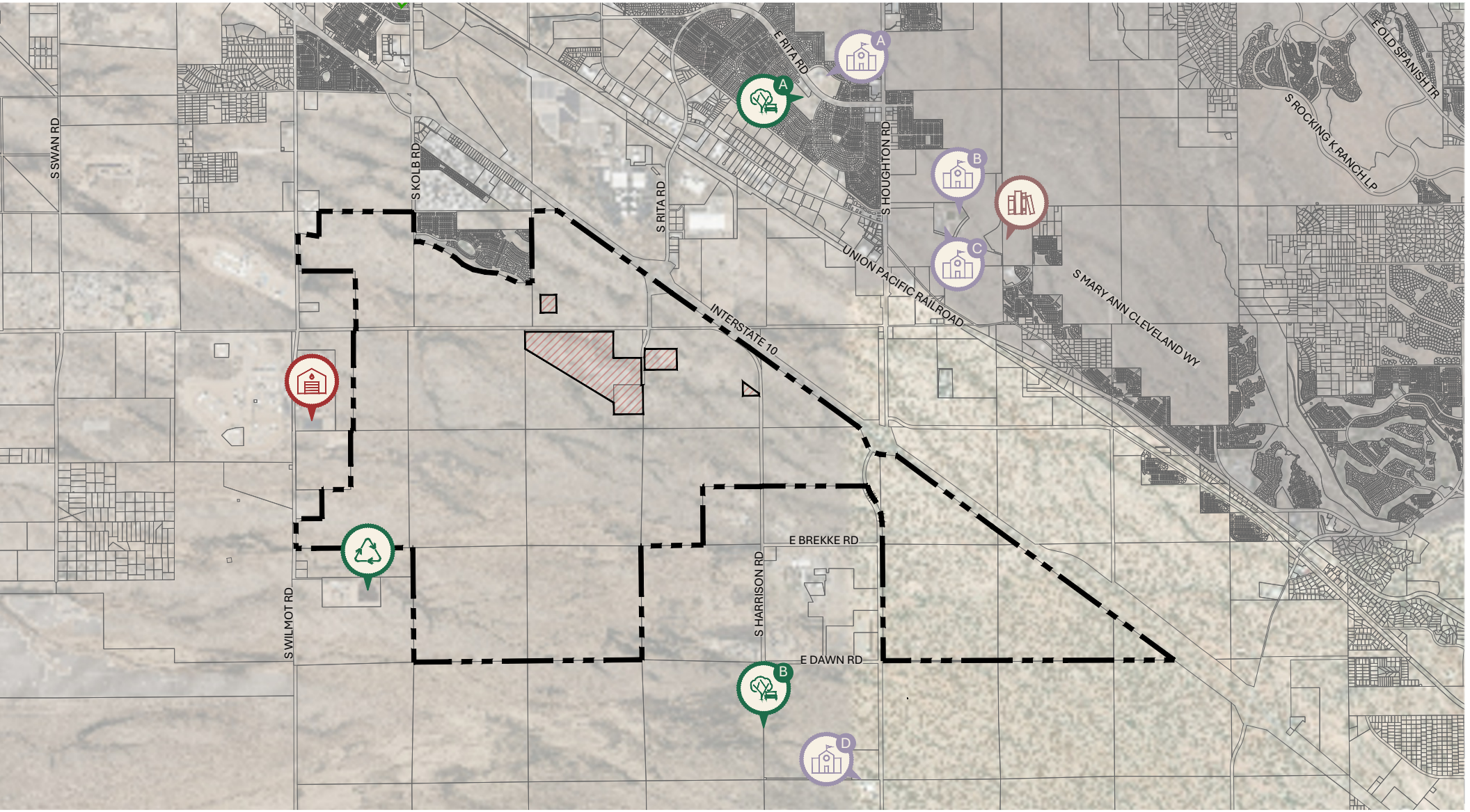
The sewer infrastructure in the area of this PCD is owned and maintained by the Pima County Regional Wastewater Reclamation Department.

- There is an existing sewer line in Wilmot Road that varies in size from 10" to 18" (G-93-085, G-95-060 and G-2005-177).

- 15” sewer line in Kolb Road that terminates near the southwest corner of the Sycamore Park Village Subdivision (G-2004-088) and in Sycamore Park Blvd that borders the southern portion of Sycamore Park Village (G-2004-087).

- 15” gravity sewer line in Harrison Road (Plan Number G-2019-050).

EXHIBIT I: PUBLIC SERVICES



LEGEND

- PROPERTY BOUNDARY
- OUT PARCELS
- TUCSON FIRE DEPARTMENT STATION 6
- W. ANNE GIBSON-ESMOND STATION LIBRARY
- TANK'S WILMOT RECYCLING AND LANDFILL FACILITY

SCHOOLS

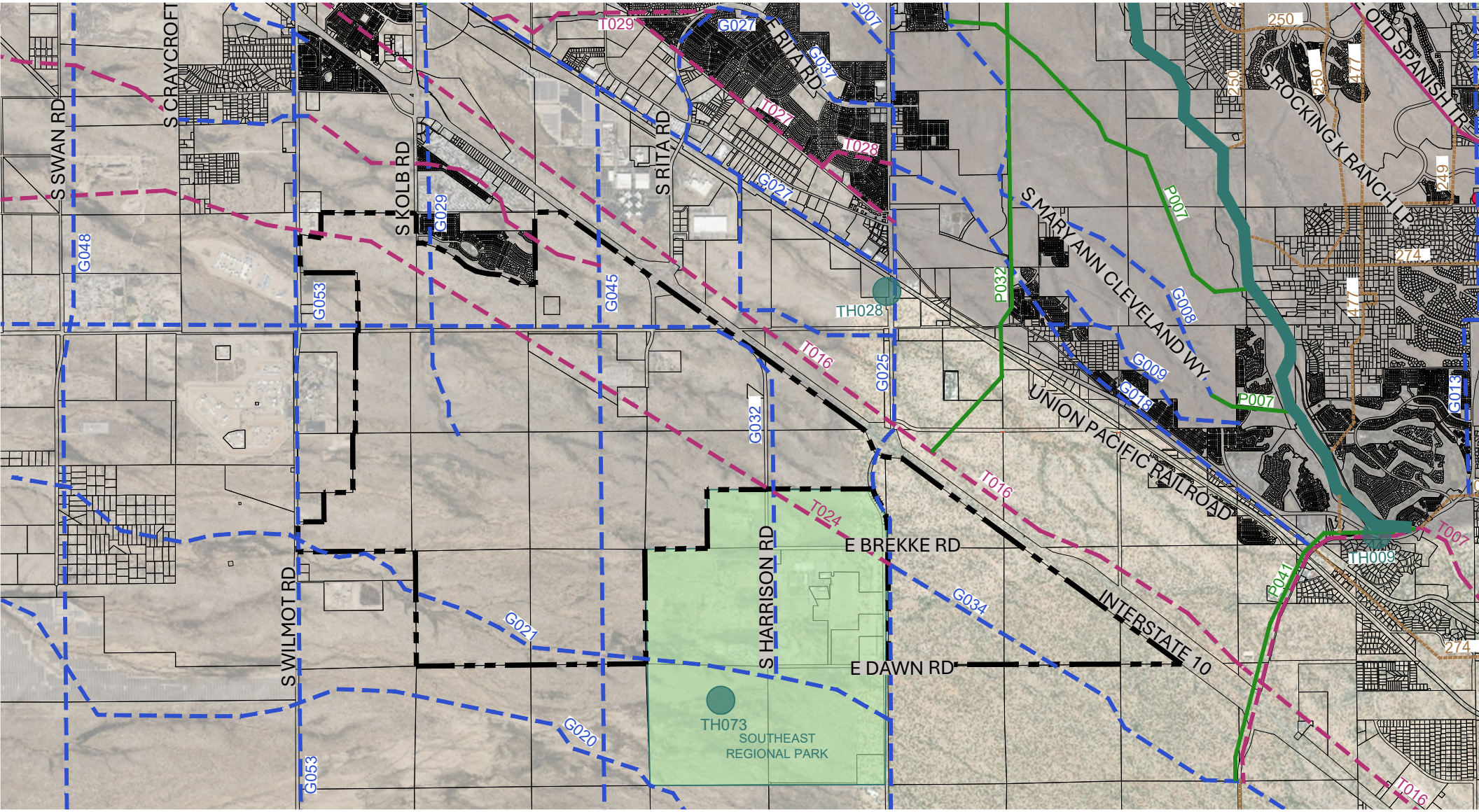
- A DESERT SKY MIDDLE SCHOOL
- B VAIL INNOVATION CENTER
- C EMPIRE HIGH SCHOOL
- D ANDRADA POLYTECHNIC HIGH SCHOOL

PARKS

- A PURPLE HEART PARK
- B COUNTY REGIONAL PARK

0' 3000' 6000'

EXHIBIT J: PARKS AND TRAILS



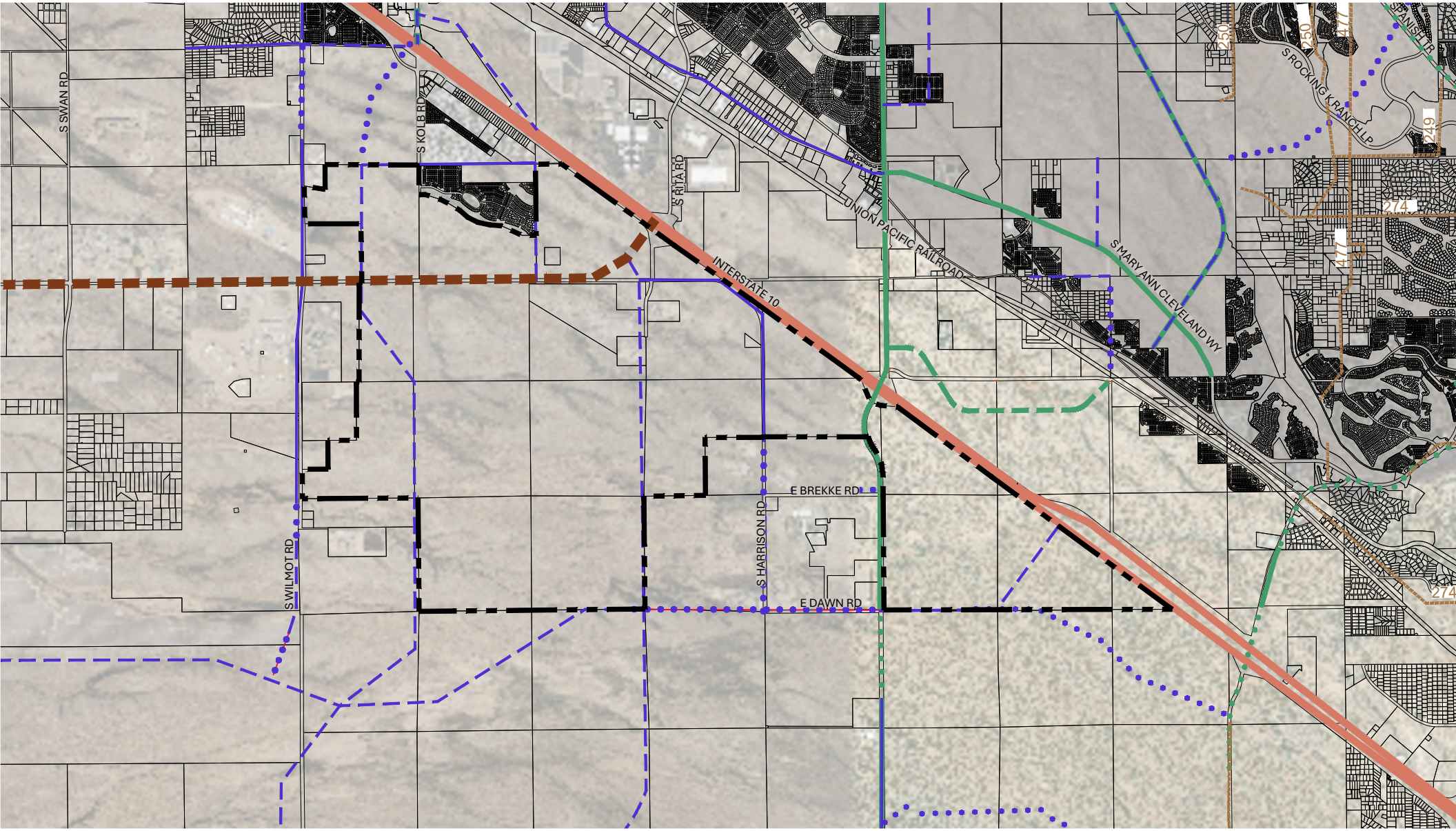
LEGEND

- PROPERTY BOUNDARY
- PLANNED GREENWAY
- PLANNED TRAIL
- PLANNED PATH
- PLANNED RIVER PARK
- PLANNED SINGLE TRACK TRAIL
- TRAILHEAD
- COUNTY URBAN PARKS

G007 ATTURBURY WASH
G008 ATTURBURY NORTH FORK WASH
G009 ATTURBURY SOUTH FORK WASH
G013 CAMINO LOMA ALTA
G018 ESMOND STATION
G020 ESTES WASH
G021 FRANCO WASH GREENWAY
G025 HOUGHTON GREENWAY
G027 JULIAN WASH GREENWAY
G029 KOLB ROAD SOUTH GREENWAY
G032 OLD VAIL/HARRISON RD
G034 POWER LINE GREENWAY
G037 RITA RANCH
G032 OLD VAIL/HARRISON ROAD GREENWAY
G045 SARNOFF DRIVE GREENWAY
G048 SWAN RD
G053 WILMOT RD
P007 CIVANO WASH
P032 POWERLINE PATH
P041 WENTWORTH ROAD PATH
T001 36TH STREET TRAIL PARK
T016 GASLINE TRAIL
T024 RAILROAD WASH TRAIL
T026 RITA RANCH
T027 RITA RANCH 2
T029 SANTA CRUZ DIVERSION CHANNEL
TH073 SRP SE REG PAR K/FAIRGROUNDS
TH009 CIECNP COLOSSAL CAVE R D

0' 3000' 6000'

EXHIBIT K: EXISTING ROADS AND MSR DESIGNATIONS

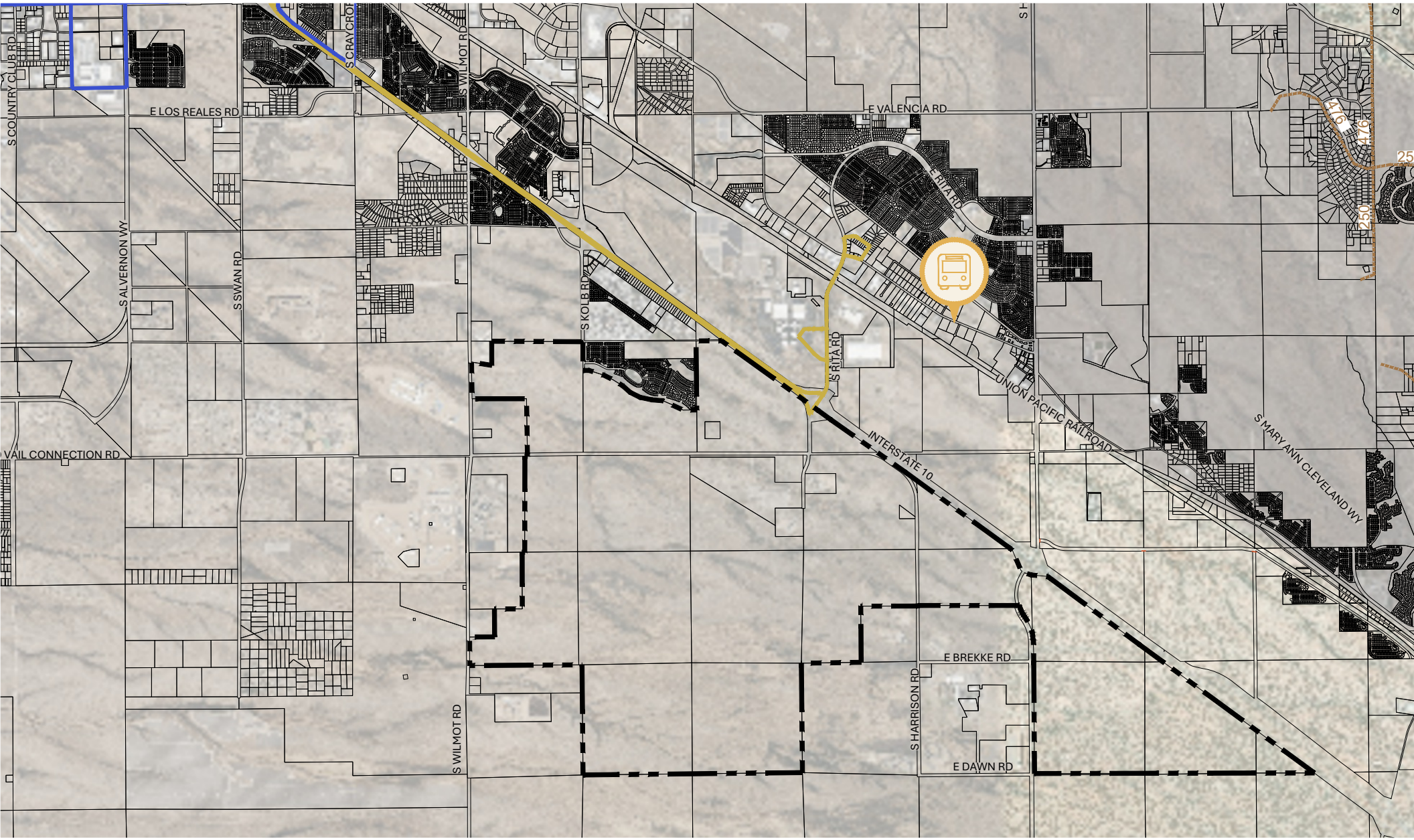


LEGEND

- PROPERTY BOUNDARY
- ARTERIAL STREET
- FUTURE ARTERIAL STREET
- FUTURE SCENIC ARTERIAL STREET
- INTERSTATE HIGHWAY
- COUNTY MAJOR ROUTE
- COUNTY SCENIC ROUTE
- PROPOSED SONORAN CORRIDOR

0' 5000' 10,000'

EXHIBIT L: BUS ROUTES

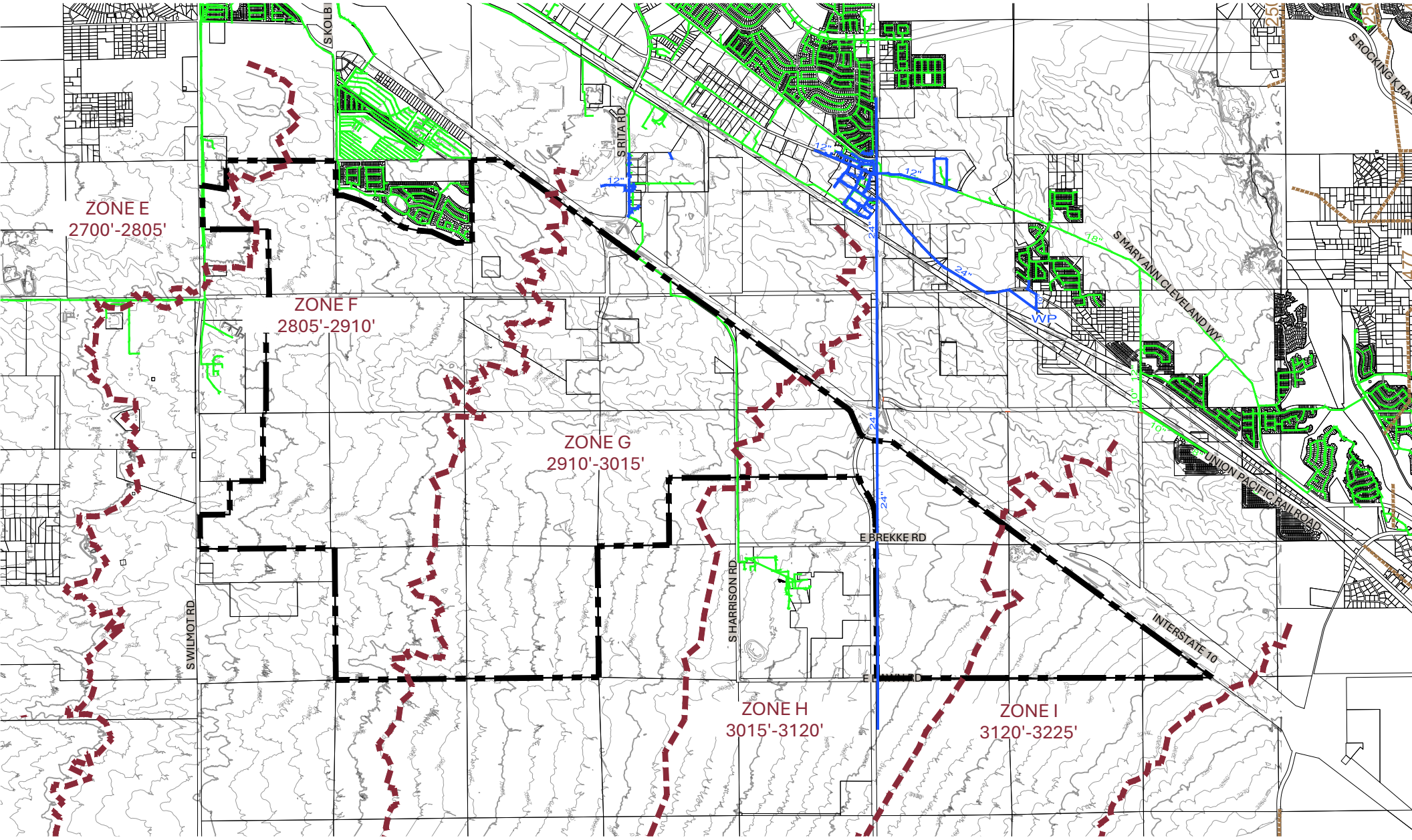


LEGEND

- PROPERTY BOUNDARY
- SUNTRAN EXPRESS ROUTES
- SUNTRAN BUS ROUTE
- PARK AND RIDE

0' 5000' 10,000'

EXHIBIT M: EXISTING WATER & SEWER



LEGEND

- PROPERTY BOUNDARY
- EXISTING SEWER LINE
- EXISTING WATER LINE
- TUCSON WATER PRESSURE ZONE BOUNDARY
- ZONE G 2910'-3015' TUCSON WATER PRESSURE ZONE & BOUNDARY ELEVATIONS

0' 2500' 5000'

H. Environmental Features

1. Topography

The elevation of the land within this PCD falls approximately 300 feet, generally from southeast to northwest. The high point of the site is in the southeast corner at an approximate elevation of 3,124 feet. The low point of the site is in the northwest corner at an approximate elevation of 2,800 feet above sea level. There are no areas with significant slopes.

Please refer to Exhibit N: Topography.

2. Existing Drainage Patterns & Site Hydrology

a. On-Site Characteristics

Federal Emergency Management Agency Floodplains

This PCD is located within Federal Emergency Management Agency) FIRM (Flood Insurance Rate Map) panels 04019C2925L, 04019C2905L and 04019C2940L. This PCD falls within Zone X, which is an area determined to be outside the 0.2% chance of an annual flood.

Local Floodplains and Washes

The City of Tucson regulates floodplains with 1-percent-annual-chance flood flow rates of over 100 cubic feet per second. The site is located within parts of the following watersheds: Airport Wash Watershed, Franco Wash Watershed, and Flato Wash Watershed. Together these watersheds consist of 84,172 acres or 132 square miles. The Airport Wash watershed is classified as a balanced basin and the Flato and Franco Wash watersheds are classified as critical basins.

The primary washes within this PCD consist of the North Fork Airport Wash, South Fork Airport Wash, Franco Wash, Franco Wash Tributary and Flato Wash.

Please refer to Exhibit O: Existing Surface *Hydrology*.

b. Existing Drainage Infrastructure

The only existing drainage infrastructure within this PCD are culverts under Kolb Road, Wilmot Road, Rita Road and Houghton Road, with only the Houghton Road culverts, recently constructed as part of a roadway widening improvement project by Pima County, having sufficient capacity to convey the 100-year storm event under the roadway. No engineered or bank protected channels, nor significant stormwater basins exist within this PCD. The Pima County Regional Flood Control District has however, recently completed the Fairgrounds North Channel between Houghton Road and Harrison Road through the Pima County Fairgrounds property, and anticipates construction of the

Fairgrounds Central Channel, design for which has been completed, in the next 2 to 5 years.

c. Offsite Flows

Please refer to Exhibit O: Existing Surface Hydrology for flows entering and leaving the site, and concentration points and peak discharges. Most of the stormwater runoff reaching this PCD originates at the base of the Santa Rita Mountains to the southeast and is typically conveyed as unconfined shallow sheet flow, except along the northern limits where floodplains are well defined by topographic relief.

Runoff reaching Houghton Road, up to the 100-year storm event, is captured and conveyed under the roadway from east to west through a series of box and pipe culverts which outlet onto the Pima County Fairground property where flows are being collected and conveyed within an engineered channel, the Northern Fairground Channel, along the northern fairground property limits or will be conveyed within a future Central Fairgrounds Channel which has been fully designed and planned for future construction by the Pima County Flood Control District. These two channels were designed to minimize flow velocities and therefore erosion potential by minimizing channel slopes and providing a wide, tiered, multi-use and landscaped flow corridor through the Fairgrounds property. The North Fairground Channels currently ends at Harrison Road, though continuation is planned for the downstream Pima County owned property as part of its SELC planning and development.

3. Shaw Riparian Areas

There are approximately 1,000 acres of Shaw Riparian Area within this PCD.

4. Wildlife Characteristics

The Arizona Game and Fish Department's Heritage Data Management and Project Evaluation Program indicates the occurrence of the following Special Status Species within a three (3) mile radius of this PCD. Please note that this report does not indicate the presence of these species within this PCD. It simply states they may occur in the area of this PCD.

SCIENTIFIC NAME	COMMON NAME	FWS	USFS	BLM
Agosia chrysogaster	Gila Longfin Dace	SC		S
Athene cunicularia Hypugaea	Western Burrowing Owl	SC	S	S
Camptostoma imberbe	Northern Beardless-Tyrannulet		S	
Choeronycteris mexicana	Mexican Long-tongued Bat	SC	S	S

Coccyzus americanus	Yellow-billed Cuckoo (Western DPS)		S	S
Danaus plexippus	Monarch	C		S
Gastrophryn mazatlanensis	Sinoloan Narrow-mouthed Toad			S
Gopherus morafkai	Sonoran Desert Tortoise	C	S	S
Heloderma suspectum	Gila Monster			
Kinosternon sonoriense	Desert Mud Turtle			S
Lithobates yavapaiensis	Lowland Leopard Frog	SC	S	S
Myotis velifer	Cave Myotis	SC		S
Poeciliopsis occidentalis	Gila Topminnow	LE		
Tadarida brasiliensis	Brazilian Free-tailed Bat			
Terrapene ornata luteola	Desert Box Turtle			S

SC = Species of Concern, S = Sensitive, C = Candidate Species. LE = Listed Endangered,

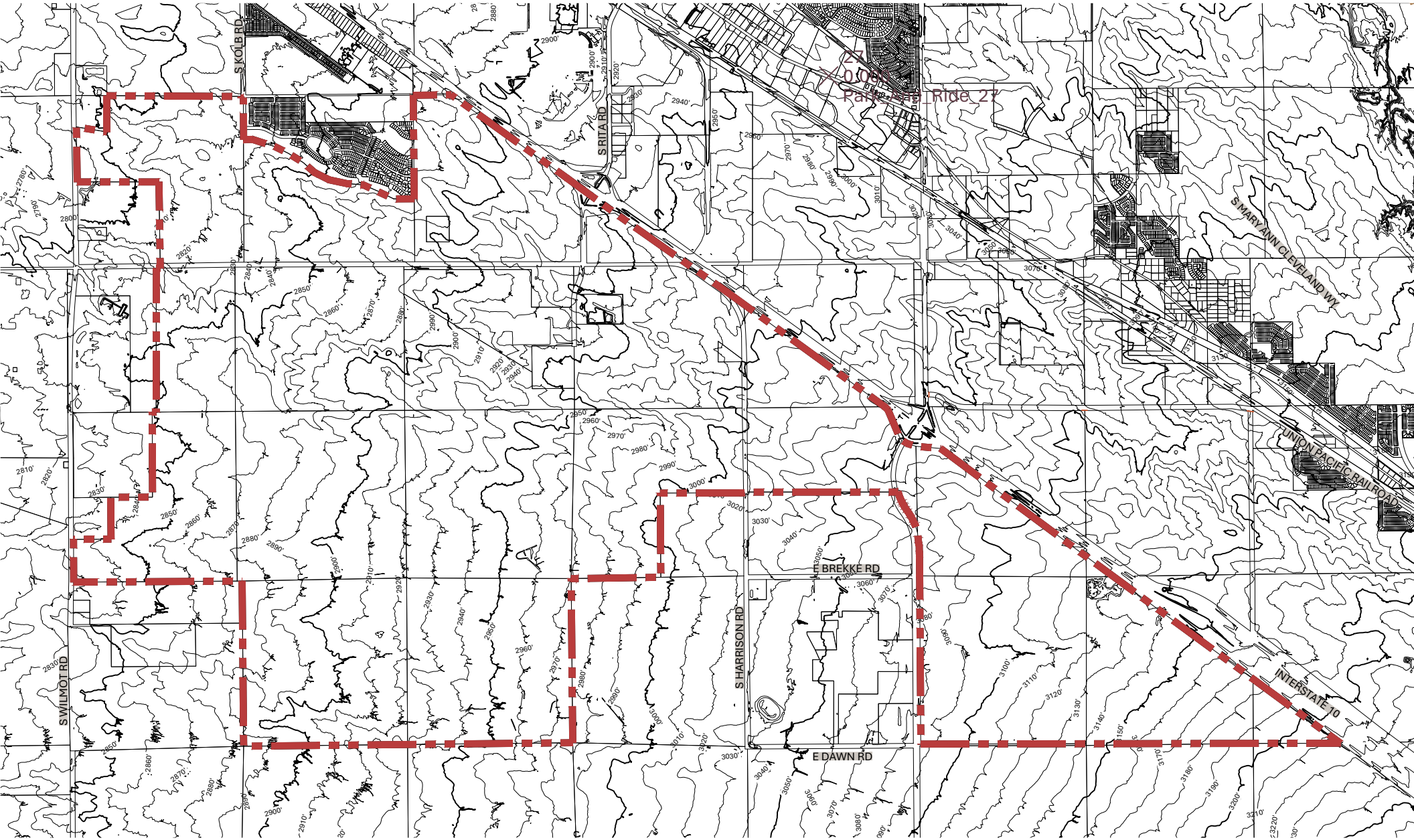
5. Cultural Resources

Westland Resources completed a cultural resources assessment of the property within this PCD in 2023. A total of 53 previous projects conducted between 1973 and 2021 intersect this PCD and of these, 12 meet modern standards and are considered to be adequate. Westland recommends that additional Class III surveys be conducted for any area not covered by the 12 recent surveys if those areas will have ground disturbing during future projects. For more information please refer to the report titled A Cultural Resources Assessment of Approximately 8,600 Acres at Rita Road and Interstate 10 in Pima County, Arizona (2023).

6. Underlying Geology, Soils & Geotechnical Considerations

Prior to construction within this PCD, future purchasers of land within this PCD will have a geotechnical report prepared that assesses the soils conditions on the property. This report will also provide recommendations pertaining to road pavement and base course thickness, pad preparation, foundation type and thickness and other recommendations as may be required for development.

EXHIBIT N: TOPOGRAPHY



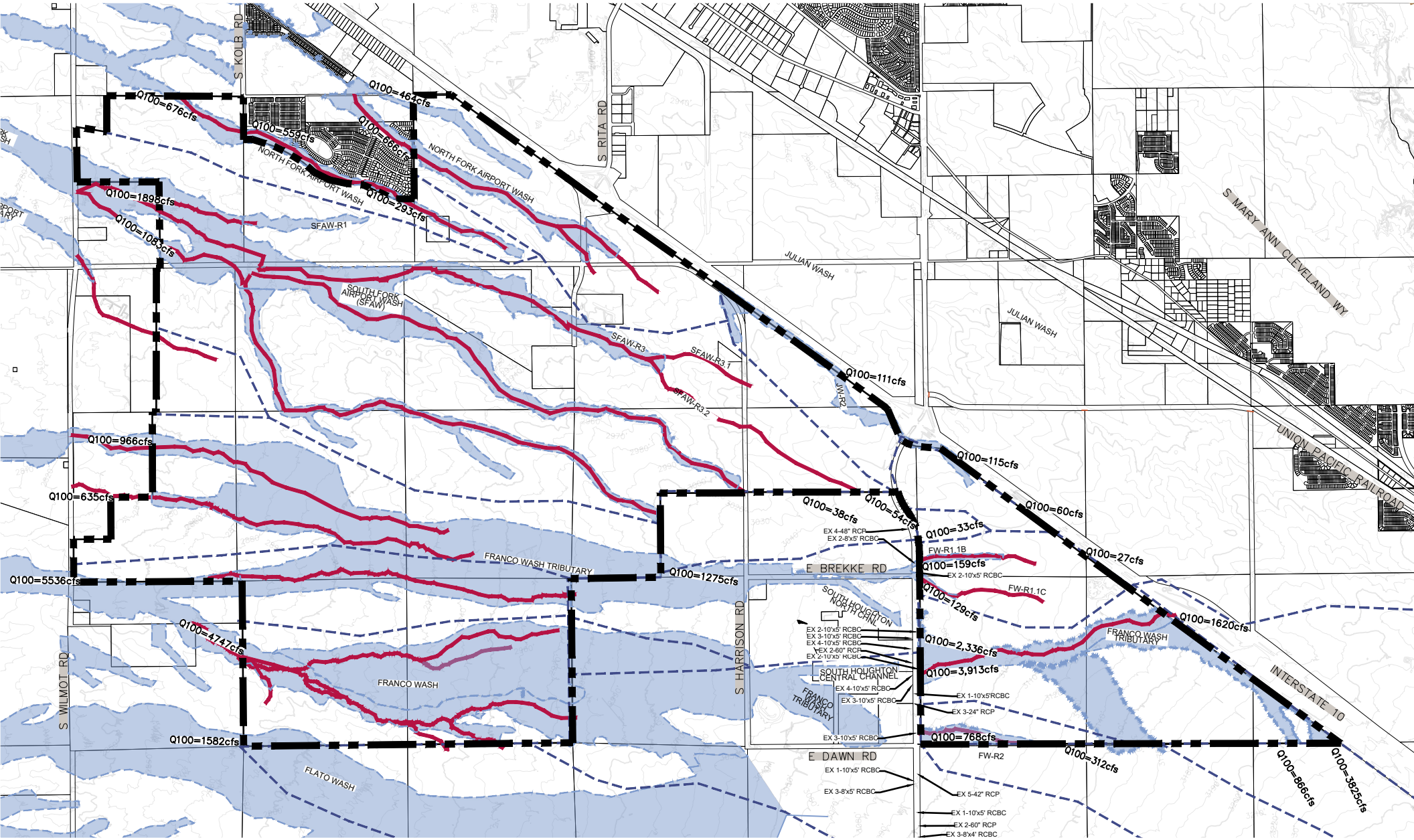
LEGEND

PROPERTY BOUNDARY

0' 5000' 10,000'

| CONTOUR INTERVAL: 10 FT | 32

EXHIBIT O: EXISTING SURFACE HYDROLOGY

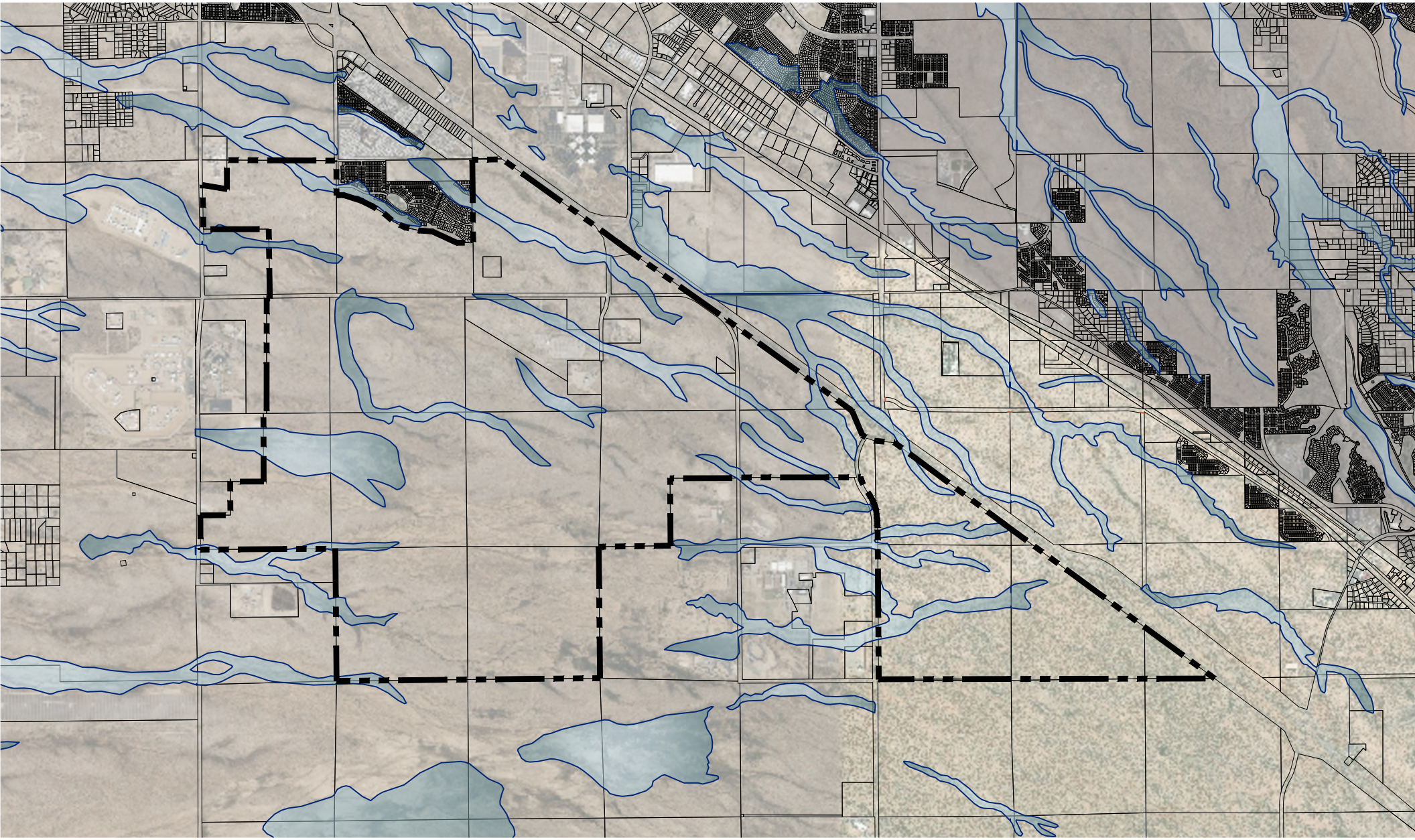


LEGEND

- PROPERTY BOUNDARY
- EXISTING ERZ WASHES
- EXISTING WATERSHED BOUNDARY
- EXISTING 100-YR FLOODPLAIN
- EX 1-10'x5' RCBC — EXISTING CULVERTS
- Q100=768cfs — EXISTING 100 YEAR Q

0' 5000' 10,000'

EXHIBIT P: SHAW RIPARIAN AREA



LEGEND

PROPERTY BOUNDARY

SHAW RIPARIAN AREA

0' 5000' 10,000'

SECTION III | LAND USE PLAN

A. Land Use Plan

1. General Information

a. PCD Overview

This PCD is intended to allow for a wide variety of uses and to be compliant with Special Policy Area 1-05 that was established as part of the RSSP Plan Amendment. It establishes two Land Use Districts, those being the Employment District and the Multiple Use District. The permitted uses in these Districts have been established such that they are compliant with the Medium/High Intensity Urban (E) and Urban Industrial (I) designations established in the above-mentioned Special Area Policy and provide flexibility in land use.

Table 1: Permitted Land Use Matrix identifies the permitted zones in the Land Use Districts. Please note that this table contains provisions specific to the zones P-I, I-1, I-2 and R-3 to ensure compatibility between industrial and residential uses and ADC Overlays.

Employment District (ED)

The Employment District is focused primarily on industrial uses and permits the following City of Tucson Zones:

- Park Industrial Zone (P-I)
- Light Industrial Zone (I-1)
- Heavy Industrial Zone (I-2)
- Office Zone (O-3)
- Residence Zone (R-3)
- Commercial Zone (C-3)
- Parking Zone (P)

Multiple Use District (MUD)

The Multiple Use District focuses on a wide variety of land uses, including commercial, residential, office/employment and industrial and permits the following City of Tucson Zones:

- Commercial Zone (C-3)
- Office Zone (O-3)
- Residence Zone (R-3)
- Park Industrial Zone (P-I)
- Light Industrial Zone (I-1)
- Parking Zone (P)

A. Land Use Plan

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- Residence Zone (R-3)
- Park Industrial Zone (P-I)
- Light Industrial Zone (I-1)
- Parking Zone (P)

Industrial uses are generally anticipated to consist of manufacturing/wholesaling activities and corporate business centers while light industrial uses would consist of uses that are industrial in nature and not offensive to surrounding land uses. Residential development of varying types and densities would be permitted, ranging from single family to multi-family. Commercial uses would service the area proximate to this PCD as well as provide services to travelers on Interstate 10.

As previously mentioned, some of the factors that make this PCD highly suitable for a variety of uses include the following:

- Proximity to Interstate 10 with direct access to Houghton Road, Rita Road and Kolb Road traffic interchanges. The Houghton Road/Interstate 10 traffic interchange was recently improved and offers excellent access to and from this PCD.

- The future Sonoran Corridor will travel through this PCD and connect to Interstate 10 at the Rita Road traffic interchange.

- Frontage on Houghton Road, a major section line arterial road that has undergone recent improvements.

- Existing dry and wet utility infrastructure in close proximity to this PCD.

- The relatively gentle topographic nature of the land.

- The opportunity to balance the provision of large developable areas for potential large-scale industrial/advanced manufacturing users and other users while preserving and enhancing on-site washes and wildlife corridors.

The District Areas shown in this PCD do not provide specific users or project layout at this time. This detail will be provided by future purchasers of land within this PCD.

Please refer to Exhibit Q: Land Use Plan for location and arrangement of the District Areas.

Once property is purchased from the State Land Department at auction, the purchaser of land will be responsible for creating more detailed master plans and reports for the entire District Area during a process referred to as Secondary Planning. One of the primary reasons for Secondary Planning is to ensure that roads and utilities are designed to allow access to all District Areas and allow utilities to be sized and positioned to allow easy extension to other District Areas. These reports include but may not be limited to the following:

- Vehicular and Pedestrian Circulation.
- Surface Drainage/Environmental Resources.
- Water.

- Wastewater.
- Trails.
- Establishment of Architectural and Landscape Architectural Design Guidelines and Standards and Design Review Process.

The purchaser of property will also be required to prepare plans and reports comprising the Development Package and conform with the subdivision platting process as required by the City of Tucson. These plans and reports generally include the following:

- Tentative plat/final plat.
- Development package (grading, paving and drainage improvement plans).
- Traffic impact analysis.
- Drainage report.
- Rainwater harvesting plans.
- Water improvement plans.
- Plans for the collection and conveyance of wastewater.
- Landscape plans.
- Native plant preservation plans.
- Geotechnical reports.
- Archaeology reports.
- Land surveys.

This PCD provides a variety of land uses. The flexible design requirements enabled by this PCD offer more focused regulations compared to conventional zoning standards, and directly promote the appropriate and efficient use of land and infrastructure. This PCD implements Plan Tucson policies providing land uses that meet the City's growth goals, and policies that provide guidance for detailed planning of development of the property.

Future purchasers will pay the rezoning/PCD fees required by the City of Tucson.

b. PCD compliance with Plan Tucson and RSSP

Plan Tucson

This PCD is designated as Southlands, a Special Planning Area intended as a long-term growth area.

Rincon Southeast Sub-Regional Plan (RSSP)

The Rincon Southeast Sub-Regional Plan was amended to include this PCD in Special Policy Area 1-05, Rita 10 – State Trust Land. The RSSP amendment was approved by Mayor and Council on April 25, 2024 (case TP-AMD-0523-0003).

The purpose of Special Policy Area 1-05 is to provide special policies and conditions of approval that guide future development of the ASLD holdings, promote orderly phased

development within the Southlands, and attract a wide variety of uses, including major industry and employment generators to the region.

The Special Area Policy Area 1-05 is aligned with the City's long-term growth strategy to promote innovative and sustainable growth within the Southlands. It encompasses phasing, performance and review criteria for any future development. It provides the necessary flexibility for the assessment of environmental systems with continued oversight through future secondary planning which will establish evaluation methods and flood control parameters.

2. Land Use Plan

The Land Use Plan for this PCD is included as Exhibit Q: Land Use Plan. This plan identifies the flowing items:

- Boundary of this PCD.
- Configuration and size (in acres) of District Areas.
- Major roads within and adjacent to this PCD. This includes existing roads and planned alignments.
- The proposed alignment of the Sonoran Corridor.
- Existing adjacent uses.
- Existing utilities and facilities, including Tucson Electric Power (TEP) and El Paso Natural Gas lines and facilities.
- Washes, including Environmental Resource Zone (ERZ) Washes that will remain in place and those that will have their designation removed via this PCD.
- Drainage corridors.
- Location of buffer areas that will offer transition to and protection of adjacent residential areas.
- Approach Departure Corridors 2 and 3 and Noise Control District A as defined by Davis – Monthan Air Force Base.

EXHIBIT Q: LAND USE PLAN

LAND USE TABLE			
PROPOSED LAND USE	ACRES (8,261± ACRES)	PERMITTED ZONING DISTRICTS	DISTRICT AREAS
EMPLOYMENT DISTRICT	4537.7± ACRES	P-I, I-1, I-2, C-3, O-3, R-3	1, 15 - 25
MULTIPLE USE DISTRICT	3723.3± ACRES	P-I, I-1, C-3, O-3, R-3	2-14

INTERSTATE 10
EXIT 270
EXIT 273
EXIT 275
KOLB ROAD
KOLB RD PER MS&R
VOYAGER RD
PANTANO RD
HOUGHTON ROAD
SONORAN CORRIDOR
TEP TRANSMISSION LINE EASEMENT
TEP SUBSTATION
PIMA COUNTY OWNED
EL PASO GAS
WILMOT ROAD
RITA ROAD
HARRISON ROAD
DAWN ROAD
BUREAU OF RECLAMATION
EL PASO NATURAL GAS LINE

1 186.0± AC
2 579.3± AC
3 286.7± AC
4 154.6± AC
5 66.4± AC
6 113.1± AC
7 177.8± AC
8 168.3± AC
9 31.1± AC
10 397.4± AC
11 601.6± AC
12 445.8± AC
13 274.2± AC
14 427.1± AC
15 254.2± AC
16 229.2± AC
17 268.0± AC
18 264.9± AC
19 411.3± AC
20 534.3± AC
21 216.0± AC
22 585.9± AC
23 174.8± AC
24 797.6± AC
25 615.5± AC

LEGEND

- PROPERTY BOUNDARY
- EXISTING PAVED ROAD
- PROPOSED ARTERIAL ROADS
- PROPOSED COLLECTOR ROAD
- 215 / 141± AC — DISTRICT AREA NUMBER AND ACREAGE
- PROPOSED FLOW CORRIDOR
- ERZ WASHES TO REMAIN
- 100–YEAR FLOODPLAIN
- SOUTHEAST EMPLOYMENT AND LOGISITCS CENTER
- UTILITY EASEMENTS
- DAVIS MONTHAN AFB APPROACH DEPARTURE CORRIDOR 2
- DAVIS MONTHAN AFB APPROACH DEPARTURE CORRIDOR 3
- DAVIS MONTHAN AFB NOISE CONTROL DISTRICT – A
- 50' BUFFER YARD AND 5' SCREEN WALL(REQUIRED IF NON– RESIDENTIAL USE DEVELOPS ADJACENT TO EXISTING RESIDENTIAL)
- FLOODPLAINS NOT ASSOCIATED WITH ERZS

NOTE: BASED PRIMARILY ON LAND USE PLANNING AND SURFACE DRAINAGE, IT IS LIKELY THAT THE ALIGNMENTS OF KOLB ROAD, RITA ROAD AND DAWN ROAD MAY BETTER CONTRIBUTE TO THE PROPOSED DEVELOPMENT OF THIS AREA WITH DIFFERENT ALIGNMENTS(SEE SECTION III.B.4. OF THE RITA 10 PCD).

0' 2000' 4000'

3. Development Standards and Land Use Regulations

a. Permitted Uses

The permitted uses in this PCD are identified in Table 1: Permitted Land Use Matrix. This table identifies the District Areas and acreage, the applicable Land Use District and the City of Tucson Zones that are permitted in each of the District Areas. It also identifies specific use restrictions that apply to certain Districts Areas.

The following provisions also apply to permitted uses in this PCD:

i. Special Exception Uses in the I-1, C-3, O-3 and R-3 are permitted by right in this PCD and do not require a Special Exception Procedure.
ii. The extraction of materials is permitted by right in District Area 10.
iii. Primary manufacturing is permitted in the Employment District and does not require a Special Exception Procedure. This use must adhere to the applicable Use Specific Standards in Article 4.9.5 of the UDC.
iv. Hazardous material manufacturing is permitted in the Employment District except in District Area 1. This use requires administrative review and approval by the Planning and Development Services Director (PDSD). The PDSD review and approval is based on compliance with the applicable Use Specific Standards in Article 4.9.5 of the UDC and the Findings in Article 3.4.5.A of the UDC.
v. All other I-2 and I-1 uses are permitted in the Employment District as indicated in Table 1 – Permitted Land Use Matrix and must adhere to the requirements of the UDC.
vi. In instances where a use is permitted in more than one Zone, the least restrictive use specific and development standards of the UDC shall apply.
vii. Data centers and all ancillary uses required for data centers are permitted in the Employment District and Multiple Use District. A data center is defined as a physical facility used primarily for the storage, management, processing, and transmission of digital data, which houses computer or network equipment, systems, servers, appliances, and other associated components related to digital data storage and operations.
viii. Recreational Vehicle Park is permitted in the Multiple Use District.
ix. Energy generation is permitted in the Employment District and Multiple Use District.
x. Surface mineral extraction is not permitted in District Area 25.

b. Uses Not Permitted

i. Billboards.

ii. Marijuana Facility: Dispensary Off-Site Cultivation Location.

iii. Residential uses are not permitted within Approach Departure Corridors 2 and 3.

Table 1 - Permitted Land Use Matrix

District Area	Acres	Land Use District – Employment District (ED) or Multiple Use District (MUD)	Zones						
			P-I	I-1	I-2	C-3	O-3	R-3	P
1	186.0±	ED	P	P	P[4]	P	P	P	P
2	579.2±	MUD	P[1]	P[1]	X	P	P	P	P
3	286.7±	MUD	P[1]	P[1]	X	P	P	P[3]	P
4	154.6±	MUD	P	P	X	P	P	P[3]	P
5	66.4±	MUD	P	P	X	P	P	P[3]	P
6	113.1±	MUD	P	P	X	P	P	X	P
7	177.8±	MUD	P	P	X	P	P	X	P
8	168.3±	MUD	P	P	X	P	P	X	P
9	31.1±	MUD	P	P	X	P	P	X	P
10	397.4±	MUD	P	P	P[2]	P	P	P[3]	P
11	601.6±	MUD	P	P	X	P	P	P[3]	P
12	445.8±	MUD	P	P	X	P	P	P[3]	P
13	274.2±	MUD	P	P	X	P	P	X	P
14	427.1±	MUD	P	P	X	P	P	P[3]	P
15	254.2±	ED	P	P	P	P	P	P	P
16	229.2±	ED	P	P	P	P	P	P	P
17	268.0±	ED	P	P	P	P	P	P	P
18	264.9±	ED	P	P	P	P	P	P	P
19	411.3±	ED	P	P	P	P	P	P	P
20	534.3±	ED	P	P	P	P	P	P	P
21	216.0±	ED	P	P	P	P	P	P	P
22	585.9±	ED	P	P	P	P	P	P	P
23	174.8±	ED	P	P	P	P	P	P	P
24	797.6±	ED	P	P	P	P	P	P	P
25	615.5±	ED	P	P	P	P	P	P	P

	8261±		P	Permitted Zone
			P[1]	Permitted Zone with Exceptions Shown Below
			X	Not Permitted

Exceptions:

1. Permitted uses in these zones under the Industrial, Utilities and Wholesaling Land Use Groups in the P-I and I-1 Zones (UDC Section 4.8.7) require a 50-foot natural undisturbed buffer and minimum 5' screen wall adjacent to existing non-industrial uses. The 5' screen wall shall be on the side of the buffer adjacent to the District Area being developed.

2. Materials extraction is permitted by right in District Area 10. The existing 400-foot wide TEP transmission line easement shall serve as the buffer between the materials extraction use and future adjacent uses in District Areas 11 and 12. The Interstate 10 right-of-way shall serve as the buffer along the northeast boundary of this District Area, and 300-foot buffers that may include the existing TEP easement shall be provided adjacent to District Area 9. No materials extraction is permitted within these buffers.

3. The area outside of Approach Departure Corridors (ADC) 2 and 3 permits residential uses, while the area within Approach Departure Corridors (ADC) 2 and 3 prohibit residential uses.

4. Hazardous material manufacturing is not permitted. In District Area 15, hazardous material manufacturing is not permitted in the area within ADC 3.

c. Use Specific Standards

Article 4.9 Use Specific Standards of the Unified Development Code shall apply to all permitted uses and special exception land uses for all Zones permitted by this PCD, noting the provision identified in Section III.A.3.a.vi.

c. Dimensional Standards and Measurements

Article 6 Dimensional Standards and Measurements of the Unified Development Code shall apply with the following exception:

Maximum building height (including property within ADC – 3): 140 feet for permitted uses in the Industrial Land Use Group as defined in UDC Section 11.3.5 and as listed in UDC Section 4.8 Permitted Use Tables. 75 feet is permitted for all other non-residential land use groups. A maximum of 200 feet is permitted for non-habitable structures.

d. Development Standards

Article 7 Development Standards of the Unified Development Code shall apply, including all exceptions and processes to reduce parking, such as the Individual Parking Permit (IPP) in accordance with Section 7.4.5 of the UDC.

e. Approach Departure Corridor (ADC) Standards

i. ADC – 3 Performance Standards for the DMAFB Environs from UDC Article 5.6.8 shall apply to property within ADC – 3 except for the following:

- Consistent with the UDC dimensional standards which do not limit lot coverage for Industrial Zones, there is no maximum FAR.
- There is no requirement for underground meeting and function areas.
- The maximum permitted building height of 62 feet does not apply. Maximum building heights are established in Section III.B.2.d above.
- Storage of hazardous materials in association with the permitted uses herein is allowed.

ii. ADC – 2 Performance Standards of the Unified Development Code shall apply.

f. Subdivision Block Platting

Subdivision platting and/or Development Packages will be completed by future purchasers of property within this PCD and will comply with Article 8: Land Division, Land Split and Subdivision Standards of the Unified Development Code, including the Flexible Lot Development (FLD) option.

g. Owner Maintenance Responsibilities

The construction of future roads within this PCD will comply with City of Tucson standards, as will right-of-way dedications for public roads. Public roads, once constructed and accepted by the City of Tucson, will be owned and maintained by the City.

The maintenance of public utilities will be the responsibility of the servicing utility company.

Trails that are intended to serve the larger community will be designed to City of Tucson or Pima County standards and dedicated to the City of Tucson or Pima County in accordance with applicable ASLD requirements and procedures for ongoing maintenance.

Pima County would maintain channelized wash corridors upon dedication.

h. Financial Assurances

Financial assurances will be provided in the future in forms acceptable to the City of Tucson as identified in Section 8.6.2 of the Unified Development Code. This includes third party trusts.

4. Design guidelines

Design guidelines will be prepared as part of the Secondary Planning process described in Section IV of this PCD.

B. Infrastructure and Utilities

1. Water and Sewer

The required water and sewer improvements to serve development within this PCD will be addressed in two ways.

First, a Water Master Plan and Wastewater Master Plan will be prepared for the development parcel's entire District Area during the Secondary Planning stage and preliminarily address the provision of water and wastewater infrastructure. These master plans will ensure that water and wastewater infrastructure is sized and located in a manner that considers not only the District Area(s) containing the initial disposition property, but also potential users in the undeveloped District Areas. The intent is to plan water and wastewater infrastructure that can easily be extended to serve District Areas that are yet to be developed.

Second, developers within this PCD shall be required to prepare and process Development Packages for review and approval by the City of Tucson. This package will include detailed

plans for connection to the existing wastewater system owned and operated by Pima County Regional Wastewater Reclamation Department. A separate water improvement plan will be prepared and submitted to Tucson Water and will consist of a Master Water Plan and a Water Improvement Plan, providing detail for connection of a development site to the water system owned and operated by Tucson Water. These plans will include provisions for the extension of utility infrastructure to other District Areas.

Pima County Regional Wastewater Reclamation Department will provide wastewater collection and treatment for this PCD. The following conditions apply:

a) The owner(s) shall not construe any action by Pima County as a commitment to provide sewer service to any new development within the rezoning area until Pima County executes an agreement with the owner(s) to that effect.
b) The owner(s) shall obtain written documentation from the Pima County Regional Wastewater Reclamation Department that treatment and conveyance capacity is available for any new development within the rezoning area, no more than 90 days before submitting a tentative plat, development plan, preliminary sewer layout, sewer improvement plan, or request for building permit for review. Should treatment and / or conveyance capacity not be available at that time, the owner(s) shall enter into a written agreement addressing the option of funding, designing and constructing the necessary improvements to Pima County's public sewerage system at his or her sole expense or cooperatively with other affected parties. All such improvements shall be designed and constructed as directed by the Pima County Regional Wastewater Reclamation Department.
c) The owner(s) shall time all new development within the rezoning area to coincide with the availability of treatment and conveyance capacity in the downstream public sewerage system.
d) The owner(s) shall connect all development within the rezoning area to Pima County's public sewer system at the location and in the manner specified by the Pima County Regional Wastewater Reclamation Department in its capacity response letter and as specified by the Pima County Regional Wastewater Reclamation Department at the time of review of the tentative plat, development plan, preliminary sewer layout, sewer construction plan, or request for building permit.
e) The owner(s) shall fund, design and construct all off-site and on-site sewers necessary to serve the rezoning area, in the manner specified at the time of review of the tentative plat, development plan, preliminary sewer layout, sewer construction plan or request for building permit.
f) The owner(s) shall complete the construction of all necessary public and/or private sewerage facilities as required by all applicable agreements with Pima County, and all applicable regulations, including the Clean Water Act and those promulgated by ADEQ, before treatment and conveyance capacity in the downstream public sewerage system will be permanently committed for any new development within the rezoning area.

2. Electric

Developers within this PCD will provide the Development Package to Tucson Electric Power Company (TEP) so that they can prepare an electric plan for provision of electricity to a development site.

3. Natural Gas

Developers within this PCD will provide the Development Package to Southwest Gas Company (SWG) so that they can prepare a natural gas plan for the provision of natural gas to a development site.

4. Transportation Infrastructure

The impacts of development of this PCD on roadways and the provision of safe and efficient access to and from this PCD will be addressed in two ways. First, traffic impacts will be completed as part of the Vehicular Circulation Master Plan to be prepared during the Secondary Planning stage. The initial purchaser of land in this PCD will prepare this master plan to address the District Area containing the initial disposition property in a manner that facilitates further development of other DAs that are affected by or may make use of the transportation infrastructure constructed to serve the initial disposition property. The intent is to ensure that transportation infrastructure is planned in a manner that it ensures adequate circulation to adjacent DAs and can easily be extended.

Secondly, the development of property within this PCD will require the preparation and processing of a Development Package. Traffic impact analyses will be prepared in accordance with the Development Package and/or subdivision platting process as required by the City of Tucson.

The City of Tucson Major Streets and Routes Plan has been reviewed to understand the proposed alignments of Arterial Streets within this PCD. Based primarily on land use planning and surface drainage, it is likely that the alignments of Kolb Road, Rita Road and Dawn Road may better contribute to the proposed development of this area with different alignments. These proposed re-alignments are shown on Exhibit Q: Land Use Plan. The modification of Arterial Street designations would be in accordance with Article 3.6 of the City of Tucson UDC.

C. Public Facilities

If needed by the City of Tucson, a 10-to-15-acre site would be reserved within this PCD for public safety facilities or other municipal services. The exact location of this site would be determined via discussions between ASLD, future purchasers and the City of Tucson.

D. Cultural Resources and Archaeology

As previously mentioned, Westland Resources recommends that additional Class III surveys be conducted for any area not covered by the 12 recent surveys if those areas will have ground disturbing during future projects. Class III Surveys shall be required to be performed by an archaeologist permitted by the Arizona State Museum (ASM). Once the Class III inspection has been completed, reports will be submitted to ASLD Cultural Resources for review in compliance with ASLD's statutory obligations under the State Historic Preservation Act (SHPA) (A.R.S. § 41-861 et al). The cultural resources inspection will provide a document to assist in determining if any cultural resources eligible for nomination to the State and Federal Registers of Historic Places are present. If register-eligible properties are present, and avoidance is not feasible, then additional fieldwork may be required. In addition, any cultural resource reports shall be submitted to the City of Tucson, Historic Preservation Office, for review in compliance with City of Tucson ordinance(s).

E. Phasing Plan

This PCD may be developed in phases that may or may not align with the boundaries of identified District Areas. In such situations, the land uses assigned to the DA that comprises the majority of the development sale parcel will apply to the entire development parcel. Once this PCD is approved by the City of Tucson, decisions for how and when to sell the land will be made by ASLD based on careful consideration of how to best achieve the Department's fiduciary responsibility to the beneficiaries of the STL. ASLD retains full authority to determine which District Areas (or portions thereof) are sold, and when the sale will occur. This is based on a careful assessment of market conditions and determining which State Land holdings may be most attractive to future purchasers. The post-PCD planning and development of this property would begin following the disposition of a parcel.

Regardless of the actual order of development of the District Areas within this PCD, future purchasers of each District Area or portion of District Areas will design and construct infrastructure (i.e. roads, water, sewer, etc.) necessary to serve the District Area or portion thereof itself, but also to facilitate the development of adjacent District Areas where appropriate and required. Infrastructure will be sized to serve other District Areas and will be designed so that it can easily be extended to reach and serve other District Areas.

F. Conceptual Drainage Strategy

1. Drainage Strategy

The overall drainage strategy for this PCD balances the creation of developable land with the safe and efficient conveyance of surface runoff through the property, vegetation enhancement, protection and creation of open spaces and wildlife habitat and corridors. The strategy is compliant with the Flood Control, Natural Resources and Wildlife Habitat and

Corridors policies in the Special Policy Area 1-05 Rita 10 – State Trust Land. Floodplain management techniques are included in this PCD to achieve this objective. Further detail on the drainage strategy is described in Appendix A: Conceptual Master Drainage Plan - Rita-10.

Five flow corridors are proposed within the Rita 10 PCD. Flow corridors 1 through 3 are located within the proposed Employment District and will significantly reduce floodplain extents while enhancing environmental and wildlife habitat and pedestrian connectivity. Flow corridors 4 and 5 are located east of Houghton Road within the Multiple Use District. Flow corridor 5 will generally maintain the existing floodplain extents on the north, with runoff from the south being captured and redirected along the southern border.

Flow corridors 1, 2 and 5 will be constructed through excavation to minimize the cost- and resource-prohibitive need to import material for future developments. Flow corridors 3 and 4 will utilize a combination of natural grade and or berms and fill to contain flows. This approach will also reduce future roadway infrastructure costs and avoid existing utilities such as the TEP transmission lines and El Paso Natural Gas line. To construct the channel, the ERZ designations will be removed through this PCD, ultimately improving the habitat within the corridors compared to the existing condition, which is generally barren or comprised of dead vegetation. Proposed flow corridors will generally match the design used in the Fairgrounds project, which features a wide shallow crossing section, a low flow thalweg for small storm events, an elevated bank with a pedestrian multi-use path, and gently landscaped side slopes. The channel design in that project also included concrete cutoff wall channel stabilization features, which are likely to be required for the proposed flow corridors and will be evaluated during each segment design.

The proposed enhanced flow corridors within this PCD would consist of wide, shallow sections similar to the South Houghton North Channel and consist of the following elements:

- An earthen, low flow channel designed to pass the more frequent storm release. This low flow channel is intended to replicate the low flow channel in the native wash and would contain the more frequent storm events with a potential capacity between the 2 and10-year events. The depth of this portion of the channel would not exceed 18”.
- Earthen revegetated side slopes at approximately 5:1.
- An earthen or paved multi-use recreational trail within the overbank area of the low flow channel in accordance with the Pima County Trails System Master Plan.
- New landscaping within the overbank area. Water harvesting strategies can be used in this overbank area to assist in long term maintenance and health of vegetation.
- Intermittent grade control structures as may be necessary.

Construction of enhanced flow corridors will be completed as described in Table 2: Drainage Infrastructure Design Standards. This approach will not directly restrict any specific parcel of land from being developed, however it does incentivize a logical progression of development from downstream to upstream along each corridor (west to east).

design plans coordinated through their appropriate departments based on the design standards described in this report.

Table 2: Drainage Infrastructure Design Standards		
INFRASTRUCTURE	**DESIGN STANDARDS**	**NOTES**
Detention/Retention/First Flush	All development will provide onsite stormwater detention/retention/first flush per current development standards.	
Flow Corridor Extents	Flow corridors and roadway drainage crossings adjacent to and downstream of each development will be constructed to their full extents within the developed District Area and dispersed on undeveloped State land using energy dissipators or match existing conditions when discharging onto private properties. This standard applies unless otherwise approved by the City of Tucson and Arizona State Land Department.	
Flow Corridor Design and Construction	Flow Corridors will be designed and constructed to meet freeboard per City Standards at the time of construction. Perched channels will only be allowed as a temporary condition on the development parcel or on adjacent undeveloped properties upstream of the proposed site development. All perched channels will be constructed with a minimum compacted top width of 20 feet and 8:1 back slopes. Construction of perched channels will be allowed upon approval of proposed design drawings and reports. Backfill may be places as necessary to create the ultimate corridor section. Evaluation of offsite stormwater runoff to be considered by each District Area and upstream runoff allowed to be captured and diverted into flow corridors as needed or to existing washes if no impacted is demonstrated and approved. This standard applies unless otherwise approved by the City of Tucson and Arizona State Land Department.	This standard is intended to describe flow corridor construction requirements adjacent to undeveloped land.

INFRASTRUCTURE	DESIGN STANDARDS	NOTES
First Flush Volume	All first flush volumes will include a 15% increase above the current 0.50-inch standard.	This standard is consistent with current development within the general area as required by the City.
Roadway Drainage Crossings	All roadway drainage crossings shall provide conveyance of the 100-year storm peak flow rate applicable at the time of development event under the roadway. This standard applies unless otherwise approved by the City of Tucson and Arizona State Land Department.	This standard recognizes that flow rates are subject to change over time due to changes in runoff modeling and rainfall values.
Pavement Drainage	Pavement drainage for all public and private roadways shall follow the design standard at the time of development.	This standard applies to spread, inlet and stormdrain pipe sizing.
Erosion Protection	All channels and culvert outlets shall be designed to prevent channel lateral migration, channel degradation and scour at their outlets through the use of energy dissipators, bank protection and grade control structures.	
Flow Corridor Vegetation Enhancement	The addition of vegetation within flow corridors to enhance them shall be considered when designing the channels and accounted for in the hydraulic analyses through the use of Manning's value increases and or blocked obstructions or other conveyance reduction methods. No vegetation shall be placed within the low flow portion of the flow corridors.	

Construction of the flow corridors will be completed as described in Table 3. The responsibility for construction of drainage corridors for each district area is summarized in Table 3. Each District Area must ensure the construction of the full flow corridor between it and the Rita 10 PCD downstream boundary. This approach does not directly restrict any specific District Area from being developed but incentivizes a logical progression of development from downstream to upstream along each corridor (west to east).

	Table 3 : Drainage Infrastructure Design Standards
DISTRICT AREA	**DRAINAGE CORRIDOR RESPONSIBILITY***
1	DEVELOPMENT REQUIRED TO DISCHARGE TO EXISTING OUTFALL LOCATIONS. NO DRAINAGE CORRIDOR CONSTRUCTION REQUIREMENTS
2	DEVELOPMENT ALLOWED TO DISCHARGE TO EXISTING OUTFALL LOCATIONS IN NORTH AND SOUTH (CORRIDOR 1) AIRPORT FORK WASHES WHILE NOT EXCEEDING EXISTING CONDITION PEAK FLOWS DOWNSTREAM IN EITHER WASH. FULL SOUTH FORK AIRPORT WASH DRAINAGE CORRIDOR (CORRIDOR 1) CONSTRUCTION REQUIRED WITHIN PROPERTY BOUNDARY.
3,4,5,6,7	DEVELOPMENT REQUIRED TO DISCHARGE TO EXISTING OUTFALL LOCATIONS WITHIN NATURAL NORTH FORK AIRPORT WASH TRIBUTARIES. NO ENCROACHMENT INTO EXISTING FLOODPLAIN ALLOWED. NO DRAINAGE CORRIDOR CONSTRUCTION REQUIRED.
8,9	NO REGULATORY FLOODPLAINS ONSITE. DEVELOPMENT TO OUTFALL TO EXISTING DISCHARGE POINTS. NO DRAINAGE CORRIDOR CONSTRUCTION REQUIRED.
10	NO ENCROACHMENT INTO REGULATORY FLOODPLAIN ALLOWED AND DEVELOPMENT TO OUTFALL AT EXISTING DISCHARGE POINTS. NO DRAINAGE CORRIDOR CONSTRUCTION REQUIRED.
11	DEVELOPMENT MUST CONSTRUCT FULL DRAINAGE CORRIDOR ALONG SOUTHERN PROPERTY BOUNDARY TO DIVERT FRANCO WASH TRIBUTARY (CORRIDOR 5) TO EXISTING CULVERT DROP INLETS AT HOUGHTON ROAD. NO ENCROACHMENT IN REMAINING REGULATORY FLOODPLAIN EXTENTS ALONG NORTHERN PROPERTY BOUNDARY ALLOWED.
12	NO ENCROACHMENT INTO REGULATORY FLOODPLAIN ALLOWED AND DEVELOPMENT TO OUTFALL AT EXISTING DISCHARGE POINTS. NO DRAINAGE CORRIDOR CONSTRUCTION REQUIRED.
13	STORMWATER DISCHARGE FROM SITE IS DEPENDENT UPON AVAILABLE DOWNSTREAM FLOW CORRIDOR INFRASTRUCTURE AVAILABILITY AND MAY BE ALLOWED TO DISCHARGE TO EXISTING CONDITIONS OUTFALL LOCATIONS OR TO FLOW CORRIDOR 1. DEVELOPMENT TO ENSURE PEAK FLOW RATES ARE NOT INCREASED WITHIN THE DOWNSTREAM WASHES.
14,15	DEVELOPMENT TO DISCHARGE INTO SOUTH FORK AIRPORT WASH DRAINAGE CORRIDOR (CORRIDOR 1). FIRST DEVELOPMENT TO CONSTRUCT BETWEEN DISTRICT AREA 14 AND 15 REQUIRED TO CONSTRUCT FULL DRAINAGE CORRIDOR FOR SOUTH FORK AIRPORT WASH (CORRIDOR 1) ALONG ITS PROPERTY LINE.

DISTRICT AREA	DRAINAGE CORRIDOR RESPONSIBILITY*
16	DEVELOPMENT TO DISCHARGE INTO FRANCO WASH TRIBUTARY DRAINAGE CORRIDOR (CORRIDOR 2). FIRST DEVELOPMENT TO CONSTRUCT BETWEEN DISTRICT AREA 16 AND 17 REQUIRED TO CONSTRUCT FULL DRAINAGE CORRIDOR FOR FRANCO WASH TRIBUTARY (CORRIDOR 2) ALONG ITS PROPERTY LINE.
17	DEVELOPMENT MAY DISCHARGE INTO FRANCO WASH (CORRIDOR, FRANCO WASH TRIBUTARY, OR BOTH WITHOUT EXCEEDING EXISTING PEAK FLOW RATES WITH THE DRAINAGE CORRIDORS. FIRST DEVELOPMENT TO CONSTRUCT BETWEEN DISTRICT AREA 16 AND 17 REQUIRED TO CONSTRUCT FULL DRAINAGE CORRIDOR FOR FRANCO WASH TRIBUTARY (CORRIDOR 2) ALONG ITS PROPERTY LINE. DISTRICT AREA 17 TO CONSTRUCT FRANCO WASH (CORRIDOR 3) NORTH BANK WITH FILL OR THROUGH USE OF A NON-LEVEE BERM.
18	NO ENCROACHMENT INTO REGULATORY FLOODPLAIN ALLOWED AND DEVELOPMENT TO DISCHARGE INTO FRANCO WASH (CORRIDOR 3). FRANCO WASH BANK IS PROVIDED BY NATURAL GRADE. NO DRAINAGE CORRIDOR CONSTRUCTION REQUIRED.
19	DEVELOPMENT TO DISCHARGE INTO FRANCO WASH (CORRIDOR 3) DRAINAGE CORRIDOR. DEVELOPMENT TO CONSTRUCT FRANCO WASH (CORRIDOR 3) DRAINAGE CORRIDOR NORTH BANK WITH FILL OR THROUGH USE OF A NON-LEVEE BERM.
20	DEVELOPMENT TO DISCHARGE INTO FRANCO WASH TRIBUTARY. DEVELOPMENT REQUIRED TO CONSTRUCT FULL FRANCO WASH TRIBUTARY DRAINAGE CORRIDOR (CORRIDOR 2) WITHIN THE DISTRICT AREA.
21	DEVELOPMENT TO DISCHARGE TO EXISTING SITE OUTFALL LOCATION(S) AND PEAK FLOW RATES NOT TO EXCEED EXISTING CONDITIONS. NO DRAINAGE CORRIDOR CONSTRUCTION REQUIRED.
22	DEVELOPMENT TO DISCHARGE INTO FRANCO WASH TRIBUTARY (CORRIDOR 2). DEVELOPMENT REQUIRED TO CONSTRUCT FULL FRANCO WASH TRIBUTARY DRAINAGE CORRIDOR (CORRIDOR 2) WITHIN THE DISTRICT AREA.
23,24,25	DEVELOPMENT TO DISCHARGE INTO SOUTH FORK AIRPORT WASH DRAINAGE CORRIDOR (CORRIDOR 1). DEVELOPMENT REQUIRED TO CONSTRUCT FULL SOUTH AIRPORT WASH DRAINAGE CORRIDOR (CORRIDOR 1) WITHIN THE DISTRICT AREA.

*These requirements/responsibilities apply unless otherwise approved by the City of Tucson and Arizona State Land Department.

Phasing of Drainage Improvements

Stormwater drainage design standards presented herein allow for the development of any District Area at any given time by requiring all downstream stormwater infrastructure to be constructed prior to site development. This incentivizes developments to be constructed in a logical fashion from downstream to upstream (west to east) as it will result in the lowest overall construction costs from a stormwater infrastructure standpoint while also likely providing the closest available fill source from channel excavation. Each development within this PCD will need to capture and convey all upstream runoff to the adjacent flow corridors.

Development within this PCD shall comply with City of Tucson Code, Chapter 26, Floodplain, Stormwater and Erosion Hazard Management as well as applicable sections of the UDC and Technical Standards Manual.

Stormwater detention and retention will comply with Section 4-03.0.0 of the City of Tucson Technical Standards Manual.

Drainage design shall comply with the City of Tucson, *City of Tucson Standards Manual for Drainage Design and Floodplain Management in Tucson, Arizona* (Ref. 1). Drainage design will consider Pima County Regional Flood Control District Design Standards for Stormwater Retention/Detention Facilities, June 2014, Section D.4 and amendments.

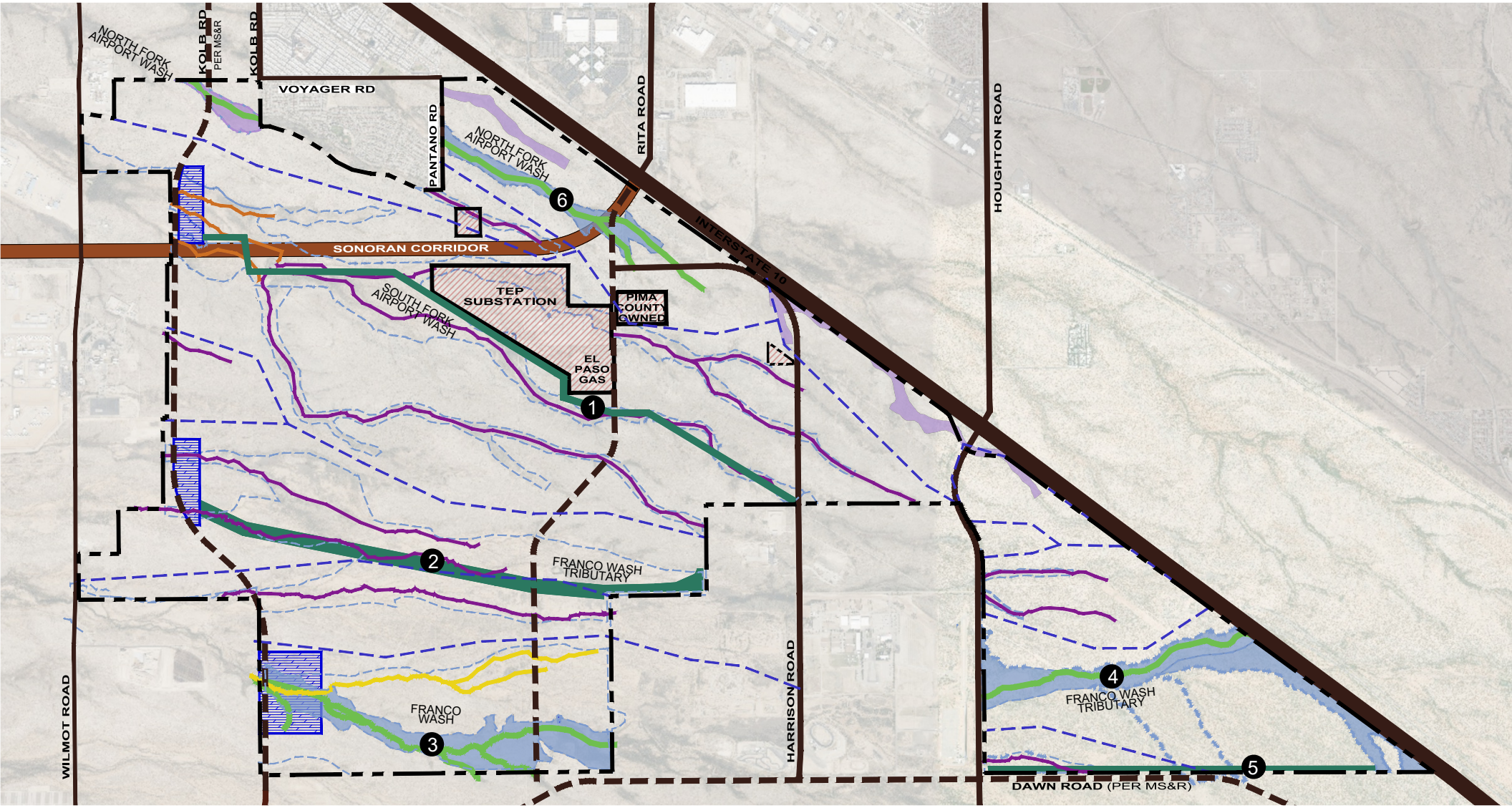
Any changes to the approved design standards will need to have their impacts evaluated, accounted for, and documented to ensure that expectations for development are known and readily available for all future developments.

Environmental Resources Zone (ERZ) Washes

Many of the existing washes and floodplains within this PCD have been mapped as protected riparian areas and are currently designated as ERZ washes, and none are considered WASH ordinance washes. According to the Environmental Resource Report (ERR) prepared by The Planning Center for this PCD in 2023, most of what was historically mapped would not be considered riparian areas under today's standards. Therefore, the proposed drainage concept is to remove the ERZ designation across much of the site, while improving the washes by creating flow corridors with consistent and predictable drainage patterns across the property, supporting vegetation and wildlife movement.

This PCD proposes the removal of portions of the ERZ designations as shown on Exhibit R: Proposed Surface Hydrology and Modification of ERZ Wash Designations. The removal of these ERZ designations is part of the balanced development strategy for this PCD. Protected Riparian Area (PRA) in these washes disturbed by development would be mitigated via the provisions of the Protected Riparian Area Mitigation and Wash Enhancement Plan. This proposed modification of ERZ designations is in accordance with Section 5.7.2.D of the UDC. It would also be in compliance with Special Area Policy 1-05, Rita 10 – State Trust Land established in the 2024 RSSP amendment specific to this property, which requires review and recommendation by an advisory board (Stormwater Technical Advisory Committee – STAC).

EXHIBIT R: PROPOSED SURFACE HYDROLOGY AND MODIFICATION OF ERZ WASH DESIGNATIONS

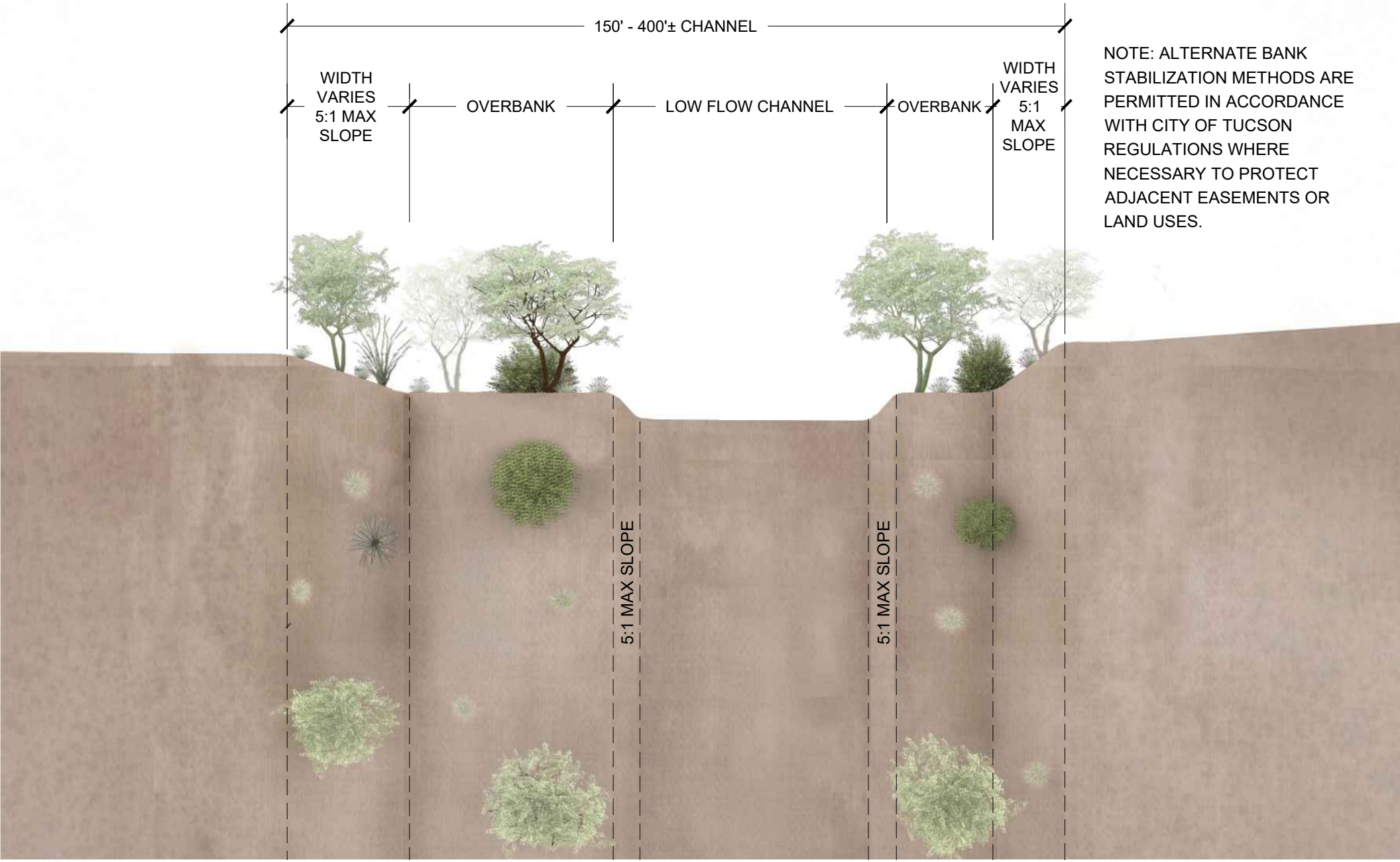


LEGEND

- PROPERTY BOUNDARY
- OUT PARCELS
- PIMA COUNTY
- ERZ WASH AND ASSOCIATED 100-YEAR FLOODPLAIN TO BE PRESERVED
- ERZ WASH TO BE REMOVED VIA PROPOSED PCD TO PROVIDE LARGE CONTIGUOUS AREAS OF LAND SUITABLE FOR LARGE SCALE INDUSTRIAL USE
- ERZ WASH TO BE REMOVED DUE TO SONORAN CORRIDOR
- ERZ WASH TO BE REMOVED DUE TO PIMA COUNTY CHANNELIZATION PROJECT
- 100-YEAR FLOODPLAIN NOT ASSOCIATED WITH AN ERZ
- 100-YEAR FLOODPLAIN/FLOW CORRIDOR
- 100-YEAR FLOODPLAIN TO BE REMOVED WITH ERZ WASH DESIGNATION REMOVAL
- PROPOSED ENHANCED FLOW CORRIDOR
- ONSITE WATERSHED BOUNDARY
- PROPOSED REGIONAL BASIN
- 1 FLOW CORRIDOR LABEL

0' 2000' 4000'

EXHIBIT S: CONCEPTUAL CHANNEL CROSS SECTION



NOTE: ALTERNATE BANK STABILIZATION METHODS ARE PERMITTED IN ACCORDANCE WITH CITY OF TUCSON REGULATIONS WHERE NECESSARY TO PROTECT ADJACENT EASEMENTS OR LAND USES.

G. Protected Riparian Area Mitigation and Wash Enhancement Plan

As previously mentioned, an Environmental Resource Report has been prepared for this property and is included in this PCD as Appendix B. This Environmental Resource Report preliminarily identifies the Protected Riparian Area (PRA). A final determination of PRA would be made by more detailed analysis to occur during the Development Package phase. If PRA remains undisturbed, then no mitigation is required. Disturbed PRA will be mitigated in accordance with the following provisions.

A PRA Mitigation and Wash Enhancement Plan shall be submitted as part of the Development Package to the City of Tucson Planning and Development Services Department by the future purchaser or purchasers of property within this PCD. Each proposed development within this PCD shall only be responsible for the preparation of a PRA Mitigation and Wash Enhancement Plan that is specific to the District Area or Areas being purchased and developed and not for the entirety of this PCD. The options for PRA mitigation are as follows:

1. Mitigation in wash corridors that are either within or adjacent to the District Area or Areas proposed for development.
2. If there are no washes within or adjacent to the District Area or Areas proposed for development, then mitigation can occur within the District Area being purchased and developed.
3. After Pima County of the City of Tucson accepts dedication of wash corridors within this PCD, then future purchasers can coordinate with the County to determine if mitigation can be provided within County owned washes and/or basins. If feasible, the future purchaser would work with the County to determine the specific location of mitigation plants and irrigation system points of connection.

The overall purpose and intent of this Plan is as follows and is illustrated on Exhibit T: PRA Mitigation and Wash Enhancement Concept.

- To compensate for the loss of PRA within this PCD by introducing new or relocated plants to mitigation areas within this PCD.
- To support and enhance healthier vegetation, wildlife habitat and connectivity in wash corridors by directing as much stormwater flow as possible from developed areas into adjacent washes and introducing new vegetation. This complies with Chapter 26 Floodplain, Stormwater and Erosion Hazard Management of the Tucson City Code. This also complies with applicable sections of the UDC, TSM and other City of Tucson drainage design documents unless modified by this PCD.

The PRA Mitigation and Wash Enhancement Plan shall be submitted and reviewed by the City of Tucson Planning and Development Services Department. The Director of the City of Tucson Planning and Development Services Department shall be the approving authority of this PRA

Mitigation and Wash Enhancement Plan, and where applicable Pima County shall review and approve.

The PRA Mitigation and Wash Enhancement Plan shall include the following information:

1. The boundary of the site proposed for development, including an aerial photograph, taken within three years of submittal.
2. The location of proposed development areas.
3. The location of 100-year floodplain limits as regulated by the City of Tucson. Flood resource areas identified by this PCD and regulated by the Pima County Regional Flood Control District should also be identified.
4. The location and amount of PRA within the boundary of the site proposed for development. The PRA shown is to be as per the PRA identified in the ERR that is to be approved by the City of Tucson. If additional PRA is identified during the preparation of the PRA Mitigation and Wash Enhancement Plan, it will be identified as such and be handled in accordance with these mitigation plan requirements.
5. An inventory of living plants within the PRA areas proposed for disturbance that meet the following criteria:
    a. Canopy, or over-story vegetation consisting of perennial, woody plants (such as mesquite, foothill palo verde or desert hackberry) that are six feet or more in height and have a basal trunk diameter greater than two inches. Caliper of trees is measured at six inches for single-trunked and multitrunked specimens above grade level at the base of the tree.
    b. Mid-story, or understory vegetation consisting of perennial woody plants (such as catclaw and whitethorn acacia) that are six feet or more in height, excluding the following perennial woody plants: burrobush, creosote bush, desert broom and triangle-leaf bursage.

    The inventory shall include the identification number, genus and species, size, transplantability (considering health, vigor, form, soil conditions at the base of the tree and topography). Please note this inventory is separate from the Native Plant Preservation Plan (NPPP) that is required by the City of Tucson. The protected plant list and caliper and height requirements are different than would be used in the preparation of the NPPP.
6. Identification of plants within the PRA areas to be transplanted to mitigation areas and ones to be removed from the site.
7. Identification of mitigation areas and individual plants that will recreate the disturbed PRA areas. The revegetation effort will create habitat that approximates the predisturbed habitat in square footage, plant density, diversity and volume. Mitigation areas are to be in accordance with Exhibit T: PRA Mitigation and Wash Enhancement Concept.

a. Trees with basal trunk diameters ranging from two to four inches and shrubs shall be replaced at a two to one ratio. Mitigation plants can come from on-site inventory (minimum caliper 0.25" for trees measured at six inches above grade) or nursery containers (minimum size is 1 gallon).

b. Trees with basal trunk diameters larger than four inches shall be replaced at a three to one ratio. Mitigation plants can come from on-site inventory (minimum caliper 0.5" measured at six inches above grade) or nursery containers (minimum size is 5 gallon).

c. Cacti shall be replaced at a one-to-one ratio.

d. All revegetation areas require hydroseeding using the Native Seed List from the UDC (5-02.6.0).

e. All salvaged and new mitigation plants shall be irrigated for three years from the time of installation. An automatic drip irrigation system will be designed and included as part of the Plan.

f. Once the inventory of living plants is completed and the extent of PRA is specifically determined, purchasers of property within this PCD working in conjunction with the with the City of Tucson may hire a qualified biologist or botanist to assess the number of mitigation plants required in accordance with the aforementioned mitigation ratios. A biologist or botanist familiar with native plants of this region would determine the ultimate number of mitigation plants that can be sustained by the wash corridor being enhanced and identified receptor areas to ensure long-term health of existing and newly planted species. If a biologist or botanist determines that a lesser amount than is called for in the mitigation ratios would be more beneficial for the overall habitat, then the mitigation ratios may be amended. The Director of the City of Tucson Planning and Development Services Department shall be the approving authority for amendments to mitigation ratios.

8. Preliminary design of surface water management system. The design of surface water management systems and location/function of flood detention/retention systems shall comply with City of Tucson requirements. This includes the use of passive water harvesting techniques found in Section 4-01.2.1 of the City of Tucson Technical Standards Manual. Basins will be designed in compliance with standards contained within the Stormwater Detention/Retention Manual, including the following standards:

   a. Basins will be unfenced and designed with curvilinear shapes, rather than geometric ones, and follow existing contours wherever possible.

   b. Varying side slope gradients will be provided with smooth transitions between grades.

   c. Side slope gradients will, wherever possible, be 3:1 or flatter.

   d. Basins are not to be located within the Erosion Hazard Setback, where possible.

   e. Basins require hydroseeding using the Native Seed List from the UDC (5-02.6.0).

f. Where possible, basins will be located in areas without significant existing vegetation to minimize disturbance of existing plants.

9. A summary table indicating the existing plants within the PRA areas, salvaged plants, plants to be removed and mitigation plants as required by these PRA mitigation standards.

10. The mitigation plan should also address the following:

    a. Best Management Practices (BMP) including long term planning for integrated invasive plant management.

    b. Personnel working within this PCD should be trained and educated to be made aware of the potential for sensitive and/or threatened and endangered species within this PCD. This would include the Sonoran Desert Tortoise, Burrowing Owl, Pima Pineapple Cactus and Needle Spined Pineapple Cactus. Protocols should be in place in the event that personnel working within this PCD encounter said species.

11. A monitoring/maintenance program for the revegetated mitigation areas shall be created as part of the Plan. The program shall include the following:

    a. On-site monitoring during salvaging and replanting.

    b. Provisions for regular inspection and removal of invasive species.

    c. Regular inspection of the irrigation system to ensure it is operational for the 3-year period previously specified.

    d. Provisions for native plant replacement for the first 3 years following installation to successfully establish the mitigation vegetation. The mitigation plan shall be considered successful if at least 80% of the plants area living and actively growing at the end of the 3-year monitoring period.

    e. Monitoring reports shall be submitted to the City of Tucson Planning and Development Services Department on an annual basis for the first 3 years following installation. The format of the monitoring reports should follow the reporting requirements found in the Pima County Regional Flood Control District, Regulated Riparian Habitat Mitigation Standards and Implementation Guidelines.

H. Agua Verde Creek Open Space Preservation Plan

Through the approval of the H2K PAD (TP-MOD-0623-000018) also containing property owned by the ASLD, certain sections of STL in the Agua Verde Creek corridor were identified as valuable areas for open space conservation. As outlined below, portions of these sections of STL will be included as part of the disposition of land within the H2K PAD for open space conservation. This PCD will also include portions of these sections of STL as part of the disposition of land within this PCD for open space conservation.

These open space areas would help to protect the long-term ecological viability of the Sonoran Desert and make the following contributions to the greater Tucson area:

- Open space preservation.
- Habitat conservation and protection.
- Protection and preservation of wildlife linkages.
- Protection of major wash corridors.
- Provision of buffers between private land and public parks and other public lands.

The Agua Verde Creek Open Space Preservation Plan would be administered as follows:

a. The amount of Pima County Regulated Riparian Habitat (RRH) disturbed by proposed development within this PCD would be identified and quantified in number of acres.

b. For each acre of RRH that is disturbed, 2 acres of offsite open space would be identified and preserved.

c. The STL eligible for use by this Plan is focused on land within the Agua Verde Creek corridor. More specifically, STL located in the following sections is eligible for use by this Plan:

Township 16 South, Range 16 East
Sections 13 and 24

Township 16 South, Range 17 East
Sections 10, 11, 12, 13, 14, 15,16, 17, 18, 19, 20 and the north half of the northeast quarter of Section 29

Township 16 South, Range 18 East
Section 16

d. Based on the previously mentioned RRH disturbance amount and 2:1 ratio, ASLD Commissioner will determine which land in the Agua Verde Creek corridor described above will be used for open space preservation.

e. The aforementioned land would be appraised and included in the property within this PCD sold at auction to a future purchaser or purchasers. Once land is acquired from ASLD, the future purchaser or purchasers would then deed this land in the Agua Verde Creek to an entity that would conserve the land as open space in perpetuity.

I. Proximity to a Navigation Facility

This PCD is subject to the Airport Environs Zone (AEZ) as per Article 5.6 of the City of Tucson Unified Development Code. More specifically, it is impacted by the Davis - Monthan Air Force Base environs. A portion of this PCD is located in Approach Departure Corridor – 2 (ADC-2) and Approach Departure Corridor - 3 (ADC - 3). Section III.A.3 of this PCD contains development standards related to permitted uses, height, floor area ratio and meeting/function areas in Davis – Monthan Air Force Base environs in ADC – 3.

According to the Federal Aviation Administration (FAA) Notice Criteria Tool, this project area is located in proximity to a navigation facility and could impact navigation signal reception. As the project site develops every project applicant shall file FAA Form 7460 with the FAA at least 45 days before construction activities begin for every proposed project unless FAA staff, with the Obstruction Evaluation / Airport Airspace Analysis (OE/AAA), provides the project applicant with written communication that filing FAA Form 7460 is not required. It is highly recommended that the applicant file earlier than 45 days to provide the applicant with sufficient time to respond to any concerns which are identified by the FAA. Any cranes which are used must also be identified with Form 7460. Please file Form 7460 at https://oeaaa.faa.gov/oeaaa/external/portal.jsp

J. Architectural Standards and Design Guidelines

Architectural standards and design guidelines will be established by future purchasers of land within this PCD for the District Area or Areas being purchased as part of the Secondary Planning process identified in Section IV of this PCD.

K. Sonoran Desert Conservation Plan

This PCD is within the Sonoran Desert Conservation Plan's designated Priority Conservation Area for the Pima Pineapple Cactus. Coordination shall occur with US Fish and Wildlife Service, and field surveys and relocation of individual cactus shall be done prior to any ground disturbing activities.

L. Scenic Corridor Zone

This PCD shall comply with the Scenic Corridor Zone (Section 5.3 of the Unified Development Code). It only applies to Houghton Road since it is the only road within the PCD that is designated by the City of Tucson Major Streets and Routes Plan as a Scenic Arterial.

M. Implementation of PCD Regulations

1. Purpose

This section outlines the implementation of this PCD. It identifies the parties responsible for ensuring the PCD is built in coordination with required infrastructure. This section also provides for guidance regarding the general administration of and amendment procedures for this PCD.

2. General Implementation Responsibilities and Development Review Procedure

The development review for this PCD shall be implemented through the review and approval process of Development Packages and final plats (if required) and all other plan reviews typically performed by the City of Tucson and through the City of Tucson building permit approval process. Please note that this would occur after the Secondary Planning that is described in Section IV of this PCD. Decisions on grading, drainage, road alignment, re-

vegetation, and other matters must be presented on the Development Package and reflected as appropriate on the final plat (if required). All subdivision plats shall be reviewed by the City of Tucson in accordance with City of Tucson procedures.

The implementation of this PCD is the responsibility of future purchasers in accordance with the regulations and guidance contained within this PCD, unless otherwise noted. The future purchasers, or their successors and assigns, shall be responsible for the engineering and implementation of the project infrastructure.

Approval of a subdivision plat or Development Package is subject to the following requirements:

a) Conformance with this PCD.
b) Dedication of appropriate rights-of-way for roads, utilities, and drainage by plat or by separate instrument if the property is not to be subdivided.
c) None of the development requirements contained within this PCD shall have the effect of superseding the requirements of the City of Tucson adopted Building Codes.

Please refer to Section III.L.3.a of this PCD for a description of ASLD's role in the implementation of this PCD.

3. Administration

If an issue, condition, or situation arises that is not covered or provided for in this PCD, those regulations of the City of Tucson Unified Development Code that are current at the time of development/permitting shall apply.

a. Role of ASLD

ASLD, in its sole and absolute discretion, will identify location and size of land within the boundary of this PCD for disposition, and this may include reconfiguring District Areas to create more functional parcels for secondary planning purposes. Throughout the period when ASLD still holds STL within this PCD, any Property owner other than ASLD shall not submit requests for interpretation or amendment of this PCD without a written document from ASLD approving the request. If a Property owner submits such a request without ASLD concurrence, the City shall reject the request until written notice from ASLD is received.

ASLD will remain involved in land use decisions within the entire PCD boundary until such time ASLD no longer has ownership of any STL within this PCD boundary. As property within this PCD is sold and developed, ASLD has the authority to review plans for consistency with this PCD to not only ensure quality development of the District Area, or portion thereof subject to such plans, but also to ensure that plans will have positive

influence on the development of future District Areas. ASLD has the authority to perform the following actions:

i. To review and approve any and all Master Plans prepared as part of the Secondary Planning process described herein. Applications to the City of Tucson must include an ASLD Planning Authorization Letter prior to submittal.

ii. To review any Development Packages, site improvement plans, subdivision plats or other plans related to the development of the land within this PCD prior to plans being submitted to the City of Tucson or other agency for review and approval.

iii. To review and approve any proposed land use permitted in this PCD prior to plans being submitted to the City of Tucson.

iv. To review and approve any proposed amendments to this PCD or other applications affecting land use, development standards and regulations while STL is still within this PCD, or while ASLD is still a landowner, one or the other. Any such applications must first be approved by ASLD prior to formal submittal to the City of Tucson. Applications to the City of Tucson must include an ASLD Planning Authorization Letter.

iv. Development Agreement and Intergovernmental Agreement

The roles, responsibilities, secondary planning, PRA mitigation and other items may be memorialized in a Development Agreement to be negotiated between the winning bidder (i.e. Developer), ASLD and the City of Tucson and in an Intergovernmental Agreement between ASLD and the City of Tucson.

b. Enforcement

This PCD shall be enforced by the City of Tucson Planning and Development Services Department in accordance with the provisions of the City of Tucson Unified Development Code.

c. Administrative Change

Certain changes to the provisions in this PCD may be approved administratively by the City of Tucson Director of Planning and Development Services, provided said changes are not in conflict with the overall intent expressed in this PCD. Proposed administrative changes shall be submitted to City of Tucson Director of Planning and Development Services for review and approval.

Categories of administrative change include, but are not limited to:

1) The addition of new information (including maps or text) to this PCD that does not change the effect of any regulations or guidelines, as interpreted by the Director.

2) Changes to the infrastructure planning, location and alignment, including on-site roads, drainage, water, and sewer systems.
3) Changes to the District Area boundaries.
4) Changes to development standards that are in the interest of the community and have no negative effect on health or safety issues.
5) The determination that a use be allowed which is not specifically listed as permitted but which may be determined to be similar in nature to those uses explicitly listed as permitted.
6) Changes to trail and greenway alignments provided that such changes still allow the trail to function in accordance with the intent of the Pima Regional Trail System Master Plan.
7) An increase in building height of up to 10% beyond that permitted in this PCD, provided that within ADC 3 such increase is reviewed and approved by Davis – Monthan Air Force Base. Substantial Change.
8) Changes to the surface drainage approach that have been mutually agreed upon by the City and ASLD.

d. Substantial Change

Any substantial changes to this PCD, as defined in the City of Tucson Unified Development Code, may be processed through a PCD amendment pursuant to the City of Tucson Unified Development Code. The Director shall determine whether a proposed amendment is a substantial change. Any amendment request shall include all sections or portions of this PCD that are affected by the change.

e. Interpretation

Interpretations of this PCD shall be made by the City of Tucson Director of Planning and Development Services, and all interpretations shall be based on the purpose and language of this PCD. If this PCD is silent on an issue, then the City of Tucson Unified Development Code shall govern as long as such an interpretation is within the purpose of this PCD. Interpretations shall not be used to permit uses or procedures not specifically authorized by this PCD or the City of Tucson Unified Development Code; however, interpretations can be used to include new land uses that closely resemble permitted uses within this PCD.

The Director shall be responsible for interpreting the provisions of this PCD. Appeals of the Director's interpretation may be made pursuant to the Unified Development Code.

f. Fees

Fees will be assessed as indicated by the City's adopted fee schedule that is in place at the time of development.

The fees that otherwise would be due at the time of rezoning submittal will be paid to the City of Tucson by the private purchaser in accordance with the following:

The base fee for the PCD (8361 acres) is $1,926,570 ($22,770 plus $227.70 per acre) . The total fee will be $1,932,344 which includes "other fees" such as: Technology/Archive Fee ($4,972.00), Aerial Photos ($165.00), Legal Ads ($284.00), Public Notification ($227.00), and Ordinance/Resolution Ads ($126.50).

The deferred fees will be pro-rated at $230.42 per acre (PCD fee of $1,926,570 divided by 8361 acres). The deferred fees will be based on the acreage being developed at the time of Development Package submittal, and at the rate of $230.42 per acre. The fee will be collected and applied to the PCD Rezoning case at the time of Development Package submittal as a separate payment.

g. PCD Development Monitoring Program

ASLD and the City of Tucson shall work jointly to prepare a written report including:

- The past year's development activity on property within this PCD.
- Applications for sale or lease of property within this PCD.
- Estimates for the upcoming year in the above categories within this PCD.

This yearly report will be prepared annually. Annual reports will not be required after development build-out.

SECTION IV | SECONDARY PLANNING

This section of the PCD outlines the responsibilities of the purchasers of property within this PCD with regard to the next level of planning that is required for the portion of property that has been purchased from ASLD for development. This next level of planning involves the preparation of a series of District Area Master Plans by purchasers of property within this PCD. Please note that Secondary Planning will occur prior to the development review process.

The Master Plans to be prepared consist of the following:

- Vehicular and Pedestrian Circulation (including trails)
- Surface Drainage/Environmental Resources
- Water.
- Wastewater.
- Trails.
- Architectural, Landscape Architectural and Green Infrastructure Design Guidelines and Standards.

A. Process

The purchase of property within this PCD carries with it a requirement to prepare the above-listed Master Plans for the District Area where a parcel is being purchased for development. The Master Plans shall be prepared by registered professionals licensed to practice in the State of Arizona. The Master Plans shall be prepared and submitted to the City of Tucson for administrative review and approval prior to a formal application starting the development review process. Each Master Plan must be accompanied by an ASLD Planning Authorization Letter.

Applicants shall attend a pre-application meeting with City of Tucson and ASLD staff or with an ASLD authorization letter prior to the submittal of the Master Plans to discuss the intent and scope of these Master Plans. The overall intent of these Master Plans is to ensure that infrastructure constructed in this PCD is designed and sized to accommodate development of this PCD at entitled densities and intensities. The Master Plans are intended to be preliminary in nature. The boundaries of each Master Plan will follow the District Area boundary unless a different functional area has been agreed upon by the City and ASLD.

B. Master Plan Requirements

Below is a description of the information that is required to be included within the Master Plans for each the individual District Area or Areas being purchased and developed and not the entirety of this PCD. The Master Plans should be developed in a manner that facilitates the continued development of the District Area and the larger PCD. Please refer to the applicable portions of Part II of this PCD for additional guidance.

1. Vehicular and Pedestrian Circulation Master Plan

- Identification of arterial roads intended to serve the District Area or Areas being developed , including ultimate rights-of-way.

- Roadway design cross-sections for an on-site access road.
- Proposed traffic control for intersections of arterial and internal access roads.
- Conceptual phasing of road infrastructure improvements.
- Identification of offsite roadway infrastructure improvements that may be necessary to provide an acceptable level of service to accommodate development within this PCD.
- Use of Complete Streets design features as per the City of Tucson Street Design Guide.
- Provisions for continued access to adjacent undeveloped District Areas.
- Location of primary trail corridors within this PCD, and identification of connection points to overall trail system for the City of Tucson.
- Where necessary, coordination with ADOT shall occur due to the proximity of the site to the existing Interstate 10 traffic interchanges.

2. Surface Drainage/Environmental Resources Master Plan

- Identification of all watersheds affecting the site with 100-year discharges greater than 100 cubic feet per second.
- Identification of Protected Riparian Area (PRA) as shown in the approved Environmental Resource Report for this PCD and PRA mitigation areas.
- Identification of areas of sheet flooding with average depths.
- Describe any encroachment or modification proposed to major drainage patterns.
- Describe and identify the location of proposed primary drainage infrastructure.
- Describe how the proposed development condition will adhere to the applicable floodplain and erosion hazard management policies and ordinances of the City of Tucson.
- Adherence to the Conceptual Master Drainage Plan (Appendix A in this document) prepared by Psomas. This will ensure a consistent drainage approach throughout this PCD. If needed, this Plan would be updated with each future development through buildout. Updates will include hydrologic and hydraulic modeling and the inclusion of as-builts for infrastructure.

3. Water Master Plan

- Location and size of existing trunk water lines and other major water system infrastructure.
- Capacity response letter from the water service provider.
- Identification of pressure zones in the area immediate to this PCD.
- Location and size of proposed trunk water lines and other major water system infrastructure such as booster stations or pressure reducing valves necessary to serve the anticipated development within this PCD.
- Identification of points of connection to existing water lines.
- Location and size of proposed water line stubs that would serve other District Areas within this PCD.

4. Wastewater Master Plan

- Location and size of existing sewer lines.
- Capacity response letter from the wastewater treatment provider.
- Location and size of proposed trunk sewer lines and identification if they are designed for gravity flow.
- Identification of points of connection to existing sewer lines.
- Location and size of proposed sewer line stubs that would serve other District Areas within the PCD.

5. Establishment of Architectural, Landscape Architectural and Low Impact Development and Green Infrastructure Design Guidelines and Standards and Design Review Process

Future purchasers of property within the PCD will develop their own design guidelines that will be implemented by that purchaser and developed during the Secondary Planning process. Design guidelines are anticipated to include the following primary items

- Design review procedures.
- Site planning.
- Building design and architectural character (including Green Building techniques).
- Landscape design (including techniques to reduce urban heat island effect).
- Native plant preservation (including preservation in place where possible and transplant on site).
- Low Impact Development and Green Infrastructure practices and strategies.

One of the purposes of design guidelines is to create a sense of harmony and a consistent theme for certain built elements for the individual District Area or Areas being developed including the following:

- Walls (color and materials).
- Plant materials.
- Decorative rock (size and color).

The design guidelines created by the initial purchaser of land in this PCD shall include designs for the items listed above. Future purchasers shall follow these designs in the construction of the above-listed items in the areas located on the perimeter of this PCD and adjacent to the proposed internal spine roads.

The design guidelines created by future purchasers shall include a section addressing Low Impact Development and Green Infrastructure practices and strategies.. Future purchasers of property shall utilize the Pima County/City of Tucson Low Impact Development and Green Infrastructure Guidance Manual (current version dated March 2015) in the preparation of the design guidelines. In addition, future purchasers shall also consider the Green Infrastructure

policies in *Plan Tucson: City of Tucson General & Sustainability Plan 2013*. The Low Impact Development and Green Infrastructure practices and strategies most suited to the proposed development with this PCD shall be included in the design guidelines.

APPENDICES

CONCEPTUAL MASTER DRAINAGE PLAN
RITA-10

March 26, 2025

Prepared for:
Arizona State Land Department
1110 W. Washington Street
Phoenix, AZ 85007

Prepared by:
PSOMAS
1745 E. River Road, Suite 245
Tucson, AZ 85718

Project No. 7ASL190105

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FIGURES

1.0 Introduction

1.1 Purpose

The purpose of this report is to:

- Conduct a high-level evaluation of existing floodplain conditions.
- Identify current and expected stormwater regulations and guidelines.
- Present a conceptual scenario for floodplain management.

This framework aims to assist the Arizona State Land Department with decisions regarding land disposition and provide guidance and stormwater management expectations for future developers.

1.2 Scope of Work

The scope of work identified to complete this report include the following key tasks:

- Map all existing regulatory floodplain exceeding 100cfs.
- Develop erosion hazard setback limits for all mapped floodplains.
- Enhancing certain areas of the flood corridors consistent with the guidelines established in the Rincon Southeast Subregional Plan (RSSP).
- Develop conceptual design and sizing for drainage crossings based on the conceptual roadway network.
- Evaluate stormwater detention/retention requirements and potential strategies for meeting these based on proposed land use and site planning.
- Coordination with the City of Tucson and Pima County Flood Control District.

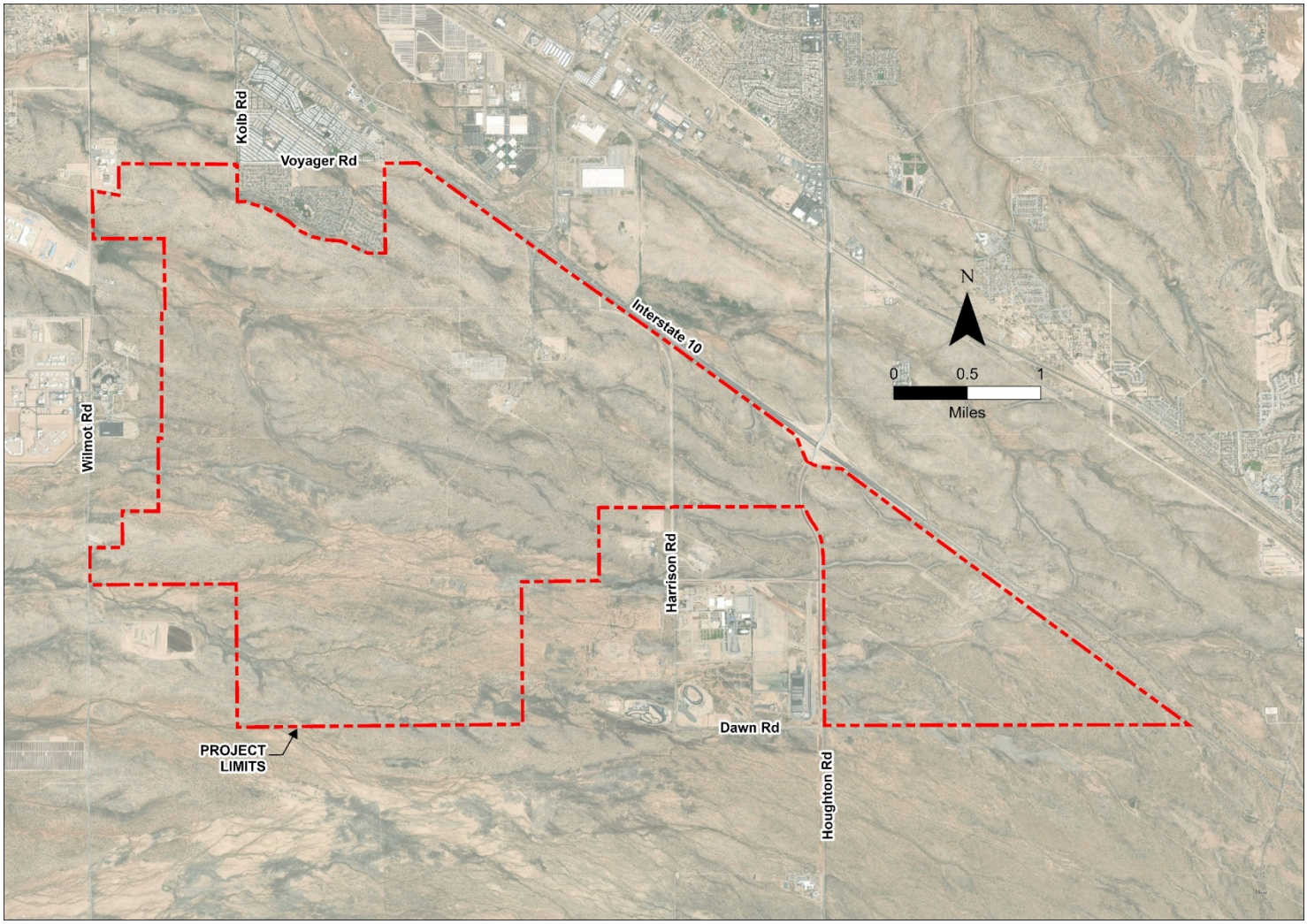
1.3 Overview of Development Area

The Rita 10 development boundary is a portion of a larger overall planning area known as the Tucson Southlands and comprised of State Trust Land (STL) located south of Interstate 10 and north of Dawn Road, extending from Wilmot Road along its western boundary to just east of Houghton Road. Rita 10 limits are depicted on Figure 1-1.

1.4 Regulatory Agencies

Lands within the Rita 10 boundary are located within the City of Tucson corporate limits and development standards primarily governed by them. The City of Tucson is located within Pima County which could play a pivotal role with regards to stormwater and floodplain management. The County will continue to own land in the middle of the Rita 10 currently in planning efforts for future development, with potential to be provided ownership and maintenance responsibilities for the regional and large watercourse/linear parks proposed. Additional key stake holders within the area include Tucson Electric Power, El Paso Natural Gas and ADOT with existing utility and roadway corridors.

Figure 1-1
Project Location Map



2.0 Existing Conditions

2.1 Topography and Land Use

The land within the Rita 10 boundary generally slopes from east to west at gradients of less than 2%. This area is entirely undeveloped and owned by the State. Within the boundary, Tucson Electric Power (TEP) owns a substation at the southern end of Rita Road. El Paso Gas has a facility and an underground gas line running from the southeast to the northwest. Additionally, Pima County has a developed parcel of land in the same vicinity.

North of the boundary, near Interstate 10 (I-10) and Kolb Road, there are subdivisions. Prisons are located west of the boundary along Wilmot Road. The Pima County Fairgrounds and its future Southeast Employment and Logistics Center, currently in the planning phases, are situated between Houghton Road and Rita Road.

The undeveloped State land is planned to be rezoned primarily as a large block industrial and commercial area. Other uses will be allowed, especially in the northern portions where large blocks of land cannot be created.

2.2 Soil Types and Rainfall Data

The majority of the land within the Rita 10 Boundary is classified by the National Resource Conservation Society as Hydrologic Soil Group (HSG) Type C, which has a moderately high runoff potential. However, the northern areas of the boundary have topographic relief that forms channels and are classified as HSG Type A.

The property within the Rita 10 boundary is located in the City of Tucson. Tucson defines the 100-year storm depth as three inches and uses a one-hour storm distribution for localized storm events and site development. For larger oval drainage areas, such as those within the Tucson Stormwater Management Study, a three-hour storm event is used. Pima County, on the other hand, uses the Upper 90th Percentile values from NOAA Atlas 14, which typically have a larger total storm depth and a similar distribution.

For the purposes of this study, the City of Tucson methodology was used to determine the extent of regulatory drainage ways exceeding 100 cubic feet per second (cfs) that were not previously mapped by studies prepared by or for the Pima County Flood Control District (FCD).

2.3 Existing Drainage Studies and Reports

Many existing studies, prepared by or for the Flood Control District (FCD), include peak flow rates and floodplain mapping for most of the Rita 10 planning area. This report presents the results from these studies and supplements them as necessary to identify locations where localized runoff results in flow rates greater than 100 cubic feet per second (cfs) under existing conditions. Table 2-1 summarizes the available studies used during the preparation of this document.

Table 2-1
Existing Drainage Studies Utilized

Report Title	Author	Date
Final PS&E Phase Drainage Report for South Houghton Road Widening-South of Interstate 10	CMG Drainage Engineering, Inc.	June 2021
Hydrology & Hydraulics Report for Locally Regulated Watercourses in Airport Wash	CMG Drainage Engineering, Inc.	January 2016
Lee Moore Wash Basin Management Study (Volume 3, Implementation Plan)	Stantec	Unknown
Upper Santa Cruz River Watercourse Studies: Technical Support Data Notebook for Hydrologic and Hydraulic Analyses for: Lee Moore Wash - East: Upstream of South Houghton Road	FCD	August 2018
Technical Support Data Notebook Hydrologic Analysis & Floodplain Mapping Lee Moore Wash - West Floodplain Mapping Project	JE Fuller	February 2019
Final Fairgrounds Drainage Channels Design Concept Report	Psomas	April 2021
Drainage Report for Fairgrounds South Houghton Channels Project (North & Central Channel)	CMG Drainage Engineering, Inc.	January 2023

Cover pages and table of contents for each report are included in Appendix A, with copies of the full documents included as attached PDF files.

2.4 Existing Drainage Infrastructure

The only existing drainage infrastructure within the Rita 10 Boundary consists of culverts under Kolb Road, Wilmot Road, Rita Road, and Houghton Road. Among these, only the Houghton Road culverts, recently constructed as part of a roadway widening improvement project by the County, have sufficient capacity to convey the 100-year storm event under the roadway.

There are no engineered or bank-protected channels, nor significant stormwater basins within the Rita 10 Boundary. However, the Flood Control District (FCD) has recently completed the Fairgrounds North Channel between Houghton and Harrison Roads through the Pima County Fairgrounds property. The FCD also anticipates the construction of the Fairgrounds Central Channel, with its design already completed, within the next 2-5 years. The overall stormwater and floodplain management approach for conveying flows through the Rita 10 properties is based on the concept developed, designed, and constructed for the Fairgrounds Channels.

Existing drainage infrastructure locations are depicted and labeled on Figure 2-1.

2.5 Existing Floodplain Mapping

Existing regulatory floodplain mapping, obtained from hydraulic models provided by the Flood Control District (FCD), is depicted on Figure 2-1. This mapping has been supplemented by extending modeling and mapping to where 100 cubic feet per second (cfs) occurs within each wash. Named washes within the Rita 10 limits include the North Fork Airport Wash, South Fork Airport Wash, Franco Wash, Franco Wash Tributary, and Flato Wash. Each of these named washes includes one or more tributary reaches that are considered regulatory. These have been identified with a nomenclature that consists of the first letter of each word in the named wash, followed by a dash, a reach number, a period, and a sub-reach number. For example, the South Fork Airport Wash has three main branches, two of which each have two branches. The naming convention increases numerically from downstream to upstream, so the most upstream reach of the South Fork Airport Wash with greater than 100 cfs has been named SFAW-R3.2.

The upstream limits of the mapped floodplain within the Rita 10 boundary have been set at locations where 100 cfs occurs. Peak flow rates at the Rita 10 Boundary under existing conditions have also been identified.

Copies of existing studies, from which most of the mapping was obtained, are provided digitally as PDFs and can typically be found online through the FCD website. Hydraulic models can be requested from the County. HEC-RAS modeling obtained from the County is included digitally as part of Appendix D.

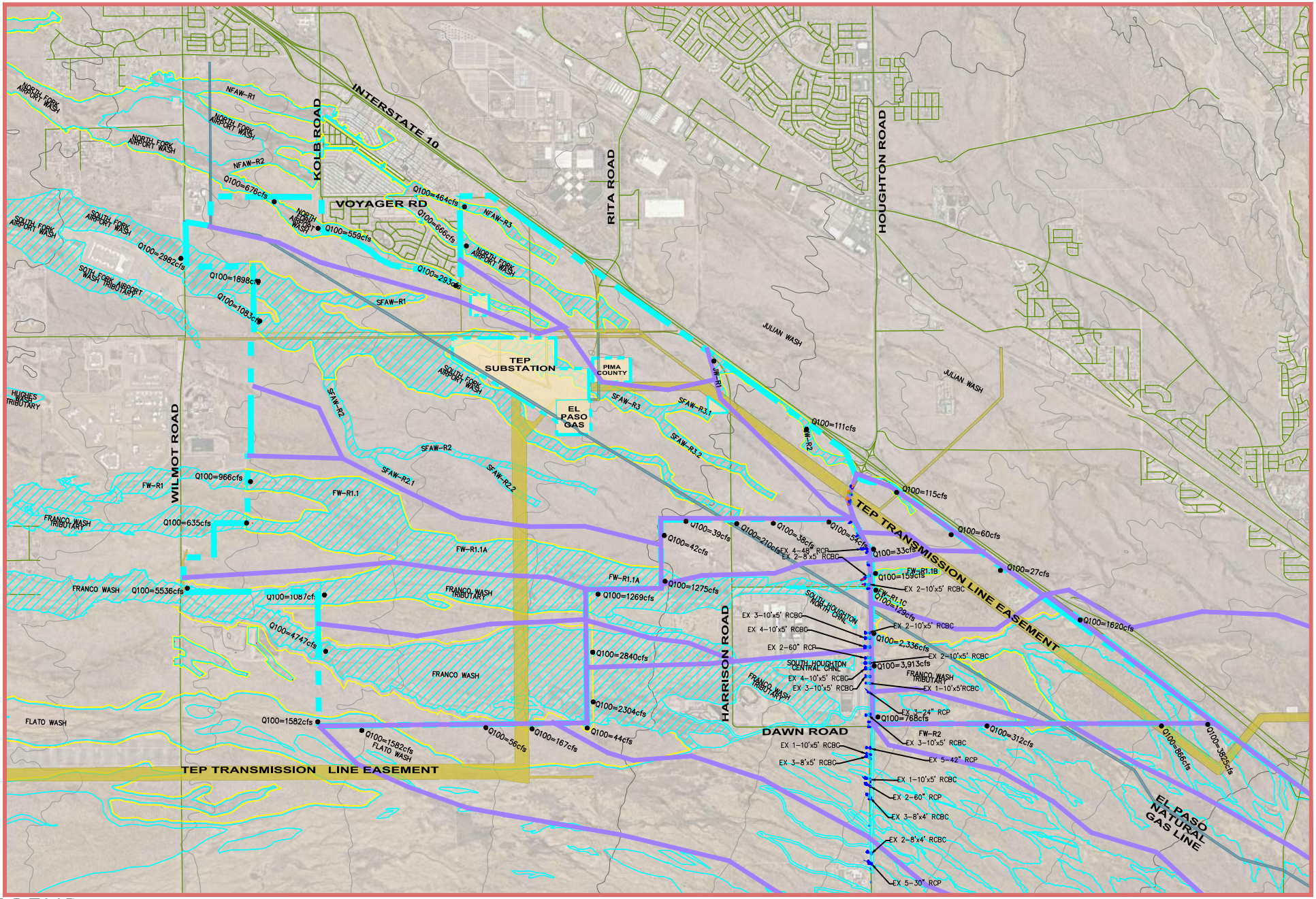
2.6 Summary of Existing Drainage Conditions

Most of the stormwater runoff reaching the Rita 10 planning area originates at the base of the Santa Rita Mountains to the southeast. This runoff is typically conveyed as unconfined shallow sheet flow, except along the northern limits where floodplains are well defined by topographic relief, as shown in Figures 2-1 and 2-2.

Runoff reaching Houghton Road, up to the 100-year storm event, is captured and conveyed under the roadway from east to west through a series of box and pipe culverts. These culverts outlet onto the Pima County Fairground property, where flows are collected and conveyed within an engineered channel, the Northern Fairground Channel, along the northern fairground property limits. Future flows will be conveyed within the Central Fairgrounds Channel, which has been fully designed and planned for construction by the Flood Control District (FCD). These two channels were designed to minimize flow velocities and erosion potential by minimizing channel slopes and providing a wide, tiered, multi-use, and landscaped flow corridor through the fairgrounds property. The North Fairground Channels currently end at Harrison Road, though continuation is planned for the downstream County-owned property as part of its Southeast Employment and Logistics Center (SELC) planning and developments.

All other existing drainage crossings of roadways occur at grade or through pipes that are not capable of conveying the 100-year storm event below the roadway.

FIGURE 2 - 1 : EXISTING CONDITIONS DRAINAGE MAP



LEGEND

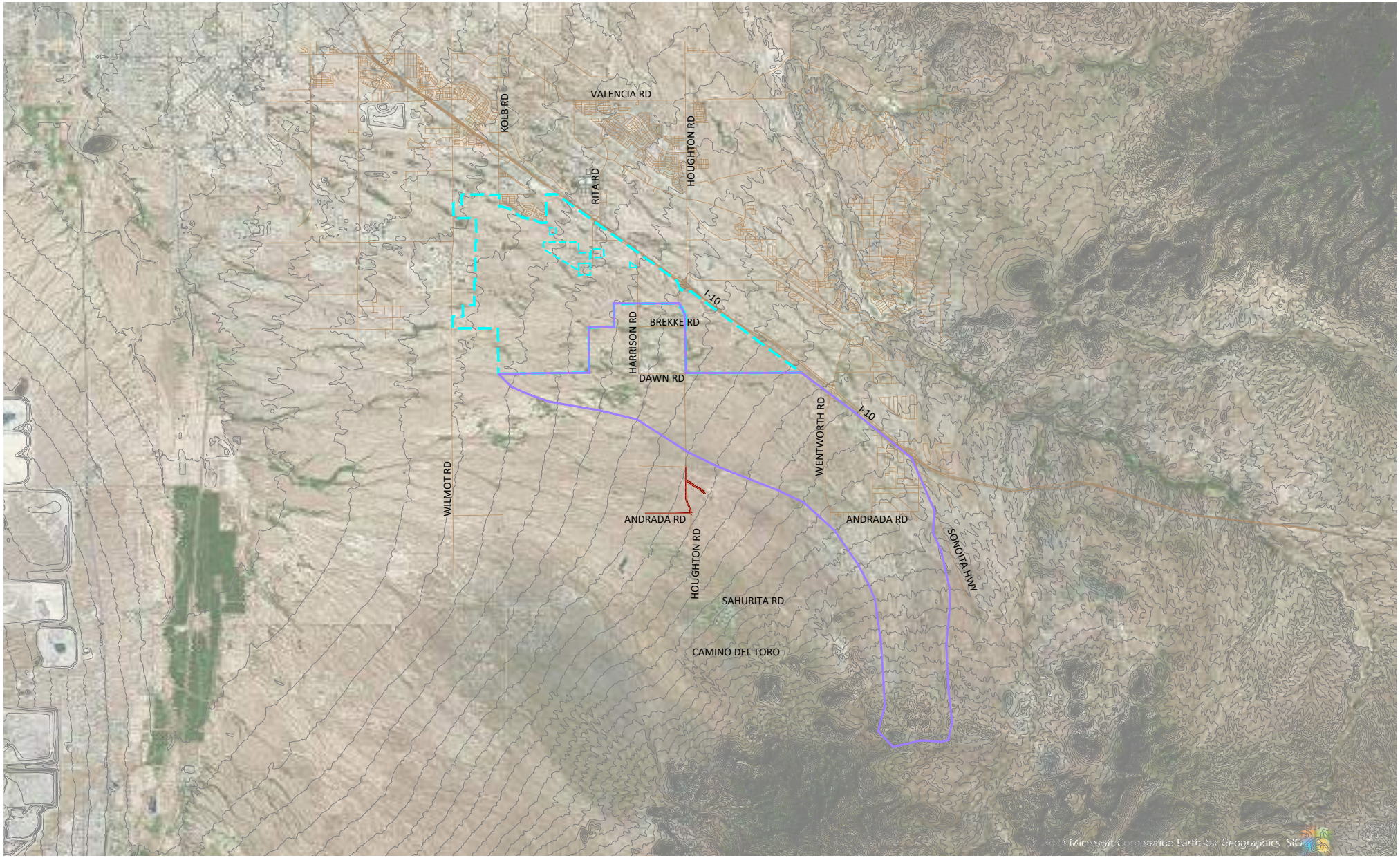
PROPERTY BOUNDARY

OFFSITE WATERSHED

0' 2500' 5000'

PSOMAS
333 E. Wetmore Road, Suite 450
Tucson, AZ 85705
(520) 292-2300 (520) 292-1290 fax
www.psomas.com

FIGURE 2 - 2 : OFFSITE WATERSHED MAP



LEGEND

	PROPERTY BOUNDARY
	OFFSITE WATERSHED

PSOMAS
333 E. Wetmore Road, Suite 450
Tucson, AZ 85705
(520) 292-2300 (520) 292-1290 fax
www.psomas.com

3.0 Proposed Development

The approximately 8,361 acres within the Rita 10 planning area will be rezoned to create a mixed-use development, including industrial, commercial, residential, and office spaces. The WLB Group has prepared the Rita 10 Planned Community Development (PCD) for the area. This plan includes a summary of proposed land use blocks, the roadway network, and a discussion of utility constraints and needs. Each of these aspects is intertwined with stormwater runoff and floodplain management, creating a logical approach to development phasing.

3.1 Future Land Use

Proposed land uses will focus on employment for the majority of the Rita 10 planning area, located west of Houghton Road and south of the future Sonoran Corridor alignment. Areas with existing shallow sheet flows will see improved development opportunities by connecting enhanced flow corridors to the upstream channels designed or constructed by Pima County. These channels will then discharge downstream into the existing floodplain, where sheet flow is generally contained within an existing network of incised channels. This approach will allow for large parcels of land to be utilized as required by anticipated industrial developments. Regional flow corridors through channelization will enable orderly, manageable, and well-phased development that supports infrastructure improvements and provides environmental and wildlife enhancements. The County or City can potentially utilize the flow as multi-use public facilities similar to other regional watercourses.

All development within the Rita 10 planning area will be required to provide onsite stormwater detention and first flush retention.

The land use exhibit from the Planned Community Development (PCD) prepared by WLB is provided as Figure 3-1. It depicts the future land use blocks, called District Areas, flow corridors, and ERZ washes to be removed and those that will remain. Flow corridors and ERZ wash designations are similarly depicted on Figures 5-2, 5-3, and 9-1.

3.2 Planned Roadway Network

Existing roadways within the Rita 10 limits include Wilmot Road, Kolb Road, Rita Road, Harrison Road, Houghton Road, Brekke Road, Dawn Road, and Voyager Road. Among these, Houghton Road is the only one recently improved to provide 100-year stormwater conveyance under the roadway, featuring multiple travel lanes in each direction. The remaining roads with only single lanes in each direction of travel have at-grade crossings or undersized drainage crossings. Kolb Road, Rita Road, and Dawn Road are planned to be extended and/or realigned. Additionally, the Sonoran Corridor, a significant truck bypass route currently in the planning stages through ADOT, will traverse the Rita 10 area.

All future roadway improvements will need to provide 100-year stormwater conveyance below the roadway. Through the construction of incised flow corridors, roads can be kept close to natural grade reducing required fill material and structure sizes, as further discussed in Section 5.0.

3.3 Utility Infrastructure

TEP has an existing substation located near the center of the northern half of the Rita 10 planning area. Existing transmission lines run from the southeast to the northwest within an easement, and a second easement runs south before turning west just south of the Dawn Road alignment. Transmission lines have strict policies regarding development and construction near them. While they support the general types of development proposed for the area, they can limit the height of the proposed development, including roadways, as well as the location and alignment of stormwater conveyance infrastructure.

El Paso Natural Gas also has a significant line running from the southeast to the northwest across the entire Rita 10 planning area. This line can result in future design constraints for underground infrastructure, including potential storm drains and channels. It can also pose limitations on the amount of fill that can be placed above it with regards to roadway infrastructure.

These constraints will need to be considered for all future development, further supporting the case for incised flow corridors and regional stormwater facilities.

3.4 Phasing

The development of 13.06 square miles of currently undeveloped land, which generally lacks existing utility infrastructure and has existing floodplain limits and limited stormwater infrastructure, will need to occur in a logical and planned phased manner as described in Section 8 of this report. The described approach will maximize public and private infrastructure improvements, enhance floodplain management within the area, and provide improved wildlife habitat and connectivity.

This study and its recommended implementation plan provide preliminary estimated flow rates and minimum expected flow corridor widths. These estimates will help set aside lands for construction of stormwater conveyance infrastructure with the ultimate goal of handing ownership, operation, and maintenance over to the City and/or FCD. Additionally, this report provides estimated drainage crossing sizes that can be used for cost estimating purposes for developers to provide roadway improvements. The conceptual drainage plan presented has taken into account the existing and planned land uses, roadways, and utilities during its development.

EXHIBIT Q: LAND USE PLAN

LAND USE TABLE			
PROPOSED LAND USE	ACRES (8,261± ACRES)	PERMITTED ZONING DISTRICTS	DISTRICT AREAS
EMPLOYMENT DISTRICT	4537.7± ACRES	P-I, I-1, I-2, C-3, O-3, R-3	1, 15 - 25
MULTIPLE USE DISTRICT	3723.3± ACRES	P-I, I-1, C-3, O-3, R-3	2-14

INTERSTATE 10
EXIT 270
EXIT 273
EXIT 275
KOLB ROAD
KOLB RD PER MS&R
VOYAGER RD
PANTANO RD
HOUGHTON ROAD
SONORAN CORRIDOR
TEP TRANSMISSION LINE EASEMENT
TEP SUBSTATION
PIMA COUNTY OWNED
EL PASO GAS
WILMOT ROAD
RITA ROAD
HARRISON ROAD
DAWN ROAD
BUREAU OF RECLAMATION
EL PASO NATURAL GAS LINE

1 186.0± AC
2 579.3± AC
3 286.7± AC
4 154.6± AC
5 66.4± AC
6 113.1± AC
7 177.8± AC
8 168.3± AC
9 31.1± AC
10 397.4± AC
11 601.6± AC
12 445.8± AC
13 274.2± AC
14 427.1± AC
15 254.2± AC
16 229.2± AC
17 268.0± AC
18 264.9± AC
19 411.3± AC
20 534.3± AC
21 216.0± AC
22 585.9± AC
23 174.8± AC
24 797.6± AC
25 615.5± AC

LEGEND

- PROPERTY BOUNDARY
- EXISTING PAVED ROAD
- PROPOSED ARTERIAL ROADS
- PROPOSED COLLECTOR ROAD
- 215 / 141± AC — DISTRICT AREA NUMBER AND ACREAGE
- PROPOSED FLOW CORRIDOR
- ERZ WASHES TO REMAIN
- 100–YEAR FLOODPLAIN
- SOUTHEAST EMPLOYMENT AND LOGISITCS CENTER
- UTILITY EASEMENTS
- DAVIS MONTHAN AFB APPROACH DEPARTURE CORRIDOR 2
- DAVIS MONTHAN AFB APPROACH DEPARTURE CORRIDOR 3
- DAVIS MONTHAN AFB NOISE CONTROL DISTRICT – A
- 50' BUFFER YARD AND 5' SCREEN WALL(REQUIRED IF NON– RESIDENTIAL USE DEVELOPS ADJACENT TO EXISTING RESIDENTIAL)
- FLOODPLAINS NOT ASSOCIATED WITH ERZS

NOTE: BASED PRIMARILY ON LAND USE PLANNING AND SURFACE DRAINAGE, IT IS LIKELY THAT THE ALIGNMENTS OF KOLB ROAD, RITA ROAD AND DAWN ROAD MAY BETTER CONTRIBUTE TO THE PROPOSED DEVELOPMENT OF THIS AREA WITH DIFFERENT ALIGNMENTS(SEE SECTION III.B.4. OF THE RITA 10 PCD).

0' 2000' 4000'

4.0 Conceptual Drainage Design Criteria

4.1 Design Standards and Guidelines Documents

The entire Rita 10 planning area is located within City of Tucson limits; therefore, the City floodplain staff has final authority on issues related to floodplain development for most of the project. However, RFCD has completed all the floodplain analyses in the study area and has development standards which differ from the City of Tucson. The primary City of Tucson floodplain regulation documents include:

- City of Tucson Code, Chapter 26 Floodplain, Stormwater and Erosion Hazard Management
- City of Tucson Development Standard 9.06 - Floodplain, Wash and Environmental Resource Standard
- City of Tucson Standards Manual for Drainage Design and Floodplain Management
- City of Tucson Code, Chapter 23, Land Use Code (LUC), Article II, Division 8, Section 2.8.6, Environmental Resource Zone (ERZ)
- City of Tucson Code, Chapter 29, Article VIII, Watercourse Amenities, Safety, and Habitat - a.k.a. The WASH Regulations

Both agencies have an overarching approach that local regulatory floodplains (Q_{100}>100 cfs and not FEMA mapped) should be avoided or subject to minimal disturbance. The City of Tucson does not have a specific code or guidance that concisely addresses the issue of development in shallow and dispersive floodplains. No WASH ordinance reaches are located within the Rita 10 Boundary and many current ERZ washes exist.

The FCD has developed recommended flow corridors as part of the Lee Moore Wash Basin Management Plan which acknowledges the challenges of development in dispersive floodplains within its implementation plan, though it does not provide well defined allowable or restricted regulations. The Lee Moore Wash documents do indicate there are discussions to eventually incorporate the concept of a minimum 10-year flow corridor into the floodplain ordinance, which would remain restrictive within the Rita 10 area since the 10-year and 100-year floodplain extents do not vary significantly.

It is the intent of this document to provide specific floodplain management techniques for the Rita 10 Planning area that will define how the area will be developed, who is responsible for construction of necessary stormwater conveyance infrastructure and how ultimate ownership and maintenance responsibilities will be handled. Through coordination with the City, the standards defined herein will be allowed throughout the development of the Rita 10 land, superseding current regulations which may differ in the future from current standards of practice and those prescribed here.

4.2 Environmental Considerations

Many of the existing washes and floodplains within the Rita 10 development have been mapped as protected riparian areas and are currently designated as ERZ washes, although none are considered WASH ordinance washes. According to the Environmental Resource Report (ERR) prepared by The Planning Center for the Rita 10 planning area in 2023, most of what was historically mapped would not be considered riparian areas under today's standards. Therefore, the proposed drainage concept is to remove the ERZ designation across much of the site, as shown in the PCD and on Figure 5-2, while improving the washes by creating flow corridors with consistent and predictable drainage patterns across the property, supporting vegetation and wildlife movement.

The City has expressed concern that their FEMA CRS rating could be impacted by the removal of these washes. However, documentation is not available to support this, and conversations with the FCD CRS Coordinator suggest that any reduction in points could be offset by the City through the submittal of documentation available directly from the County, essentially piggybacking on points earned by their efforts.

Currently, no 404 designations exist under federal regulations and guidance, but this is subject to change over time with changes in legislation and political leadership. Jurisdictional requirements should be monitored over time and permits obtained as necessary for disturbances should current standards change.

Addressing drainage, vegetation, and wildlife movement holistically ensures sustainable development while preserving environmental resources. The ERR cover page and table of contents are attached in Appendix C, and the entire document is provided digitally as a PDF.

4.3 Proposed Regulatory Requirements

Drainage design requirements are known to change over time, and the development of the Rita 10 planning area is expected to span a significant period. The drainage standards summarized in Table 4-1 are proposed based on the conceptual drainage design and recent coordination with both the City of Tucson. Agreement and acceptance of these design standards and the proposed conceptual drainage design are critical to provide a framework that future developers can anticipate and plan for during their due diligence and design phases. Any changes to the approved design standards will need to have their impacts evaluated, accounted for, and documented to ensure that expectations for development are known and readily available for all future developments.

Table 4-1
Drainage Infrastructure Design Standards

INFRASTRUCTURE	DESIGN STANDARDS	NOTES
Retention/Detention/First Flush	All development will provide onsite stormwater detention/retention/first flush per current development standards.	
Flow Corridor Extents	Flow corridors and roadway drainage crossings adjacent to and downstream of each development will be constructed to their full extents within the developed District Area and dispersed on undeveloped State land using energy dissipators or match existing conditions when discharging onto private properties. This standard applies unless otherwise approved by the City of Tucson and Arizona State Land Department.	
Flow Corridor Design and Construction	Flow Corridors will be designed and constructed to meet freeboard per City Standards at the time of construction. Perched channels will only be allowed as a temporary condition on the development parcel or on adjacent undeveloped properties upstream of the proposed site development. All perched channels will be constructed with a minimum compacted top width of 20 feet and 8:1 back slopes. Construction of perched channels will be allowed upon approval of proposed design drawings and reports. Backfill may be places as necessary to create the ultimate corridor section. Evaluation of offsite stormwater runoff to be considered by each District Area and upstream runoff allowed to be captured and diverted into flow corridors as needed or to existing washes if no impacted is demonstrated and approved. This standard applies unless otherwise approved by the City of Tucson and Arizona State Land Department.	This standard is intended to describe flow corridor construction requirements adjacent to undeveloped land.

INFRASTRUCTURE	DESIGN STANDARDS	NOTES
First Flush Volume	All first flush volumes will include 15% increase above the current 0.50-inch standard.	This standard is consistent with current development within the general area as required by the City.
Roadway Drainage Crossings	All roadway drainage crossings shall provide conveyance of the 100-year storm peak flow rate applicable at the time of development event under the roadway. This standard applies unless otherwise approved by the City of Tucson and Arizona State Land Department.	This standard recognizes that flow rates are subject to change over time due to changes in runoff modeling and rainfall values.
Pavement Drainage	Pavement drainage for all public and private roadways shall follow the design standard at the time of development.	This standard applies to spread, inlet and stormdrain pipe sizing.
Erosion Protection	All channels and culvert outlets shall be designed to prevent channel lateral migration, channel degradation and scour at their outlets through the use of energy dissipators, bank protection and grade control structures.	
Flow Corridor Vegetation Enhancement	The addition of vegetation within flow corridors to enhance them shall be considered when designing the channels and accounted for in the hydraulic analyses through the use of Manning's value increases and or blocked obstructions or other conveyance reduction methods. No vegetation shall be placed within the low flow portion of the flow corridors.	

5.0 Conceptual Drainage Infrastructure

5.1 Integration with Existing and Future Stormwater Infrastructure

As previously mentioned, the County has recently completed roadway and drainage improvements along Houghton Road to capture and convey the 100-year storm event from east to west under the roadway. Additionally, the County has completed a flow corridor within the Pima County Fairgrounds and has construction plans for a second flow corridor within the Fairgrounds property. Further planning efforts are underway for the County property west of Harrison Road, referred to as SELC. The existing and planned flow corridors within the Pima County Fairgrounds property are expected to extend downstream across the SELC property, providing a continuous flow corridor capable of 100-year stormwater conveyance, ecosystem enhancement, pedestrian connectivity, and maximizing the developable area within the SELC undeveloped property.

The Rita 10 planning area proposes to match the flow corridor design approach used by the County within the Fairgrounds and create similar flow corridors that tie into the County's at the upstream Rita 10 property boundary. This will enable a more regional drainage approach, in addition to creating continuous wildlife connectivity and recreational opportunities.

Acceptance of this report and the conceptual drainage report will allow for a consistent drainage approach and enhancements for both State lands moving forward. This document shall be considered a living document, which must be updated with each future development through buildout. Updates shall include hydrologic and hydraulic modeling and the inclusion of as-builts for all infrastructure.

5.2 Utility Corridors and Roadway Alignment Considerations

Existing utility corridors and roadway alignments, as well as proposed future roadway alignments are depicted on Figure 5-1. While future alignments generally follow current planned routes, Kolb Road and Dawn Road are shown as realigned based on existing and proposed floodplain conditions to minimize future infrastructure costs associated with the roadway alignments.

5.3 Proposed Flow Corridors

Five flow corridors are proposed within the Rita 10 project boundary. Flow Corridors 1 through 3 are located within the proposed industrial land use areas and will significantly reduce floodplain extents while enhancing environmental and wildlife habitat and pedestrian connectivity. Flow Corridors 4 and 5 are located east of Houghton Road within the mixed-use land. Flow Corridor 5 will generally maintain the existing floodplain extents on the north, with runoff from the south being captured and redirected along the southern border.

Flow corridors 1, 2 and 5 will be constructed through excavation to minimize the cost- and resource-prohibitive need to import material for future developments. Flow corridors 3 and 4 will utilize a combination of natural grade and or berms and fill to contain flows. This approach will also reduce future roadway infrastructure costs and avoid existing utilities such as the TEP transmission lines and El Paso Natural Gas line. To construct the channel, the ERZ designations will be removed through the PCD, ultimately improving the habitat within the corridors compared to the existing condition, which is generally barren or comprised of dead vegetation. Proposed flow corridors will generally match the design used in the Fairgrounds project, which features a wide shallow crossing section, a low flow thalweg for small storm events, an elevated bank with a pedestrian multi-use path, and gently landscaped side slopes. The channel design in that project also included concrete cutoff wall channel stabilization features, which are likely to be required for the proposed flow corridors and will be evaluated during each segment design.

Construction of the flow corridors will be completed as described in Table 4-1. The responsibility for construction of drainage corridors for each district area is summarized in Table 5-1. Each District Area must ensure the construction of the full flow corridor between it and Rita 10 downstream boundary. This approach does not directly restrict any specific District Area from being developed but incentivizes a logical progression of development from downstream to upstream along each corridor (west to east).

All flow corridors will be dedicated to the City ownership and maintenance, with the approval of design plans coordinated through its appropriate departments based on the design standards described in this report and agreed upon during its preparation.

Preliminary flow corridor modeling is provided in the attached HEC-RAS models, and corridor widths are depicted in Figure 3-1.

Table 5-1
Drainage Corridor Construction Responsibility

DISTRICT AREA	DRAINAGE CORRIDOR RESPONSIBILITY*
1	DEVELOPMENT REQUIRED TO DISCHARGE TO EXISTING OUTFALL LOCATIONS. NO DRAINAGE CORRIDOR CONSTRUCTION REQUIREMENTS
2	DEVELOPMENT ALLOWED TO DISCHARGE TO EXISTING OUTFALL LOCATIONS IN NORTH AND SOUTH (CORRIDOR 1) AIRPORT FORK WASHES WHILE NOT EXCEEDING EXISTING CONDITION PEAK FLOWS DOWNSTREAM IN EITHER WASH. FULL SOUTH FORK AIRPORT WASH DRAINAGE CORRIDOR (CORRIDOR 1) CONSTRUCTION REQUIRED WITHIN PROPERTY BOUNDARY.
3,4,5,6,7	DEVELOPMENT REQUIRED TO DISCHARGE TO EXISTING OUTFALL LOCATIONS WITHIN NATURAL NORTH FORK AIRPORT WASH TRIBUTARIES. NO ENCROACHMENT INTO EXISTING FLOODPLAIN ALLOWED. NO DRAINAGE CORRIDOR CONSTRUCTION REQUIRED.
8,9	NO REGULATORY FLOODPLAINS ONSITE. DEVELOPMENT TO OUTFALL TO EXISTING DISCHARGE POINTS. NO DRAINAGE CORRIDOR CONSTRUCTION REQUIRED.
10	NO ENCROACHMENT INTO REGULATORY FLOODPLAIN ALLOWED AND DEVELOPMENT TO OUTFALL AT EXISTING DISCHARGE POINTS. NO DRAINAGE CORRIDOR CONSTRUCTION REQUIRED.
11	DEVELOPMENT MUST CONSTRUCT FULL DRAINAGE CORRIDOR ALONG SOUTHERN PROPERTY BOUNDARY TO DIVERT FRANCO WASH TRIBUTARY (CORRIDOR 5) TO EXISTING CULVERT DROP INLETS AT HOUGHTON ROAD. NO ENCROACHMENT IN REMAINING REGULATORY FLOODPLAIN EXTENTS ALONG NORTHERN PROPERTY BOUNDARY ALLOWED.
12	NO ENCROACHMENT INTO REGULATORY FLOODPLAIN ALLOWED AND DEVELOPMENT TO OUTFALL AT EXISTING DISCHARGE POINTS. NO DRAINAGE CORRIDOR CONSTRUCTION REQUIRED.
13	STORMWATER DISCHARGE FROM SITE IS DEPENDENT UPON AVAILABLE DOWNSTREAM FLOW CORRIDOR INFRASTRUCTURE AVAILABILITY AND MAY BE ALLOWED TO DISCHARGE TO EXISTING CONDITIONS OUTFALL LOCATIONS OR TO FLOW CORRIDOR 1. DEVELOPMENT TO ENSURE PEAK FLOW RATES ARE NOT INCREASED WITHIN THE DOWNSTREAM WASHES.
14,15	DEVELOPMENT TO DISCHARGE INTO SOUTH FORK AIRPORT WASH DRAINAGE CORRIDOR (CORRIDOR 1). FIRST DEVELOPMENT TO CONSTRUCT BETWEEN DISTRICT AREA 14 AND 15 REQUIRED TO CONSTRUCT FULL DRAINAGE CORRIDOR FOR SOUTH FORK AIRPORT WASH (CORRIDOR 1) ALONG ITS PROPERTY LINE.

*These requirements/responsibilities apply unless otherwise approved by the City of Tucson and Arizona State Land Department.

DISTRICT AREA	DRAINAGE CORRIDOR RESPONSIBILITY*
16	DEVELOPMENT TO DISCHARGE INTO FRANCO WASH TRIBUTARY DRAINAGE CORRIDOR (CORRIDOR 2). FIRST DEVELOPMENT TO CONSTRUCT BETWEEN DISTRICT AREA 16 AND 17 REQUIRED TO CONSTRUCT FULL DRAINAGE CORRIDOR FOR FRANCO WASH TRIBUTARY (CORRIDOR 2) ALONG ITS PROPERTY LINE.
17	DEVELOPMENT MAY DISCHARGE INTO FRANCO WASH (CORRIDOR, FRANCO WASH TRIBUTARY, OR BOTH WITHOUT EXCEEDING EXISTING PEAK FLOW RATES WITH THE DRAINAGE CORRIDORS. FIRST DEVELOPMENT TO CONSTRUCT BETWEEN DISTRICT AREA 16 AND 17 REQUIRED TO CONSTRUCT FULL DRAINAGE CORRIDOR FOR FRANCO WASH TRIBUTARY (CORRIDOR 2) ALONG ITS PROPERTY LINE. DISTRICT AREA 17 TO CONSTRUCT FRANCO WASH (CORRIDOR 3) NORTH BANK WITH FILL OR THROUGH USE OF A NON-LEVEE BERM.
18	NO ENCROACHMENT INTO REGULATORY FLOODPLAIN ALLOWED AND DEVELOPMENT TO DISCHARGE INTO FRANCO WASH (CORRIDOR 3). FRANCO WASH BANK IS PROVIDED BY NATURAL GRADE. NO DRAINAGE CORRIDOR CONSTRUCTION REQUIRED.
19	DEVELOPMENT TO DISCHARGE INTO FRANCO WASH (CORRIDOR 3) DRAINAGE CORRIDOR. DEVELOPMENT TO CONSTRUCT FRANCO WASH (CORRIDOR 3) DRAINAGE CORRIDOR NORTH BANK WITH FILL OR THROUGH USE OF A NON-LEVEE BERM.
20	DEVELOPMENT TO DISCHARGE INTO FRANCO WASH TRIBUTARY. DEVELOPMENT REQUIRED TO CONSTRUCT FULL FRANCO WASH TRIBUTARY DRAINAGE CORRIDOR (CORRIDOR 2) WITHIN THE DISTRICT AREA.
21	DEVELOPMENT TO DISCHARGE TO EXISTING SITE OUTFALL LOCATION(S) AND PEAK FLOW RATES NOT TO EXCEED EXISTING CONDITIONS. NO DRAINAGE CORRIDOR CONSTRUCTION REQUIRED.
22	DEVELOPMENT TO DISCHARGE INTO FRANCO WASH TRIBUTARY (CORRIDOR 2). DEVELOPMENT REQUIRED TO CONSTRUCT FULL FRANCO WASH TRIBUTARY DRAINAGE CORRIDOR (CORRIDOR 2) WITHIN THE DISTRICT AREA.
23,24,25	DEVELOPMENT TO DISCHARGE INTO SOUTH FORK AIRPORT WASH DRAINAGE CORRIDOR (CORRIDOR 1). DEVELOPMENT REQUIRED TO CONSTRUCT FULL SOUTH AIRPORT WASH DRAINAGE CORRIDOR (CORRIDOR 1) WITHIN THE DISTRICT AREA.

*These requirements/responsibilities apply unless otherwise approved by the City of Tucson and Arizona State Land Department.

FIGURE 5-1 ROADWAY AND UTILITY CORRIDORS

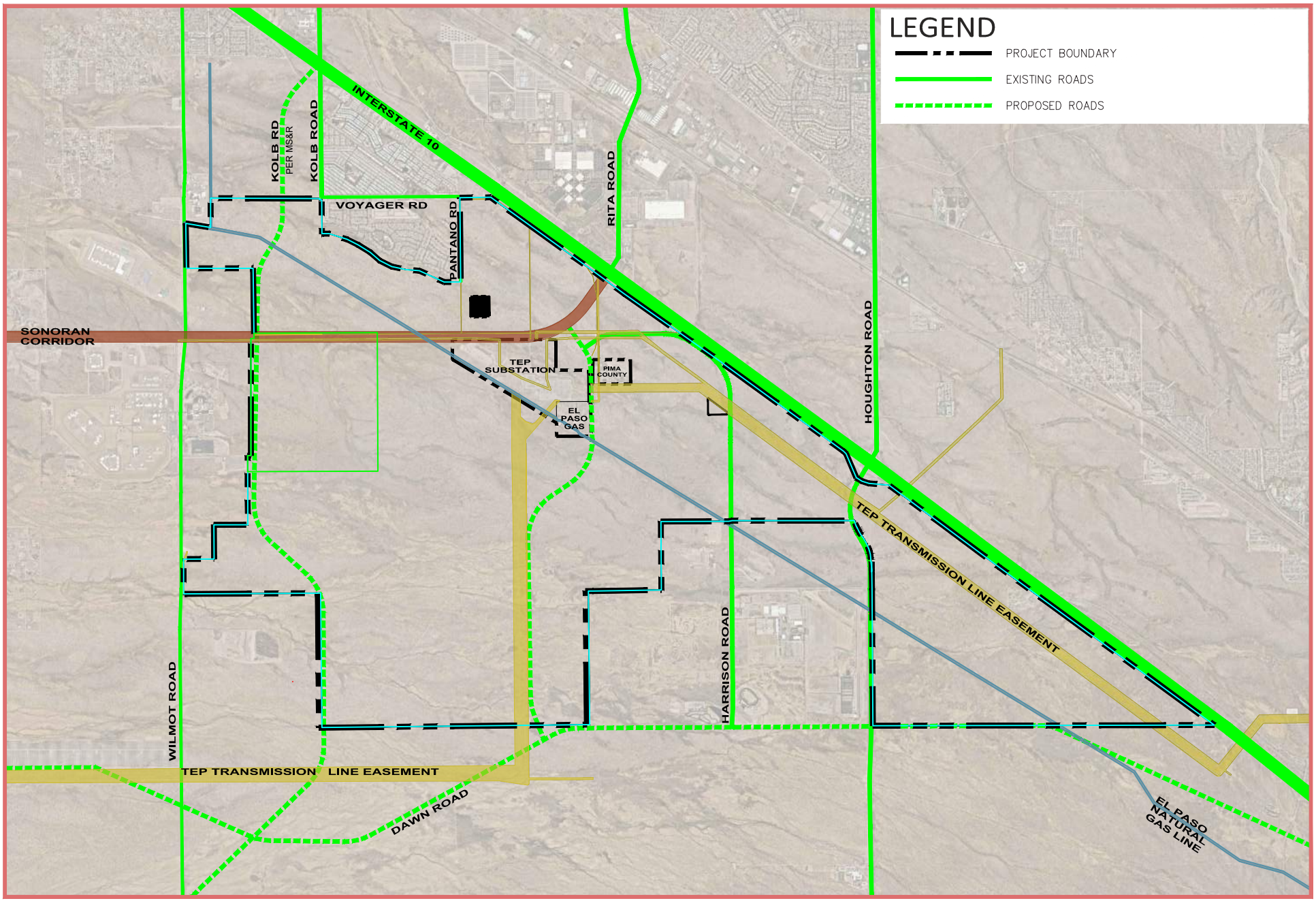
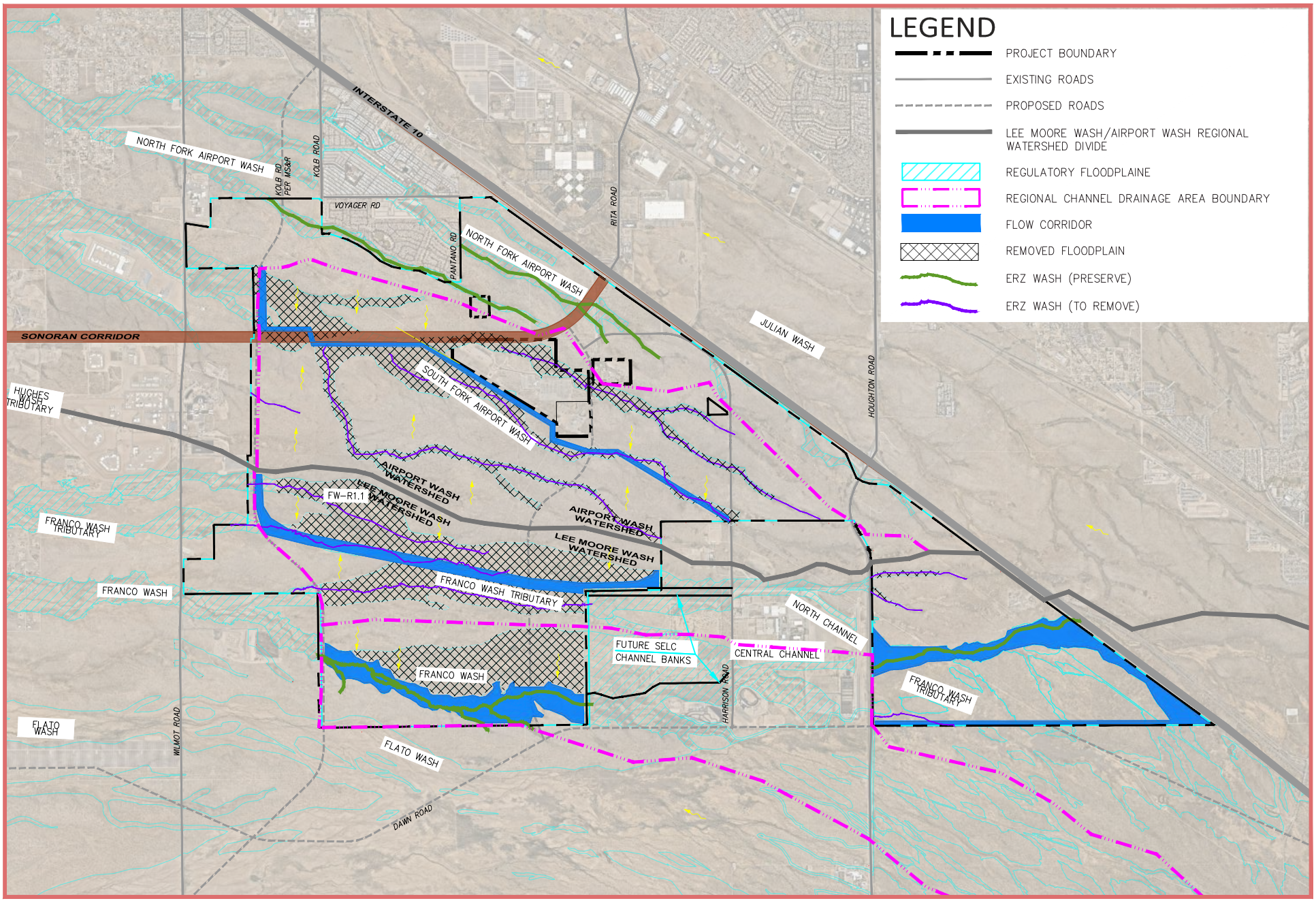


FIGURE 5-2 FLOW CORRIDORS



5.4 Roadway Drainage Crossings

Roadway Drainage crossings have been preliminarily located and sized based on a combination of proposed future land use and existing known flow rates, though typically the times of concentration between local and regional flows do not occur near the same time or are influenced significantly by each other. Culvert locations are depicted on Figure 5-3 and sizing summarized in Table 5-2. Cross drainage sizing calculations are attached in Appendix E.

Table 5-2
Concept Culvert Crossing Sizing and Flow Rates

Culvert Location ID	Q100 (cfs)	Size		Culvert Location ID	Q100 (cfs)	Size
Harrison Road				Kolb Road		
C20	99	2 – 48" RCP's		C40	656	3 – 10' x 4' RCBC
C21	127	2 – 48" RCP's		C41	1102	3 – 10' x 4' RCBC
C22	284	4 – 42" RCP		C42	134	3 – 36" RCP
C23	473	3 – 6' x 4' RCBC		C43	715	4 – 10' x 4' RCBC
C24	2,336	8 – 10' x 4' RCBC		C44	2,982	10 – 10' x 4' RCBC
C25	3,927	13 – 10' x 4' RCBC		C46	258	4 – 42" RCP
Rita Road				C47	264	4 – 42" RCP
C30	737	4 – 6' x 5' RCBC		C48	405	2 – 10' x 4' RCBC
C31a	1,049	6 – 6' x 5' RCBC		C49	887	3 – 10' x 4' RCBC
C31b	95	2 – 36" RCP		C50	475	4 – 4' x 4' RCBC
C32	445	3 – 6' x 4' RCBC		C51	4,476	10 – 10' x 5' RCBC
C33	154	2 – 48" RCP's		C52	4,261	10 – 10' x 5' RCBC
C34	3,620	10 – 12' x 4' RCBC		C53	2,034	7 – 10' x 4' RCBC
C35	4,635	13 – 12' x 4' RCBC				
C36	418	3 – 6' x 4' RCBC		Pantano Road		
Sonoran Corridor				C67	464	3 – 6' x 4' RCBC
C1	510	5 – 10' x 4' RCBC		Dawn Road		
C2	330	2 – 10' X 4' RCBC		C60	443	3 – 6' x 4' RCBC
C3	513	4 – 10' X 4' RCBC		C63	1,884	3 – 10' x 4' RCBC
C4	394	4 – 10' X 4' RCBC		C64	87	2 – 36" RCP
C5	258	3 – 10' X 4' RCBC		C65	336	5 – 42" RCP
C6	613	3 – 10' X 3' RCBC		C66	535	3 – 10' x 4' RCBC
C7	2,982	6 – 10' X 6' RCBC				
C8	45	3 – 30'' RCP				
C9	147	2 – 10' X 4' RCBC				
C10	834	5 – 10' X 4' RCBC				

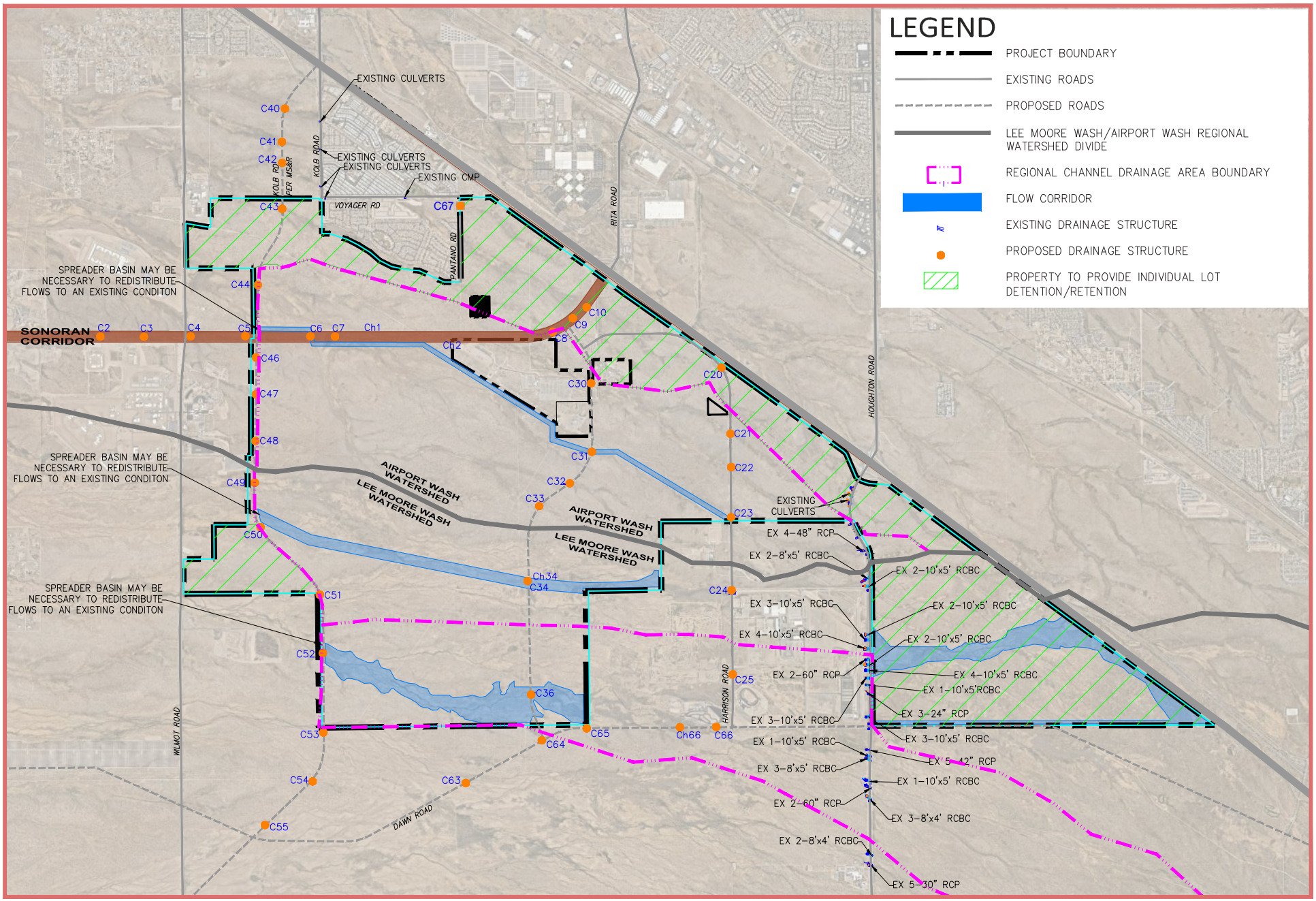
5.5 Detention and Retention Basin

Each development will be required to provide its own stormwater basins to control peak flow runoff from the site and not impact downstream properties and providing first flush retention volumes.

Volume estimates for each development can be approximated on a per acre basis based on the proposed land use type and assuming disturbance of the full parcel of land. Excavations from required onsite basins are another source of necessary fill materials that can be utilized.

First flush retention volumes can be estimated at 1656 cubic feet per acre of developed impervious land. Detention volumes can be estimated at 3528 cubic feet per acre, which in general can also contain the first flush retention volume.

FIGURE 5-3 CONCEPT DRAINAGE CROSSINGS AND REGIONAL CHANNELS



5.6 Erosion and Sediment Load Control

Erosion control will be provided within individual development(s), and also within the proposed flow corridors. Within Flow Corridors, bank protection is not generally anticipated as the design intent is to reduce flow velocities and provide landscaping and grade control structures such that the none is warranted.

Flow corridors will provide adequate sediment conveyance and provide erosion control through flattening the channel slopes, concrete grade control structures and enhanced natural vegetation and landscaping.

5.7 Stormwater Facility Management/Ownership

Proposed flow corridors and basins will need to be accepted for ownership and maintenance by the City or County for this conceptual design to work as intended and provide maximized developable State lands in the area, while also improving the existing environment and wildlife habitat and connectivity.

6.0 Constraints and Challenges

6.1 Permitting and Regulatory Constraints

Changes in political landscapes result in regulatory changes over time and cannot be avoided when it comes to Federal standards such as Jurisdictional Water of the US. Right now there are no areas designated as 404, however that can change over time and permitting would need to be applied for and approved for the proposed conceptual drainage approach.

6.2 Environmental and Ecological Constraints

The City of Tucson ERZ wash designation must be removed for the Conceptual Drainage Plan to be feasible and I discussed in more detail in the attached Environmental Resource Report. The City has expressed concerns over their removal as it relates to their FEMA CRS rating, however discussion with FCD have indicated this can likely be easily overcome with additional coordination and submittal of documents the County already has available.

7.0 Future Conditions and Adaptation

7.1 Projected Climate Change

Climate change projections change over time and the County is currently considering changes to the proposed hydrologic modeling and drainage development standards. The proposed standards discussed in Section 4 of this report are intended to allow for the development of the Rita 10 planning area based on currently available information as shown in this report. Design of infrastructure in the future may need to accommodate increased regulatory peak flow rates and freeboard standards as applicable at the time of development.

7.2 Future Land Use Changes

All analyses for this document assumed an overly conservative 95% imperviousness for estimate peak discharge flow rates for design of flow corridors and detention/retention basin sizing. Ultimately, each development will refine the information used in this study to determine and demonstrate their individual volumetric requirements for regional and/or onsite basins.

7.3 Long-term Maintenance

Reginal flow corridors are to be owned and maintained by the County or City after construction is completed by each proposed development.

8.0 Implementation Plan

8.1 Phasing

Stormwater drainage design standards presented in Section 4.0 allow for the development of any District Area at any given time by requiring all downstream stormwater infrastructure to be constructed prior to site development. This incentivizes developments to be constructed in a logical fashion from downstream to upstream (west to east) as it will result in the lowest overall construction costs from a stormwater infrastructure standpoint while also likely providing the closest available fill source.

Each development within the Rita 10 property will need to capture and convey all upstream runoff to the adjacent flow corridors, which will include the greater of the existing regional flow rates, or the existing, developed condition at that time upstream of their site.

8.2 Funding Sources/Cost Sharing

Where beneficial for both the developers and jurisdiction responsible for ownership and maintenance of the flow corridors and reginal facilities, it may be feasible for those developments to provide funding to the agency for them to construct the flow corridors and cross culverts, however that would need to be agreed upon ahead of time and the specific developments constructed such that they do no result in any increased in flows downstream until the point at which the County or City completed the drainage infrastructure.

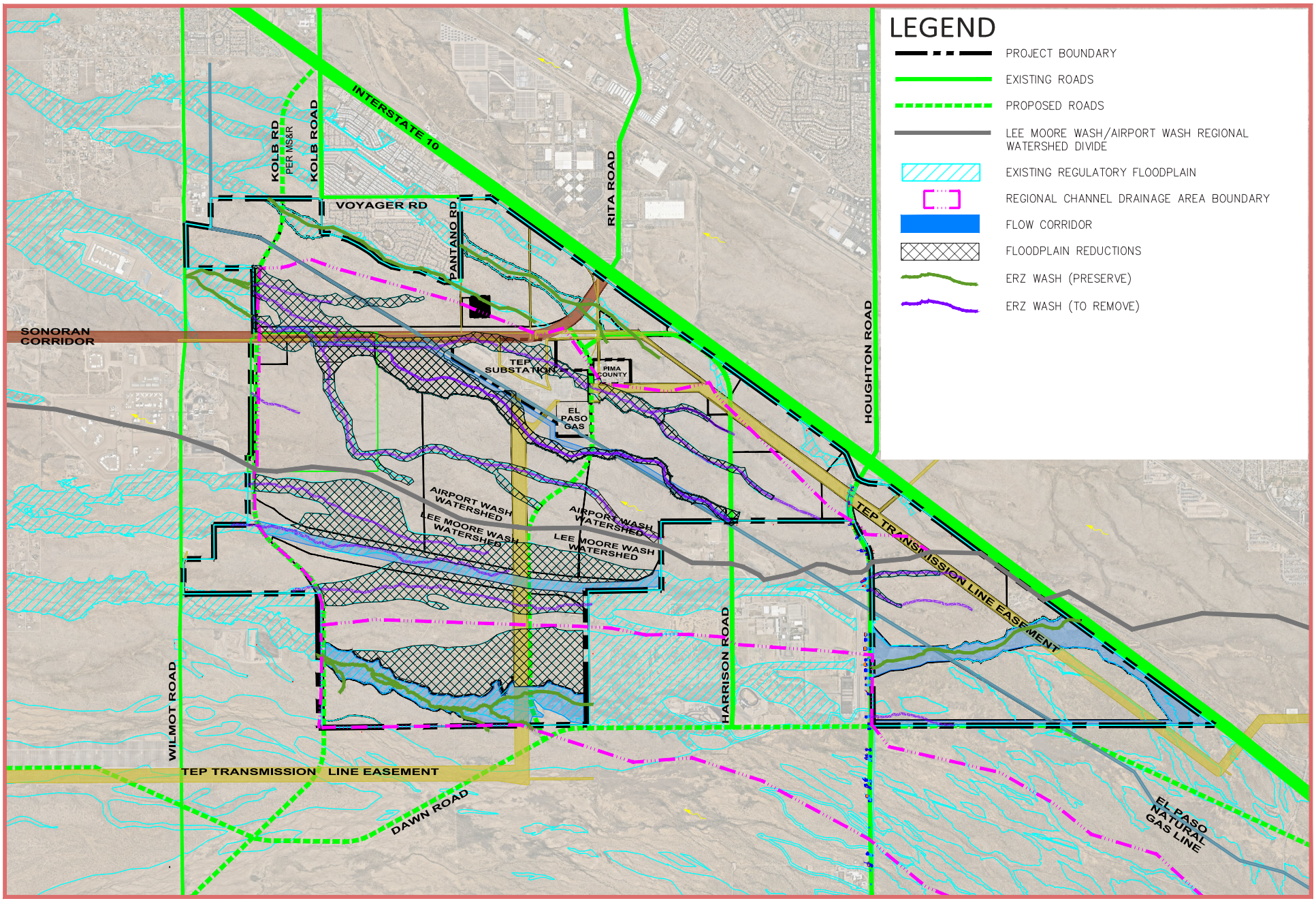
8.3 Stakeholder Coordination

The City of Tucson and FCD are the two major regulatory agencies which may be reviewing and approving any development plans. Additionally, the proposed drainage concept will require the City's acceptance in order to be a feasible approach. Other important stakeholders that will need to ultimately be involved will be all existing and needed utilities. While there are no current JD waters or FEMA Mapped floodplains, Federal agencies may be involved in the future.

9.0 Conclusion

The proposed drainage concept will allow currently undeveloped floodplain areas to be developed using a consistent approach and provide enhanced vegetation and wildlife connectivity in an area where natural vegetation is currently not well sustained. The proposed drainage concept with existing and proposed utility and roadway considerations are depicted on Figure 9-1.

FIGURE 9-1 PROPOSED CONDITIONS MAP



PSOMAS
333 E. Wetmore Road, Suite 450
Tucson, AZ 85705
(520) 292-2300 (520) 292-1290 fax
www.psomas.com

APPENDIX A

Existing Reports and Studies

FINAL PS&E PHASE DRAINAGE REPORT
for
SOUTH HOUGHTON ROAD WIDENING –
SOUTH OF INTERSTATE-10
PIMA CO. PROJECT NO. 4SHRWD

Location:
T16S, R15E, Sections 11 - 14, and 23 - 26
Pima County, Arizona

Prepared for:

PIMA COUNTY
TRANSPORTATION

201 N Stone Ave, 4th Floor South
Tucson, Arizona 85701

Prepared by:

CMG DRAINAGE ENGINEERING, INC.

3555 N Mountain Ave.
Tucson, Arizona 85719

As a Subconsultant to:

PSOMAS

333 E Wetmore Road, Suite 450
Tucson, Arizona 85705

June 22, 2021
CMG Project No. 20-017

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Lee Moore Wash Basin Management Study

Volume 3

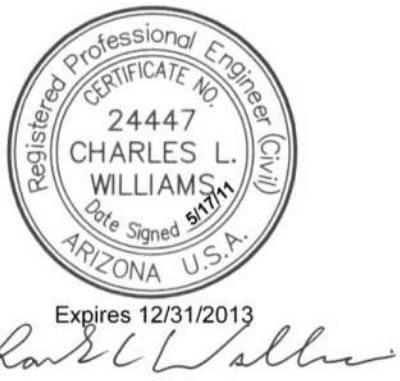
Implementation Plan

Adopted by Pima County Regional Flood Control District Board of Directors June 1st, 2010

Adopted by City of Tucson Mayor and Council October 19th, 2010

Adopted by Town of Sahuarita Mayor and Council December 13th,2010

Stantec Project No.: 185120071



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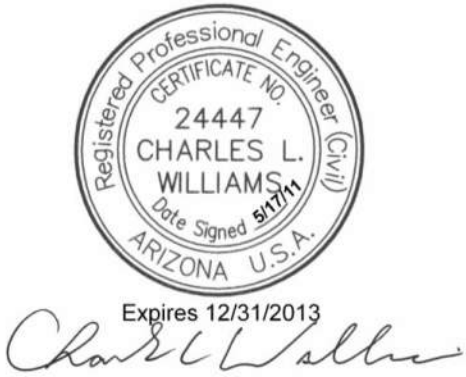


PIMA COUNTY
FLOOD CONTROL

MEMORANDUM

DATE: August 21, 2018

TO: All

FROM: Brian Jones, CFM
Chief Hydrologist

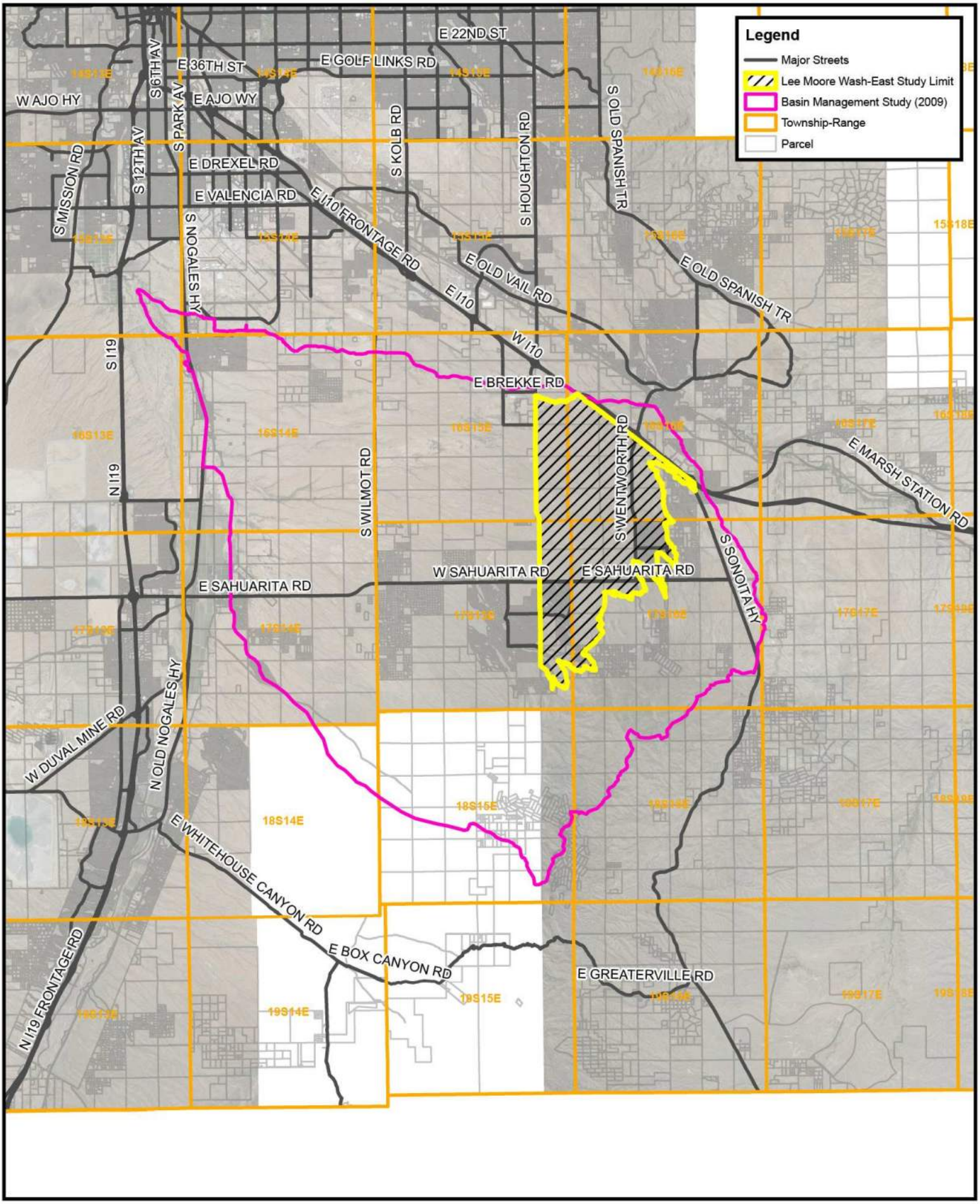
SUBJECT: **Revised floodplain delineations for portions of Lee Moore Basin Management Plan**

On August 15, 2018, Suzanne Shields, P.E., Chief Engineer for Pima County Regional Flood Control District approved the report titled: *Upper Santa Cruz River Watercourse Studies: Technical Support Data Notebook for Hydrologic and Hydraulic Analyses for Lee Moore Wash – East: Upstream of South Houghton Road*. For the project area shown as "Lee Moore Wash-East Study Limit" in Attachment A below, the floodplain delineations in this report supersede the delineations found in the 2009 Lee Moore Basin Management Plan reports.

Specifically, the reports that are partially superseded by the above report are titled *Lee Moore Wash Basin Management Study – Hydrology and Hydraulic Report*, by Stantec dated December 2008, and Two-Dimensional Flow Analysis Report for the Lee Moore Wash Basin Management Study in Pima County Arizona by JE Fuller Hydrology & Geomorphology, Inc., dated December 2008.

Aspects of other reports associated with the 2009 Lee Moore Wash Basin Management Plan may also be made obsolete by the latest report. Further revision of the floodplain delineations for the area west of Houghton Road is expected by early 2019.

Please ensure that you are using the latest information for your area of concern.



N

0 5,000 10,000 20,000 Feet

1 in = 20,000 feet

Lee Moore Wash-East
Attachment A - Study Limit

PIMA COUNTY
FLOOD CONTROL

Date: 8/21/2018

Upper Santa Cruz River Watercourse Studies:
Technical Support Data Notebook
for Hydrologic and Hydraulic Analyses for:

Lee Moore Wash – East: Upstream of South Houghton Road

FEMA FIRM Panels:
04019C-2925L
04019C-2940L
04019C-2945L
04019C-3500L**
04019C-3525L
** *Panel Not Printed*

Prepared by

Jacob Prietto, CFM
Principal Hydrologist

Approved by

Suzanne Shields, P.E.
Director

Pima County Regional Flood Control District
201 N. Stone Avenue, 9th Floor
Tucson Arizona, 85701

August 14, 2018

PIMA COUNTY
FLOOD CONTROL

Upper Santa Cruz River Watercourse Studies:
Technical Support Data Notebook
for Hydrologic and Hydraulic Analyses for:

Lee Moore Wash – East: Upstream of South Houghton Road

FEMA FIRM Panels:
04019C-2925L
04019C-2940L
04019C-2945L
04019C-3500L**
04019C-3525L
** *Panel Not Printed*

Prepared by

Jacob Prietto, CFM
Principal Hydrologist

Approved by

Suzanne Shields, P.E.
Director

Pima County Regional Flood Control District
201 N. Stone Avenue, 9th Floor
Tucson Arizona, 85701

August 14, 2018

PIMA COUNTY
FLOOD CONTROL

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Exhibit 1A – Maximum Depth Map: 10-year (5 sheets)
Exhibit 1B – Maximum Depth Map: 100-year (5 sheets)

Exhibit 2A – Maximum Velocity Map: 10-year (5 sheets)
Exhibit 2B – Maximum Velocity Map: 100-year (5 sheets)

Exhibit 3 – Floodplain Inundation Map: 10-year & 100-year (5 sheets)

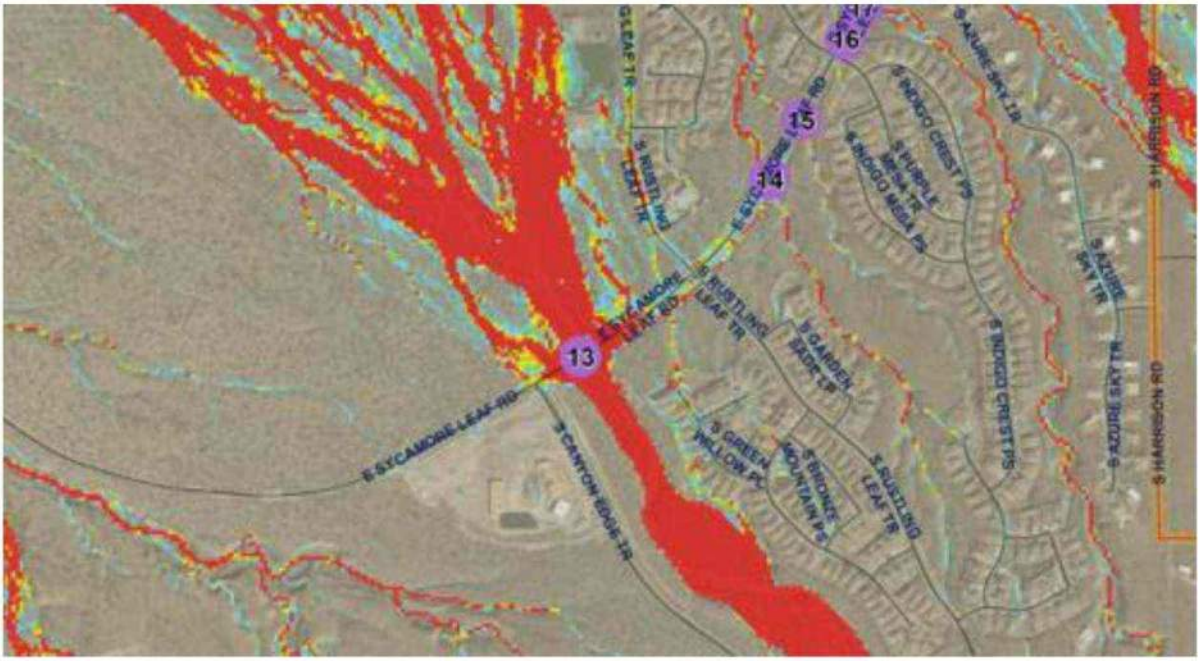
Exhibit 4A – Maximum DV^2 Map: 10-year (5 sheets)
Exhibit 4B – Maximum DV^2 Map: 100-year (5 sheets)

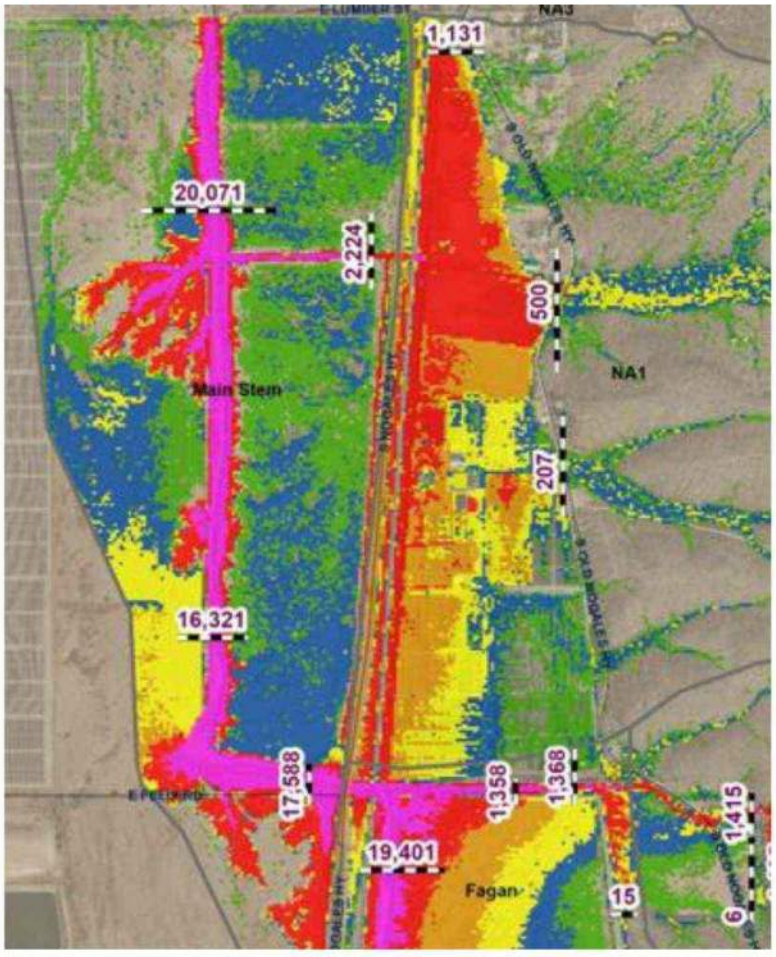
Attached CD

TSDN with supporting models, GIS data, and Exhibits.

Appendix A – References
Appendix B – General Documentation and Correspondence
Appendix C – Survey Field Notes (N/A)
Appendix D – Hydrologic Analysis Supporting Documentation
Appendix E – Hydraulic Analysis Supporting Documentation
Appendix F – Erosion, Sediment, Transport, Geometric Analysis Supporting Documentation (N/A)

EXHIBITS





Technical Support Data Notebook

Hydrologic Analysis & Floodplain Mapping

Lee Moore Wash-West Floodplain Mapping Project

Pima County, Arizona

Contract DO FC 18*22393

February 2019

PIMA COUNTY
FLOOD CONTROL

JE FULLER
define•communicate•solve

Technical Support Data Notebook for

Hydrologic Analysis & Floodplain Mapping

Lee Moore Wash-West Floodplain Mapping Project

Pima County, Arizona

Pima County Contract DO FC 18*22393

Prepared For:
Pima County Regional Flood Control District
201 N. Stone Avenue, 9th Floor
Tucson, Arizona 85701
Jacob Prietto, CFM, Project Manager

Prepare By:
JE Fuller Hydrology & Geomorphology Inc.
40 East Helen Street
Tucson, Arizona 85705
520-623-3112
Ian Sharp, PE

February 2019

February 28, 2019

Jacob Prietto, CFM
Pima County Regional Flood Control District
201 North Stone Ave., Ninth Floor
Tucson, Arizona 85701

RE: TSDN for Lee Moore Wash-West Project

Dear Mr. Prietto:

JE Fuller has prepared this report to document the flood mapping and modeling our firm has provided for the Lee Moore Wash-West project. This report defines our assumptions and methods and provides the results from two-dimensional FLO-2D models of this watershed.

Along with this report we are submitting floodplain work maps, digital mapping files, and the FLO-2D models.

I very much appreciate the opportunity to assist you and Pima County with this project. Please do not hesitate to contact me at 520-623-3112 or ian@jefuller.com should you have any questions or concerns.

Sincerely,

JE Fuller/Hydrology & Geomorphology, Inc.

Ian P. Sharp, P.E.
Project Engineer

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Digital Files

TSDN with supporting models and GIS data.

FINAL

FAIRGROUNDS DRAINAGE CHANNELS DESIGN CONCEPT REPORT (5FGSHC)

April 22, 2021

Prepared for:
Pima County Regional Flood Control District
201 N. Stone Avenue, Suite 7
Tucson, AZ 85701

Prepared by:
PSOMAS
Mike Daly, P.E.
333 East Wetmore Road
Suite 400
Tucson, AZ 85705
Project No. 7PFC190202

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RITA 10

Environmental Resource Report

Arizona State Land Department

June 2023

RITA 10 Environmental Resource Report

Tucson, Arizona

Prepared for:

Arizona State Land Department
1110 West Washington Street
Phoenix AZ, AZ 85007

Prepared by:

The Planning Center
2 East Congress Street, Suite 600
Tucson, Arizona 85701

With assistance from:

Psomas
333 East Wetmore Road, Suite 450
Tucson, Arizona 85705

Lazarus & Silvyn, P.C.
Grant Road Professional Plaza
5983 E. Grant Road, Suite 290
Tucson, AZ 85712

June 2023

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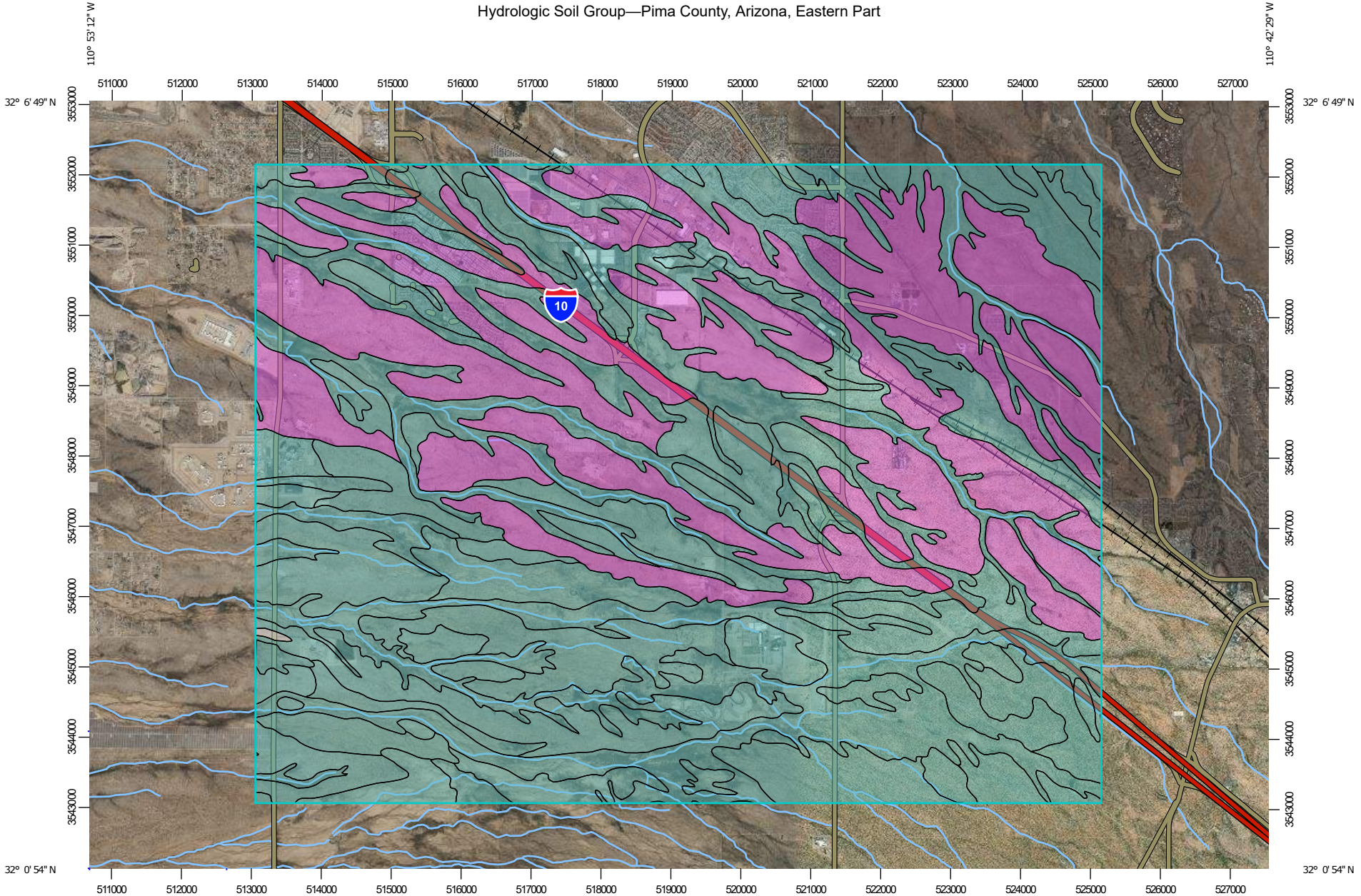
APPENDIX D
Supplemental Hydrology
And
Channel Sizing Calculations

PROVIDED DIGITALLY AS HEC-RAS MODELS

Hydrologic Soil Group—Pima County, Arizona, Eastern Part



MAP LEGEND

Area of Interest (AOI)

Area of Interest (AOI)

Soils

Soil Rating Polygons

A

A/D

B

B/D

C

C/D

D

Not rated or not available

Soil Rating Lines

A

A/D

B

B/D

C

C/D

D

Not rated or not available

Soil Rating Points

A

A/D

B

B/D

C

C/D

D

Not rated or not available

Water Features

Streams and Canals

Transportation

Rails

Interstate Highways

US Routes

Major Roads

Local Roads

Background

Aerial Photography

MAP INFORMATION

The soil surveys that comprise your AOI were mapped at 1:24,000.

Please rely on the bar scale on each map sheet for map measurements.

Source of Map: Natural Resources Conservation Service
Web Soil Survey URL:
Coordinate System: Web Mercator (EPSG:3857)

Maps from the Web Soil Survey are based on the Web Mercator projection, which preserves direction and shape but distorts distance and area. A projection that preserves area, such as the Albers equal-area conic projection, should be used if more accurate calculations of distance or area are required.

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Pima County, Arizona, Eastern Part
Survey Area Data: Version 22, Sep 8, 2023

Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Dec 31, 2009—Nov 25, 2022

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.

Hydrologic Soil Group

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
11	Cave soils and urban land, 0 to 8 percent slopes		13.3	0.0%
34	Hantz loam, 0 to 1 percent slopes	C	7,976.9	29.3%
47	Mohave soils and urban land, 1 to 8 percent slopes	C	213.9	0.8%
60	Pinaleno-Stagecoach complex, 5 to 16 percent slopes	C	78.7	0.3%
62	Pinaleno very cobbly sandy loam, 1 to 8 percent slopes	C	73.7	0.3%
68	Riveroad and Comoro soils, 0 to 2 percent slopes	C	19.8	0.1%
72	Sahuarita soils, mohave soils and urban land, 1 to 5 percent slopes	C	5,837.8	21.4%
78	Stagecoach-Sahuarita association, 1 to 8 percent slopes	A	8,744.9	32.1%
81	Tubac gravelly loam, 1 to 8 percent slopes	C	3,251.6	11.9%
86	Yaqui fine sandy loam, 1 to 3 percent slopes	C	1,040.6	3.8%
Totals for Area of Interest			**27,254.9**	**100.0%**

Description

Hydrologic soil groups are based on estimates of runoff potential. Soils are assigned to one of four groups according to the rate of water infiltration when the soils are not protected by vegetation, are thoroughly wet, and receive precipitation from long-duration storms.

The soils in the United States are assigned to four groups (A, B, C, and D) and three dual classes (A/D, B/D, and C/D). The groups are defined as follows:

Group A. Soils having a high infiltration rate (low runoff potential) when thoroughly wet. These consist mainly of deep, well drained to excessively drained sands or gravelly sands. These soils have a high rate of water transmission.

Group B. Soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well drained or well drained soils that have moderately fine texture to moderately coarse texture. These soils have a moderate rate of water transmission.

Group C. Soils having a slow infiltration rate when thoroughly wet. These consist chiefly of soils having a layer that impedes the downward movement of water or soils of moderately fine texture or fine texture. These soils have a slow rate of water transmission.

Group D. Soils having a very slow infiltration rate (high runoff potential) when thoroughly wet. These consist chiefly of clays that have a high shrink-swell potential, soils that have a high water table, soils that have a claypan or clay layer at or near the surface, and soils that are shallow over nearly impervious material. These soils have a very slow rate of water transmission.

If a soil is assigned to a dual hydrologic group (A/D, B/D, or C/D), the first letter is for drained areas and the second is for undrained areas. Only the soils that in their natural condition are in group D are assigned to dual classes.

Rating Options

Aggregation Method: Dominant Condition

Component Percent Cutoff: None Specified

Tie-break Rule: Higher

RITA 10

Environmental Resource Report

Arizona State Land Department

June 2023

RITA 10 Environmental Resource Report

Tucson, Arizona

Prepared for:

Arizona State Land Department
1110 West Washington Street
Phoenix AZ, AZ 85007

Prepared by:

The Planning Center
2 East Congress Street, Suite 600
Tucson, Arizona 85701

With assistance from:

Psomas
333 East Wetmore Road, Suite 450
Tucson, Arizona 85705

Lazarus & Silvyn, P.C.
Grant Road Professional Plaza
5983 E. Grant Road, Suite 290
Tucson, AZ 85712

June 2023

Contents

LIST OF EXHIBITS

I. INTRODUCTION

Introduction

This Environmental Resource Report (ERR) has been prepared in conjunction with the proposed RITA 10 Planned Area Development (PAD) for 8,361 acres of Arizona State Trust Land between Interstate 10 and Wilmot Road. See *Exhibit 1: Location Map* and *Exhibit 2: Subject Property*. This report conforms to the standards set forth by the City of Tucson's *Technical Standards Manual Section 4-02.0.0: Floodplain, Wash and ERZ Standards*. This report examines the property's hydrologic, geologic, vegetative, wildlife, and development factors. The ERR details existing environmental resources to more accurately identify Protected Riparian Areas (PRA) on the property, as defined by *Section 4-02.2.3* of the *Technical Standards Manual*.

Environmental designations applied to the property include:

- Environmental Resource Zone (ERZ) washes previously designated on the property
- Critical and Sensitive Wildlife Habitat of Eastern Pima County
- Protected Riparian Area (PRA) for areas within 100-year floodplains with flows exceeding 100 cfs

Background

With proximate utilities and future transportation planning underway, the subject property is well-positioned to develop with industrial, manufacturing, or logistics uses along with supportive housing and commercial services. ASLD is currently working to establish initial entitlements through the RITA 10 PAD rezoning to prepare the property for auction. The PAD creates the policy framework and regulatory standards for how future development will address the existing environmental resources. Secondary planning efforts will detail future site design and development plans after end users have purchased property within RITA 10.

The ERR informs this process by identifying existing environmental factors and specifying the extent of existing Protected Riparian Areas.

Exhibit 1: Location Map

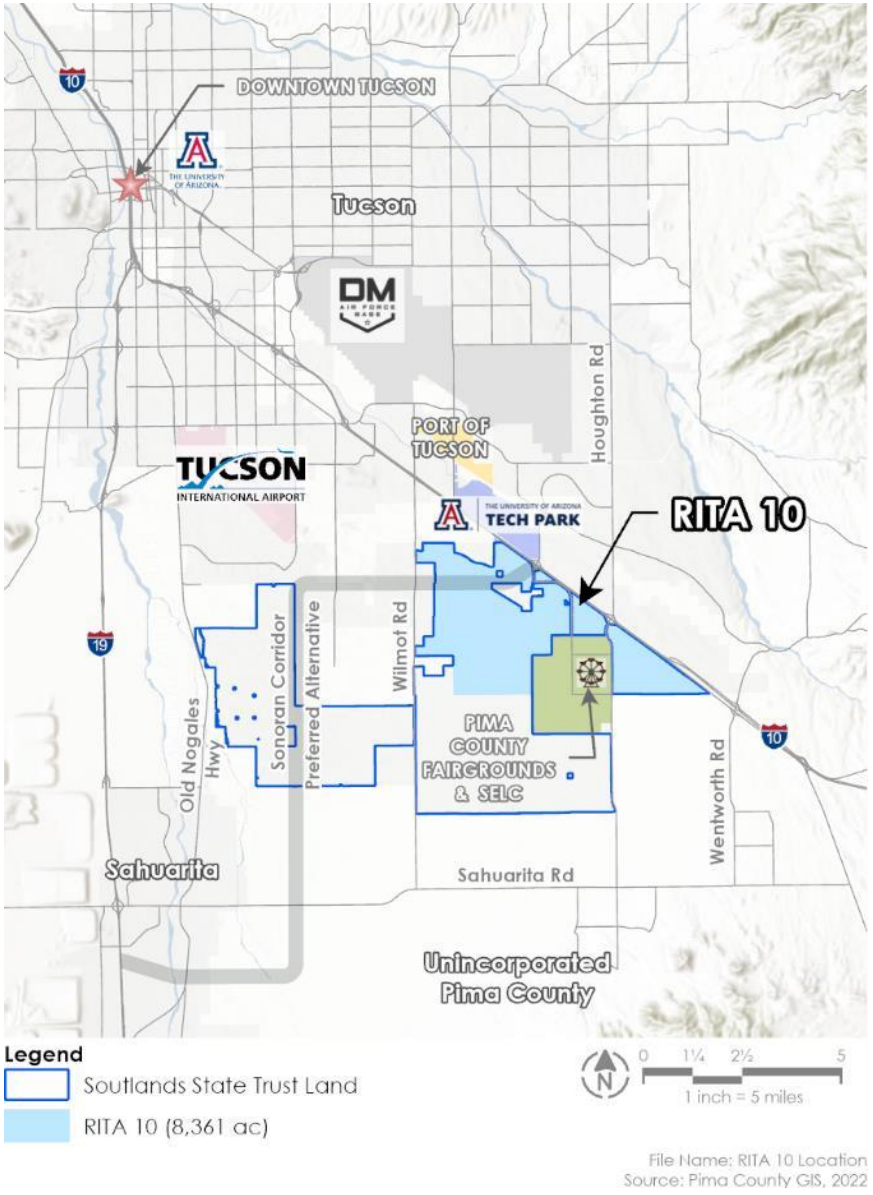
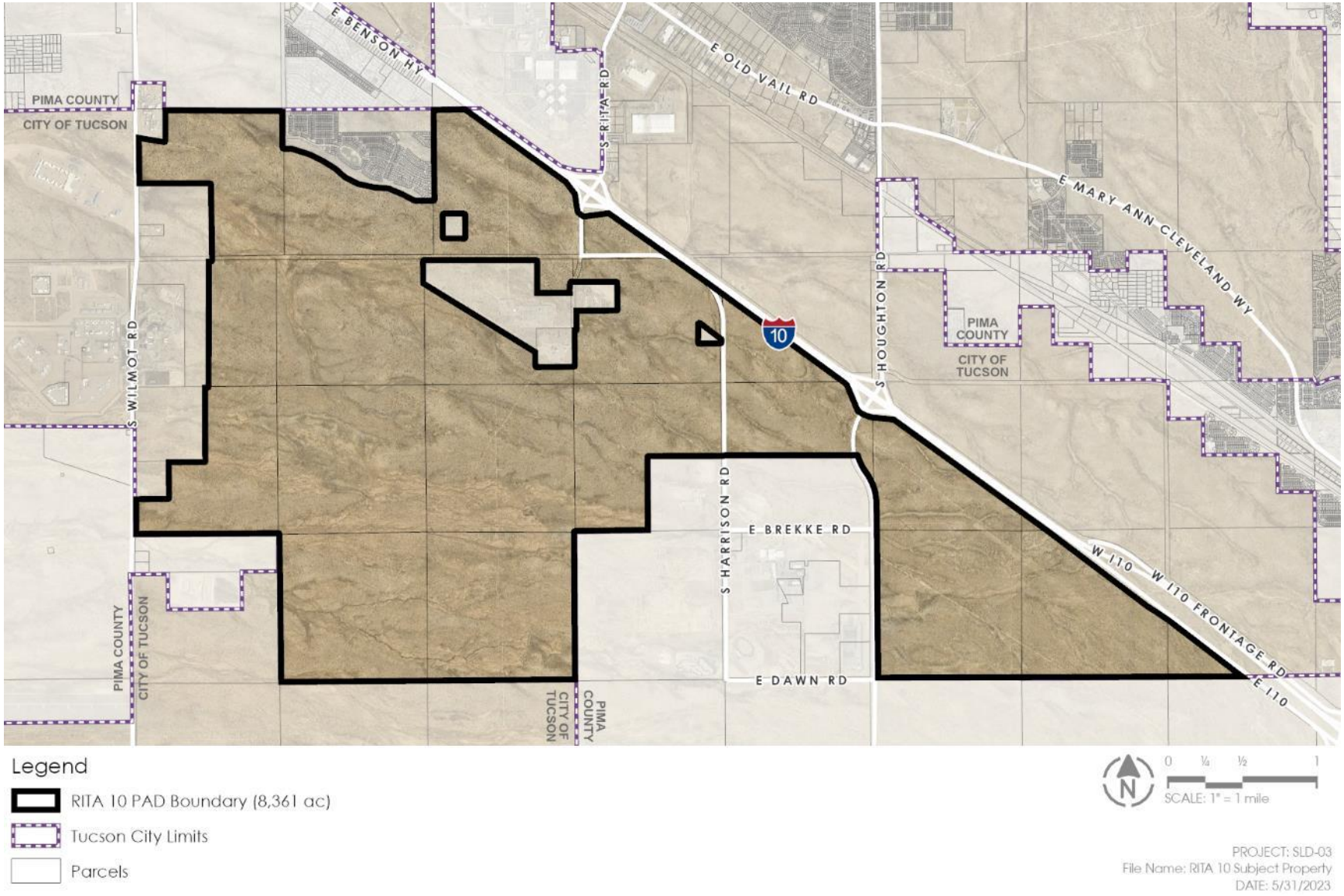


Exhibit 2: Subject Property



II. ENVIRONMENTAL RESOURCE REPORT

Hydrology

RITA 10's hydrology consists of broad shallow floodplains of varying widths flowing across the property from east to west. Named washes within these floodplains are generally braided flow networks with little to no bank definition, dispersing across the property in a sheet flow condition. Due to their ill-defined nature, these watercourses are best described as broad, dispersed floodplain areas rather than defined wash corridors. Named washes associated with these 100-year floodplains within RITA 10 are the North Fork Airport Wash, South Fork Airport Wash, Franco Wash, and the Flato Wash. See *Exhibit 3: Floodplains*. These floodplain watercourses are described individually as follows:

The property is covered by FEMA's Flood Insurance Rate Maps (FIRMs) 04019C2905L, 04019C2925L, and 04019C40L. These maps identify the entire property in Zone X, outside the 0.2% chance of flood. No FEMA floodplains are located within 200 feet of the property boundary.

Named Watercourse Characteristics

North Fork Airport Wash

The eastern extent of the North Fork Airport Wash flows through the northern portion of RITA 10 north of the Old Vail Connection Road alignment. It flows in a northwest direction, exits the property, and continues through the Sycamore Park neighborhood and Voyager RV Park. Its tributary flows in a similar direction and separates the northern RITA 10 boundary from the Sycamore Park subdivision. The main floodplain and tributary are generally 200 to 300 feet wide, however flows are still primarily dispersed as shallow sheet flow.

South Fork Airport Wash

The South Fork Airport Wash and its tributaries flow through the central portion of RITA 10. The main floodplain generally forms north of the Pima County Fairgrounds near Harrison Road and flows to the northwest. It has a defined flow path approximately 200 feet in width south of the TEP and El Paso Natural Gas substations before spreading out as braided flow west of these facilities. The northern tributary floodplain north of the TEP Substation has a 500 to 600-foot wide shallow flow path that joins the braided wash network. The southern tributary floodplain varies in width from 200 to 400 feet. It follows a similar flow path as the main wash floodplain before turning north and joining the main floodplain near the Kolb Road alignment. The main wash floodplain and the two tributaries all converge at the Old Vail Road alignment approximately ¾ of a mile south of the Kolb Road terminus. A large manmade berm stops drainage within these floodplains at this convergence point. These flow paths break out around the sides of the berm and continue to the northwest as a braided network downstream of the berm.

Franco Wash

The Franco Wash and its tributaries begin across I-10 east of the property. It is a broad, braided floodplain network flowing in a sheet flow condition through the eastern portion of RITA 10 between I-10 and Houghton Road. The flow is captured and directed underneath Houghton Road through a series of channels, catchment basins, and culverts installed as part of Pima

County's recently completed Houghton Road widening project. It continues through the Pima County Fairgrounds in this managed condition before returning to its original broad and braided sheet flow pattern flowing in two paths through the southern portion of RITA 10. The floodplain reaches over ½ mile wide as it flows in a westerly direction through the property. The sheet flow consolidates into defined natural channels approximately one mile west of the property, and continues in this condition before emptying into the Santa Cruz River to the west.

Flato Wash

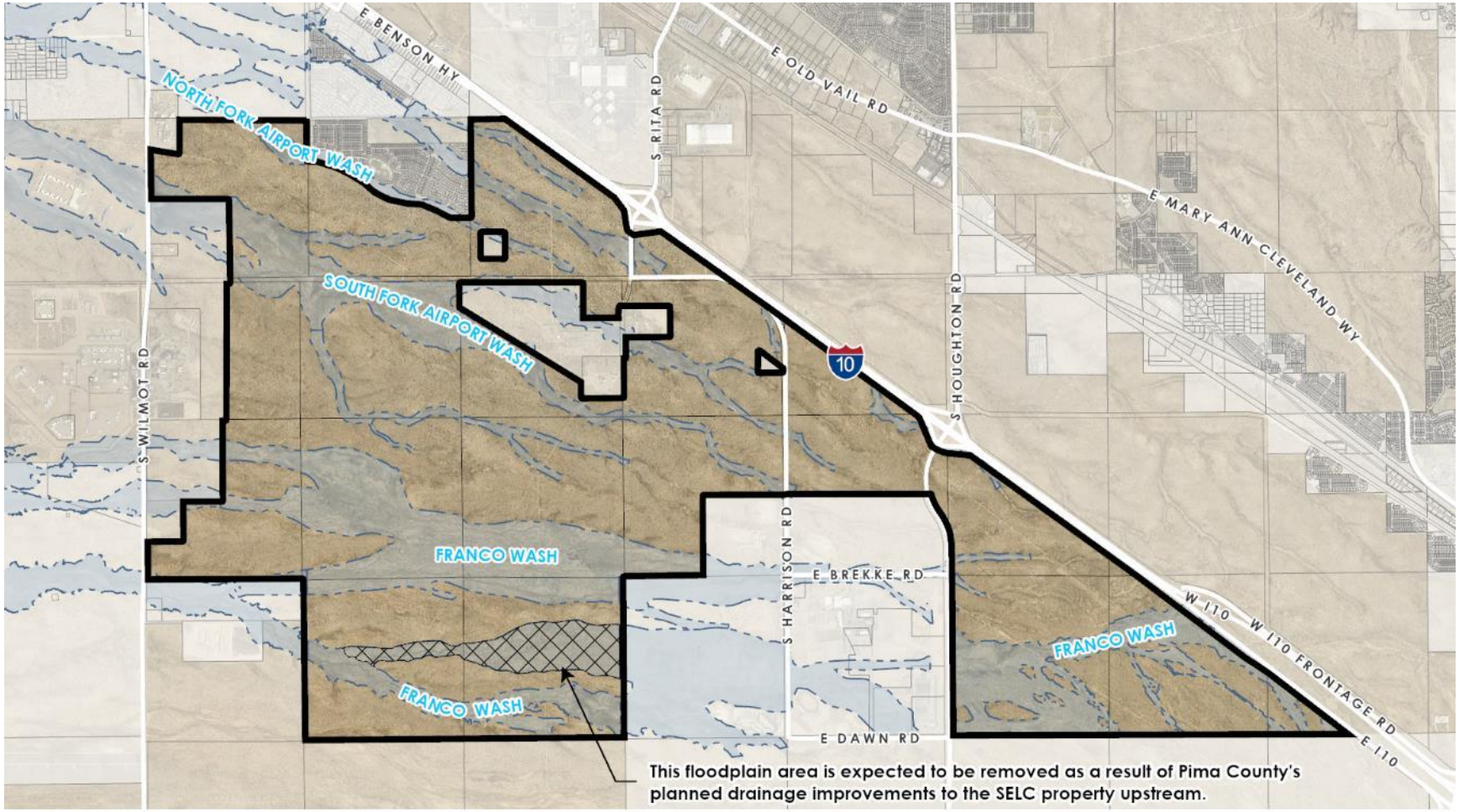
A small portion of the Flato Wash's northern tributary floodplain crosses the southwest corner of RITA 10's boundary along the Dawn Road alignment. This tributary follows the similar braided, shallow sheet flow network as the other floodplains onsite. It flows in this condition to the west through State Trust Land outside of the RITA 10 boundary before crossing Wilmot Road and converging into the Flato's main flow through the solar generation facility to the west.

These floodplains along with their many tributaries are designated as Environmental Resource Zone (ERZ) washes under Article 5.7 of the City of Tucson UDC (see *Exhibit 4: ERZ Designations*).

100-Year Floodplains

There are two separate 100-year floodplains located on the property, one in the north and one in the south. First are the floodplains associated with the North and South Fork Airport Washes flowing across the northern half of the property and are delineated as regulatory floodplains carrying at least 100 cubic feet per second (cfs). Second, the Lee Moore Wash study delineates the floodplain associated with the Franco Wash flows across the site's southern portion and a small portion of the Flato Wash's northern extent. See *Exhibit 3: Floodplains*.

Exhibit 3: Floodplains



Legend

- RITA 10 PAD Boundary (8,361 ac)
- Parcels
- Regulatory Floodplain Limits (100-year at 100 cfs)
- Expected Floodplain Removal

N

0 ¼ ½ 1

SCALE: 1" = 1 mile

PROJECT: SLD-03
File Name: RITA 10 Subject Property
DATE: 5/31/2023

Previous Studies & Basin Management

Portions of the property are located within several study areas, including the *Airport Wash Basin Management Study*, *Lee Moore Wash Basin Management Plan*, *Lee Moore Wash East,* and *Lee Moore Wash West*. Pima County Regional Flood Control District completed these studies to identify the drainage and flooding hazards within the area's watersheds and develop alternatives to address those hazards.

Existing & Proposed Drainageway

The property is undeveloped, with no constructed drainageways present on-site. The Arizona State Land Department owns the locally mapped floodplain segments flowing through the property and the locally occurring drainageways. The RITA 10 PAD proposes maintaining and enhancing the site's more significant flow paths through consolidation of the floodplain areas carrying less flow. The details would be identified as part of an enhancement plan established in the PAD in a manner similar to the Julian Wash Enhancement Plan in the H2K PAD, approved by the Tucson City Council in July 2022. This consolidation and enhancement approach would allow for the creation of larger contiguous tracts of land desired by large-scale industrial users, facilitate land sales by ASLD and contribute positively to the City of Tucson's economic growth. Alterations to and ownership of the enhanced drainageways will be determined during the secondary planning process or at the time of development.

Vegetation

Protected Riparian Areas (PRA)

The Shaw 1994 Habitat Modeling and the Critical and Sensitive Wildlife Habitats of Eastern Pima County (CSWH) (2005) established a presumption of riparian habitat that might be present on the property; however, Shaw's identification of potential riparian habitat on the property conflicts with that shown on the CSWH Map. Shaw shows large, isolated patches of potential riparian area, while the CSWH shows narrow strands linking riparian areas together. See *Exhibit 5: Shaw Riparian Habitat Modeling (1994)* and *Exhibit 6: Critical & Sensitive Wildlife Habitats of Eastern Pima County (2005)*. Since the last survey's completion nearly twenty years ago, a rise in temperature and decades of drought conditions have affected the vegetative condition within the study area. Field work verifies that both studies overestimate the riparian resources currently present on-site.

A more recent analysis was conducted to determine the presence and extent of riparian resources within the RITA 10 boundary. Analysis began with floodplain mapping conducted by Psomas to identify regulatory floodplains, flow areas, and the overall drainage network. The property was then examined for regulated riparian areas per Section 4-02.2.2 of the City of Tucson Technical Standards Manual (TSM) using a combination of current aerial photography (Pima County 2022 Pictometry), infrared imagery (see *Exhibit 7: USDA NAIP Vegetation Cover*), and on-site vegetative sampling to determine the extent of potential Protected Riparian Areas on-site. *Exhibit 8: Preliminary PRA Delineation* depicts the results of this analysis with a preliminary area of 492 acres of Protected Riparian Areas distributed across RITA 10. These PRA limits are subject to further refinement and alteration through additional analysis and field inventory as part of the secondary planning effort or development plan process. *Exhibit 9: PRA & Riparian Habitat Comparison* depicts the difference between the Preliminary PRA limits and the Pima County riparian areas from Exhibit 6. Some areas overlap, but the Pima County Riparian tends to overestimate the amount of habitat in RITA 10.

The TSM also requires identification of Protected Riparian Areas (PRA) per Section 4-02.2.3:

"The protected riparian area is the area that has riparian habitat that is to be preserved. Except for watercourses designated by ordinance as subject to ERZ and WASH regulations, the protected riparian area shall not exceed the 100-year floodplain. Protected riparian areas include areas that provide habitat structure, wildlife food and shelter, and that also aid in supporting wildlife connectivity, control and help to improve quality. Riparian habitat may include (A) ***vegetative resources****, (B)* ***mapped areas and wildlife habitat*** *and (C)* ***corridors listed below where such habitat is riparian in nature and function.****"*

A. Vegetative Resources

Vegetative Resources are defined as groups of three or more individual plants in close proximity to each other representing any of the plant species (and any combination of associated vegetative structure) listed below:

1. Mesoriparian plant species, including Arizona walnut, Fremont cottonwood, Goodding (black) willow, Arizona sycamore, Arizona ash.

   Analysis Results: No Mesoriparian plant species are present within the RITA 10 PAD area.

2. Over-story vegetation consisting of closely spaced, perennial, woody plants (e.g., mesquite, foothill palo verde, Mexican palo verde, ironwood, netleaf hackberry) that are generally six feet or more in total height, and where the distance between canopy margins of individuals of the predominant over-story plant species is less than two times the height of the tallest individuals.

   Analysis Results: This vegetative resource is present in areas of higher water accumulation, such as the defined floodplain of the South Fork Airport Wash south of the TEP Substation and the floodplain areas immediately upstream of two manmade berms blocking the flow of the South Fork Airport Wash and the Franco Wash floodplains.

3. Understory vegetation consisting of closely spaced, perennial woody plants (e.g., catclaw and whitethorn acacia) that are generally six feet or less in total height and where the distance between canopy margins of individuals of the predominant understory plant species is generally less than two times the height of the tallest individuals, excluding nearly pure stands of understory vegetation consisting of the following perennial woody plants: burrow bush, creosote bush, desert broom, or triangle-leaf bursage.

   Analysis Results: This is the dominant vegetative condition for most of the RITA 10 floodplains. Much of the understory vegetation is found along portions of braided flow paths in shallow sheet flow areas. Vegetation in these areas generally consisted of small plants in poor health due to extended periods of drought.

4. Combinations of overstory and understory vegetation that together constitute valuable habitat, and tobosa swales.

   Analysis Results: This combination is limited to areas where stormwater concentration is identified in Section A.2.

B. Mapped Areas shown on the Critical and Sensitive Wildlife Habitat Maps which contain:

1. Major segments of desert riparian habitat extending from public preserves.

   Analysis Results: No public preserves are adjacent to RITA 10.

2. Major segments of desert riparian habitat not extending directly from a public preserve but containing a high density and diversity of plant and animal species.

Analysis Results: No major segments of desert riparian areas containing a high density and diversity of plants and animals are present within RITA 10.

3. Deciduous riparian woodlands.

   Analysis Results: No deciduous riparian woodlands are present within RITA 10.

4. Mesquite bosques.

   Analysis Results: No mesquite bosques are present within RITA 10.

5. Lakes, ponds, or wetlands.

   Analysis Result: There is one manmade ponding area associated with the current ASLD grazing lease that was created by damming off the Franco Wash with a berm west of the Pima County Fairgrounds.

C. Wildlife Habitat Corridors:

Wildlife includes, but is not limited to, the wildlife and areas identified in the public draft or final City of Tucson Habitat Conservation Plan applicable to the regulated area.

Analysis Results: No mapped wildlife habitat corridors exist through RITA 10. The fragmented vegetation pattern prevents habitat connection. The RITA 10 PAD will create these connections through the enhancement of the Franco Wash and South Fork Airport Wash corridors.

Environmental Resource Zone

Section 4-02.2.2 of the TSM stipulates that ERZ Watercourses are regulated areas subject to review. Nearly every floodplain flow path and tributary throughout RITA 10 has been designated an ERZ Watercourse. WASH Watercourses are also subject to review, but no WASH Watercourses are located on-site. See *Exhibit 4: ERZ Designations*.

Regulated areas not designated as ERZ or WASH watercourses are defined as the 100-year floodplain of watercourses with flows of 100 cfs or more, including those areas which contain the following:

1. *Hydroriparian, Mesoriparian, or Xeroriparian Types A, B, or C habitats as delineated by Pima County as part of Article X of the Pima County Floodplain and Erosion Hazard Ordinance.*

   Analysis Result: The property contains only small pockets of Hydroriparian, Mesoriparian, or Xeroriparian Types A, and B habitats, except for two areas upstream of manmade berms: one at the convergence of the South Fork Airport Wash and its two tributaries and one on the Franco Wash west of the Pima County Fairgrounds. These interventions stop the natural flow of these washes, degrading riparian habitat downstream. Xeroriparian C is the dominant classification shown on Pima County's riparian map. However, a more recent vegetative analysis was performed as part of this ERR,

showing that much of this habitat is not present on-site. See *Appendix 1 Vegetation Inventory Summary*.

2. *Hydroriparian, Mesoriparian, or Xeroriparian High or Xeroriparian Intermediate Habitats as delineated in the TSMS Phase II Stormwater Master Plan.*

   Analysis Result: This habitat type has not been delineated within RITA 10.

3. *Xeroriparian Low Habitats as delineated in the TSMS Phase II Stormwater Master Plan or Type D habitat as delineated by Pima County for connectivity between higher habitat classes, if low-volume, high-value habitats are present, including tabosa swales or similar habitats.*

   Analysis Result: Pima County's riparian map shows several Type D habitats forming connections between higher value habitat areas within the site's broad, shallow floodplains. Recent vegetation analysis shows that much of the habitat delineated on the Pima County Map is not present on-site, and subsequently, no connections between these habitats exist.

4. *Unclassified or undocumented riparian habitat of equivalent value to the above criteria.*

   Analysis Result: While additional unclassified or undocumented riparian habitat may be present on-site, there is no other habitat of equivalent value to the above criteria located within the RITA 10 boundaries. Undocumented habitat that meets the definition of PRA as described in the City of Tucson TSM and is planned for disturbance or removal will have a mitigation plan prepared following the standards established in the RITA 10 PAD. Riparian habitat delineated by Pima County that meets the City of Tucson PRA criteria and is planned for disturbance, will follow an off-site mitigation plan prepared in accordance with the RITA 10 PAD standards.

Exhibit 4: ERZ Designations

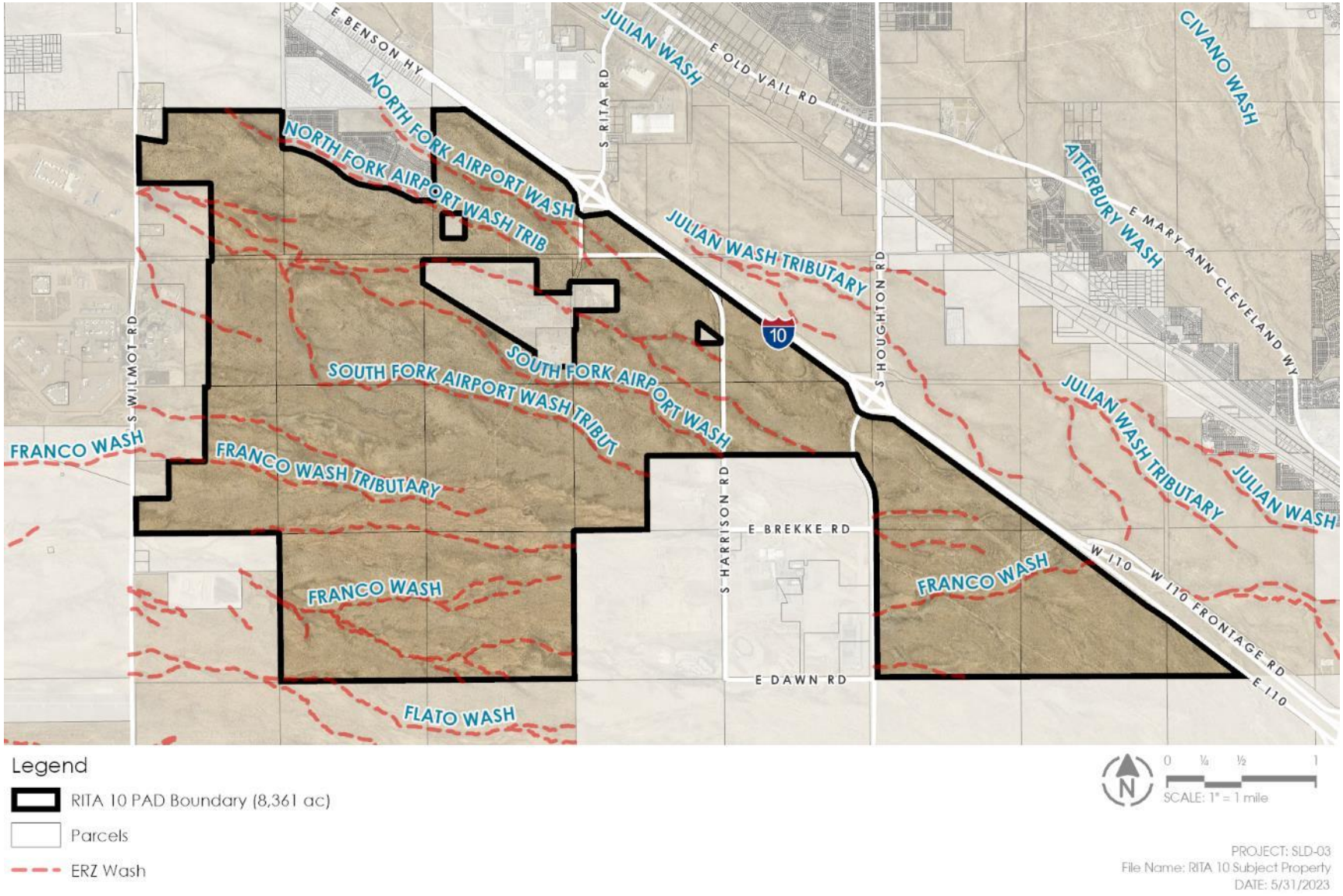


Exhibit 5: Shaw Riparian Habitat Modeling (1994)

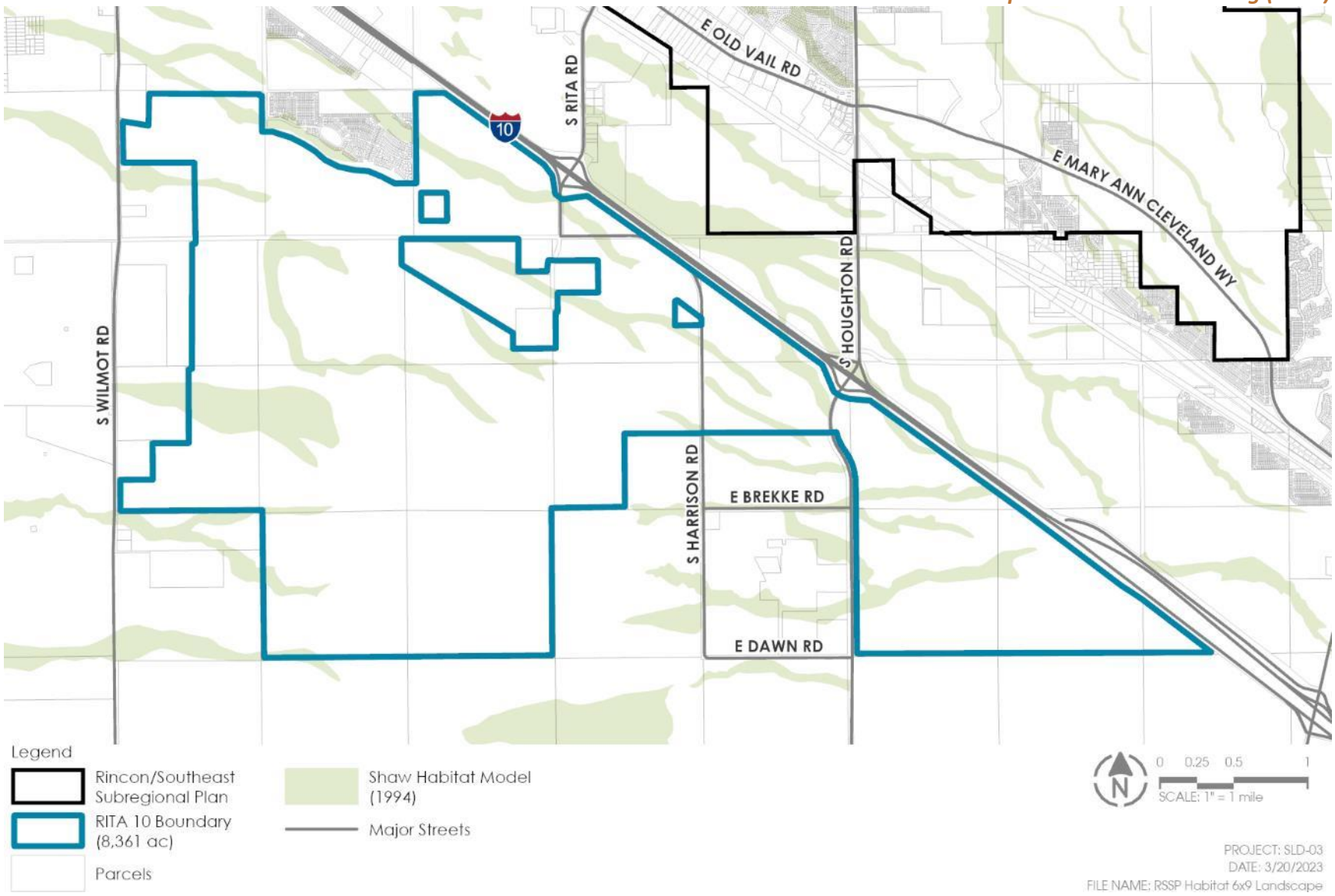


Exhibit 6: Critical & Sensitive Wildlife Habitats of Eastern Pima County (2005)

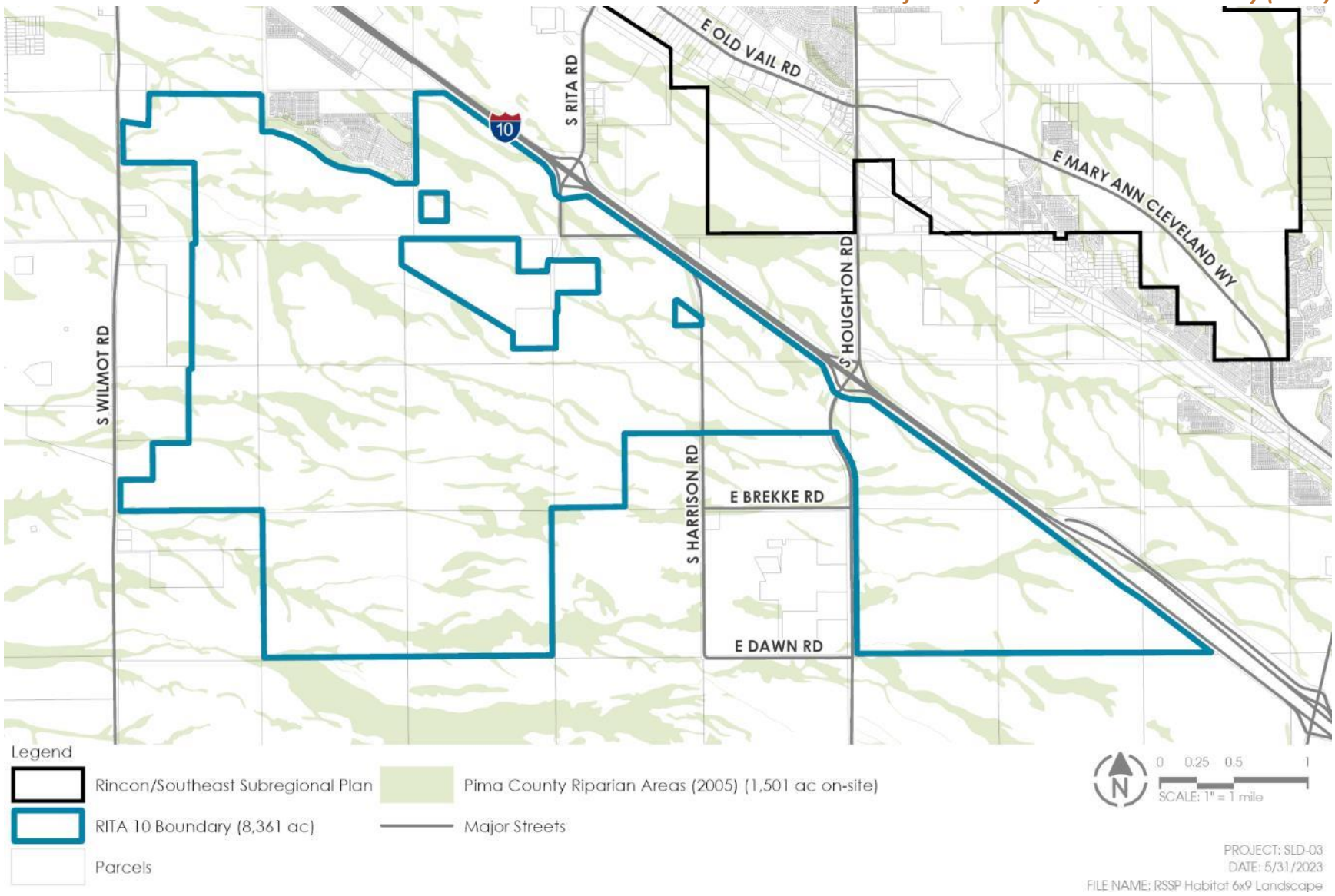


Exhibit 7: USDA NAIP Vegetation Cover

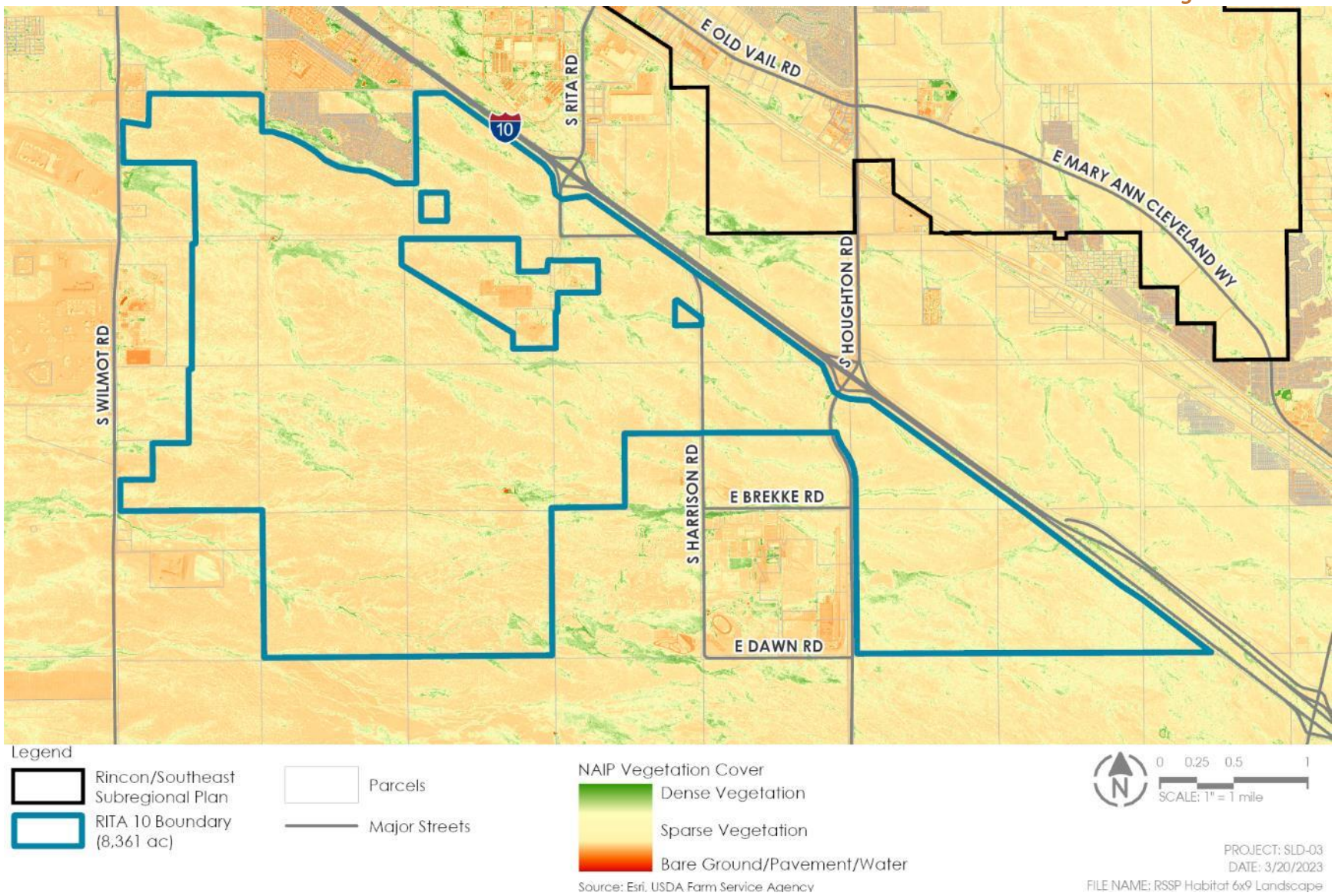
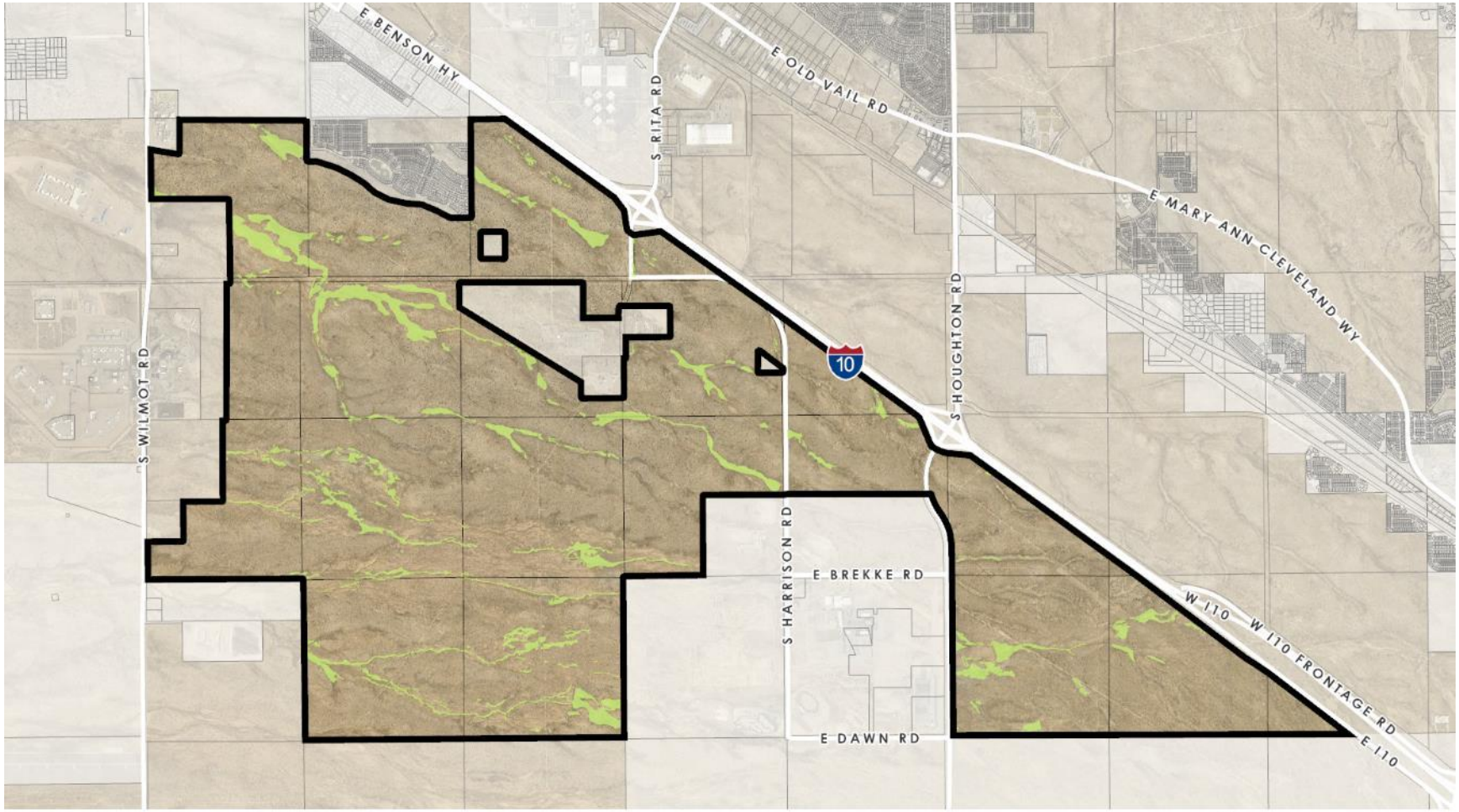


Exhibit 8: Preliminary PRA Delineation



Legend

RITA 10 PAD Boundary (8,361 ac)

Parcels

Preliminary PRA Limits* (492 ac)

*NOTE: PRA Limits shown on this exhibit are preliminary delineations based on aerial imagery, remote sensing data, and field sampling. These limits are subject to further verification and may be altered with additional analysis through the secondary planning or development plan process.

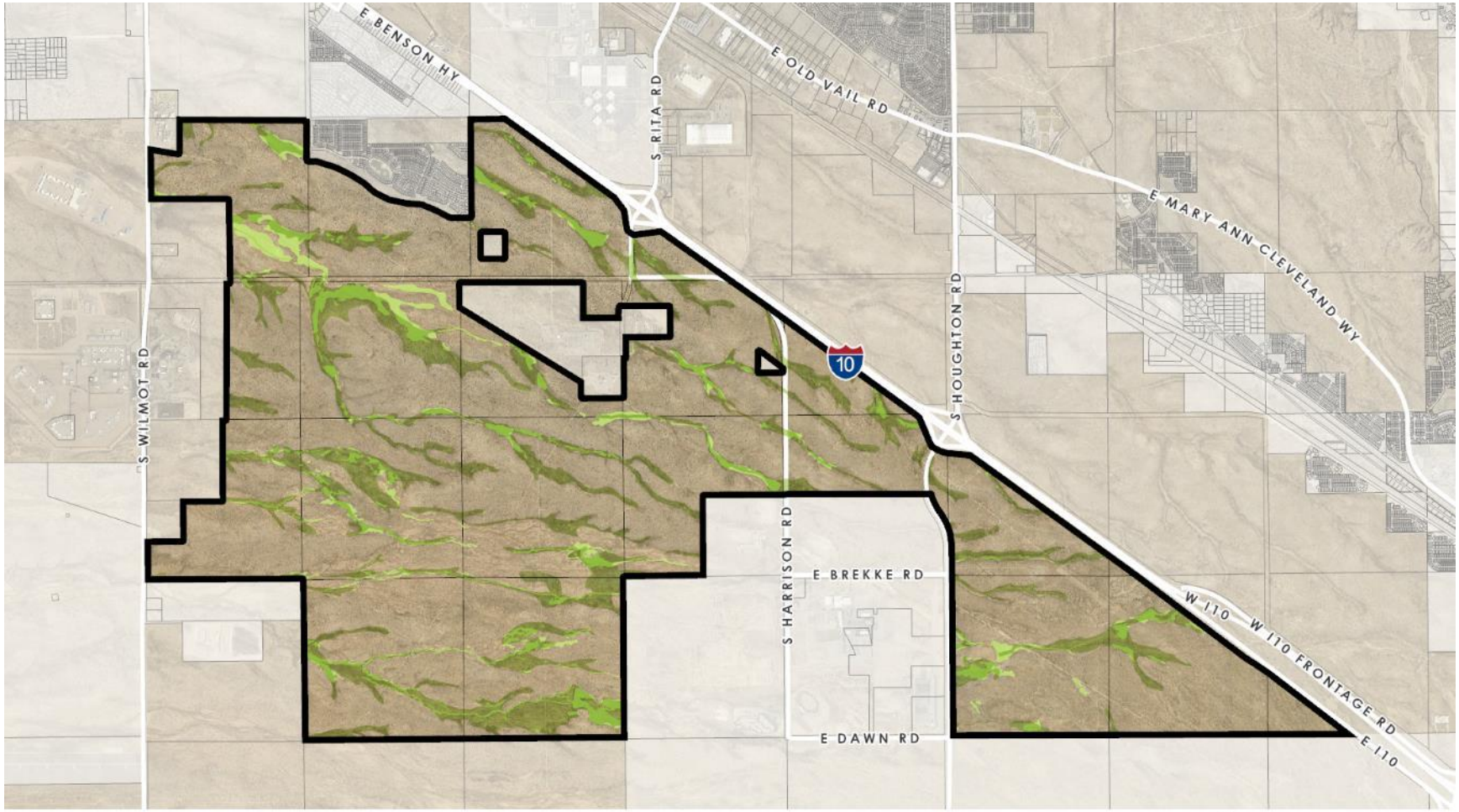
N

0 ¼ ½ 1

SCALE: 1" = 1 mile

PROJECT: SLD-03
File Name: RITA 10 Subject Property
DATE: 5/31/2023

Exhibit 9: PRA & Riparian Habitat Comparison



Legend

- RITA 10 PAD Boundary (8,361 ac)
- Parcels
- Preliminary PRA Limits* (492 ac)
- Pima County Regulated Riparian Areas (2005) (1,501 ac)

N

0 ¼ ½ 1

SCALE: 1" = 1 mile

*NOTE: PRA Limits shown on this exhibit are preliminary delineations based on aerial imagery, remote sensing data, and field sampling. These limits are subject to further verification and may be altered with additional analysis through the secondary planning or development plan process.

PROJECT: SLD-03
File Name: RITA 10 Subject Property
DATE: 5/31/2023

Wildlife

Arizona Game & Fish Department

The Arizona Game and Fish Department's Environmental Online Review Tool indicates nine Special Status Wildlife Species have been documented within a three-mile radius of the PAD boundary. These species are listed in the table below, along with their status from various agencies. Please note that this report does not indicate the presence of these species on the property, only that they may occur in the area. *Appendix 2: Arizona Game & Fish Report* of this document includes the entire Environmental Online Review Tool report.

Special Status Wildlife Species					
Scientific Name	**Common Name**	**FWS**	**USFS**	**BLM**	**SGCN***
Athene cunicularia hypugaea	Western Burrowing Owl	SC	S	S	2
Camptostoma imberbe	Northern Beardless-Tyrannulet		S		2
Danaus plexippus	Monarch	C		S	
Gastrophryne mazatlanensis	Sinaloan Narrow-mouthed Toad			S	2
Gopherus morafkai	Sonoran Desert Tortoise	CCAA	S	S	1
Myotis velifer	Cave Myotis	SC		S	2
Poeciliopsis occidentalis	Gila Topminnow	LE			
Tadarida brasiliensis	Brazilian Free-tailed Bat				2
Terrapene ornata luteola	Desert Box Turtle			S	

FWS: U.S. Fish and Wildlife Service
USFS: U.S. Forest Service
BLM: Bureau of Land Management
SGCN*: Species of greatest conservation need
C: Candidate Species
CCAA: Candidate Conservation Agreement with Assurances
LE: Listed endangered
SC: Species of Concern
S: Sensitive
1: Deemed Vulnerable with additional protection criteria
2: Deemed Vulnerable with no additional protection criteria

Geology & Soils

Soil Conditions

Exhibit 10: Soils shows that RITA 10 consists of multiple soil types typical of the Tucson Valley. Future purchasers of land within the PAD will submit geotechnical reports assessing the soil characteristics for their respective sites before construction. These reports will be submitted during the secondary planning or development plan stages and include recommendations for addressing soil conditions and best practices for developing the property.

Previous grading on-site is limited to a series of berms created to control water flowing through the floodplains of the Franco Wash and South Fork Airport Wash. Many of these berms divert flow paths into jogs and bends or capture flows for storage in ponding areas. Combined with the area's dispersive, shallow sheet flow, this results in fragmented and intermittent flow patterns across the property. Alterations or removal of these berms will be assessed with future drainage analysis and improvements.

A composting and landfill facility is located near the southwest corner of the PAD boundary off Wilmot Road. This facility accepts inert construction debris and landscape waste. No aggregate mines are present within one mile of the property.

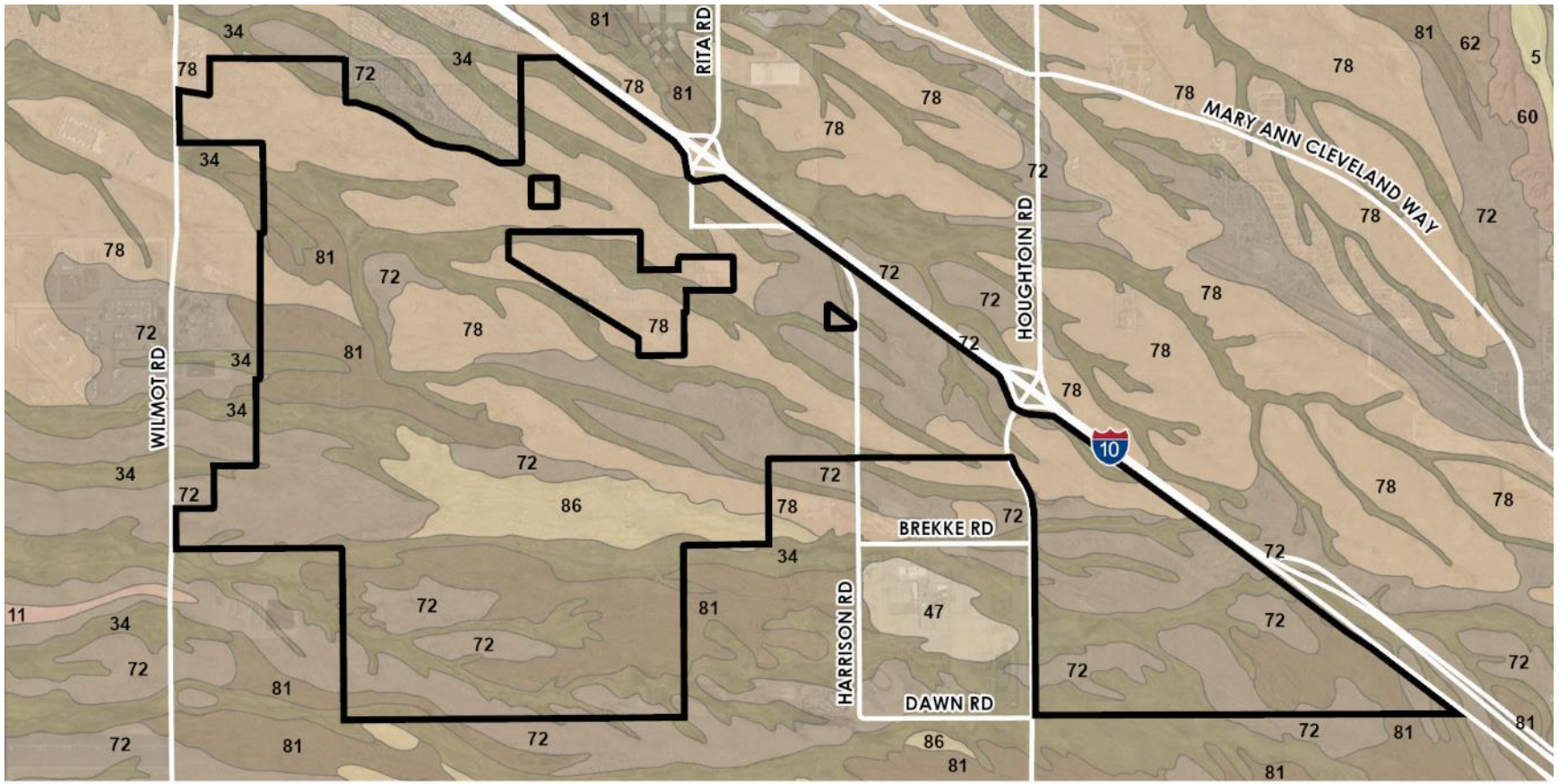
Erosion Potential & Sediment Transport

The various soil types within RITA 10 have different wind and water erosion susceptibilities. *Appendix 3: Soil Report* identifies each soil's erosion potential. Further erosion potential and sediment transport analysis will be conducted in the secondary planning process as properties are developed within RITA 10.

Groundwater Recharge Potential

The numerous soils on the property contain a range of infiltration characteristics. Further geotechnical analysis will be conducted as part of the secondary planning process and include recommendations pertaining to stormwater retention and groundwater recharge potential on the property. See *Appendix 3: Soil Report* for information regarding each soil type's permeability and infiltration capacity. The potential for groundwater recharge is anticipated to be increased through the consolidation of sheet flow areas into enhanced flow corridors.

Exhibit 10: Soils



Legend

	RITA 10 PAD Boundary
3	Anthony Fine Sandy Loam, 0-3% slopes
5	Arizo-Riverwash Complex, 0-3% slopes
11	Cave Soils & Urban Land, 0-8% slopes
30	Glendale Silt Loam, 0-3% slopes
34	Hantz loam, 0-1% slopes
47	Mohave Soils & Urban Land, 1-8% slopes
60	Pinaleno-Stagecoach Complex, 5-16% slopes
62	Pinaleno Very Cobbly Sandy Loam, 1-8% slopes
72	Sahuarita Soils, Mohave Soils & Urban Land, 1-15% slopes
78	Stagecoach-Sahuarita Association, 1-8% slopes
81	Tubac Gravelly Loam, 1-8% slopes
86	Yaqui Fine Sandy Loam, 1-3% slopes

N

0 ¼ ½ 1

SCALE: 1" = 1 mile

PROJECT: SLD-03
File Name: RITA 10 Soils
DATE: 5/31/2023 6:28 PM

Development

Development Boundary

Future development in RITA 10 is anticipated to accommodate a range of large-scale employers, campus-style developments, and supporting office, commercial, and residential uses. Future market demand will ultimately determine the end users.

Rights-of-way

- Old Vail Connection Road, running through the northern portion of RITA 10, has a right-of-way between 100 and 150 feet.
- Rocket Road/Harrison Road in the northern boundary has an existing right-of-way width between 100 and 160 feet.
- Houghton Road right-of-way in the eastern portion of the property is approximately 250 feet wide.
- To date, the future Sonoran Corridor route has only been identified through the Tier I Environmental Impact Statement (EIS) as a 2,000-foot-wide Preferred Alternative Corridor running along the east side of the property. ADOT will need to complete a future Tier II EIS to determine the ultimate 400-foot right-of-way for this future highway.

Easements

- A Western Area Power Administration (WAPA) easement runs diagonally through the eastern portion of the property to the TEP substation. From there, it runs south to the southern edge of the property.
- TEP also has an easement that runs parallel with the WAPA easement south of Interstate 10.
- El Paso Natural Gas has an easement running approximately ½ mile south of the WAPA easement, roughly parallel to I-10.

Utility Infrastructure

Sewer

Most of the RITA 10 property is vacant and undeveloped. As such, the existing sewer facilities are concentrated near surrounding established development in the northern and western portions of the PAD boundary.

The northern portion is served by a fifteen-inch main that connects to Pima County's Southeast Interceptor along Harrison Road. This line serves the Pima County Fairgrounds and the Southeast Employment and Logistics Center (SELC) development area. Capacity in this line may be limited due to narrower pipe sizing downstream.

The western portion of the property is best positioned to be served by the existing wastewater network, as recent improvements have increased the service capacity in this area. An eighteen-inch sewer main was recently installed in the Old Vail Connection alignment to increase capacity for the state and federal prisons west of Wilmot Road. This new main connects to the Old Nogales Interceptor west of the Southlands. Initial analysis of this new line indicates an available capacity of nearly 12.5 million gallons per day. The Old Vail Connection main has the added benefit of opening approximately two million gallons

per day of additional capacity in the Wilmot Road mains to the north that used to serve the prisons.

Secondary planning efforts will further analyze the wastewater network, including line sizing, capacity, points of connection, and other potential improvements.

Electricity

Tucson Electric Power's (TEP) Vail Substation is located on the larger of the two utility out parcels in the northern portion of RITA 10. The approximately 219-acre property is southwest of the intersection of Rita Road and Old Vail Connection Road. The Vail Substation serves the southeast portion of the Tucson Metro Area. Transmission lines connecting to the substation run from the south, southeast, and west.

The Western Area Power Administration's (WAPA) Southline high voltage transmission line runs diagonally along the eastern RITA 10 boundary parallel with I-10. These transmission lines cross Harrison Road north of the Pima County Fairgrounds and connect to the Vail Substation. The WAPA transmission lines continue south of the substation for approximately two miles before running northwest toward Tucson International Airport. TEP has partnered with WAPA to upgrade the Southline to a double-circuit 230-kV line connecting the Vail Substation to the Tortolita Substation in Pinal County. This upgrade is in the final planning phase. Construction is anticipated to begin in 2023 and be completed in 2023. The new transmission line will better serve Tucson with more reliable power. It will also increase the transmission capacity enabling future renewable energy development.

The Wilmot Solar Energy Center west of RITA 10 is one such renewable energy development. This 100-megawatt solar generation and 30-megawatt battery storage facility is TEP's largest renewable energy investment to date.

These electric facilities and transmission lines will be analyzed further during the secondary planning process to ensure future developments in RITA 10 are compatible.

Natural Gas

El Paso Natural Gas maintains a compressor station south of TEP's Vail Substation. This compressor station serves the high-pressure natural gas transmission pipeline that crosses the RITA 10 property. This pipeline runs in a northwest/southeast direction through the center of the property. Secondary planning efforts will account for this pipeline to ensure future development is compatible with this existing infrastructure.

Water

Existing water infrastructure

The property is entirely within Tucson Water's Obligated Service Area. Existing water facilities consist of reservoirs and water mains north of RITA 10 and production wells to the south. An existing 36-inch water main along Wilmot Road connects to the Hermans Reservoir southeast of the Wilmot Road and Hermans Road intersection. This reservoir generally serves established developments to the north and west, with little pressure available to serve the RITA 10 property to the south. A recently constructed 24-inch water main along Houghton Road will provide water to the eastern portion of RITA 10 as well as the

Pima County Fairgrounds upon completion of a future transmission main connecting to the Vail Booster Station north of I-10 and east of Houghton Road.

Planned Water Infrastructure

Tucson Water maintains a Capital Improvement Program (CIP), which is the primary means for identifying and funding long-term water supply projects. There are several projects affecting the RITA 10 area which are intended to move a large volume (10 MGD) of potable water by connecting existing facilities from the west through the Old Vail Connection Road to storage facilities east of Houghton Road. The CIP's justification statements indicate the purpose of these improvements is to both convey water east to the Vail Booster Station for use in Corona de Tucson as well as to provide water availability to support economic development in the area.

On-Site Open Space & Trails

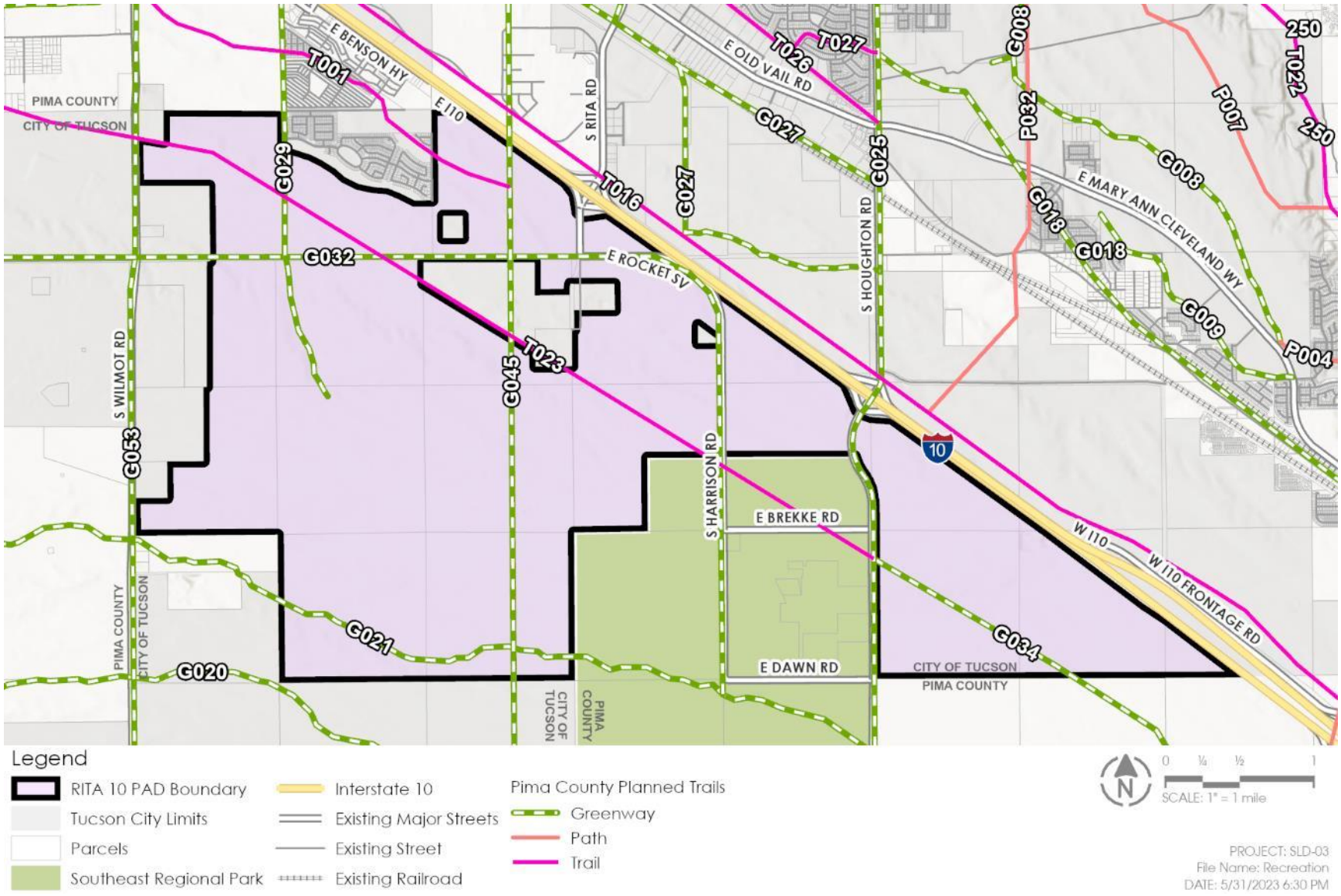
No open spaces, parks, or trails are within the RITA 10 boundary. Informal trails on the property are not permitted uses on State Trust Land.

The Pima Regional Trail System Master Plan proposes several greenways through RITA 10. These include the *Flato Wash Greenway (G020), Franco Wash Greenway (G021), Houghton Road Greenway (G025), Kolb Rd South Greenway (G029), Old Vail/Harrison Greenway Rd (G032), Power Line Greenway (G034), Sarnoff Rd Greenway (G045)*, and *Wilmot Rd Greenway (G053)*. Two trails, *the Airport Wash North Trail (T001)* and the *Railroad Wash Trail (T024)*, are proposed in the northeast portion of the property. The Houghton Road Greenway is the only existing trail abutting RITA 10. This segment consists of a multiuse path south of Interstate 10 that was included with the recent Houghton Road improvements. This segment continues north of I-10 and provides access to the Loop at the Julian Wash Greenway.

Any trails on State Trust Land will require an application to ASLD for legal ROW or will need to be negotiated with the ultimate purchaser(s) and included in the secondary planning process.

Future on-site open space may be created through the designation of protected washes or the creation of enhanced flow corridors. Any trail or recreation elements associated with this future open space shall be approved by ASLD and detailed in the secondary planning phase. See *Exhibit 11: Recreation*.

Exhibit 11: Recreation



Plant Inventory

Site visits were conducted to determine the vegetation condition and observe the general state of the property. Over 30 one-acre sample plots were inventoried in this assessment. See *Appendix 1: Vegetation Inventory*. Individual plant inventories will be conducted during the secondary planning or development plan process to comply with the Native Plant Preservation Plan and Riparian Habitat Mitigation Plan requirements established in the RITA 10 PAD regulations.

Riparian Encroachment

The riparian areas associated with the existing floodplains will be evaluated and may be enhanced or removed as part of the secondary planning process according to the RITA 10 PAD regulations. This planning effort seeks to address RITA 10's drainage, vegetation, and wildlife movement holistically. The backbone of this approach are drainage improvements that consolidate the existing broad 100-year floodplains and braided flow paths into manageable and naturalistic drainage areas called enhanced flow corridors. Enhancing these floodplains creates a consistent and predictable drainage pattern across the property and lays the groundwork for habitat improvement and wildlife connectivity.

Mitigation Plan

The process for mitigating impacts on the existing vegetation is detailed in the RITA 10 PAD Mitigation Standards. These standards create simplified and streamlined procedures to meet the intent of existing habitat and vegetation regulations. Furthermore, the enhanced flow corridors will be designed to accommodate mitigation measures on-site.

APPENDIX 1: VEGETATION INVENTORY

RITA 10 Vegetation Inventory Summary - March 17, 2023

This report summarizes the methodology and findings of a vegetation inventory and analysis conducted by The Planning Center. The inventory was conducted on December 16, 2022, and the first week of March 2023. It assessed the general condition and density of vegetative communities found on Arizona State Trust Land within the RITA 10 PAD boundaries. The findings of this inventory will inform mitigation strategies crafted through the PAD entitlement process for future implementation in secondary planning and the development plan process.

Methodology

The large size of the planning area led to the use of sample plots as a data collection method. Sample plots are often utilized to extrapolate data across larger land areas where a full inventory is not feasible. Sample Plots (also known as relevés) have been used in vegetation studies as a practical, relatively fast means of collecting information on vegetation (MDNR, 2013). Sample plots have been used by the National Park Service, Pima County, and The Arizona-Sonora Desert Museum to assess vegetation coverage and health in the Tucson region. The sample plot method for this inventory was presented to City Staff who approved it as a valid method for assessing vegetation within RITA 10.

This study's sample plot methodology is derived from a combination of the relevé method found in Pima County's *Environmentally Sensitive Roadway Design Guidelines* (Pima County, 2002) and The National Parks Service's sampling in *Monitoring Upland Vegetation and Soils in the Sonoran Desert and Chihuahuan Desert Networks* (NPS, 2012). The sample plots represent vegetative communities and were objectively identified using aerial photography, established floodplain limits, and USDA NAIP vegetative density imagery. One-acre sample plots were located within the 100-year regulatory floodplain limits at ½ mile intervals along the major flow corridors of the Franco Wash Tributary and the central flow of South Fork Airport Wash. Additional one-acre sample plots were located in upland areas to sample vegetation outside of floodplains. Sample plots were chosen for inventory based on their vehicular accessibility.

Thirty-one sample plots were inventoried based on accessibility *(*see ***Exhibit 1: Sample Plot Locations****).* The sample plots are in areas most likely to be altered by future development and drainage improvements. They include locations upstream and downstream of manmade interventions, along wash channels, and inside and outside 100-year regulatory floodplains.

Within each sample plot, plants meeting inventory criteria outlined in the City of Tucson standards for protected native plant species were geo-referenced into an online GIS database. The inventory criteria included: species type, plant height, trunk caliper of two inches or greater, and viability. Viability was determined as High, Medium, or Low as outlined in *UDC Section 7.7.5.A.1.b.(1) Plant Viability Standards* and *TSM Section 2.5B.1.r Encroachment in Regulated Areas*.

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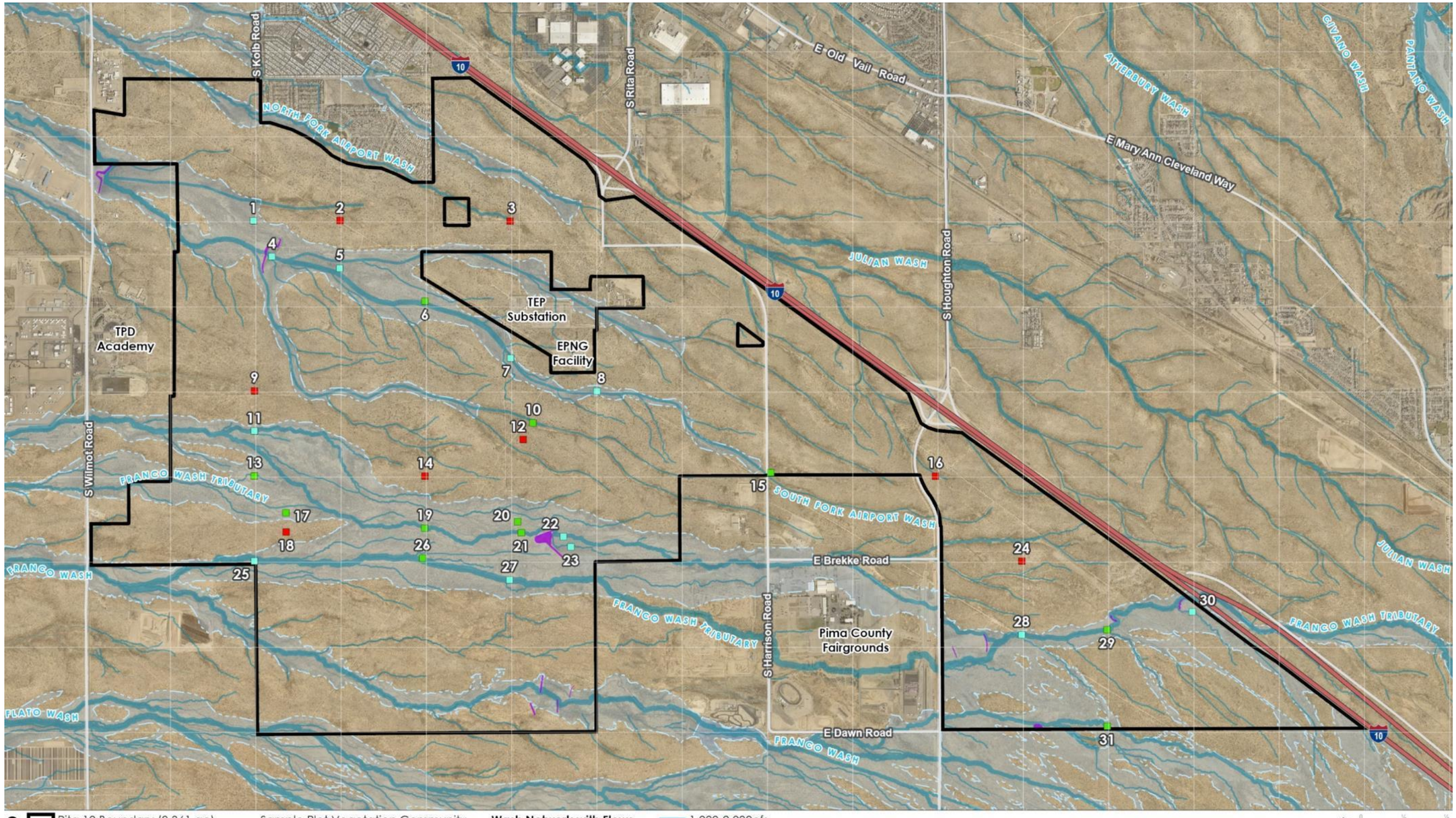
The inventory was conducted using GPS mobile phone app and GIS data to collect and record individual plant information. In sample plots with dense uniform vegetation, individual plants were counted, and the characteristics of each species (height, caliper, and viability) were summarized on-site and input into GIS. Site photos were also taken to document plant species, general vegetative coverage, and vegetative communities within the sample plot areas. The collected data may be utilized to project plant species, plant densities, and the overall health of vegetative communities throughout the planning area.

Exhibit 1: Sample Plot Locations



Vegetative Communities

Generally, three vegetative communities were observed: Upland, Upland Floodplain, and Floodplain.

Upland Community

The Upland community is located on higher ground outside of the floodplain limits. The terrain consists of rocky soils on gentle slopes. Vegetation cover is dominated by creosote flats, cholla and prickly pear cacti stands, with ocotillos also present. The few desert trees present in this community mainly consist of Mesquite and Foothills Palo Verde species. Mesquites are small (less than eight feet in height) and in poor health. Foothills Palo Verdes are larger and in better health than the Mesquites. Shrubs and annual grasses are absent from this community.

Upland Floodplain Community

The Upland Floodplain community is located in or near the 100-year floodplain limits. The terrain is flat and consists of bare sandy soils. Vegetation consists of a mixture of desert trees (Mesquite and Blue Palo Verde), shrubs (Acacia species, Desert Hackberry), creosote flats, cholla and prickly pear cacti stands. The concentration of trees and shrubs along small stream flows differentiates the Upland Floodplain community from the Upland Community. Trees are small (less than eight feet in height) and tend to be in poor health. Some patches of ground cover annuals are present in this community.

Floodplain Community

The Floodplain communities had a higher concentration of plants predominately associated with riparian communities, such as Acacia and Hackberry species. The ground plane typically comprised annual grasses, shrubs, and short-lived perennials. These communities also have trees that are larger in form (greater than eight feet in height) and typically identified as being healthier. The densest and largest vegetation is found upstream of two manmade berms, one west of the fairgrounds (Plots 22 and 23) and one at the confluence of South Fork Airport Wash (Plot 4). This difference is likely due to the accumulation of water behind the berms.

The following site photos demonstrate the varying vegetative communities (see ***Exhibits 2-4***).

Exhibit 2: Upland Vegetation Community Photos

Sample Plot 2

Sample Plot 3

Exhibit 2: Upland Vegetation Community Photos (continued)

Sample Plot 9

Sample Plot 12

Sample Plot 18

Exhibit 2: Upland Vegetation Community Photos (continued)

Sample Plot 14

Sample Plot 16

Exhibit 2: Upland Vegetation Community Photos (continued)

Sample Plot 24

Sample Plot 24

Exhibit 3: Upland Floodplain Vegetation Community Photos

Sample Plot 6

Sample Plot 11

Exhibit 3: Upland Floodplain Vegetation Community Photos (continued)

Sample Plot 13

Sample Plot 15

Exhibit 3: Upland Floodplain Vegetation Community Photos (continued)

Sample Plot 17

Sample Plot 17

Sample Plot 19

Exhibit 3: Upland Floodplain Vegetation Community Photos (continued)

Sample Plot 20

Sample Plot 21

Sample Plot 25

Exhibit 3: Upland Floodplain Vegetation Community Photos (continued)

Sample Plot 26

Sample Plot 31

Exhibit 4: Floodplain Vegetation Community Photos

Sample Plot 1

Sample Plot 4

Exhibit 4: Floodplain Vegetation Community Photos

Sample Plot 4

Sample Plot 4 – central flow channel

Sample Plot 5

Exhibit 4: Floodplain Vegetation Community Photos

Sample Plot 7

Sample Plot 8

Exhibit 4: Floodplain Vegetation Community Photos (continued)

Sample Plot 11

Sample Plot 23

Exhibit 4: Floodplain Vegetation Community Photos (continued)

Sample Plot 27

Sample Plot 28

Findings

The 31 sample plots are divided among the three vegetative communities as follows: Upland (8), Upland Floodplain (14), Floodplain (9), and communities. A total of 1,940 plants met the inventory criteria and were recorded within the 31 one-acre sample plots. The range of vegetation found within these plots corresponds with the vegetative community. The Floodplain community accounted for 60% (1,169 plants) of the total plants inventoried. The Upland Floodplain and Upland sample plots predominantly consisted of creosote flats, cholla and prickly pear cacti stands, and bare soils. They contained fewer species that met the inventory criteria. The Upland Floodplain community contained 36% (698 plants), and the Upland community contained 3% (73 plants) of the inventory total.

Species type is only one determinant of the overall vegetative condition of the area. The size and health of plant species play a more important role in habitat formation. Velvet Mesquite is the most numerous species accounting for 46% of species inventoried across all sample plots. However, the form and health of most of these trees are poor. As shown in the chart below, inventoried Mesquite trees have an average height of six feet and an average caliper of seven inches. Nearly 70% of these trees are given a low viability rating as they are damaged, display health issues, or have died. Outside the regulated Floodplain, mitigation is not required for dead plants or plants with a low viability rating per the City of Tucson's Native Plant Preservation Ordinance. Whitethorn Acacia and Desert Hackberry are the next most prevalent species accounting for 29% and 18% of inventoried plants, respectively. These species are found near accumulations of water in the Floodplain and Upland Floodplain communities. They tend to have a higher viability rating than the Mesquite species. Other inventoried species include Foothills Palo Verde, Blue Palo Verde, Catclaw Acacia, Graythorn, Ocotillo, and Yucca (see ***Table 1: Inventory Summary - All Communities***).

Table 1: Inventory Summary - All Communities							
Species	**Count**	**Average Height** (feet)	**Average Caliper** (inches)	**High Viability**	**Medium Viability**	**Low Viability**	**Dead Plant**
Trees							
Velvet Mesquite	893	6	7	1%	30%	49%	20%
Blue Palo Verde	72	9	6	36%	42%	17%	5%
Foothills Palo Verde	17	6	7	65%	29%	6%	0%
Shrubs							
Whitethorn Acacia	553	6	3	39%	45%	11%	5%
Desert Hackberry	345	11	4	18%	77%	3%	2%
Catclaw Acacia	21	8	6	24%	76%	0%	0%
Graythorn	4	10	4	75%	25%	0%	0%
Other							
Ocotillo	30	10	14 canes	97%	3%	0%	0%
Soaptree Yucca	4	8	N/A	100%	0%	0%	0%
Other Yucca species	1	6	N/A	0%	100%	0%	0%
Total	**1,940**	**-**	**-**	**19%**	**43%**	**22%**	**16%**

Species size and viability vary across vegetative communities. As shown in the following tables, the Floodplain community contains a greater range and concentration of species that tend to be healthier and larger in caliper and height than the other communities. This is likely due to greater water availability within the Floodplain's main flows, leading to a healthier vegetative condition. It should be noted that sample plots 4, 22, and 23 account for nearly 40% of all Floodplain vegetation inventoried. These plots have the highest concentration of larger, healthier plants compared to other sample plots. These plots are upstream of manmade earthen berms that impede major flow corridors in their respective washes. These manmade interventions likely contribute to a higher accumulation of water upstream, leading to a healthier, larger, and denser vegetative condition than found in other sample plots (see ***Table 2: Inventory Summary - Floodplain Community***).

Table 2: Inventory Summary - Floodplain Community							
Species	**Count**	**Average Height** (feet)	**Average Caliper** (inches)	**High Viability**	**Medium Viability**	**Low Viability**	**Dead Plant**
Trees							
Velvet Mesquite	558	12	8	2%	43%	35%	20%
Blue Palo Verde	43	13	7	56%	40%	4%	0%
Foothills Palo Verde	3	12	5	33%	67%	0%	0%
Shrubs							
Whitethorn Acacia	261	9	2	35%	58%	4%	3%
Desert Hackberry	303	11	4	16%	81%	1%	2%
Catclaw Acacia	13	11	6	8%	92%	0%	0%
Graythorn	2	6	2	100%	0%	0%	0%
Other							
Soaptree Yucca	1	8	N/A	100%	0%	0%	0%
Other Yucca species	1	5	N/A	0%	100%	0%	0%
Total	**1,169**	-	-	**15%**	**56%**	**25%**	**4%**

The Upland Floodplain community tends to have similar species as the Floodplain community though they are less abundant, with less than 700 plants inventoried. Plants in this community exhibit smaller size, lower density, and poorer health. Velvet Mesquite is the most abundant species, but many exhibit low viability or are dead. Desert Hackberry is also present though fewer in number. They also tend to be smaller and less viable than similar species in the Floodplain community. There are slightly more Whitethorn Acacias in this community, but they are smaller and present a wider range of viability than their Floodplain counterparts. (see ***Table 3: Inventory Summary – Upland Floodplain Community***).

Table 3: Inventory Summary – Upland Floodplain Community							
Species	**Count**	**Average Height** (feet)	**Average Caliper** (inches)	**High Viability**	**Medium Viability**	**Low Viability**	**Dead Plant**
Trees							
Velvet Mesquite	310	6	5	0%	10%	48%	42%
Blue Palo Verde	43	11	6	26%	44%	19%	11%
Foothills Palo Verde	10	12	6	90%	10%	0%	0%
Shrubs							
Whitethorn Acacia	280	6	2	42%	33%	16%	9%
Desert Hackberry	42	8	3	31%	50%	14%	5%
Catclaw Acacia	8	8	6	50%	50%	0%	0%
Graythorn	2	12	5	50%	50%	0%	0%
Other							
Soaptree Yucca	3	8	N/A	100%	%	%	%
Total	**698**	-	-	**23%**	**24%**	**35%**	**18%**

The Upland community contains the least inventoried plants (73 total). Tree species are sparse as cacti, creosote, and bare ground dominate this community. Many of the shrub species found in the other two communities are absent from the Upland community. This community is the only one containing Ocotillos, as they are suited for this drier setting (see ***Table 4: Inventory Summary – Upland Community***).

Table 4: Inventory Summary – Upland Community							
Species	**Count**	**Average Height** (feet)	**Average Caliper** (inches)	**High Viability**	**Medium Viability**	**Low Viability**	**Dead Plant**
Trees							
Velvet Mesquite	25	8	7	0%	4%	72%	24%
Foothills Palo Verde	4	14	14	25%	50%	25%	0%
Blue Palo Verde	2	8	6	0%	0%	100%	0%
Shrubs							
Whitethorn Acacia	12	6	3	33%	25%	33%	8%
Other							
Ocotillo	30	10	14 canes	97%	3%	0%	0%
Total	**73**	-	-	**45%**	**11%**	**29%**	**15%**

Conclusion

The three vegetation communities identified in this report give a general overview of the vegetative character of this portion of the Southlands. The overall vegetative condition of the inventory area consisted of a mix of stressed and sparse plants with pockets of healthier vegetation concentrated in areas of higher water accumulation. Manmade interventions have altered stormwater flows and improved vegetation coverage upstream. Aside from the pockets of concentrated vegetation, there is little difference in quality between plants inside and outside the regulatory 100-year Floodplain limits. The mixture of cacti and bare ground combined with the lack of healthy tree species and understory plants indicates that the flows within the 100-year floodplains are not of sufficient quantity or frequency to sustain healthy, mature native tree populations outside of specific concentrated areas. Based on this initial study, vegetation cover is not a major factor in developing this portion of Arizona State Trust Land. Further sampling and analysis may be needed to assess the vegetation condition in other portions of the RITA 10 planning area and the remainder of the Southlands.

Sources:

Minnesota Department of Natural Resources (MDNR), *A handbook for collecting vegetation plot data in Minnesota: The relevé method. 2nd edition,* 2013

National Park Service, *Monitoring Upland Vegetation and Soils in the Sonoran Desert and Chihuahuan Desert Networks*, https://www.nps.gov/articles/uplands-monitoring-sonoran-desert.htm (website visited 2/27/2023)

Pima County, *Environmentally Sensitive Roadway Design Guidelines*, 2002

Pima County GIS, Aeiral Pictometry Data, 2022

USDA Farm Services Agency (USDA), National Agriculture Imagery Program (NAIP) imagery, 2020

Van Devender, Thomas R. and Dimmitt, Mark A., *Final Report on "Conservation of Arizona Upland Sonoran Desert Habitat. Status and Threats of Buffelgrass (Pennisetum ciliare) in Arizona and Sonora. Project #2004-0013-003)".* Arizona-Sonora Desert Museum, 2021 N. Kinney Rd., Tucson, AZ 85743, 2006

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:
RITA 10

User Project Number:
SLD-03

Project Description:
Preliminary planning for State Trust Land

Project Type:
Development Within Municipalities (Urban Growth), Commercial/industrial (mall) and associated infrastructure, New construction

Contact Person:
Adam Call

Organization:
The Planning Center

On Behalf Of:
ASLD

Project ID:
HGIS-18760

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. Arizona Wildlife Conservation Strategy (AWCS), specifically Species of Greatest Conservation Need (SGCN), 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.

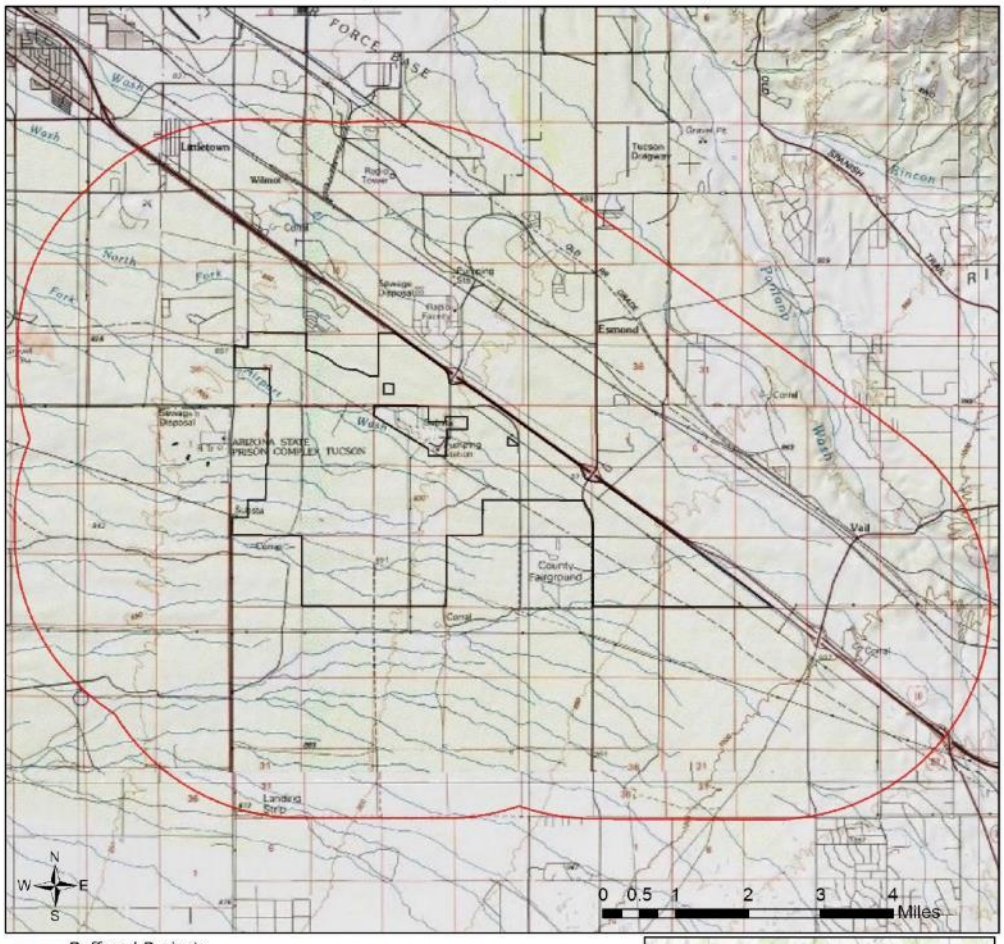
Locations Accuracy Disclaimer:
Project locations are assumed to be both precise and accurate for the purposes of environmental review. The creator/owner of the Project Review Report is solely responsible for the project location and thus the correctness of the Project Review Report content.

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
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

RITA 10

USA Topo Basemap With Locator Map



Buffered Project Boundary

Project Boundary

Project Size (acres): 8,353.67

Lat/Long (DD): 32.0584 / -110.8113

County(s): Pima

AGFD Region(s): Tucson

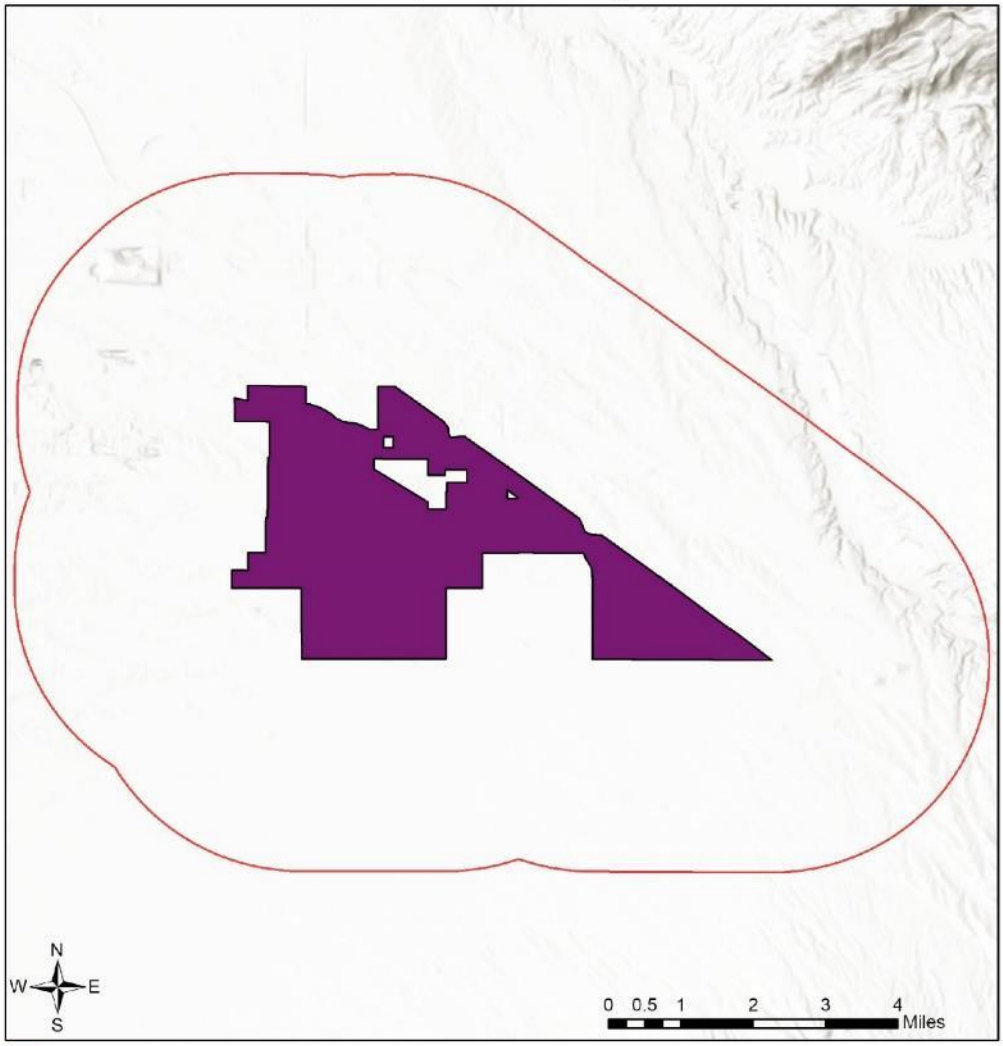
Township/Range(s): T15S, R15E; T16S, R15E; T16S, R16E

USGS Quad(s): TUCSON SE; VAIL

Sources: Esri, Airbus DS, USGS, NGA, NASA, CGIAR, N Robinson, NCEAS, NLS, OS, NMA, Geodatastyrelsen, Rijkswaterstaat, GSA, Geoland, FEMA, Intermap and the GIS user community

RITA 10

Web Map As Submitted By User



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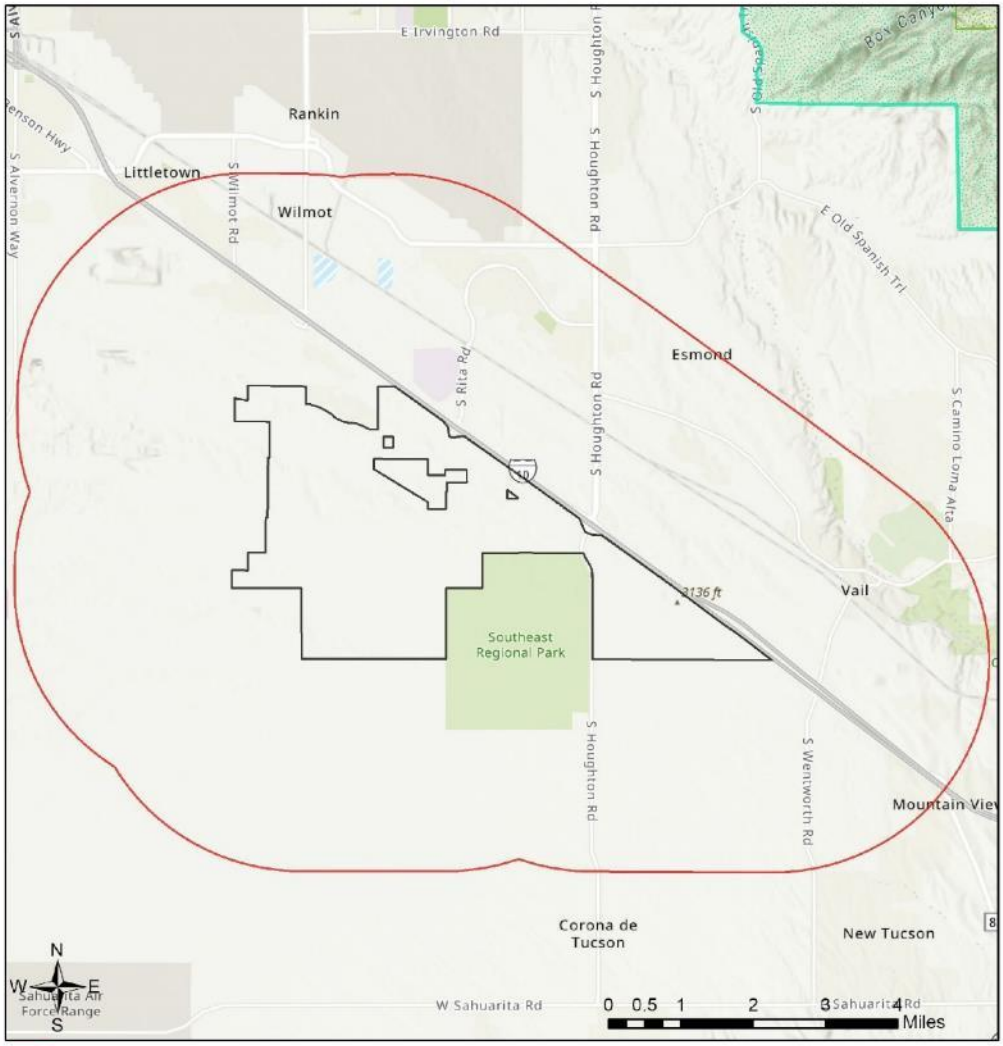
RITA 10

Important Areas



- Buffered Project Boundary
- Project Boundary
- Important Bird Areas
- Critical Habitat
- Pinal County Riparian
- Important Connectivity Zones
- Wildlife Connectivity

Project Size (acres): 8,353.67

Lat/Long (DD): 32.0584 / -110.8113

County(s): Pima

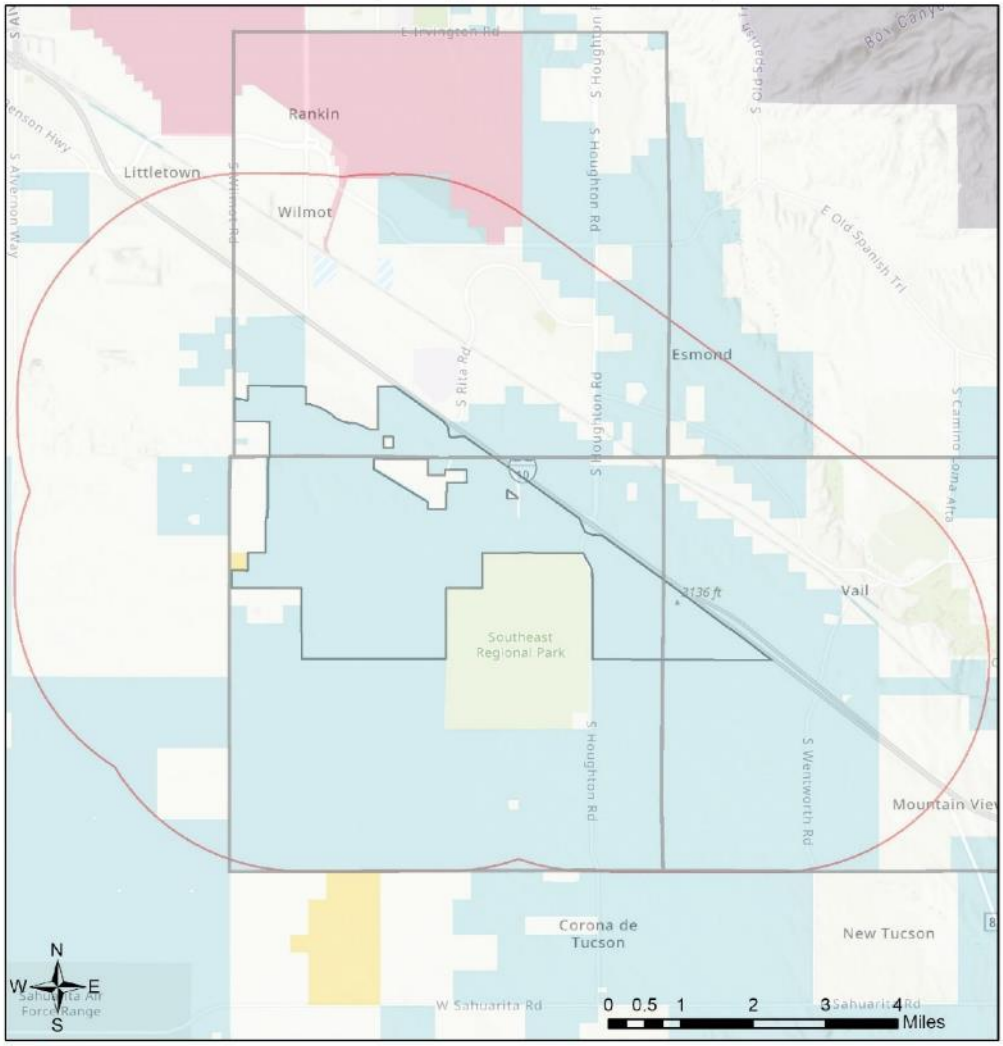
AGFD Region(s): Tucson

Township/Range(s): T15S, R15E; T16S, R15E; T16S, R16E

USGS Quad(s): TUCSON SE; VAIL

RITA 10

Township/Ranges and Land Ownership



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

Project Size (acres): 8,353.67

Lat/Long (DD): 32.0584 / -110.8113

County(s): Pima

AGFD Region(s): Tucson

Township/Range(s): T15S, R15E; T16S, R15E; T16S, R16E

USGS Quad(s): TUCSON SE; VAIL

Special Status Species Documented within 3 Miles of Project Vicinity

Scientific Name	Common Name	FWS	USFS	BLM	NPL	SGCN
Athene cunicularia hypugaea	Western Burrowing Owl	SC	S	S		2
Bat Colony						
Camptostoma imberbe	Northern Beardless-Tyrannulet		S			2
Coryphantha scheeri var. robustispina	Pima Pineapple Cactus	LE			HS	
Danaus plexippus	Monarch	C		S		
Echinocereus fasciculatus	Magenta-flower Hedgehog-cactus				SR	
Echinomastus erectocentrus var. erectocentrus	Needle-spined Pineapple Cactus	SC			SR	
Gastrophryne mazatlanensis	Sinoloan Narrow-mouthed Toad			S		2
Gopherus morafkai	Sonoran Desert Tortoise	CCA	S	S		1
Myotis velifer	Cave Myotis	SC		S		2
Poeciliopsis occidentalis occidentalis	Gila Topminnow	LE				1
Tadarida brasiliensis	Brazilian Free-tailed Bat					2
Terrapene ornata luteola	Desert Box Turtle			S		

Note: Status code definitions can be found at https://www.azgfd.com/wildlife/planning/wildlifeguidelines/statusdefinitions/

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Special Areas Documented that Intersect with Project Footprint as Drawn

Scientific Name	Common Name	FWS	USFS	BLM	NPL	SGCN
Lee Moore Wash Flow Corridors	Pima County Wildlife Movement Area - Riparian/Wash					

Note: Status code definitions can be found at https://www.azgfd.com/wildlife/planning/wildlifeguidelines/statusdefinitions/

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Species of Greatest Conservation Need Predicted that Intersect with Project Footprint as Drawn, based on Predicted Range Models

Scientific Name	Common Name	FWS	USFS	BLM	NPL	SGCN
Ammodramus savannarum perpallidus	Western Grasshopper Sparrow					
Ammospermophilus harrisii	Harris' Antelope Squirrel					
Anthus spragueii	Sprague's Pipit	SC				2
Aquila chrysaetos	Golden Eagle			S		2
Asio otus	Long-eared Owl					2
Aspidoscelis sonorae	Sonoran Spotted Whiptail					2
Athene cunicularia hypugaea	Western Burrowing Owl	SC	S	S		2
Auriparus flaviceps	Verdin					2
Buteo regalis	Ferruginous Hawk	SC		S		2
Buteo swainsoni	Swainson's Hawk					2

Species of Greatest Conservation Need Predicted that Intersect with Project Footprint as Drawn, based on Predicted Range Models

Scientific Name	Common Name	FWS	USFS	BLM	NPL	SGCN
Buteogallus anthracinus	Common Black Hawk					2
Calcarius ornatus	Chestnut-collared Longspur					2
Callipepla squamata	Scaled Quail					2
Calypte costae	Costa's Hummingbird					2
Camptostoma imberbe	Northern Beardless-Tyrannulet		S			2
Campylorhynchus brunneicapillus	Cactus Wren					2
Catharus ustulatus	Swainson's Thrush					2
Chaetodipus baileyi	Bailey's Pocket Mouse					2
Charadrius montanus	Mountain Plover	SC				2
Chilomeniscus stramineus	Variable Sandsnake					2
Choeronycteris mexicana	Mexican Long-tongued Bat	SC	S	S		2
Coccyzus americanus	Yellow-billed Cuckoo (Western DPS)					
Colaptes chrysoides	Gilded Flicker			S		2
Columbina inca	Inca Dove					2
Corvus cryptoleucus	Chihuahuan Raven					2
Corynorhinus townsendii pallescens	Pale Townsend's Big-eared Bat	SC	S	S		1
Crotalus tigris	Tiger Rattlesnake					2
Cynanthus latirostris	Broad-billed Hummingbird		S			2
Elgaria kingii	Madrean Alligator Lizard					2
Empidonax wrightii	Gray Flycatcher					2
Eumops perotis californicus	Greater Western Bonneted Bat					
Falco mexicanus	Prairie Falcon					2
Falco peregrinus anatum	American Peregrine Falcon					
Falco sparverius	American Kestrel					2
Gastrophryne mazatlanensis	Sinoloan Narrow-mouthed Toad					
Glaucidium brasilianum cactorum	Cactus Ferruginous Pygmy-owl					
Gopherus morafkai	Sonoran Desert Tortoise	CCA	S	S		1
Heloderma suspectum	Gila Monster					1
Icterus bullockii	Bullock's Oriole					2
Icterus cucullatus	Hooded Oriole					2
Icterus parisorum	Scott's Oriole					2
Incilius alvarius	Sonoran Desert Toad					2
Kinosternon sonoriense sonoriense	Desert Mud Turtle					
Lanius ludovicianus	Loggerhead Shrike	SC				2
Lasiurus blossevillii	Western Red Bat		S			2
Lasiurus cinereus	Hoary Bat					2
Lasiurus xanthinus	Western Yellow Bat		S			2
Leptonycteris yerbabuenae	Lesser Long-nosed Bat	SC				1
Lepus alleni	Antelope Jackrabbit					2

Species of Greatest Conservation Need Predicted that Intersect with Project Footprint as Drawn, based on Predicted Range Models

Scientific Name	Common Name	FWS	USFS	BLM	NPL	SGCN
Lithobates yavapaiensis	Lowland Leopard Frog	SC	S	S		1
Macrotus californicus	California Leaf-nosed Bat	SC		S		2
Megascops kennicottii	Western Screech-owl					
Melanerpes uropygialis	Gila Woodpecker					2
Melospiza lincolnii	Lincoln's Sparrow					2
Melozone aberti	Abert's Towhee		S			2
Micrathene whitneyi	Elf Owl					
Micruroides euryxanthus	Sonoran Coralsnake					2
Myadestes townsendi	Townsend's Solitaire					2
Myotis auriculus	Southwestern Myotis					2
Myotis thysanodes	Fringed Myotis	SC				2
Myotis velifer	Cave Myotis	SC		S		2
Myotis yumanensis	Yuma Myotis	SC				2
Neotoma mexicana mexicana	Mexican Woodrat					2
Notiosorex cockrumi	Cockrum's Desert Shrew					2
Nyctinomops femorosaccus	Pocketed Free-tailed Bat					2
Nyctinomops macrotis	Big Free-tailed Bat	SC				2
Parabuteo unicinctus	Harris's Hawk					2
Passerculus sandwichensis	Savannah Sparrow					2
Perognathus amplus	Arizona Pocket Mouse					2
Peucaea carpalis	Rufous-winged Sparrow					2
Phrynosoma solare	Regal Horned Lizard					2
Phyllorhynchus browni	Saddled Leaf-nosed Snake					2
Pooecetes gramineus	Vesper Sparrow					2
Progne subis hesperia	Desert Purple Martin					
Sigmodon arizonae cienegae	Arizona Cotton Rat					2
Spizella breweri	Brewer's Sparrow					2
Tadarida brasiliensis	Brazilian Free-tailed Bat					
Toxostoma bendirei	Bendire's Thrasher					2
Troglodytes pacificus	Pacific Wren					2

Species of Economic and Recreation Importance Predicted that Intersect with Project Footprint as Drawn

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

Species of Economic and Recreation Importance Predicted that Intersect with Project Footprint as Drawn

Scientific Name	Common Name	FWS	USFS	BLM	NPL	SGCN
Zenaida macroura	Mourning Dove					

Project Type: Development Within Municipalities (Urban Growth), Commercial/industrial (mall) and associated infrastructure, New construction

Project Type Recommendations:
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.

Based on the project type entered, coordination with Arizona Department of Water Resources may be required (https://new.azwater.gov/).

The Department requests further coordination to provide project/species specific recommendations, please contact Project Evaluation Program directly at 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/sites/default/files/Native%20Plant%20Rules%20-%20AZ%20Dept%20of%20Ag.pdf starts on page 44

Analysis indicates that your project is located in the vicinity of an identified ***wildlife habitat connectivity feature***. The **County-level Stakeholder Assessments** contain five categories of data (Barrier/Development, Wildlife Crossing Area, Wildlife Movement Area- Diffuse, Wildlife movement Area- Landscape, Wildlife Movement Area- Riparian/Washes) that provide a context of select anthropogenic barriers, and potential connectivity. The reports provide recommendations for opportunities to preserve or enhance permeability. Project planning and implementation efforts should focus on maintaining and improving opportunities for wildlife permeability. For information pertaining to the linkage assessment and wildlife species that may be affected, please refer to: https://www.azgfd.com/wildlife/planning/habitatconnectivity/identifying-corridors/.
Please contact the Project Evaluation Program (pep@azgfd.gov) for specific project recommendations.

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 https://www.fws.gov/office/arizona-ecological-services or:

Phoenix Main Office
9828 North 31st Avenue #C3
Phoenix, AZ 85051-2517
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

HDMS records indicate that **Sonoran Desert Tortoise** have been documented within the vicinity of your project area. Please review the Tortoise Handling Guidelines found at: https://www.azgfd.com/wildlife/nongamemanagement/tortoise/

HDMS records indicate that **Western Burrowing Owls** have been documented within the vicinity of your project area. Please review the western burrowing owl resource page at: https://www.azgfd.com/wildlife/speciesofgreatestconservneed/burrowingowlmanagement/.

Map Unit Description

The map units delineated on the detailed soil maps in a soil survey represent the soils or miscellaneous areas in the survey area. The map unit descriptions in this report, along with the maps, can be used to determine the composition and properties of a unit.

A map unit delineation on a soil map represents an area dominated by one or more major kinds of soil or miscellaneous areas. A map unit is identified and named according to the taxonomic classification of the dominant soils. Within a taxonomic class there are precisely defined limits for the properties of the soils. On the landscape, however, the soils are natural phenomena, and they have the characteristic variability of all natural phenomena. Thus, the range of some observed properties may extend beyond the limits defined for a taxonomic class. Areas of soils of a single taxonomic class rarely, if ever, can be mapped without including areas of other taxonomic classes. Consequently, every map unit is made up of the soils or miscellaneous areas for which it is named, soils that are similar to the named components, and some minor components that differ in use and management from the major soils.

Most of the soils similar to the major components have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called noncontrasting, or similar, components. They may or may not be mentioned in a particular map unit description. Some minor components, however, have properties and behavior characteristics divergent enough to affect use or to require different management. These are called contrasting, or dissimilar, components. They generally are in small areas and could not be mapped separately because of the scale used. Some small areas of strongly contrasting soils or miscellaneous areas are identified by a special symbol on the maps. If included in the database for a given area, the contrasting minor components are identified in the map unit descriptions along with some characteristics of each. A few areas of minor components may not have been observed, and consequently they are not mentioned in the descriptions, especially where the pattern was so complex that it was impractical to make enough observations to identify all the soils and miscellaneous areas on the landscape.

The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The objective of mapping is not to delineate pure taxonomic classes but rather to separate the landscape into landforms or landform segments that have similar use and management requirements. The delineation of such segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, however, onsite investigation is needed to define and locate the soils and miscellaneous areas.

An identifying symbol precedes the map unit name in the map unit descriptions. Each description includes general facts about the unit and gives important soil properties and qualities.

Soils that have profiles that are almost alike make up a *soil series*. All the soils of a series have major horizons that are similar in composition, thickness, and arrangement. Soils of a given series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

Some map units are made up of two or more major soils or miscellaneous areas. These map units are complexes, associations, or undifferentiated groups.

A *complex* consists of two or more soils or miscellaneous areas in such an intricate pattern or in such small areas that they cannot be shown separately on the maps. The pattern and proportion of the soils or miscellaneous areas are somewhat similar in all areas. Alpha-Beta complex, 0 to 6 percent slopes, is an example.

An *association* is made up of two or more geographically associated soils or miscellaneous areas that are shown as one unit on the maps. Because of present or anticipated uses of the map units in the survey area, it was not considered practical or necessary to map the soils or miscellaneous areas separately. The pattern and relative proportion of the soils or miscellaneous areas are somewhat similar. Alpha-Beta association, 0 to 2 percent slopes, is an example.

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

Some surveys include *miscellaneous areas*. Such areas have little or no soil material and support little or no vegetation. Rock outcrop is an example.

Additional information about the map units described in this report is available in other soil reports, which give properties of the soils and the limitations, capabilities, and potentials for many uses. Also, the narratives that accompany the soil reports define some of the properties included in the map unit descriptions.

Report—Map Unit Description

Pima County, Arizona, Eastern Part

34—Hantz loam, 0 to 1 percent slopes

Map Unit Setting

National map unit symbol: 1t00
Elevation: 2,400 to 3,600 feet

Mean annual precipitation: 10 to 12 inches
Mean annual air temperature: 64 to 70 degrees F
Frost-free period: 220 to 280 days
Farmland classification: Prime farmland if irrigated and either protected from flooding or not frequently flooded during the growing season

Map Unit Composition

Hantz and similar soils: 80 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Hantz

Setting

Landform: Swales, alluvial fans, flood plains
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Tread, dip
Down-slope shape: Linear
Across-slope shape: Linear
Parent material: Mixed alluvium

Typical profile

A1 - 0 to 5 inches: loam
A2 - 5 to 12 inches: clay loam
C1 - 12 to 45 inches: clay
C2 - 45 to 60 inches: clay

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: NoneOccasional
Frequency of ponding: None
Calcium carbonate, maximum content: 10 percent
Gypsum, maximum content: 4 percent
Maximum salinity: Nonsaline to moderately saline (0.0 to 8.0 mmhos/cm)
Sodium adsorption ratio, maximum: 13.0
Available water supply, 0 to 60 inches: Moderate (about 8.9 inches)

Interpretive groups

Land capability classification (irrigated): 3w
Land capability classification (nonirrigated): 7w
Hydrologic Soil Group: C
Ecological site: R040XA102AZ - Clayey Swale 10"-13" p.z.
Hydric soil rating: No

Minor Components

Unnamed soils

Percent of map unit: 20 percent
Hydric soil rating: No

72—Sahuarita soils, mohave soils and urban land, 1 to 5 percent slopes

Map Unit Setting

National map unit symbol: 1t27
Elevation: 2,200 to 2,800 feet
Mean annual precipitation: 10 to 12 inches
Mean annual air temperature: 64 to 70 degrees F
Frost-free period: 220 to 280 days
Farmland classification: Not prime farmland

Map Unit Composition

Sahuarita and similar soils: 34 percent
Mohave and similar soils: 33 percent
Urban land: 33 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Sahuarita

Setting

Landform: Fan terraces
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Tread
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Mixed alluvium

Typical profile

A - 0 to 3 inches: very gravelly fine sandy loam
Bk - 3 to 28 inches: fine sandy loam
2Btkb - 28 to 45 inches: sandy clay loam
2Btb - 45 to 60 inches: very gravelly sandy clay loam

Properties and qualities

Slope: 1 to 5 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.60 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 35 percent

Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum: 3.0
Available water supply, 0 to 60 inches: Moderate (about 8.3 inches)

Interpretive groups
Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: C
Ecological site: R040XA108AZ - Limy Fan 10"-13" p.z.
Hydric soil rating: No

Description of Mohave

Setting
Landform: Fan terraces
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Tread
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Mixed alluvium

Typical profile
A - 0 to 3 inches: loam
BA - 3 to 6 inches: sandy loam
Btk - 6 to 40 inches: clay loam
C - 40 to 60 inches: loam

Properties and qualities
Slope: 1 to 5 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.60 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 40 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum: 25.0
Available water supply, 0 to 60 inches: High (about 9.7 inches)

Interpretive groups
Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7c
Hydrologic Soil Group: C
Ecological site: R040XA114AZ - Loamy Upland 10"-13" p.z.
Hydric soil rating: No

Description of Urban Land

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 8
Hydric soil rating: No

78—Stagecoach-Sahuarita association, 1 to 8 percent slopes

Map Unit Setting

National map unit symbol: 1t2f
Elevation: 2,200 to 3,200 feet
Mean annual precipitation: 10 to 12 inches
Mean annual air temperature: 64 to 70 degrees F
Frost-free period: 220 to 280 days
Farmland classification: Not prime farmland

Map Unit Composition

Stagecoach and similar soils: 50 percent
Sahuarita and similar soils: 25 percent
Minor components: 25 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Stagecoach

Setting

Landform: Fan terraces
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Tread
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Mixed alluvium

Typical profile

A/Bw - 0 to 10 inches: very gravelly sandy loam
Bk1 - 10 to 19 inches: very gravelly loam
Bk2 - 19 to 40 inches: extremely gravelly loam
2C - 40 to 60 inches: very gravelly loamy sand

Properties and qualities

Slope: 3 to 8 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): High (2.00 to 6.00 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 35 percent
Gypsum, maximum content: 5 percent

Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum: 13.0
Available water supply, 0 to 60 inches: Low (about 3.3 inches)

Interpretive groups
Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: A
Ecological site: R040XA106AZ - Limy Upland, Deep 10"-13" p.z.
Hydric soil rating: No

Description of Sahuarita

Setting
Landform: Fan terraces
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Tread
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Mixed alluvium

Typical profile
A - 0 to 3 inches: very gravelly fine sandy loam
Bk - 3 to 28 inches: fine sandy loam
2Btkb - 28 to 45 inches: sandy clay loam
2Btb - 45 to 60 inches: very gravelly sandy clay loam

Properties and qualities
Slope: 1 to 3 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.60 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 35 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum: 3.0
Available water supply, 0 to 60 inches: Moderate (about 8.3 inches)

Interpretive groups
Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: C
Ecological site: R040XA108AZ - Limy Fan 10"-13" p.z.
Hydric soil rating: No

Minor Components

Unnamed soils

Percent of map unit: 25 percent
Hydric soil rating: No

81—Tubac gravelly loam, 1 to 8 percent slopes

Map Unit Setting

National map unit symbol: 1t2n
Elevation: 2,400 to 3,200 feet
Mean annual precipitation: 10 to 12 inches
Mean annual air temperature: 64 to 70 degrees F
Frost-free period: 220 to 280 days
Farmland classification: Not prime farmland

Map Unit Composition

Tubac and similar soils: 80 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Tubac

Setting

Landform: Fan terraces
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Tread
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Mixed alluvium

Typical profile

A1 - 0 to 2 inches: gravelly loam
A2 - 2 to 14 inches: loam
Bt - 14 to 31 inches: clay
2Btk - 31 to 60 inches: gravelly sandy clay loam

Properties and qualities

Slope: 1 to 8 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 15 percent
Gypsum, maximum content: 1 percent
Maximum salinity: Nonsaline to slightly saline (0.0 to 4.0 mmhos/cm)

Sodium adsorption ratio, maximum: 10.0
Available water supply, 0 to 60 inches: Moderate (about 7.7 inches)

Interpretive groups
Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 6s
Hydrologic Soil Group: C
Ecological site: R040XA114AZ - Loamy Upland 10"-13" p.z.
Hydric soil rating: No

Minor Components

Unnamed soils
Percent of map unit: 20 percent
Hydric soil rating: No

86—Yaqui fine sandy loam, 1 to 3 percent slopes

Map Unit Setting
National map unit symbol: 1t2t
Elevation: 2,200 to 3,600 feet
Mean annual precipitation: 10 to 12 inches
Mean annual air temperature: 64 to 70 degrees F
Frost-free period: 220 to 280 days
Farmland classification: Not prime farmland

Map Unit Composition
Yaqui and similar soils: 80 percent
Minor components: 20 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Yaqui

Setting
Landform: Alluvial fans
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Tread
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Mixed alluvium

Typical profile
A - 0 to 4 inches: fine sandy loam
Bw - 4 to 31 inches: sandy clay loam
2Btb - 31 to 43 inches: clay loam
2Bkb - 43 to 60 inches: gravelly loam

Properties and qualities
Slope: 1 to 3 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained

Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.60 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 20 percent
Gypsum, maximum content: 1 percent
Maximum salinity: Nonsaline to slightly saline (0.0 to 4.0 mmhos/cm)
Sodium adsorption ratio, maximum: 13.0
Available water supply, 0 to 60 inches: Moderate (about 8.9 inches)

Interpretive groups

Land capability classification (irrigated): None specified
Land capability classification (nonirrigated): 7c
Hydrologic Soil Group: C
Ecological site: R040XA108AZ - Limy Fan 10"-13" p.z.
Hydric soil rating: No

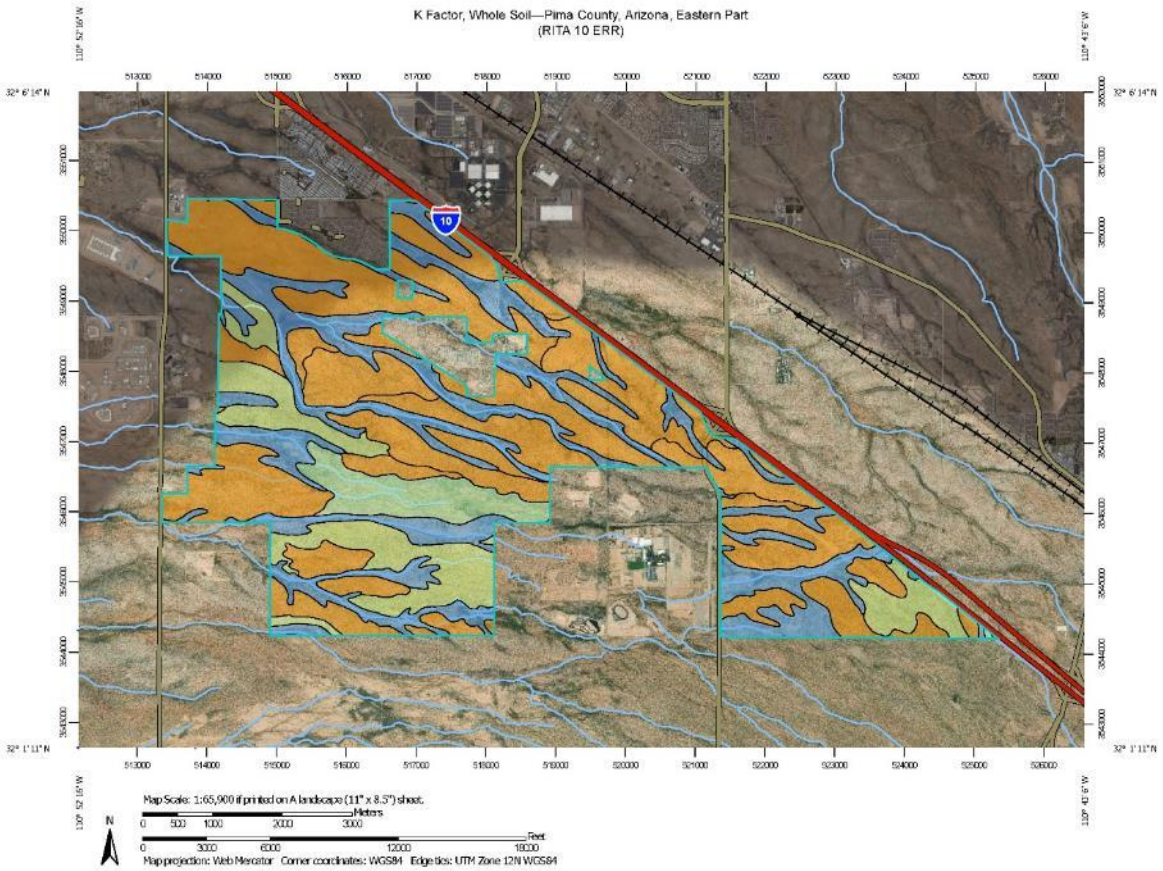
Minor Components

Unnamed soils

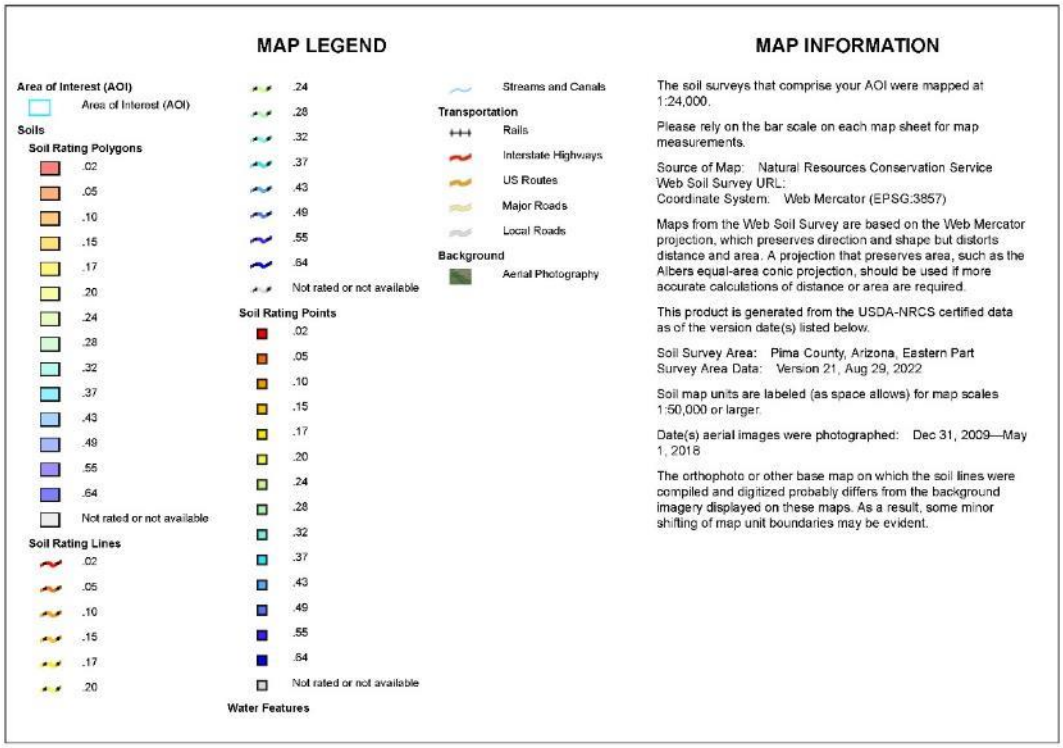
Percent of map unit: 20 percent
Hydric soil rating: No

Data Source Information

Soil Survey Area: Pima County, Arizona, Eastern Part
Survey Area Data: Version 21, Aug 29, 2022


K Factor, Whole Soil—Pima County, Arizona, Eastern Part
(RITA 10 ERR)
Map Scale: 1:65,900 if printed on A landscape (11" x 8.5") sheet.
Meters
Feet
Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 12N WGS84
Natural Resources
Conservation Service
Web Soil Survey
National Cooperative Soil Survey
4/21/2023
Page 1 of 5

K Factor, Whole Soil—Pima County, Arizona, Eastern Part
(RITA 10 ERR)



K Factor, Whole Soil

Map unit symbol	Map unit name	Rating	Acres in AOI	Percent of AOI
34	Hantz loam, 0 to 1 percent slopes	.43	2,319.8	27.7%
72	Sahuarita soils, mohave soils and urban land, 1 to 5 percent slopes	.10	2,331.4	27.9%
78	Stagecoach-Sahuarita association, 1 to 8 percent slopes	.10	2,131.6	25.5%
81	Tubac gravelly loam, 1 to 8 percent slopes	.24	1,113.7	13.3%
86	Yaqui fine sandy loam, 1 to 3 percent slopes	.28	463.8	5.5%
Totals for Area of Interest			**8,360.3**	**100.0%**

Description

Erosion factor K indicates the susceptibility of a soil to sheet and rill erosion by water. Factor K is one of six factors used in the Universal Soil Loss Equation (USLE) and the Revised Universal Soil Loss Equation (RUSLE) to predict the average annual rate of soil loss by sheet and rill erosion in tons per acre per year. The estimates are based primarily on percentage of silt, sand, and organic matter and on soil structure and saturated hydraulic conductivity (Ksat). Values of K range from 0.02 to 0.69. Other factors being equal, the higher the value, the more susceptible the soil is to sheet and rill erosion by water.

"Erosion factor Kw (whole soil)" indicates the erodibility of the whole soil. The estimates are modified by the presence of rock fragments.

Factor K does not apply to organic horizons and is not reported for those layers.

Rating Options

Aggregation Method: Dominant Condition

Aggregation is the process by which a set of component attribute values is reduced to a single value that represents the map unit as a whole.

A map unit is typically composed of one or more "components". A component is either some type of soil or some nonsoil entity, e.g., rock outcrop. For the attribute being aggregated, the first step of the aggregation process is to derive one attribute value for each of a map unit's components. From this set of component attributes, the next step of the aggregation process derives a single value that represents the map unit as a whole. Once a single value for each map unit is derived, a thematic map for soil map units can be rendered. Aggregation must be done because, on any soil map, map units are delineated but components are not.

For each of a map unit's components, a corresponding percent composition is recorded. A percent composition of 60 indicates that the corresponding component typically makes up approximately 60% of the map unit. Percent composition is a critical factor in some, but not all, aggregation methods.

The aggregation method "Dominant Condition" first groups like attribute values for the components in a map unit. For each group, percent composition is set to the sum of the percent composition of all components participating in that group. These groups now represent "conditions" rather than components. The attribute value associated with the group with the highest cumulative percent composition is returned. If more than one group shares the highest cumulative percent composition, the corresponding "tie-break" rule determines which value should be returned. The "tie-break" rule indicates whether the lower or higher group value should be returned in the case of a percent composition tie. The result returned by this aggregation method represents the dominant condition throughout the map unit only when no tie has occurred.

Component Percent Cutoff: None Specified

Components whose percent composition is below the cutoff value will not be considered. If no cutoff value is specified, all components in the database will be considered. The data for some contrasting soils of minor extent may not be in the database, and therefore are not considered.

Tie-break Rule: Higher

The tie-break rule indicates which value should be selected from a set of multiple candidate values, or which value should be selected in the event of a percent composition tie.

Layer Options (Horizon Aggregation Method): Surface Layer (Not applicable)

For an attribute of a soil horizon, a depth qualification must be specified. In most cases it is probably most appropriate to specify a fixed depth range, either in centimeters or inches. The Bottom Depth must be greater than the Top Depth, and the Top Depth can be greater than zero. The choice of "inches" or "centimeters" only applies to the depth of soil to be evaluated. It has no influence on the units of measure the data are presented in.

When "Surface Layer" is specified as the depth qualifier, only the surface layer or horizon is considered when deriving a value for a component, but keep in mind that the thickness of the surface layer varies from component to component.

When "All Layers" is specified as the depth qualifier, all layers recorded for a component are considered when deriving the value for that component.

Whenever more than one layer or horizon is considered when deriving a value for a component, and the attribute being aggregated is a numeric attribute, a weighted average value is returned, where the weighting factor is the layer or horizon thickness.