

**Application
for a
Certificate of Environmental Compatibility**

SOUTHWEST TUCSON RELIABILITY PROJECT

Prepared for:

**Arizona Power Plant and
Transmission Line Siting Committee**

Submitted by:

Tucson Electric Power Company

Date: September 18, 2026

Case No. _____

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List of Acronyms and Abbreviations

AADT	average annual daily traffic volume
ADOT	Arizona Department of Transportation
AM	amplitude modulation
amsl	above mean sea level
AN	audible noise
ANPL	Arizona Native Plant Law
APE	Area of Potential Effect
APLIC	Avian Powerline Interaction Committee
A.R.S.	Arizona Revised Statutes
ASLD	Arizona State Land Department
ASM	Arizona State Museum
AGFD	Arizona Game and Fish Department
AZDA	Arizona Department of Agriculture
BCC	Birds of Conservation Concern
BE	Biological Evaluation
BGEPA	Bald and Golden Eagle Protection Act
BLM	Bureau of Land Management
BMP	best management practice
CAP	Central Arizona Project
CCA	Candidate Conservation Agreement
CEC	Certificate of Environmental Compatibility
CFR	Code of Federal Regulations
CLS	Conservation Lands System
COT	City of Tucson
dBA	A-weighted decibel
DEM	Digital Elevation Model
EMF	Electric and magnetic fields
EPM	environmental protection measures
ERT	Environmental Resource Tool
ESA	Endangered Species Act

FAA	Federal Aviation Administration
FCC	Federal Communications Commission
FEMA	Federal Emergency Management Agency
FERC	Federal Energy Regulatory Commission
FM	frequency modulation
GIS	Geographic Information Systems
GLO	General Land Office
I-19	Interstate 19
IBA	Important Bird Area
IPaC	Information for Planning and Consultation
IRA	Important Riparian Area
HDMS	Heritage Data Management System
KOP	key observation point
kV	Kilovolt
MBTA	Migratory Bird Treaty Act
mG	milligauss
MS&R	Major Streets & Routes
MSCP	Multi-Species Conservation Plan
MW	megawatt
NEPA	National Environmental Policy Act
NERC	North American Electric Reliability Corporation
NESC	National Electrical Safety Code
NPS	National Park Service
NRIS	National Register Information System
NRHP	National Register of Historic Places
NWI	National Wetlands Inventory
OERT	Online Arizona Environmental Review Tool
PCC	Pima Community College
PPC	Pima pineapple cactus
PVS	Priority Vulnerable Species
RMP	Resource Management Plan
ROW	right(s)-of-way
SDCP	Sonoran Desert Conservation Plan
SELUP	Special Exception Land Use Permit
SHPO	(Arizona) State Historic Preservation Office
SXD	San Xavier District (of the Tohono O’odham Nation)

TEP	Tucson Electric Power Company
TON	Tohono O’odham Nation
UDC	Unified Development Code
USACE	U.S. Army Corps of Engineers
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
WAPA	Western Area Power Administration

Project Definitions

Analysis Area. A 3-mile buffer around the Project's Siting Study Area (limited to Biological Evaluation).

Area of Analysis. A 0.5 mile buffer around the Phase 1 and Phase 2 Routes.

Area of Potential Effect. As defined in the Cultural Resources Class I Study, collectively, the proposed transmission routes and an area extending 2,640 ft (0.5 mi) beyond the proposed transmission line routes.

Circuit Tie. The end point of the Phase 2 Route, where the Project ties in to the existing Midvale-South 138-kilovolt transmission line.

Project Area. A general term for the regional area the Project is within.

Siting Study Area. The area studied as part of the Siting Study.

**APPLICATION FOR A
CERTIFICATE OF
ENVIRONMENTAL COMPATIBILITY**

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Introduction

Pursuant to Arizona Revised Statutes (A.R.S.) 40-360, *et seq.*, Tucson Electric Power Company (TEP) submits this application for a Certificate of Environmental Compatibility (CEC) granting authority to construct two phases—Phase 1 and Phase 2—of the 138-kilovolt (kV) transmission line project called the Southwest Tucson Reliability Project (Project) in the City of Tucson (COT) and unincorporated Pima County, Arizona.

The Project will create a looped transmission system to provide greater reliability and power quality to southwest Tucson. New transmission facilities will replace older, lower-voltage equipment that cannot keep pace with customers' growing energy needs. The added capacity is designed to accommodate both current demand and projected growth in the area, including new residential development and commercial activity. In addition to improving day-to-day service, the modernized system will strengthen resilience during periods of peak demand, such as extreme summer heat, when reliable power delivery is especially critical.

Project Overview

The Project will include an approximately 17-mile-long looped transmission system consisting of two new 138-kV circuits. TEP identified routes for the proposed circuits following a comprehensive planning and siting process.

The Project will be completed in two phases. Phase 1 of the Project will connect TEP's existing Midvale Substation in the COT to TEP's planned Tucson Estates Substation¹ in unincorporated Pima County (Figure 1). Phase 1 is approximately 7.7 miles long and consists of several construction components, including:

- Constructing approximately 1.5 miles of new 138-kV transmission line
- Re-energizing approximately 4 miles of existing 115-kV transmission line to 138-kV on existing structures
- Adding approximately 2.2 miles of new 138-kV circuit to existing transmission line structures

Phase 2 of the Project will connect TEP's planned Tucson Estates Substation in unincorporated Pima County to a tie-in point on TEP's existing Midvale-South 138-kV transmission line (referred to as the Circuit Tie) in the COT. Phase 2 is approximately 9.5 miles long and consists of several construction components, including:

- Constructing approximately 1.1 miles of new 138-kV transmission line
- Rebuilding approximately 1.8 miles of existing 46-kV line as a 138-kV transmission line
- Rebuilding approximately 0.5 miles of existing 46-kV line as a 46-kV/138-kV double-circuit transmission line
- Re-energizing approximately 5.1 miles of existing 46-kV circuit to 138-kV on existing structures
- Re-energizing approximately 1 mile of existing 115-kV transmission line to 138-kV on existing structures

¹ Power Substation Permit approved by Pima County Board of Supervisors September 8, 2026.

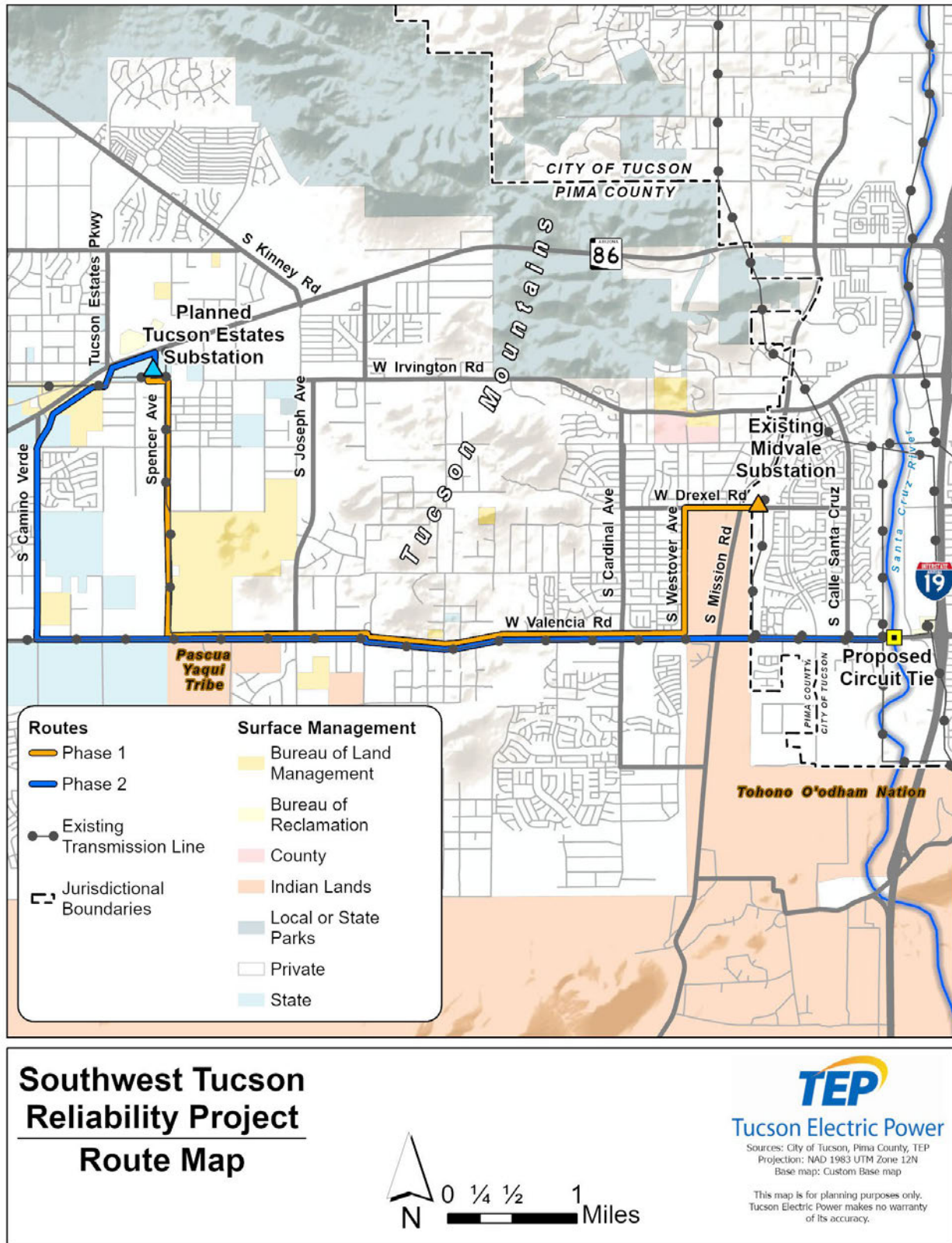


Figure 1. Phase 1 and Phase 2 Routes.

The Project will be located within the COT and unincorporated Pima County and will cross private, State, COT, Pima County, Arizona Department of Transportation, and Bureau of Land Management land.

While not jurisdictional, and thus not a part of this CEC application, TEP plans to construct the Tucson Estates Substation in conjunction with this Project. The substation will increase capacity to serve customers' growing energy needs west of Tucson while allowing for the retirement of two aging 46-kV substations and the 46-kV lines supporting these substations.

Project Purpose, Need, and Benefits

TEP serves over 10,000 residential and business customers in the Project vicinity. Today, these customers are served through the Bilby and Bopp Donald 46-kV substations, which rely on a radial 46-kV line with its source originating at TEP's Irvington Substation, located at Irvington Road and Alvernon Way. The Irvington Substation is approximately five miles from the Project area. Given that the area is served by a radial line, the distance to the source substation, and the fact that this area is on the outskirts of TEP's system, the area is susceptible to frequent and long-duration electrical outages. The radial nature of the existing line also hinders TEP's ability to take the line out of service for maintenance or repairs.

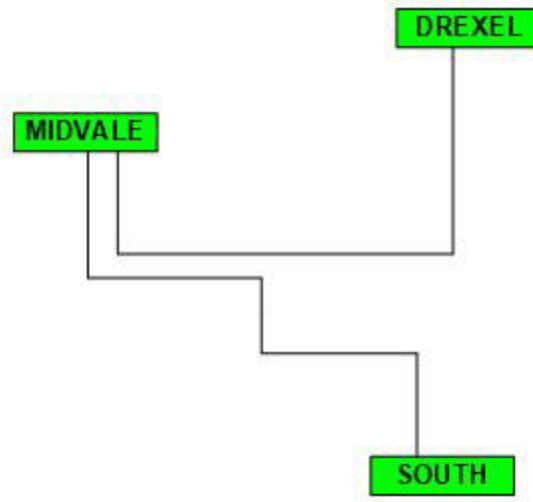
In order to provide customers in the Project area with the same level of service as TEP's other customers, TEP proposes to construct a looped 138-kV transmission system, together with the planned Tucson Estates Substation, which will increase reliability and enable seamless power delivery even if one line experiences an issue or is taken out of service for maintenance (Figure 2).

The Project will also increase capacity to serve customers in the area, which means TEP can meet the growing needs of current customers, as well as accommodate future growth. Today, TEP has 52.6 megawatts (MW) of load-serving capacity combined between the Bilby and Bopp Donald Substations. Peak demand is 41.3 MW, or 79% of capacity. TEP considers 75% to be the threshold for when to plan for additional facilities. With the construction of the Project and the planned Tucson Estates Substation, TEP will significantly increase load-serving capability to 150 MW.

The Project will:

- Enhance grid reliability and resilience by upgrading from a radial 46-kV system to a looped 138-kV system, which will decrease the frequency and duration of outages—critical for residents, businesses, and schools
- Enable maintenance or upgrades without interrupting electrical service
- Increase the number of distribution feeders from five to eight, which will increase distribution reliability by providing more options for tying circuits together and restoring power
- Improve power quality by bringing the source of power to the Project area instead of relying on Irvington Substation, over five miles away
- Expand capacity to meet both current and future energy demand

BEFORE



AFTER

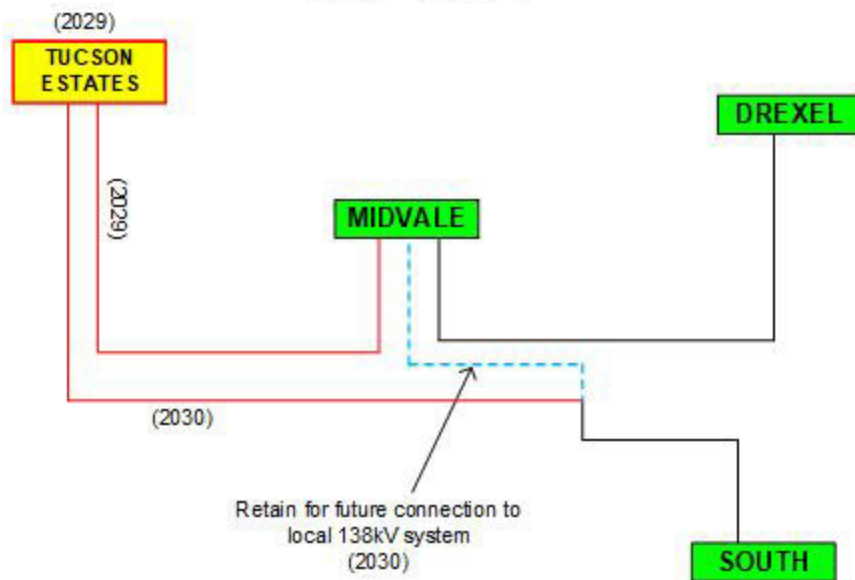


Figure 2. One-line Diagram of Existing and Planned 138-Kilovolt Infrastructure Serving the Project Area.

Siting, Outreach, and Engagement

TEP followed a comprehensive planning and siting process, which involves five phases (Figure 3), to identify the most environmentally compatible routes for the Project, included in this application as the Phase 1 and Phase 2 Routes.

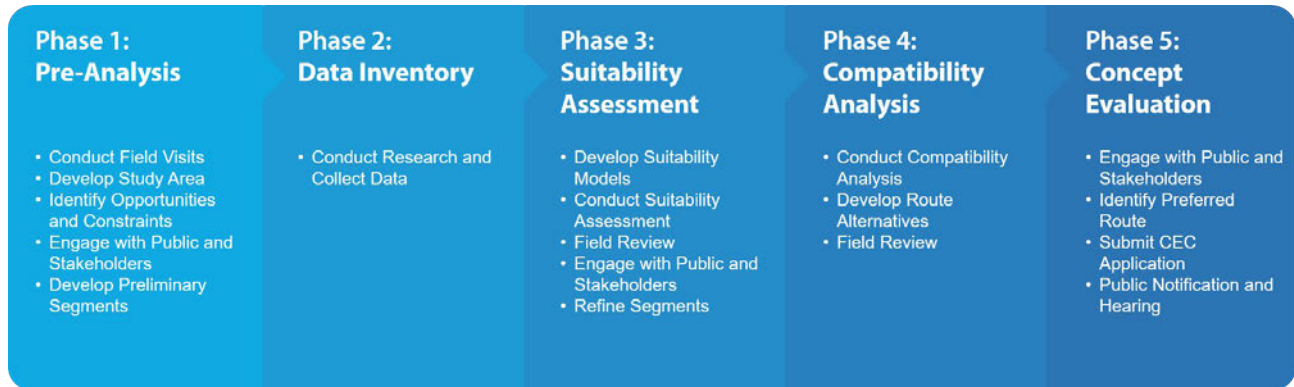


Figure 3. TEP's Line Siting Process.

This process started by determining a Siting Study Area, which defined the area in which potential routes would be considered. The Siting Study Area was defined to be large enough to encompass high-level opportunities and constraints for development of various route segments. Complete details of the siting analysis are included in this application in Exhibit B-1.

Public and stakeholder input is a vital part of TEP's planning and siting process for new transmission lines.

At each phase of the process, TEP either seeks public and stakeholder input or incorporates received input into its analysis.

Outreach activities began in February 2026. To provide residents, affected property owners, and stakeholders every opportunity to learn about the proposed Project and engage in the siting process, TEP sent postcards to over 43,000 physical addresses, sent emails to over 18,000 email addresses, posted street signage throughout the Siting Study Area, posted flyers in public spaces, ran targeted social media campaigns, advertised in newspapers, and managed a project webpage (<https://www.tep.com/southwest-tucson-reliability-project/>). The webpage is regularly updated to provide interested parties with the most up-to-date information regarding the Project.

TEP held three in-person public open houses, three virtual agency briefings, and offered briefings to elected officials, tribal communities, and agencies.

As a result, TEP received 80 public comments through email, voice messages, online comment forms, and paper comment forms. The majority of these comments could be grouped into four categories:

1. Minimize visual impacts, particularly views of the Tucson Mountains from residential areas
2. Make use of existing infrastructure
3. Avoid residential areas
4. Minimize costs

These comments were incorporated into the evaluation criteria used throughout the planning and siting process to influence the outcome. Approximately 80% of the proposed routes reuse existing facilities or rebuild similar facilities in place; only 20% of the proposed routes include the construction of new facilities. As a result, the proposed routes minimize visual impacts to residential areas and minimize costs by maximizing the use of existing infrastructure while also reducing the construction of new infrastructure in undisturbed portions of the Project area (Figure 4).

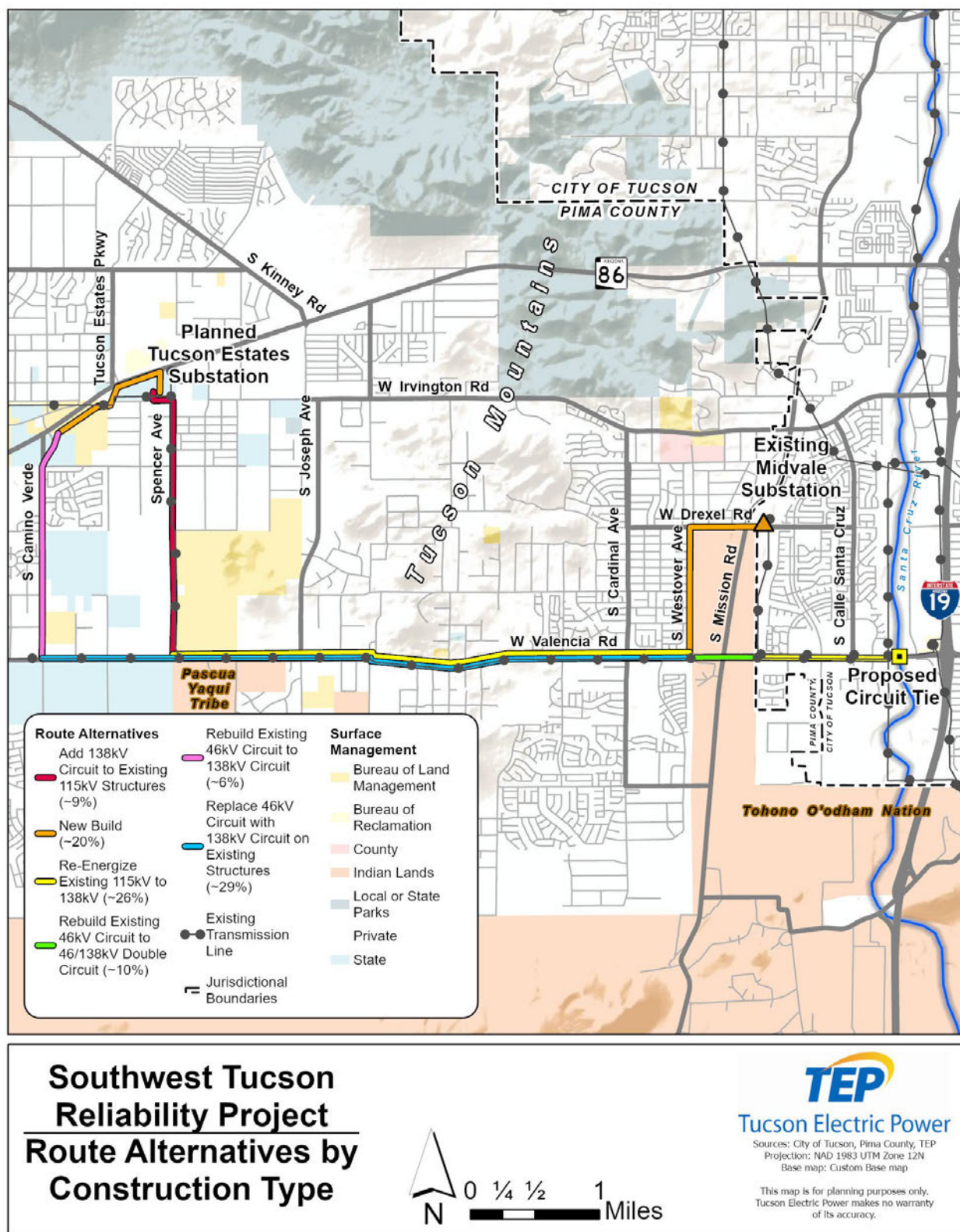


Figure 4. Route Alternatives by Construction Type

Conclusion

The Project will greatly improve the reliability of the TEP electrical system by creating a looped transmission system. The Project will provide benefits to residents and businesses in the area, including improved electric reliability and greater energy capacity. As noted above, a significant portion of the Project involves rebuilding and re-energizing existing utility infrastructure rather than constructing entirely new facilities. This approach minimizes the Project's footprint by making use of established corridors and previously disturbed land, reducing impacts to the surrounding area, including nearby land uses, vegetation, and viewsheds, while still delivering the reliability and capacity improvements the area needs. To enable these reliability, power quality, and capacity benefits for our customers, TEP respectfully asks that the Arizona Power Plant and Line Siting Committee issue a CEC for the Southwest Tucson Reliability Project.

Application for a Certificate of Environmental Compatibility

(Pursuant to Arizona Revised Statute § 40-360.03 and 40-360.06 and Arizona Administrative Code R14-7-119).

1. Name and address of the applicant:

Tucson Electric Power Company
88 East Broadway Boulevard, Tucson, AZ 85701
PO Box 711, Tucson, AZ 85702

2. Name, address, and telephone number of a representative of the applicant who has access to technical knowledge and background information concerning this application, and who will be available to answer questions or furnish additional information:

Clark Bryner
Tucson Electric Power Company
88 East Broadway Boulevard, Tucson, AZ 85701
PO Box 711, Tucson, AZ 85702
Phone: (520) 401-1175

3. Dates on which the applicant filed a Ten-Year Plan in compliance with A.R.S. § 40-360.02, and designate each such filing in which the facilities for which this application is made were described. If they have not been previously described in a Ten-Year Plan, state the reasons therefore:

The Project was first identified in TEP's Ten-Year Plan Transmission Projects for Years 2021-2030 filed in January 2021 under Docket No. E-99999A-21-0009 and has been included in each subsequent filing (Table 1).

Table 1. Dates on Which the Applicant Filed a Ten-Year Plan

FILING YEAR	DOCKET NUMBER	PROJECT NAME	POINT OF ORIGIN	POINT OF TERMINATION
2021	E-99999A-21-0009	Planned Cottonwood to Future Bopp-Donald 138-kV Transmission Line	Planned Cottonwood 138-kV Substation	Future Bopp-Donald 138-kV Substation
		Future Bopp-Donald to Midvale 138-kV Transmission Line	Future Bopp-Donald 138-kV Substation	Midvale 138-kV Substation
2022	E-99999A-21-0009	Planned Cottonwood to Future Bopp-Donald 138-kV Transmission Line	Planned Cottonwood 138-kV Substation	Future Bopp-Donald 138-kV Substation
		Future Bopp-Donald to Midvale 138-kV Transmission Line	Future Bopp-Donald 138-kV Substation	Midvale 138-kV Substation
2023	E-99999A-23-0016	Planned Cottonwood to Future Bopp-Donald 138-kV Transmission Line	Planned Cottonwood 138-kV Substation	Future Bopp-Donald 138-kV Substation
		Future Bopp-Donald to Midvale 138-kV Transmission Line	Future Bopp-Donald 138-kV Substation	Midvale 138-kV Substation
2024	E-99999A-23-0016	Planned Cottonwood to Planned Bopp-Donald 138-kV Transmission Line	Planned Cottonwood 138-kV Substation	Planned Bopp-Donald 138-kV Substation
		Planned Bopp-Donald to Midvale 138-kV Transmission Line	Planned Bopp-Donald 138-kV Substation	Midvale 138-kV Substation
2025	E-99999A-25-0006	Planned Cottonwood to Planned Bopp-Donald 138-kV Transmission Line	Planned Cottonwood 138-kV Substation	Planned Bopp-Donald 138-kV Substation
		Planned Bopp-Donald to Midvale 138-kV Transmission Line	Planned Bopp-Donald 138-kV Substation	Midvale 138-kV Substation
2026	E-99999A-25-0006	Midvale to Planned Tucson Estates (formerly Bopp-Donald) 138-kV Transmission Line	Midvale 138-kV Substation	Planned Tucson Estates 138-kV Substation
		Planned Tucson Estates to South 138-kV Transmission Line	Planned Tucson Estates 138-kV Substation	South 138-kV Substation

4. Description of the transmission line:

i. Nominal voltage for which the line is designed; description of the proposed structures and switchyards or substations associated therewith; and purpose for constructing said transmission line:

(1) Nominal voltage:

The nominal voltage for the Project is 138-kilovolt (kV).

(2) Description of the proposed structures:

As discussed in the Introduction, TEP is utilizing several different construction methods for the Phase 1 and Phase 2 Routes. For the new build sections of the Project and where TEP will rebuild the existing 46-kV transmission line to 138-kV, TEP proposes to construct a single circuit on double circuit capable structures.

The structures will be tubular, weathering steel monopoles with non-reflective surfaces. Structures will typically be 75 to 85 feet in height; taller structures up to 115 feet may be required for certain areas. The conductor will have a non-specular finish to reduce visibility. Some portions will include distribution underbuild.

Approximately 55% of Phase 1 and Phase 2 will use existing structures and conductor. These structures are tubular, weathering steel monopoles with non-reflective surfaces. Structures are typically between 75 to 85 feet in height. The existing conductor has a non-specular finish to reduce visibility. Some portions include existing distribution underbuild.

For the addition of TEP's 138-kV line to the existing 115-kV transmission line (along Spencer Avenue), new structures will not be required, however TEP will add insulators on the opposite side of the structure and string new conductor.

Conceptual drawings showing typical structures are provided in Exhibit G.

(3) Description of proposed switchyards and substations:

Substations are not jurisdictional. TEP, however, is including this description of the substation to better explain the Project's purpose and need. There are no jurisdictional switchyards.

Phase 1 of the Project will originate at TEP's Midvale Substation, in City of Tucson (COT), and terminate at TEP's planned Tucson Estates Substation in unincorporated Pima County. Phase 2 of the Project will originate at TEP's planned Tucson Estates Substation and terminate at a circuit tie on TEP's Midvale-South 138-kV transmission line. No expansion at the Midvale Substation will be required to support Phase 1 of the Project.

The planned Tucson Estates Substation will be located on West Ajo Highway/State Highway 86, 1.1 miles southwest of Kinney Road. The substation site is located within a portion of the southwest quarter of Section 35, Township 14 South, Range 12 East; Gila and Salt River Baseline and Meridian in Pima County, Arizona. It is comprised of Assessor Parcel Number 212-48-0700.

The parcel is 51.88 acres and the substation site consists of a 15-acre lease on the larger parcel, acquired from the State of Arizona and administered by the Arizona State Land Department (ASLD). TEP has acquired a lease for the site and Pima County Board of Supervisors approved the Power Substation Permit on September 8, 2026.

(4) Purpose for constructing said transmission line:

The Project Area is currently served by a radial 46-kV line. The Project will provide greater reliability by creating a looped transmission system—that will help reduce the frequency and duration of outages in Pima County.

ii. Description of geographical points between which the transmission line will run, the straight-line distance between such points and the length of the transmission line for each alternative route for which the application is made

(1) Description of geographical points between which the transmission line will run:

Phase 1 - The east point of Phase 1 is TEP's Midvale Substation, located on land owned by TEP on the north side of Drexel Road, east of Mission Road. The west point of Phase 1 is TEP's planned Tucson Estates Substation on leased state land, located south of Ajo Highway and east of South Camino Verde.

Phase 2 – The west point of Phase 2 is TEP's planned Tucson Estates Substation on leased state land, located south of Ajo Highway and east of South Camino Verde. The east point of Phase 2 is a circuit tie within an existing electric line easement on the south side of Valencia Road, west of I-19

(2) Straight-line distance between such points:

Phase 1 - The straight-line distance from the Midvale Substation to the planned Tucson Estates Substation is approximately 5 miles.

Phase 2 – The straight-line distance from the planned Tucson Estates Substation to the Circuit Tie is approximately 6.2 miles.

(3) Length of the transmission line for each alternative route:

Phase 1 – 7.7 miles

Phase 2 – 9.5 miles

iii. Nominal width of right-of-way required, nominal length of spans, maximum height of supporting structures and minimum height of conductor above ground

(1) Nominal width of right-of-way required:

In areas outside of existing right-of-way (ROW), and/or where the transmission lines currently exist, the Applicant plans to acquire easements or other necessary land rights up to 100 feet wide. TEP is requesting a siting corridor up to 300 feet wide for the approved route to allow for routing flexibility.

(2) Nominal length of spans:

The typical span length between structures will be approximately 600–1,000 feet, with variations made to achieve site-specific mitigation objectives or meet site-specific engineering requirements.

(3) Typical height of supporting structures:

Supporting structures typically will range from 75 feet to 85 feet above grade for the transmission lines. Taller structures, up to 115 feet above grade, may be required in limited locations to maintain National Electrical Safety Code clearance.

(4) Minimum height of conductor above ground:

The minimum height of the conductor above existing grade will be 25 feet at maximum sag.

- iv. To the extent available, the estimated costs of proposed transmission line and route, stated separately. (If application contains alternative routes, furnish an estimate for each route and a brief description of the reasons for any variations in such estimates.)**

Estimates for the Phase 1 and Phase 2 Routes are shown in Table 2. The total transmission line cost is approximately \$19.1 million.

Table 2. Estimated Costs of the Phase 1 and Phase 2 Routes

Route	Length (miles)	Construction Costs	ROW Costs	Total Cost	\$ per Mile
Phase 1	7.7	\$1,605,325	\$6,831,487	\$8,436,812	\$1,095,690
Phase 2	9.5	\$426,914	\$10,247,230	\$10,674,144	\$1,123,594

- v. Description of proposed route and switchyard locations. (If application contains alternative routes, list routes in order of applicant's preference with a summary of reasons for such order of preference and any changes such alternative routes would require in the plans reflected in (i) through (iv) hereof.)**

The Phase 1 and Phase 2 Routes were selected based on the results of a siting study, which was conducted in coordination with stakeholders and the public. Please see Exhibit B-1 for the siting study for additional details.

Phase 1 Route

The Phase 1 Route originates at the existing Midvale Substation on the north side of Drexel Road on

land owned by TEP in the COT. From the substation, the route continues in the Drexel Road ROW west to Westover Avenue. The route turns south and continues in the west ROW of Westover Avenue to South Valencia Road. It then turns west and continues in the south ROW of West Valencia Road to Camino de Oeste, where it crosses to the north ROW of West Valencia Road. It continues in the north ROW of West Valencia Road to just east of Spencer Avenue. Here, the route turns north and continues in an existing 115-kV transmission line easement (owned by others) that parallels the Spencer Avenue alignment, to the planned Tucson Estates Substation parcel, which is leased from ASLD in Pima County, Arizona.

Phase 2 Route

The Phase 2 Route originates at the planned Tucson Estates Substation, which is leased from ASLD, in Pima County, Arizona. From the substation, the route traverses ASLD, Arizona Department of Transportation (ADOT), and Bureau of Land Management (BLM) lands as it heads west to South Camino Verde. The route then turns south and continues in the west ROW of South Camino Verde to West Valencia Road. It then turns east and continues in the north ROW of West Valencia Road to Camino de Oeste, where it crosses to the south side of West Valencia Road. It continues east in the West Valencia Road ROW to the Circuit Tie, located west of I-19 in the COT, Arizona.

Reason a Single, Phased Route Was Selected

TEP identified the Phase 1 and Phase 2 Routes after presenting two alternative routes for Phase 1 and one route for Phase 2 to the public and interested parties and completing a route-level compatibility assessment. The Phase 1 and Phase 2 Routes take into consideration factors most important to the public and stakeholders:

- Minimizes visual impacts, particularly views of the Tucson Mountains from residential areas
- Makes use of existing infrastructure
- Avoids residential areas, to the extent possible
- Minimizes costs

vi. For each alternative route for which application is made, list the ownership percentages of land traversed by the entire route (federal, state, tribal, private, etc.).

Land ownership percentages for the Phase 1 and Phase 2 Routes are described in Table 3.

Table 3. Land Ownership Percentages

Route	BLM	ASLD	County (ROW)	COT (ROW)	Total
Phase 1	17%	1%	81%	1%	100%
Phase 2	10%	9%	70%	11%	100%

5. List the areas of jurisdiction [as defined in A.R.S. § 40-360(1)] affected by each alternative site or route and designate those proposed sites or routes, if any, which are contrary to the zoning ordinances or master plans of any of such areas of jurisdiction.

The areas of jurisdiction include COT, Pima County, ASLD, and ADOT. The routes are compatible with local

land use plans and zoning. Further discussion of COT is included in Exhibit H.

6. Describe any environmental studies applicant has performed or caused to be performed in connection with this application or intends to perform or cause to be performed in such connection, including the contemplated date of completion.

TEP has conducted environmental studies described herein and evaluated all available data related to land use, biological resources, visual resources, cultural resources, recreational resources, noise levels, and communications signals to assess the potential impacts that may result from the construction, operation, and maintenance of the Project. These evaluations are included in Exhibits A-I of this application.

TEP has also conducted an extensive public and agency engagement process to gather information and comments related to the Project. Information collected and analyzed in conjunction with the engagement process is included in Exhibit J of this application.

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EXHIBIT A

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Exhibit A: Location and Land Use Maps

1. *Where commercially available, a topographic map, 1:250,000 scale, showing the proposed plant site and the adjacent area within 20 miles thereof. If application is made for alternative plant sites, all sites may be shown on the same map, if practicable, designated by applicant's order of preference.*
2. *Where commercially available, a topographic map, 1:62,500 scale, or each proposed plant site, showing the area within two miles thereof. The general land use plan within this area shall be shown on the map, which shall also show the areas of jurisdiction affected and any boundaries between such areas of jurisdiction. If the general land use plan is uniform throughout the area depicted, it may be described in the legend in lieu of an overlay.*
3. *Where commercially available, a topographic map, 1:250,000 scale, showing any proposed transmission line route of more than 50 miles in length and the adjacent area. For routes of less than 50 miles in length, use a scale of 1:62,500. If application is made for alternative transmission line routes, all routes may be shown on the same map, if practicable, designated by applicant's order of preference.*
4. *Where commercially available, a topographic map, 1:62,500 scale, of each proposed transmission line route of more than 50 miles in length showing that portion of the route within two miles of any subdivided area. The general land use plan within the area shall be shown on a 1:62,500 map required for Exhibit A-3, and for the map required by this Exhibit A-4, which shall also show the areas of jurisdiction affected and any boundaries between such areas of jurisdiction. If the general land use plan is uniform throughout the area depicted, it may be described in the legend in lieu of an overlay.*

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Exhibit A-3
138-kV Transmission Line Project – Location

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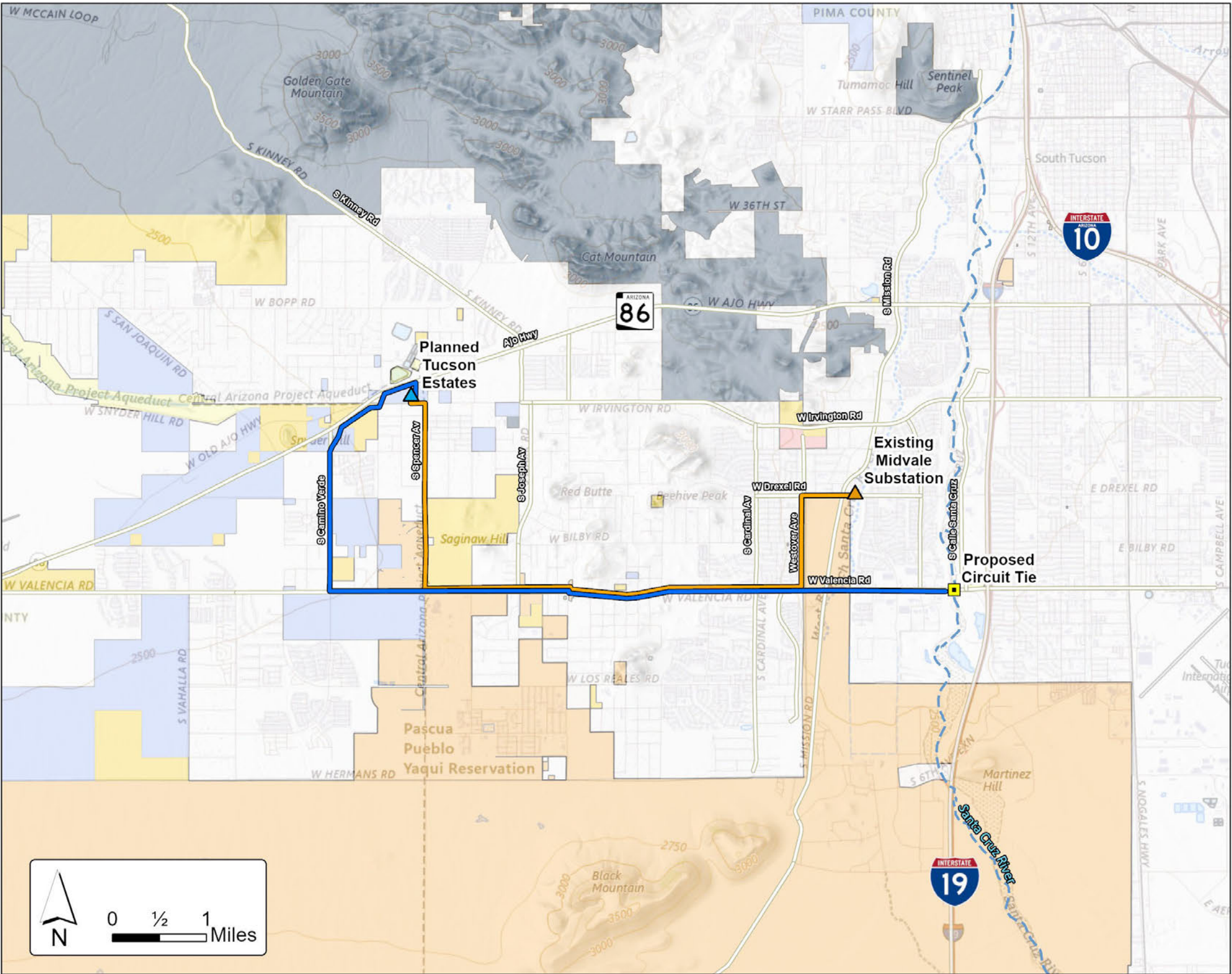


Exhibit A-3 Southwest Tucson Reliability Project Location

- Routes**
- Phase 1
 - Phase 2
- Surface Management**
- Bureau of Land Management
 - Bureau of Reclamation
 - County
 - Tribal Lands
 - Local or State Parks
 - Private
 - State

Scale: 1:62,500



Sources: City of Tucson, Pima County, TEP
Projection: NAD 1983 UTM Zone 12N
Base map: ESRI Topographic

This map is for planning purposes only.
Tucson Electric Power makes no warranty
of its accuracy.

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Exhibit A-4
138-kV Transmission Line Project – General Plan Land Use

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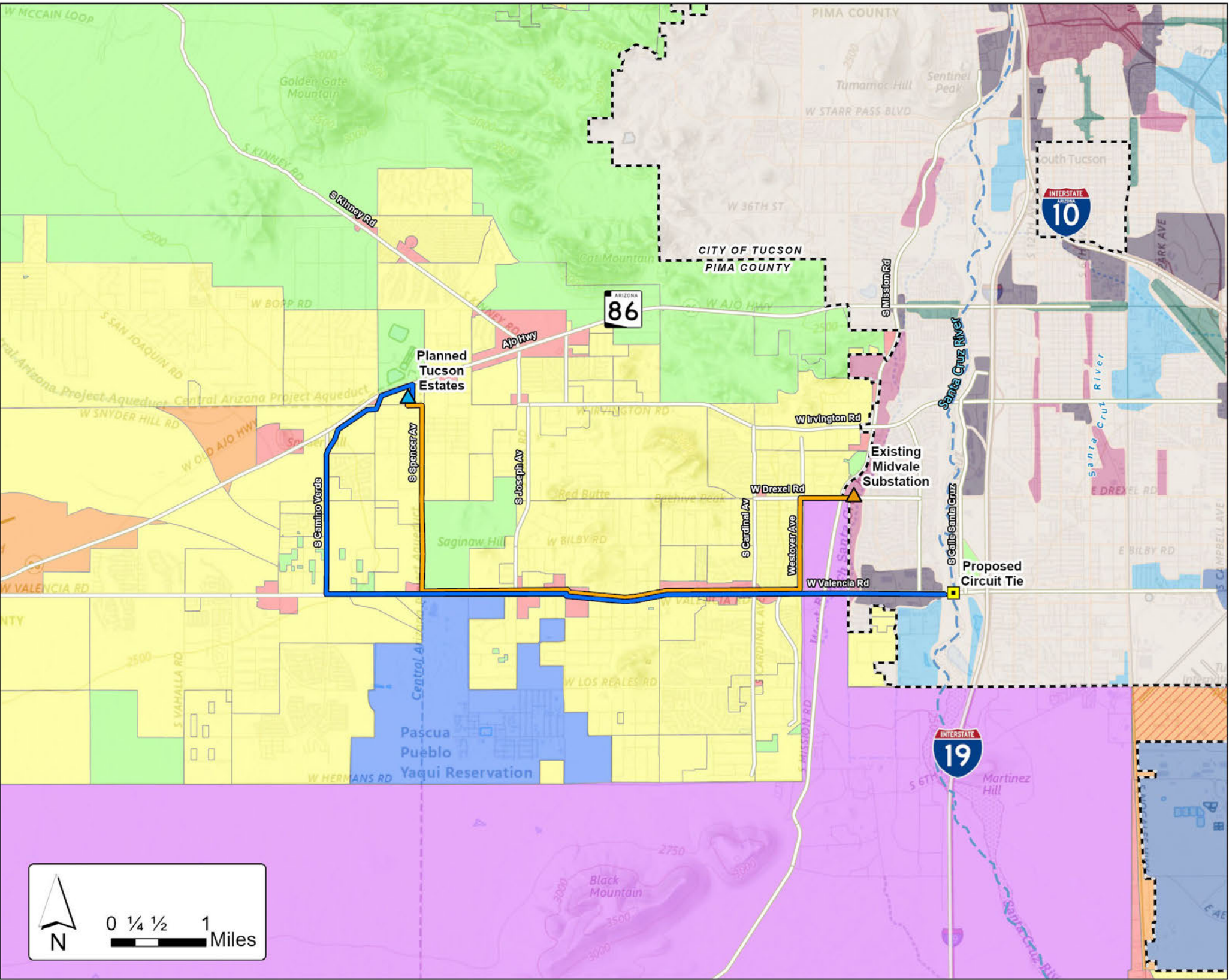


Exhibit A-4 Southwest Tucson Reliability Project Land Use

- Routes**
- Phase 1
 - Phase 2
- City of Tucson Boundary**
- Pima County General Plan**
- Commercial Activity Center
 - Industrial
 - Residential
 - Sensitive/Conservation
 - Pascua Yaqui Tribe
 - San Xavier Dist-Tohono O'odham
- City of Tucson General Plan**
- Business Centers
 - Downtown
 - Industrial Area
 - Mixed Use Activity Center
 - Mixed Use Corridor
 - Neighborhood Centers and Corridors
 - Neighborhoods
 - Potential Annexation Area

Scale: 1:62,500



Sources: City of Tucson, Pima County, TEP
Projection: NAD 1983 UTM Zone 12N
Base map: Custom

This map is for planning purposes only.
Tucson Electric Power makes no warranty
of its accuracy.

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EXHIBIT B

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Exhibit B: Environmental Report

As required by Arizona Administrative Code R14-7-119, the Applicant provides the following in Exhibit B:

Attach any environmental studies which applicant has made or obtained in connection with the proposed site(s) or route(s). If an environmental report has been prepared for any federal agency or if a federal agency has prepared an environmental statement pursuant to Section 102 of the National Environmental Policy Act, a copy shall be included as a part of this exhibit.

B.1 Introduction

Starting in September 2025, Tucson Electric Power Company (TEP) conducted a siting study to identify a Siting Study Area, Preliminary and Refined Segments, alternative routes, and ultimately the proposed Phase 1 and Phase 2 Routes for the Southwest Tucson Reliability Project (Project). The Siting Study, presented in Exhibit B-1, is the culmination of all the other detailed studies (attached as the other Exhibits to this Application) conducted to assess the Project environment. All information about the analysis conducted is in the Siting Study. Additional Project studies address components such as biological resources, the built environment, cultural resources, visual resources, etc.

The results of the environmental studies and analyses conducted by TEP are discussed in subsequent exhibits of this application:

- Exhibit A - Relevant maps of existing and proposed land use
- Exhibit C - Areas of Biological Wealth
- Exhibit D - Biological Resources
- Exhibit E - Scenic Areas, Historic Sites and Structures, and Archaeological Sites
- Exhibit F - Recreational Purposes and Aspects
- Exhibit G - Concepts of Proposed Facilities and Visual Simulations
- Exhibit H - Existing Plans
- Exhibit I - Anticipated Noise and Interference with Communication Signals
- Exhibit J - Special Factors, including public involvement

B.2 Environmental Planning Process

The Phase 1 and Phase 2 Routes presented in this application are the results of the processes outlined in the Siting Study (Exhibit B-1).

B.3 Environmental Statements

B.3.1 U.S. Fish and Wildlife Service (USFWS)

Special status species that might be present within the Siting Study Area were identified by obtaining a USFWS Information for Planning and Consultation (IPaC) Official Species List of Threatened and Endangered species protected under the Endangered Species Act (ESA). The 10 federally-listed animal species (six endangered, two

threatened, one experimental population (treated as threatened), one proposed threatened) and three federally-listed endangered flowering plant species were evaluated in the Biological Evaluation (BE), included as Exhibit C-2.

The evaluation determined that of the 14 federally-listed special status species that may be present in the Area of Analysis, the Project:

- May impact monarch butterfly but is not likely to result in a trend toward Federal listing or a loss of viability.
- The Project may affect but is not likely to adversely affect Pima pineapple cactus.

The USFWS has no designated critical habitat mapped within the Siting Study Area.

Project construction would have no effect on other species listed under the ESA.

It was also determined that bald and golden eagles, protected under the Bald and Golden Eagle Protection Act, may be present and may be impacted by the Project.

The Sonoran desert tortoise, managed by USFWS under a Candidate Conservation Agreement, was determined present based on regional occurrence data from the Arizona Game and Fish Department and resident accounts. The Project may impact individuals but is not likely to result in a trend toward Federal listing or a loss of viability.

Consultation may be required in the event pre-construction surveys determine that these species are present and may be impacted by the Project. Although formal consultation is not anticipated to be required, TEP submitted the BE to USFWS and the Arizona Game and Fish Department on September 9, 2026 for a courtesy consultation.

B.3.2 U.S. Army Corps of Engineers (USACE)

TEP conducted a desktop evaluation and site visits to determine whether the Project is likely to impact USACE Waters of the U.S., including washes, wetlands, or navigable waters in the Siting Study Area. The Santa Cruz River is an intermittent waterway within the Area of Analysis, located just east of the Phase 2 Route end point (Circuit Tie). Although the Santa Cruz River is located within the Area of Analysis, construction in the area of the river will be limited to the installation of a single structure outside of the jurisdictional boundaries of the USACE.

Several ephemeral drainages are crossed by the Phase 1 and Phase 2 Routes (see map Exhibit C-1 for a visual representation of the locations of these drainages) (USFWS 2022). These drainages will be spanned. When working in close proximity to any ephemeral drainage, Best Management Practices, as described in Exhibit D, would be utilized. As a result, there will be no direct or indirect impacts to wetlands or Waters of the U.S., and no permits will be required from USACE.

B.3.3 Federal Aviation Administration (FAA)

Based on initial outreach with Ryan Airfield and Tucson Airport Authority representatives, TEP utilized the Federal Aviation Administration (FAA) Obstruction Evaluation/Airport Airspace Analysis Pre-Screening Tool to determine if any of the proposed transmission line structures (based on preliminary design) would require FAA notice (FAA 2026). The results of the pre-screening indicated that portions of the Project requiring new structures may affect the National Airspace System. The pre-screening determined that TEP will be required to notice FAA by submitting Form 7460 for each new structure at least 60 days prior to construction. Once a route is approved and a final

design is completed, TEP will submit the notice and coordinate with FAA to mitigate any potential impacts.

B.3.4 National Environmental Policy Act (NEPA)

The Project crosses lands managed by the Bureau of Land Management (BLM). This constitutes a Federal Nexus; therefore, the Project is subject to NEPA, pursuant to Section 102.

Initial discussion with BLM indicates that the Project would likely qualify for a Categorical Exclusion. Once a route is approved and a final design is completed, TEP would apply for a right-of-way from the BLM and conduct any additional analysis necessary to comply with NEPA and obtain BLM permission to construct portions of the Project on federal land.

B.4 References

FAA. 2026. *Federal Aviation Administration Obstruction Evaluation/Airport Airspace Analysis*.
<https://oeaaa.faa.gov/oeaaa/oe3a/main/#/home>

USFWS. 2022. *National Wetlands Inventory*. Usgs.gov.
<https://fwsprimary.wim.usgs.gov/wetlands/apps/wetlands-mapper/>

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EXHIBIT B-1

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Exhibit B-1: Siting Study

B-1.1 Introduction

The Southwest Tucson Reliability Project (Project) will create a looped transmission system to provide greater reliability, power quality, and capacity to southwest Tucson. New transmission facilities will replace older, lower-voltage equipment that cannot keep pace with customers' growing energy needs.

The Project will include two new 138-kilovolt (kV) circuits and a new 138-kV substation. Phase 1 is a 138-kV transmission line from TEP's existing Midvale Substation, located near South Mission and West Drexel roads, to TEP's planned Tucson Estates Substation, located near West Ajo Highway and South Tucson Estates Parkway. The substations are located approximately 5 miles apart.

Phase 2 is a 138-kV transmission line from the planned Tucson Estates Substation that will tie into an existing 138-kV transmission line, owned by TEP, located near West Valencia Road and Calle Santa Cruz. These two interconnection points are approximately 8 miles apart.

The planned Tucson Estates Substation will encompass approximately 15 acres on the southeast corner of West Ajo Highway and South Tucson Estates Parkway.

The Project will help reduce the duration and frequency of power outages in the area, while also supporting options for maintenance and emergency repairs.

Typical transmission poles will stand 75-85 feet tall and 600-1,000 feet apart. Some poles may be taller to accommodate site-specific clearance issues. Structures will be designed to accommodate two circuits using tubular, weathering steel monopoles with non-reflective surfaces. Conductors (wires) will have a non-specular finish to reduce visibility.

B-1.2 Background

The Project is designed to provide greater capacity to help meet the current and future energy needs of the community. The creation of a looped transmission system will provide redundancy and greater service stability, improving service reliability to customers. The Project will mitigate potential reliability issues by allowing for the eventual retirement of two older 46-kV substations.

B-1.3 Objective and Methodology

The objective of this study was to identify alternative route corridors, including a preferred route, to connect (1) the existing Midvale 138-kV Substation to the planned Tucson Estates 138-kV Substation and (2) the planned Tucson Estates 138-kV Substation to tie into TEP's transmission system via a connection to an existing 138-kV circuit (proposed Circuit Tie).

The methodology for siting the alternative routes included five phases. These phases were viewed as parts of an iterative process, where TEP can revisit earlier phases as necessary (Figure B-1.1).

TEP's design philosophy emphasizes the following guidelines:

- Route alignment along existing linear features, such as road rights-of-way (ROW) and utility corridors, to reduce impacts on surrounding areas.
- Collaborative engagement with local stakeholders and community members to identify community values and concerns and explore alternative solutions that reflect the community's interests.

The objective of the study was to identify potential transmission line corridor alternatives for the Project. The resulting alternative routes have been carried forward in the application for a Certificate of Environmental Compatibility (CEC) for consideration and decision by the Arizona Corporation Commission (ACC).



Figure B-1.1 Project Phases

B-1.4 Phase 1: Pre-Analysis

B-1.1.4.1 Study Area

The first step in the pre-analysis phase was to define the Siting Study Area. TEP considered the following factors in developing the Siting Study Area:

- The fixed end points of the Project
- High-level opportunities and constraints
- Direct route opportunities that would minimize the cost of the Project
- Existing utility corridors
- Linear features such as roadways and washes
- Existing residential, commercial, and other developments
- Presence of existing infrastructure and ROWs
- Potential for adverse or significant environmental impacts
- Land jurisdiction
- Presence of sensitive and/or protected lands
- Topography

The Siting Study Area was first presented to stakeholders and the public in March 2026 (Figure B-1.2).

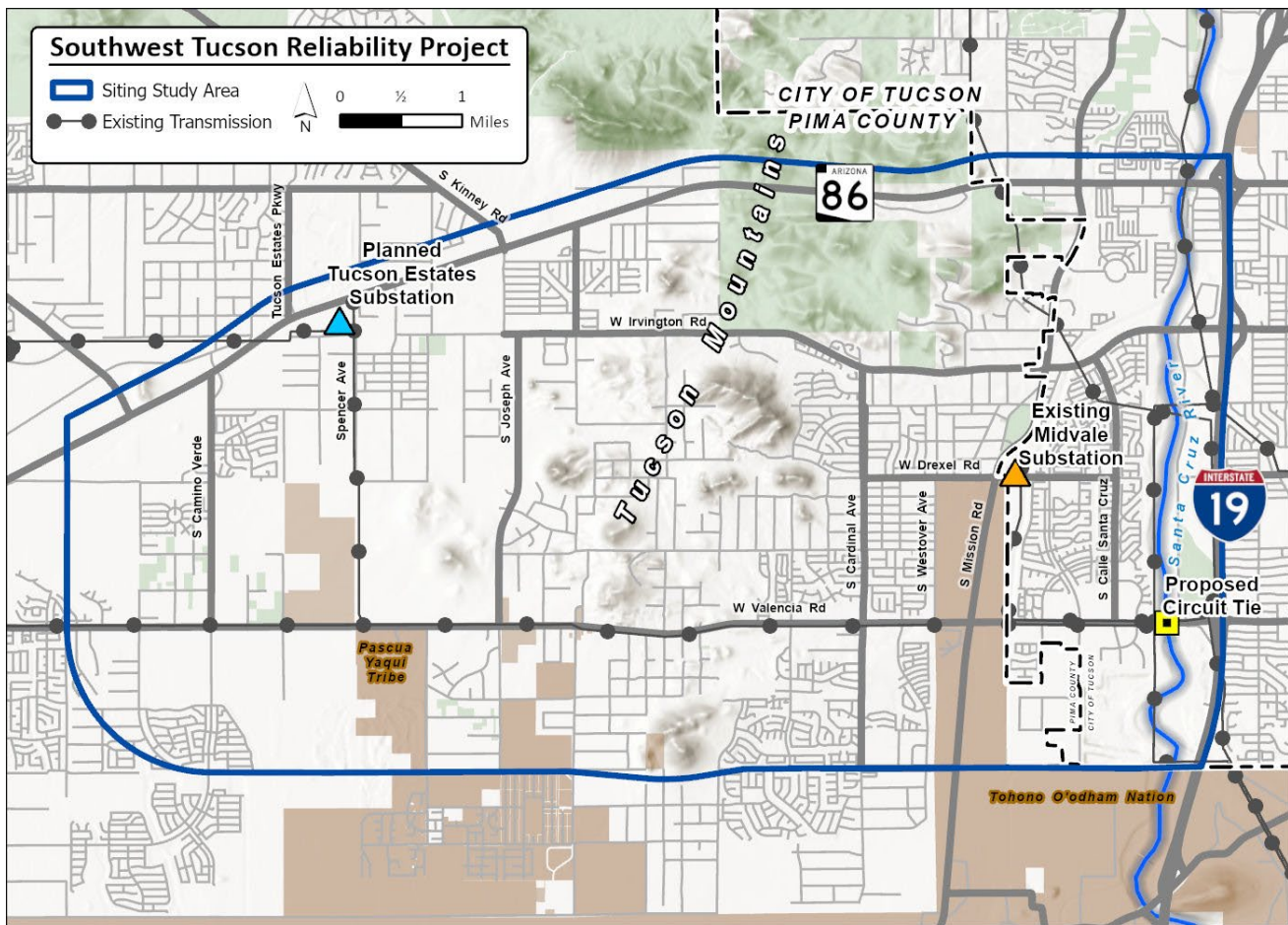


Figure B-1.2 Siting Study Area

B-1.1.4.2 Opportunities/Constraints

The second step was to identify opportunities and constraints (Figure B-1.3) to site a transmission line within the Siting Study Area.

Opportunities included:

- Major roads, which are generally wider and can easily accommodate the space requirements needed for a transmission line.
- Existing utility infrastructure, such as electric transmission and sub-transmission lines or major transmission pipelines. These are areas with an established right-of-way and have already been disturbed for a similar use.
- Existing or planned industrial land use. There are generally less sensitivities to a transmission line in an industrial area; and
- Vacant land, open space, or natural linear features such as washes.

While these are not the only areas that might be compatible with a transmission line, and there is no guarantee a transmission line could be feasibly constructed in one of these corridors, identifying opportunities and constraints served as a starting point for siting.

Constraints can include factors such as less compatible land uses, land use regulations, terrain, or environmental sensitivities that would make it more challenging to construct and maintain a transmission line.

Constraints included:

- Constructability concerns, such as rugged terrain
- Sensitive/Conservation lands
- Scenic/Gateway corridors
- Residential neighborhoods

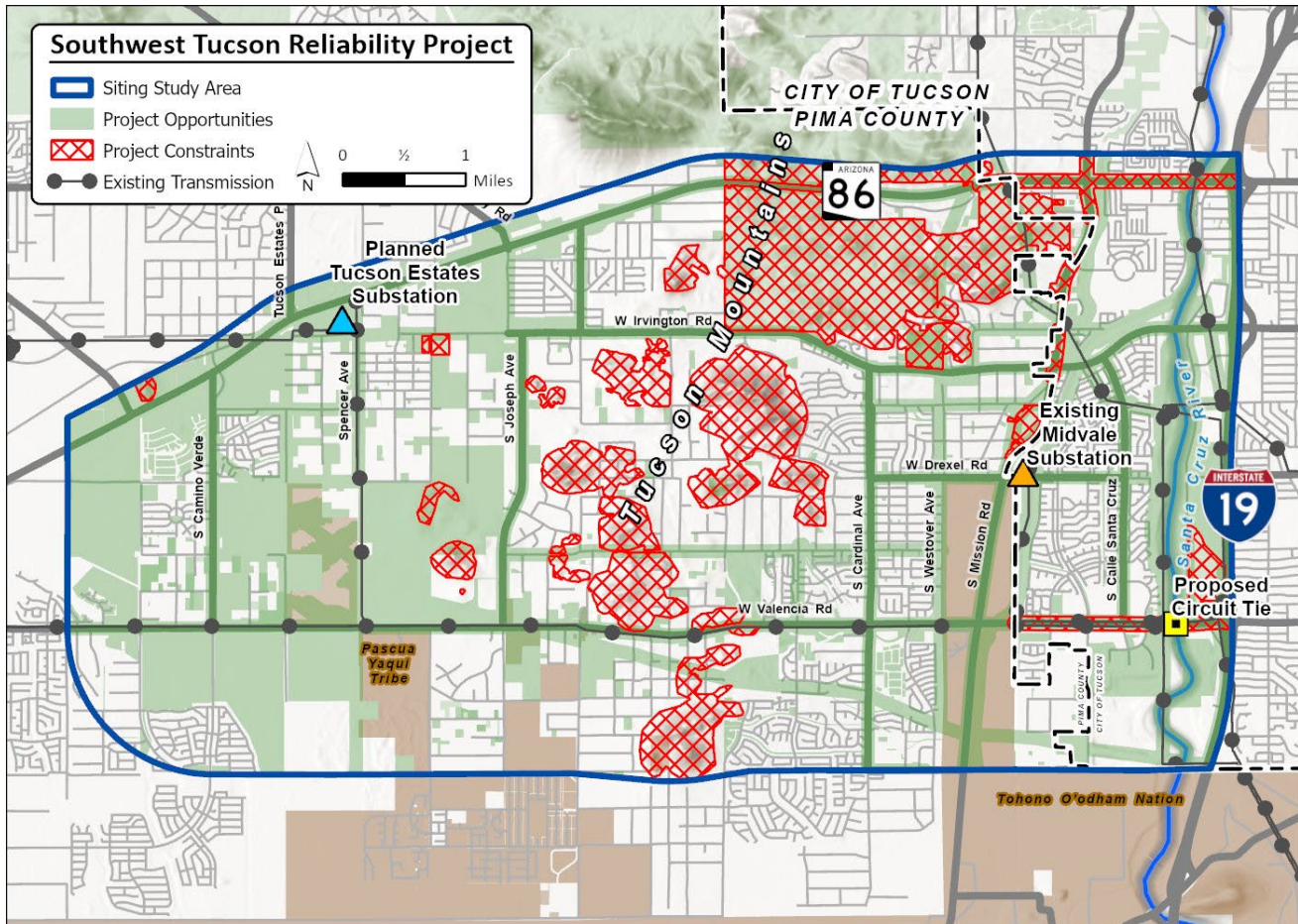


Figure B-1.3 Opportunities and Constraints

B-1.1.4.3 Criteria

The third step was to define evaluation criteria, informed by public and stakeholder input, for analysis in Phases 3 and 4 of the siting study. TEP identified 16 criteria to be used during the evaluation process. The criteria are aligned with ACC CEC decision factors (Arizona Revised Statute § 40-360.06) and TEP's design philosophy and construction standards:

1. Existing and planned land use that is compatible with use as a transmission line corridor. Public input focused on using the Valencia Road commercial corridor that is compatible with a transmission line.
2. Presence/absence of residential use adjacent to the corridor, as measured by whether the Project is

- adjacent to existing residences and/or planned future development on one or both sides of the corridor.
3. Presence/absence of conservation/preservation lands and whether siting is permissible.
 4. Special status species and/or habitat, as measured by the presence/absence of potentially suitable habitats, including five general biological resource areas: special status species, water resources, wildlife linkages, riparian habitat, and native plants.
 5. Noise compatibility, as measured by proximity to Sensitive Receptors.
 6. Communication signal compatibility, as measured by proximity to registered communication sites.
 7. Listed historic properties, eligible cultural resources, and districts adjacent to the corridor, as measured by proximity to these cultural resources.
 8. Scenic areas, as measured by proximity to scenic areas, parks, trailheads, etc.
 9. Residential visual impacts, as measured by distance and whether the Project is in foreground, middleground, or background views. Public input focused on visual impacts to the Tucson Mountains viewshed from residential properties.
 10. Total Environment, including existing land use, geology and soils, biological resources, cultural, and visual resources, as measured by scores determined by Subject Matter Experts in the Compatibility Assessment.
 11. Engineering and Construction, including:
 - a. Presence/ absence of an existing corridor and ability to use.
 - b. 100-Year floodplain, as measured by location and engineering design.
 - c. Room for separation from existing utilities in the corridor.
 - d. Presence/absence of extreme terrain that may impact construction and maintenance.
 - e. Ability to construct and maintain the transmission line.
 12. System Operation, as measured by operational concerns related to safety, reliability, and customer impact as a result of outages.
 13. Compliance with State, County, and/or City Requirements.
 14. ROW Acquisition, as measured by ability to use existing road and utility ROWs and whether private easements would be required.
 15. Cost of construction.
 16. Public/Stakeholder feedback, as measured by level of support or opposition.

B-1.1.4.4 Field Visits

In addition to learning about the Siting Study Area from the public and stakeholders, it was important for the Project team to become familiar with the area, including its character, geography, existing land uses, and the community. Multiple field visits occurred during Phase 1 of the siting process.

B-1.1.4.5 Preliminary Segments

Next, Preliminary Segments were identified within the boundaries of the Siting Study Area. Each opportunity was reviewed by TEP's project engineers. These reviews took place both in the field and by desktop. If engineers believed a transmission line could reasonably be constructed and operated within the area of opportunity, then the area of opportunity was designated as a Preliminary Segment.

A total of 158 segments were identified as "Preliminary Segments" (Figure B-1.4).

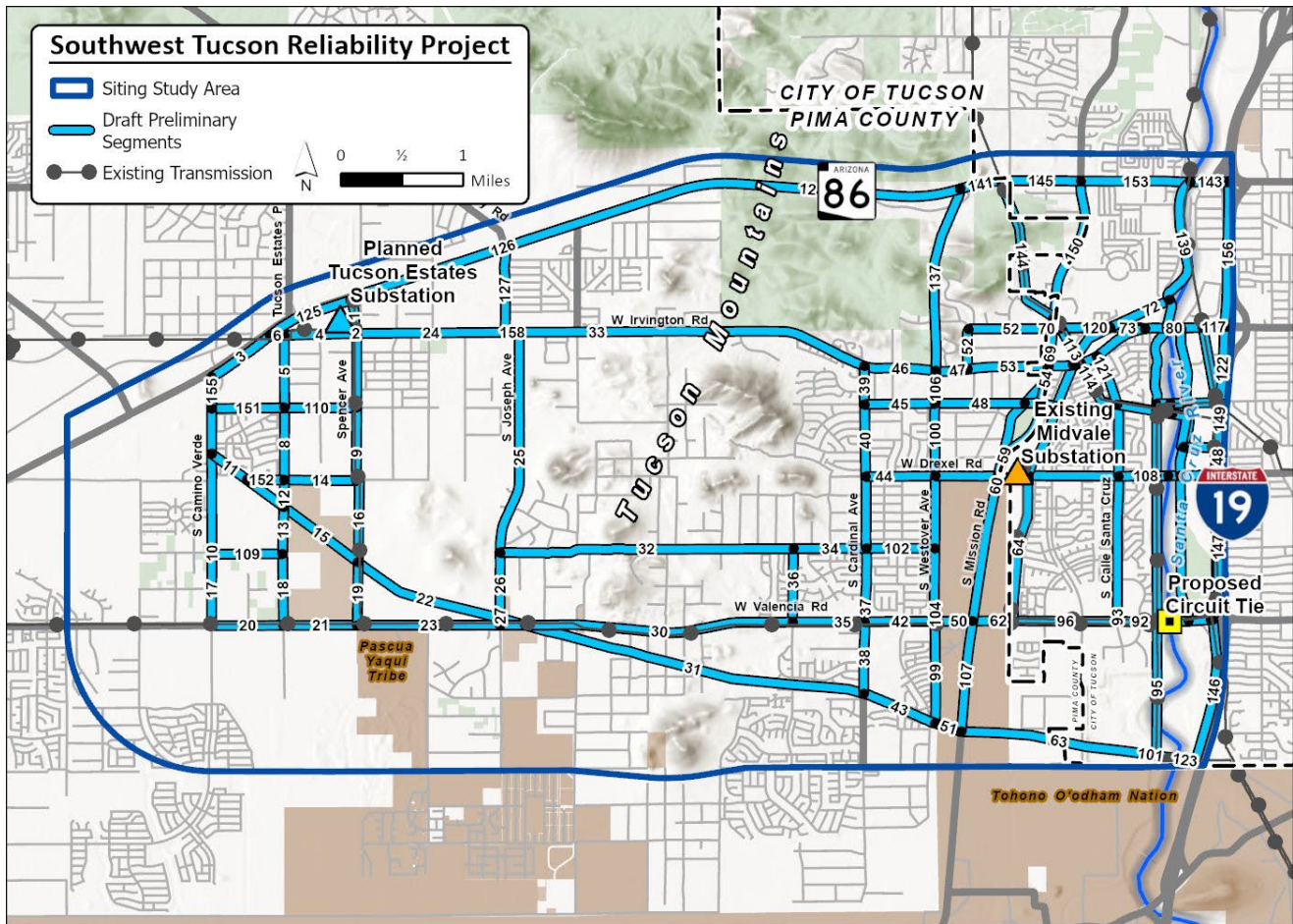


Figure B-1.4. Preliminary Segments

B-1.1.4.6 Public and Stakeholder Engagement

A public open house meeting (March 5, 2026) and a virtual stakeholder meeting (March 4, 2026) were held during Phase 1 of the Project, as detailed in Exhibit J.

As part of this first round of public outreach and engagement, TEP provided an introduction to the Project, including the need and purpose for it. In addition, several products developed as part of the pre-analysis were also shared, including the:

1. Project Study Area
2. Draft Opportunities and Constraints
3. Draft Evaluation Criteria
4. Draft Preliminary Segments

B-1.5 Phase 2: Data Inventory

To apply the ACC evaluation criteria listed in A.R.S. § 40-360.06, as well as TEP's additional criteria listed in Section 1.4.3 above, TEP collected applicable data and reports. These data and reports were used to create spatial data models for use in Phase 3 suitability assessment and to inform subject-matter experts' evaluation during the Phase 4 compatibility analysis. Phase 2 did not directly involve the public or stakeholders, but part of the data-collection

effort included compiling the various comments and concerns received through outreach efforts.

Data gathered included:

- General land use plans
- Zoning
- Existing and planned land uses
- Conservation/preservation lands and easements
- Critical habitat
- Wildlife connectivity zones
- Wildlife habitat
- Important Bird Areas
- Existing and proposed sensitive receptors
- FCC-licensed communication sites
- Class I cultural resource survey data - listed and eligible sites
- Archaeological zones
- Historic zones and districts
- Scenic/gateway corridors
- BLM visual resources
- Socioeconomics
- Geology and soils
- Slopes
- Existing well sites
- Airspace height limitations
- Floodplains
- Existing linear features – electric distribution and transmission lines, gas pipelines
- Agency/Stakeholder input

TEP also developed two data sets including:

- Existing and future residential land use
- Views of mountains from residential areas

B-1.6 Phase 3: Suitability Assessment

B-1.1.6.1 Suitability Assessment

Phase 3 of the siting process applied the raw data collected in Phase 2 to create spatial models through which the Preliminary Segments could be evaluated for higher or lower levels of suitability.

Using ESRI ArcGIS Pro GIS software, 9 suitability criteria models were created using the raw data that was collected. These models included:

1. Existing Plans
2. Existing and Future Residential Land Use
3. Conservation and Preservation
4. Biological Resources
5. Noise and Communications

6. Cultural Resources
7. Scenic and Visual Resources
8. Total Environment
9. Construction and Maintenance

The suitability criteria models were then combined and weighted to create 4 different composite suitability models, including the Balanced Model, the Environmental Model, Residential and Visual Model, and the Construction and Maintenance Model. The Balanced Model weighted each of the 9 data criteria models equally, the Environmental Model weighted environmental factors higher, the Residential and Visual Model weighted residential viewsheds and proximity to residential areas higher, and the Construction and Maintenance Model weighted those factors higher.

See Appendix A for the procedure followed to create the suitability criteria models, as well as the composite suitability models.

B-1.1.6.2 Refined Segments

The product of Phase 3 of the siting process was a set of refined segments.

Using the 158 previously identified Preliminary Segments and each composite suitability model developed above, TEP used the ESRI ArcGIS “Least Cost Path” tool to develop “paths” within the Siting Study Area. The tool was used in two ways; first unconstrained to identify the most suitable path based on each composite suitability model; with a second model run that was constrained and set to prohibit following a path through an area previously identified as a constraint (see Section B-1.1.4.2 above).

The paths that were identified (comprised of the Preliminary Segments joined together) were then visually evaluated by subject matter experts to determine which paths were most suitable and whether additional paths were of substantially similar suitability to see if other, un-used segments should be considered.

This exercise resulted in the elimination of 90 segments. These eliminated segments, as well as the rationale for elimination are summarized in Table B-1.1.

Refined segments are illustrated in Figure B-1.5.

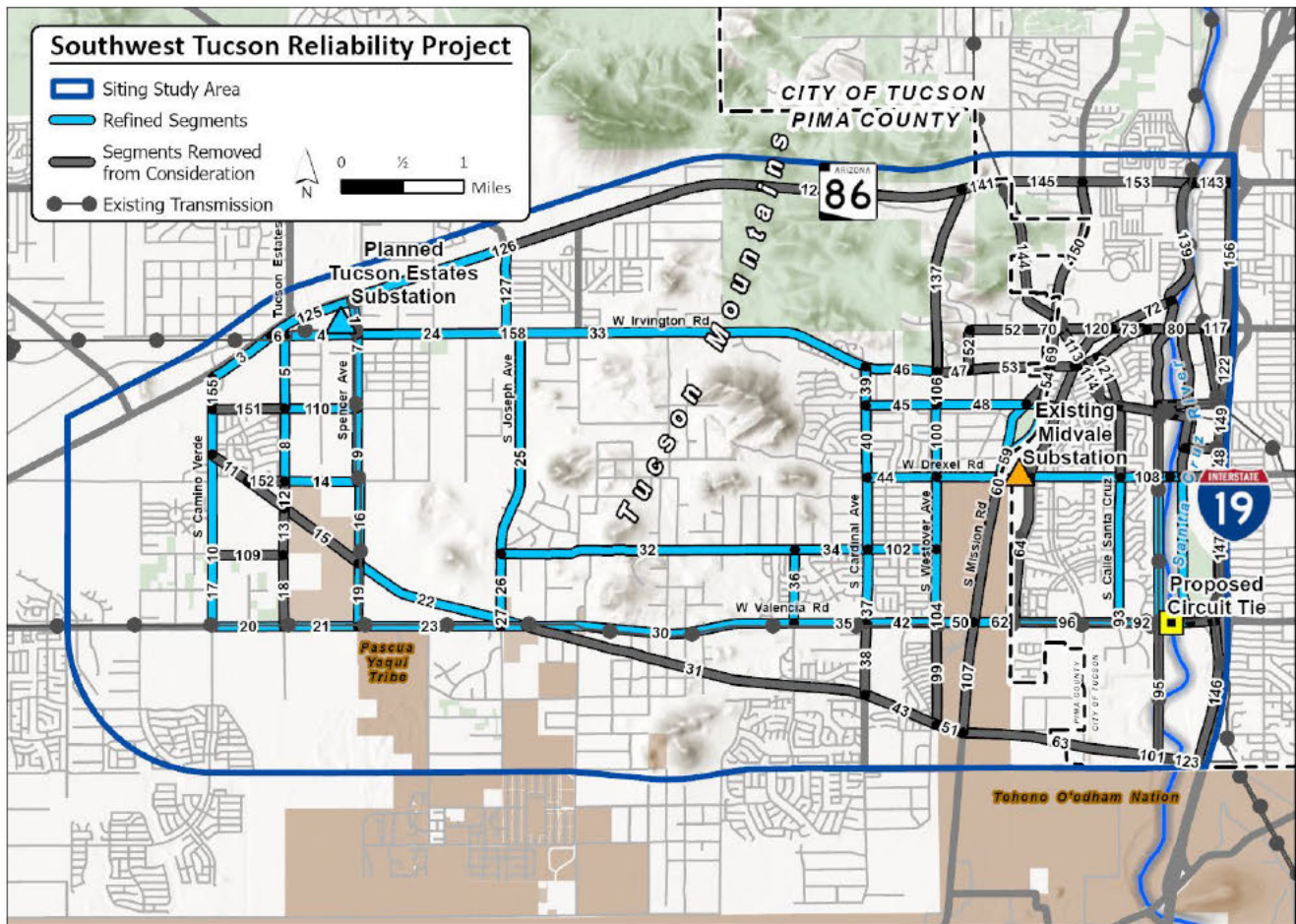


Figure B-1.5. Refined Segments

Table B-1.1. Phase 3 Segments Eliminated

Preliminary Segment	Description
2	Segment combined with segment 24.
11	Less suitable segment due to siting adjacent to existing El Paso gas line.
12	Requires segment 13 to complete route.
13	Requires segments 12 and 18 to complete route.
15	Less suitable segment due to siting adjacent to existing El Paso gas line.
18	Requires segment 13 to complete route.
31	Less suitable segment due to siting adjacent to existing El Paso gas line.
38	Requires segments 31 and 43 to complete route.
43	Requires segment 31 and 51 to complete route.
47	Requires segment 53 to complete route.
51	Requires segment 43 and 63 to complete route.
52	Requires segment 47 and 70 to complete route.
53	Requires segment 47 and 68 to complete route.
54	Requires segment 55 to complete route.
55	Requires segment 54 to complete route.

Preliminary Segment	Description
56	Requires segment 54 to complete route.
60	Less suitable segment as it bisects the Tohono O'odham - San Xavier District and existing 46-kV line serving outside of the Siting Study Area.
63	Less suitable segment due to siting adjacent to existing El Paso gas line.
64	Less suitable segment due to siting along existing dual circuit 138-kV transmission line.
65	Requires segment 67 to complete route.
66	Less suitable segment due to siting within the existing flood control district - West Branch of the Santa Cruz channel.
67	Less suitable segment due to siting within the existing flood control district - West Branch of the Santa Cruz channel.
68	Requires segments 53 and 76 to complete route.
69	Less suitable segment due to siting within the COT Gateway Corridor potentially requiring additional permitting.
70	Requires segments 52 and 120 to complete route.
71	Less suitable segment due to siting within the existing flood control district - West Branch of the Santa Cruz channel.
72	Less suitable segment due to siting within the existing flood control district - West Branch of the Santa Cruz channel.
73	Requires segments 74 and 120 to complete route.
74	Requires segments 73 and 80 to complete route.
75	Requires segments 74 and 85 to complete route.
76	Requires segments 68 and 85 to complete route.
77	Requires segment 121 to complete route.
78	Requires segments 80 and 142 to complete route.
79	Requires segments 80 and 83 to complete route.
80	Requires segments 74 and 81 to complete route.
81	Requires segments 80 and 117 to complete route.
82	Less suitable segment due to siting along existing dual circuit 138-kV transmission line.
83	Less suitable segment due to siting along existing dual circuit 138-kV transmission line.
84	Less suitable segment due to siting along existing dual circuit 138-kV transmission line.
85	Requires segments 75 and 76 to complete route.
86	Requires segments 79 and 136 to complete route.
88	Less suitable segment due to conflict with existing WAPA 230-kV line.
89	Requires segments 90 and 133 to complete route.
90	Less suitable segment due to siting within the COT Gateway Corridor potentially requiring additional permitting.
94	Requires segments 69 and 150 to complete route.
95	Less suitable segment due to siting along existing dual circuit 138-kV transmission line.
99	Less suitable segment due to siting adjacent to existing El Paso gas line.
101	Requires segments 63 and 123 to complete route.
107	Less suitable segment due to siting adjacent to existing San Xavier District and existing 46-kV line serving outside of the Study Area.
109	Requires segments 18 and 13 to complete route.
111	Less suitable segment due conflict with existing WAPA 230-kV line.
112	Less suitable segment due conflict with existing WAPA 230-kV line.

Preliminary Segment	Description
113	Less suitable segment due conflict with existing WAPA 230-kV line.
114	Less suitable segment due conflict with existing WAPA 230-kV line.
115	Less suitable segment due conflict with existing WAPA 230-kV line.
116	Less suitable segment due conflict with existing WAPA 230-kV line.
117	Requires segments 81 and 122 to complete route.
118	Requires segments 72 and 78 to complete route.
119	Less suitable segment due to siting along existing dual circuit 138-kV transmission line.
120	Requires segments 70 and 73 to complete route.
121	Requires segments 77 and 73 to complete route.
122	Requires segments 149 and 156 to complete route. Less suitable segment due to conflict with ADOT I-19 ROW.
123	Requires segments 101 and 146 to complete route.
124	Requires segments 138 and 148 to complete route.
128	Less suitable segment due to expanse within Pima County Scenic Route and public preference against transmission lines in Ajo Hwy corridor.
131	Requires segment 132 to complete route.
132	Requires segments 131 and 148 to complete route.
133	Requires segments 89 and 147 to complete route.
134	Less suitable segment due to siting within the existing flood control district - West Branch of the Santa Cruz channel.
135	Requires segments 82 and 149 to complete route.
136	Requires segment 86 to complete route.
137	Less suitable segment due to siting adjacent to existing El Paso gas line.
138	Less suitable segment due conflict with existing WAPA 230-kV line.
139	Less suitable segment due to siting along existing dual circuit 138-kV transmission line.
140	Less suitable segment due conflict with existing WAPA 230-kV line.
141	Less suitable segment due to expanse within Pima County Scenic Route and public preference against transmission lines in Ajo Hwy corridor.
142	Less suitable segment due to siting along existing dual circuit 138-kV transmission line.
143	Less suitable segment due to siting within the COT Gateway Corridor potentially requiring additional permitting.
144	Less suitable segment due conflict with existing WAPA 230kV line.
145	Less suitable segment due to siting within the COT Gateway Corridor potentially requiring additional permitting.
146	Less suitable segment due conflict with existing WAPA 230-kV line.
147	Less suitable segment due conflict with ADOT I-19 ROW and existing WAPA 230-kV line.
148	Less suitable segment due conflict with ADOT I-19 ROW and existing WAPA 230-kV line.
149	Less suitable segment due conflict with ADOT I-19 ROW and existing WAPA 230-kV line.
150	Less suitable segment due to siting within the COT Gateway Corridor potentially requiring additional permitting.
151	Less suitable due to lack of public ROW.
152	Requires segments 11 and 12 to complete route.
153	Less suitable segment due to siting within the COT Gateway Corridor potentially requiring additional permitting.
156	Less suitable segment due conflict with ADOT I-19 ROW.

Preliminary Segment	Description
157	Less suitable segment due conflict with existing WAPA 230-kV line.

B-1.1.6.3 Public and Stakeholder Engagement

A public open-house meeting (May 14, 2026) and a virtual stakeholder meeting (May 13, 2026) were held during Phase 3 of the Project, as detailed in Exhibit J.

As part of this second round of public outreach and engagement, TEP provided a report back on what we had learned from the public and stakeholders in Phase 1, and how that feedback had been incorporated into the Phase 3 Suitability Assessment. In addition, several products developed as part of Phase 3 were also shared, including the:

- Suitability Criteria Models
- Composite Suitability Models
- What we heard from the public/stakeholders
- Draft Refined Segments

Comments were in line with the first phase of engagement.

B-1.7 Phase 4: Compatibility Analysis

Following the second round of public and stakeholder engagement, each of the 68 refined segments was evaluated for compatibility with the siting evaluation criteria listed in Section 1.4.3. These criteria include statutory factors under A.R.S. § 40-360.06; TEP-specific criteria, such as constructability and system operations; and community-based criteria identified through public and stakeholder engagement, including proximity to residences and scenic views of the Tucson Mountains.

Subject matter experts reviewed each Refined Segment individually, drawing on prior research, field visit observations, and professional experience. They assessed the feasibility and potential impacts of constructing and maintaining a transmission line along each segment. Each segment was then assigned a rating of 1, 2, 3, or 100, with the values generally interpreted as follows:

- 1 = compatible
- 2 = possible negative impact
- 3 = known negative impact
- 100 = unacceptable impacts that likely could not be mitigated

B-1.1.7.1 Preliminary Alternative Routes

The scores, assigned in the first part of Phase 4 were averaged across all factors to produce an overall compatibility score for each Refined Segment. The averaged scores ranged from 1.0 to 1.4.

Recognizing the importance of public and stakeholder input in the siting process, TEP developed a Public/stakeholder-weighted average compatibility score. Evaluation criteria identified as more important to the public, based on the amount and nature of feedback received, were weighted more heavily in the scoring. The assigned weighting for each criterion is shown below. These criteria included:

- Presence/absence of residential use adjacent to the corridor (25%)
- Special status species and/or habitat and general wildlife (5%)
- Listed historic properties, eligible cultural resources, and districts adjacent to the corridor (5%)
- Scenic areas (10%)
- Residential visual impacts (35%)
- Overall public support or opposition to a specific route (20%)

The Public/stakeholder-weighted average scores ranged from 1.0 to 2.75.

The final scores (individual criteria, overall compatibility, and public/stakeholder weighted) were reviewed once more by subject matter experts and each Refined Segment was either eliminated from consideration or carried forward as part of a Draft Alternative Route. This process resulted in the elimination of 38 refined segments. The remaining 30 segments were simplified and combined into a single route for Phase 1 of the Project, with two sub-routes (Phase 1A and 1B); and a single route for Phase 2 of the Project (Figure B-1.6).

Details, including individual scores, of the Phase 4 compatibility analysis are included in Appendix B.

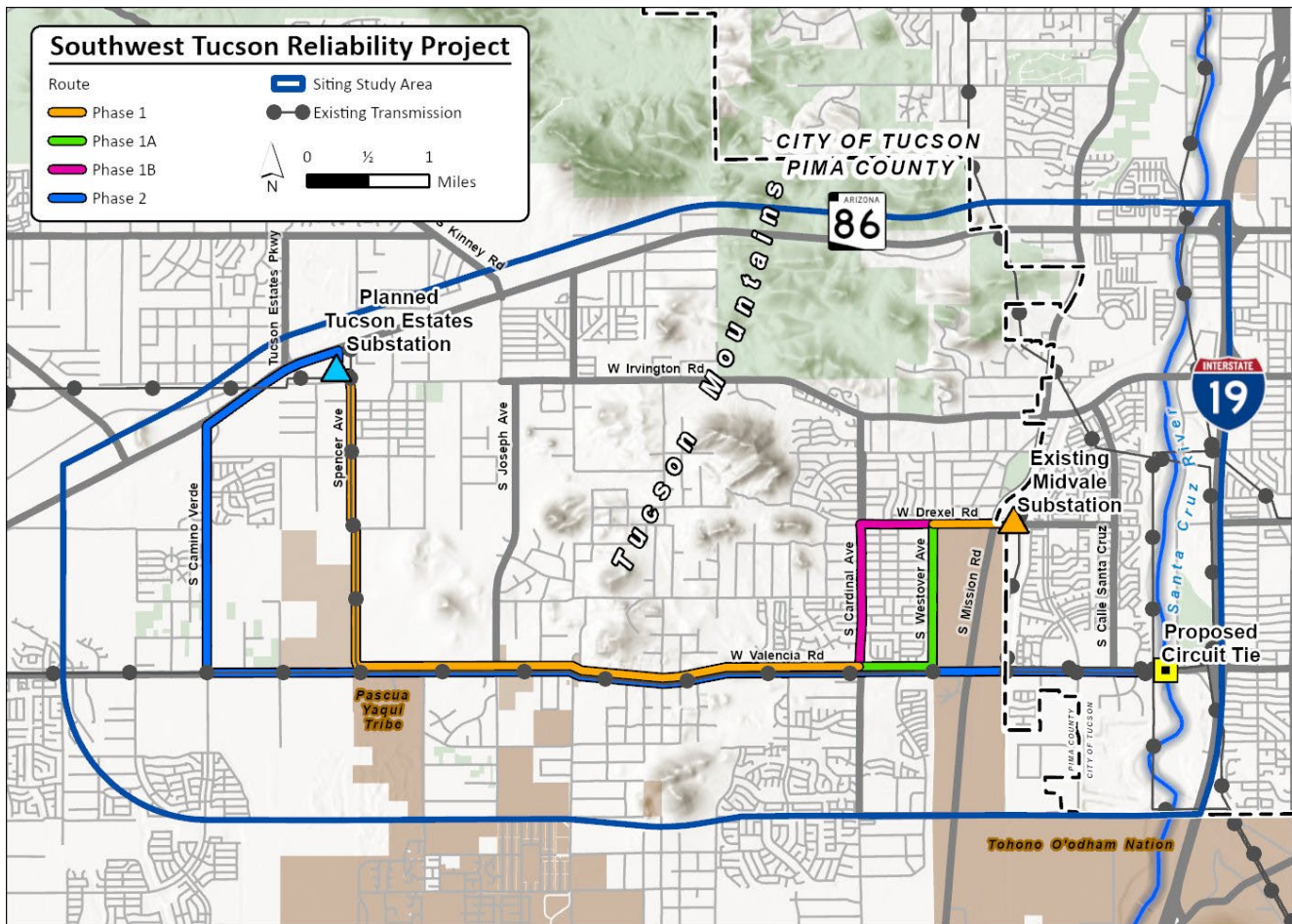


Figure B-1.6. Draft Route Alternatives

B-1.1.7.2 Draft Alternative Routes by Construction Type

In part, due to public and stakeholder feedback requesting that existing facilities be used, where possible, throughout the siting study, TEP identified existing facilities that could be re-built, re-purposed, or modified to accommodate the Project. This included coordination with Western Area Power Administration, Bureau of Reclamation, and the Central Arizona Project to determine the feasibility of using and/or co-locating with their facilities. As a result, the proposed routes significantly reduce the amount of new build required, in line with comments from the public and stakeholders. The Draft Route Alternatives utilize a number of different construction methods including (Figure B-1.7):

- New build (20%)
- Add 138-kV circuit to existing structures (~9%)
- Re-energize existing 115-kV circuit to 138-kV circuit on existing structures (no ground disturbance required) (~26%)
- Re-build existing 46-kV circuit and structures to 46/138-kV double circuit structures (~10%)
- Re-build existing 46-kV circuit and structures to 138-kV circuit structures (~6%)
- Replace existing 46-kV circuit with 138-kV circuit on existing structures (no ground disturbance required) (~29%)

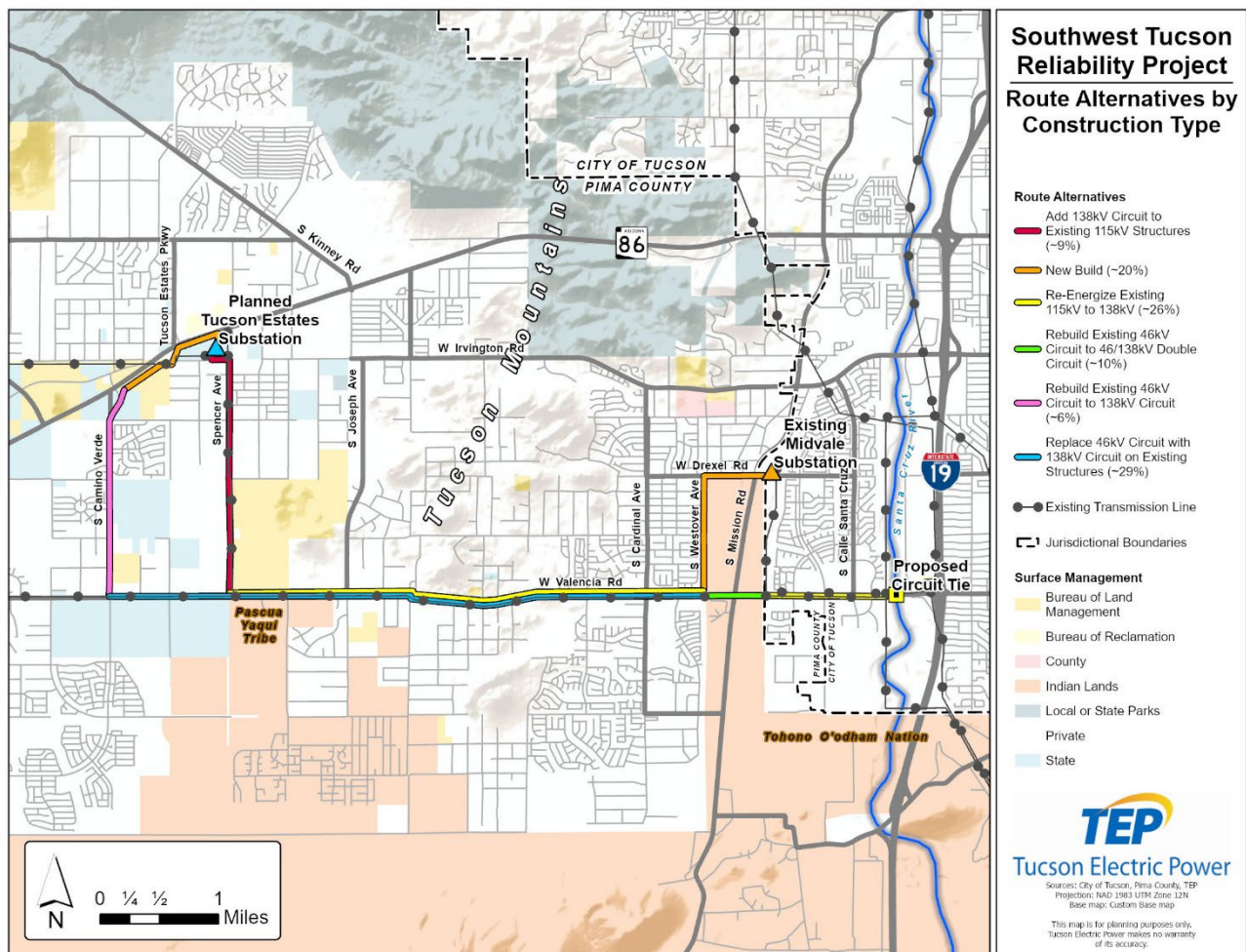


Figure B-1.7. Route Alternatives by Construction Type

B-1.8 Concept Evaluation

The final phase of the siting process was the Concept Evaluation. The purpose of this phase was to share the results of the siting effort in the form of Draft Route Alternatives and request feedback from specific stakeholders and the public, thereby confirming route acceptability. Since the siting process is designed to be iterative, this was an opportunity to step back and revisit an earlier phase of the process if needed. The feedback received did not indicate this to be necessary.

B-1.1.8.1 Public and Stakeholder Engagement

A third public open-house meeting (August 6, 2026) and a virtual stakeholder meeting (August 5, 2026) were held during Phase 5 of the Project, as detailed in Exhibit J. In addition, several products developed as part of Phase 5 were also shared, including the:

- Compatibility Assessment results
- What we heard from the public/stakeholders
- Draft Route Alternatives
- Draft Route Alternatives by Construction Type
- Draft Visual Simulations of Proposed Routes

B-1.1.8.2 Final Routes to Include in the CEC Application

As a result of public and stakeholder engagement and the results of the compatibility analysis, TEP identified a single route for each phase—Phase 1 Route and Phase 2 Route—to carry forward in the CEC application (Figure B-1.8). The Phase 1 Route utilizes the Phase 1A Alternative Route. TEP decided not to include the Phase 1B Alternative Route in the CEC application based on public feedback.

Route selection followed the comprehensive planning and siting process detailed in this report and considered each route's potential effects on environmental resources and land uses, public and stakeholder feedback reflecting community values, and technical factors such as constructability, maintenance, and cost.

Combined, 64% of the Phase 1 and Phase 2 routes will use existing facilities, and another 16% will rebuild existing 46-kV lines in place. Only 20% of the proposed routes will require new construction, most of which would be located along a state highway or adjacent to a natural gas pipeline utility corridor.

By maximizing the use of existing infrastructure, the proposed routes help reduce costs while minimizing environmental, land use, and visual impacts.

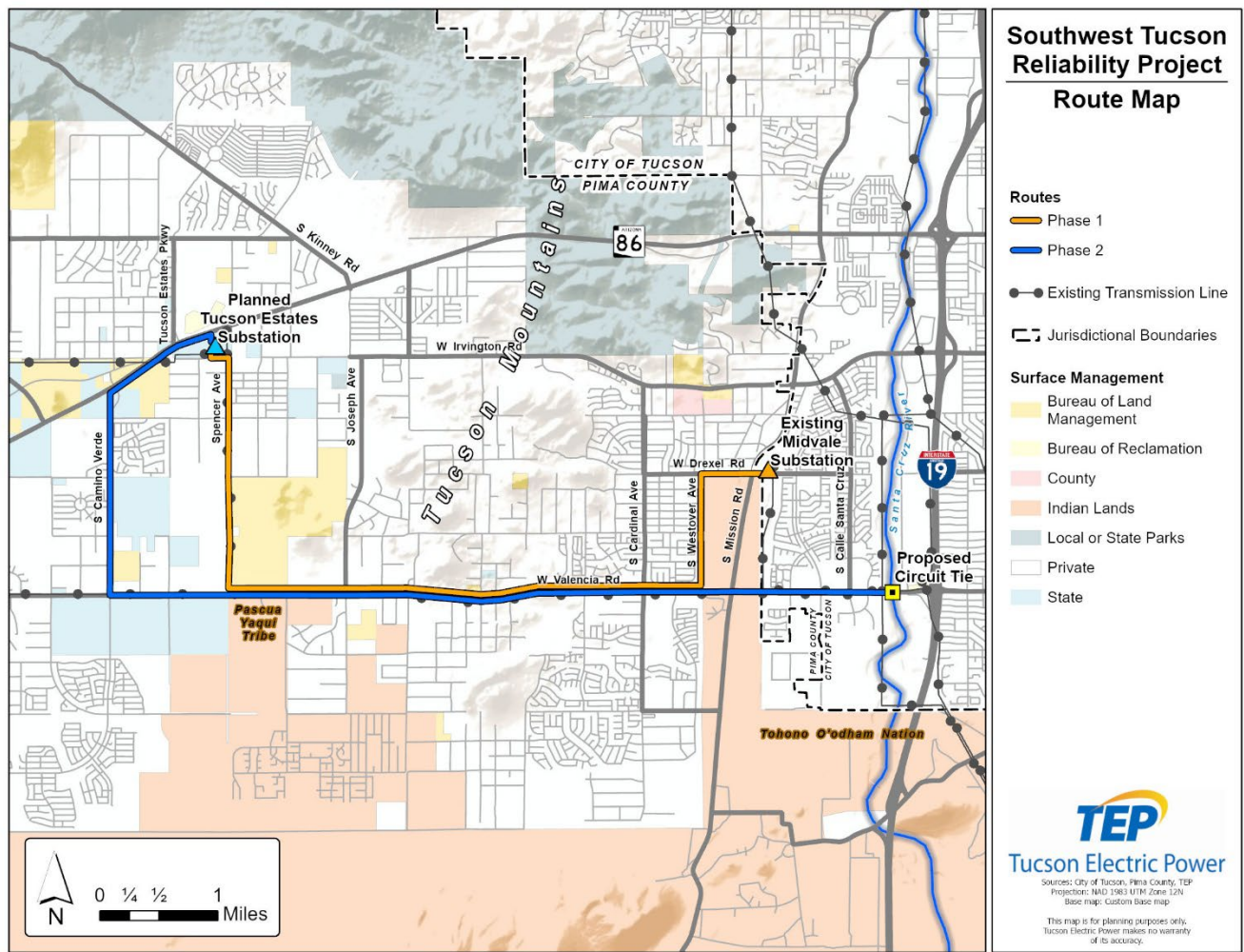


Figure B-1.8. Phase 1 and Phase 2 Routes

Appendix A:
Suitability Assessment Procedure

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Southwest Tucson Reliability Project

Procedure and criteria for creation of GIS suitability assessment model and identifying refined segments.

Alternative Analysis and Suitability Criteria and Procedure

In order to analyze segments to identify those most suitable based on many different factors, specific data models need to be created. These data models will then be combined and weighted based on different factors in order to evaluate alternatives best suited to minimizing impacts to different goals.

Procedure

Create an ArcGIS Pro project.

Note 1 – Every raster needs to cover the full size of the clip area otherwise raster calculator will not work and will only return a value where one exists for all input layers. The clip area will be the study area.

Note 2 – Use dissolve when creating buffers.

Note 3 – When using Feature to Raster tool, under Environments, set Extent to “Clip_Area”.

Note 4 – Use raster cell size 10m

1. Create the following datasets:

A. Criteria 1 – Existing Plans:

Detailed description:

- Existing plans will be inventoried and mapped, existing plans of Pima County, the COT and private entities for other developments within the Siting Study Area.

Phase 3 Suitability Assessment

Note A – Plans should be treated the same as an existing land use of the same type.

Data Required

- Existing land uses as zoned by City/County
- Filed Final Plats, Specific Plans, Planned Area Developments (PADs) or Development Plans
- Proposed plans identified through meetings with jurisdictions and/or public that have not been filed yet

Procedure to create Criteria 1 dataset: Digitized Existing Residential and Proposed Residential uses and collected Pima County and COT zoning parcel data. Then added a new field “Weight” as type Short to each of the datasets listed above – assign appropriate cell values as noted below; union those results with “Clip_Area” for each dataset; use those results with Feature to Raster classifying by “Weight”; then create a composite raster by weighting each of the datasets as indicated below and adding the results together.

- Proposed/Planned Land Use (50% weight)
- Cell Value = 10: High Density Residential (Urban)/Public/Quasi Public
- Cell Value = 8: Low/Medium Density Residential (Rural)
- Cell Value = 6: Commercial/Mixed Use
- Cell Value = 4: Industrial
- Cell Value = 3: Parks and Recreation
- Cell Value = 2: Agriculture/Ranching
- Cell Value = 1: Open Space
- Cell Value = 0: all other cells

- Zoning (50% weight)
- Cell Value = 10: High Density Residential (Urban)/Public/Quasi Public
- Cell Value = 8: Low/Medium Density Residential (Rural)
- Cell Value = 6: Commercial/Mixed Use
- Cell Value = 4: Industrial
- Cell Value = 3: Parks and Recreation
- Cell Value = 2: Agriculture/Ranching
- Cell Value = 1: Open Space
- Cell Value = 0: all other cells

B. Criteria 2 – Existing and Future Residential Land Use:

Detailed Description

- Low or Medium residential areas are defined as single-family residential areas by existing or future land use. High residential areas are defined as multi-family residential areas by existing or future land use. Purpose of this criterion is to identify routes that minimize construction and operation in residential areas.

Phase 3 Suitability Assessment

- Existing residential land use will be inventoried and mapped, with inventoried and mapped future residential land use added. Any preliminary links that pass through, or are located immediately adjacent to residential areas, as defined under the detailed description will be given a lower suitability for this criterion, where preliminary links that do not will be given a higher suitability for this criterion.

Data Required

- Existing “on the ground” land use
- Future land uses, identified in Criteria 1

Procedure to create criteria 2 dataset: create a single dataset of residential areas, as defined above. Add a new field “Weight” as type Short to the dataset listed above – assign appropriate cell values as noted below; union those results with “Clip_Area” for the dataset; use those results with Feature to Raster classifying by “Weight”.

- Cell Value = 10: Within Existing High Density Residential (Urban)/Public/Quasi Public
- Cell Value = 8: Within Existing Low/Medium Residential (Rural)
- Cell Value = 8: Within Planned High Density Residential (Urban)/Public/Quasi Public
- Cell Value = 6: Within Planned Low/Medium Density Residential (Rural)
- Cell Value = 0: all other cells

C. Criteria 3 – Conservation & Preservation

Detailed Description

- Conservation easements are included to account for protected lands where development is restricted or prohibited, ensuring that the analysis minimizes potential impacts to conserved open space and environmentally sensitive areas.

- Hillside Development Zones are incorporated to reflect areas with steep slopes and challenging terrain, where development is typically limited due to increased construction difficulty, erosion risk, and regulatory oversight. Restricted peaks and ridges are also included to account for prominent topographic features that are often subject to additional land use restrictions.

Phase 3 Suitability Assessment

- Conservation easements, Hillside Development Zones, and restricted peaks and ridges will be inventoried and mapped. Any preliminary links that pass through, or are located immediately adjacent to these constrained areas, as defined under the detailed description, will be assigned a lower suitability for this criterion. Preliminary links that avoid these areas will be assigned a higher suitability for this criterion.

Data Required

- Conservation Easements
- Hillside Development Zones
- Restricted peaks and ridges

Procedure to create criteria 3 dataset: Combine Hillside Development Zones and Restricted peaks and ridges into one layer and dissolving the results. Add a new field “Weight” as type Short to the dataset listed above – assign appropriate cell values as noted below; union those results with “Clip_Area” for the dataset; use those results with Feature to Raster classifying by “Weight”.

- Conservation Easements & Lands (75% weight)
 - Cell Value = 10: In conservation easement or other restricted conservation
 - Cell Value = 0: all other cells
- Hillside Development Zone/Restricted Peaks and Ridges (25% weight)
 - Cell Value = 10: In HDZ or Restricted Peaks and Ridges zone
 - Cell Value = 0: all other cells

D. Criteria 4 – Biological Resources: Fish, wildlife and plant life and associated forms of life on which they are dependent.

Detailed Description

- Sensitive plant and wildlife species and/or habitat is classified as areas designated as Final Critical Habitat for a federally-listed threatened, endangered, or candidate species. In addition, any areas classified as an Important Bird Area, a designated wildlife corridor, a National Wildlife Refuge (existing and/or proposed), or riparian/open water habitat within the study area would also be included.

Phase 3 Suitability Assessment

- Final critical habitat data, Important Bird Areas, and designated wildlife corridors, as well as riparian habitat data will be compiled. Any preliminary links that pass through areas of habitat, as defined under the detailed description, will be given a lower suitability for this criterion, where preliminary links that do not will be given a higher suitability for this criterion.

Data Required

- Final Critical habitat for Threatened and Endangered species

- Riparian and Open Water Areas
- Important Bird Areas
- Designated Wildlife Corridors
- National Wildlife Refuges (existing and proposed)

Procedure to create criteria 4 dataset: add a new field “Weight” as type Short to each of the datasets listed above – assign appropriate cell values as noted below; union those results with “Clip_Area” for each dataset; use those results with Feature to Raster classifying by “Weight”; then create a composite raster by weighting each of the datasets as indicated below and adding the results together.

- Critical Habitat (40% weight)
 - Cell Value = 10: critical habitat for T&E Species
 - Cell Value = 0: all other cells
- Wildlife Habitat (40% weight)
 - Cell Value = 10: Riparian Areas & Open Water
 - Cell Value = 8: Buffer around perennial/open water
 - Cell Value = 2: Scrub
 - Cell Value = 4: Forest & Woodland
 - Cell Value = 0: all other cells
- Wildlife Connectivity Zone (5% weight)
 - Cell value = 10: In wildlife connectivity zone
 - Cell Value = 0: all other cells
- Important Bird Areas (5% weight)
 - Cell value = 10: In IBA
 - Cell Value = 0: all other cells
- National Wildlife Refuge
 - Cell Value = 10: In a National Wildlife Refuge
 - Cell Value = 5: In a proposed National Wildlife Refuge
 - Cell Value = 0: all other cells

E. Criteria 5 – Noise & Communication: Noise emission levels and interference with communication signals.

Detailed Description

- Although a 138-kV transmission line is not a source of significant noise, certain land uses can be more sensitive to noise. For purposes of this study these sensitive noise receptors are classified as schools, hospitals, adult/childcare facilities, and churches. Further, for a very limited distance, transmission lines have the potential to create interference with certain communications signals. For purposes of this study an area within 250 feet of a communications antenna licensed by the Federal Communications Commission (FCC) will be assessed.

Phase 3 Suitability Assessment

- Geospatial data will be collected on all sensitive noise receptors and FCC licensed antennas as defined under the detailed description. Any preliminary links that pass through more of these

areas classified to have greater sensitivity will be given a lower suitability for this criterion, where preliminary links that pass through less will be given a higher suitability for this criterion.

Data Required

- Existing sensitive receptors: schools, hospitals, adult/childcare facilities, churches (within 500' of property boundary)
- Proposed sensitive receptors: schools, hospitals, adult/childcare facilities, churches (within 500' of property boundary)
- FCC data on licensed antennas (within 250' of antenna)
- Proposed licensed antennas (within 250' of antenna)

Procedure to create criteria 5 dataset: create 250-foot buffer around FCC licensed antenna sites; create 500-foot buffer around sensitive receptor locations; add a new field "Weight" as type Short to each of the datasets listed above – assign appropriate cell values as noted below; union each of these layers, with layers with highest cell value ranked in priority order; union those results with "Clip_Area"; finally use those results with Feature to Raster classifying by "Weight".

- Sensitive Receptors (75% weight)
 - Cell Value = 10: Located within buffered area for existing sensitive receptors
 - Cell value = 6: Located with buffered area for proposed sensitive receptors
 - Cell value = 0: all other cells
- FCC Licensed Antennas (25% weight)
 - Cell Value = 10: cell is located within buffered area for FCC licensed antennas
 - Cell Value = 0: all other cells

F. Criteria 6 – Historic properties and districts:

Detailed Description

- Historic properties are those listed, or eligible for listing, on the National Register of Historic Places and/or the Arizona Register of Historic Places.
- Archaeological sensitivity zones are mapped areas, generalized from known high-value cultural resource locations where ground disturbance within city's rights-of-way triggers requirements for archaeological monitoring and coordination with the city, and county staff for cultural resources preservation.

Phase 3 Suitability Assessment

- A qualified archaeologist will conduct a records review to identify known historic, pre-historic sites, and historic districts within the project study area. Any preliminary links that pass through or are located within the vicinity of a historic property or historic neighborhood, as defined under the detailed description will be given a lower suitability for this criterion, where preliminary links that do not will be given a higher suitability for this criterion.

Note A – define vicinity as within 500 feet, implies some sort of adjacency.

Data Required

- Listed or eligible sites (buffered by 500')
- COT Archaeological Sensitivity Zones
- SXD Mission Historic Preservation Zone (buffered by 500')

Procedure to create criteria 6 dataset: create buffers as noted above; add a new field "Weight" as type Short to each of the datasets listed above – assign appropriate cell values as noted below; union those results with "Clip_Area" for each dataset; use those results with Feature to Raster classifying by "Weight"; then create a composite raster by weighting each of the datasets as indicated below and adding the results together.

- Listed or eligible sites (50% weight)
 - Cell Value = 10: within site boundary
 - Cell Value = 6: within buffered distance to site
 - Cell Value = 0: all other cells
- COT Archaeological Sensitivity Zone (25% weight)
 - Cell Value = 10: within zone
- SWD Mission Historic Preservation Zone (25% weight)
 - Cell Value = 10: within Zone
 - Cell Value = 6: within buffered distance to Zone

G. Criteria 7 – Scenic & Visual Resources: Existing scenic areas, or visual resources at or in the vicinity of the proposed site.

Data Required

- Scenic roads, viewpoints, or areas designated for this such as the COT and Pima County Scenic and Gateway corridors (buffered by 200', and BLM's National Visual Resources Inventory (VRI)
- Area in between residential areas, adjacent to open space/vacant land with a view of the Tucson Mountains (buffered by 150m, 400m, and 800m)

Procedure to create criteria 7 dataset: create buffers as noted above; add a new field "Weight" as type Short to each of the datasets listed above – assign appropriate cell values as noted below; union those results with "Clip_Area" for each dataset; use those results with Feature to Raster classifying by "Weight"; then create a composite raster by weighting each of the datasets as indicated below and adding the results together.

- Scenic Areas (60% weight)
 - Cell Value = 10: cell is located within a designated Pima County or COT scenic corridor
 - Cell Value = 8: cell is located within a designated Pima County or COT gateway corridor
 - Cell Value = 8: cell is in an area identified as scenic
 - Cell Value = 10: cell is located in a BLM designated VRI Class I or Class 2 area
 - Cell Value = 0: all other cells
- Visual Resources (Views of Tucson Mountains from Residential Areas) (40% weight)
 - Cell Value = 10: cell is located within 150m of residential area with a view of Tucson Mtns

- Cell Value = 6: cell is located within 400m of residential area with a view of Tucson Mtns
- Cell Value = 4: cell is located within 800m of residential area with a view of Tucson Mtns
- Cell Value = 0: all other cells

H. Criteria 8 – Total Environment: Total environment of the area.

Detailed Description

- This is a broad criterion and is inclusive of several other more detailed criteria. For purposes of this study, the total environment will include water resources, biological resources, cultural resources, visual resources, geology and soils, air quality, land uses, sensitive noise receptors, communications interference, and socioeconomic considerations.

Phase 3 Suitability Assessment

Geospatial data will be collected on each of the resources/factors listed under the detailed description. A composite geospatial model will be created classifying areas where multiple resources/factors exist or where the impact is expected to be greater. Any preliminary links that pass through more of these areas classified to have greater sensitivity will be given a lower suitability for this criterion, where preliminary links that pass through less will be given a higher suitability for this criterion.

Data Required

- Criteria 2, 4, 5, & 6 models
- Geology and Soil - Erodibility (K-Factor)
- Geology and Soil - Prime Farmland
- Air quality
- Socioeconomic conditions (poverty)

Procedure to create criteria 8 dataset: add a new field “Weight” as type Short to each of the datasets listed above – assign appropriate cell values as noted below; union those results with “Clip_Area” for each dataset; use those results with Feature to Raster classifying by “Weight”; then create a composite raster by weighting each of the datasets as indicated below and adding the results together.

- Existing Residential Land Use (20% weight) (Criteria 2 model)
 - Cell Value – Criteria 2 model
- Existing and Future License Antennas/Sensitive Noise Receptors (5% weight)
 - Cell Value – Criteria 5 model
- Geology and Soils (10% weight)
 - Prime Farmland (50% weight of the 10%)
 - Cell Value = 10: Prime Farmland
 - Cell Value = 0 – all other cells
 - Erodibility (K-Factor) (50% weight of the 10%)
 - Cell Value = 10: Very Severe Erosion
 - Cell Value = 7: Severe Erosion
 - Cell Value = 5: Moderate Erosion
 - Cell Value = 2: Light Erosion
 - Cell Value = 0: all other cells
- Water/Biological Resources (20% weight)
 - Cell Value – Criteria 4 model

- Cultural Resources (20% weight)
 - Cell Value – Criteria 6 model
- Air Quality (5% weight)
 - Cell Value = 10 – Nonattainment Area for PM 2.5, PM 10, or Ozone
 - Cell Value = 0 – all other cells
- Socioeconomic Conditions (20% weight)
 - Cell Value = 10 – % census tracts at or below poverty level is > 1.5x % county at or below poverty level
 - Cell Value = 5 – ≥ % census tracts at or below poverty level is > % county at or below poverty level
 - Cell Value = 0 – all other cells

I. Criteria 9 – Construction & Maintenance: The technical practicability of achieving a proposed objective and the previous experience with equipment and methods available for achieving a proposed objective.

Data Required

- Digital Elevation Model (DEM)
- Flood hazards
- Airspace height limitations
- Well Sites (buffered by 100')

Procedure to create criteria 9 dataset: create buffers as noted above; create slopes from DEM; add a new field "Weight" as type Short to each of the datasets listed above – assign appropriate cell values as noted below; union those results with "Clip_Area" for each dataset; use those results with Feature to Raster classifying by "Weight"; then create a composite raster by weighting each of the datasets as indicated below and adding the results together.

- Digital Elevation Model (15% weight)
 - Cell Value = 10: slopes ≥ 75 and ≤ 90
 - Cell Value = 8: slopes ≥ 50 and < 75
 - Cell Value = 6: slopes ≥ 35 and < 50
 - Cell Value = 4: slopes ≥ 20 and < 35
 - Cell Value = 0: all other cells
- Airspace height limitations (40% weight)
 - Cell Value = 10: height limitation ≤ 50 and > 0
 - Cell Value = 8: height limitation ≤ 75 and > 50
 - Cell Value = 4: height limitation ≤ 95 and > 75
 - Cell Value = 2: height limitation ≤ 140 and > 95
 - Cell Value = 0: all other cells
- Flood Hazard (30% weight)
 - Cell Value = 10 (floodway)
 - Cell Value = 8 (100 year floodplain)
 - Cell Value = 6 (500 year floodplain)
 - Cell Value = 0: all other cells

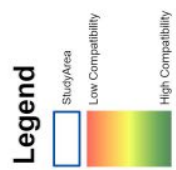
- Existing well Sites (15% weight)
 - Cell Value = 10: cell is located within buffer
 - Cell Value = 0: all other cells

J. Exclusion Areas: Any areas where a transmission line cannot be built or maintained due to one of the factors listed below:

- FAA structure height limitation ≤ 0
- Existing/Proposed Areas with Conservation Easements restricting new development – exception is if there is an existing line that can accommodate a second circuit
- Historic national or state parks
- COT Scenic & Gateway Corridors, except when using existing poles exactly as they are - TEP has identified these locations.

K. Inclusion Areas: Any area located within 200 ft of an existing linear infrastructure. This supersedes all other values. TEP has identified these locations.

Suitability Criteria Models



Suitability Criteria Models.

2. Create several composite models, using the criteria above to evaluate the compatibility of links and segments with respect to the environmental, land use, other factors considered by statute in granting a CEC, and other factors raised by the public. At a minimum, a model should be created for each of the following:

A. Balanced Compatibility Model

- Criteria 1 – Existing Plans (1/9 weight)
- Criteria 2 – Existing & Future Residential Land Use (1/9 weight)
- Criteria 3 – Conservation & Preservation (1/9 weight)
- Criteria 4 – Biological Resources (1/9 weight)
- Criteria 5 – Noise & Communication (1/9 weight)
- Criteria 6 – Cultural Resources (1/9 weight)
- Criteria 7 – Scenic & Visual Resource (1/9 weight)
- Criteria 8 – Total Environment (1/9 weight)
- Criteria 9 - Construction & Maintenance (1/9 weight)

B. Environmentally Preferred Model

- Criteria 1 – Existing Plans (5% weight)
- Criteria 2 – Existing & Future Residential Land Use Resources (5% weight)
- Criteria 3 – Conservation & Preservation Resources (10% weight)
- Criteria 4 – Biological Resources (20% weight)
- Criteria 5 – Noise & Communication (5% weight)
- Criteria 6 – Cultural Resources (20% weight)
- Criteria 7 – Scenic & Visual Resource Resources (10% weight)
- Criteria 8 – Total Environment (20% weight)
- Criteria 9 - Construction & Maintenance (5% weight)

C. Construction and Maintenance Preferred Model

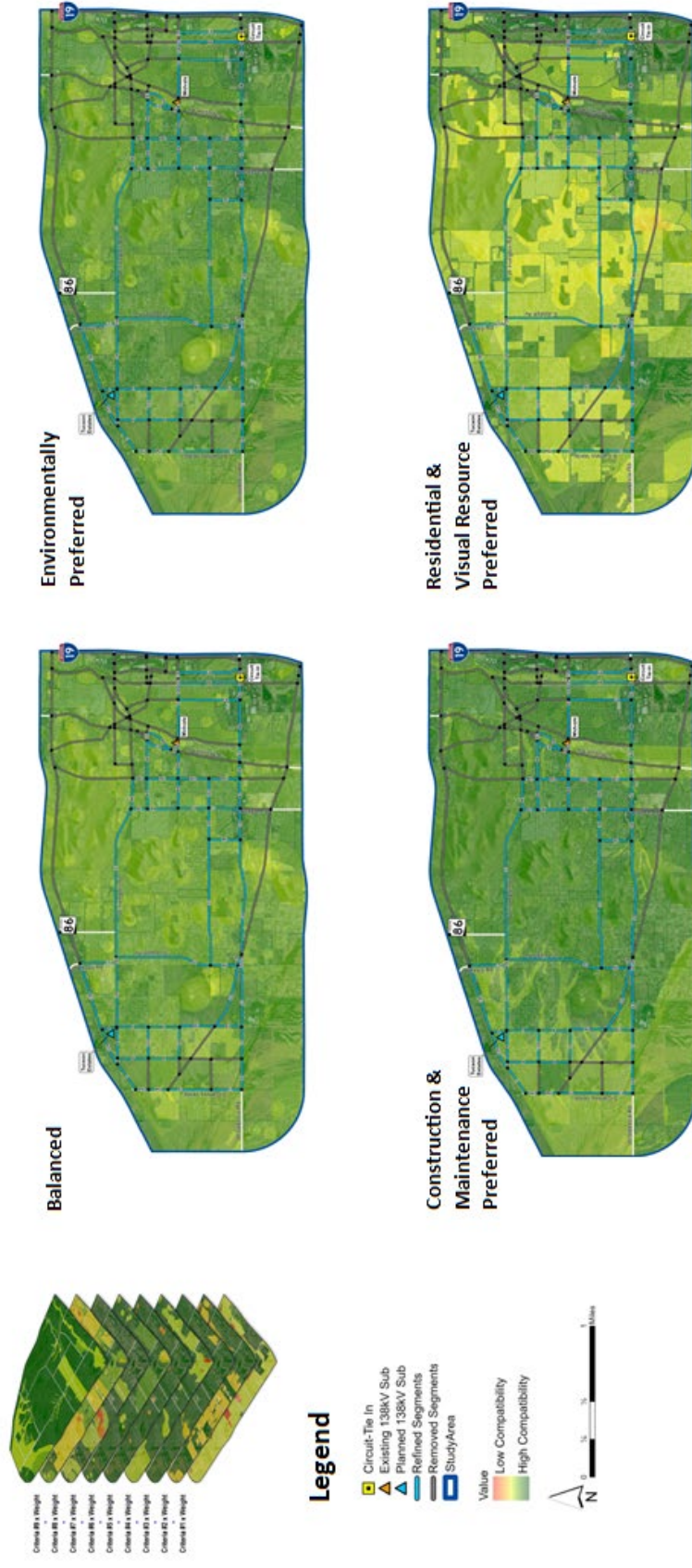
- Criteria 1 – Existing Plans (1/16 weight)
- Criteria 2 – Existing & Future Residential Land Use Resources (1/16 weight)
- Criteria 3 – Conservation & Preservation Resources (1/16 weight)
- Criteria 4 – Biological Resources (1/16 weight)
- Criteria 5 – Noise & Communication (1/16 weight)
- Criteria 6 – Cultural Resources (1/16 weight)
- Criteria 7 – Scenic & Visual Resource Resources (1/16 weight)
- Criteria 8 – Total Environment (1/16 weight)
- Criteria 9 - Construction & Maintenance (50% weight)

D. Residential and Visual Resource Preferred Model (based on Public Comment)

- Criteria 1 – Existing Plans (5% weight)
- Criteria 2 – Existing & Future Residential Land Use Resources (40% weight)
- Criteria 3 – Conservation & Preservation Resources (5% weight)
- Criteria 4 – Biological Resources (5% weight)
- Criteria 5 – Noise & Communication (5% weight)
- Criteria 6 – Cultural Resources (5% weight)
- Criteria 7 – Scenic & Visual Resource Resources (25% weight)
- Criteria 8 – Total Environment (5% weight)
- Criteria 9 - Construction & Maintenance (5% weight)

Use Raster Calc. tool to add each of the criteria together with the appropriate weights to create the models.

Composite Suitability Models



Composite Suitability Models.

3. Use the composite suitability models to identify the most suitable routes (Refined Segments).

- A.** Create a buffer of 100 feet (50 feet on either side) around the preliminary segments layer. Use the “Feature to Raster” tool in ArcGIS Pro to convert the resulting feature class to a raster with the same cell size as the suitability models (10m). Set the extent of the raster to be the same as that of the composite suitability models. Reclassify the raster so all cells have a value of 1.
- B.** Using the Raster Calculator, combine the composite cost surfaces with the segment corridor constraint raster to limit analysis to the defined corridor areas. The resulting raster represents relative cost values constrained to the vicinity of the segment corridors, ensuring that subsequent least-cost path analysis is confined to these allowable areas.
- C.** For each of the resulting composite suitability models, use the “Least Cost Path” tool in ArcGIS Pro. For Phase 1, inputs are set using these composite suitability models as the “input cost surface”, the Midvale substation as the “input starting point” and the Tucson Estates substation as the “input ending point”. For Phase 2, the inputs are the composite suitability models, Tucson Estates substation as the “input starting point” and the Circuit-tie in as the “input ending point”. The output path feature class will represent the path of highest suitability with respect to priorities of that given model. This is repeated for each model.
- D.** All of the highest suitability paths are then overlaid with the preliminary segments in order to identify those segments that represent the highest level of suitability based on multiple priorities and are included in a new “Refined Segments” feature class.
- E.** Step A (above) is repeated, but any segments through areas identified as a “constraint” in Phase 1 of the planning and siting analysis are eliminated from the preliminary segments layer. Then steps B, C, and D are repeated using this more limited set of options. This results in identifying the most suitable paths if whatever constraints identified cannot be overcome. Each of these paths are then overlaid with the preliminary segments in order to identify those segments they represent and are added to the new “Refined Segments” feature class.
- F.** Lastly, the “Least Cost Path” tool identifies those routes that quantitatively represent the most suitable routes. But there may be another preliminary segment that represents a nearly identical degree of suitability for a path from a point east to west or north to south as the path that was selected through the tool. A visual analysis of the remaining preliminary segments is conducted to assess their suitability, with respect to each composite suitability model, in comparison with the suitability of the path(s) selected. If the suitability is nearly identical for a given preliminary segment, it is added to the new “Refined Segments” feature class.

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Appendix B:
Compatibility Analysis

Key to Evaluation Criteria in Table

1. Existing and Planned Land Use
2. Adjacent Residential Properties
3. Conservation and Preservation
4. Fish, Wildlife, Plants, Includes T&E Species
5. Noise
6. Communications Signals
7. Archaeological and Historical Resources
8. Scenic Areas
9. Residential Visual Impact
10. Total Environment
11. Engineering and Construction
12. System Operations
13. Compliance with State, County, or City Ordinances
14. ROW Acquisition
15. Cost
16. Public and Stakeholder Feedback

Compatibility Rating Guide
Compatible = 1
Possible Negative Impacts = 2
Known Negative Impacts = 3
Unacceptable Impacts = 100

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Segment #	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	Overall Average	Overall Average Weighted by Public and Stakeholder Feedback
Public and Stakeholder Weight (%)	0	25	0	5	0	0	5	10	35	0	0		0	0	0	20	100	
1	1	1	1	1	1	1	1	1	1	1	2	1	1	1	1	1	1.06	1.00
3	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1.06	1.13
4	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1.06	1.31
5	1	2	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1.06	1.31
6	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1.00	1.00
7	1	1	1	1	1	1	1	1	1	1	2	1	1	1	1	1	1.06	1.00
8	1	3	1	1	1	1	3	2	1	1	1	1	1	1	1	1	1.31	1.88
9	1	1	1	1	1	1	1	1	1	1	2	1	1	1	1	1	1.06	1.00
10	1	1	1	1	2	1	1	2	1	1	1	1	1	1	1	1	1.13	1.13
14	1	3	1	1	1	1	3	2	2	1	1	1	1	1	1	1	1.38	2.31
16	1	1	1	1	1	1	1	1	2	1	2	1	1	1	1	1	1.13	1.44
17	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1.06	1.13
19	1	1	1	1	1	1	1	1	2	1	2	1	1	1	1	1	1.13	1.44
20	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1.00	1.00
21	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1.00	1.00
22	1	1	1	1	1	1	3	1	1	1	3	1	1	2	1	1	1.31	1.13
23	1	1	1	1	1	1	1	1	1	1	2	2	1	1	1	1	1.13	1.00
24	1	3	1	1	1	1	1	2	2	1	1	1	1	1	1	2	1.31	2.19
25	1	3	1	1	2	1	1	2	3	1	1	1	1	2	1	2	1.50	2.63
26	1	3	1	1	2	1	3	2	3	1	1	1	1	1	1	2	1.56	2.75
27	1	1	1	1	1	1	3	1	1	1	1	1	1	1	1	2	1.19	1.13
28	1	1	1	1	1	1	3	1	1	1	2	2	1	1	1	1	1.25	1.13
29	1	1	1	1	1	1	3	1	1	1	1	1	1	3	1	1	1.56	1.13
30	1	1	1	1	1	3	3	1	1	1	2	2	1	1	1	1	1.38	1.13
32	1	3	1	1	2	1	1	2	3	1	3	1	1	1	3	2	1.69	2.63
33	1	3	2	1	2	1	1	2	3	1	1	1	1	1	1	3	1.56	2.63
34	1	3	1	1	1	1	1	2	2	1	1	1	1	1	1	2	1.31	2.19
35	1	1	1	1	1	1	1	1	1	1	2	2	1	1	1	1	1.13	1.00
36	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1.00	1.00
37	1	3	1	1	1	1	1	1	1	1	1	1	1	1	1	3	1.25	1.63
39	1	3	1	1	1	1	1	1	1	1	1	1	1	1	1	3	1.25	1.63
40	1	3	1	1	2	1	1	1	1	1	1	1	1	1	1	3	1.31	1.63

Segment #	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	Overall Average	Overall Average Weighted by Public and Stakeholder Feedback
Public and Stakeholder Weight (%)	0	25	0	5	0	0	5	10	35	0	0		0	0	0	20	100	
41	1	3	1	1	1	1	1	1	1	1	1	1	1	1	1	3	1.25	1.63
42	1	1	1	1	2	1	3	1	1	1	2	2	1	1	1	1	1.31	1.13
44	1	3	1	1	1	1	1	2	1	1	1	1	1	2	1	1	1.25	1.75
45	1	3	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1.19	2.06
46	1	3	2	1	1	1	1	2	2	1	1	1	1	1	1	3	1.44	2.19
48	1	3	2	1	1	1	3	1	1	1	1	1	1	1	1	1	1.31	1.75
49	1	2	1	1	2	1	1	1	1	1	1	1	1	2	1	1	1.19	1.31
50	1	1	1	1	2	1	1	1	1	1	2	1	1	1	1	1	1.13	1.00
57	1	1	3	1	1	1	3	1	1	1	1	1	2	1	1	2	1.38	1.13
58	1	2	2	1	1	1	3	1	1	1	1	1	1	1	1	2	1.31	1.44
59	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1.06	1.00
61	1	2	1	1	2	3	1	1	1	1	1	1	1	2	1	1	1.31	1.31
62	1	1	1	1	1	1	3	1	1	1	2	1	2	1	1	1	1.25	1.13
87	1	1	2	1	2	1	3	1	1	1	1	1	1	1	1	1	1.25	1.13
90	1	1	1	1	1	1	2	1	1	1	1	1	2	1	1	1	1.13	1.06
91	1	1	1	1	1	1	2	1	1	1	1	1	2	1	1	1	1.13	1.06
92	1	1	1	1	2	1	3	1	1	1	2	1	2	1	1	1	1.31	1.13
93	1	3	1	1	2	1	1	1	1	1	1	1	1	1	1	1	1.19	1.63
96	1	1	1	1	2	1	3	1	1	1	2	1	2	1	1	1	1.31	1.13
97	1	3	1	1	2	1	1	1	1	1	1	1	1	2	1	1	1.25	1.63
100	1	3	1	1	1	1	1	1	2	1	2	1	1	1	1	1	1.25	2.06
102	1	3	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1.13	1.63
103	1	1	2	1	1	1	3	1	1	1	1	1	1	2	1	1	1.25	1.13
104	1	2	1	1	2	1	1	1	1	1	2	1	1	1	1	1	1.19	1.31
105	1	2	1	1	1	1	1	1	1	1	2	1	1	1	1	1	1.13	1.31
106	1	1	1	1	1	1	1	2	2	1	2	1	1	2	1	2	1.31	1.56
108	1	3	1	1	1	1	2	1	1	1	1	1	1	2	1	1	1.25	1.69
110	1	3	1	1	1	1	1	1	1	1	1	1	1	2	1	1	1.19	1.63
125	1	1	1	1	1	1	3	2	1	1	1	1	1	1	1	1	1.19	1.25
126	1	3	1	1	2	1	3	2	2	1	1	1	1	1	1	1	1.44	2.31

Segment #	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	Overall Average	Overall Average Weighted by Public and Stakeholder Feedback
Public and Stakeholder Weight (%)	0	25	0	5	0	0	5	10	35	0	0		0	0	0	20	100	
41	1	3	1	1	1	1	1	1	1	1	1	1	1	1	1	3	1.25	1.63
42	1	1	1	1	2	1	3	1	1	1	2	2	1	1	1	1	1.31	1.13
44	1	3	1	1	1	1	1	2	1	1	1	1	1	2	1	1	1.25	1.75
45	1	3	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1.19	2.06
46	1	3	2	1	1	1	1	2	2	1	1	1	1	1	1	3	1.44	2.19
48	1	3	2	1	1	1	3	1	1	1	1	1	1	1	1	1	1.31	1.75
49	1	2	1	1	2	1	1	1	1	1	1	1	1	2	1	1	1.19	1.31
50	1	1	1	1	2	1	1	1	1	1	2	1	1	1	1	1	1.13	1.00
57	1	1	3	1	1	1	3	1	1	1	1	1	2	1	1	2	1.38	1.13
58	1	2	2	1	1	1	3	1	1	1	1	1	1	1	1	2	1.31	1.44
59	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	2	1.06	1.00
127	1	3	1	1	1	1	3	1	2	1	1	1	1	2	1	1	1.38	2.19
129	1	1	1	1	1	1	2	1	1	1	1	1	1	2	1	1	1.13	1.06
130	1	1	1	1	1	1	3	1	1	1	1	1	1	2	1	1	1.19	1.13
154	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1.06	1.13
155	1	1	1	1	1	1	1	2	1	1	1	1	1	1	1	1	1.06	1.13
158	1	2	1	1	1	1	1	2	2	1	1	1	1	1	1	1	1.19	1.88

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EXHIBIT C

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Exhibit C: Areas of Biological Wealth

As required by Arizona Administrative Code R14-7-119, the Applicant provides the following in Exhibit C:

Describe any areas in the vicinity of the proposed site or route which are unique because of biological wealth or because they are habitats for rare and endangered species. Describe the biological wealth or species involved and state the effects, if any, the proposed facilities will have thereon.

C.1 Introduction

The following analysis describes potential impacts that the Southwest Tucson Reliability Project (Project) may have on areas of biological wealth and special status species. Exhibit C-1 provides a visual representation of areas of biological wealth. Exhibit C-2 is the Biological Evaluation (BE), which provides a general description of the existing environment with respect to vegetation, wildlife, washes and riparian areas, and the potential for special status species to occur. The biological analysis looked at three distinct areas:

Analysis Area: A 3-mile buffer around the Project's Siting Study Area. U.S. Fish and Wildlife Service (USFWS) and Arizona Game and Fish Department (AGFD) provide special status species data buffered to three miles to allow for the evaluation of potential indirect effects.

Siting Study Area: A broad area that was evaluated as part of the siting study to assess potential impacts at the segment level. The draft Biological Evaluation informed the scoring and selection of alternative routes.

Area of Analysis: A 0.5-mile buffer around the proposed Phase 1 and Phase 2 Routes, used to identify direct and indirect effects the Project may have on areas of biological wealth and special status species and within which Best Management Practices (BMPs) and mitigation measures may be employed to offset those effects.

The information analyzed includes a list of special status species obtained from the USFWS Information for Planning and Consultation (IPaC) online database, and species lists, ranges, and habitat data obtained from the AGFD Heritage Database Management System (HDMS) online Environmental Review Tool (ERT), National Wetlands Inventory (NWI) Maps, and a review of habitat and life history requirements.

C.2 Areas of Biological Wealth

Areas of biological wealth can include Important Bird Areas, Wildlife Connectivity Linkages, designated Critical Habitat, and waterways and wetlands with associated riparian habitat. Within the Analysis Area, there is an established wildlife corridor and an Important Bird Area (IBA). Exhibit C-1 provides mapping for the Area of Analysis in relation to the areas of biological wealth. The BE (Exhibit C-2) along with this section, is an overview of the existing environmental conditions in the Siting Study Area and Analysis Area of the BE, with a focus on vegetation, wildlife, and the potential presence of special status species.

C.2.1 Tucson Mountains Important Bird Area

The Tucson Mountains IBA, designated on March 20, 2017, spans roughly 73 square miles of National Park Service (NPS), Pima County, and Bureau of Land Management (BLM) lands west of Tucson. The most proximate point of the Project is almost 2 miles from the IBA. The Project would entail limited vegetation disturbance and will not

impact the IBA. Pre-construction surveys would be conducted if construction is to occur during breeding season for migratory birds.

C.2.2 Wildlife Linkage Corridor

The Arizona Wildlife Linkages Workgroup has identified wildlife linkage corridors that provide connectivity between habitats for wildlife species, which are essential to many wildlife population structures and movement. The Tucson Mountains to San Xavier (San Robles Pass) linkage is a wildlife movement corridor located within the Analysis Area. The corridor is composed entirely of Arizona Upland Sonoran Desertscrub (Brown and Lowe, 1980) and is predominantly privately owned (88%), with smaller portions managed by the BLM (4%), Arizona State Land (5%), and the Pascua Yaqui and San Xavier District (SXD) of the Tohono O’odham Nation (TON) (3%). Hydrologically, it is influenced by the Santa Cruz River and its West Branch.

This corridor connects two habitat blocks that are preserved wildlands—the Tucson Mountains Habitat Block and the San Xavier Habitat Block. The Tucson Mountains Habitat Block is located north of and abutting Ajo Way, covering Tucson Mountain Park and Saguaro National Park. The San Xavier Habitat Block is within the Area of Analysis and is crossed by both the Phase 1 and Phase 2 Routes.

This corridor supports a variety of sensitive and wide-ranging species, including bobcat (*Lynx rufus*), mountain lion (*Felis concolor*), Sonoran desert tortoise (*Gopherus morafkai*), Western burrowing owl (*Athene cunicularia hypugaea*), cave myotis (*Myotis velifer*), California leaf-nosed bat (*Macrotus californicus*), the giant spotted whiptail (*Aspidoscelis burti stictogrammus*), and the greater western mastiff bat (*Eumops perotis californicus*). As a connective habitat area, it plays an important role in maintaining ecological permeability between the Tucson Mountains and SXD of the TON.

Key threats to the corridor include border security infrastructure, the presence of State Route 86, and ongoing development, each contributing to habitat fragmentation and reduced wildlife movement. Despite these pressures, the linkage remains an important component of regional conservation planning, particularly for maintaining species movement and long-term ecological resilience in the rapidly developing Tucson region. (Arizona’s Wildlife Linkages Assessment 2006).

To support the linkage design, the Project would:

- Avoid the banks of the Santa Cruz River,
- Span washes,
- Avoid clearing riparian vegetation for access, construction, or maintenance,
- Follow Environmental Protection Measures (EPMs) to avoid introduction of non-native invasive plants and animals, and
- Minimize noise and excessive light during construction in those areas.

C.2.3 Critical Habitat

Tucson Electric Power (TEP) accessed the USFWS IPaC tool on March 25, 2026, and again on June 23, 2026, and determined that there is no critical habitat designated by USFWS under the Endangered Species Act (ESA) in, or near, the Analysis Area.

C.2.4 Waterways, Wetlands, and Riparian Habitat

Riparian and aquatic resources within the Area of Analysis are concentrated along drainage corridors and stream

networks crossed by the Phase 1 and Phase 2 Routes. These habitats are associated with ephemeral and intermittent waterbodies, including the Santa Cruz River, Black Wash, and Snyder Hill Wash. NWI classification data identified wetlands, ponds, and riverine systems within the Area of Analysis.

In an arid regional landscape, these riparian resources sustain higher vegetative density and function as critical ecological features by providing wildlife habitat, surface water availability, and regional movement corridors. To prevent adverse impacts to sensitive aquatic ecosystems, TEP will utilize BMPs as described in Exhibit D to prevent erosion, control stormwater runoff, and safeguard downstream aquatic resources.

C.2.5 Potential Effects

The Project will have a nominal effect on this wildlife corridor primarily because the majority of the Project utilizes existing infrastructure and/or utility corridors. Only 20% of the Project is new build and all new construction is adjacent to existing roads. By avoiding the introduction of new linear barriers, the Project preserves long-term habitat connectivity for local species. Potential impacts are limited to temporary, short-term disruptions during the construction phase. Once operational, the line will maintain the pre-existing environmental baseline; long-term impacts to wildlife movement or avian species will remain unchanged.

C.3 Special Status Species

Special status species with the potential to occur in or near the Analysis Area were also assessed in the BE (Exhibit C-2), including federally-listed species, Arizona State Sensitive and Conservation Agreement Species, Pima County vulnerable species, and avian species protected under the Migratory Bird Treaty Act (MBTA) and the Bald and Golden Eagle Protection Act (BGEPA).

C.3.1 Federally-listed Species

An assessment of federally-listed special status species with the potential to occur in the Analysis Area resulted in a list of fourteen federally-protected species with the potential to occur. These include:

- Jaguar (*Panthera onca*; Endangered)
- Ocelot (*Leopardus* (= *Felis*) *pardalis*; Endangered)
- Sonoran pronghorn (*Antilocapra americana sonoriensis*; Experimental population, non-essential)
- Cactus ferruginous pygmy-owl (*Glaucidium brasilianum cactorum*; Threatened)
- California least tern (*Sternula antillarum browni*; Endangered)
- Southwestern willow flycatcher (*Empidonax traillii extimus*; Endangered)
- Yellow-billed cuckoo (*Coccyzus americanus*; Threatened)
- Chiricahua leopard frog (*Rana chiricahuensis*; Threatened)
- Gila chub (*Gila intermedia*; Endangered)
- Gila topminnow (incl. Yaqui) (*Poeciliopsis occidentalis*; Endangered)
- Monarch butterfly (*Danaus plexippus*; Proposed Threatened)
- Arizona eryngo (*Eryngium sparganophyllum*; Endangered)
- Huachuca water-umbel (*Lilaeopsis schaffneriana* var. *recurve*; Endangered)
- Pima pineapple cactus (*Coryphantha scheeri* var. *robustispina*; Endangered)

Further review of these 14 federally-listed species determined that the Pima pineapple cactus (PPC) and the monarch butterfly have the potential to occur within the Area of Analysis. The remaining 12 federally-listed species are unlikely, or have no potential, to occur.

Monarch Butterfly (Danaus plexippus)

The monarch butterfly is federally-listed as proposed threatened. Monarch butterflies are large and conspicuous, with two sets of bright orange wings that span three to four inches and are covered with black veins and surrounded by a black border with a double row of white spots. Monarch butterflies are migratory insects known for their long-distance seasonal movements between breeding and overwintering grounds, unique reproductive strategy, and large masses formed while overwintering in Mexico and coastal California. The species is highly dependent on milkweed (*Asclepias pp.*) as the sole host plant for larval development, while adults utilize a wide variety of nectar-producing plants for foraging.

Habitat conditions are generally marginal for this species in the Area of Analysis but may provide blooming plants that could sustain adults during migration. No milkweeds were identified during field visits on November 18, 2025, and April 30, 2026. The Project may impact individuals but is not likely to result in a trend toward Federal listing or a loss of viability.

Pima Pineapple Cactus (Coryphantha scheeri var. robustispina)

PPC is federally-listed as an endangered species. PPC is a small globular cactus native to Sonoran Desert scrub and semi-desert grassland communities of southern Arizona and far northern Sonora, Mexico. In the U.S., it is found in only Pima and Santa Cruz counties, between approximately 2,400 to 4,500 feet in elevation. Individual plants typically occur in low densities, grow 5-46 centimeters in height and 5-21 centimeters in diameter, and can have one to many stems. PPC are known to grow most often in areas with the following characteristics: alluvial fans or hillsides; shallow to deep and silty to rocky soils with a preference for silty to gravelly, deep alluvial soils; and open areas on flat ridge tops or areas with less than 10 percent slope.

There is suitable habitat for PPC in the Area of Analysis, particularly west of the Tucson Mountains, which are bisected by alluvial fans and silty soils. As vegetation removal will be minimized, the amount of potential habitat that may be removed during site preparation and construction would likely be minimal. Compliance with recommended EPMs would avoid and minimize impacts to the PPC. The Project may affect but is not likely to adversely affect PPC.

C.3.2 State Protected Species

Sonoran used the AGFD ERT to identify documented occurrences of special status species and assess their potential to occur during Project implementation. The ERT report identified 65 wildlife Species of Greatest Conservation Need within the Analysis Area. These species include those federally-listed species already discussed above, species managed by the United States Forest Service and the BLM, AGFD Tier 1 and Tier 2 Species of Greatest Conservation Need, and native plants regulated by the Arizona Department of Agriculture (ADOA). Of these, three species were determined to be present or have potential to be present within the Area of Analysis and are discussed in greater detail below. The remaining species are unlikely to be impacted by the Project or have no potential to occur. The complete list of these species and their protection status is provided in the ERT report in Appendix B of the BE (Exhibit C-2).

Sonoran Desert Tortoise (Gopherus morafkai)

The Sonoran desert tortoise is not federally-listed under the Endangered Species Act following a 2022 USFWS finding, and no critical habitat is designated or proposed. However, the species is managed under the voluntary 2015 Candidate Conservation Agreement (CCA) involving USFWS, Arizona Department of Transportation, and AGFD, and is covered by Pima County's Multi-Species Conservation Plan.

The Sonoran desert tortoise is native to the Sonoran Desert, occurring in western, central and southern Arizona, U.S. and in northwest Sonora, Mexico. The Sonoran desert tortoise inhabits Sonoran desertscrub communities and prefers rocky outcrops, washes, and bajadas. The tortoise spends a significant amount of its life in burrows, and its preferred habitat includes steep, rocky slopes, and washes.

The Area of Analysis occurs within predominantly disturbed Sonoran Desert uplands west of the Santa Cruz River corridor, where vegetation is characterized by creosotebush scrub, scattered mesquite, and ruderal species. While much of the Area of Analysis reflects human development and disturbed areas, suitable microhabitat for Sonoran desert tortoise containing friable soils for burrowing and sparse shrub cover remains present in portions of the Area of Analysis.

Of note, the Sonoran desert tortoise has been documented within the Siting Study Area, according to iNaturalist (2026) and consistent with regional occurrence data from the AGFD (Online ERT) indicating known records within 3 miles of the Siting Study Area and resident accounts. Although the immediate Santa Cruz River corridor provides less suitable habitat due to altered hydrology and soil conditions, adjacent uplands surrounding the Tucson Mountains may support transient or resident individuals.

Species that fall under a CCA are afforded added protection measures to be taken for any planned development projects, including avoidance and mitigation measures within and adjacent to the Project's footprint. Compliance with recommended EPMs for the Sonoran desert tortoise would avoid and minimize impacts to the species. By implementing these recommendations, the Project may impact individuals but is not likely to result in a trend toward Federal listing or a loss of viability.

Western Burrowing Owl (Athene cunicularia hypugaea)

Although not protected under the ESA, the western burrowing owl is listed by the USFWS as a National Bird of Conservation Concern, which identifies it as a species that without additional protection is likely to become a candidate for listing under the ESA. It is also listed by AGFD as a Tier 2 Species of Greatest Conservation Need and a Priority Vulnerable Species (PVS) by Pima County's Sonoran Desert Conservation Plan (SDCP).

Western burrowing owl is a small (19-25 cm), ground-dwelling diurnal owl with yellow eyes, long legs, and characteristic head-bobbing behavior when disturbed. It inhabits a variety of habitats, including semidesert grassland, plains grassland, cropland, Great Basin Desertscrub, the Lower Colorado and Arizona Upland subdivisions of the Sonoran Desertscrub formation, barren ground, Great Basin Grassland, Mojave Desertscrub, and rural and residential areas, including roads, airports, orchards, vacant urban lots, parks, and orchards.

There is potential for Western burrowing owls to occur within the Area of Analysis. Their prey base of fossorial, burrowing mammals is most certainly present throughout. In addition, along with natural flat, open areas, there are also disturbed areas with culverts and access to water (Santa Cruz River, Central Arizona Project facilities, nearby sand and gravel operations, and residences). AGFD also documents it as occurring in the Project vicinity.

Though the majority of the Project would have limited construction activity in areas suitable for burrows, there is the potential for Project activities to impact the Western burrowing owl. Compliance with recommended EPMs would avoid or minimize impacts to the Western burrowing owl. The Project may impact individuals but is not likely to result in a trend toward federal listing or a loss of viability.

Tumamoc Globeberry (Tumamoca macdougallii)

Tumamoc globeberry was formerly listed as Endangered by USFWS but was delisted in 1993, after it was determined to be less habitat specific and occur across a more extensive range. It is protected by ADOA as Salvage Restricted and is identified as a Priority Vulnerable Species in Pima County's Sonoran Desert Conservation Plan.

The Area of Analysis is crossed by washes that may provide suitable habitat for Tumamoc globeberry. The Project will be aerial, span washes, and much of it will use existing structures and be sited in existing road rights-of-way and utility corridors. However, during construction, vehicles may cross washes, which could impact the globeberry. So long as the Project does not closely parallel drainages and minimizes vegetation removal, the amount of potential habitat that may be removed during site preparation and construction would be minimal. Compliance with standard EPMs would avoid or minimize impacts to the globeberry. The Project may impact individuals but is not likely to result in a trend toward Federal listing or a loss of viability.

C.3.3 Bald and Golden Eagle Protection Act

In 1940, the U.S. Congress passed the BGEPA to protect declining bald eagle (*Haliaeetus leucocephalus*) populations and amended the Act in 1962 to include golden eagles (*Aquila chrysaetos*) (BGEPA Title 16 U.S. Code, section 668-668d, 54 Stat. 250). Eagles are also protected by the MBTA (USFWS 1940).

These statutes prohibit the take, possession, or disturbance of eagles, their nests, or eggs without a permit. USFWS IPaC reports, the AGFD ERT, and eBird records confirm that both species occur regionally. While bald eagles are occasional inhabitants in the region, golden eagles are more likely to be encountered, as they frequently utilize the open, mountainous terrain of Southern Arizona for foraging and migration.

Bald eagles typically nest in tall trees or saguaros near water and feed opportunistically on fish, waterfowl, small mammals, and carrion. The Area of Analysis consists primarily of flat, disturbed, desertscrub urban terrain that lacks the water bodies, large trees, or cliff faces necessary to support bald or golden eagle nesting. No suitable nesting habitat exists for bald eagles within the Siting Study Area. However, the IPaC report indicated that bald eagles can still occur in the Area of Analysis.

Golden eagles are generally found in open or mountainous terrains and nest on cliffs, rock ledges, or large trees. In Arizona, they are primarily located in mountainous regions and are largely absent from desert areas outside the breeding season. Like bald eagles, no suitable nesting habitat is located within the Siting Study Area. The nearest suitable nesting habitat for golden eagles is located approximately 2 miles north in Tucson Mountain Park. However, the IPaC report indicated that golden eagles could occur in the Area of Analysis.

Therefore, bald and golden eagles may transiently inhabit the Area of Analysis during construction; however, their presence would likely be limited to migratory and/or hunting behavior as there is no suitable nesting habitat for either species found within the Siting Study Area. During hunting, eagles may use transmission and distribution poles as perches.

Construction of the Project is unlikely to result in the impact or take of individuals or nests of either species. During preconstruction migratory bird and raptor nest surveys, observations of bald and golden eagles will be recorded.

To minimize the potential for mortality caused by electrocution to eagles and other species while flying, hunting, or perching on poles, TEP designs their lines in accordance with the guidelines and recommendations set forth by the Avian Power Line Interaction Committee (APLIC).

C.3.4 Migratory Bird Act

Migratory birds are protected under the MBTA of 1918, as amended (16 U.S. Code §§ 703–712). Under the MBTA, it is unlawful to take, kill, or possess migratory birds, their eggs, parts, or nests without a valid permit (50 Code of Federal Regulations [CFR] § 21.11).

Besides the bald and golden eagle, the recent IPaC analysis for the Area of Analysis indicated that 11 species of migratory Birds of Conservation Concern (BCC) could inhabit the area. The BCC species included in the report are American Avocet (*Recurvirostra americana*), Bendire's Thrasher (*Toxostoma bendirei*), Black-chinned Sparrow (*Spizella atrogularis*), Costa's Hummingbird (*Calypte costae*), Gila Woodpecker (*Melanerpes uropygialis*), Grace's Warbler (*Setophaga graciae*), Lawrence's Goldfinch (*Spinus lawrencei*), Long-eared Owl (*Asio otus*), Marbled Godwit (*Limosa fedoa*), Western Grebe (*Aechmophorus occidentalis*), and Willet (*Tringa semipalmata*). Further coordination with the USFWS and AGFD may be necessary if updated data becomes available or if Project timing overlaps with known nesting periods.

Suitable nesting habitat is present in the Area of Analysis and may host several species of active nesting birds during the nesting season (March 1 to August 31). It should be assumed there is high likelihood that nesting activity will occur during construction within and/or adjacent to the Project. To avoid impacting nests during the active nesting season and to limit the potential for take of species, formal preconstruction migratory bird and raptor nest surveys are recommended to be conducted by a qualified biologist within 10 days prior to the initiation of construction activities. These preconstruction surveys would be continued, as needed, as construction moves to new areas not previously or recently surveyed or those areas that have had no construction activities take place for longer than 10 consecutive days. If active nests are discovered, a species-specific avoidance buffer would be established, and no construction activities would take place within that buffer until it is confirmed by a qualified biologist that the nestlings have successfully fledged or the nest is later determined by the biologist to be inactive. Vegetation would be surveyed prior to construction to confirm that no protected bird species would be impacted.

C.4 Summary of Potential Effects

The potential for the Project's activities to affect listed special status species was evaluated in the BE. The Project has the potential to impact two federally-listed special status species: monarch butterfly and PPC, and three state listed species: Sonoran desert tortoise, Western burrowing owl, and Tumamoc globeberry, as well as the bald and golden eagle, and migratory birds. The Project is not expected to affect any other federally-listed species under the ESA, based on a lack of suitable habitat in the Area of Analysis.

Project infrastructure is limited to existing road ROWs or existing structures, preventing the introduction of new long-term impediments to local wildlife connectivity or established linkages. Avian electrocution risks exist, especially where raptors utilize power lines as perching sites; TEP will adhere to its established raptor protection protocols to prevent occurrences.

C.5 Recommended Environmental Protection Measures

The following EPMs would be implemented to avoid, minimize, or mitigate impacts to special status species with the potential to occur in areas to be disturbed by the Project.

C.5.1 Monarch Butterfly

TEP plans to keep the removal of blooming plants at a minimum to avoid impacts to the monarch butterfly.

C.5.2 Pima Pineapple Cactus

The USFWS has established standard measures to avoid or minimize impacts on the PPC:

- Conduct pre-construction surveys in suitable habitat to identify individual plants. Follow current survey protocols.
- Establish 10- to 50-foot-wide buffers around identified PPCs to avoid impacting individual PPCs and their surrounding habitat during construction and ground-disturbing activities. These buffered areas should be flagged or fenced.
- Restrict construction during wet seasons to avoid excessive soil compaction.
- Minimize soil disturbance in suitable habitat (e.g., limit grading, vehicle travel, equipment laydowns, trenching).
- Implement appropriate erosion and sediment control measures to protect habitat from runoff.
- Restore disturbed habitat with native seed and/or plantings.
- Educate site personnel on species' appearance and legal protections. Prohibit plant collection and/or removal.

C.5.3 Sonoran Desert Tortoise

The following mitigation measures will be implemented to avoid impacts on the Sonoran desert tortoise:

- Preconstruction survey by a qualified biologist for burrows, shelters, and individual tortoises.
- Site personnel will be trained on the appearance of the species, their legal protections, and the AGFD Desert Tortoise Handling Guidelines (Appendix C of C-2) to mitigate potential impacts to the desert tortoise.
- If construction occurs during the desert tortoise's active periods, construction monitoring is recommended.

C.5.4 Western Burrowing Owl

The Arizona Burrowing Owl Working Group has developed guidelines for surveys and management of burrowing owls on development sites (AGFD 2009). In addition to standard EPMs for protection of migratory birds (C.5.5), the following guideline is recommended within the selected right of way:

- Coordinate with the AGFD to determine need for surveys and other resource protection measures.

C.5.5 Avian Species

To avoid impacts on avian species and their nests:

- Follow TEP established raptor protection protocols, as well as APLIC guidelines.
- During the general breeding season of March 1 to August 31:
 - A biologist will conduct surveys for migratory bird and raptor nests within 10 days prior to construction activities, vegetation removal, or ground disturbance.
 - Establish avoidance buffers around active nests. No construction, vegetation, or ground disturbance will occur in this buffer area during breeding season.
 - Minimize disturbance to areas with high vegetative cover.

- If listed species and their nests are identified during construction, activities will stop at site, and TEP will notify appropriate federal or state wildlife agencies.

C.6 Conclusion

Construction, operation, and maintenance of the Phase 1 and Phase 2 Routes are not anticipated to significantly affect biological wealth, sensitive habitats, or special status species. Potential effects will be mitigated through established EPMs, comprehensive pre-construction surveys, and direct agency coordination. While potential impacts to federally-listed species or their habitats could occur, pre-construction surveys will proactively identify risks, and coordination with the USFWS prior to construction will confirm potential effects and establish any necessary project-specific mitigation measures. Potential impacts to migratory birds will be mitigated by conducting nest surveys prior to construction and enforcing seasonal buffers around active nests during the breeding season. Since no suitable nesting habitat for bald or golden eagles exists within or adjacent to the Area of Analysis, no direct or indirect impacts to these species are anticipated.

The Project's design significantly minimizes overall environmental disturbance. Approximately 64% of the proposed alignment utilizes existing utility structures, 16% reconstructs existing facilities, and only 20% of the Project requires new construction. Given this minimized construction footprint and the relatively short duration of construction activities, the Project will not cause meaningful habitat fragmentation, reduce habitat connectivity, or cause significant loss of migratory stopover habitat. Although adverse impacts to sensitive terrestrial wildlife and biological resources are not anticipated, the Project incorporates avoidance protocols. By conducting pre-construction surveys, adjusting construction timing around sensitive biological windows, and modifying pole placement or configurations as necessary, the Project maximizes avoidance of potential conflicts.

C.7 References

AGFD. 2009. *Burrowing Owl Project Clearance Guidance for Landowners*. Phoenix, AZ: Arizona Burrowing Owl Working Group, AGFD.

Arizona Wildlife Linkages Workgroup. 2006. Arizona's wildlife linkages assessment. Arizona Department of Transportation. <https://azdot.gov/sites/default/files/2019/06/awlw-linkages-assessment-intro.pdf>.

U.S. Fish and Wildlife Service (USFWS). 1940. *Bald and Golden Eagle Protection Act*. Retrieved from US Fish and Wildlife Service: <https://www.fws.gov/law/bald-and-golden-eagle-protection-act>.

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Exhibit C-1
Biological Wealth Map

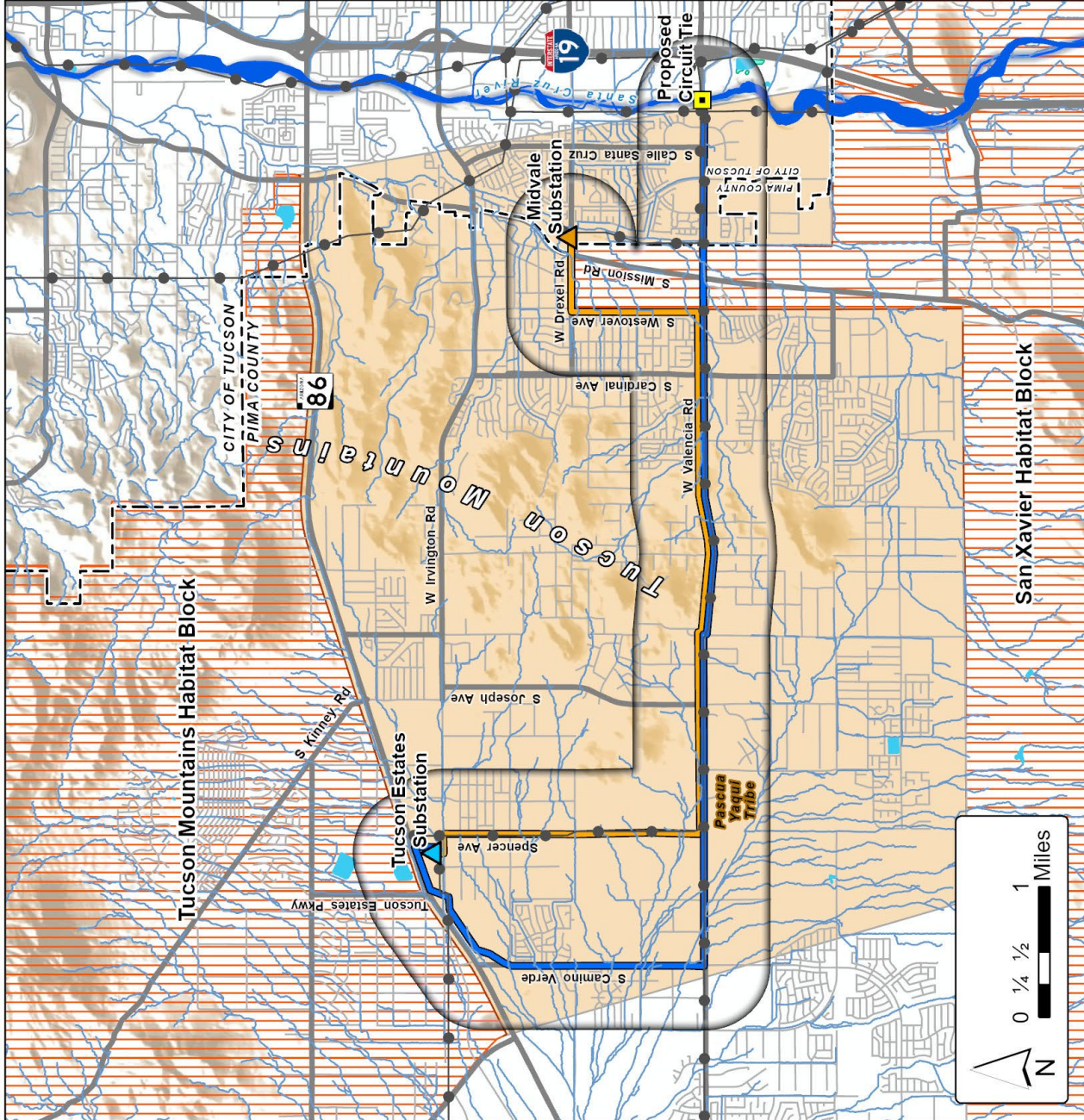
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Exhibit C-1 Southwest Tucson Reliability Study Biological Wealth

- Routes
- Phase 1
 - Phase 2
 - Area of Analysis
 - Tucson Mountains -
San Xavier Linkage
 - Habitat Blocks
 - Jurisdictional
Boundaries
 - USFWS National
Wetlands Inventory:
Wetland Type
 - Freshwater
 - Emergent Wetland
 - Freshwater Pond
 - Riverine
 - Ephemeral Washes
 - Existing
Transmission

TEP
Tucson Electric Power

Sources: City of Tucson, Pima County, TEP
Projection: NAD 1983 UTM Zone 12N
Base map: ESRI Topographic
This map is for planning purposes only.
Tucson Electric Power makes no warranty
of its accuracy.



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Exhibit C-2
Biological Evaluation

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1. Introduction

Sonoran Land Resources, LLC (Sonoran) was retained by Tucson Electric Power Company (TEP) to prepare a Biological Evaluation (BE) for the Southwest Tucson Reliability Project (Project). The BE is used to determine the potential for special status species or their habitat to occur in the area where the Project is located and evaluate the Project's potential effects on these species and/or their habitat. Special status species are defined as species designated by the U.S. Fish and Wildlife Service (USFWS) as Endangered (E), Threatened (T), Proposed for listing (P), or Candidate for listing (C) under the Endangered Species Act (ESA), Arizona state protected species, and species protected under the Bald and Golden Eagle Protection Act (BGEPA). Other laws and statutes considered in the evaluation process include the Executive Order 11990 for the Protection of Wetlands, and the Migratory Bird Treaty Act (MBTA), among others.

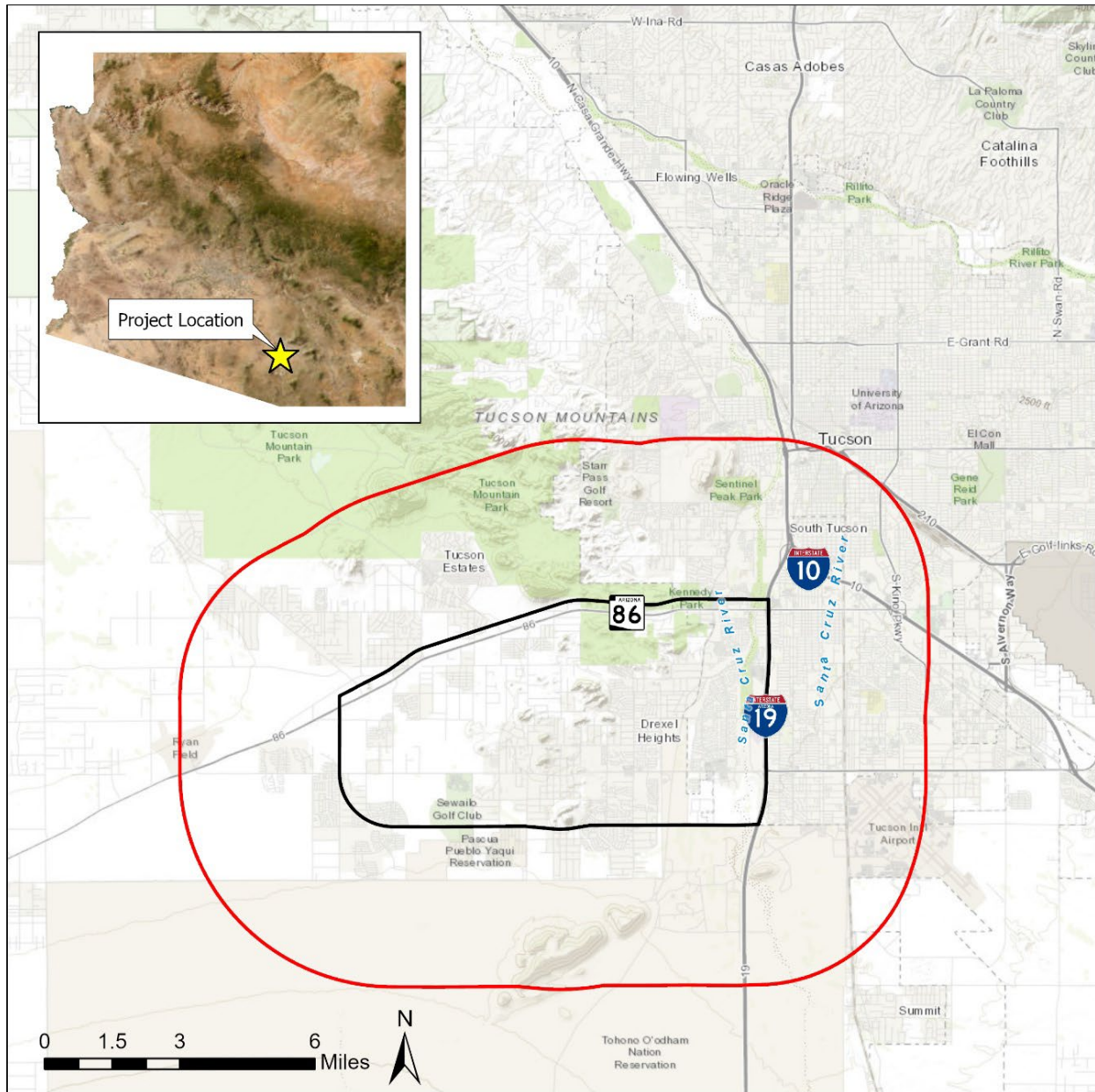
The Siting Study Area, as referenced in this report, includes a broad area reviewed as part of Project siting and includes the corridors presented as potential routes for the Project. In contrast, the Analysis Area includes a three-mile buffer around the Siting Study Area, allowing for the consideration of potential indirect effects (**Figure C-2.1**).

2. Existing Conditions in the Analysis Area

The Analysis Area was reviewed to evaluate potential direct, indirect, and cumulative effects of the Project and the Project's activities. The following sections provide an overview of the Analysis Area broken up by Waterways, Floodplains, and Riparian Habitat (**Section 2.1**), Geology (**Section 2.2**), Soil (**Section 2.3**), Vegetation (**Section 2.4**), Invasive, Non-Native Plant Species (**Section 2.5**), General Wildlife (**Section 2.6**), and Special Areas (**Section 2.7**).

Climate in the Analysis Area is defined as arid to semi-arid (Sonoran Desert) and is characterized by strong seasonal variability. The region receives an average annual precipitation of approximately 11.92 inches (U.S. Climate Data 2026), with roughly 50-60% falling during the summer monsoon season (July to September) as short-duration, high-intensity rain events that can generate localized flooding. Winters (December to February) contribute a secondary, smaller precipitation peak associated with frontal systems.

Mean annual temperatures typically range from about 68°F to 72°F, with summer highs frequently exceeding 100°F (June to August) and winter daytime temperatures averaging in the mid-60s°F with nighttime lows occasionally near freezing (National Weather Service 2025). The area experiences high evapotranspiration rates, low relative humidity outside of the monsoon season, and abundant solar radiation, all of which contribute to generally dry soil conditions for much of the year despite episodic rainfall events.



Tucson Electric Power

Southwest Tucson Reliability Project

- Analysis Area
- Siting Study Area



Figure C-2.1. Project Location Map

2.1 Waterways, Floodplains, and Riparian Habitat

Riparian and aquatic resources within the Analysis Area are concentrated along drainage corridors and stream networks crossed by the Phase 1 and Phase 2 Routes. These habitats are associated with ephemeral and intermittent waterbodies, including the Santa Cruz River, Black Wash, and Snyder Hill Wash. USFWS National Wetlands Inventory (NWI) classification data identified wetlands, ponds, and riverine systems within the Analysis Area. In an arid regional landscape, these riparian resources sustain higher vegetative density and function as critical ecological features by providing wildlife habitat, surface water availability, and regional movement corridors. To prevent adverse impacts to sensitive aquatic ecosystems, TEP will utilize Environmental Protection Measures (EPMs) and Best Management Practices (BMPs) to prevent erosion, control stormwater runoff, and safeguard downstream aquatic resources.

Santa Cruz River, Ephemeral Washes and Wetlands

The Santa Cruz River is a tributary of the Gila River, draining 8,581 square miles in southeastern Arizona (Parker 1993). The Santa Cruz River originates in the San Rafael Valley, approximately 60 miles southwest of the Siting Study Area in Santa Cruz County and flows north near the eastern edge of the Siting Study Area. The Santa Cruz River is predominantly ephemeral, with surface flow typically absent except during storm events or when treated wastewater is discharged upstream. Hydrologically, the reach functions as a losing stream, with most surface water rapidly infiltrating into the underlying alluvium and contributing to aquifer recharge rather than sustained channel flow.

The Santa Cruz River corridor within the Siting Study Area is embedded within an intensively developed urban environment that includes transportation infrastructure such as Interstate-19 and the Ajo Way interchange, as well as adjacent industrial, residential, and institutional land uses. Existing vegetation is patchy and disturbance adapted, consisting of scattered mesquites (*Prosopis* spp.) and early successional riparian species such as seep willow (*Baccharis salicifolia*) and arrowweed (*Pluchea sericea*) occurring in areas of intermittent moisture.

The USFWS NWI maps ephemeral washes and wetlands. The entirety of the Siting Study Area is crossed by washes of varying sizes that range from ephemeral with a discharge volume of 500 cubic feet per second to major with discharges ranging from 5,000 to 10,000 cubic feet per second. These washes are regulated by Pima County through the Pima County Floodplain Management Ordinance 2010-FC-5 (Pima County 2026a), which controls construction activity and enforces setback requirements near washes and typically requires permits for improvements that meet a disturbance threshold in regulated floodplains. These washes are shown on **Figure C-2.2**. In addition, wetlands are also highlighted on **Figure C-2.2** and occur in the southeast corner of the Siting Study Area, identified as 'Freshwater Emergent Wetlands' and 'Freshwater Pond' habitat.

Central Arizona Project Canal

The Central Arizona Project (CAP) is a 336-mile canal system that supplies Colorado River water to Maricopa, Pima, and Pinal counties, and serves more than 80% of the state's population (Central Arizona Project n.d.). Throughout its course, the CAP lifts water approximately 3,000 feet in elevation and has 15 pumping plants including one hydroelectric pump/generating plant at New Waddell Dam, the Lake Pleasant storage reservoir, 39 radial gate structures to control the flow of water, and more than fifty turnouts to deliver water.

The Snyder Hill Pumping Plant sits just north of the Siting Study Area and has 9 units that lift water 293 feet through a series of lift stations and operations features that include open-water basins associated with pumping and flow regulation. Within the facility, several engineered ponds are present, identified by

the USFWS NWI as freshwater ponds (see **Figure C-2.2**). These features represent managed, artificial surface water resources that maintain standing water for operations purposes, resulting in persistent, open-water conditions distinct from the surrounding natural landscape.

Floodplains

The watershed is split by the Tucson Mountains. Waters on the east side of the mountains flow generally east, towards the Santa Cruz River, which is within the Siting Study Area. Waters on the west side of the mountains generally flow west and north, eventually joining Brawley Wash and leaving the County.

The Siting Study Area, particularly on the west side is flood prone and occurs within flood zones A, AO1 and AO2. An area along West Valencia Road from the west boundary of the Tohono O’odham Nation west to South Caballo Road is also within Zone A. Both the Phase 1 and Phase 2 Routes are located in these flood prone areas.

The Drexel Heights neighborhood, including along Westover Avenue between Nebraska and Valencia Road is subject to sheet flooding. Pima County Regional Flood Control Department lists this area as having a 6” base flood elevation. The Phase 1 Route would require new construction in road right-of-way in this area.

Riparian Habitat

Riparian habitat is present along most of the washes within the Siting Study Area. Riparian habitat is regulated by Pima County Ordinance 2005-FC2, *Watercourse and Riparian Habitat Protection and Mitigation Requirements* (Pima County 2026a).

The Siting Study Area includes the following riparian habitat designations, as defined by Ordinance 2005-FC2:

- *Xeroriparian B and C* – “These riparian habitats are generally associated with an ephemeral water supply. Communities typically contain plant species also found in upland habitats; however, plants are typically larger and/or occur at higher densities than adjacent uplands.”
- *Hydromesoriparian or Mesoriparian H* – “These riparian habitats generally are associated with perennial or intermittent watercourses or shallow groundwater. Plant communities may be dominated by species that are also found in drier habitats (e.g., mesquite) but contain some preferential riparian plant species such as ash or netleaf hackberry.”
- *IRA – Xeroriparian B and C; IRA H; Important Riparian Areas (IRA)* – “Designated as Important Riparian Areas for their hydrologic, geomorphic, and biological values, these areas provide a critical function for landscape linkage and connectivity with other habitats and provide biological corridors.”

Two Classes of IRAs are mapped within the Siting Study Area and overlap the routes (**Figure 2**). IRA-H is mapped along South Camino Verde (Phase 2 Route), West Drexel Road and South Mission Road (Phase 1 Route), and at the Circuit Tie (Phase 2 Route). Class B habitat is mapped along West Valencia Road in the areas of South Viviana Road and South Camino Verde Road (Phase 2 Route).

Preconstruction site visits should be conducted to confirm presence/absence, condition, and related regulatory requirements for all waterway, floodplain, and riparian habitat. Depending on findings, it is recommended to keep vegetation clearing and soil disturbance to a minimum.

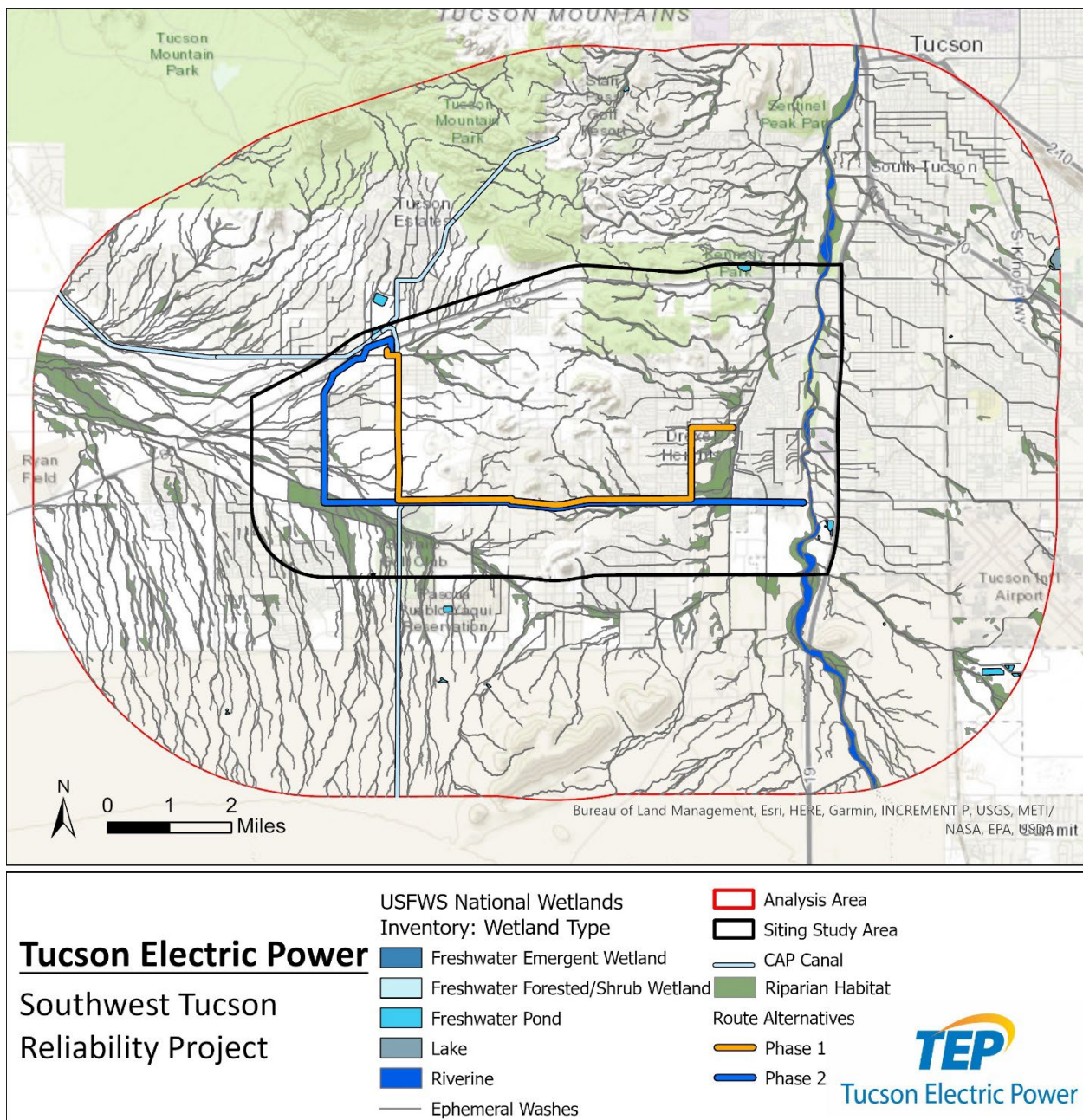


Figure C-2.2. Surface Water Features and Riparian Habitat

2.2 Geology

The Siting Study Area is situated within the Sonoran Desert section of the Basin and Range physiographic province. The Basin and Range Province spans much of the southwestern United States and northern Mexico, defined by alternating mountain ranges and sediment-filled basins formed by extensional tectonic forces. Within this province, the Sonoran Desert is a warm, subtropical desert known for its diverse vegetation, including various cacti, palo verde trees, and creosote bushes, as well as its extreme temperature variations and seasonal monsoon rains. This region covers parts of southern Arizona, southeastern California, northwestern Mexico, and extends into southwestern New Mexico.

2.3 Soils

Soils in the Siting Study Area are dominated by aridisols, a soil order that remains dry most of the year and forms in arid and semi-arid climates where there is very little rainfall. The soils limit plant growth and the leaching of minerals through the soil profile. Entisols are also present. These soils have no diagnostic horizons and are unaltered from their parent material, which could be unconsolidated sediment, or rock. These occur in the Siting Study Area as narrow, linear bands associated with drainageways and recent alluvial deposits. A corridor of mollisols is present along the eastern portion of the Siting Study Area, corresponding with the Santa Cruz River corridor. Mollisols are soils characterized by higher organic content and greater moisture retention. Minor areas mapped as 'No Soil' and 'Data Not Available' are present but are negligible relative to the overall Analysis Area. Overall, the soil distribution reflects a transition from xeric upland desert conditions to more moisture-influenced alluvial and riparian environments.

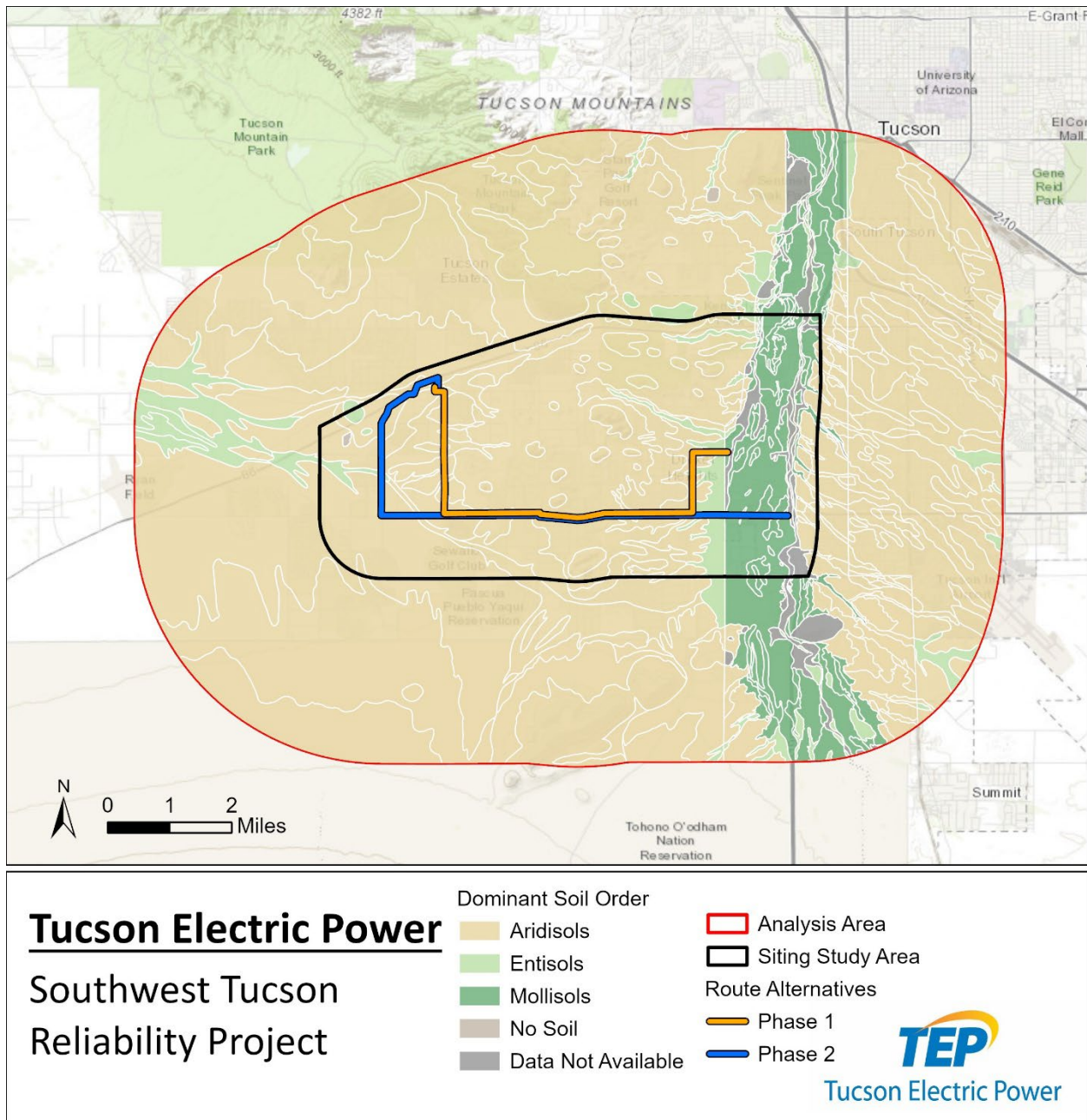


Figure C-2.3. Dominant Soil Orders

2.4 Vegetation

The Siting Study Area lies entirely within the Arizona Upland subdivision of Sonoran Desert Scrub biotic community, as described by Brown (1994). Vegetation classes include Palo Verde-Mixed Cactus, Sonoran Riparian-Mesquite Series, and Agricultural/Developed.

Native plants observed during a site visit on November 18, 2025, are typical of Sonoran desertscrub. The dominant tree species are velvet mesquite (*Prosopis velutina*) and blue palo verde (*Parkinsonia* spp.). Dominant native shrubs, forbs, and grasses include catclaw acacia (*Senegalia greggii*), four-wing saltbush (*Atriplex canescens*), creosotebush (*Larrea tridentata*), desert broom (*Baccharis sarothroides*), desert

marigold (*Baileya multiradiata*), globemallow (*Sphaeralcea* spp.), goldenweed (*Isocoma* sp.), fluffgrass (*Dasyochloa pulchella*), and six-week threeawn (*Aristida adscensionis*).

Native plants in Arizona are protected under the Arizona Native Plant Law (ANPL) and Pima County code. Depending on the extent of proposed vegetative clearing, a Notice of Intent to Clear Land may be required for submittal to the Arizona Department of Agriculture (AZDA).

2.5 Invasive, Non-Native Plant Species

Pima County has documented the presence of invasive, non-native plant species throughout the Siting Study Area, primarily along roadways and other areas with disturbed soils (Pima County 2026c) such as buffelgrass, fountain grass (*Pennisetum setaceum*), Bermuda grass (*Cynodon dactylon*), and Russian thistle (*Salsola tragus*). These weeds have the potential to cause an elevated risk of ecological harm (AWIPWG 2005) and wildfire. Buffelgrass is also categorized as a Class C Noxious Weed according to the AZDA (2026).

Management and control of invasive species is important when creating ground disturbance, as these opportunistic plants thrive in disturbed soils. Measures to minimize ground disturbance and decontaminate construction equipment are recommended to help prevent the spread of these species that pose harm to both the surrounding natural and built environments.

2.6 General Wildlife in the Siting Study Area

Though the Project is sited along existing roads and utility corridors and is developed, wildlife persists and reflects the diversity typical of Upland Sonoran Desertscrub particularly on the west side of the Analysis Area. Wildlife in the Siting Study Area are supported by natural features that promote connectivity within the region, including the Tucson Mountains, numerous washes, as well as undeveloped lands in the center of Siting Study Area.

Wildlife species observed in the Siting Study Area during field visits in November 2025 and April 2026 are shown in Table C-2.1 below.

Table C-2.1. Wildlife Observed During Field Visits in November 2025 and April 2026*

Species Name	Common Name
<i>Buteo jamaicensis</i>	Red-tailed hawk
<i>Callipepla gambelii</i>	Gambel's quail
<i>Cathartes aura</i>	Turkey vulture
<i>Zenaida macroura</i>	Mourning dove
* As the field visits were limited to the Preliminary Segment corridors, this does not represent a comprehensive listing of species that are either known to occur or have the potential to occur in the Siting Study Area or Analysis Area.	

2.7 Special Areas

Tucson Mountains Important Bird Area (IBA)

The Tucson Mountains IBA, designated by the National Audubon Society on March 20, 2017, spans roughly

73 square miles of National Park Service, Pima County, and Bureau of Land Management (BLM) lands west of Tucson. Easily accessed from several major roads, the area includes popular destinations such as Gates Pass, the Arizona-Sonoran Desert Museum, and extensive trail networks within Saguaro National Park's Tucson Mountain District. Centered on the Tucson Mountains and the surrounding Upland Sonoran Desert, the IBA ranges from 2,500 to 4,688 feet in elevation and contains some of the densest saguaro stands on Earth (**Figure C-2.4**).

This landscape supports exceptional biological diversity due to its location at the intersection of several biotic communities, its varied microclimates, and its bi-seasonal rainfall regime. In fewer than 40 square miles, researchers have documented more than 630 plant species, representing about one-sixth of the entire Sonoran Desert flora. Habitats span dense saguaro uplands, desert grassland patches at higher elevations, and rich desert-scrub communities tied to both Sonoran and Mohave Desert floras. The area provides important habitat for numerous bird species, including year-round residents such as Gilded Flicker, Harris's Hawk, and Cactus Wren; breeding species such as Bell's Vireo and Lucy's Warbler; and various migratory and wintering birds.

Despite its ecological richness, the IBA faces several conservation challenges. Proximity to Tucson brings heavy recreational use and significant habitat fragmentation from urbanization, which is now considered the most serious threat to regional biodiversity. Invasive species, especially buffelgrass, Sahara mustard, tamarisk, and others, are transforming plant communities and altering fire regimes, endangering native vegetation and wildlife. Additional pressures include grazing on limited BLM lands, altered hydrology, and the broader regional loss of native vegetation. Land managers, including the National Park Service and regional partners, are addressing these threats through invasive species control efforts and broader planning initiatives such as the Sonoran Desert Conservation Plan (SDCP).

The most proximate point of the Project is almost 2 miles from the IBA. The Project would entail limited vegetation disturbance and will not impact the IBA.

Pre-construction surveys would be conducted if construction is to occur during breeding season for migratory birds.

Wildlife Linkage Corridors

Tucson Mountains to San Xavier (San Robles Pass) is a wildlife movement corridor located within the Siting Study Area. The corridor is composed entirely of Arizona Upland Sonoran Desertscrub (Brown 1994) and is predominantly privately owned (88%), with smaller portions managed by the BLM (4%), Arizona State Land Department (5%), and the Pascua Yaqui and San Xavier District (Tohono O'odham) (3%). Hydrologically, it is influenced by the Santa Cruz River and its West Branch.

This corridor connects two habitat blocks that are preserved wildlands. One is the Tucson Mountains, and the other the San Xavier District of the Tohono O'odham Nation. The Tucson Mountains Habitat Block is located north of and abutting Ajo Way, covering Tucson Mountain Park and Saguaro National Park. The San Xavier Habitat Block is within the Analysis Area and is crossed by both the Phase 1 and Phase 2 Routes.

Linkage design typically includes installation of crossing structures over highways and roads, removal of barriers to wildlife movement, and increasing riparian habitat to improve connections to streams and rivers. Mitigations to stream impediments include maintaining natural flood regimes, reducing ATV and OHV use in riparian vegetation in the floodplain, and removing non-native and invasive plants and animals.

This linkage supports a variety of sensitive and wide-ranging species, including bobcat (*Lynx rufus*), mountain lion (*Felis concolor*), Sonoran desert tortoise (*Gopherus agassizii*), Western burrowing owl (*Athene cunicularia hypugaea*), cave myotis (*Myotis velifer*), California leaf-nosed bat (*Macrotus californicus*), the giant spotted whiptail (*Aspidoscelis burti stictogrammus*) and the greater western mastiff bat (*Eumops perotis californicus*). As a connective habitat area, it plays an important role in maintaining ecological permeability between the Tucson Mountains, the San Xavier District, and further to other southern desert landscapes.

Key threats to the corridor include border security infrastructure, the presence of State Route 86, and ongoing development - each contributing to habitat fragmentation and reduced wildlife movement. Despite these pressures, the linkage remains an important component of regional conservation planning, particularly for maintaining species movement and long-term ecological resilience in the rapidly developing Tucson region (Arizona's Wildlife Linkages Assessment 2006). While transmission lines are not inherently considered barriers to wildlife movement, removal of vegetation and establishment of associated access roads can be. To support the linkage design, the Project would:

- Avoid the banks of the Santa Cruz River
- Span washes
- Avoid clearing riparian vegetation for access, construction, or maintenance
- Follow EPMs to avoid introduction of non-native invasive plants and animals
- Minimize noise and excessive light during construction in those areas

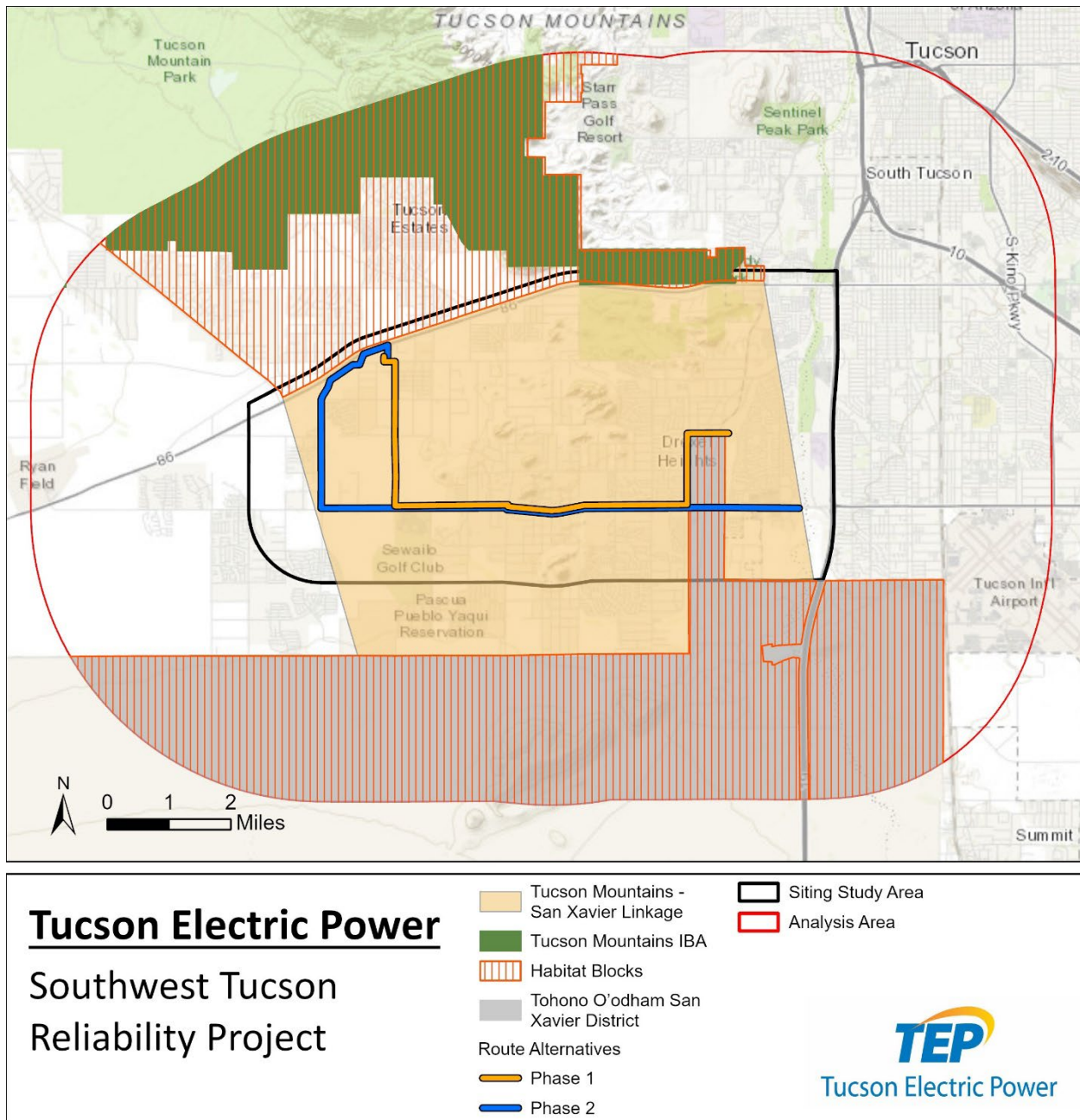


Figure C-2.4. Special Areas

3. Special Status Species Evaluation and Results

Special status species that might be present within the Siting Study Area were identified by obtaining a USFWS Information for Planning and Consultation (IPaC) Official Species List of Threatened and Endangered species (**Appendix A**) and an Arizona Game and Fish Department (AGFD) Heritage Data Management System (HDMS) report using the online Environmental Review Tool report (**Appendix B**).

The USFWS IPaC Official Species List indicated that 11 animal species (six endangered, three threatened, one Experimental Population (treated as threatened), and one proposed threatened) and three Endangered flowering plant species require consideration in this report. There are no designated critical habitats within the Siting Study Area. The AGFD report indicated six special status species have

documented occurrences within 3.0 miles of the Siting Study Area (=Analysis Area). While each are considered Priority Vulnerable Species (PVS) in Pima County's SDCP, only one is modeled in the Analysis Area as PVS—the Pima pineapple cactus (PPC). This report also assesses the potential for bald and golden eagles, protected under the BGEPA to occur in the Analysis Area (**Table C-2.2**).

Table C-2.2. Special Status Species and Their Potential to Occur in the Siting Study Area

Common Name	Scientific Name	Status	Potential to Occur
Federally-listed			
Jaguar	<i>Panthera onca</i>	E	Unlikely
Ocelot	<i>Felis pardalis</i>	E	Unlikely
Sonoran pronghorn	<i>Antilocapra americana soniensis</i>	EXPN	Unlikely
Chiricahu leopard frog	<i>Rana chiricahuensis</i>	T	Unlikely
Yellow-billed cuckoo (Western DPS)	<i>Coccyzus americanus</i>	T, PVS, 1	Unlikely
Cactus ferruginous pygmy owl	<i>Glaucidium brasilianum cactorum</i>	T, PVS, 1	Unlikely
California least tern	<i>Sterna antillarum browni</i>	E	Unlikely
Southwestern willow flycatcher	<i>Empidonax traillii extimus</i>	E, PVS	Unlikely
Gila chub	<i>Gila intermedia</i>	E, PVS	Unlikely
Gila topminnow (incl. Yaqui)	<i>Poeciliopsis occidentalis</i>	E, PVS	Unlikely
Monarch butterfly	<i>Danaus plexippus</i>	PT	Possible
Arizona eryngo	<i>Eryngium sparganophyllum</i>	E	Unlikely
Huachuca water-umbel	<i>Lilaeopsis schaffneriana</i> var. <i>recurve</i>	E, PVS	Unlikely
Pima pineapple cactus	<i>Coryphantha scheeri</i> var. <i>robustipina</i>	E, PVS, HS	Possible
Bald and golden eagle (See Section 3.2.6)	<i>Haliaeetus leucocephalus</i> <i>Aquila chrysaetos</i>	BGEPA	Possible
State Listed			
Sonoran desert tortoise ^a	<i>Gopherus morafkai</i>	CCA, PVS, 1	Present
Western burrowing owl ^b	<i>Athene cunicularia hypugaea</i>	PVS, 2	Possible
Tumamoc globeberry	<i>Tumamoca macdougallii</i>	PVS, SR	Possible

^a Sonoran Desert Tortoise did not appear on the IPaC list, however residents report presence of them in the Siting Study Area at Open House meetings and iNaturalist.

^b Species with known occurrences within 3.0 miles of the Study Area (AGFD).

USFWS (E=Endangered, T=Threatened, EXPN=Experimental Population, PT=Proposed Threatened, CCA=Candidate Conservation Agreement), BGEPA= Bald and Golden Eagle Protection Act; AZGFD (1 or 2= SGCN Tier); ADOA (HS=Highly Safeguarded, SR=Salvage Restricted); Pima County SDCP (PVS=Priority Vulnerable Species)

3.1 Special Status Species Evaluation

Screening analyses were conducted to determine the potential for special status species and designated critical habitat to occur within the Siting Study Area and surrounding Analysis Area. Screening analyses consisted of species identification, habitat assessment, and evaluation of the potential for occurrence. These methods are described in the following sections.

Habitat Assessment

Sonoran reviewed Brown (1994) to identify the biotic community in which the Siting Study Area occurs. Vegetation and habitat features are described in **Section 2.4**.

Site Visit

Prior to the first site visit conducted on November 18, 2025, Sonoran reviewed the natural history, habitat use and known range and distribution of the special status species identified in Table 1. Sonoran noted and photo-documented site conditions during the visit, including vegetation communities and species, wildlife and habitat, the presence of surface water, and any other resources that are known to be associated with areas occupied by the special status species.

Special Status Species Evaluation of Potential Occurrence

In total, fourteen (14) special status species were reviewed for having some potential to occur in the Siting Study Area: nine (9) federally Endangered species, three (3) federally Threatened species, one (1) federally non-essential Experimental Population species, and one (1) federally Proposed Threatened species. The screening also included two (2) species protected by the BGEPA, one (1) state-listed species that is also managed at the federal level under a Candidate Conservation Agreement (CCA), as well as the state-protected burrowing owl which is documented as present in the vicinity of the Siting Study Area, and the Tumamoc globeberry, a PVS and salvage restricted plant species.

Appendix C is the Special Status Species Screening Table and provides details for all special status species removed from further consideration following the evaluation of potential occurrence.

The potential for each special status species to occur within the Siting Study Area was determined based on:

- A desktop review completed by Sonoran on October 29, 2025, and updated on March 25, 2026
- Site visits conducted on November 18, 2025 and April 30, 2026
- Review of the natural history, geographic and elevation ranges of each special status species
- Review of occurrence records of special status species in published or grey literature
- Comparisons of known habitat associations with habitats within the Siting Study Area

The criteria used to define the potential for occurrence of each species included in this screening analysis are defined as follows:

Present: The species has been observed in the Siting Study Area, the Siting Study Area is within the known range and distribution of the species, and habitat characteristics required by the species are present.

Possible: There are no known records of the species within the Siting Study Area, but the known, current distribution of the species includes the Siting Study Area and the required habitat characteristics of the species appear to be present in the Siting Study Area. Given the uncertainty associated with species identification and accuracy of the location of observations from eBird and other citizen science or public agency databases, observations associated with citizen science or public agency databases are evidence that a species is possible within the Siting Study Area.

Unlikely: The known, current distribution of the species does not include the Siting Study Area, but the distribution of the species is close enough such that the Siting Study Area may be within the dispersal or foraging distance of the species, and they may show up as transients. The habitat characteristics required by the species may be present in the Siting Study Area.

No Potential: The Siting Study Area is outside of the known distribution of the species, or the habitat characteristics required by the species are not present.

3.2 Potential for Special Status Species to Occur

It was determined that two federally-listed special status species (monarch butterfly and PPC) and two state listed special status species (Western burrowing owl and Tumamoc globeberry) potentially occur within the Siting Study Area. It was also determined that bald and golden eagles may occur (see **Section 3.2.6**). The Sonoran desert tortoise was determined present based on regional occurrence data from AGFD and resident accounts. These species are discussed in greater detail below.

Effects determinations are based on standard terms used by subject matter experts. Species listed by the USFWS and protected by the ESA receive the following effects determinations:

- *“May affect, likely to adversely affect”* – the project is likely to adversely affect a species if the species is known to occur in the Study Area; project activities would disturb areas or habitat elements known to be used by the species or would directly affect an individual.
- *“May affect, but not likely to adversely affect”* – the project is not likely to affect a species if the species may occur, but its presence has not been documented; project activities would not result in disturbance to areas or habitat elements known to be used by the species.
- *“No effect”* – the project will have no effect on a species if the species is considered unlikely to occur because the known range, vegetation type, etc. are inappropriate, and the species or its sign was not observed during surveys of the Study Area.

For species not protected under the authority of the ESA, the following impact determinations are applicable:

- *“No impact”* – the project would have no impact on a species, notably if habitat is not present, the Study Area is outside of the known range, and/or evidence of individual(s) was not observed.
- *“Beneficial impact”* – the project is likely to benefit the species by creating or enhancing species’ habitat elements, regardless if the species is currently present.
- *“May impact individuals, but not likely to result in a trend toward Federal listing or loss of viability”* – although a project may have a detrimental impact on individuals, it is not anticipated to reduce overall location use and/or contribute to a future federal listing status.
- *“May impact individuals and is likely to result in a trend towards Federal listing or loss of viability”* – the project is likely to have a detrimental impact on individuals and the species as a whole, contributing toward a reduction in location use and/or a future federal listing status

3.2.1 Monarch Butterfly

Status

The Monarch butterfly (*Danaus plexipus*) is currently proposed for federal listing as a Threatened species under the ESA. In the USFWS’s December 17, 2020, 12-month finding (USFWS 2020), they determined that the monarch butterfly warranted listing as an Endangered or Threatened species under the ESA, but that listing was precluded by higher priority listing actions and it was added to the candidate list. In December of 2024, the USFWS proposed to list the species as Threatened, on the Endangered species list.

Description, Habitat, and Threats

Monarch butterflies are large and conspicuous, with two sets of bright orange wings that span three to four inches and are covered with black veins and surrounded by a black border with a double row of white spots. Monarch butterflies are migratory insects known for their long-distance seasonal movements

between breeding and overwintering grounds, unique reproductive strategy, and large masses formed while overwintering in Mexico and coastal California. The species is highly dependent on milkweed (*Asclepias pp.*) as the sole host plant for larval development, while adults utilize a wide variety of nectar-producing plants for foraging. Habitat conditions are generally marginal for this species in the Analysis Area but may provide blooming plants that could sustain adults during migration. In Arizona, monarch activity is often associated with riparian corridors, urban landscapes, and areas where ornamental or native milkweed is present (USFWS 2020).

Potential to Occur

Habitat conditions are generally marginal for this species in the Siting Study Area and may provide potentially suitable foraging habitat, however no milkweeds were identified during field visits on November 18, 2025, or April 30, 2026. According to USFWS, monarch butterflies are considered potentially present within the Siting Study Area based on range-wide distribution and habitat associations; however, no critical habitat has been designated, and site-specific occurrence records are limited (iNaturalist 2026).

Potential for Impact by the Project

Although the Project will be aerial and much of it will use existing structures and be sited in existing road right of way and utility corridors, construction activity could potentially impact habitat. However, with the application of EPMs, the Project may impact individuals but is not likely to result in a trend toward Federal listing or a loss of viability.

3.2.2 Pima Pineapple Cactus

Status

The USFWS listed PPC as Endangered in 1993 (USFWS 2024). It is also protected by AZDA ANPL as a Highly Safeguarded species. It is also included as a PVS in Pima County's SDCP.

Description, Habitat and Threats

PPC is a small globular cactus native to Sonoran Desertscrub and semi-desert grassland communities of southern Arizona and far northern Sonora, Mexico. In the U.S., it is found in only Pima and Santa Cruz counties, between approximately 2,400 to 4,500 feet in elevation. Individual plants typically occur in low densities, grow 5-46 centimeters in height and 5-21 centimeters in diameter, and can have one to many stems. Individual flowers bloom in summer for a single day and are primarily pollinated by a native, solitary, ground-nesting bee (*Diadasia rinconis*). Threats include illegal collection, development, nonnative invasive plants, drought, and alteration of fire regimes.

Potential to Occur

PPC are known to grow most often in areas with the following characteristics: alluvial fans or hillsides; shallow to deep and silty to rocky soils with a preference for silty to gravelly, deep alluvial soils; and open areas on flat ridge tops or areas with less than 10 percent slope. There is suitable habitat for PPC in the Siting Study Area, particularly west of the Tucson Mountains, which is bisected by alluvial fans and silty soils.

Potential for Impact by the Project

The Project will be aerial, span washes, and much of it will use existing structures and be sited in existing road right of way and utility corridors. However, during construction, pole foundations will be dug and vehicles may cross washes and surrounding alluvial fans. As vegetation removal will be minimized, the

amount of potential habitat that may be removed during site preparation and construction would likely be minimal. Compliance with recommended EPMs would reduce or avoid impacts to the PPC. The Project may affect but is not likely to adversely affect PPC.

3.2.3 Sonoran Desert Tortoise

Status

Since 1982, the federal listing status for the Sonoran desert tortoise has changed multiple times. Most recently, in 2022 the USFWS determined that the species did not warrant listing as endangered or threatened and removed it from the candidate list. It remains protected by a 2015 CCA administered by USFWS, which includes 16 state and federal partners. In Arizona, the Sonoran desert tortoise has been protected under AGFD Commission Order 43 since 1989, which prohibits take, possession, or harassment of desert tortoises unless specifically authorized by the AGFD (AGFD 2025). It is also listed by AGFD as a Tier 1 SGCN and by Pima County's SDCP as a PVS.

Description, Habitat and Threats

The Sonoran desert tortoise is native to the Sonoran Desert, occurring in western, central and southern Arizona, U.S. and in northwest Sonora, Mexico. It eats a variety of herbs, woody plants, grasses, and succulents. Its preferred habitat includes steep, rocky slopes of mountains and the incised washes that drain the slopes. Tortoises are long-lived (>50 years) and spend a significant portion of their life in burrows/shelters. The availability of shelter sites and drinking water strongly influences population density and species survival (AGFD 2026c). Threats to the species include urban expansion, depredation, habitat degradation and loss, invasive species, illegal collection, vehicle collisions, wildfires, drought and disease.

Potential to Occur

The Siting Study Area occurs within predominantly disturbed Sonoran Desert uplands west of the Santa Cruz River corridor, where vegetation is characterized by creosotebush scrub, scattered mesquite, and ruderal species. While much of the Siting Study Area reflects human development and disturbed areas, suitable microhabitat for Sonoran Desert tortoise containing friable soils for burrowing and sparse shrub cover, remains present in portions of the Siting Study Area.

Of note, the Sonoran Desert tortoise has been documented within the Siting Study Area, according to iNaturalist (2026) and consistent with regional occurrence data from the AGFD (Online ERT) indicating known records within 3 miles of the Siting Study Area, as well as resident accounts. Although the immediate Santa Cruz River corridor provides less suitable habitat due to altered hydrology and soil conditions, adjacent uplands surrounding the Tucson Mountains may support transient or resident individuals.

Potential for Impact by the Project

Species that fall under a CCA are afforded added protection measures be taken for any planned development projects, including avoidance and mitigation measures within and adjacent to the Project's footprint. Compliance with recommended EPMs for the Sonoran desert tortoise would avoid and minimize impacts to the species. By implementing these recommendations, the Project may impact individuals but is not likely to result in a trend toward Federal listing or a loss of viability.

3.2.4 Western Burrowing Owl

Status

Although not protected under the ESA, the western burrowing owl is listed by the USFWS as a National Bird of Conservation Concern, which identifies it as a species that without additional protection is likely to become a candidate for listing under the ESA. It is also listed by AGFD as a Tier 2 SGCN and a PVS by Pima County's SDCP.

Description, Habitat and Threats

Western burrowing owl is a small (19-25 cm), ground-dwelling diurnal owl with yellow eyes, long legs, and characteristic head-bobbing behavior when disturbed. It inhabits a variety of habitats, including semidesert grassland, plains grassland, cropland, Great Basin Desertscrub, the Lower Colorado and Arizona Upland subdivisions of the Sonoran Desertscrub formation, barren ground, Great Basin Grassland, Mojave Desertscrub, and rural and residential areas, including roads, airports, orchards, vacant urban lots, parks, and orchards (USFWS 2026a). Primary threats are habitat loss and elimination of their prey base of burrowing mammals through control programs.

Potential to Occur

There is potential for western burrowing owls to occur within the Siting Study Area. Their prey base of fossorial, burrowing mammals is most certainly present throughout. In addition, along with natural flat, open areas, there are also disturbed areas with culverts and access to water (Santa Cruz River, Central Arizona Project facilities, nearby sand and gravel operations, and residences). AGFD also documents it as occurring in the Project vicinity.

Potential for Impact by the Project

Though the majority of the Project would have limited activity in areas suitable for burrows, there is the potential for Project activities to impact the western burrowing owl. Compliance with recommended EPMs would reduce or avoid impacts. The Project may impact individuals but is not likely to result in a trend toward federal listing or a loss of viability.

3.2.5 Tumamoc Globeberry

Status

Tumamoc globeberry was formerly listed as Endangered by USFWS but was delisted in 1993, after it was determined to be less habitat specific and occur across a more extensive range (USFWS 2026a). It is protected by ANPL as Salvage Restricted and is identified as a PVS in Pima County's SDCP.

Description, Habitat and Threats

Tumamoc globeberry is a vine with grasping tendrils. It generally flowers in August, then produces grape sized, globe-shaped fruit. It is found along washes and arroyos at elevations below 3,000 feet above mean sea level but is difficult to locate, as its foliage intermingles with neighboring species. Primary threats are habitat loss, habitat degradation, climate conditions, and non-native invasive species.

Potential to Occur

The Siting Study Area is crossed by many washes that may provide suitable habitat for Tumamoc globeberry. The Project will be aerial, span washes, and much of it will use existing structures and be sited in existing road rights-of-way and utility corridors. However, during construction, vehicles may cross washes, which could impact the globeberry. The Project is not expected to closely parallel washes and it

will minimize vegetation removal; thus, the amount of potential habitat that may be removed during site preparation and construction would likely be minimal. Compliance with standard EPMs would reduce or avoid impacts to the globeberry. The Project may impact individuals but is not likely to result in a trend toward Federal listing or a loss of viability.

3.2.6 Bald and Golden Eagle

In 1940, the U.S. Congress passed the BGEPA to protect declining bald eagle (*Haliaeetus leucocephalus*) populations and amended the Act in 1962 to include golden eagles (*Aquila chrysaetos*) (BGEPA Title 16 U.S. Code, section 668-668d, 54 Stat. 250). Eagles are also protected by the MBTA (USFWS 1940).

These statutes prohibit the take, possession, or disturbance of eagles, their nests, or eggs without a permit. USFWS IPaC reports, the AGFD ERT, and eBird records confirm that both species occur regionally. While bald eagles are occasional inhabitants in the region, golden eagles are more likely to be encountered in the Analysis Areas, as they frequently utilize the open, mountainous terrain of southern Arizona for foraging and migration.

The Analysis Area consists primarily of flat, disturbed, desertscrub urban terrain that lacks water bodies, large trees, or cliff faces necessary to support bald or golden eagle nesting.

Bald eagles typically nest in tall trees or saguaros near water and feed opportunistically on fish, waterfowl, small mammals, and carrion. No suitable nesting habitat exists for bald eagles within the Siting Study Area. However, the IPaC report indicated that bald eagles could occur in the Siting Study Area.

Golden eagles are generally found in open or mountainous terrains and nest on cliffs, rock ledges, or large trees. In Arizona, they are primarily located in mountainous regions and are largely absent from desert areas outside the breeding season. Like bald eagles, no suitable nesting habitat is located within the Siting Study Area. The nearest suitable nesting habitat for golden eagles is located approximately 2 miles north in Tucson Mountain Park. However, the IPaC report indicated that bald eagles could occur in the Siting Study Area.

Therefore, bald and golden eagles may transiently inhabit the Analysis Area during construction; however, their presence would likely be limited to migratory and/or hunting behavior as there is no suitable nesting habitat for either species found within the Siting Study Area. During hunting, eagles may use transmission and distribution poles as perches.

Construction of the Project is unlikely to result in the impact or take of individuals or nests of either species. During preconstruction migratory bird and raptor nest surveys, observations of bald and golden eagles will be recorded. To minimize the potential for mortality caused by electrocution to eagles and other species while flying, hunting, or perching on poles, TEP designs their lines in accordance with the guidelines and recommendations set forth by APLIC.

3.2.7 Migratory Bird Treaty Act

Status

Migratory birds are protected under the MBTA of 1918, as amended (16 U.S. Code §§ 703–712) (USFWS 2026a). Under the MBTA, it is unlawful to take, kill, or possess migratory birds, their eggs, parts, or nests without a valid permit (50 Code of Federal Regulations [CFR] § 21.11). The list of migratory bird species applies to birds native to the United States. The AGFD HDMS report provides an extensive list of bird

species currently on the MBTA list that could occur within the Analysis Area (Appendix B).

Potential to Occur

Besides the bald and golden eagle, the recent IPaC analysis for the Analysis Area indicated that 11 species of migratory BCC could inhabit the area. The BCC species included in the report are American Avocet (*Recurvirostra americana*), Bendire's Thrasher (*Toxostoma bendirei*), Black-chinned Sparrow (*Spizella atrogularis*), Costa's Hummingbird (*Calypte costae*), Gila Woodpecker (*Melanerpes uropygialis*), Grace's Warbler (*Setophaga graciae*), Lawrence's Goldfinch (*Spinus lawrencei*), Long-eared Owl (*Asio otus*), Marbled Godwit (*Limosa fedoa*), Western Grebe (*Aechmophorus occidentalis*), and Willet (*Tringa semipalmata*). Further coordination with the USFWS and AGFD may be necessary if updated data becomes available or if Project timing overlaps with known nesting periods.

Potential for Impact by the Project

Suitable nesting habitat is present throughout much of the Siting Study Area and may host several species of active nesting birds during the nesting season (March 1 to August 31). It should be assumed there is high likelihood that nesting activity will occur during construction within and/or adjacent to the Project.

To avoid impacting nests during the active nesting season and to limit the potential for take of species, formal preconstruction migratory bird and raptor nest surveys are recommended to be conducted by a qualified biologist within 10 days prior to the initiation of construction activities. These preconstruction surveys would be continued, as needed, as construction moves to new areas not previously or recently surveyed or those areas that have had no construction activities take place for longer than 10 consecutive days. If active nests are discovered, a species-specific avoidance buffer would be established, and no construction activities would take place within that buffer until it is confirmed by a qualified biologist that the nestlings have successfully fledged or the nest is later determined by the biologist to be inactive.

Vegetation would be surveyed prior to construction to confirm that no protected bird species would be impacted.

4. Recommended Best Management Practices and Environmental Protection Measures

The following BMPs and EPMs are designed to reduce the impact to special status species, risk of animal injury, or spread of invasive species.

4.1 BMPs

The following BMPs will be utilized for all construction and maintenance activities:

- Vehicular traffic will use existing roads and stay within the right of way.
- Construction will generally occur only during daylight hours.
- Maintain all construction equipment in proper working condition according to manufacturer's specifications.
- Use electric or battery-powered equipment whenever possible to reduce emissions.
- Schedule construction and maintenance activities during favorable weather conditions, such as low-wind and moderate temperatures to the extent practicable.
- Minimize idling time either by shutting equipment off when not in use or reducing the time of idling to 5 minutes.
- Implement a stormwater pollution prevention plan as required.

- Implement a spill prevention, control, and countermeasures plan as required.

The following BMPs will be implemented to prevent the introduction or spread of invasive plant species:

- All construction equipment and personnel vehicles used on site will be clean before entering the construction area. Vehicles will be clean of all mud, dirt, plant parts, and other debris.
- Soil disturbance will be minimized to the maximum extent feasible. Contractors will use certified weed-free wood straw mulch that has a certified stamp or sterile material such as re-green or other approved material.
- Monitor disturbed areas for invasive plant establishment during bi-annual inspections.

4.2 Environmental Protection Measures

Monarch Butterfly

TEP plans to keep the removal of blooming plants at a minimum to avoid impacts to the monarch butterfly.

Pima Pineapple Cactus

The USFWS has established standard measures to avoid or minimize impacts on the PPC:

- Conduct pre-construction surveys in suitable habitat to identify individual plants. Follow current survey protocols.
- Establish 10- to 50-foot-wide buffers around identified PPCs to avoid impacting individual PPCs and their surrounding habitat during construction and ground-disturbing activities. These buffered areas should be flagged or fenced.
- Restrict construction during wet seasons to avoid excessive soil compaction.
- Minimize soil disturbance in suitable habitat (e.g., limit grading, vehicle travel, equipment laydowns, trenching).
- Implement appropriate erosion and sediment control measures to protect habitat from runoff.
- Restore disturbed habitat with native seed and/or plantings.
- Educate site personnel on species' appearance and legal protections. Prohibit plant collection and/or removal.

Sonoran Desert Tortoise

Standard AGFD protection measures to avoid or minimize impacts will be followed including:

- Preconstruction survey by a qualified biologist for burrows, shelters, and individuals.
- Site personnel will be trained on the appearance of the species and AGFD Desert Tortoise Handling Guidelines (Appendix D) to mitigate potential impacts to the desert tortoise.
- If construction occurs during species active periods, construction monitoring is recommended.

Western Burrowing Owl

The Arizona Burrowing Owl Working Group has developed guidelines for surveys and management of burrowing owls on development sites (AGFD 2009). In addition to standard EPMs for protection of migratory birds, the following guideline is recommended within the selected right of way:

- Coordinate with the AGFD to determine need for surveys and other resource protection measures.

Migratory Bird Species

To avoid impacts on migratory birds (including bald and golden eagles) and their nests, the following mitigation measures are recommended during the general breeding season of March 1 to August 31:

- A biologist will conduct surveys for migratory bird and raptor nests within 10 days prior to construction activities, vegetation removal, or ground disturbance.
- Establish avoidance buffers around active nests. No construction, vegetation, or ground disturbance will occur during time restriction.
- Minimize disturbance to areas with high vegetative cover.
- If listed species and their nests are identified during construction, activities will stop at site, and TEP will notify appropriate federal or state wildlife agencies to determine appropriate next steps.
- Follow TEP established raptor protection protocols, as well as the Avian Power Line Interaction Committee guidelines.

Standard EPMs

- Minimize vegetation clearing and ground disturbance.
- Provide construction period monitors in areas where pre-construction surveys indicate the presence of sensitive species.
- Implement worker environmental awareness training to inform site personnel on the appearance of protected species and their legal protections.
- Clear the construction site of Project or construction-related trash each day.
- Restore disturbed areas to pre-construction or native condition following completion of Project activities, by planting seeds or native vegetation.
- If native plants listed under the ANPL are proposed for removal, a Notice of Intent to Clear Land should be submitted to the AZDA prior to commencing ground disturbance.

5. Summary

Impacts on wildlife and vegetation are anticipated to be limited, and potential impacts to sensitive resources can be minimized or avoided, with implementation of the recommended BMPs and EPMs.

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Appendix A.
U.S. Fish and Wildlife Service Information for Planning and Consultation Tool Report

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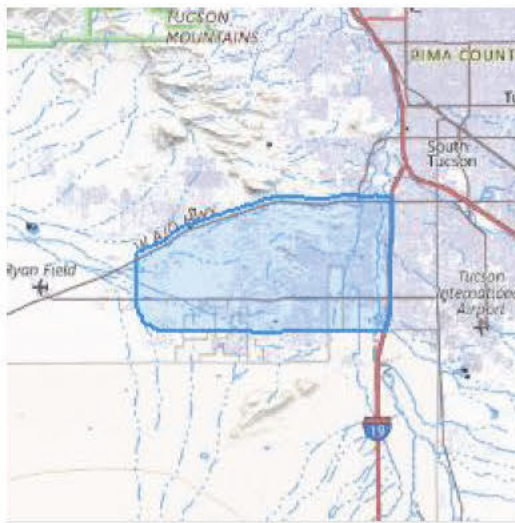
IPaC resource list

This report is an automatically generated list of species and other resources such as critical habitat (collectively referred to as *trust resources*) under the U.S. Fish and Wildlife Service's (USFWS) jurisdiction that are known or expected to be on or near the project area referenced below. The list may also include trust resources that occur outside of the project area, but that could potentially be directly or indirectly affected by activities in the project area. However, determining the likelihood and extent of effects a project may have on trust resources typically requires gathering additional site-specific (e.g., vegetation/species surveys) and project-specific (e.g., magnitude and timing of proposed activities) information.

Below is a summary of the project information you provided and contact information for the USFWS office(s) with jurisdiction in the defined project area. Please read the introduction to each section that follows (Endangered Species, Migratory Birds, USFWS Facilities, and NWI Wetlands) for additional information applicable to the trust resources addressed in that section.

Location

Pima County, Arizona



Local office

Arizona Ecological Services Field Office

☎ (602) 242-0210

📅 (602) 242-2513

9828 North 31st Ave

#c3

Phoenix, AZ 85051-2517

Endangered species

This resource list is for informational purposes only and does not constitute an analysis of project level impacts.

The primary information used to generate this list is the known or expected range of each species. Additional areas of influence (AOI) for species are also considered. An AOI includes areas outside of the species range if the species could be indirectly affected by activities in that area (e.g., placing a dam upstream of a fish population even if that fish does not occur at the dam site, may indirectly impact the species by reducing or eliminating water flow downstream). Because species can move, and site conditions can change, the species on this list are not guaranteed to be found on or near the project area. To fully determine any potential effects to species, additional site-specific and project-specific information is often required.

Section 7 of the Endangered Species Act **requires** Federal agencies to "request of the Secretary information whether any species which is listed or proposed to be listed may be present in the area of such proposed action" for any project that is conducted, permitted, funded, or licensed by any Federal agency. A letter from the local office and a species list which fulfills this requirement can **only** be obtained by requesting an official species list from either the Regulatory Review section in IPaC (see directions below) or from the local field office directly.

For project evaluations that require USFWS concurrence/review, please return to the IPaC website and request an official species list by doing the following:

- 1. Draw the project location and click CONTINUE.
- 2. Click DEFINE PROJECT.
- 3. Log in (if directed to do so).
- 4. Provide a name and description for your project.
- 5. Click REQUEST SPECIES LIST.

Listed species¹ and their critical habitats are managed by the [Ecological Services Program](#) of the U.S. Fish and Wildlife Service (USFWS) and the fisheries division of the National Oceanic and Atmospheric Administration (NOAA Fisheries²).

Species and critical habitats under the sole responsibility of NOAA Fisheries are **not** shown on this list. Please contact [NOAA Fisheries](#) for [species under their jurisdiction](#).

- 1. Species listed under the [Endangered Species Act](#) are threatened or endangered; IPaC also shows species that are candidates, or proposed, for listing. See the [listing status page](#) for more information. IPaC only shows species that are regulated by USFWS (see FAQ).
- 2. [NOAA Fisheries](#), also known as the National Marine Fisheries Service (NMFS), is an office of the National Oceanic and Atmospheric Administration within the Department of Commerce.

The following species are potentially affected by activities in this location:

Mammals

NAME	STATUS
Jaguar <i>Panthera onca</i> Wherever found There is final critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/3944	Endangered
Ocelot <i>Leopardus (=Felis) pardalis</i> Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/4474	Endangered
Sonoran Pronghorn <i>Antilocapra americana sonoriensis</i> No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/4750	EXPN

Birds

NAME	STATUS
Cactus Ferruginous Pygmy-owl <i>Glaucidium brasilianum cactorum</i> Wherever found There is final critical habitat for this species. https://ecos.fws.gov/ecp/species/1225	Threatened

California Least Tern *Sternula antillarum browni* Endangered

Wherever found

No critical habitat has been designated for this species.

<https://ecos.fws.gov/ecp/species/8104>

Southwestern Willow Flycatcher *Empidonax traillii extimus* Endangered

Wherever found

There is **final** critical habitat for this species. Your location does not overlap the critical habitat.

<https://ecos.fws.gov/ecp/species/6749>

Yellow-billed Cuckoo *Coccyzus americanus* Threatened

There is **final** critical habitat for this species. Your location does not overlap the critical habitat.

<https://ecos.fws.gov/ecp/species/3911>

Amphibians

NAME	STATUS
Chiricahua Leopard Frog <i>Rana chiricahuensis</i>	Threatened
Wherever found	
There is final critical habitat for this species. Your location does not overlap the critical habitat.	
https://ecos.fws.gov/ecp/species/1516	

Fishes

NAME	STATUS
Gila Chub <i>Gila intermedia</i>	Endangered
Wherever found	
There is final critical habitat for this species. Your location does not overlap the critical habitat.	
https://ecos.fws.gov/ecp/species/51	
Gila Topminnow (incl. Yaqui) <i>Poeciliopsis occidentalis</i>	Endangered
Wherever found	
No critical habitat has been designated for this species.	
https://ecos.fws.gov/ecp/species/1116	

Insects

NAME	STATUS
Monarch Butterfly <i>Danaus plexippus</i>	Proposed Threatened
Wherever found	
There is proposed critical habitat for this species. Your location does not overlap the critical habitat.	
https://ecos.fws.gov/ecp/species/9743	

Flowering Plants

NAME	STATUS
Arizona Eryngo <i>Eryngium sparganophyllum</i>	Endangered
There is final critical habitat for this species. Your location does not overlap the critical habitat.	
https://ecos.fws.gov/ecp/species/10705	
Huachuca Water-umbel <i>Lilaeopsis schaffneriana</i> var. <i>recurva</i>	Endangered
Wherever found	
There is final critical habitat for this species. Your location does not overlap the critical habitat.	
https://ecos.fws.gov/ecp/species/1201	
Pima Pineapple Cactus <i>Coryphantha scheeri</i> var. <i>robustispina</i>	Endangered
Wherever found	
No critical habitat has been designated for this species.	
https://ecos.fws.gov/ecp/species/4919	

Critical habitats

Potential effects to critical habitat(s) in this location must be analyzed along with the endangered species themselves.

There are no critical habitats at this location.

You are still required to determine if your project(s) may have effects on all above listed species.

Bald & Golden Eagles

Bald and Golden Eagles are protected under the Bald and Golden Eagle Protection Act² and the Migratory Bird Treaty Act (MBTA)¹. Any person or organization who plans or conducts activities that may result in impacts to Bald or Golden Eagles, or their habitats, should follow appropriate regulations and consider implementing appropriate avoidance and minimization measures, as described in the various links on this page.

Additional information can be found using the following links:

- Eagle Management <https://www.fws.gov/program/eagle-management>
- Measures for avoiding and minimizing impacts to birds <https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds>
- Nationwide avoidance and minimization measures for birds <https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf>
- Supplemental Information for Migratory Birds and Eagles in IPaC <https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action>

There are Bald Eagles and/or Golden Eagles in your [project](#) area.

Measures for Proactively Minimizing Eagle Impacts

For information on how to best avoid and minimize disturbance to nesting bald eagles, please review the [National Bald Eagle Management Guidelines](#). You may employ the timing and activity-specific distance recommendations in this document when designing your project/activity to avoid and minimize eagle impacts. For bald eagle information specific to Alaska, please refer to [Bald Eagle Nesting and Sensitivity to Human Activity](#).

The FWS does not currently have guidelines for avoiding and minimizing disturbance to nesting Golden Eagles. For site-specific recommendations regarding nesting Golden Eagles, please consult with the appropriate Regional [Migratory Bird Office](#) or [Ecological Services Field Office](#).

If disturbance or take of eagles cannot be avoided, an [incidental take permit](#) may be available to authorize any take that results from, but is not the purpose of, an otherwise lawful activity. For assistance making this determination for Bald Eagles, visit the [Do I Need A Permit Tool](#). For assistance making this determination for golden eagles, please consult with the appropriate Regional [Migratory Bird Office](#) or [Ecological Services Field Office](#).

Ensure Your Eagle List is Accurate and Complete

If your project area is in a poorly surveyed area in IPaC, your list may not be complete and you may need to rely on other resources to determine what species may be present (e.g. your local FWS field office, state surveys, your own surveys). Please review the [Supplemental Information on Migratory Birds and Eagles](#), to help you properly interpret the report for your specified location, including determining if there is sufficient data to ensure your list is accurate.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to bald or golden eagles on your list, see the "Probability of Presence Summary" below to see when these bald or golden eagles are most likely to be present and breeding in your project area.

Review the FAQs

The FAQs below provide important additional information and resources.

NAME	BREEDING SEASON
Bald Eagle <i>Haliaeetus leucocephalus</i> This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1626	Breeds Oct 15 to Aug 31

This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.

<https://ecos.fws.gov/ecp/species/1680>

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read "[Supplemental Information on Migratory Birds and Eagles](#)", specifically the FAQ section titled "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is $0.25/0.25 = 1$; at week 20 it is $0.05/0.25 = 0.2$.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

Breeding Season (■)

Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (|)

Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

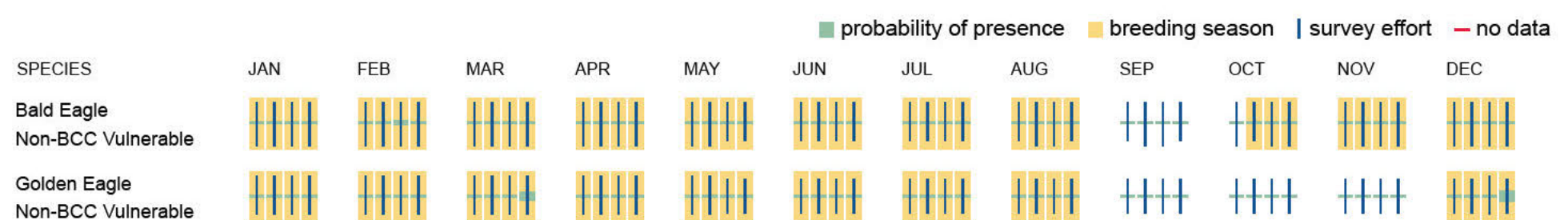
To see a bar's survey effort range, simply hover your mouse cursor over the bar.

No Data (—)

A week is marked as having no data if there were no survey events for that week.

Survey Timeframe

Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.



Bald & Golden Eagles FAQs

What does IPaC use to generate the potential presence of bald and golden eagles in my specified location?

The potential for eagle presence is derived from data provided by the [Avian Knowledge Network \(AKN\)](#). The AKN data is based on a growing collection of [survey, banding, and citizen science datasets](#) and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are an eagle ([Bald and Golden Eagle Protection Act](#) requirements may apply).

Proper interpretation and use of your eagle report

On the graphs provided, please look carefully at the survey effort (indicated by the black vertical line) and for the existence of the "no data" indicator (a red horizontal line). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort line or no data line (red horizontal) means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds have the potential to be in your project area, when they might be there,

and if they might be breeding (which means nests might be present). The list and associated information help you know what to look for to confirm presence and helps guide you in knowing when to implement avoidance and minimization measures to eliminate or reduce potential impacts from your project activities or get the appropriate permits should presence be confirmed.

How do I know if eagles are breeding, wintering, or migrating in my area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating, or resident), you may query your location using the [RAIL Tool](#) and view the range maps provided for birds in your area at the bottom of the profiles provided for each bird in your results. If an eagle on your IPaC migratory bird species list has a breeding season associated with it (indicated by yellow vertical bars on the phenology graph in your "IPaC PROBABILITY OF PRESENCE SUMMARY" at the top of your results list), there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

Interpreting the Probability of Presence Graphs

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. A taller bar indicates a higher probability of species presence. The survey effort can be used to establish a level of confidence in the presence score.

How is the probability of presence score calculated? The calculation is done in three steps:

The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.

To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is $0.25/0.25 = 1$; at week 20 it is $0.05/0.25 = 0.2$.

The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

Breeding Season ()

Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort ()

Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps.

No Data ()

A week is marked as having no data if there were no survey events for that week.

Survey Timeframe

Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.

Migratory birds

The Migratory Bird Treaty Act (MBTA) ¹ prohibits the take (including killing, capturing, selling, trading, and transport) of protected migratory bird species without prior authorization by the Department of Interior U.S. Fish and Wildlife Service (Service).

1. The [Migratory Birds Treaty Act](#) of 1918.
2. The [Bald and Golden Eagle Protection Act](#) of 1940.

Additional information can be found using the following links:

- Eagle Management <https://www.fws.gov/program/eagle-management>
- Measures for avoiding and minimizing impacts to birds <https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds>
- Nationwide avoidance and minimization measures for birds
- Supplemental Information for Migratory Birds and Eagles in IPaC <https://www.fws.gov/media/supplemental-information-migratory-birds-and-bald-and-golden-eagles-may-occur-project-action>

Measures for Proactively Minimizing Migratory Bird Impacts

Your IPaC Migratory Bird list showcases [birds of concern](#), including [Birds of Conservation Concern \(BCC\)](#), in your project location. This is not a comprehensive list of all birds found in your project area. However, you can help proactively minimize significant impacts to all birds at your project location by implementing the measures in the [Nationwide avoidance and minimization measures for birds](#) document, and any other project-specific avoidance and minimization measures suggested at the link [Measures for avoiding and minimizing impacts to birds](#) for the birds of concern on your list below.

Ensure Your Migratory Bird List is Accurate and Complete

If your project area is in a poorly surveyed area, your list may not be complete and you may need to rely on other resources to determine what species may be present (e.g. your local FWS field office, state surveys, your own surveys). Please review the [Supplemental Information on Migratory Birds and Eagles document](#), to help you properly interpret the report for your specified location, including determining if there is sufficient data to ensure your list is accurate.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, see the "Probability of Presence Summary" below to see when these birds are most likely to be present and breeding in your project area.

Review the FAQs

The FAQs below provide important additional information and resources.

NAME	BREEDING SEASON
American Avocet <i>Recurvirostra americana</i> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA	Breeds Apr 21 to Aug 10
Bald Eagle <i>Haliaeetus leucocephalus</i> This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1626	Breeds Oct 15 to Aug 31
Bendire's Thrasher <i>Toxostoma bendirei</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9435	Breeds Mar 15 to Jul 31
Black-chinned Sparrow <i>Spizella atrogularis</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9447	Breeds Apr 15 to Jul 31
Costa's Hummingbird <i>Calypte costae</i> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/9470	Breeds Jan 15 to Jun 10
Gila Woodpecker <i>Melanerpes uropygialis</i> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA https://ecos.fws.gov/ecp/species/5960	Breeds Apr 1 to Aug 31
Golden Eagle <i>Aquila chrysaetos</i> This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1680	Breeds Dec 1 to Aug 31
Grace's Warbler <i>Setophaga graciae</i> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA	Breeds May 20 to Jul 20
Lawrence's Goldfinch <i>Spinus lawrencei</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9464	Breeds Mar 20 to Sep 20
Long-eared Owl <i>asio otus</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/3631	Breeds Mar 1 to Jul 15
Marbled Godwit <i>Limosa fedoa</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/9481	Breeds elsewhere
Western Grebe <i>Aechmophorus occidentalis</i> This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/6743	Breeds Jun 1 to Aug 31

This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.

Probability of Presence Summary

The graphs below provide our best understanding of when birds of concern are most likely to be present in your project area. This information can be used to tailor and schedule your project activities to avoid or minimize impacts to birds. Please make sure you read ["Supplemental Information on Migratory Birds and Eagles"](#), specifically the FAQ section titled "Proper Interpretation and Use of Your Migratory Bird Report" before using or attempting to interpret this report.

Probability of Presence (■)

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. (A year is represented as 12 4-week months.) A taller bar indicates a higher probability of species presence. The survey effort (see below) can be used to establish a level of confidence in the presence score. One can have higher confidence in the presence score if the corresponding survey effort is also high.

How is the probability of presence score calculated? The calculation is done in three steps:

1. The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.
2. To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is $0.25/0.25 = 1$; at week 20 it is $0.05/0.25 = 0.2$.
3. The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

To see a bar's probability of presence score, simply hover your mouse cursor over the bar.

Breeding Season (■)

Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort (|)

Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps. The number of surveys is expressed as a range, for example, 33 to 64 surveys.

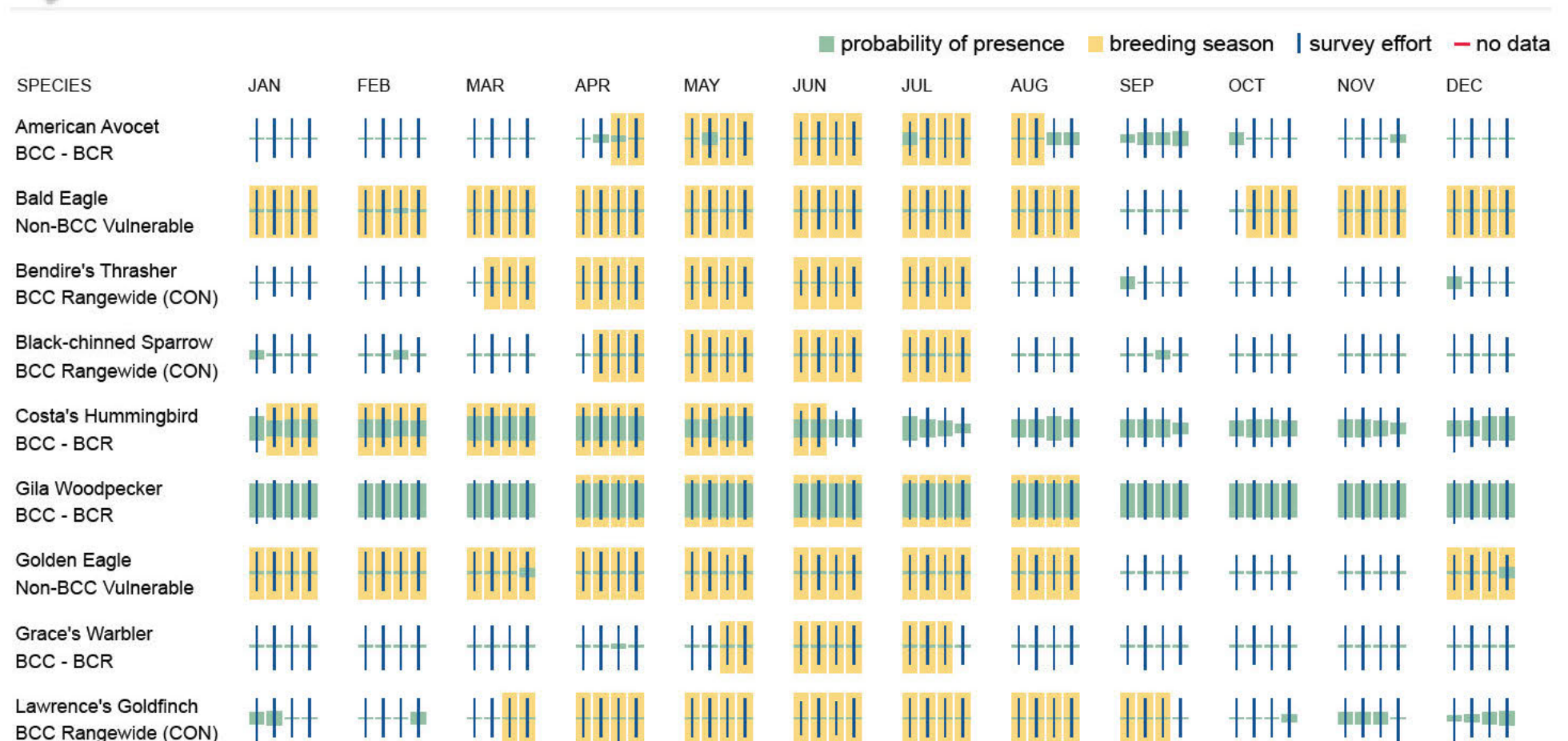
To see a bar's survey effort range, simply hover your mouse cursor over the bar.

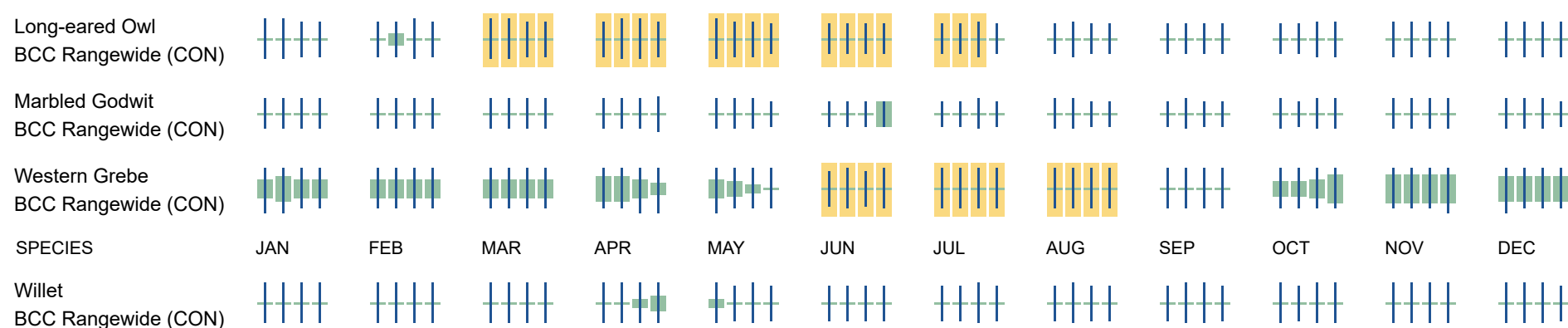
No Data (—)

A week is marked as having no data if there were no survey events for that week.

Survey Timeframe

Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.





Migratory Bird FAQs

Tell me more about avoidance and minimization measures I can implement to avoid or minimize impacts to migratory birds.

[Nationwide Avoidance & Minimization Measures for Birds](#) describes measures that can help avoid and minimize impacts to all birds at any location year-round. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is one of the most effective ways to minimize impacts. To see when birds are most likely to occur and breed in your project area, view the Probability of Presence Summary. [Additional measures](#) or [permits](#) may be advisable depending on the type of activity you are conducting and the type of infrastructure or bird species present on your project site.

What does IPaC use to generate the list of migratory birds that potentially occur in my specified location?

The Migratory Bird Resource List is comprised of [Birds of Conservation Concern \(BCC\)](#) and other species that may warrant special attention in your project location, such as those listed under the Endangered Species Act or the [Bald and Golden Eagle Protection Act](#) and those species marked as "Vulnerable". See the FAQ "What are the levels of concern for migratory birds?" for more information on the levels of concern covered in the IPaC migratory bird species list.

The migratory bird list generated for your project is derived from data provided by the [Avian Knowledge Network \(AKN\)](#). The AKN data is based on a growing collection of [survey, banding, and citizen science datasets](#) and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) with which your project intersects. These species have been identified as warranting special attention because they are BCC species in that area, an eagle ([Bald and Golden Eagle Protection Act](#) requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

Again, the Migratory Bird Resource list includes only a subset of birds that may occur in your project area. It is not representative of all birds that may occur in your project area. To get a list of all birds potentially present in your project area, and to verify survey effort when no results present, please visit the [Rapid Avian Information Locator \(RAIL\) Tool](#).

Why are subspecies showing up on my list?

Subspecies profiles are included on the list of species present in your project area because observations in the AKN for **the species** are being detected. If the species are present, that means that the subspecies may also be present. If a subspecies shows up on your list, you may need to rely on other resources to determine if that subspecies may be present (e.g. your local FWS field office, state surveys, your own surveys).

What does IPaC use to generate the probability of presence graphs for the migratory birds potentially occurring in my specified location?

The probability of presence graphs associated with your migratory bird list are based on data provided by the [Avian Knowledge Network \(AKN\)](#). This data is derived from a growing collection of [survey, banding, and citizen science datasets](#).

Probability of presence data is continuously being updated as new and better information becomes available. To learn more about how the probability of presence graphs are produced and how to interpret them, go to the Probability of Presence Summary and then click on the "Tell me about these graphs" link.

How do I know if a bird is breeding, wintering, or migrating in my area?

To see what part of a particular bird's range your project area falls within (i.e. breeding, wintering, migrating, or resident), you may query your location using the [RAIL Tool](#) and view the range maps provided for birds in your area at the bottom of the profiles provided for each bird in your results. If a bird on your IPaC migratory bird species list has a breeding season associated with it (indicated by yellow vertical bars on the phenology graph in your "IPaC PROBABILITY OF PRESENCE SUMMARY" at the top of your results list), there may be nests present at some point within the timeframe specified. If "Breeds elsewhere" is indicated, then the bird likely does not breed in your project area.

What are the levels of concern for migratory birds?

Migratory birds delivered through IPaC fall into the following distinct categories of concern:

1. "BCC Rangewide" birds are [Birds of Conservation Concern](#) (BCC) that are of concern throughout their range anywhere within the USA (including Hawaii, the Pacific Islands, Puerto Rico, and the Virgin Islands);
2. "BCC - BCR" birds are BCCs that are of concern only in particular Bird Conservation Regions (BCRs) in the continental USA; and
3. "Non-BCC - Vulnerable" birds are not BCC species in your project area, but appear on your list either because of the [Bald and Golden Eagle Protection Act](#) requirements (for eagles) or (for non-eagles) potential susceptibilities in offshore areas from certain types of development or activities (e.g. offshore energy development or longline fishing).

Although it is important to avoid and minimize impacts to all birds, efforts should be made, in particular, to avoid and minimize impacts to the birds on this list, especially BCC species. For more information on avoidance and minimization measures you can implement to help avoid and minimize migratory bird impacts, please see the FAQ "Tell me more about avoidance and minimization measures I can implement to avoid or minimize impacts to migratory birds".

Details about birds that are potentially affected by offshore projects

For additional details about the relative occurrence and abundance of both individual bird species and groups of bird species within your project area off the Atlantic Coast, please visit the [Northeast Ocean Data Portal](#). The Portal also offers data and information about other taxa besides birds that may be helpful to you in your project review. Alternately, you may download the bird model results files underlying the portal maps through the [NOAA NCCOS Integrative Statistical Modeling and Predictive Mapping of Marine Bird Distributions and Abundance on the Atlantic Outer Continental Shelf](#) project webpage.

Proper interpretation and use of your migratory bird report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please look carefully at the survey effort (indicated by the black vertical line) and for the existence of the "no data" indicator (a red horizontal line). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list does not represent all birds present in your project area. It is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list and associated information help you know what to look for to confirm presence and helps guide implementation of avoidance and minimization measures to eliminate or reduce potential impacts from your project activities, should presence be confirmed. To learn more about avoidance and minimization measures, visit the FAQ "Tell me about avoidance and minimization measures I can implement to avoid or minimize impacts to migratory birds".

Interpreting the Probability of Presence Graphs

Each green bar represents the bird's relative probability of presence in the 10km grid cell(s) your project overlaps during a particular week of the year. A taller bar indicates a higher probability of species presence. The survey effort can be used to establish a level of confidence in the presence score.

How is the probability of presence score calculated? The calculation is done in three steps:

The probability of presence for each week is calculated as the number of survey events in the week where the species was detected divided by the total number of survey events for that week. For example, if in week 12 there were 20 survey events and the Spotted Towhee was found in 5 of them, the probability of presence of the Spotted Towhee in week 12 is 0.25.

To properly present the pattern of presence across the year, the relative probability of presence is calculated. This is the probability of presence divided by the maximum probability of presence across all weeks. For example, imagine the probability of presence in week 20 for the Spotted Towhee is 0.05, and that the probability of presence at week 12 (0.25) is the maximum of any week of the year. The relative probability of presence on week 12 is $0.25/0.25 = 1$; at week 20 it is $0.05/0.25 = 0.2$.

The relative probability of presence calculated in the previous step undergoes a statistical conversion so that all possible values fall between 0 and 10, inclusive. This is the probability of presence score.

Breeding Season ()

Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

Survey Effort ()

Vertical black lines superimposed on probability of presence bars indicate the number of surveys performed for that species in the 10km grid cell(s) your project area overlaps.

No Data ()

A week is marked as having no data if there were no survey events for that week.

Survey Timeframe

Surveys from only the last 10 years are used in order to ensure delivery of currently relevant information. The exception to this is areas off the Atlantic coast, where bird returns are based on all years of available data, since data in these areas is currently much more sparse.

Facilities

National Wildlife Refuge lands

Any activity proposed on lands managed by the [National Wildlife Refuge](#) system must undergo a 'Compatibility Determination' conducted by the Refuge. Please contact the individual Refuges to discuss any questions or concerns.

There are no refuge lands at this location.

Fish hatcheries

There are no fish hatcheries at this location.

Wetlands in the National Wetlands Inventory (NWI)

Impacts to [NWI wetlands](#) and other aquatic habitats may be subject to regulation under Section 404 of the Clean Water Act, or other State/Federal statutes.

For more information please contact the Regulatory Program of the local [U.S. Army Corps of Engineers District](#).

This location did not intersect any wetlands mapped by NWI.

NOTE: This initial screening does **not** replace an on-site delineation to determine whether wetlands occur. Additional information on the NWI data is provided below.

Data limitations

The Service's objective of mapping wetlands and deepwater habitats is to produce reconnaissance level information on the location, type and size of these resources. The maps are prepared from the analysis of high altitude imagery. Wetlands are identified based on vegetation, visible hydrology and geography. A margin of error is inherent in the use of imagery; thus, detailed on-the-ground inspection of any particular site may result in revision of the wetland boundaries or classification established through image analysis.

The accuracy of image interpretation depends on the quality of the imagery, the experience of the image analysts, the amount and quality of the collateral data and the amount of ground truth verification work conducted. Metadata should be consulted to determine the date of the source imagery used and any mapping problems.

Wetlands or other mapped features may have changed since the date of the imagery or field work. There may be occasional differences in polygon boundaries or classifications between the information depicted on the map and the actual conditions on site.

Data exclusions

Certain wetland habitats are excluded from the National mapping program because of the limitations of aerial imagery as the primary data source used to detect wetlands. These habitats include seagrasses or submerged aquatic vegetation that are found in the intertidal and subtidal zones of estuaries and nearshore coastal waters. Some deepwater reef communities (coral or tubercid worm reefs) have also been excluded from the inventory. These habitats, because of their depth, go undetected by aerial imagery.

Data precautions

Federal, state, and local regulatory agencies with jurisdiction over wetlands may define and describe wetlands in a different manner than that used in this inventory. There is no attempt, in either the design or products of this inventory, to define the limits of proprietary jurisdiction of any Federal, state, or local government or to establish the geographical scope of the regulatory programs of government agencies. Persons intending to engage in activities involving modifications within or adjacent to wetland areas should seek the advice of appropriate Federal, state, or local agencies concerning specified agency regulatory programs and proprietary jurisdictions that may affect such activities.

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Appendix B.
Arizona Game and Fish Department – Heritage Data Management System Environmental
Review Tool Report

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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.*

The Department requests further coordination to provide project/species specific recommendations. Please use the [Project Evaluation Form](#) to submit your project to the Project Evaluation Program at PEP@azgfd.gov.

Project Name:

STR_03252026

Project Type:

Energy Production/Storage/Transfer, Energy Transfer, Power line/electric line (new)

Project ID:

HGIS-27846

Project Description:

New line on new and existing poles

Contact Person:

Gerald Berthelette

Organization:

Sonoran Land Resources

On Behalf Of:

CONSULTING

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.

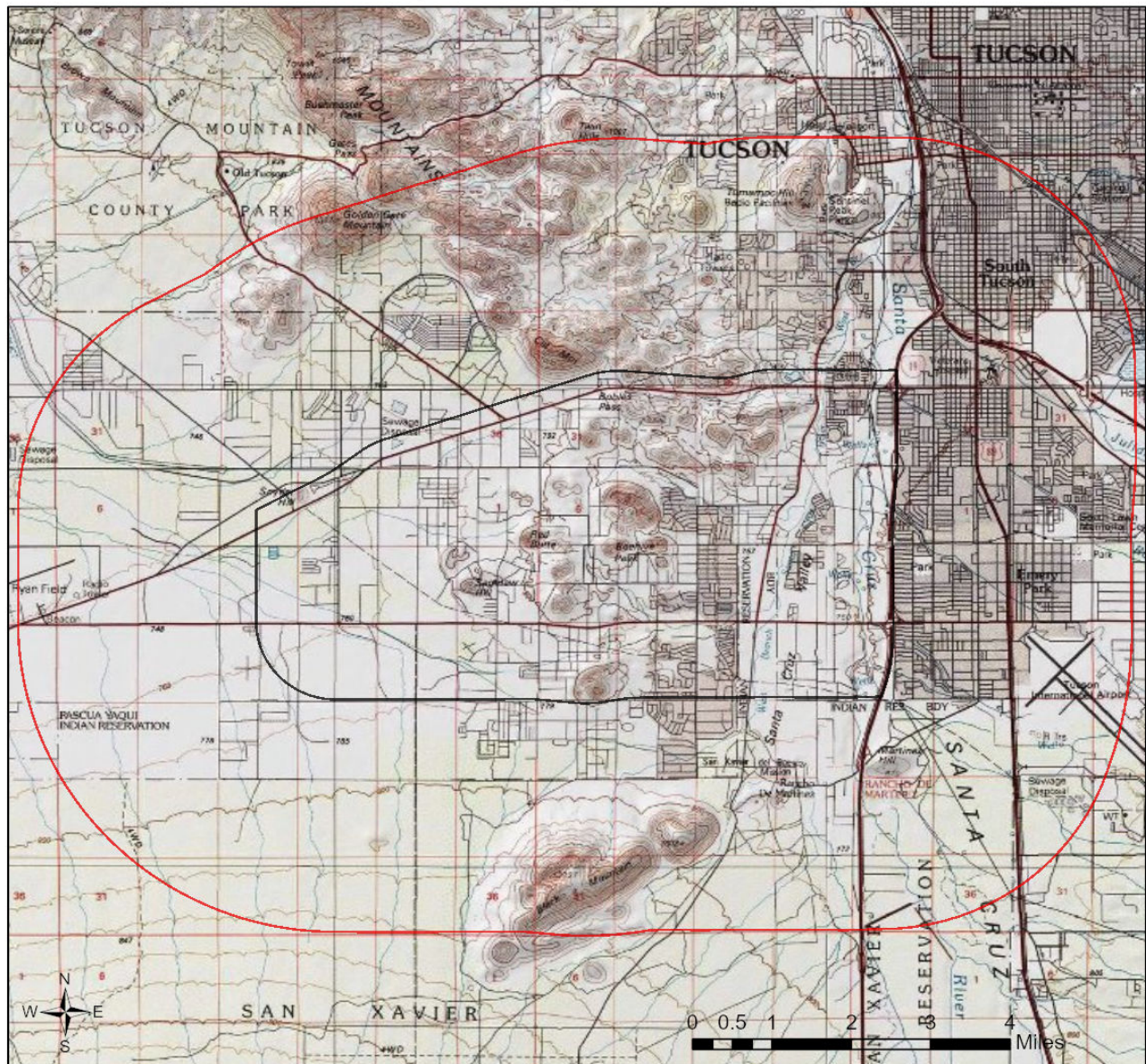
Locations Accuracy Disclaimer:

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.

STR_03252026 USA Topo Basemap With Locator Map



- Buffered Project Boundary
- Project Boundary

Project Size (acres): 19,405.71

Lat/Long (DD): 32.1474 / -111.0492

County(s): Pima

AGFD Region(s): Tucson

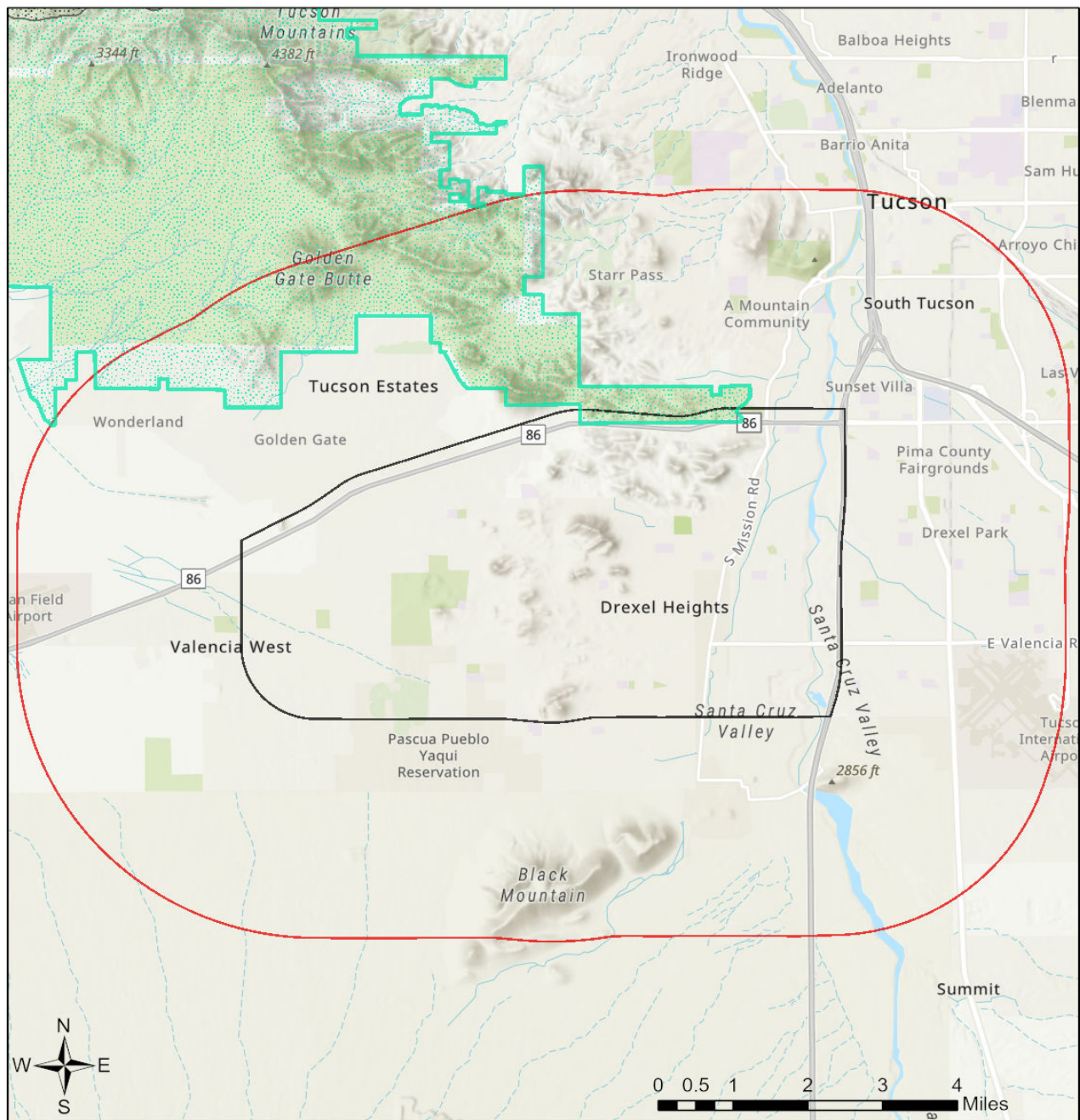
Township/Range(s): T14S, R12E; T14S, R13E; T15S, R12E +

USGS Quad(s): CAT MOUNTAIN; SAN XAVIER MISSION +

County of Yavapai, Esri, TomTom, Garmin, FAO, NOAA, USGS, EPA, USFWS
Copyright:© 2013 National Geographic Society, i-cubed
Esri, USGS



STR_03252026 Important Areas



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

Project Size (acres): 19,405.71

Lat/Long (DD): 32.1474 / -111.0492

County(s): Pima

AGFD Region(s): Tucson

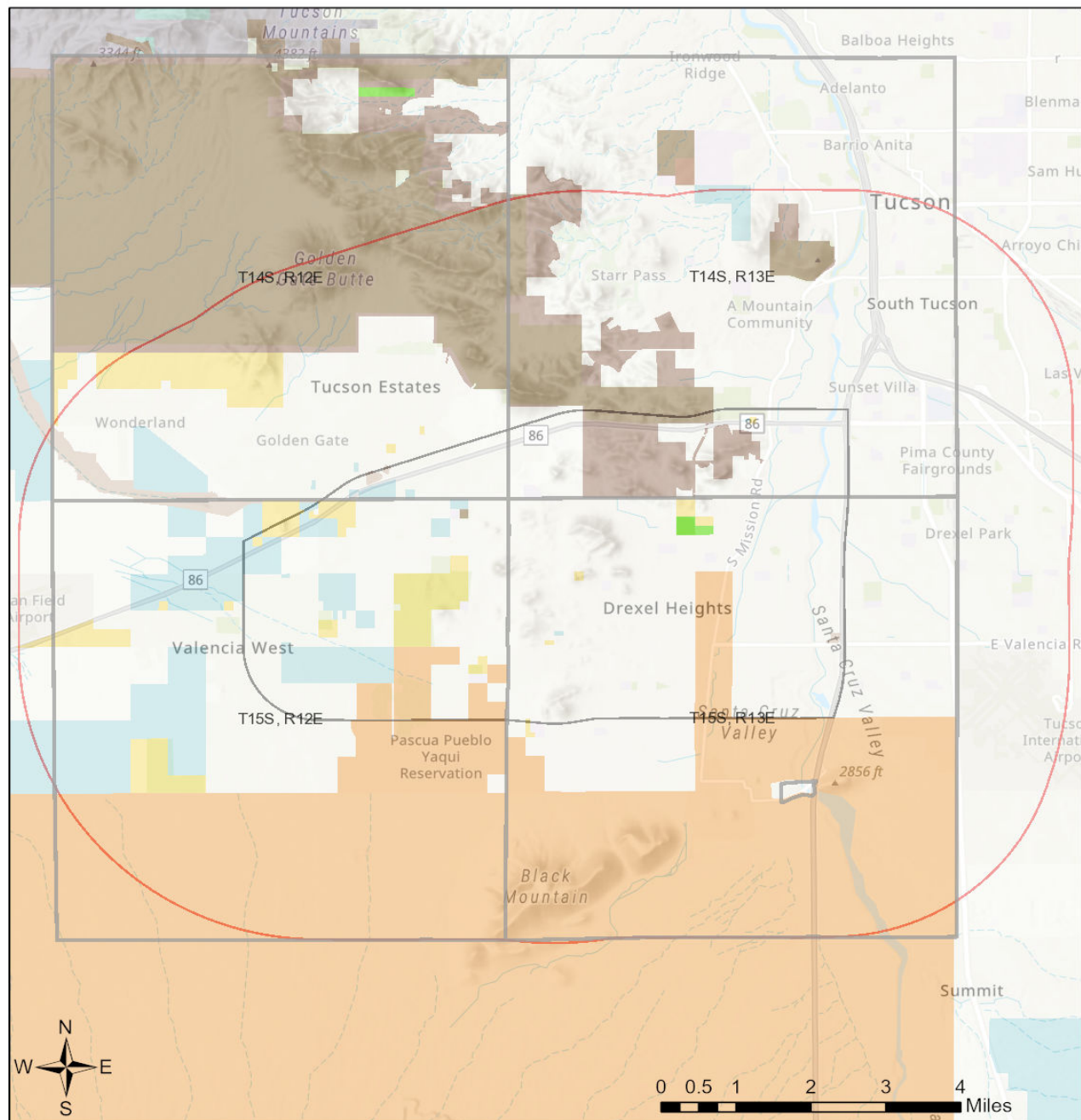
Township/Range(s): T14S, R12E; T14S, R13E; T15S, R12E +

USGS Quad(s): CAT MOUNTAIN; SAN XAVIER MISSION +

Esri, NASA, NGA, USGS
CONANP, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS,
Bureau of Land Management, EPA, NPS, USDA, USFWS

STR_03252026

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): 19,405.71

Lat/Long (DD): 32.1474 / -111.0492

County(s): Pima

AGFD Region(s): Tucson

Township/Range(s): T14S, R12E; T14S, R13E; T15S, R12E +

USGS Quad(s): CAT MOUNTAIN; SAN XAVIER MISSION +

Esri, NASA, NGA, USGS
CONANP, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, METI/NASA, USGS,
Bureau of Land Management, EPA, NPS, USDA, USFWS

Special Status Species Documented within 3 Miles of Project Vicinity

Scientific Name	Common Name	FWS	USFS	BLM	NPL	SGCN
<i>Abutilon parishii</i>	Pima Indian Mallow		S	S	SR	
<i>Agelaius phoeniceus</i>	Red-winged Blackbird					2
<i>Agosia chrysogaster chrysogaster</i>	Gila Longfin Dace			S		2
<i>Anthus rubescens</i>	American Pipit					2
<i>Aspidoscelis arizonae</i>	Little Striped Whiptail			S		
<i>Aspidoscelis sonora</i>	Sonoran Spotted Whiptail					2
<i>Aspidoscelis stictogrammus</i>	Giant Spotted Whiptail		S			2
<i>Athene cunicularia hypugaea</i>	Western Burrowing Owl		S	S		2
<i>Auriparus flaviceps</i>	Verdin					2
Bat Colony						
<i>Buteo swainsoni</i>	Swainson's Hawk					2
<i>Calamospiza melanocorys</i>	Lark Bunting					2
<i>Campylorhynchus brunneicapillus</i>	Cactus Wren					2
<i>Cardinalis sinuatus</i>	Pyrrhuloxia					2
<i>Chaetodipus baileyi</i>	Bailey's Pocket Mouse					2
<i>Charadrius vociferus</i>	Killdeer					2
<i>Chilomeniscus cinctus</i>	Banded Sandsnake					2
<i>Circus hudsonius</i>	Northern Harrier					2
<i>Coccyzus americanus</i>	Yellow-billed Cuckoo (Western DPS)	LT	S	S		1
<i>Colaptes chrysoides</i>	Gilded Flicker			S		2
<i>Columbina inca</i>	Inca Dove					2
<i>Contopus sordidulus</i>	Western Wood-Pewee					2
<i>Corvus cryptoleucus</i>	Chihuahuan Raven					2
<i>Corynorhinus townsendii pallescens</i>	Pale Townsend's Big-eared Bat		S	S		1
<i>Coryphantha scheeri</i> var. <i>robustispina</i>	Pima Pineapple Cactus	LE		S	HS	
<i>Crotalus tigris</i>	Tiger Rattlesnake					2
<i>Cynanthus latirostris</i>	Broad-billed Hummingbird		S			2
<i>Danaus plexippus</i>	Monarch	PT		S		
<i>Empidonax wrightii</i>	Gray Flycatcher					2
<i>Eryngium sparganophyllum</i>	Arizona Eryngo	LE		S		
<i>Euphagus cyanocephalus</i>	Brewer's Blackbird					2
<i>Falco peregrinus anatum</i>	American Peregrine Falcon		S	S		1
<i>Falco sparverius</i>	American Kestrel					2
<i>Gastrophryne mazatlanensis</i>	Sinoloan Narrow-mouthed Toad			S		2
<i>Geothlypis tolmiei</i>	MacGillivray's Warbler					2
<i>Gopherus morafkai</i>	Sonoran Desert Tortoise	CCA	S	S		1
<i>Heloderma suspectum</i>	Gila Monster					1
<i>Icterus cucullatus</i>	Hooded Oriole					2
<i>Incilius alvarius</i>	Sonoran Desert Toad					2

Special Status Species Documented within 3 Miles of Project Vicinity

Scientific Name	Common Name	FWS	USFS	BLM	NPL	SGCN
Kinosternon sonoriense sonoriense	Desert Mud Turtle			S		2
Lanius ludovicianus	Loggerhead Shrike					2
Leptonycteris yerbabuenae	Lesser Long-nosed Bat			S		1
Lilaeopsis schaffneriana ssp. recurva	Huachuca Water-umbel	LE		S	HS	
Macrotus californicus	California Leaf-nosed Bat			S		2
Mammillaria thornberi	Thornber Fishhook Cactus				SR	
Masticophis bilineatus	Sonoran Whipsnake					2
Melanerpes uropygialis	Gila Woodpecker					2
Melospiza lincolni	Lincoln's Sparrow					2
Melospiza aberti	Abert's Towhee		S			2
Melospiza fusca	Canyon Towhee					2
Myotis velifer	Cave Myotis			S		2
Nyctinomops femorosaccus	Pocketed Free-tailed Bat					2
Parabuteo unicinctus	Harris's Hawk					2
Passerculus sandwichensis	Savannah Sparrow					2
Peucaea carpalis	Rufous-winged Sparrow					2
Phrynosoma solare	Regal Horned Lizard					2
Poeciliopsis occidentalis occidentalis	Gila Topminnow	LE,UR		S		1
Progne subis hesperia	Desert Purple Martin			S		2
Rana chiricahuensis	Chiricahua Leopard Frog	LT		S		1
Rana yavapaiensis	Lowland Leopard Frog		S	S		1
Sigmodon hispidus	Hispid Cotton Rat					2
Sonorella magdalenensis	Sonoran Talussnail	UR	S	S		3
Sonorella walkeri	Santa Rita Talussnail					2
Spizella breweri	Brewer's Sparrow					2
Tadarida brasiliensis	Brazilian Free-tailed Bat					2
Tumamoca macdougallii	Tumamoc Globeberry		S	S	SR	

Note: Status code definitions can be found at <https://www.azgfd.com/wildlife-conservation/on-the-ground-conservation/state-wildlife-action-plan/state-wildlife-action-plan-status-definitions/>.

Special Areas Documented that Intersect with Project Footprint as Drawn

Scientific Name	Common Name	FWS	USFS	BLM	NPL	SGCN
CAP Canal	Pima County Wildlife Crossing Area					
Concentrated drainages across State Route 86 towards Brawley Wash	Pima County Wildlife Movement Area - Landscape					
Pascua Yaqui Reservation	Pascua Yaqui Reservation					
San Xavier Indian Reservation	San Xavier Indian Reservation					

Special Areas Documented that Intersect with Project Footprint as Drawn

Scientific Name	Common Name	FWS	USFS	BLM	NPL	SGCN
Santa Cruz River	Pima County Wildlife Movement Area - Riparian/Wash					
Tucson Mountain Park to Tohono O'odham Nation (San Xavier)/Santa Cruz River	Pima County Wildlife Movement Area - Landscape					
Tucson Mountains IBA	Important Bird Area					
Tucson Mountains	Conservation Opportunity Area					
West Branch Santa Cruz River	Pima County Wildlife Movement Area - Riparian/Wash					

Note: Status code definitions can be found at <https://www.azgfd.com/wildlife-conservation/on-the-ground-conservation/state-wildlife-action-plan/state-wildlife-action-plan-status-definitions/>.

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					2
Ammospermophilus harrisi	Harris' Antelope Squirrel					2
Anarhynchus montanus	Mountain Plover					2
Anaxyrus retiformis	Sonoran Green Toad			S		2
Anthus spragueii	Sprague's Pipit					2
Antrostomus ridgwayi	Buff-collared Nightjar		S			2
Aquila chrysaetos	Golden Eagle	BGA		S		2
Asio otus	Long-eared Owl					2
Aspidoscelis sonora	Sonoran Spotted Whiptail					2
Aspidoscelis stictogrammus	Giant Spotted Whiptail		S			2
Astur atricapillus	American Goshawk		S	S		2
Athene cunicularia hypugaea	Western Burrowing Owl		S	S		2
Auriparus flaviceps	Verdin					2
Botaurus lentiginosus	American Bittern					2
Buteo regalis	Ferruginous Hawk			S		2
Buteo swainsoni	Swainson's Hawk					2
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

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
<i>Chilomeniscus cinctus</i>	Variable Sandsnake					2
<i>Choeronycteris mexicana</i>	Mexican Long-tongued Bat		S	S		2
<i>Chordeiles minor</i>	Common Nighthawk					2
<i>Coccyzus americanus</i>	Yellow-billed Cuckoo (Western DPS)	LT	S	S		1
<i>Colaptes chrysoides</i>	Gilded Flicker			S		2
<i>Columbina inca</i>	Inca Dove					2
<i>Corvus cryptoleucus</i>	Chihuahuan Raven					2
<i>Corynorhinus townsendii pallescens</i>	Pale Townsend's Big-eared Bat		S	S		1
<i>Crotalus tigris</i>	Tiger Rattlesnake					2
<i>Crotaphytus nebrius</i>	Sonoran Collared Lizard					2
<i>Cynanthus latirostris</i>	Broad-billed Hummingbird		S			2
<i>Cyprinodon macularius</i>	Desert Pupfish	LE		S		1
<i>Dendrocygna autumnalis</i>	Black-bellied Whistling-Duck					2
<i>Empidonax wrightii</i>	Gray Flycatcher					2
<i>Euderma maculatum</i>	Spotted Bat		S	S		2
<i>Eugenes fulgens</i>	Rivoli's Hummingbird					2
<i>Eumops perotis californicus</i>	Greater Western Bonneted Bat			S		2
<i>Falco mexicanus</i>	Prairie Falcon					2
<i>Falco peregrinus anatum</i>	American Peregrine Falcon		S	S		1
<i>Falco sparverius</i>	American Kestrel					2
<i>Gastrophryne mazatlanensis</i>	Sinoloan Narrow-mouthed Toad			S		2
<i>Glaucidium brasilianum cactorum</i>	Cactus Ferruginous Pygmy-owl	LT	S	S		1
<i>Gopherus morafkai</i>	Sonoran Desert Tortoise	CCA	S	S		1
<i>Heloderma suspectum</i>	Gila Monster					1
<i>Icterus bullockii</i>	Bullock's Oriole					2
<i>Icterus cucullatus</i>	Hooded Oriole					2
<i>Icterus parisorum</i>	Scott's Oriole					2
<i>Incilius alvarius</i>	Sonoran Desert Toad					2
<i>Kinosternon sonoriense sonoriense</i>	Desert Mud Turtle			S		2
<i>Lanius ludovicianus</i>	Loggerhead Shrike					2
<i>Lasiurus cinereus</i>	Hoary Bat					2
<i>Lasiurus frantzii</i>	Desert Red Bat		S			2
<i>Lasiurus xanthinus</i>	Western Yellow Bat		S			2
<i>Leptonycteris yerbabuenae</i>	Lesser Long-nosed Bat			S		1
<i>Lepus alleni</i>	Antelope Jackrabbit					2
<i>Macrotus californicus</i>	California Leaf-nosed Bat			S		2
<i>Masticophis bilineatus</i>	Sonoran Whipsnake					2
<i>Megascops kennicottii</i>	Western Screech-owl					2
<i>Melanerpes uropygialis</i>	Gila Woodpecker					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
Melospiza lincolnii	Lincoln's Sparrow					2
Melospiza aberti	Abert's Towhee		S			2
Micrathene whitneyi	Elf Owl					3
Micruroides euryxanthus	Sonoran Coralsnake					2
Myadestes townsendi	Townsend's Solitaire					2
Myotis auriculus	Southwestern Myotis					2
Myotis thysanodes	Fringed Myotis					2
Myotis velifer	Cave Myotis			S		2
Myotis yumanensis	Yuma Myotis					2
Notiosorex cockrumi	Cockrum's Desert Shrew					2
Nyctinomops femorosaccus	Pocketed Free-tailed Bat					2
Nyctinomops macrotis	Big Free-tailed Bat					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
Poeciliopsis occidentalis occidentalis	Gila Topminnow	LE,UR		S		1
Poocetes gramineus	Vesper Sparrow					2
Progne subis hesperia	Desert Purple Martin			S		2
Rana yavapaiensis	Lowland Leopard Frog		S	S		1
Spizella breweri	Brewer's Sparrow					2
Tadarida brasiliensis	Brazilian Free-tailed Bat					2
Toxostoma bendirei	Bendire's Thrasher					2
Toxostoma lecontei	LeConte's Thrasher			S		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					
Zenaidura macroura	White-winged Dove					
Zenaidura macroura	Mourning Dove					

Project Type: Energy Production/Storage/Transfer, Energy Transfer, Power line/electric line (new)

Project Type Recommendations:

Minimize the potential introduction or spread of exotic invasive species, including aquatic and terrestrial plants, animals, insects and pathogens. Precautions should be taken to wash and/or decontaminate all equipment utilized in the project activities before entering and leaving the site. See the Arizona Department of Agriculture website for a list of prohibited and restricted noxious weeds at <https://www.invasivespeciesinfo.gov/> and the Arizona Native Plant Society <https://aznps.com/invas> for recommendations on how to control these species. To view a list of documented invasive species or to report invasive species in or near your project area visit iMapInvasives - a national cloud-based application for tracking and managing invasive species at <https://imap.natureserve.org/imap/services/page/map.html>.

- To build a list: zoom to your area of interest, use the identify/measure tool to draw a polygon around your area of interest, and select "See What's Here" for a list of reported species. To export the list, you must have an account and be logged in. You can then use the export tool to draw a boundary and export the records in a csv file.

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

The AZGFD recommends following the Avian Power Line Interaction Committee (APLIC) guidelines for new power lines, which can be found in the current version of *Suggested Practices for Avian Protection on Power Lines and Reducing Avian Collisions with Power Lines*. Large bodied birds, such as hawks, owls, vultures, and eagles, may be vulnerable to line strikes and electrocution during construction and operation of power lines and substations; power poles can also serve as perches for large-bodied birds. These potential impacts can be avoided or minimized by following the APLIC guidelines which include designing the power lines with enough space between energized components to reduce the likelihood of a bird electrocution or installing bird flight diverters in sections of line where elevated bird strikes are anticipated (e.g. lines over water bodies or in the path of colonial roosting locations). The AZGFD's Raptor Coordinator, who can be contacted at raptors@azgfd.gov or 623-236-7575, can provide further information on specific design features and best management practices.

The AZGFD recommends that a qualified biologist conduct a survey for nesting birds within the project area prior to removal or trimming of trees/vegetation, if the removal or trimming occurs during the breeding season (the Project Evaluation Program can be contacted at PEP@azgfd.gov or 623-236-7600 to determine the appropriate breeding season within the project area). Trees and/or vegetation within the project area may provide nesting opportunities for avian species that are regulated under the Migratory Bird Treaty Act (MBTA) and protected under state law. If it is anticipated the project will not be in compliance with MBTA, the AZGFD recommends contacting the U.S. Fish and Wildlife Service (<https://www.fws.gov/office/arizona-ecological-services>) for technical assistance. The USFWS will provide options to comply with the MBTA.

The AZGFD recommends revegetating disturbed areas with native drought-tolerant species that represent the natural surrounding landscape. Landscaping with native plants can help support wildlife and pollinator species in the area while reducing dust and erosion. In addition, the applicable land management agencies should be consulted regarding guidelines for revegetation efforts. The AZGFD also recommends the development of a short and long-term monitoring plan, including adaptive management guidelines to address invasive species control and maintain native vegetation.

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

HDMS records indicate that **Chiricahua Leopard Frogs** have been documented within the vicinity of your project area. Please review the Chiricahua Leopard Frog Management Guidelines found

at: <https://s3.amazonaws.com/azgfd-portal-wordpress/PortalImages/files/wildlife/planningFor/wildlifeFriendlyGuidelines/FINALLithchirHabitatGdlns.pdf>

Analysis indicates that your project is located in the vicinity of an identified **Conservation Opportunity Area (COA)**. While there are many areas in Arizona that present abundant conservation opportunities, COAs are specific areas on the landscape that the Department identified as having the greatest potential for conservation efforts. COAs were identified using species and habitat data, the presence of unique landscape features, and Departmental expertise. COAs range in size, scope, and focal species and/or habitats and are strictly a non-regulatory conservation tool for the public and our conservation partners to consider. For more information regarding this particular COA near your project area and the Department's suggestions for potential conservation efforts, please visit the COA profile at <https://awcs.azgfd.com/conservation-opportunity-areas>.

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-conservation/planning-for-wildlife/planning-for-wildlife-identifying-corridors/>. Please contact the Project Evaluation Program (pep@azgfd.gov) for specific project recommendations.

The analysis has detected one or more **Important Bird Areas** within your project vicinity. Please see http://aziba.org/?page_id=38 for details about the Important Bird Area(s) identified in the report.

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://s3.amazonaws.com/azgfd-portal-wordpress/PortalImages/files/wildlife/2014%20Tortoise%20handling%20guidelines.pdf>.

Tribal Lands are within the vicinity of your project area and may require further coordination. Please contact:

Pascua Yaqui Tribe

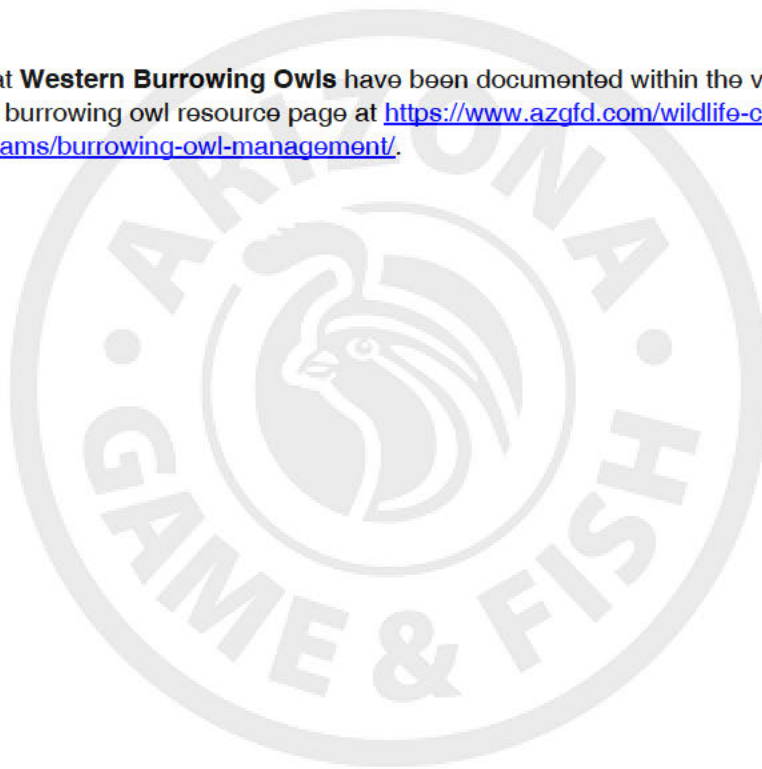
7474 S Camino de Oeste
Tucson, AZ 85746
(520) 883-5000 ext. 5016
(520) 883-5014 (fax)

Tribal Lands are within the vicinity of your project area and may require further coordination. Please contact:

Tohono O'odham Nation

PO Box 837
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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-conservation/conservation-and-endangered-species-programs/burrowing-owl-management/>.



Appendix C.
Special Status Species Screening Table

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Special Status Species Screening Table

Species Name	USFWS Status	Range or Habitat Requirements	Potential to Occur	Effects Recommendation
Amphibians (1)				
Chiricahua leopard frog (<i>Rana chiricahuensis</i>)	Threatened (USFWS 2002, USFWS 2012); designated critical habitat (USFWS 2012).	Breeds in perennial to semi-permanent montane aquatic environments including cattle tanks, creeks, cienegas, pools, rivers, springs, lakes and reservoirs (USFWS 2011). Larvae are obligate on aquatic habitats whereas adults are primarily aquatic but also utilize terrestrial habitats (USFWS 2012). May disperse from occupied habitat one mile overland, three miles along intermittent drainages, and five miles along permanent water courses, or some combination thereof (USFWS 2012). Elevation: 3,200–8,890 ft (USFWS 2012).	Unlikely. Siting Study Area is surrounded by developed lands. No perennial to semi-permanent montane aquatic habitat exists for this species in the Siting Study Area.	No effect.
Birds (4)				
Cactus ferruginous pygmy owl (<i>Glaucidium brasilianum cactorum</i>)	Threatened (USFWS 2023)	The <i>cactorum</i> subspecies ranges from southern Arizona and southern Texas, U.S. and south into Mexico. Commonly occurs in desertscrub, thornscrub, dry deciduous forests and lowland riparian habitats (USFWS 2011a). In Arizona, this species occurs in cottonwood and willow riparian habitats, mesquite bosques, heavily wooded	Unlikely. There are no documented occurrences within 3 miles of the Siting Study Area (AGFD Online ERT, iNaturalist 2026). Saguaros are present in the Siting Study Area, however, occurrence records for this species are mostly	No effect.

Species Name	USFWS Status	Range or Habitat Requirements	Potential to Occur	Effects Recommendation
		dry washes, and suburban or rural areas with native vegetation (Corman 2005). Nests in cavities of saguaro cacti or broad leaf riparian tree species (AGFD 2001, Corman 2005). This species resides in same habitat types year-round (Proudfoot and Johnson 2000). Elevation: In Arizona, historically 450–4,200 ft (Corman 2005).	restricted to the Altar Valley, to the west and south (iNaturalist 2024), where Sonoran desertscrub and open grassland habitat is present and saguaros are prolific.	
California least tern (<i>Sternula antillarum browni</i>)	Endangered (USFWS 1970)	Breeds in colonies on open sandy beaches, sandbars, gravel pits, or exposed flats along shorelines of inland rivers, lakes, reservoirs, and wetland areas (USFWS 1985). Uses similar habitat during migration (USFWS 2006). Winters in habitats outside of the U.S. (USFWS 2006). Elevation: Sea level to approximately 1,000 ft in Arizona (Marschalek 2010).	Unlikely. No habitat exists for this species in the Siting Study Area.	No effect.
Southwestern willow flycatcher (<i>Empidonax traillii extimus</i>)	Endangered (USFWS 1995); designated critical habitat (USFWS 2013).	This species prefers dense riparian habitats with willow, cottonwood, and other vegetation near rivers, streams, and wetlands. Breeding activities require successional stands of dense riparian vegetation composed of trees and shrubs along rivers or lakes (AGFD 2002a, USFWS 2013). In	Unlikely. No dense riparian habitat exists for this species in the Siting Study Area.	No effect.

Species Name	USFWS Status	Range or Habitat Requirements	Potential to Occur	Effects Recommendation
		Arizona, this species occurs between 75 and 9,180 ft amsl (AGFD 2002a). Migrates along riparian habitats, including those with shorter or more sparse vegetation or smaller patches than would be suitable for nesting (USFWS 2013). This species is a long-distance neotropical migrant and winters in habitats outside of the U.S. (Sedgwick 2000). Elevation: In Arizona, 75–9,180 ft (AGFD 2002a).		
Yellow-billed cuckoo (<i>Coccyzus americanus</i>)	Threatened (USFWS 2014); proposed critical habitat (USFWS 2020).	In Arizona, most commonly found in lowland riparian woodlands where Fremont cottonwood, willow, velvet ash, Arizona walnut, mesquite, and tamarisk are dominant (USFWS 2013a). Also utilizes drier woodlands including mesquite bosques, drainages in desert scrub and desert grassland with a tree component, and Madrean evergreen woodlands in perennial, intermittent or ephemeral drainages (USFWS 2020). This species typically occurs at elevations less than 6,600 ft amsl (AGFD 2011). Western yellow-billed cuckoos may migrate along riparian	Unlikely. No lowland riparian woodland exists for this species in the Siting Study Area.	No effect.

Species Name	USFWS Status	Range or Habitat Requirements	Potential to Occur	Effects Recommendation
		corridors or gallery forests and surrounding upland vegetation (Hughes 2015). Elevation: Typically, below 6,600 ft (AGFD 2011).		
Fishes (2)				
Gila chub (<i>Gila intermedia</i>)	Endangered (USFWS 2005); designated critical habitat (USFWS 2005).	The species typically occurs in pools of small streams or cienegas. However, this species can also be found in larger streams. It is often found near undercut banks, overhanging vegetation, and various types of cover within the aquatic habitat (USFWS 2015). Elevation: 2,000–5,500 ft (USFWS 2015).	No Potential. No aquatic habitat exists for this species in the Siting Study Area.	No effect.
Gila topminnow (incl. Yaqui) (<i>Poeciliopsis occidentalis</i>)	Endangered (USFWS 1967); no critical habitat.	Occurs in springs, cienegas, permanent and intermittent streams and the margins of large rivers. Prefers warm, shallow and slow-moving water but can occur in lentic habitats or lotic habitats with moderate current. Additionally, favors areas with algal mats or debris along stream margins (USFWS 1998). Elevation: Below 5,000 ft (AGFD 2001a).	No Potential. No aquatic habitat exists for this species in the Siting Study Area.	No effect.
Mammals (3)				
Jaguar (<i>Panthera onca</i>)	Endangered (USFWS 1997); designated	Occurs in southern Arizona, New Mexico, and Texas. Extends south to Argentina (USFWS	No Potential. This species requires large swaths of intact and	No effect.

Species Name	USFWS Status	Range or Habitat Requirements	Potential to Occur	Effects Recommendation
	critical habitat (USFWS 2014a).	2018). Uses wide variety of habitat types, including lowland wet vegetative communities, marshy savannas, and tropical rainforest. This species is also found in arid regions where it is found in tropical dry forest, thornscrub, desertscrub, chaparral, semi-desert grassland, Madrean evergreen woodland, deciduous forest, and conifer forest (USFWS 2018). Elevation: Up to 9,186 ft in the northern extent of its range (USFWS 2018).	connected forest/scrub habitat. The Siting Study Area is surrounded by developed lands unsuitable for jaguar movement.	
Ocelot (<i>Leopardus</i> (=Felis) <i>pardalis</i>)	Endangered (USFWS 1982); no critical habitat.	Occurs in southern Arizona and Texas in the United States. Range extends south to Argentina and Uruguay (USFWS 2016). Uses a wide range of densely vegetated habitats throughout its range including desertscrub, thornscrub, grasslands, marshlands, coastal tropical forest, dry tropical forest, tropical rain forest, oak woodlands, piedmont/montane scrub, cloud forest, pine-oak forests, palm savanna, sandhills, shrub woodlands, deciduous forest and gallery forest (AGFD 2010, USFWS 2016). Elevation: Generally, below 4,000 ft (AGFD 2010) but has	No Potential. Siting Study Area is surrounded by developed lands. No densely vegetated habitat exists for this species in the Siting Study Area.	No effect.

Species Name	USFWS Status	Range or Habitat Requirements	Potential to Occur	Effects Recommendation
		been documented from sites as high as 9,514 ft in Mexico (USFWS 2016).		
Sonoran pronghorn (<i>Antilocapra americana soniensis</i>)	Experimental Population, Non-Essential (USFWS 2011b)	Sonoran pronghorn is found exclusively in the Lower Colorado River Valley and the Arizona Upland subdivisions of the Sonoran Desertscrub Biome and currently occur in southwestern Arizona and northwestern Sonora, Mexico. In winter, Sonoran pronghorn prefer sparsely vegetated, flat, open spaces that are ideal for swift running and visual detection of predators. However, in summer they require denser vegetation that offers thermal cover and moister forage. They also require quality forage, access to water, a mosaic of suitable vegetation structure, and minimal human disturbance (USFWS 2016a).	No Potential. Siting Study Area is surrounded by developed lands. No open valleys with diverse vegetation structure exists in the Siting Study Area.	Is not likely to jeopardize the continued existence.
Flowering Plants (2)				
Arizona eryngo (<i>Eryngium sparganophyllum</i>)	Endangered with designated Critical Habitat (USFWS 2022)	Found in organic muck or wet silty clay-loam soils in riparian zones or marshes in Pinyon-Juniper or Madrean evergreen woodlands and cienegas in desertscrub (AGFD 2004). Elevation: In Arizona, 2,720–4,000 ft (AGFD 2004).	No Potential. No riparian zones or marshy habitat for this species exists in the Siting Study Area.	No effect.

Species Name	USFWS Status	Range or Habitat Requirements	Potential to Occur	Effects Recommendation
Huachuca water-umbel (<i>Lilaeopsis schaffneriana</i> var. <i>recurva</i>)	Endangered (USFWS 1997), designated critical habitat (USFWS 1999).	Found in shallow and slow-flowing cienegas, rivers, streams and springs or within active stream channels in areas that escape scouring during flood events (USFWS 2017). Elevation: 2,001–7,100 ft (USFWS 2017).	No Potential. No aquatic habitat for this species exists in the Siting Study Area.	No effect.

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Appendix D.
Sonoran Desert Tortoise (*Gopherus morafkai*) Handling Guidelines

SONORAN DESERT TORTOISE (*GOPHERUS MORAFKAI*) CONSERVATION GUIDELINES

Chad A. Rubke, Turtles Project Coordinator

Terrestrial Wildlife Branch, Wildlife Management Division
Arizona Game and Fish Department



Technical Report 368
Nongame and Endangered Wildlife Program
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Arizona Game and Fish Department
5000 W. Carefree Highway
Phoenix, Arizona 85086

May 2024

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RECOMMENDED CITATION

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SONORAN DESERT TORTOISE (*GOPHERUS MORAFKAI*) CONSERVATION GUIDELINES

Chad A. Rubke

1.0 INTRODUCTION

The Sonoran desert tortoise (*Gopherus morafkai*) can be found in both the United States and Mexico, with a distribution split approximately 60:40 between Arizona and Mexico (U.S. Fish and Wildlife Service [USFWS] 2015). In Arizona, its range includes a hybridization zone with the Mojave desert tortoise (*Gopherus agassizii*) in Mohave County, extending from the Black Mountains west of Kingman, south to at least the Buck Mountains, and east to the Hualapai Mountains' western foothills (McLuckie et al. 1999; Edwards et al. 2015; Dolby et al. 2021). The tortoise's range spans across southern Arizona beneath the Mogollon Rim, reaching as far southeast as the Pinaleno Mountains in Graham County and extending to the Pajarito and Atascosa mountains in Santa Cruz County (Babb et al. 2013). In Arizona, the Sonoran desert tortoise generally ranges from 155 to 1500 meters (500 to 5,000 feet) above sea level (ASL), but individuals have been recorded at near or over 1500 meters (m) ASL in several areas with a single report at over 2300 m in the Rincon Mountains, Pima County (Aslan et al. 2003; USFWS 2015). The management of suitable tortoise habitat involves various stakeholders, including federal agencies such as the U.S. Forest Service (USFS), U.S. Fish and Wildlife Service (USFWS), Bureau of Land Management (BLM), National Park Service (NPS), Department of Defense (DoD), as well as the Arizona State Land Department, Tribal Nations, and private landowners.

Zylstra et al. (2013) reported generally high rates of annual survival (~92%) among 15 large, long-term *G. morafkai* mark-recapture plots surveyed between 1987 and 2008. These plots were distributed throughout the species' range within Arizona. Survival of adult tortoises on the plots decreased with drought severity, especially in portions of the range that were most arid, and in plots nearest to cities (Zylstra et al. 2013). Re-surveys between 2008 and 2020 at 13 of those plots, revealed annual survival of adults at 95–96% and juveniles averaged 82%. (Zylstra and Steidl 2021). Drought and closer proximity to cities continued to affect survivorship negatively.

To maintain viability over the long term, the Sonoran desert tortoise requires populations of adequate size and distribution to support resiliency, redundancy, and representation (USFWS 2022). Populations need large numbers of individuals to improve the chances of withstanding stochastic events. Resilient populations need to be spread across its range in both Arizona and Sonora, Mexico, supported by suitable habitat quantity and quality, to provide for range-wide redundancy and representation.

The USFWS reviewed the Sonoran desert tortoise for listing under the Endangered Species Act (ESA) twice since its identification as a distinct species in 2011. Most recently the USFWS found that the species was not considered to be at risk of extinction and that ESA listing was not warranted (USFWS 2022). *Gopherus morafkai* is protected throughout its range in Arizona through state laws (Arizona Revised Statute Title 17) and regulations approved by the Arizona Game and Fish Commission. Under Arizona Game and Fish Commission Order 43, take from the wild is prohibited, and possession is prohibited by AZGFD Rules (Article 4), except under special license or exemption.

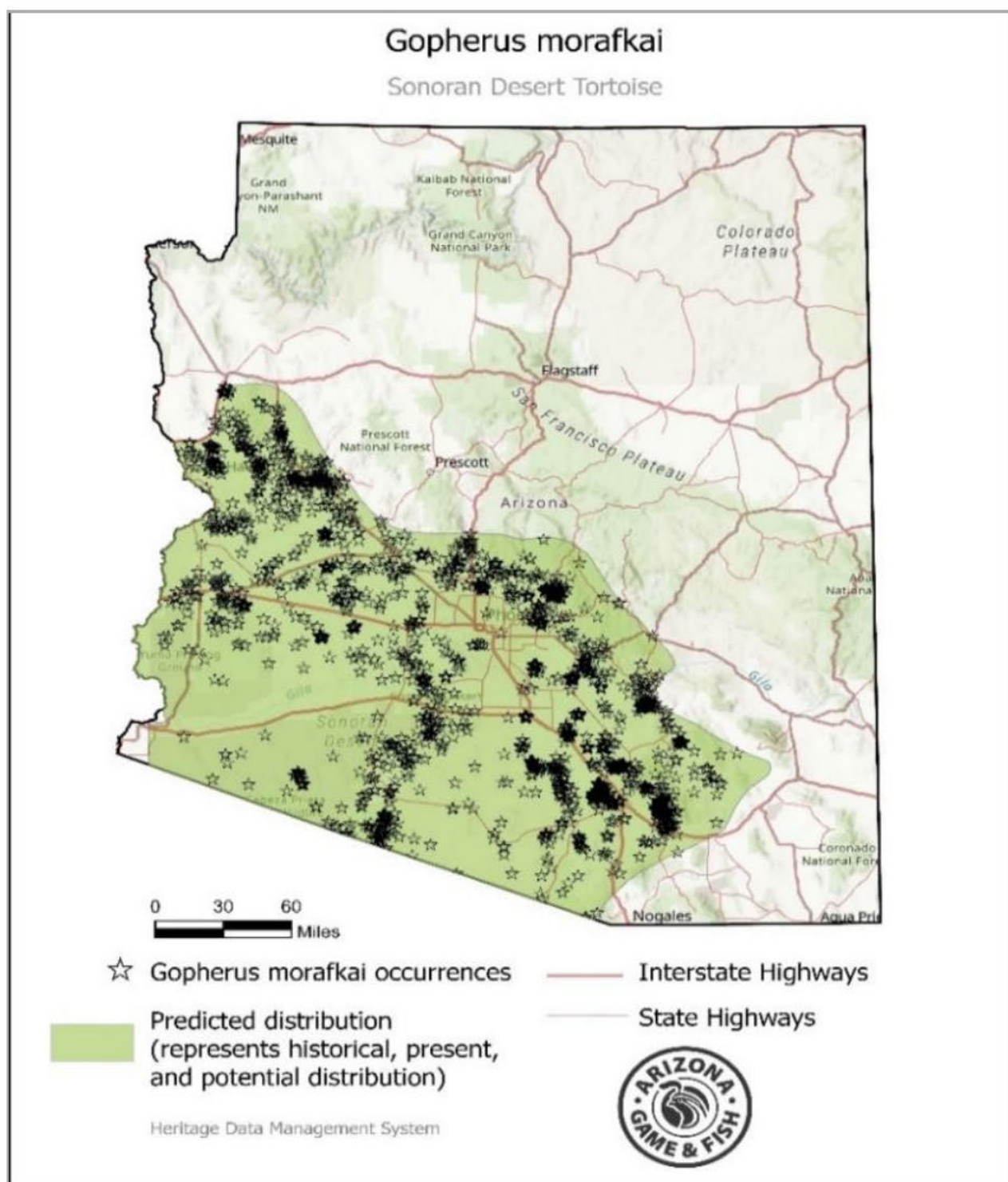


Figure 1. Distribution of the Sonoran desert tortoise in Arizona

The Arizona Interagency Desert Tortoise Team (AIDTT) completed a Candidate Conservation Agreement (CCA) for *G. morafkai* in Arizona to encourage, facilitate, and direct tortoise conservation actions across agencies (AIDTT 2015). Management actions in the agreement include reducing the spread of non-native grasses, reducing or mitigating dispersal barriers, reducing the risk and impact of desert wildfires, reducing the impact of off-highway vehicles, conducting population monitoring, and reducing illegal collection of tortoises. The Arizona Game and Fish Department has developed the following guidelines to reduce potential impacts to Sonoran desert tortoises, and to promote the continued existence of this species throughout the state.

2.0 GENERAL BIOLOGY

Gopherus morafkai is a large tortoise (up to 320 mm) with a dorsally flattened, pyriform carapace and an elongated, hingeless plastron with a deep posterior notch. Similar to other *Gopherus* species, substantial variability exists among individuals for many morphological features. The carapace is often widest behind the center and generally flares or becomes serrated over the posterior marginals. Paired gulars project anteriorly past the carapacial edge, and the species is sexually dimorphic with males having longer, more forked and upturned gulars. Body mass of adults can exceed 5 kg for large individuals, though 2.5–3.5 kg is more common (Dickinson et al. 2002).

The Sonoran desert tortoise occurs in various habitat types, mainly mixed cactus-paloverde associations along rocky slopes of mountain ranges and, to a lesser degree, they use incised washes with adequate caliche sheltersites draining into intervening lands. *Gopherus morafkai* is slow-growing, taking 18-20 years to reach sexual maturity, and is long-lived (living more than 50 years in the wild; Curtin et al. 2009). Tortoises feed on a variety of vegetation and spend the majority of their time in underground shelters, emerging mainly in the relatively cooler morning and evening hours of the summer or following precipitation events at any time of year. During the spring months, reproductive females emerge to take advantage of new growth following winter rains which provide important energy reserves for subsequent egg development. The most active season is from July through October, coinciding with the summer monsoon and the arrival of new growth in perennial plants and the germination of summer annuals. For the Sonoran desert tortoise, summer is key for feeding, movement, and reproduction.

As temperatures decline in October and November, tortoises reduce their surface activity, contract their movements, and shift their active periods to the warmer temperatures of midday (Averill-Murray et al. 2002; Woodman et al. 2002). The onset of winter inactivity among tortoises varies widely, with some starting to become inactive when daily high temperatures can still reach 30° C, while others may remain active. Tortoises in southern Arizona primarily used overwintering shelters on steep south-facing slopes, and males used deeper, more thermally buffered shelters than females (Bailey et al. 1995). Strong shelter site fidelity has also been noted, with some individuals using the same overwintering shelters for several consecutive years (Rubke and O'Donnell 2020).

2.1 Reproduction

Sonoran desert tortoises have relatively low fecundity. Females lay about 4–6 eggs (observed range 1–9; Averill-Murray et al. 2018), and roughly 50% of females reproduce each year, though this proportion is highly variable (Campbell et al. 2018).

Egg development is correlated with heat accumulation in the spring, with ovarian eggs formed earlier in warmer springs, and egg-laying varying from mid-May through late August (Lovich et al. 2017). Females that emerge earlier from hibernation are more likely to produce eggs, and early-emerging females also produce larger eggs than females that emerge later. The smallest gravid female was measured at 22.0 cm carapace length (CL). The smallest mature male was observed at 21.0 cm CL. Large females are more likely to reproduce in a given year and produce larger eggs than smaller females, but body size does not affect clutch size (Averill-Murray et al. 2018).

2.2 Movement

During their active period, tortoises may travel considerable distances. Home ranges vary from 3–112 hectares (ha) (Riedle et al. 2008; Sullivan et al. 2016; Rubke and Leavitt 2016; Averill-Murray et al. 2020). Long-distance movements of 14–32 km also have been recorded (Edwards et al. 2004; Rubke and Leavitt 2017), though movements of this magnitude typically span more than one season. Within-season movements of >1.5 km have been frequently documented (Barrett 1990; Sullivan et al. 2016; Rubke and O'Donnell 2018). These forays may be prompted by a lack of resources or potential mates in an area, or dispersal of younger tortoises to new territory. Immature tortoises are reported to be 47% more likely to disperse than mature tortoises and movements lasted 5–26 weeks in duration (Averill-Murray et al. 2020). Once established, female *G. morafkai* may overlap significantly in their home range with other females, while males appear less likely to do so (Sullivan et al. 2016). Females, on average, have smaller home ranges than males (Averill-Murray et al. 2020).

2.3 Habitat Requirements

Throughout most of its range *G. morafkai* occurs in subdivisions of the Sonoran Desert (summarized in USFWS 2021). It is a common inhabitant of the Arizona Upland Subdivision. Numerous populations also exist in the Lower Colorado River Subdivision in western Arizona, but it occurs in very low abundance at scattered localities in the hot and dry lower Gila Valley region of extreme southwestern Arizona. Populations are found marginally in Semi-desert Grassland and Madrean Evergreen Woodland (Martin 1995; Babb et al. 2013) in southeastern Arizona. Populations where *G. morafkai* coexists or hybridizes with *G. agassizii* in western Arizona occur in or have influences from the Mojave Desert. Range-wide geospatial modeling of habitat based on vegetation, slope, and elevation resulted in an estimate of approximately 79,000 km² of potential habitat in Arizona (USFWS 2021; Figure 2).

Habitat characteristics are influenced more by topographic and geomorphologic features than vegetation communities (Riedle et al. 2008; Zylstra and Steidl 2009). *Gopherus morafkai* most typically occupies steep slopes with boulders and bedrock outcrops in and under which individuals shelter and burrow (Burge 1979, 1980; Barrett 1990; Rosen et al. 2014). However, they are also closely associated with dry washes, extending more than 1.7 km away from rock slopes, where they often shelter in cavities in consolidated alluvial rock such as caliche (Averill-Murray and Averill-Murray 2005; Riedle et al. 2008). Desert washes are an important component of *G. morafkai* habitat, as they provide access to shelter sites outside of rocky bajadas and serve as

linkages between disjunct populations on the various desert mountain ranges throughout its distribution (Edwards et al. 2004; Grandmaison et al. 2010). Populations and individuals are rarely observed in deep, sandy loam soils in semi-desert grassland and Sonoran desert scrub.

2.4 Sheltersite Use

Gopherus morafkai typically emerges from overwintering shelters with the warming temperatures of early spring (Martin 1995; Sullivan et al. 2014). While their activity is reduced in winter, opportunities to drink, forage, and bask prompt individuals to leave shelters briefly, even during cool winter months (Sullivan et al. 2014; Rubke and O'Donnell 2021). Male *G. morafkai* terminate hibernation on average in late April, and females emerge one month earlier in March (Vaughan 1984). Tortoise activity in the spring is variable as temperatures increase. The earlier emergence by females may provide reproductive advantages as access to spring forage is gained (Averill-Murray 2002). Male tortoises have been recorded leaving overwintering shelters as late as June (Bailey et al. 1995).

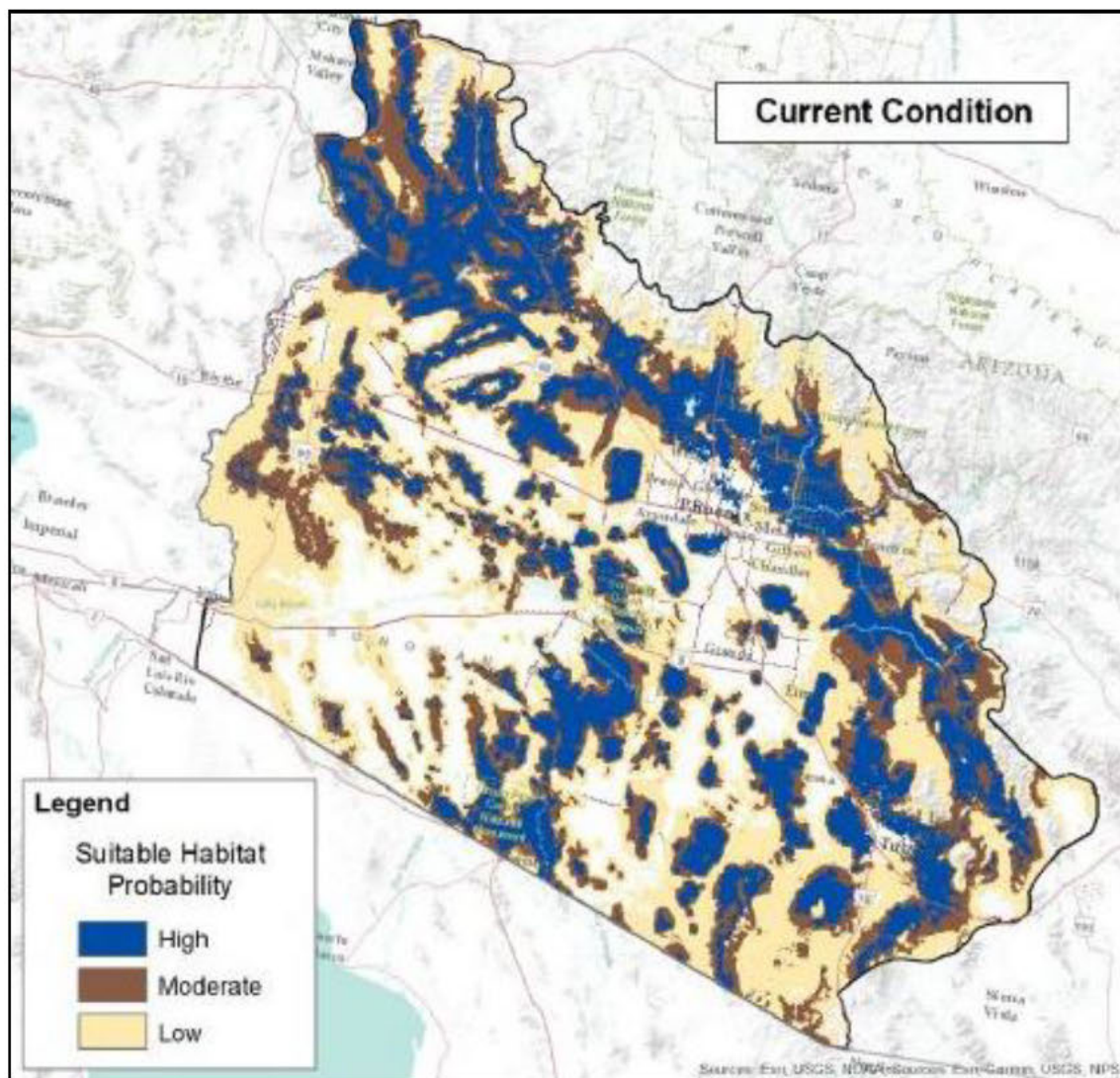


Figure 2. Suitable Sonoran desert tortoise habitat probability, current condition, as modeled by USFWS Species Status Assessment, 2021.

The arrival of summer rainfall, typically beginning in July, rouses tortoises to emerge from deep, thermally insulated shelters to which most individuals retreated during the hot, dry period of mid-May through June. These shelters often consist of caliche caves, rock overhangs, soil burrows, or even *Neotoma* sp. (wood rat) nests. Shelters frequently extend greater than a meter in depth (Grandmaison et al. 2010; Sullivan et al. 2016). When monsoon rains begin, tortoises begin surface activity behaviors and are primarily diurnal, but as critical thermal maxima are regularly reached by mid-morning at the height of summer, they may shift active periods to become more crepuscular and even be sporadically active into the night.

2.5 Food Habits

In Arizona's Sonoran Desert, the distinct winter and summer rainfall patterns provide *Gopherus morafkai* with greater access to food and water than its counterpart, *G. agassizii*. An analysis of scat fragments collected from seven locations across *G. morafkai*'s range in Arizona identified 104 plant species, with herbaceous annuals making up nearly half of this diversity (Van Devender et al. 2002). Perennial shrubs and trees, herbaceous perennials, succulents, and both annual and perennial grasses were also present. Data from Van Devender et al. (2002) resulted in over 200 plant species in the diet of *G. morafkai*. Spring-season diets encompass a broad spectrum of herbaceous annuals, leading to greater diversity. Diets in the summer are less diverse, but include a wider, more balanced selection across different growth forms.

Gopherus morafkai diets are diverse when considered as a group, but each tortoise usually focuses on a few species, and similarly each location where tortoise diets are studied has a subset of species that comprise the majority of their diets. Summer staples included mallows (desert rose-mallow [*Hibiscus coulteri*], globe-mallow [*Sphaeralcea ambigua*], bladder-mallow [*Herissantia crispa*], Indian mallow [*Abutilon incanum*]), and spreading fanpetals (*Sida abutifolia*), as well as desert vine (*Janusia gracilis*), and a wide variety of grasses. There are also invasive species in the diets of *G. morafkai*, such as *Erodium cicutarium* (redstem filaree) (Van Devender et al. 2002).

Many plant species contain potassium. Sonoran desert tortoises lose water in the process of metabolizing potassium (Oftedal 2002). The potassium excretion potential (PEP) is an index of water, nitrogen, and potassium levels in a plant that affects the ability of all desert tortoises to efficiently excrete potassium. Sonoran desert tortoises have been documented selectively foraging on high PEP plant species (Oftedal 2002; Oftedal 2007) such as certain species of primroses, filaree, legumes, mustards, and spurge (Ernst and Lovich 2009). Selecting for PEP plant species may be especially important for Sonoran desert tortoises to overcome the effects of drought (Ernst and Lovich 2009).

Summer rains bring opportunities to drink from small pools occurring in natural depressions and to forage on new plant growth. Natural and artificially induced drinking behavior in free-ranging tortoises reveals their ability to rapidly and efficiently drink from very small catchments, in part because of the suction they generate using the nares to drink (Sullivan and Sullivan 2016). Individuals will often completely submerge their head in order to effectively imbibe water.

2.6 Predators and Disease

The most commonly documented mammalian predator of *G. morafkai* is *Puma concolor* (Mountain Lion). Predation by *P. concolor* on adult *G. morafkai* was documented or suspected at

several demographic plots across Arizona, often repeatedly. Chew marks indicative of attempted canid predation, most likely by *Canis latrans* or *Urocyon cinereoargenteus* (Coyote, Gray Fox), have been reported on adult tortoises at numerous populations, and a *C. latrans* scat included remains of a juvenile tortoise in at least one case (e.g., Shields and Woodman 1987; Woodman et al. 2001). Domestic dogs are also known to kill tortoises (e.g., Woodman et al. 1993).

Despite the fact that *Corvus corvax* (Common Raven) commonly preys on juvenile *G. agassizii* in the Mojave Desert (Boarman and Berry 1995), evidence of avian predation on juvenile *G. morafkai* has only occasionally been documented (e.g., Woodman et al. 1999). Predation by ravens on *G. morafkai* was never confirmed during surveys of 22 demographic plots between 1980 and 2020. Minimal impact on *G. morafkai* likely results from the more complex habitat and less dense raven populations in the Sonoran Desert (Averill-Murray et al. 2002; Howland and Rorabaugh 2002).

Even though *Mycoplasma agassizii* (the causative agent of Upper Respiratory Tract Disease [URTD]) has been detected in captive *G. morafkai* in Arizona (Jones 2008), prevalence has been low to undetected in wild populations, and population declines in Arizona have not been observed in conjunction with disease (Dickinson et al. 2002, 2005). The shell disease cutaneous dyskeratosis has been reported at variable frequencies between 0% and 65% in *G. morafkai* populations in Arizona (Dickinson et al. 2002). Two populations that suffered marked declines had relatively high frequencies of cutaneous dyskeratosis, but this association was correlated with concurrent periods of severe drought (Averill-Murray et al. 2002, Dickinson et al. 2002, Zylstra et al. 2013). Soft-bodied ticks (*Ornithodoros* spp.) and sandflies (*Lutzomyia* spp.) also have been reported from *G. morafkai*, although without observed detrimental effects (e.g., Woodman et al. 2009; Gray and Steidl 2015).

2.7 Legal Protections

Legal protections pertaining to collection are afforded to the Sonoran desert tortoise in Arizona by state laws (i.e., Arizona Revised Statute Title 17) and regulations imposed by the Arizona Game and Fish Commission. Unless otherwise prescribed in Title 17, it is unlawful to “take, possess, transport, buy, sell, or offer to expose for sale wildlife except as expressly permitted by this title” (ARS 17-309). As restricted live wildlife (R12-4-406), Sonoran desert tortoises cannot be imported, exported, or possessed without special license or lawful exemption. Individuals must be permitted by Arizona Game and Fish Department (AZGFD) in order to conduct scientific research and perform other activities for the Sonoran desert tortoise. Personnel should obtain a Scientific Activities License from AZGFD to allow handling and temporary possession of tortoises. For additional permitting information contact scpermits@azgfd.gov. There are currently no laws prohibiting the incidental take of Sonoran desert tortoises by otherwise lawful activities, nor are there any legal protections afforded to occupied habitat.

It is important to note that private citizens throughout Arizona can legally adopt and hold in their possession Sonoran desert tortoises if they are acquired through state-sanctioned adoption programs operated by AZGFD and the Arizona-Sonora Desert Museum.

3.0 GENERAL HANDLING GUIDELINE FOR SONORAN DESERT TORTOISES

If a tortoise is located within an area of potential harm, it should be moved out of harm’s way to

adjacent appropriate habitat. If an occupied shelter is determined to be in jeopardy of destruction, the tortoise should be relocated to the nearest shelter of appropriate size and depth, as determined by a qualified biologist. Tortoises should be moved less than 48 hours in advance of the habitat disturbance so they do not return to the area in the interim. A tortoise may be moved up to one kilometer, but no farther than necessary from its original location. If a release site or alternate burrow is unavailable within this distance, and ambient air temperature exceeds 40° Celsius (105° Fahrenheit), contact the Department for guidance.

Tortoises have little effective physiological capacity to dissipate heat, so it is the handler's responsibility to guard against over-heating. Desert tortoises should not be exposed to direct sunlight. Keep tortoises in the shade of a shrub or your body. Ground temperatures are much hotter than air temperatures, so minimize tortoise/ground contact when temperatures are hot. The critical maximum body temperature of desert tortoises is between 40° C and 44° C (103° F and 112° F). Tortoises must not be moved if ambient air temperature exceeds 40° C (105° F) unless an alternate shelter is available or the tortoise is in imminent danger.

To avoid transmission of diseases between tortoises, do not allow tortoises to come into contact with clothing or skin. A fresh pair of non-porous disposable gloves must be used for each tortoise (e.g. latex, nitrile, vinyl, or similar material). Keep gloves on during the entire time you handle a tortoise. If your glove is torn during handling of a tortoise, put a new one over the torn glove. Once used, gloves and any other disposable materials must be contained so as not to come into contact with disinfected materials, fresh gloves, equipment, or any other item that might come into contact with a tortoise. All non-disposable equipment that comes into contact with any part of a tortoise, or any instrument or item that has been in contact with a tortoise, must be treated with an approved disinfectant. Currently, trifectant or chlorhexidine diacetate (or chlorhexidine gluconate) are approved for use, prepared according to manufacturers' instructions. A 30% bleach solution is acceptable, but not preferred.

It is important to minimize risk to tortoises when they are handled in the course of data collection. Special precautions must be taken to prevent or minimize the fluid loss that occurs if tortoises void their bladder during handling. Do not handle the tortoise more than necessary. Always use two hands when picking up a tortoise, and do not turn it on its back or move it rapidly. Sudden movements can cause the tortoise to void (urinate), which can result in dehydration and increases risk of death. Tortoises found in shelters should only be extracted if deemed necessary (see 8.3 Methods section of Clearance Survey Protocol, below, for more details on approved extraction methods).

If the tortoise urinates, it should be rehydrated. To rehydrate a tortoise, you may either soak it in a shallow tub or offer fluids via a shallow bowl and a syringe (without needle attached). For the soak method, soak the tortoise at the release location in a tub with a clean, unused plastic disposable liner for a minimum of 10 to 20 minutes in a quiet protected area. An unused paint tray often works well for this application. Water level shall not be higher than the lower jaw of the animal; the water temperature should be tepid. Desert tortoises must be soaked individually. After each soaking, change the water and disinfect the tub to prevent the transmission of disease between individual tortoises. When offering fluids using an oral syringe, avoid touching the syringe to the tortoise. Instead, create a slow, steady flow that moves over the tortoise's nares and mouth and drips into

the shallow bowl below the tortoise's head (Figure 3). The dripping water will often stimulate the tortoise to take up water from the bowl. Offer fluids while positioning yourself away from the tortoise's line of sight; standing behind the tortoise and holding the syringe behind the tortoise's face is best. This may minimize the stress response from the tortoise and should avoid pushing material back into the nares. Offer at least a full [50 ml] syringe of fluids and as many as 2 more if the tortoise appears to be accepting fluids. Discard the syringe if it touches the tortoise.



Figure 3. Offering fluids to a Sonoran desert tortoise via the syringe and bowl method.

4.0 PROJECTS OCCURRING WITHIN SONORAN DESERT TORTOISE HABITAT

Presence of Sonoran desert tortoises can often be confirmed by contacting biologists with AZGFD, the Bureau of Land Management, or other local biologists that have knowledge of specific areas or access to AZGFD's Heritage Data Management System or other databases that list locality data for desert tortoises. Sonoran desert tortoises can be expected to occur in desert mountains, rocky areas, washes cut through caliche, and bajadas in desert scrub vegetation communities. Tortoises typically inhabit areas with elevations ranging from sea level to 5,000 feet. Presence surveys and mitigation for Sonoran desert tortoise will generally not be needed above 5,000 feet.

4.1 Disturbance Type

The selection of appropriate conservation measures will depend on whether the disturbance is temporary or permanent:

- Temporary action – leaves no permanent structures and results in no permanent habitat loss.

- Permanent action –causes a loss of tortoise habitat or permanently displaces tortoises through the creation of permanent structures.

This guidance closely follows many aspects of the Mojave Desert Tortoise Pre-project Survey Protocol (USFWS 2018) and the Clearance Survey Protocol for the Mojave Desert Tortoise (USFWS 2020). The purpose of this guidance is to:

1. Offer instruction on how to approach projects within desert tortoise habitat;
2. Determine whether desert tortoises are present in a project area; and
3. Provide measures to reduce potential impacts to desert tortoises.

4.2 Coordination

This document provides general guidance but you are encouraged to contact the appropriate land management or resource management agencies when planning surveys so that any site-specific issues can be addressed. Complete results of work should be reported so that a full understanding of the project-specific circumstances are conveyed. Reports should include the conditions under which the surveys were conducted (e.g., weather, experience of surveyors, access to the survey area, degree of disturbance of the land, etc.). Complete results allow for a more thorough understanding of the potential effects of a project. Using desert tortoise surveyors with appropriate qualifications and previous Sonoran desert tortoise experience will improve confidence in the survey results. Note that handling Sonoran desert tortoises is not required to implement pre-project surveys. When planning projects, we recommend working with AZGFD and the other appropriate agencies concurrently to ensure a consistent approach to work planning.

Arizona Game and Fish Department (AZGFD)
5000 W. Carefree Highway
Phoenix, Arizona 85086
623-236-7606
PEP@azgfd.gov

4.3 Site Assessment

If tortoises have been found in the project area or nearby areas of similar habitat, the species can be presumed present, and appropriate mitigation must be included in the proposed project (see 9.0 Mitigation Measures section, below). If presence is questionable, surveys by qualified biologists should be conducted. Often, casual surveys by qualified biologists that focus on microsites with the greatest potential for supporting tortoises can confirm the presence of the species. More intensive work is needed to suggest absence of tortoises.

AZGFD strongly recommends that pre-project surveys cover the entire area of the proposed action. For each action, we also recommend that you discuss with AZGFD the extent of the action area prior to beginning surveys; this is to reduce the likelihood of requests for additional surveys later. Action areas (all areas that may be affected directly or indirectly by the action) frequently include the project site, access routes, and the areas into which desert tortoises may need to be translocated. If the entire action area cannot be accessed at the time of surveys, make note of that in the survey report. Pre-project surveys are valid for 1 year.

4.4 Assessing Habitat Conditions in the Action Area

Being aware of the habitat conditions in the action area allows AZGFD to more effectively assess the results of the surveys and to consider the effects of the proposed action on suitable habitat. Descriptions of the plant communities, level of disturbance, elevation, general soils, and proximity to humans will be advantageous.

- Factors to consider for habitat physical and biological features:
 - Does the action area contain any natural or anthropogenic features that would preclude desert tortoises from residing or moving through the area?
 - Does the action area support native annual plants upon which desert tortoises forage? Are the soil conditions appropriate to support these species?
 - Is the substrate appropriate for desert tortoises to burrow, nest, and overwinter?
 - Does the action area support burrows, rock overhangs, caliche caves, and other sheltersites or have the ability to support such sites
 - Is there an area with a slope >5% or a deeply incised wash crossing the area that might contain tortoises or their shelters?
 - What is the status of the perennial plant community? Are shrubs large enough to provide shelter to desert tortoises? Are they too dense or too sparse to allow for desert tortoises to reside in the area?
 - What evidence is there of past or ongoing disturbance as a result of human activities? Does the area show evidence (i.e., garbage, targets) of past recreational shooting in the area? Do common ravens seem to be overly abundant? Are feral or free-roaming dogs present?

The primary purpose of these surveys is to provide information on whether desert tortoises are likely to be present. Determining whether desert tortoises are present based primarily on sign (rather than live animals) requires biologists to be diligent in observing and describing sign. When evaluating survey results, AZGFD considers other factors, including type and condition of habitat, the general location of the survey area, the experience of the surveyors, the time and weather when the survey was conducted, how much time surveyors spent at the site, and whether they were conducting a focused survey for tortoises or looking for a suite of biological and/or cultural resources.

5.0 TYPES OF PROJECT SURVEYS – LINEAR PROJECT

5.1 Linear Project Surveys

If an action area is elongated and less than 600 m wide, linear project surveys are appropriate. The narrower action areas associated with linear projects, like rights-of-way, are less likely to include the entire home ranges of desert tortoises, so that animals that use the area may not be present during surveys. The primary purpose of surveys for linear projects is to provide information on where most tortoises may be encountered along the project. We recommend that surveys be done during the summer monsoon season (July – September) when possible. Tortoise surveys conducted before April or after October may not be accepted as a suitable survey and could necessitate return visits to the site. Contact AZGFD regarding sections of the proposed right-of-way where surveys may not be necessary or appropriate.

5.2 Field Methods

For linear projects, the action area is the right-of-way, and the adjacent areas on both sides of the right-of-way where tortoises may be moved from harm's way during implementation of the project. To adequately determine where most tortoises may be found, complete at least one 10-m-wide belt transect for every 100 m of the width of the action area or portion thereof. For example, if the right-of-way is 50 m wide and tortoises will be moved no more than 200 m from either edge of the right-of-way, the action area would be 450 m wide. A surveyor would need to complete 5 10-m-wide transects. Once 10-m-wide belt transects have been established, survey by walking a straight path on the centerline of each transect. Surveyors should report what they see or are drawn to investigate while walking on the centerline, whether a tortoise is visible on the surface or somewhat concealed in vegetation or in a shelter. If a surveyor detects a shelter while walking on the centerline, it should be examined to determine if a desert tortoise is present, or at or near the entrance. Use mirrors or flashlights to inspect any and all shelters. If the back of a shelter cannot be seen due to shelter depth or configuration, an endoscope or borescope can be used to determine occupancy or absence of a tortoise.

Surveyors should record on datasheets all evidence that indicates desert tortoises may be present (e.g., scat, tracks, shelters, carcasses, etc., in addition to live tortoises). To the best of the surveyor's ability, condition of the sign should be categorized (e.g., fresh, < 1 year, > 1 year old). If sign is detected off-transect, it should be recorded and then noted that it was found off-transect.

For each tortoise that is encountered, at a minimum it should be recorded whether it is ≥ 180 mm. If feasible, obtain the most accurate midline carapace length (MCL) measurement possible without touching the tortoise or if the animal is partially concealed, estimate its length and note on a datasheet. If personnel have obtained a Scientific Activities License from AZGFD, or are named as agents under one, handling of tortoises is acceptable. If no Scientific Activities License has been obtained, and personnel are not named as agents under one, handling of tortoises is not permissible.

5.3 Reporting

Provide the data sheets, a map of the action area that includes the locations of the transects, desert tortoises, and sign, and a description of the habitat conditions onsite to AZGFD at the email address provided above. Ensure these materials are sent as soon after completion of the surveys as possible. Spatial information can be provided in pdf and GIS formats. In order to protect sensitive data, it is advisable to either discourage the sharing of geographic locations on social media platforms and citizen science applications or to encourage users to obscure or privatize these details.

6.0 TYPES OF PROJECT SURVEYS – SMALL PROJECT

6.1 Small Project Surveys

Operationally, AZGFD considers sites < 200 ha (500 ac) to be “small.” The action areas of small projects are less likely to include the entire home ranges of desert tortoises, therefore, desert tortoises that regularly use the area may be off site during surveys. The primary purpose of these surveys is to provide information on where tortoises may be encountered in the action area of the project. We recommend that surveys be done during the summer monsoon season (July – September) when possible. Tortoise surveys conducted before April or after October may not be

accepted as a suitable survey and could necessitate return visits to the site. Contact AZGFD regarding sections of the project action area where surveys may not be necessary or appropriate.

6.2 Field Methods

Establish 10-m-wide belt transects to cover the entirety of the action area. Survey by walking a straight path on the centerline of each transect. Surveyors should report what they see or are drawn to investigate while walking on the centerline, whether a tortoise is visible on the surface or somewhat concealed in vegetation or in a shelter. If a surveyor detects a shelter while walking the centerline, it should be examined to determine if a desert tortoise is present, or at or near the entrance. Use mirrors or flashlights to inspect any and all shelters. If the back of a shelter cannot be seen due to shelter depth or configuration, an endoscope or borescope can be used to determine occupancy or absence of a tortoise.

Surveyors should record on datasheets all evidence that indicates desert tortoises may be present (e.g., scat, tracks, shelters, carcasses, etc., in addition to live tortoises). To the best of the surveyor's ability, condition of the sign should be categorized (e.g., fresh, < 1 year, > 1 year old). If sign is detected off-transect, it should be recorded and then noted that it was found off-transect.

For each tortoise that is encountered, at a minimum it should be recorded whether it is ≥ 180 mm. If feasible, obtain the most accurate MCL measurement possible without touching the tortoise or if the animal is partially concealed, estimate its length and note on a datasheet. If personnel have obtained a Scientific Activities License from AZGFD, or are named as agents under one, handling of tortoises is acceptable. If no Scientific Activities License has been obtained, and personnel are not named as agents under one, handling of tortoises is not permissible.

6.3 Reporting

Provide the data sheets, a map of the action area that includes the locations of the transects, desert tortoises, and sign, and a description of the habitat conditions onsite to AZGFD at the email address provided above. Ensure these materials are sent as soon after completion of the surveys as possible. Spatial information can be provided in pdf and GIS formats. In order to protect sensitive data, it is advisable to either discourage the sharing of geographic locations on social media platforms and citizen science applications or to encourage users to obscure or privatize these details.

7.0 TYPES OF PROJECT SURVEYS – LARGE PROJECT

7.1 Large Project Surveys

The AZGFD considers sites > 200 hectares (500 acres) to be “large.” The action areas of large projects could include the entire home ranges of desert tortoises. AZGFD will always consider it acceptable to survey the entire action area with transect centerlines spaced 10 m apart. However, large projects may reach a scale where it becomes unreasonable to cover entire action areas using transects spaced at 10 m. In this case, transect spacing can be increased to 20 m or 30 m between surveyors. The primary purpose of large project surveys is to provide information on where desert tortoises are occurring within the action area. Surveys to enumerate the number of individuals should be conducted when Sonoran desert tortoises are most active (monsoon season [July – September], but also in the spring [April] and fall [October]).

7.2 Field Methods

Establish 10, 20, or 30 m-wide belt transects to cover the action area. Survey by walking a straight path on the centerline of each transect. Surveyors should report what they see or are drawn to investigate while walking on the centerline, whether the tortoise is visible on the surface or somewhat concealed in vegetation or a shelter. If a surveyor detects a shelter while walking the centerline, it should be examined to determine if a desert tortoise is present or at or near the entrance. Flashlights or a hand-held mirror should be used to illuminate and examine the shelter. If the back of a shelter cannot be seen due to shelter depth or configuration, an endoscope or borescope can be used to determine occupancy or absence of a tortoise.

Surveyors should record on datasheets all evidence that indicates desert tortoises may be present (e.g., scat, tracks, shelters, carcasses, etc., in addition to live tortoises). To the best of the surveyor's ability, condition of the sign should be categorized (e.g., fresh, < 1 year, > 1 year old). If sign is detected off-transect, it should be recorded and then noted that it was found off-transect.

For each tortoise that is encountered, at a minimum it should be recorded whether it is ≥ 180 mm. If feasible, obtain the most accurate MCL measurement possible without touching the desert tortoise or if the animal is partially concealed, estimate its length and note on a datasheet. If personnel have obtained a Scientific Activities License from AZGFD, or are named as agents under one, handling of tortoises is acceptable. If no Scientific Activities License has been obtained, and personnel are not named as agents under one, handling of tortoises is not permissible.

7.3 Reporting

Provide the data sheets, a map of the action area that includes the locations of the transects, desert tortoises, and sign, and a description of the habitat conditions onsite to AZGFD at the email address provided above. Ensure these materials are sent as soon after completion of the surveys as possible. Spatial information can be provided in pdf and GIS formats. In order to protect sensitive data, it is advisable to either discourage the sharing of geographic locations on social media platforms and citizen science applications or to encourage users to obscure or privatize these details.

8.0 CLEARANCE SURVEY PROTOCOL FOR THE SONORAN DESERT TORTOISE

8.1 Objectives of Clearance Surveys

- Locate as many desert tortoises as possible within the project area.
- Remove all desert tortoises encountered from the project site.
- Safely excavate, collect, and rebury desert tortoise eggs if found within the project area.

8.2 Applicability of Clearance Surveys

For projects located in occupied desert tortoise habitat (as evidenced by presence of live tortoises or recent sign) we strongly recommend a clearance survey. This is especially appropriate for projects with a permanent or linear disturbance (roads, transmission lines, etc.). This survey is intended to reduce the likelihood that desert tortoises are injured or killed as a result of the proposed action. Clearance survey methods may include temporarily penning desert tortoises within the area surrounding its shelter, moving desert tortoises out of harm's way a short distance from the impact area, or translocating desert tortoises to a designated area outside its home range in accordance with an AZGFD—and other appropriate agency—approved translocation plan. It is

the project proponent's responsibility to obtain all necessary authorizations from AZGFD and applicable land management agencies.

8.3 Methods

Clearance surveys require 100% coverage of the project area, with a focus on locating all desert tortoises above and below ground within the project area. Clearance surveys should be conducted immediately prior to surface disturbance at each site within the project area or following construction of a desert tortoise-proof fence encompassing the project area. A desert tortoise-proof fence ensures tortoises cannot enter the project area after clearance surveys are completed.

Desert tortoises often pace along new fences attempting to gain access to the other side or return to areas from which they were removed. After the desert tortoise exclusion fence has been installed, the fencing should be checked several times a day when temperatures are expected to exceed 95°F (35°C) to ensure tortoises are not trapped within the fence or are fence-walking; these animals may be exposed to lethal temperatures. If a suspected hyperthermic tortoise or excessively stressed tortoise (see Figure 4) is found along a fence and temperatures are above 95°F (35°C), the tortoise should be moved to a climate-controlled area and rehydrated (following methods described above).



Figure 4. Signs associated with hyperthermia include lethargy, weakness, edema, neurological signs, and excessive, frothy oral discharge as seen in these extremely stressed tortoises (*Gopherus Polyphemus*) (Wendland et al. 2009).

Clearance surveys at the site must consist of at least 2 consecutive surveys of the site. Surveys will involve walking transects ≤ 5 -m wide under typical conditions. In areas of dense vegetation or when conditions limit the ability of the surveyor to locate desert tortoises, transects should be reduced in width accordingly. To maximize effectiveness and gather useful data, surveys should be conducted around sunrise and/or sunset, particularly during the desert tortoises' peak activity periods in the monsoon season (July – September), with additional opportunities in spring (April) and fall (October). Clearance surveys should not be conducted November – March. The ultimate number of surveys required may depend on the scale of the project and the number of tortoises found on the last survey.

All methods used for handling desert tortoises during the clearance surveys must be in accordance with AZGFD handling guidelines and procedures. Anyone that handles desert tortoises during clearance activities must have the appropriate authorizations from AZGFD.

During clearance surveys, desert tortoises in shelters may be removed through tapping or careful excavation (see *Extracting Desert Tortoises from Shelters*, and *Excavating Shelters* sections, below). Multiple visits occurring at sunrise and/or sunset may be necessary if desert tortoises are inaccessible in deep shelters. Tortoises are often most active around sunrise and sunset during the height of summer. During all handling procedures, desert tortoises will be treated in a manner to ensure they do not overheat or exhibit signs of overheating (e.g., gaping, foaming at the mouth, etc.), or are placed in a situation where they cannot maintain surface and core temperatures necessary to their well-being. Desert tortoises will be kept shaded at all times until it is safe to release them. Tortoises must not be moved if the ambient air temperature exceeds 105°F (40°C) unless an alternate shelter of appropriate size and depth is available, or the tortoise is in imminent danger. Ambient air temperature will be measured in the shade, protected from the wind, at a height of 5 cm above the ground surface.

The area cleared and number of tortoises found within that area must be reported to the AZGFD or appropriate management agency. The report should be made in writing, preferably by email. Provide data sheets, maps of the clearance surveys, and include the locations of desert tortoises, sign, and shelter sites. Spatial information can be provided in pdf and GIS formats.

If a desert tortoise is encountered after clearance surveys have been completed, process the tortoise according to the methods described above.

8.4 Extracting Desert Tortoises from Shelters

Before reaching into a desert tortoise shelter, examine the entrance for other occupants. Rattlesnakes, spiders, scorpions, skunks, and Gila monsters often inhabit tortoise shelters. To determine if a tortoise resides within the shelter, firmly pound the soil at the side of the “apron” or soil mound at the entrance of the shelter 5 – 6 times with an open hand, then listen for desert tortoise movement; wait 30 seconds and repeat several times if the tortoise does not readily emerge. Avoid disturbing or pounding the center of the apron or entrance of the shelter where desert tortoises typically dig nests and lay their eggs. If the desert tortoise is visible deep in its shelter, the observer can gently tap the carapace 3 – 4 times with a stick (Medica et al. 1986). The observer should then remove the stick and move away from the shelter entrance. If tapping is successful, the desert tortoise will emerge, usually to the shelter entrance. If desert tortoise movements are not heard within a few minutes, discontinue tapping.

If the desert tortoise is within arm’s reach, first ensure you are wearing a fresh pair of non-porous disposable gloves, then firmly grasp the gular, plastron, or posterior edge of the carapace and gently pull the tortoise towards the shelter entrance. If the desert tortoise resists to the point where moderate pulling effort is unsuccessful, stop pulling but maintain a grip on the tortoise; allow the tortoise to relax. When the tortoise has relaxed, again pull the tortoise towards the shelter entrance; this pattern of pulling, allowing the tortoise to relax, and then pulling again may need to be repeated many times until the animal can be extracted entirely. Try not to compromise the integrity of a

shelter if the desert tortoise will remain within the project area. If the area is to be cleared of all desert tortoises, excavate the shelter as described in the section below.

8.5 Excavating Shelters

Desert tortoise shelters should be excavated only if they occur within a planned disturbance area. As an alternative to excavation in certain circumstances, the immediate area surrounding a shelter occupied by a desert tortoise may be temporarily penned (see 8.8 Temporarily Confining Desert Tortoises section, below), but this should be coordinated and approved by AZGFD and any other appropriate land management agency.

Before excavation, feel for desert tortoise eggs by gently probing (with your fingers) the soil in front of the shelter opening and along the floor of the shelter as you excavate the shelter. The purpose of probing is to locate areas of excavated soil that are less compacted and may indicate a nest. Eggs have been found up to 6 ft (1.9 m) in front of shelter openings and up to 6 ft (1.9 m) within the entrance of a shelter; they may also occur in the mound at the shelter opening. To avoid crushing eggs, do not scrape tools such as shovels, across the bottom of the shelter, but continue to probe the area with your fingers as you proceed. Removal of the top 10 in (25 cm) of soil (or until a hard layer of soil is encountered) will typically ensure that you find any desert tortoise eggs. Be particularly careful from mid-May through late August when eggs are most likely to be present. If found, follow egg handling protocols detailed in the following section.

Excavators should wear leather or cloth gloves during shelter excavation to avoid bites or stings by wildlife. Use blunt-nosed shovels or garden trowels. The preferred method involves two individuals, each with a shovel, to excavate a shelter. Place a shovel in the shelter entrance, or garden trowel for small shelters, and slice away the ceiling with the second shovel or trowel. Remove the soil with the first shovel or trowel as excavation proceeds and repeat. Excavate the shelter slowly and carefully and stop often to see if a tortoise is within reach. Do not collapse the shelter ahead of the shovel or trowel inside the shelter. You should feel the shovel contact the other shovel with each stroke to avoid striking a desert tortoise. It may take several minutes or several hours to excavate a desert tortoise shelter, depending on its length and other characteristics.

Always excavate the shelter to its absolute end(s), and then excavate an additional foot-or-so (0.3 m) of harder soil beyond the suspected end to ensure that a desert tortoise is not behind a dirt plug or mound. Search all side tunnels within the shelter for tortoises, especially in kit fox dens. If a desert tortoise is found, do not assume that it is alone. After removing the first desert tortoise encountered, return to the shelter and continue to excavate it looking for additional tortoises. After excavating the shelter, leave it collapsed so that no desert tortoise may reuse it.

A tortoise may be moved up to one kilometer but no further than necessary from its original location. Irrespective of the time of year and temperature, relocate the desert tortoise to a suitable shelter and contact AZGFD for additional guidance and coordination if needed.

8.6 Nest and Egg Handling Protocol

Sonoran desert tortoise nest and egg handling involves specialized protocols that require technical expertise and are not intended for the general public. If a tortoise nest or eggs are encountered, it

is critical not to disturb them. The AZGFD should be contacted and consulted for guidance on appropriate measures.

Desert tortoises may lay eggs during the months of May through August and usually hatch September through October. Some eggs may not hatch, or hatchlings may not emerge until the following spring. Desert tortoise eggs will need to be moved to a similarly constructed artificial nest in the wild. If unemerged hatchlings are encountered, release them into an unoccupied shelter in the wild unless otherwise directed by AZGFD.

Any nest that is found will be carefully excavated by hand at a time of day when the air temperature 15 cm above the ground is approximately equal to the soil temperature at egg level. Excavate suspected nests by hand. Disposable rubber, latex, or nitrile gloves should be worn when marking and handling eggs. Before disturbance of nest contents, each egg will be gently marked with a small dot on the top using a felt-tipped pen to establish the egg's orientation in the nest. In handling nest contents, eggs must be maintained in this orientation at all times. Because egg shells become extremely fragile in the last few weeks before hatching, special care will be taken with eggs found from August to mid-October. Because the egg is very fragile, it may break during handling; this will be lethal to the developing tortoise inside. Broken eggs will be buried nearby and left in the field, or the contents preserved and made available for research projects. Report broken eggs to AZGFD.

Measure and record the depth of the nest below the soil surface and the position of the nest relative to the shelter entrance (or other shelter cover). Place approximately 1 in (2.5 cm) of soil from the nest area in a bucket and carefully transfer the eggs to the bucket, maintaining egg orientation. Gently cover the eggs with soil that is free of cobbles and pebbles, to a depth equivalent to that of the original nest.

A nest will be prepared (or a natural one found) at the release site with the same depth and location in relation to the shelter entrance as the original nest. The eggs will be transferred to the new nest, maintaining their original orientation. The eggs will be replaced so that they touch one another. Gently cover with soil from which cobbles and pebbles have been removed so that all the air spaces around the eggs are filled.

8.7 Constructing Artificial Shelters

Constructing artificial shelters generally is not necessary when translocating Sonoran desert tortoises. Often, ample shelters can be found in surrounding habitat. However, in the infrequent case that an artificial shelter may be needed (coordinate with AZGFD), the information below provides a general description of the methods for constructing artificial shelters taken from the Tortoise Group's adoption and care pamphlet.

Create an artificial shelter that is the same orientation and size as the shelter from which the desert tortoise was taken. The burrow for a juvenile desert tortoise should be 0.9–1.2 m (3–4 ft) long, and an adult tortoise shelter should be 1.5–1.8 m (5–6 ft) long. Shelter construction involves digging a three-sided shelf upon which plywood will be placed to serve as the roof of the shelter. A channel is dug below the level of the shelf which approximates the width of the tortoise and functions as the actual shelter.

Determine the width and length to dig the shelf, and place the plywood on the ground. Use corner stakes and twine to delineate the perimeter. Dig the shelter in a downward slant 15–20° below the horizontal line of the ground (Figure 5). Place the plywood onto the shelf. Fit the plywood snugly and then remove it. Next, dig the channel and loosen the soil along the floor of the channel to a depth of 15 cm (6 in) to allow a tortoise to dig its way out should the plywood sag and possibly trap or pin it in the shelter. Replace the plywood and shovel dirt on top. Place rocks along the eave of the shelter roof, above the opening (Figure 5). Mound the dirt so that rain water will not puddle on top of the finished shelter.

Alternatively, the tortoise and its shelter may be temporarily penned (see section below).

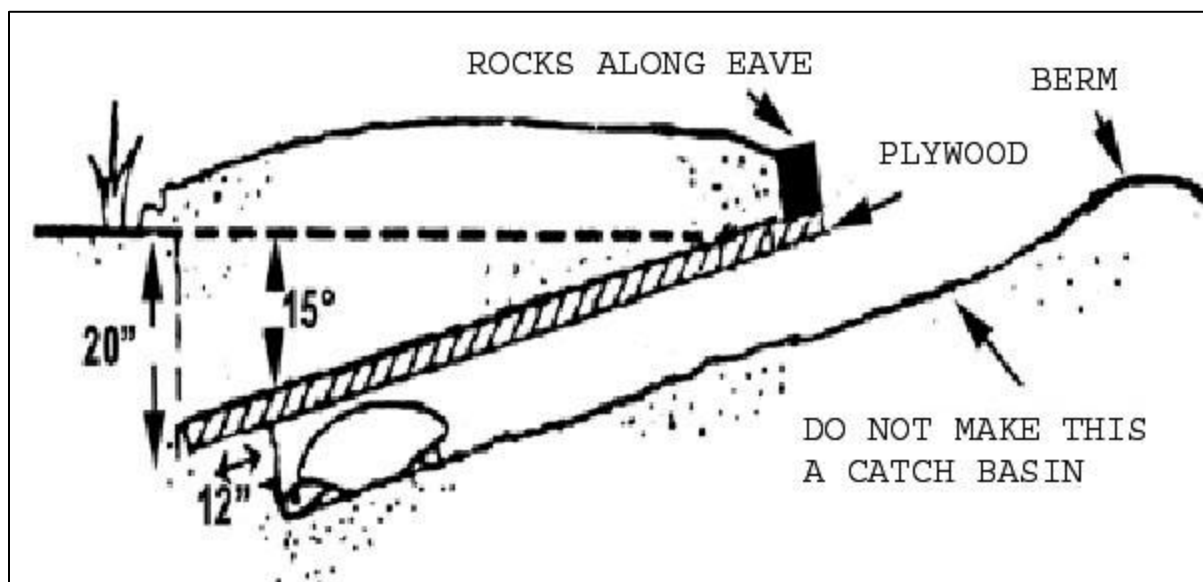


Figure 5. Diagram of an artificial tortoise shelter (Tortoise Group 2019).

8.8 Temporarily Confining Desert Tortoises

Occasionally, desert tortoises may be found on the periphery of the project area that may need to be temporarily penned to prevent them from moving onto the project site and then needing to be physically moved. These situations should be coordinated with AZGFD and construction activity will need to be carefully monitored in the area around the penned tortoise. The methodology for penning desert tortoises (U.S. Department of Defense 2005) is adapted from a methodology developed by Gilbert Goodlett (EnviroPlus Consulting, Ridgecrest, California). Generally, desert tortoises should not be penned in areas of moderate or heavy public use. Penning will be accomplished by installing a circular fence, approximately 6 m (20 ft) in diameter to enclose the tortoise/shelter (Figure 6). The pen should be constructed with durable materials (*i.e.*, 16 gauge or heavier) suitable to resist desert environments. Fence material should consist of 1-in horizontal by 2-in (2.5 by 5.0 cm) vertical, galvanized welded wire. Pen material should be 50 cm (24 in) in width. Steel T-posts or rebar (0.6–0.9 m [2–3 ft]) should be placed every 1.5–1.8 m (5–6 ft) to support the pen material. The pen material should extend 46 cm (18 in) aboveground. The bottom of the enclosure will be buried 15–30 cm (6–12 in) or bent inward (towards the burrow), soil

mounded along the base, and implement other measures to ensure zero ground clearance. Care will be taken to minimize visibility of the pen by the public. A designated “Desert Tortoise Monitor” will check the pen at least daily and ensure that the desert tortoise is in the shelter or pen, the desert tortoise is alive and well, and the pen is intact. All instances of penning or issues associated with penning will be reported to AZGFD within 3 days.



Figure 6. Example of fencing designed for the temporary penning of a desert tortoise. Note: this fencing is currently under installation; the open trench at the base of the fence must be backfilled to eliminate gaps that could entrap tortoises.

9.0 AVOIDANCE, MINIMIZATION, AND MITIGATION MEASURES FOR THE SONORAN DESERT TORTOISE

Mitigation should be tailored to the nature of the proposed action, its anticipated effects, and the density and expected response of desert tortoises to the action. The following mitigation actions are grouped to assist in selection of appropriate actions for specific projects. Nevertheless, each project is different and development of an appropriate mitigation plan will require the input of a desert tortoise biologist and authorizing agencies. Mitigation measures suggested herein are recommendations to be used in developing mitigation plans for specific projects. Required mitigation will be developed by permitting agencies and project proponents in accordance with land management plans, the National Environmental Policy Act (NEPA), and other applicable guidance and regulations.

The first set of mitigation measures are presented as a generic mitigation outline. Within the outline, measures are listed in the general order and priority in which they should be applied to project proposals. This step-down process is in accordance with NEPA regulations and Fish and Wildlife Service mitigation policy. A second set of measures follow the outline and consist of project-specific mitigation recommendations. These and/or other measures developed during project planning should be added to the generic mitigation outline as appropriate.

Some of the following recommended measures are defined fairly specifically; others provide more general guidance to be considered in the process of developing a project mitigation plan. When integrating these measures into a mitigation plan, replace “should” with “shall” to reflect their obligatory status.

9.1 Generic Mitigation Plan for Projects in Desert Tortoise Habitat

9.2 Priority 1: Avoid the Impacts

To the extent possible, project features should be located in previously disturbed areas or outside of desert tortoise habitat.

If impacts to desert tortoises or their habitat cannot be avoided, then:

9.3 Priority 2: Minimize the Impacts

A. Scheduling Activities to Reduce Potential Adverse Effects:

To the extent possible, project activities should be scheduled when tortoises are inactive (typically November 1 to March 1).

B. Information and Education of Project Personnel:

A desert tortoise protection education program should be presented to all employees, inspectors, supervisors, contractors, and subcontractors who carry out proposed activities at the project site. The education program should include discussions of the following:

1. The legal and sensitive status of the tortoise;
2. a brief discussion of tortoise life history and ecology;
3. mitigation measures designed to reduce adverse effects to tortoises;
4. and protocols to follow if a tortoise is encountered, including appropriate contact points.

C. Designation of a Desert Tortoise Coordinator:

The project proponent should designate a desert tortoise coordinator who should be responsible for overseeing compliance with the mitigation program, coordination with permitting agencies, land managers, and Arizona Game and Fish Department; and as a contact point for personnel that encounter desert tortoises. The desert tortoise coordinator should be on site during project activities and should be familiar with and have a copy of the desert tortoise mitigation plan.

D. Removal of Harm to Desert Tortoises on Project Sites:

If a tortoise is found in a project area, activities should be modified to avoid injuring or harming it. If activities cannot be modified, tortoises in harm's way should be moved in accordance with guidelines established above (see section 3.0 General Handling Guidelines).

E. Minimization of Project Footprint:

1. Vehicle use should be limited to existing or designated routes to the extent possible
2. Areas of new construction or disturbance should be flagged or marked on the ground prior to construction. All construction workers should strictly limit their activities and vehicles to areas that have been marked. Construction personnel should be trained to recognize markers and understand the equipment movement restrictions involved.

F. Limitation of Habitat Disturbance within the Project Footprint:

1. Blading of new access or work areas should be minimized to the extent possible. Disturbance to shrubs should be avoided if possible. If shrubs cannot be avoided during equipment operation or vehicle use, wherever possible they should be crushed rather excavated or bladed and removed.
2. Project features that might trap or entangle desert tortoises, such as open trenches, pits, open pipes, etc. should be covered or modified to prevent entrapment. This may only be necessary during the tortoise active season and may be unnecessary if an on-site biologist is monitoring activities - see "Suggested Mitigation Measures for Projects Conducted During the Tortoise Activity Period" below.

G. Preventing Attraction of Predators or Enhancement of Predator Populations:

Construction sites should be maintained in a sanitary condition at all times to prevent attracting predators. The project proponent is responsible for controlling and limiting litter, trash, and garbage by placing refuse in predator-proof, sealable receptacles immediately. This practice not

only keeps the site clean but also reduces the likelihood of attracting avian predators such as ravens, along with other potential predators that can harm Sonoran desert tortoises. Additionally, care should be taken to avoid creating artificial perches or other structures that could facilitate predator access. Trash and debris should be removed when construction is complete to ensure that the habitat remains as natural and undisturbed as possible.

9.4 Priority 3: Rectify the Impacts

A. Removal of Hazards:

After completion of the project, trenches, pits, and other features in which tortoises could be entrapped or entangled, should be filled in, covered, or otherwise modified so they are no longer a hazard to desert tortoises.

B. Habitat Restoration:

After project completion, measures should be taken to facilitate restoration. Restoration techniques should be tailored to the characteristics of the site and the nature of project impacts identified in the mitigation plan as developed by project biologists, AZGFD, and other relevant agencies. Techniques may include removal of equipment and debris, recontouring, replacing boulders that were moved during construction; and seeding/planting native vegetation, and transplanting of cacti and yuccas, etc. Only native plant species, preferably from a source on or near the project area, should be used in restoration.

9.5 Priority 4: Reduce or Eliminate the Impacts over Time, and Provide Guidance and Information for Improving Future Mitigation Plans

Monitoring and Reporting Requirements:

The project proponent should submit a monitoring report to AZGFD and any permitting State or Federal agency within 90 days of project completion. For long-term or ongoing projects that may result in continuing impacts to tortoises and habitat, annual monitoring reports should be prepared. Monitoring reports should briefly document the effectiveness of the desert tortoise mitigation measures, actual acreage of desert tortoise habitat disturbed, the number of desert tortoises excavated from burrows, the number of desert tortoises moved from construction sites, and other applicable information on individual desert tortoise encounters. The report should make recommendations for modifying or refining the mitigation program to enhance desert tortoise protection and reduce needless hardship on the project proponents.

The following mitigation measures are designed for specific project types or conditions. Most act to minimize project impacts (priority 2 measures).

For Projects Involving Hazardous Materials:

Oil, fuel, pesticides, and other hazardous material spills should be cleaned up and properly disposed of as soon as they occur in accordance with applicable State and Federal regulations. All hazardous material spills must be reported promptly to the appropriate surface management agencies and hazardous materials management authorities.

For Projects Conducted During the Tortoise Activity Period (typically March 1 to November 1)

1. Construction and operation activities should be monitored by a qualified desert tortoise biologist. The biologist should be present during all activities in which encounters with tortoises may occur. The biologist should watch for tortoises wandering into construction areas, check under vehicles, check at least three times per day any excavations that might trap tortoises, and conduct other activities necessary to ensure the death and injury of tortoises is minimized. This measure may only be warranted in areas of moderate to high tortoise density. Additionally, desert tortoises are drawn to water and damp soil, which can result from using a water truck for dust control. The scent of wet or damp soil mimics the conditions of a natural rainstorm, attracting tortoises and potentially increasing their presence on or near project roads. Therefore, heightened vigilance is essential to prevent harm to tortoises in these situations.
2. Unleashed dogs should be prohibited in project areas.
3. If temporary fencing is necessary to exclude desert tortoises during construction, the fence should include: 1) portable, stand-alone chain-link fence modules or plastic snow fencing, supported by standard metal fence posts; and 2) desert tortoise fencing that complies with section 8.8 Temporarily Confining Desert Tortoises. Note that snow fencing or orange safety fencing, typically made from plastic or PVC, does not withstand desert conditions well and should not be used for periods exceeding 60 days.

For Long-term or Permanent Projects in Which Continued Encounters with Desert Tortoises Are Expected:

Construction of permanent or long-term projects in moderate to high density desert tortoise habitat should be enclosed with desert tortoise barrier fencing to prevent tortoises from wandering onto the project site where they may be subject to collection, death, or injury. Barrier fencing should consist of wire mesh with a maximum mesh size of 1-inch (horizontal) by 2-inch (vertical) fastened securely to posts. The wire mesh should extend at least 18 inches above the ground and preferably 12 inches below the surface of the ground. Where burial is not possible, the lower 12 inches should be folded outward, away from the enclosed site, and fastened to the ground so as to prevent tortoise entry. Any gates or gaps in the fence should be constructed and operated to prevent desert tortoise entry (such as installing "tortoise guards" similar to cattle guards, and/or keeping gates closed). Specific measures for tortoise-proofing gates and gaps should be addressed project by project. Fencing is a relatively expensive mitigation measure and may only be appropriate in areas of moderate to high tortoise density

10.0 SPECIFICATIONS FOR DESERT TORTOISE EXCLUSION FENCING

10.1 Fence Construction

The specifications for fencing materials and construction procedures were standardized by the USFWS to effectively confine tortoises or exclude them from potentially harmful situations, particularly in areas near roads and highways. For further details, please consult the "USFWS Desert Tortoise Fencing Specifications 2005," which can be accessed via the following URL:

https://eplanning.blm.gov/public_projects/nepa/41489/93713/113028/AppendixD_Desert-Tortoise-Fence-Specs.pdf.

10.2 Materials

Fences should be constructed with durable materials (i.e., 16 gauge or heavier) suitable to resist desert environments, alkaline and acidic soils, wind, and erosion. Fence material should consist of 1-inch horizontal by 2-inch vertical, galvanized welded wire, 36 inches in width. Other materials include: Hog rings, steel T-posts, and smooth or barbed livestock wire. Hog rings should be used to attach the fence material to existing strand fence. Steel T-posts (5 to 6-foot) are used for new fence construction. Standard smooth livestock wire fencing should be used for new fence construction, on which tortoise-proof fencing would be attached.

10.3 Retrofitting Existing Livestock Fence

Option 1 (see drawing diagram of Appenix A below). Fence material should be buried a minimum of 12 inches below the ground surface, leaving 22-24 inches above ground. A trench should be dug or a cut made with a blade on heavy equipment to allow 12 inches of fence to be buried below the natural level of the ground. The top end of the tortoise fence should be secured to the livestock wire with hog rings at 12 to 18-inch intervals. Distances between T-posts should not exceed 10 feet, unless the tortoise fence is being attached to an existing right-of-way fence that has larger interspaces between posts. The fence must be perpendicular to the ground surface, or slightly angled away from the road, towards the side encountered by tortoises. After the fence has been installed and secured to the top wire and T-posts, excavated soil will be replaced and compacted to minimize soil erosion.

Option 2 (see drawing diagram of Appenix A below). In situations where burying the fence is not practical because of rocky or undigable substrate, the fence material should be bent at a 90° angle to produce a lower section approximately 14 inches wide which will be placed parallel to, and in direct contact with, the ground surface; the remaining 22-inch wide upper section should be placed vertically against the existing fence, perpendicular to the ground and attached to the existing fence with hog rings at 12 to 18-inch intervals. The lower section in contact with the ground should be placed within the enclosure in the direction of potential tortoise encounters and level with the ground surface. Soil and cobble (approximately 2 to 4 inches in diameter; can use larger rocks where soil is shallow) should be placed on top of the lower section of fence material on the ground covering it with up to 4 inches of material, leaving a minimum of 18 inches of open space between the cobble surface and the top of the tortoise-proof fence. Care should be taken to ensure that the fence material parallel to the ground surface is adequately covered and is flush with the ground surface.

10.4 New Fence Construction

Options 1 or 2 should be followed except in areas that require special construction and engineering such as wash-out sections (see below). T-posts should be driven approximately 24 inches below the ground surface spaced approximately 10 feet apart. Livestock wire should be stretched between the T-posts, 18 to 24 inches above the ground to match the top edge of the fence material; desert tortoise-proof fencing should be attached to this wire with hog rings placed at 12 to 18-inch intervals. Smooth (barb-less) livestock wire should be used except where grazing occurs.

If fence is constructed within the range of bighorn sheep, two smooth-strand wires are required at the top of the T-post, approximately 4 inches apart, to make the wire(s) more visible to sheep. A 20 to 24-inch gap must exist between the top of the fence material and the lowest smoothstrand wire at the top of the T-post. The lower of the top two smooth-strand wires must be at least 43 inches above the ground surface.

(72-inch T-posts: 24 inches below ground + 18 inches of tortoise fence above ground + 20 to 24-inch gap to lower top wire + 4 inches to upper top wire = 66 to 70 inches).

10.5 Inspection of Desert Tortoise Barriers

The risk level for a desert tortoise encountering a breach in the fence is greatest in the spring, summer, and fall, particularly around the time of precipitation including the period during which precipitation occurs and at least several days afterward. All desert tortoise fences and cattleguards should be inspected on a regular basis sufficient to maintain an effective barrier to tortoise movement. Inspections should be documented in writing and include any observations of entrapped animals; repairs needed including bent T-posts, leaning or non-perpendicular fencing, cuts, breaks, and gaps; cattleguards without escape paths for tortoises or needed maintenance; tortoises and tortoise burrows including carcasses; and recommendations for supplies and equipment needed to complete repairs and maintenance.

All fence and cattleguard inventories should be inspected at least twice per year. However, during the first 2 to 3 years all inspections will be conducted quarterly at a minimum, to identify and document breaches, and problem areas such as wash-outs, vandalism, and cattleguards that fill-in with soil or gravel. GPS coordinates and mileages from existing highway markers should be recorded in order to pinpoint problem locations and build a database of problem locations that may require more frequent checking. Following 2 to 3 years of initial inspection, subsequent inspections should focus on known problem areas which will be inspected more frequently than twice per year. In addition to semi-annual inspections, problem areas prone to wash-outs should be inspected following precipitation that produces potentially fence-damaging water flow. A database of problem areas will be established whereby checking fences in such areas can be done efficiently.

10.6 Repair and Maintenance of Desert Tortoise Barriers

Repairs of fence wash-outs: (1) realign the fence out of the wash if possible to avoid the problem area, or (2) re-construct tortoise-proof fencing using techniques that will ensure that an effective desert tortoise barrier is established that will not require frequent repairs and maintenance.

Gaps and breaks will require either: (a) repairs to the existing fence in place, with similar diameter and composition of original material, (b) replacement of the damaged section to the nearest T-post, with new fence material that original fence standards, (c) burying fence, and/or (d) restoring zero ground clearance by filling in gaps or holes under the fence and replacing cobble over fence constructed under Option 2. Tortoise-proof fencing should be constructed and maintained at cattleguards to ensure that a desert tortoise barrier exists at all times.

All fence damage should be repaired in a timely manner to ensure that tortoises do not travel through damaged sections. Similarly, cattleguards will be cleaned out of deposited material underneath them in a timely manner. In addition to periodic inspections, debris should be removed that accumulates along the fence. All cattleguards that serve as tortoise barriers should be installed and maintained to ensure that any tortoise that falls underneath has a path of escape without crossing the intended barrier.

11.0 CULVERTS AND PASSAGEWAYS FOR DESERT TORTOISES

Effective road and highway infrastructure planning is critical to mitigating the impacts of habitat fragmentation on desert tortoises. Implementing culverts and passageways can enhance connectivity between tortoise populations separated by roads, thus improving their genetic diversity and overall population viability. This section outlines recommendations for designing and maintaining culverts and passageways to facilitate tortoise movement and reduce road mortality and closely follows the recommendations outlined in the USFWS's document on passages for connectivity of Mojave desert tortoises by the Desert Tortoise Recovery Office.

11.1 Design Recommendations

Exclusion Fencing and Passageway Spacing

Exclusion Fencing: Desert tortoise exclusion fencing should be considered for roads with an average daily traffic volume over 200 vehicles. These fences help prevent tortoises from accessing roadways, thereby reducing mortality.

Passageway Spacing: To restore connectivity, passages should be spaced approximately 2200 feet (670 m) apart. This spacing is based on multi-year home range estimates and aims to provide at least one road passage for tortoises living near the road.

Placement Considerations

Habitat Potential: Passages should be installed in areas with high habitat potential on both sides of the road. Avoid placing passages in areas where one side is no longer suitable for tortoises.

Wash Associations: Where possible, align passageways with natural washes, as tortoises preferentially use these areas for foraging and movement.

Structural Design

Culvert Specifications: Under-road passages, such as culverts, should have an openness ratio (structure's cross-section/length) of 0.4. Square passages should be at least 5.9 feet (1.8 m) on each side, and circular passages should have a diameter of at least 6.6 feet (2.0 m).

Substrate and Lighting: Culverts should have a natural substrate (e.g., sand, silt, gravel) to encourage use by tortoises. The ability of tortoises to see light at the end of the passageway is crucial; therefore, shorter culverts with a large diameter are preferred.

Noise and Visual Barriers

Sound Attenuation: High traffic volumes can deter tortoises from using passageways. Installing sound-attenuating walls above the entrance can reduce noise and light disturbance from passing vehicles.

Flooding and Debris Management: Design passageways to minimize debris accumulation and maintain a clear, dry path wide enough to encourage use by tortoises.

11.2 Maintenance and Monitoring

Regular Maintenance: Regular inspections and maintenance are required to ensure fencing and passageways remain effective, especially after storm events. Damaged fencing and blocked passages should be promptly repaired.

Effectiveness Monitoring: Monitoring should accompany the installation of passageways to assess their effectiveness in maintaining connectivity. Data on tortoise use, road mortality rates, and habitat conditions should be collected to refine design and placement guidelines.

11.3 Research and Adaptation

Ongoing Research: Additional research is necessary to understand the long-term effects of roads and passageways on desert tortoise genetics, demography, and connectivity. Studies should focus on optimal design criteria and spacing to maximize passageway use.

Adaptive Management: Recommendations should be implemented through adaptive management, adjusting strategies based on monitoring results and new research findings.

12.0 EARTHEN V-DITCHES

12.1 Design Specifications

To ensure the safety of the Sonoran desert tortoise during construction and operation activities, it is crucial to consider specific design specifications for earthen v-ditches. The sides of these ditches should have a maximum slope of 35 degrees to prevent tortoises from becoming trapped. The depth and width of the v-ditch should be appropriate for the expected water flow and soil type, avoiding exceptionally deep trenches that tortoises cannot escape and ensuring the width is sufficient to handle water flow without posing unnecessary hazards to wildlife. Regular escape ramps, installed at intervals of at least every 50 meters, should feature a gentle slope not steeper than 15 degrees, allowing tortoises and other small animals to exit easily. Additionally, vegetation should be maintained along the edges of the v-ditch to provide cover. Regular inspections and maintenance are necessary to keep the v-ditch free of debris and ensure the functionality of escape ramps, with maintenance and checks planned during critical periods for tortoises. Adhering to these design specifications will minimize the impact on Sonoran desert tortoises, enhancing their protection and promoting their conservation in areas affected by construction activities.

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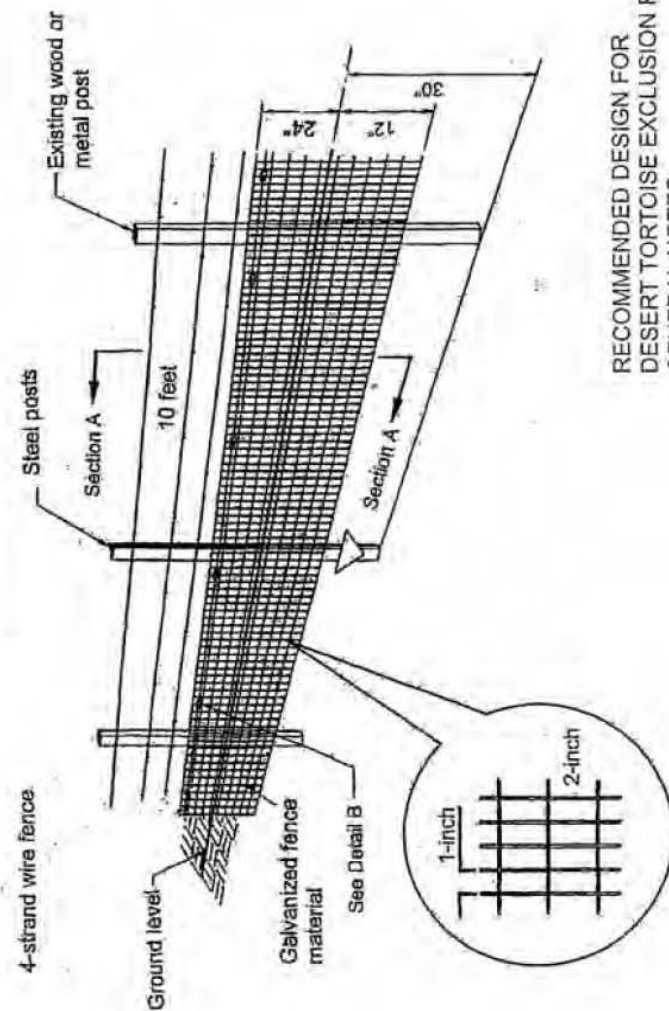
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APPENDIX A

Desert Tortoise Exclusion Fencing

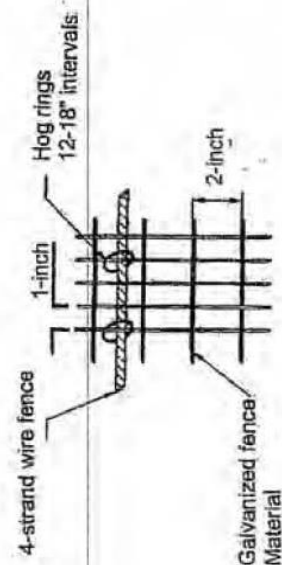
DESERT TORTOISE EXCLUSION FENCE (2005)



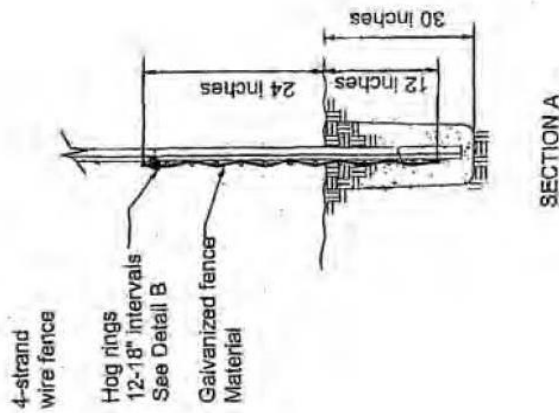
RECOMMENDED DESIGN FOR DESERT TORTOISE EXCLUSION FENCE GENERAL NOTES:

1. Ensure that fence posts and materials conform to the standards approved by the U.S. Fish and Wildlife Service.
2. Ensure that the height above ground level is no less than 18 inches and no higher than 24 inches.
3. Ensure that the depth of fence material below ground level is about 12 inches but no less than 6 inches. (See SECTION A above)
4. Install additional steel posts when span between existing fence posts exceed 10 feet.
5. Attach fence material to existing fence or wire using hog rings at 12-inch intervals.
6. Fasten fence material to posts with 3 tie wires with a wire near the top, bottom, and center of the fence material.

DETAIL A



DETAIL B

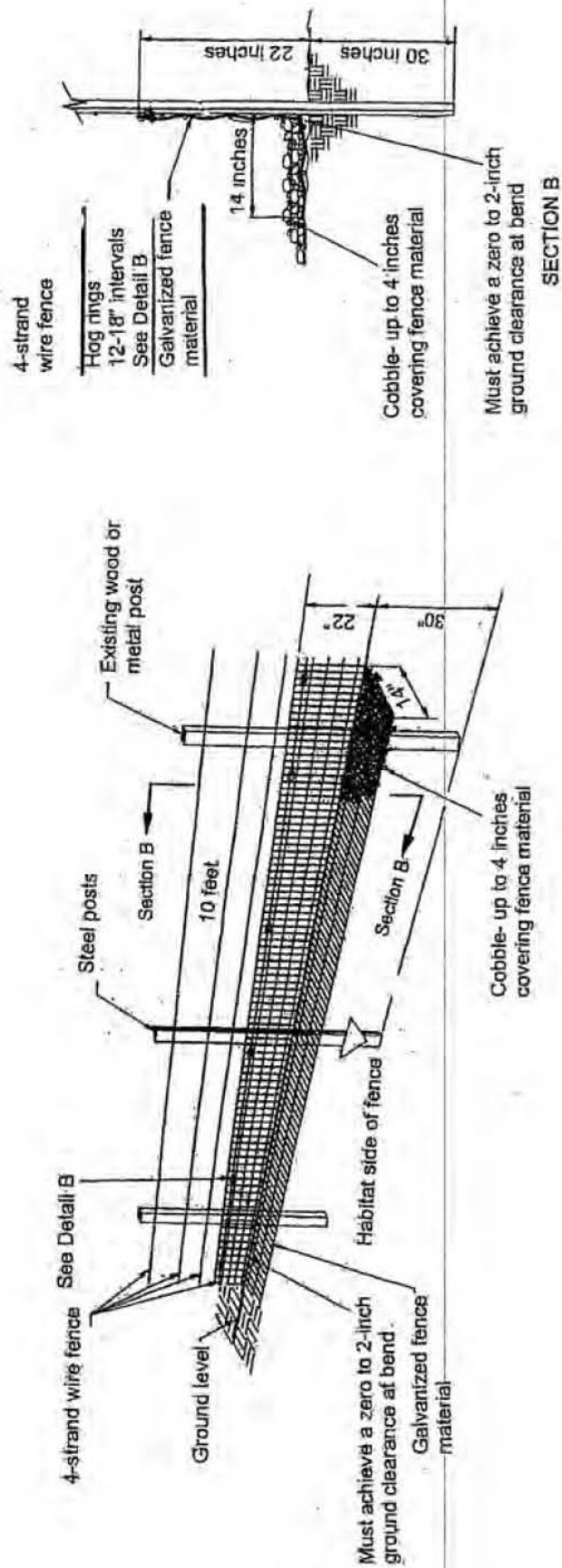


SECTION A

7. Backfill trenches with excavated material and compact the material.
8. Attach fence material to all gates. Ensure that clearance at base of gate achieves zero ground clearance.
9. Substitute smooth wire for barbed wire if additional support wires are necessary.
10. The number and placement of support wires may be modified to allow sheep and deer to pass safely.
11. Erosion at the edge of the fence material where the fence crosses washes may occur and requires appropriate and timely monitoring and repair.
12. Tie the fence into existing culverts and catleguards when determined necessary to allow desert tortoise passage underneath roadways.

FOR BEDROCK OR CALICHE SUBSTRATE

1. Use this fence design (see below) only for that portion of the fence where fence material cannot be placed 6 inches below existing ground level due to presence of bedrock, large rocks or caliche substrate.
2. Ensure that the fence height above ground level is no less than 22 inches.
3. Ensure that there is a zero to 2-inch ground clearance at the bend.
4. Ensure that the bent portion of the fence is lying on the ground and pointed in the direction of desert tortoise habitat.
5. Cover the portion of the fence that is flush with the ground with cobble (rocks placed on top of the fence material to a vertical thickness up to 4 inches).
6. When substrate no longer is composed of bedrock or caliche, install fence using design shown above.



APPENDIX B

Desert Tortoise Field Survey Datasheet

Sonoran Desert Tortoise: Field Survey Datasheet

Date of survey: _____ Survey biologist(s): _____
(day, month, year) (name, email, and phone number)

Site description: _____
(project name and size; general location)

County: _____ Location: _____
(UTM coordinates, lat-long, and/or TRS; map datum)

Area size to be surveyed: _____ Transect #: _____ Transect length: _____

GPS Start-point: _____ Start time: _____ am/pm
(easting, northing, elevation in meters)

GPS End-point: _____ End time: _____ am/pm
(easting, northing, elevation in meters)

Start Temp: _____ °C End Temp: _____ °C

Live Tortoises

Detection number	GPS location Easting Northing		Time	Tortoise location (in burrow: all of tortoise beneath plane of burrow opening, or not in burrow)	Approx MCL ≥180 mm? (Yes, No or Unknown)	Existing tag # if present
1						
2						
3						
4						
5						
6						
7						
8						
9						
10						

Tortoise Sign (burrows, scats, carcasses, etc)

Detection number	GPS location Easting Northing		Type of sign (burrows, scats, carcass, etc)	Description and comments
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				

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EXHIBIT D

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Exhibit D: Biological Resources

As stated in Arizona Administrative Code R14-7-119 of the Rules of Practice and Procedure Before Power Plant and Transmission Line Siting Committee, Exhibits to Application, Exhibit D:

List the fish, wildlife, plant life and associated forms of life in the vicinity of the proposed site or route and describe the effects, if any, the proposed facilities will have thereon.

D.1 Introduction

TEP evaluated the potential impacts of the Southwest Tucson Reliability Project (Project) on existing biological resources within the broader Siting Study Area. This exhibit includes a description of biological resources within the Area of Analysis, which encompasses the entirety of the Project, ensuring a comprehensive evaluation of all relevant factors and project impacts within its boundaries.

D.2 Existing Conditions

The Project will be constructed in primarily urbanized residential areas of the City of Tucson (COT) and unincorporated Pima County, Arizona surrounded by a mix of rural residential areas, commercial and industrial land use, and vacant/open space. The Area of Analysis consists mostly of residential areas, with development along existing road corridors and utility lines. Approximate average elevation ranges from 2,400 feet above mean sea level (amsl) on the east side of the Area of Analysis to approximately 2,500 feet amsl on the west side of the Area of Analysis.

Climate in the Area of Analysis is arid to semi-arid Sonoran Desertscrub and is characterized by strong seasonal variability. The region receives an average annual precipitation of approximately 11.92 inches (U.S. Climate Data 2026), with roughly 50-60% falling during the summer monsoon season (July – September) as short-duration, high-intensity rain events that can generate localized flooding. Winters (December – February) contribute a secondary, smaller precipitation peak associated with frontal systems.

Soils in the Area of Analysis are dominated by aridisols -reflecting arid conditions, low precipitation, and sparse vegetation. These soils commonly contain accumulations of calcium carbonate, gypsum, or salts and have low organic matter. Entisols present occur as narrow, linear bands associated with drainageways and recent alluvial deposits lacking well-developed horizons. A corridor of mollisols is present along the eastern portion of the Area of Analysis following the Santa Cruz River (U.S. Department of Agriculture 2019). Overall, the soil distribution reflects a transition from xeric upland desert conditions to more moisture-influenced alluvial and riparian environments.

A brief discussion of vegetation and wildlife resources potentially occurring within the Area of Analysis and the potential impacts from Project activities are outlined below and described in more detail in the Biological Evaluation (BE), Exhibit C-2.

D 2.1. Vegetation

The Area of Analysis is situated within the Sonoran Desert section of the Basin and Range physiographic province. Within this province, the Sonoran Desert is a warm, subtropical desert known for its diverse vegetation, including

various cacti, palo verde trees, and creosote bushes, which are well-adapted to the dry climate. Due to the harsh conditions, species richness is relatively low.

Field visits were conducted on November 18, 2025 and April 30, 2026. Plant and wildlife species observed during these visits are provided in Tables 1 and 2.

Table D-1. Plants Observed During Field Visit in November 2025 and April 2026*

Species Name	Common Name
<i>Prosopis velutina</i>	velvet mesquite
<i>Parkinsonia spp.</i>	blue palo verde
<i>Senegalia greggii</i>	catclaw acacia
<i>Larrea tridentata</i>	creosotebush
<i>Baccharis sarothroides</i>	desert broom
<i>Baileya multiradiata</i>	desert marigold
<i>Sphaeralcea spp.</i>	globemallow
<i>Isocoma sp.</i>	goldenweed
<i>Dasyochloa pulchella</i>	fluffgrass
<i>Aristida adscensionis</i>	six-week threeawn
* As the field visits were limited to the Preliminary Segment corridors, this does not represent a comprehensive listing of species that are either known to occur or have the potential to occur in the Siting Study Area or Area of Analysis.	

D 2.2. Wildlife

Special status species, including those listed federally by the U.S. Fish and Wildlife Service (USFWS) and/or by the Arizona Game and Fish Department, are discussed in the BE (Exhibit C-2). Wildlife species observed in the Siting Study Area during field visits in November 2025 and April 2026 are shown in Table 2 below.

Table D-2. Wildlife Observed During Field Visits in November 2025 and April 2026*

Species Name	Common Name
<i>Buteo jamaicensis</i>	Red-tailed hawk
<i>Callipepla gambeli</i>	Gambel's quail
<i>Cathartes aura</i>	Turkey vulture
<i>Zenaida macroura</i>	Mourning dove
* As the field visits were limited to the Preliminary Segment corridors, this does not represent a comprehensive listing of species that are either known to occur or have the potential to occur in the Siting Study Area or Area of Analysis.	

D.3 Best Management Practices (BMPs)

The following BMPs will be utilized for all construction and maintenance activities:

- Vehicular traffic will use existing roads and stay within the right of way.
- Construction will generally occur only during daylight hours.
- Maintain all construction equipment in proper working condition according to manufacturer's specifications.
- Use electric or battery-powered equipment whenever possible to reduce emissions.
- Schedule construction and maintenance activities during favorable weather conditions, such as low-wind and moderate temperatures to the extent practicable.
- Minimize idling time either by shutting equipment off when not in use or reducing the time of idling to 5 minutes.
- Implement a stormwater pollution prevention plan, as required.
- Implement a spill prevention, control, and countermeasures plan, as required.

The following BMPs will be implemented to prevent the introduction or spread of invasive plant species:

- All construction equipment and personnel vehicles used on site will be clean before entering the construction area. Vehicles will be clean of all mud, dirt, plant parts, and other debris.
- Soil disturbance will be minimized to the maximum extent feasible. Contractors will use certified weed-free wood straw mulch that has a certified stamp or sterile material such as re-green or other approved material.
- Monitor disturbed areas for invasive plant establishment during bi-annual inspections.

D.4 Effects of the Proposed Project

The Project will result in minimal ground disturbance and vegetation removal, with the potential to impact native plants within the Area of Analysis. Additionally, birds are known to inhabit the area and may use utility poles for perching or nesting. Due to the lack of cliff habitat in the immediate area, utility poles provide elevated structures on which to build a nest or survey the landscape for prey. In the event construction is scheduled during nesting/breeding seasons, TEP will conduct pre-construction nesting bird surveys and avoid nesting birds until fledging is complete.

Some native vegetation would be trimmed or removed to allow for equipment access during construction. Vegetation within the Project rights-of-way (ROW) will be surveyed prior to construction to ensure there will be no impacts on protected species. Certain plants within the Area of Analysis may be protected by the Arizona Department of Agriculture (AZDA). TEP will limit disturbance to extent possible and will follow AZDA guidelines and, if necessary, file a Notice of Intent to Clear Land prior to construction (AZDA 2023).

D.5 Conclusion

The Project's design significantly minimizes overall environmental disturbance. Approximately 64% of the proposed alignment utilizes existing utility structures, 16% rebuilds existing facilities, and only 20% of the Project requires new construction. Given this minimized construction footprint and the relatively short duration of construction activities, impacts to general wildlife and vegetation are anticipated to be minimal. Temporary disturbance is anticipated to native vegetation due to plant trimming and removal to allow for equipment access during construction. Potential impacts to plants and animals will be addressed through pre-construction surveys, timing of work, and compliance with all applicable statutes, ordinances, and regulations of any local, state, or federal agency having jurisdiction.

D.6 References

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EXHIBIT E

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Exhibit E:

Scenic Areas, Historic Sites and Structures and Archaeological Sites

As required by Arizona Administrative Code R14-7-119, the Applicant provides the following in Exhibit E:

“Describe any existing scenic areas, historic sites and structures or archaeological sites in the vicinity of the proposed facilities, and state the effects, if any, the proposed facilities will have thereon.”

E.1 Introduction

Tucson Electric Power Company (TEP) evaluated the potential impacts of the Southwest Tucson Reliability Project (Project) on existing visual resources, historic sites and structures, cultural resources, and archaeological resources within the broader Project Siting Study Area. Exhibit E provides an analysis focused on the Area of Analysis, a 0.5-mile buffer around the Phase 1 and Phase 2 Routes, and evaluates the potential impacts the Phase 1 and Phase 2 Routes may have on each resource.

E.2 Scenic Areas and Visual Resources

This section addresses scenic and visual resources within the Area of Analysis, which contains several designated federal, state, and local scenic resources. Federal resources include the Juan Bautista de Anza National Historic Trail and lands managed by the Bureau of Land Management (BLM), with visual resources that are managed by BLM’s Visual Resource Management tools and regulations. BLM lands within the Area of Analysis are designated as VRM 3, which means “to partially retain the existing character of the landscape”. The level of change allowed should be moderate and may attract attention but should not dominate the view. Changes should repeat the basic elements found in the predominant natural features of the characteristic landscape (BLM 2013). Local scenic resources include the Tucson Mountain Range, as well as Pima County and City of Tucson (COT) managed roadways. Within the Area of Analysis and within unincorporated Pima County, Ajo Highway and Valencia Road are designated Scenic Major Routes. In the COT city limits, Mission Road is designated a Scenic Route and Valencia Road is designated a Gateway Corridor.

A Visual Impact Assessment was conducted by Jeremy Palmer, Sole Proprietor (Palmer) for the entire Project, including the Phase 1 and Phase 2 routes. The visual impact assessment combines objective and subjective evaluations of the existing landscape characteristics and potential changes to the landscape because of the Project and assesses the level of viewer sensitivity to different segments of the alternative routes.

E.2.1 Methodology

Through public and stakeholder engagement, desktop and field review, and consultation with local planners, the Project team identified designated and otherwise notable scenic features, sensitive observation locations and viewer groups. Identification of potential visual impacts involved a review of the preliminary transmission line designs and review of federal, state and local planning documents, aerial photos, geographic information system (GIS) data maps, site visits, 3D modeling, photos taken in the Siting Study Area, and use of Google Earth Pro.

The visual impact assessment conducted by Palmer for the Project determined the potential impacts of the route alternatives on viewsheds. Viewsheds associated with the Siting Study Area were measured by the frequency of casual observers, scenic designations, and the classification of the viewer’s experience (i.e., traveler, recreationist,

resident). Each route was scored based on the relative level of impact to existing versus future landscape, types of viewers, and degree of impact to visual resources.

The components of the visual impact assessment included (1) identification of the types of viewers and their sensitivity to the Project in each segment of the route, and (2) characterization of impacts that were quantified as low, medium, or high. The visual impact assessment considered the effects of new structures introduced into the existing setting on associated sensitive viewers, which considered the influence of existing facilities (i.e., existing transmission lines, streetlight structures).

This information was used as evaluation criteria to refine segments during the Siting Study (Exhibit B-1) and in the selection of the Phase 1 and Phase 2 Routes. The segments were evaluated during the siting study with the establishment of 15 key observation points (KOPs) to represent views of important resources and receptor groups (Exhibit E-1). A visual simulation was prepared for each KOP, and a contrast analysis was conducted.

E.2.2 Landscape Setting

The landscape setting for the Area of Analysis is comprised of a mix of commercial, varying densities of residential land, and natural open space that spreads across COT, Pima County, the Tohono O'odham Nation - San Xavier District, and Pascua Yaqui Tribal lands.

For each type of land use within the Siting Study Area, the expectations of a casual observer for the character of the landscape changes. Residential observers located within a home or private yard, and recreational observers typically take in a viewshed with long and frequent views of the surrounding landscape; therefore, their respective sensitivity is typically higher. Similarly, observers associated with tourism are expected to have a high sensitivity to their surroundings. Commercial observers are anticipated to have a medium sensitivity, due to shorter exposure to a viewshed and less familiarity. Commuters typically experience low sensitivity as they are in transit to and focused on work-related activities and may not be as sensitive to changes in the landscape.

The addition of scenic designations creates another layer of sensitivity and potential for impacts. Each of these designations has similar goals or objectives to limit or manage disturbances which may negatively impact visual resources, obstruct views to those resources, or impact the casual viewer. The impact assessment weighted potential impacts more heavily if the proposed structures were in conflict with the scenic management goals or objectives, for example a simulation that depicts a proposed impact as low was elevated up one level to moderate, if that impact occurred in a visual resource management area.

The casual observer's sensitivity to changes in the landscape that is a direct result of proposed structures is also contingent on the character of the existing landscape. If the proposed structures are similar in character, e.g., form, line, scale, color, when compared to the existing landscape, then a viewer sensitivity to the resulting changes will be lower than when compared to an existing landscape in which there are no similar features.

E.2.3 Phase 1 and Phase 2 Routes Overview

Phase 1 of the Project originates at the existing Midvale Substation near the intersection of Drexel and Mission roads and proceeds west and then north to the planned Tucson Estates Substation. Phase 2 exits the planned Tucson Estates Substation and travels west to South Camino Verde and back east along South Valencia Road to the Circuit Tie near Interstate 19.

Phase 1 Midvale Substation to West Drexel Road (KOP 4)

This segment of Phase 1 heads west on the south edge of the roadway. Along this route segment, new structures

would be constructed in a commercial (at Mission Road) and residential setting that currently has transmission, sub-transmission, and distribution lines. This segment crosses Mission Road, just south of the COT scenic corridor designated area.

Phase 1 Westover Avenue (Drexel Road to Valencia Road) (KOP 7 and KOP 8)

This segment of Phase 1 entails the construction of new structures located within the west right-of-way of Westover Avenue in a wide corridor that also has an existing distribution line and Southwest Gas line. The width of the existing utility easements allows for Phase 1 to be installed further away from residential properties, allowing for a vegetative buffer and helping to mitigate impacts.

Phase 1 West Valencia Road (Westover Avenue to Spencer Avenue) (KOP 9 and KOP 10)

This segment of Phase 1 will utilize existing structures and lines therefore there are no changes that will create visual impacts. Valencia Road is a designated Pima County Major Scenic Route.

Phase 1 Spencer Avenue (South Valencia Road to the planned Tucson Estates Substation) (KOP 13 and KOP 14)

This segment of Phase 1 will be co-located with an existing 115-kV transmission line. The existing single-circuit transmission line will be double-circuited with the addition of arms and wires. At the north end of Spencer Road, the transmission lines enter the proposed Tucson Estates substation.

Phase 2 Planned Tucson Estates Substation to South Camino Verde (KOP 15)

This segment of Phase 2 exits the Tucson Estates substation and is located on the south side of Ajo Highway, a Pima County Designated Major Scenic Route. It continues west, behind the existing Pilot gas station, and south of an existing drainage channel. New structures and wires will be added in an area that have none. New structures will be constructed as far south of the highway as possible but will be viewable by the casual viewer. Residents to the north, south, and west will not likely be able to view the line, given the terrain and distance.

Phase 2 South Camino Verde (Ajo Highway to South Valencia Road) (KOP 12)

This segment of Phase 2 is in the west right-of-way of South Camino Verde and will replace an existing 46-kV sub-transmission line. The existing wood structures will be replaced with slightly taller, self-weathering steel poles.

Phase 2 South Valencia Road (South Camino Verde to Circuit Tie) (KOP 1-3 and KOP 9-11)

This segment of Phase 2 is in both the north and south rights-of-way of South Valencia Road (switches from north to south at Camino de Oeste). This segment will utilize existing structures, hardware, and conductor; only energizing the line at 138-kV, instead of 46-kV, which would not result in a noticeable change. This is true, except in two locations:

- Where the existing transmission line crosses the Tohono O’odham Nation (in Pima County Road right-of-way), the existing structures are wood and would be replaced with taller self-weathering steel structures (KOP 3).
- At the Circuit Tie, one new structure is required. It will be located in-line with TEP’s existing Midvale-South 138-kV transmission line, to interconnect with TEP’s existing system (KOP 1).

Within unincorporated Pima County, Valencia Road is a designated Major Scenic Route, and, in the COT, it is a designated Gateway Corridor.

E.2.4 Visual Impact Assessment Results

Visual contrasts are defined as the change to the visual environment resulting from modifications to the landscape. The degree of visual change resulting from a modification is directly related to the amount of contrast between the proposed structures and existing environment.

Visual contrasts were first rated by the degree to which transmission routes and structures would conflict with the existing environment. Visual impacts were rated as follows:

- Low Contrast: the Project is adjacent or parallel to similar features and/or is within a more industrial setting. Viewer sensitivity to visual changes is expected to be low, particularly among casual observers.
- Moderate Contrast: the Project is adjacent or parallel to similar features in form, line, color, and texture but viewer sensitivity to changes is moderate or high. The setting may include mixed-use or transitional landscapes where changes are more noticeable.
- High Contrast: the Project introduces new visual elements that contrast with the existing landscape. These areas are typically residential or recreational, where viewer sensitivity is high and visual changes are more likely to be perceived as intrusive.

Visual contrast would be low for the proposed 138-kV transmission line when it is adjacent to or parallel with similar developed settings or features, such as existing power lines, or industrial and commercial settings, because visual contrast is minimal. In contrast, a transmission line introduced to a park or recreation setting has a greater visual impact because it differs in form and line from the existing open space or recreational facilities. Moderate visual contrast is anticipated when a new transmission line is in a residential setting. The new structures would be similar to the existing structures, but viewer sensitivity is high.

Visual contrasts resulting from the Project can be reduced by locating the proposed route 1) within an industrial setting that is similar in form and line; 2) within a corridor that has existing overhead electric lines; or (3) some distance from the casual observer where it will be obscured or blend into the landscape.

The routes were additionally rated for their Visual Impact to a casual observer, from each KOP (Table E.1). A value is assigned to each segment of the route as follows:

- High Visual Impact (Rank= 3): A value assigned to segments in which the Phase 1 or Phase 2 Routes would negatively affect the casual observer's viewshed.
- Moderate Visual Impact (Rank= 2): A value assigned to segments in which the Phase 1 or Phase 2 Routes would moderately affect the casual observer's viewshed.
- Low Visual Impact (Rank=1): A value assigned to segments in which the Phase 1 or Phase 2 Routes would have minimal effect on the casual observer's viewshed.

Table E.1. Visual Impact Assessment Matrix

KOP	Route	Contrast Rating	Visual Impact	Notes
1	Phase 2	Low	Low	Similar lines, forms, colors from existing structure and development. Addition of one structure in an area with several existing transmission, sub-transmission, and distribution lines in an industrial/commercial area, offset by removal of overhead conductors (wires) crossing the road. Although Valencia Road is a COT designated gateway arterial, the single new structure blends with the existing setting. Minimal impact to the casual observer. Residential use not present.
2	Phase 2	Low	Low	No visible changes. The Project utilizes the existing 115-kV/46-kV structures in this area.
3	Phase 2	Low	Low	Replacement of wood poles with self-weathering steel structures is similar in line, form, and colors as existing structures. Minimal impact to the casual observer and residents.
4	Phase 1	Low	Low	Addition of new structures and wires in an area with the existing Midvale Substation, transmission lines, and distribution lines. Area is mainly commercial, but a church is located across from the existing Midvale Substation and residential uses are nearby. Minimal impacts to the casual observer and residents.
5	Phase 1	Low	Mod	Existing infrastructure with similar lines, forms, colors. New structures are taller and protrude further into the horizon, increasing impact. Moderate impact to residents that front this corridor.
7	Phase 1	Low	Low	New line parallel to existing distribution line in a wide corridor. Taller structures with similar form and color. Moderate impact to residents that front this corridor.
8	Phase 1	Low	Low	New line parallel to existing distribution line in a wide corridor. Taller structures with similar form and color. Moderate impact to residents that front this corridor.
9	Phase 1 and 2	Low	Low	No visible changes. The Project utilizes the existing 115-kV/46-kV structures in this area.
10	Phase 1 and 2	Low	Low	No visible changes. The Project utilizes the existing 115-kV/46-kV structures in this area.
11	Phase 2	Low	Low	No visible changes. The Project utilizes the existing 46-kV structures in this area.

KOP	Route	Contrast Rating	Visual Impact	Notes
12	Phase 2	Low	Low	Similar lines, forms, colors from existing structure and development. New structures replace existing structures.
13	Phase 1	Low	Mod	Addition of second circuit is similar in line, form, and colors to existing, however in a BLM Class 3 area and viewer sensitivity to the additional infrastructure is moderate to high given the landscape setting.
14	Phase 1	Low	Mod	Addition of second circuit is similar in line, form, and colors to existing, however viewer sensitivity to the additional infrastructure is moderate to high given the landscape setting.
15	Phase 2	Low	Mod	Addition of new lines and structures where none exist, in a BLM Class 3 area, and along a scenic highway. Not located within view of a residential area.

E.2.5 Summary

Throughout the siting process, TEP engaged the public and stakeholders and learned early on that the views of the Tucson Mountains, avoidance of residential areas, and use of existing infrastructure were of utmost importance to those that participated. As a result, TEP included those community values in the evaluation criteria in the siting study to identify the most compatible routes. As a result, options were narrowed when it was determined that TEP could re-energize an existing 115-kV transmission line to 138-kV on existing structures, co-locate on an existing 115-kV transmission line, and rebuild existing TEP 46-kV facilities, thus keeping new build to only 20% of the Project.

As a result, visual impacts from the Project are Low to Moderate and will not have a significant impact on visual resources or visual resource management in the Area of Analysis.

E.3 Historic Sites and Structures, and Archaeological Sites

A Class I records review was conducted by Chronicle Heritage, to determine the extent of existing archaeological survey work within the Area of Analysis and along the Phase 1 and Phase 2 Routes, and whether any sites were found to intersect with the route corridor (Exhibit E-2).

E.3.1 Inventory Methods and Results

Chronicle Heritage conducted a records review within the Area of Analysis, which included the routes plus a 0.5-mile buffer referred to as the Area of Potential Effect (APE). The Project is subject to compliance with the Arizona Antiquities Act (A.R.S. §§ 41-841 et seq. and 41-844), COT Resolution No. 12443 (1983), Pima County Board of Supervisors Policy C3.17, Pima County Resolution 1983-104, Pima County Historic Zone Ordinance 18.63, and other applicable federal, state, and local regulations concerning cultural resources. Chronicle Heritage reviewed the online AZSITE database, the National Register Information System (NRIS) database, the Arizona State Museum (ASM) Archaeological Records Office, Arizona State Historic Preservation Office (SHPO) records, General Land

Office (GLO) plats, historical USGS topographic maps, and historical aerial imagery to evaluate previously recorded cultural resources and historic-period features within and adjacent to the APE.

A total of 137 previous cultural resources investigations have been completed within the APE, 55 of which intersect the proposed routes. Because of improvements in survey methods and the moving 50-year window for eligibility for the National Register of Historic Places (NRHP), jurisdictions within Arizona vary in how long they consider archaeological surveys to remain valid. In keeping with Arizona SHPO Guidance Point No. 5 (Arizona SHPO 2004), Chronicle Heritage considers surveys completed within the past 10 years to be accurate and up to date. Surveys older than this have been evaluated on a case-by-case basis. Only one investigation intersecting the APE was completed within the past 10 years, whereas the remaining 54 investigations were completed more than 10 years ago. Although portions of the APE have been previously surveyed, previous investigations were generally limited to transportation, utility, and development projects rather than comprehensive surveys of the APE.

A total of 41 previously recorded archaeological sites occur within the APE, six of which intersect the Phase 1 and Phase 2 Routes. These include AZ BB:13:136(ASM), a multicomponent artifact scatter containing Hohokam and historic Tohono O'odham materials; AZ AA:16:474(ASM), a prehistoric artifact scatter consisting of ceramics and lithics; AZ AA:16:602(ASM), a late historic Euro-American artifact scatter; AZ AA:16:542(ASM), a late historic Euro-American artifact scatter; AZ AA:16:492(ASM), late historic Euro-American features with an associated artifact scatter; and AZ CC:16:24(ASM), the historic El Paso Natural Gas Line 1100 pipeline. The significance, eligibility, and current status of archaeological sites intersecting the APE are discussed in Exhibit E-1. Two Arizona SHPO properties occur within the APE; however, neither intersects the proposed routes.

E.3.2 Historic District Analysis

No National Register-listed or locally designated historic districts, historic neighborhoods, or individually listed historic buildings were identified within the APE.

E.3.3 Summary and Conclusion

The Class I literature review demonstrates that the proposed transmission routes traverse multiple historic cultural landscapes associated with O'odham settlement, irrigated agriculture, transportation, ranching, mining, and subsequent urban expansion. Collectively, the GLO plats, historical USGS topographic maps, and historical aerial imagery illustrate the long-term evolution of the project area from an irrigation-based agricultural landscape centered on the Santa Cruz River to a modern urban environment while demonstrating the continued persistence of historic transportation corridors throughout the mapping sequence. The eastern portion of the Phase 1 alignment traverses the greatest concentration of mapped historic-period resources, including transportation corridors, agricultural features, domestic properties, industrial resources, and mining-related features depicted throughout the historical mapping sequence. The eastern portion of the Phase 2 alignment traverses the historic agricultural landscape surrounding Mission San Xavier del Bac and intersects established historic transportation corridors identified from the GLO plats and subsequent USGS maps. In contrast, the western portion of the Phase 2 alignment crosses a more sparsely developed historic landscape characterized primarily by the Ajo Road corridor, dispersed secondary roads, ranching properties, mining-related features, and later suburban expansion.

The eastern portion of the Phase 2 Route traverses a COT Archaeological Sensitivity Zone. Archaeological Sensitivity Zones identify landscapes with an elevated potential for previously unidentified archaeological resources based on documented site distributions, environmental setting, and historical land use. Although Archaeological Sensitivity Zones are not designated historic properties, the occurrence of the sensitivity zone along the Phase 2 Route further supports the need for comprehensive Class III pedestrian inventory prior to ground-disturbing activities.

Approximately 17 miles of the Phase 1 and Phase 2 Routes have not been surveyed within the past 10 years and therefore are no longer considered current under Arizona SHPO guidance.

Given the limited extent of recent survey coverage, the presence of previously recorded archaeological sites, mapped historic-period resources, and the COT Archaeological Sensitivity Zone traversed by the proposed routes, Chronicle Heritage recommended a Class III pedestrian survey be conducted of all portions of the APE subject to direct effects that have not been surveyed within the past 10 years, including proposed transmission line alignments, structure locations, access roads, equipment yards, staging areas, laydown areas, pull sites, temporary work areas, and all other areas where Project-related ground disturbance is anticipated.

The survey will be conducted in accordance with Section 106 of the National Historic Preservation Act (54 U.S.C. § 306108; 36 CFR Part 800), the Arizona Antiquities Act (A.R.S. §§ 41-841 et seq. and 41-844), and applicable requirements of the BLM, Arizona State Land Department, SHPO, ASM, COT, and Pima County, including COT Resolution No. 12443 (1983), Pima County Board of Supervisors Policy C3.17, Pima County Resolution 1983-104, and Pima County Historic Zone Ordinance 18.63.

Consultation will be coordinated, as appropriate, with the applicable federal, state, and local agencies and other consulting parties with jurisdiction over lands, permits, or other approvals associated with the undertaking.

E.4 References

Bureau of Land Management. 2013. Best Management Practices for Reducing Visual Impacts of Renewable Energy Facilities on BLM-Administered Lands. https://www.blm.gov/sites/default/files/docs/2025-09/BLM_RenewableEnergyVisualBMPs_LowRes.pdf

Arizona State Historic Preservation Office. 2004. SHPO Position on Relying on Old Archaeological Survey Data. SHPO Guidance Point No. 5.

Exhibit E-1
Key Observation Point Map

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Exhibit E

Southwest Tucson Reliability Study

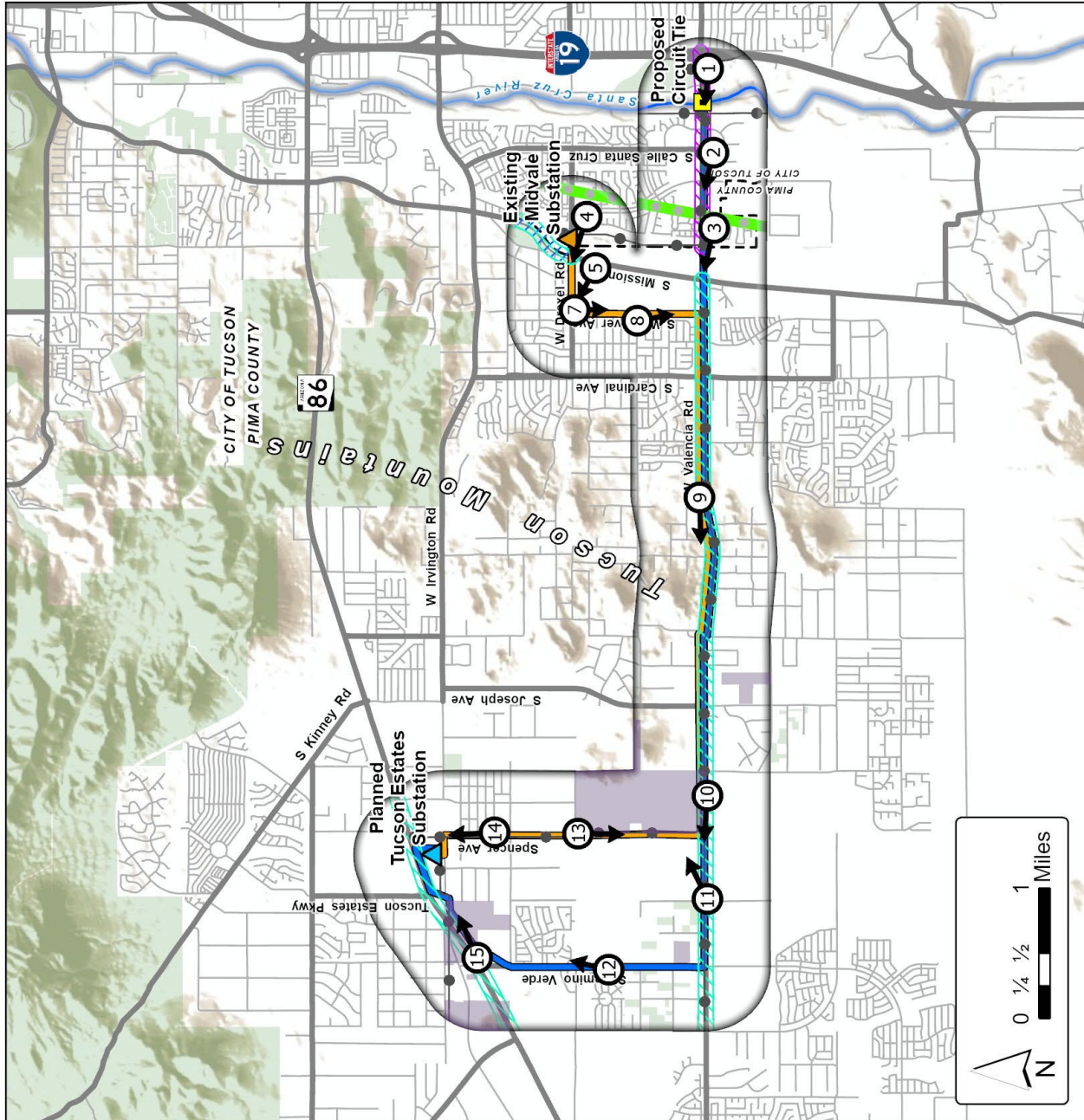
Key Observation Points

- Area of Analysis
- KOP Location
- Existing Transmission
- Routes
- Phase 1
- Phase 2
- City of Tucson Gateway Corridor
- City of Tucson Scenic Corridor
- Pima County Scenic Major Route
- BLM VRM Class III
- Juan Bautista de Anza Historic Trail

TEP
Tucson Electric Power

Source: City of Tucson, Pima County, TEP
Projection: NAD 1983 UTM Zone 12N
Base map: ESRI Topographic

This map is for planning purposes only.
Tucson Electric Power makes no warranty
of accuracy.



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Exhibit E-2
Class I Literature Review

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August 20, 2026

Renee Darling
Director, Environmental & Land Use Planning
Sonoran Land Resources
8750 E Speedway Blvd, Suite 230
Tucson, AZ 85710

RE: Class I Literature Review for the TEP Southwest Tucson Reliability Project in Tucson, Pima County, Arizona

Dear Renee Darling:

Sonoran Land Resources, on behalf of Tucson Electric Power (TEP), contracted Chronicle Heritage, LLC (Chronicle Heritage) to conduct a site file search and literature review for the proposed TEP Southwest Tucson Reliability Project in Tucson, Pima County, Arizona (Project). The Project consists of the proposed Phase 1 (40,705 ft [7.71 mi]) and Phase 2 (49,285 ft [9.33 mi]) transmission routes. The proposed undertaking includes improvements to existing overhead electrical transmission corridors, upgrades to existing transmission infrastructure, and construction of new transmission facilities where necessary. Collectively, the proposed transmission routes and an area extending 2,640 ft (0.5 mi) beyond the proposed transmission line routes define the Area of Potential Effects (APE). The proposed transmission routes extend approximately 17 miles, and the APE encompasses approximately 11,000 acres. The proposed transmission facilities are located primarily on private land; however, the APE includes Arizona State Trust land, Bureau of Land Management (BLM) land, San Xavier District of the Tohono O'odham Nation lands, and Pascua Yaqui tribal lands; however, no proposed transmission facilities or ground-disturbing activities are located on tribal lands. The Project is subject to compliance with the Arizona Antiquities Act (A.R.S. §§ 41-841 et seq. and 41-844), City of Tucson Resolution No. 12443 (1983), Pima County Board of Supervisors Policy C3.17, Pima County Resolution 1983-104, Pima County Historic Zone Ordinance 18.63, and other applicable federal, state, and local regulations concerning cultural resources. The APE is located in western Tucson within Township (T) 14 South (S), Range (R) 12 East (E), portions of Sections 2-3 and 10-15; T15S, R12E, Sections 34-35; and T15S, R13E, Sections 3, 4, 7-11, and 14-18, Gila and Salt River Base and Meridian (USGS 7.5-minute Cat Mountain, Ariz. [1978] and Tucson, Ariz. [1984] quadrangles) (Figure 1).

Project Description

TEP proposes to improve its electrical transmission system to increase system capacity, reliability, and operational flexibility. The Project includes Phase 1 and Phase 2. Phase 1 extends from the existing Midvale Substation to Drexel and Westover and then continues along Valencia to Spencer and north to the planned Tucson Estates Substation. Phase 2 begins at the planned Tucson Estates Substation and continues along Ajo, Camino Verde, and Valencia to the Circuit Tie. (Figure 1 and Figure 2).

The proposed undertaking includes upgrades to existing overhead transmission infrastructure, replacement of existing transmission structures, construction of new overhead transmission facilities where necessary, conductor installation, and associated hardware. Construction activities may include localized grading, excavation, drilling, foundation installation, utility relocations, access improvements, equipment staging, and other activities necessary to support construction, operation, and maintenance of the transmission system. Although the Project generally follows existing overhead transmission corridors and road ROWs, temporary and permanent ground disturbance associated with transmission line upgrades, construction of new transmission facilities, access improvements, and related support infrastructure may occur throughout the APE.

Setting

The APE is located on the alluvial basin floor of the Tucson Basin within the Basin and Range physiographic province of southern Arizona (Figure 1; Figure 2). The APE extends across western Tucson from the vicinity of Tucson Estates eastward to the Santa Cruz River floodplain. Elevations within the APE range from approximately 2,200 to 4,000 ft above mean sea level (amsl). Much of the APE has been modified by urban development, transportation corridors, and utility infrastructure, with comparatively less-developed areas occurring in the western portion of the APE. Ephemeral drainages cross portions of the APE and ultimately drain toward the Santa Cruz River.

The APE is situated within the Arizona Upland subdivision of the Sonoran Desertscrub biotic community (Brown 1982), which is considered the most biologically diverse subdivision of the Sonoran Desert. Within less-developed portions of the APE, Sonoran desertscrub vegetation occurs where disturbance is limited. Native vegetation consists primarily of creosote bush (*Larrea tridentata*), bursage (*Ambrosia* spp.), palo verde (*Parkinsonia* spp.), mesquite (*Prosopis* spp.), ironwood (*Olneya tesota*), catclaw acacia (*Senegalia greggii*), ocotillo (*Fouquieria splendens*), and numerous cacti including saguaro (*Carnegiea gigantea*), prickly pear (*Opuntia* spp.), and cholla (*Cylindropuntia* spp.). Riparian vegetation, where present along larger washes, may include mesquite bosques and desert willow (*Chilopsis linearis*). Although extensive residential, commercial, transportation, and utility development has altered much of the APE, remnants of native Sonoran Desert vegetation persist within undeveloped parcels, utility corridors, drainage easements, and open-space preserves.

Geologically, the APE is underlain primarily by Quaternary basin-fill sediments deposited by streams draining the surrounding mountain ranges of the Basin and Range Province (Griffith et al. 2014). These unconsolidated deposits consist of varying proportions of gravel, sand, silt, and clay that accumulated through repeated episodes of alluvial fan deposition and floodplain aggradation. The western portion of the APE contains shallow, rocky soils developed on pediments, hills, and dissected fan remnants adjacent to the Tucson Mountains, while the central portion transitions to broad fan terraces and basin-floor deposits. The eastern portion is characterized by younger alluvial sediments associated with stream terraces and the Santa Cruz River floodplain, as well as extensive urbanized landscapes. This geomorphic transition is reflected in the mapped soils of the APE, which include steep rocky complexes such as Anklam–Cellar–Rock outcrop, Saguaro–Rock outcrop, and Pantano–Granolite in the western uplands; fan-remnant and fan-terrace soils including Delnorte–Stagecoach, Stagecoach–Sahuarita, Sahuarita, Mohave, Tubac, and Yaqui across the central basin; and floodplain, terrace, and anthropogenically modified soils such as

Anthony, Glendale, Comoro, Grabe, Rillito, Riverwash, and urban land complexes toward the eastern end of the APE. Together, these soil associations document a transition from rugged piedmont landscapes along the basin margin to broad alluvial surfaces and active drainage systems across the Tucson Basin (Soil Survey Staff 2026). Soils within the APE are summarized in Table 1.

Table 1. Soils Within the APE

Soil Type	Parent Material	Landforms
Anklam–Cellar–Rock outcrop complex, 15–55% slopes	Alluvium and colluvium derived from volcanic and metamorphic rocks; alluvium and colluvium derived from granite and gneiss	Mountains, hills
Anthony fine sandy loam, 0–3% slopes	Mixed alluvium	Flood plains
Anthony gravelly sandy loam, 1–3% slopes	Mixed stream alluvium	Flood plains, alluvial fans
Cave–Rillito complex, 0–8% slopes	Mixed calcareous alluvium	Old terraces
Comoro sandy loam	Recent alluvium	Flood plains
Comoro loam	Recent alluvium	Flood plains, low alluvial fans
Delnorte–Stagecoach complex, 1–20% slopes	Mixed fan alluvium	Fan remnants
Glendale silt loam, 0–3% slopes	Mixed alluvium	Stream terraces
Grabe loam	Recent alluvium	Alluvial fans, flood plains
Grabe silty clay loam	Recent alluvium	Flood plains
Grabe soils, 0–3% slopes	Recent alluvium	Low alluvial fans, flood plains
Gullied land	Recent alluvium	Gullies on flood plains
Hantz loam, 0–1% slopes	Mixed alluvium	Flood plains, alluvial fans, swales
Laveen–Rillito complex, 0–3% slopes	Mixed calcareous alluvium; old mixed calcareous alluvium	Low terraces
Mohave soils and urban land, 1–8% slopes	Mixed alluvium	Fan terraces
Pantano–Granolite complex, 5–25% slopes	Mixed alluvium and mixed colluvium; mixed alluvium and residuum weathered from rhyolite	Pediments

Pits, dumps	Disturbed anthropogenic material	Pits and dumps
Rillito gravelly sandy loam, 0–8% slopes	Mixed calcareous alluvium	Old remnant terraces, alluvial fans
Rillito sandy loam, 1–3% slopes	Mixed calcareous alluvium	Old alluvial fans, eroded remnant terraces
Riverwash	Stratified alluvium	Channels, flood plains
Rock land	Alluvium derived from limestone, basalt, and/or andesite	Hills, mountains
Saguaro–Rock outcrop complex, 15–45% slopes	Alluvium and colluvium derived from limestone	Mountains
Sahuarita soils, Mohave soils and urban land, 1–5% slopes	Mixed alluvium	Fan terraces
Stagecoach–Sahuarita association, 1–8% slopes	Mixed alluvium	Fan terraces
Tubac sandy loam, 0–2% slopes	Mixed alluvium	Basin floors, fan terraces
Yaqui fine sandy loam, 1–3% slopes	Mixed alluvium	Alluvial fans

Much of the APE reflects the historic growth of western and southwestern Tucson during the post-World War II period. Prior to the 1940s, much of the area consisted of desert, agricultural lands, and scattered rural homesteads beyond Tucson's urban core (Rai 2007). Wartime expansion of Davis-Monthan Army Air Field, the establishment of defense-related industries such as Consolidated-Vultee and Hughes Aircraft, continued mining activity, tourism, and growth of the University of Arizona transformed Tucson into one of the fastest-growing metropolitan areas in the Southwest (Rai 2007). Population growth created a substantial demand for housing, and developers responded by constructing large residential subdivisions in unincorporated Pima County beyond the city limits, where land was less expensive and development regulations were limited. Beginning in the 1950s, Tucson undertook an aggressive program of annexation that incorporated many of these neighborhoods while extending municipal water, sewer, transportation, and other public services into formerly rural areas. Subsequent commercial, industrial, and institutional development followed the expanding transportation network, producing the modern pattern of residential neighborhoods separated by commercial corridors and employment centers that characterizes much of the APE today (Rai 2007). Land uses include established residential neighborhoods, master-planned subdivisions, apartment complexes, mobile home communities, commercial corridors, office developments, light industrial and warehouse facilities, schools, churches, parks, golf courses, municipal facilities, and public utility properties. Commercial and industrial uses are concentrated along major transportation corridors, while residential development occupies much of the intervening landscape.

Despite extensive urbanization, undeveloped and partially developed lands remain within the APE, including vacant parcels, open space, agricultural fields, utility corridors, drainage easements, flood-control channels, retention basins, irrigation canals, and numerous unnamed ephemeral

washes associated with the Santa Cruz River watershed. Larger tracts of undeveloped desert, recent residential subdivisions, and agricultural remnants are concentrated in the western portion of the APE, while the eastern portion is characterized by continuous urban development, commercial centers, and transportation infrastructure. The southern and southeastern margins of the APE border the San Xavier District of the Tohono O'odham Nation and the Pascua Yaqui Tribe, and Ryan Airfield lies immediately south of the west portion of the APE.

Existing infrastructure is extensive throughout the APE and includes overhead electrical transmission and distribution lines, substations, switching facilities, communication towers, water transmission and distribution systems, sanitary sewer infrastructure, natural gas pipelines, reclaimed water facilities, stormwater conveyance systems, and numerous buried and overhead utilities. Major transportation facilities include Interstate 19, State Route 86 (Ajo Highway), Valencia Road, Irvington Road, Drexel Road, Bilby Road, Mission Road, Camino de la Tierra, Kinney Road, and numerous arterial roadways, collector streets, local roads, bridges, and associated transportation infrastructure. The Project consists primarily of improvements to existing overhead electrical transmission infrastructure within existing utility corridors and easements, with localized construction of new transmission facilities, and replacement of existing transmission structures.

Previous Research

Chronicle Heritage conducted a records review within the APE. Chronicle Heritage reviewed the online AZSITE database, the National Register Information System (NRIS) database, the Arizona State Museum (ASM) Archaeological Records Office, Arizona State Historic Preservation Office (SHPO) records, General Land Office (GLO) plats, historical USGS topographic maps, and historical aerial imagery to evaluate previously recorded cultural resources and historic-period features within and adjacent to the APE.

A total of 137 previous cultural resources investigations have been completed within the APE, 55 of which intersect the proposed routes (Figure 3, Figure 4; Table 2). Previous investigations were conducted in support of transportation, utility, roadway, residential, commercial, water infrastructure, and other land development projects.

Because of improvements in survey methods and the moving 50-year window for eligibility for the NRHP, jurisdictions within Arizona vary in how long they consider archaeological surveys to remain valid. In keeping with Arizona SHPO Guidance Point No. 5 (Arizona SHPO 2004), Chronicle Heritage considers surveys completed within the past 10 years to be accurate and up to date. Surveys older than this have been evaluated on a case-by-case basis. Only one investigation intersecting the APE was completed within the past 10 years, whereas the remaining 54 investigations were completed more than 10 years ago. Although portions of the APE have been previously surveyed, previous investigations were generally limited to transportation, utility, and development projects rather than comprehensive surveys of the APE.

A total of 41 previously recorded archaeological sites occur within the APE, six of which intersect the proposed routes. These include AZ BB:13:136(ASM), a multicomponent artifact scatter containing Hohokam and historic Tohono O'odham materials; AZ AA:16:474(ASM), a prehistoric artifact scatter consisting of ceramics and lithics; AZ AA:16:602(ASM), a late historic Euro-American artifact scatter; AZ AA:16:542(ASM), a late historic Euro-American artifact scatter; AZ AA:16:492(ASM), late historic Euro-American features with an associated artifact scatter; and AZ CC:16:24(ASM), the historic El Paso Natural Gas Line 1100 pipeline (Figure 3, Figure 4; Table 3). The significance, eligibility, and current status of archaeological sites intersecting the APE are

discussed below. Two Arizona SHPO properties occur within the APE; however, neither intersects the proposed routes.

Available GLO plats were reviewed. Features depicted within the APE were reviewed to determine whether they intersect the proposed routes. GLO plats reviewed included Plat No. 2117, surveyed and approved in 1871 and officially filed June 23, 1871, depicting T15S, R13E; Plat No. 2103, surveyed October 14, 1918, and officially filed December 3, 1919, depicting T15S, R12E; and Plat No. 2037, surveyed June 11, 1927, and officially filed February 15, 1928, depicting T14S, R12E (BLM GLO 2026) (Figure 5 and Figure 6). The plats document the development of transportation corridors, agriculture, settlement, mining, and industry across the APE between 1871 and 1928. Numerous historic-period features are depicted within the APE; however, review of the GLO plats identified 14 mapped features that intersect the proposed routes (Table 4). These intersecting features consist primarily of historic transportation corridors, including the Tucson–Tubac Road, Tucson–Altar Road, Ajo–Tucson Road, and associated secondary roads, as well as mapped agricultural, settlement, and industrial features crossed by the proposed routes. These roads formed part of a broader regional transportation network that connected settlements along the Santa Cruz River valley with later nineteenth-century routes through Tucson, including the Butterfield Overland Mail route. Although the documented Butterfield route does not intersect the APE, roads within the APE provided connections to the larger regional transportation network served by the Butterfield route.

The Phase 1 and Phase 2 alignments intersect the historic agricultural landscape of the Santa Cruz River valley. T15S, R13E depicts the Tucson–Tubac Road, generally corresponding to present-day South Mission Road, extending north–south through Sections 10 and 16 and the Tucson–Altar Road, generally corresponding to the present-day Ajo Way corridor, extending east–west through Sections 10, 16, 17, and 18. These roads formed the principal transportation network connecting Tucson with Mission San Xavier del Bac, Tubac, and settlements to the south and west during the Spanish, Mexican, and Territorial periods (Officer 1987). The Tucson–Tubac corridor also generally follows the earlier travel corridor used by the Juan Bautista de Anza expedition through the Santa Cruz River valley and Mission San Xavier del Bac in 1775. The alignments also cross the San Xavier Indian Reservation boundary and traverse a landscape characterized by the Santa Cruz River, irrigation ditches, cultivated fields, orchard plantings, wells, scattered residences, and a Lime Kiln.

The concentration of irrigation features, cultivated fields, orchards, and domestic features reflects the long-established agricultural community associated with the O'odham village of Wa:k and Mission San Xavier del Bac. The perennial reach of the Santa Cruz River at San Xavier supported extensive irrigation agriculture because shallow groundwater and volcanic bedrock-maintained surface flow, allowing cultivation of fields and orchards that distinguished this reach from much of the remainder of the river valley (Waters 1988; Mabry 2018). Mission San Xavier del Bac was established at Wa:k by Father Eusebio Kino in 1692, and the present church, constructed between 1783 and 1797, became the religious and community center of the surrounding O'odham settlements (Officer 1987). The mapped Lime Kiln illustrates local lime production, while the numerous residences, wells, cultivated fields, and orchards demonstrate the intensity of agricultural occupation along the Santa Cruz floodplain. Additional cultivated lands, orchards, residences, and Mission San Xavier del Bac occur immediately south of the APE, demonstrating that the undertaking occupies the northern margin of the historic San Xavier agricultural community.

T15S, R12E plat illustrates continued expansion of the transportation network and settlement west of the Santa Cruz River. The Phase 1 and Phase 2 alignments intersect an increasingly developed transportation network consisting of numerous mapped roads extending across Sections 2, 3, 10,

and 11. The roads include north-south, northeast-southwest, and east-west alignments, together with short connecting roads that link the principal routes. This pattern contrasts with the more linear transportation system depicted within the Santa Cruz River valley and reflects the development of local access routes extending into the foothills west of the floodplain. The road network also connects to the Domingo Valencia residence and associated ponds in Section 14, an additional residence in Section 13, and the Smelter Ruins in Section 11, illustrating the close relationship between transportation, settlement, and industrial activity within the surrounding landscape. Unlike T15S, R13E, where irrigation ditches, orchards, cultivated fields, and wells dominate the mapped landscape, T15S, R12E contains comparatively few agricultural improvements. Instead, the mapping depicts dispersed residences connected by an expanding local road system together with a single named industrial feature, suggesting that land use west of the Santa Cruz River was becoming increasingly diversified during the early twentieth century. The presence of the Domingo Valencia residence and associated ponds indicates continued agricultural land use beyond the irrigated floodplain, while the Smelter Ruins demonstrate that industrial activities had expanded into the foothills immediately west of the valley. Collectively, the mapped roads, residences, industrial feature, and associated water resources indicate the transition from the intensively irrigated agricultural landscape surrounding San Xavier to a more dispersed transportation, settlement, agricultural, and industrial landscape occupying the western margin of the APE.

T14S, R12E depicts the landscape crossed by Phase 2. The historic Ajo-Tucson Road, generally corresponding to present-day Ajo Highway, extends east-west through Sections 34 and 35 and is crossed and closely paralleled by the Phase 2 alignment. In addition to the Ajo-Tucson Road, the map depicts three unnamed secondary roads, including a north-south road extending from Section 36 into Section 35 and another road crossing Section 34 from the SE $\frac{1}{4}$ toward the NW $\frac{1}{4}$, illustrating continued development of local access routes west of Tucson. Compared with the Santa Cruz River valley, few residences, cultivated fields, orchards, irrigation ditches, or wells are depicted. Instead, the mapped landscape is dominated by transportation corridors traversing open desert. This pattern reflects the transition from the irrigated agricultural landscape of the Santa Cruz floodplain to the more arid alluvial fans and bajadas surrounding Robles Pass and the eastern foothills of the Tucson Mountains, where development was more dispersed and primarily associated with transportation, access to mining properties, and scattered settlements. Although no major industrial or agricultural complexes are depicted within T14S, R12E, the Ajo-Tucson Road provided the principal east-west transportation corridor linking Tucson with settlements, ranches, and mining districts farther west, while the secondary road network provided access to the surrounding desert landscape. Collectively, the mapped transportation corridors illustrate that the Phase 2 alignment follows a long-established east-west travel corridor that remained the primary means of access through the western portion of the APE.

The GLO plats demonstrate a pronounced shift in historic land use across the APE from east to west. Within the Santa Cruz River valley, the mapped landscape is dominated by irrigation-dependent agriculture, including cultivated fields, orchard plantings, irrigation ditches, wells, and numerous residences concentrated along the Tucson-Tubac Road and Tucson-Altar Road. The greatest concentration of mapped historic features occurs along the Phase 1 alignment, where the plats depict the San Xavier Indian Reservation boundary, the Santa Cruz River, irrigation ditches, cultivated fields, orchards, wells, scattered residences, a Lime Kiln, the Domingo Valencia residence and associated ponds, Smelter Ruins, and an extensive network of named and unnamed roads. The Phase 2 alignment, near its eastern terminus at the Circuit Tie also crosses the intensively developed historic agricultural landscape associated with Mission San Xavier del Bac. In contrast, the Phase 2 alignment in the west portion of the APE, near the planned Tucson Estates

Substation, traverses a more sparsely developed landscape where the mapping is dominated by the Ajo–Tucson Road and a limited number of secondary roads with comparatively few residences or agricultural improvements. The distribution of mapped resources indicates the greatest potential for historic-period transportation, agricultural, domestic, irrigation, and industrial resources along the eastern portions of Phase 1 and Phase 2, whereas the western portion of the Phase 2 alignment has comparatively lower potential and is more likely to contain transportation- and settlement-related resources.

Historical USGS topographic maps dated between 1925 and 1968 were reviewed, including the San Xavier (1925), Tucson Mountains (1934), San Xavier Mission (1943 and 1957), Tucson (1956, 1959, 1962, and 1964), and Cat Mountain (1968) quadrangles (USGS 1925, 1934, 1943, 1956, 1957, 1959, 1962, 1964, 1968). The USGS maps support the continued use and modification of historic transportation corridors and features first depicted on the GLO plats. Numerous historic-period features are shown within and adjacent to the APE; however, review of the USGS quadrangles identified only mapped features intersecting the APE. These intersecting features include Mission Road, Ajo Road (formerly the Ajo–Tucson Road), Robles Pass Road, associated secondary roads, and other historic-period features crossed by the APE (Table 4).

The maps reflect continued expansion of transportation and industrial development west of the Santa Cruz River by 1934 (Figure 7, Figure 8). While the principal transportation corridors established on the GLO plats remained intact, the secondary road network had expanded considerably, providing improved access to ranches, mining properties, and the foothills of the Tucson Mountains. The Arizona Copper Company and Arizona Group Mines appear for the first time, documenting the emergence of organized mining development within the western portion of the APE. Unlike the GLO plats, which depict only the Smelter Ruins as evidence of industrial activity, the 1934 quadrangle identifies active mining operations together with the transportation infrastructure necessary to support them. The continued depiction of Valencia Ranch and Kubils Ranch demonstrates that ranching remained an important component of the landscape as mining expanded, while the increasing density of secondary roads reflects the growing integration of ranches, mines, and the regional transportation network. Together, these features indicate that the western portion of the APE had transitioned from a landscape characterized primarily by dispersed transportation routes and isolated settlement to one supporting multiple historic industrial operations linked by an increasingly developed road network. Phase 1 traverses this expanding transportation and mining landscape and therefore has increased potential over Phase 2 to intersect historic-period transportation features and resources associated with ranching and mining that are more clearly illustrated on the 1934 USGS quadrangle than on the earlier GLO plats.

The 1943 and 1957 quadrangles indicate continued development throughout the APE. Ryan Field, radio towers, additional wells, expanded road networks, and increased residential development are depicted, while Mission Road, Ajo Road, Robles Pass Road, San Xavier Mission, Valencia Ranch, and Kubils Ranch continue to be mapped, demonstrating the persistence of the principal transportation corridors and historic properties identified on the earlier GLO plats and 1934 quadrangle. Residential development becomes increasingly concentrated east of the Santa Cruz River and along the Mission Road and Valencia Road corridors, while the western portion of the APE continues to be characterized by ranches, mining properties, and dispersed development connected by an expanding secondary road network. In contrast, many of the cultivated fields, orchard plantings, and irrigation ditches prominently depicted on the GLO plats are no longer shown on the mid-twentieth-century USGS quadrangles, indicating that the irrigated agricultural landscape surrounding San Xavier had been substantially reduced as transportation infrastructure, residential development, utilities, and aviation-related facilities expanded. The continued

depiction of the principal historic roads indicates that these transportation corridors remained in use despite the surrounding changes in land use, whereas many agricultural features documented on the GLO plats were no longer shown by 1957.

The 1956 through 1968 quadrangles depict continued suburban expansion along the Mission Road and Valencia Road corridors. Residential subdivisions, utility corridors, commercial development, schools, and associated infrastructure increasingly replace much of the agricultural landscape documented on the GLO plats, while Ryan Field is identified as abandoned by 1959. Although many of the cultivated fields, orchards, irrigation ditches, and other agricultural improvements depicted on the GLO plats are no longer shown, the principal transportation corridors established during the nineteenth century remain identifiable throughout the mapping sequence and continue to serve as the primary routes through the APE. By 1968, the eastern portion of the APE had become predominantly suburban, reflecting continued outward expansion of Tucson, whereas the western portion retained a comparatively lower density of development, with Ajo Highway, dispersed secondary roads, ranching properties, and mining-related features continuing to characterize the landscape. This progression illustrates the gradual transition from an irrigated agricultural landscape to an urbanized transportation corridor while preserving the principal historic roadway network established during the late nineteenth and early twentieth centuries.

The historical USGS topographic maps show both continuity and change within the APE. The principal transportation corridors depicted on the GLO plats, including Mission Road, Ajo Road, Robles Pass Road, and numerous secondary roads, continue to be depicted on the 1925 through 1968 quadrangles, while San Xavier Mission, Valencia Ranch, Kubils Ranch, and numerous wells remain identifiable on successive maps. In contrast, many of the cultivated fields, orchard plantings, irrigation ditches, and scattered residences depicted on the GLO plats are no longer depicted on the later USGS quadrangles as residential subdivisions, commercial development, utility corridors, schools, Ryan Field, and other twentieth-century improvements are added. The greatest changes occur along the eastern portions of Phase 1 and Phase 2 alignments, where the historic agricultural landscape is progressively replaced by urban development while the historic transportation network remains largely intact. Comparatively fewer changes are evident along the western portion of Phase 2, where Ajo Road dispersed secondary roads, ranching properties, and mining-related features continue to characterize the mapped landscape.

Historical aerial imagery was reviewed to illustrate changes in land use, development patterns, and the development of historic-period built environments within and adjacent to the APE (Nationwide Environmental Title Research Online [NETROnline] 2026). The earliest available aerial imagery demonstrates that portions of the APE retained agricultural fields, undeveloped desert, dispersed rural development, and established transportation corridors following the period represented by the GLO plats and historical USGS quadrangles. Mid- to late-twentieth-century aerial imagery documents the rapid expansion of Tucson and the progressive conversion of agricultural and undeveloped lands to residential, commercial, utility, and transportation development. Numerous residential subdivisions and associated infrastructure were established along the Mission Road, Valencia Road, Ajo Way, and surrounding corridors during the post-World War II period, while the Phase 2 alignment remained characterized by transportation corridors and comparatively dispersed development. Aerial imagery also illustrates the continued expansion of schools, commercial centers, utility corridors, and other community facilities throughout the APE.

No National Register-listed or locally designated historic districts, historic neighborhoods, or individually listed historic buildings were identified within the APE. Portions of the undertaking traverse established post-World War II residential neighborhoods; however, much of the proposed undertaking follows existing transmission corridors and previously disturbed utility alignments,

reducing the likelihood of substantial changes to the existing character of the surrounding built environment. The eastern portion of the Phase 1 route traverses a City of Tucson Archaeological Sensitivity Zone associated with the Santa Cruz River corridor. These planning areas identify landscapes with an elevated potential for previously unidentified archaeological resources based on documented site distributions, environmental setting, and historical land use, including prehistoric habitation sites, irrigation canals and agricultural features, artifact scatters, and historic-period archaeological deposits.

Recommendations

A records search identified 137 previous cultural resources investigations within the APE, 55 of which intersect the proposed routes. Only one investigation intersecting the proposed routes was completed within the past 10 years and overlaps 615 ft (0.12 mi) of the proposed routes. The remaining route-intersecting investigations were completed more than 10 years ago and were generally conducted in support of transportation improvements, utility projects, roadway construction, residential and commercial development, water infrastructure, and other land development activities rather than comprehensive inventories of the APE. Six previously recorded archaeological sites intersect the proposed routes, including AZ BB:13:136(ASM), AZ AA:16:474(ASM), AZ AA:16:602(ASM), AZ AA:16:542(ASM), AZ AA:16:492(ASM), and AZ CC:16:24(ASM). The Class I literature review demonstrates that the proposed transmission routes traverse multiple historic cultural landscapes associated with O'odham settlement, irrigated agriculture, transportation, ranching, mining, and subsequent urban expansion. Collectively, the GLO plats, historical USGS topographic maps, and historical aerial imagery illustrate the long-term evolution of the project area from an irrigation-based agricultural landscape centered on the Santa Cruz River to a modern urban environment while demonstrating the continued persistence of historic transportation corridors throughout the mapping sequence. The eastern portion of the Phase 1 alignment traverses the greatest concentration of mapped historic-period resources, including transportation corridors, agricultural features, domestic properties, industrial resources, and mining-related features depicted throughout the historical mapping sequence. The eastern portion of the Phase 2 alignment traverses the historic agricultural landscape surrounding Mission San Xavier del Bac and intersects established historic transportation corridors identified from the GLO plats and subsequent USGS maps. In contrast, the western portion of the Phase 2 alignment crosses a more sparsely developed historic landscape characterized primarily by the Ajo Road corridor, dispersed secondary roads, ranching properties, mining-related features, and later suburban expansion.

The proposed routes also traverse a City of Tucson Archaeological Sensitivity Zone within the eastern portion of the Phase 1 alignment. Archaeological Sensitivity Zones identify landscapes with an elevated potential for previously unidentified archaeological resources based on documented site distributions, environmental setting, and historical land use. Although Archaeological Sensitivity Zones are not designated historic properties, the occurrence of the sensitivity zone along the proposed route further supports the need for comprehensive Class III pedestrian inventory prior to ground-disturbing activities.

Approximately 17 mi of the proposed routes has not been surveyed within the past 10 years and therefore is no longer considered current under Arizona SHPO guidance.

Given the limited extent of recent survey coverage, the presence of previously recorded archaeological sites, mapped historic-period resources, and the City of Tucson Archaeological Sensitivity Zone traversed by the proposed routes, Chronicle Heritage recommends a Class III

pedestrian survey of all portions of the APE subject to direct effects that have not been surveyed within the past 10 years, including proposed transmission line alignments, structure locations, access roads, equipment yards, staging areas, laydown areas, pull sites, temporary work areas, and all other areas where project-related ground disturbance is anticipated.

The survey should be conducted in accordance with Section 106 of the National Historic Preservation Act (54 U.S.C. § 306108; 36 CFR Part 800), the Arizona Antiquities Act (A.R.S. §§ 41-841 et seq. and 41-844), and applicable requirements of the Bureau of Land Management, Arizona State Land Department, Arizona State Historic Preservation Office, Arizona State Museum, City of Tucson, and Pima County, including City of Tucson Resolution No. 12443 (1983), Pima County Board of Supervisors Policy C3.17, Pima County Resolution 1983-104, and Pima County Historic Zone Ordinance 18.63. Consultation should be coordinated, as appropriate, with the applicable federal, state, and local agencies and other consulting parties with jurisdiction over lands, permits, or other approvals associated with the undertaking.

Sincerely,

Chronicle Heritage



Christine A. Jerla, M.A. | Senior Archaeologist

Results of Previous Research

Table 2. Previous Projects Intersecting the Proposed Transmission Routes

Route/Alignment	Project Reference Number	Project Name	Associated Reference
Phase 1	1980-117.ASM	Mason Terrace	ASM Project Registration Form
Phase 1	1980-135.ASM	Pima County Department of Transportation and Flood Control District Valencia Road Survey	ASM Project Registration Form
Phase 2	1980-157.ASM	Cooper Ridge, Camino de la Tierra and Valencia	ASM Project Registration Form
Phase 1	1982-150.ASM	Camino Verde Village, Camino Verde and Drexel	ASM Project Registration Form
Phase 1	1985-15.ASM	State Land Survey	ASM Project Registration Form
Phase 1	1985-71.ASM	State Land Survey	ASM Project Registration Form
Phase 1 / Phase 2	1986-109.ASM	Tucson Aqueduct Project - Phase B	Czaplicki et al. 1988
Phase 2	1987-222.ASM	U.S. Telecom Buried Fiber Optic Cable	O'Brien et al. 1987
Phase 1 / Phase 2	1988-181.ASM	Festival Theme Park	ASM Project Registration Form
Phase 1	1988-197.ASM	CAP - Black Mountain Pumping Plant Power Line	ASM Project Registration Form
Phase 1	1988-218.ASM	Archaeological Survey of a 2-Mile-Long Proposed ROW for Trico Electric Cooperative, Inc.	Maldonado 1988
Phase 2	1989-157.ASM	Archaeological Survey of a Proposed ROW for the CAP Southwest, Transmission Main	Maldonado 1989
Phase 2	1991-109.ASM	Cultural Resources Inventory for 11 CAP Pressure Regulating Valve Station Sites in Tucson and Pima County	Slawson 1991
Phase 1	1991-260.ASM	None	Roth 1991
Phase 2	1994-128.ASM	Mission View Assembly of God	Jones 1994
Phase 1	1995-148.ASM	Avra Valley - Valencia Road Survey	Swartz 1995
Phase 2	1998-1.ASM	Survey of post office-Valencia Road, Tucson	McKee and Towner 1998

Phase1 / Phase 2	1998-141.ASM	Drexel/Mission Main Survey	Vint 1998
Phase 1	1999-450.ASM	Valencia Pit	Courtright and Wright 1999
Phase 1	2000-12.ASM	Cultural Resources Survey of Valencia Road Between Mission Road and the Cruz River in Tucson	Kaldahl and Dart 2000
Phase 1	2000-225.ASM	W.O.4VRMRI, part 1: testing at AZ AA:16:67(ASM)	Jones 2000
Phase 1	2001-321.ASM	TRICO On-Call (Valencia and Vahalla Survey)	Hesse 2001
Phase 1	2001-324.ASM	Valencia Road Cultural Resources Survey	Tucker 2001
Phase 1	2002-4.ASM	Picture Rocks/Sandario to Valencia/Camino de Oeste ca. 31-Mile Cultural Resources Survey	Jeffrey T. Jones and Dart 2002
Phase 2	2002-13.ASM	Mark Road Qwest cable cultural resources survey from 160 ft N of Bilby Rd to 160 ft N of Valencia Rd	Wyman 2002
Phase 1	2002-203.ASM	TRICO Mark Road Survey	Hesse 2002
Phase 1	2003-8.ASM	Pascua Yaqui 30-Acre Survey	Hesse 2003
Phase 1 / Phase 2	2003-457.ASM	Drexel Road Underground Feeder	Knoblock 2002
Phase 1 / Phase 2	2003-1070.ASM	EPNG Tucson Class III Survey	Hesse 2004
Phase 1 / Phase 2	2004-31.ASM	Mark Road Cultural Resource Survey	India S. Hesse 2004
Phase 1 / Phase 2	2004-37.ASM	Drexel and Cardinal Survey	Petersen 2004
Phase 1	2004-412.ASM	Avenida Don Fernando	Levstik 2004
Phase 1	2005-653.ASM	Avra Valley Viviana Main Survey	Diehl 2005
Phase 1	2005-766.ASM	Line 1100 and Line 1103 Pipeline Replacement Project	Tutt and Dobschuetz 2005
Phase 1 / Phase 2	2005-1242.ASM	Valencia Supplemental CR Survey	Fahrni and David 2006
Phase 2	2005-1262.ASM	Valencia Road and Camino de la Tierra Survey	Douglas 2005
Phase 1	2006-273.ASM	Camino Verde Survey	Luchetta and Twilling 2006
Phase 1	2006-551.ASM	Valencia Road Improvements	Barr 2006
Phase 1	2006-831.ASM	SR 86: Kinney to Sandario Roads	Kristen L. Fangmeier and Fackler 2007
Phase 1 / Phase 2	2008-432.ASM	Valencia Road Widening Class III Survey	Twilling and Murphy 2008

Phase 1	2008-629.ASM	New ROW Parcels along SR 86-Sandario Rd to Kinney Rd	Schilling and Fackler 2008
Phase 1 / Phase 2	2009-71.ASM	SWTC and CAP Joint Projects	Barr and Hesse 2009
Phase 1	2009-458.ASM	Valencia/Camino Verd	Murphy and Urban 2009
Phase 1	2010-313.ASM	West Valencia Survey	Jones 2010
Phase 1	2011-144.ASM	Atlas 512	Slawson 2010
Phase 1	2011-300.ASM	Valencia Road, Mountain Eagle to Mark Road	Lundin 2011
Phase 1	2012-541.ASM	Tucson Aqueduct Reaches 3 - 5 Site Reassessment	Schilling 2013
Phase 1	2013-117.ASM	Camino Verde 170	Stephen 2002
Phase 1	2013-583.ASM	Why to Tucson Highway (SR 85), Valencia Road to Kinney Road	Tactikos 2014
Phase 1	2014-231.ASM	SR 86 Valencia to Kinney Roads Fourth Addendum	Tactikos and Jones 2014
Phase 1 / Phase 2	2015-458.ASM	Atlas 0528	Howell 2015
Phase 2	2022-340.ASM	San Xavier Sheriff Substation and Library	Kincer and Langan 2022
Phase 1	BLM-16-18	R/W A-10867 Pima County Sewer Line	Not Available
Phase 2	BLM-16-19	R&PP A-10854 Pima County Parks County Rodeo Ground	Not Available
Phase 1 / Phase 2	12-133.BLM	Unknown	Not Available

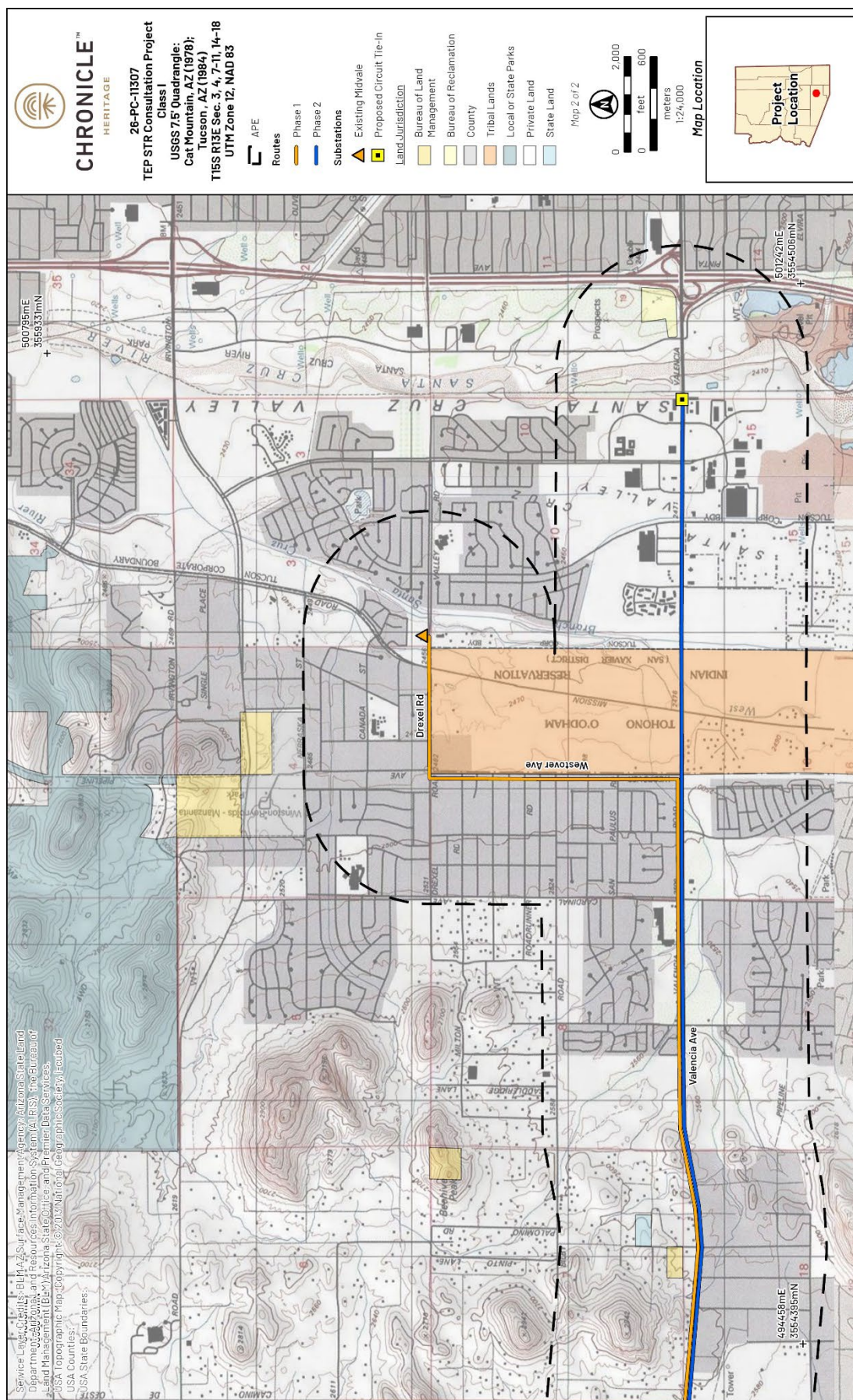
Table 3. Previously Recorded Cultural Resources Intersecting the Proposed Routes

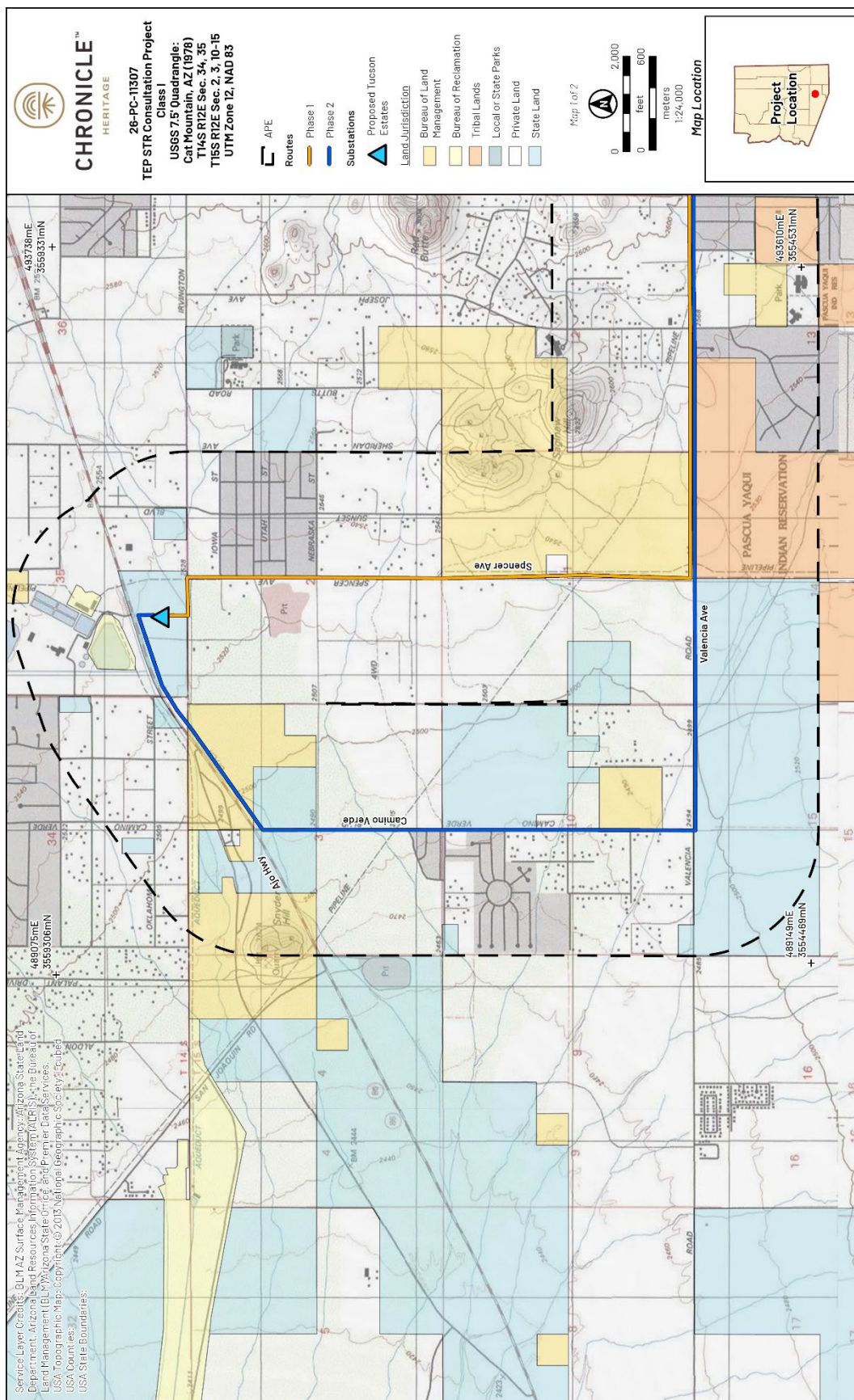
Route/Alignment	Site No./ Name	Affiliation	Site Type	Eligibility Status	Associated Reference(s)
Phase 2	AZ BB:13:136(ASM)	Hohokam (AD 200-1450 and historic Tohono O'odham (AD 1500-1950)	Artifact scatter	Determined ineligible individually by SHPO on 5-30-2001 (2000-2165)	ASM Site Card
Phase 1	AZ AA:16:474(ASM)	Hohokam (AD 200-1450)	Artifact scatter	Not evaluated	Hopkins 2005
Phase 2	AZ AA:16:602(ASM)	Late historic Euro-American (AD 1900-1950)	Artifact scatter	Determined ineligible individually by SHPO on 6-23-2014 (2007-1440)	Tactikos 2014; Tactikos and Jones 2014
Phase 2	AZ AA:16:542(ASM)	Late historic Euro-American (AD 1900-1950)	Artifact scatter	Determined ineligible individually by SHPO on 8-26-2007 (2007-1440)	Fangmeier and Fackler 2007
Phase 1 / 2	AZ AA:16:492(ASM)	Late historic Euro-American (AD 1900-1950)	Features with associated artifact scatter	Determined ineligible individually by SHPO on 8-23-2006 (2006-1091)	Fahrni and David 2006
Phase 1 / 2	AZ CC:16:24(ASM)	El Paso Natural Gas Line 1100 (AD 1928-1956)	Utility	Determined eligible individually by SHPO on 7-23-2012 (2012-0658)	Fahrni and David 2006

Table 4. Historic USGS Map and GLO Properties Intersecting the Proposed Routes

Route/Alignment	Historic Feature	Source
Phase 1 / 2	Tucson-Tubac Road	GLO Plat T15S, R13E (1871)
Phase 1 / 2	Tucson-Altar Road	GLO Plat T15S, R13E (1871)
Phase 1	Secondary roads (8)	GLO Plat T15S, R12E (1919)

Phase 2	Ajo-Tucson Road	GLO Plat T14S, R12E (1928)
Phase 2	Secondary roads (3)	GLO Plat T14S, R12E (1928)





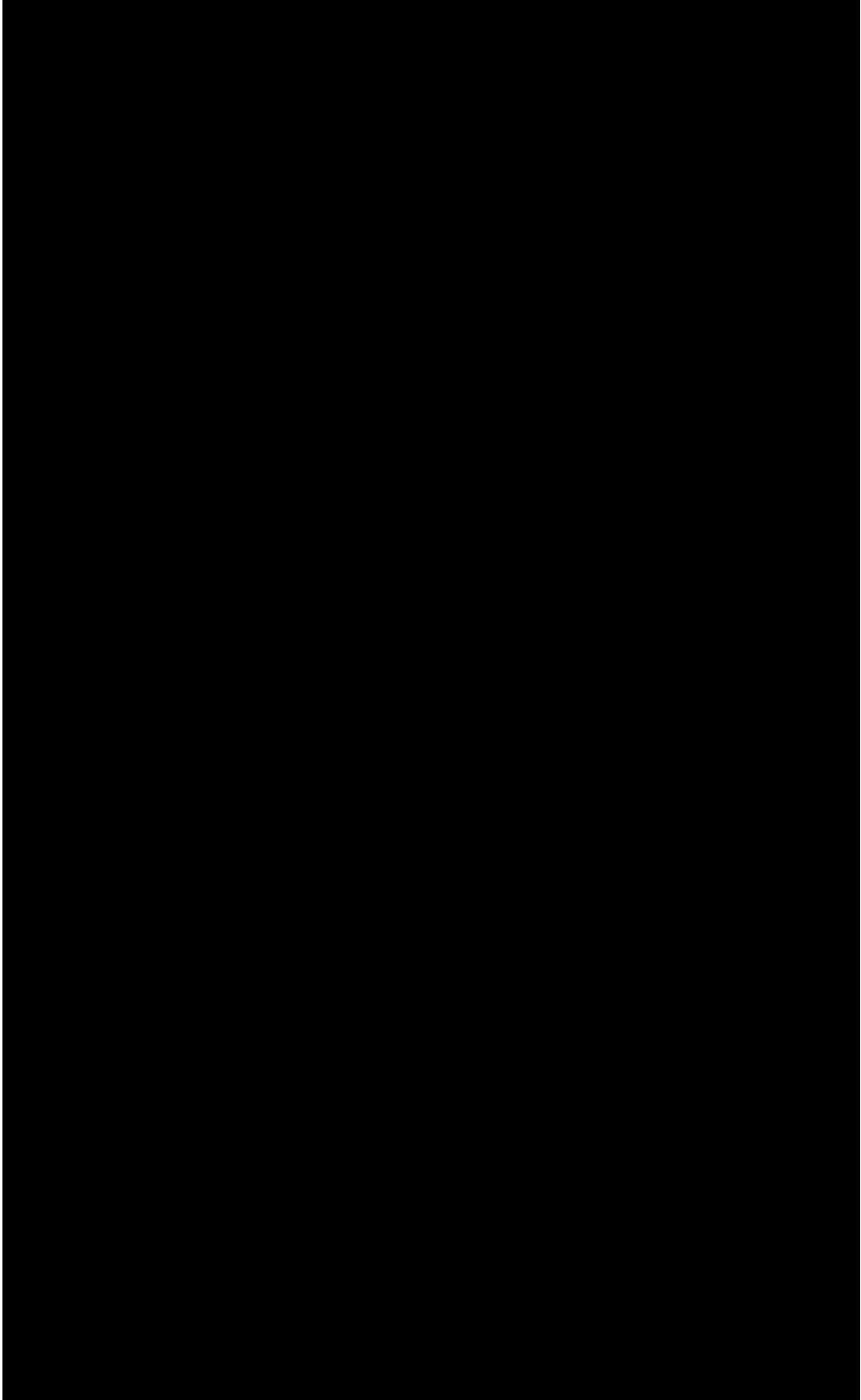


Figure 3. APE map showing previous projects and sites (1 of 2).

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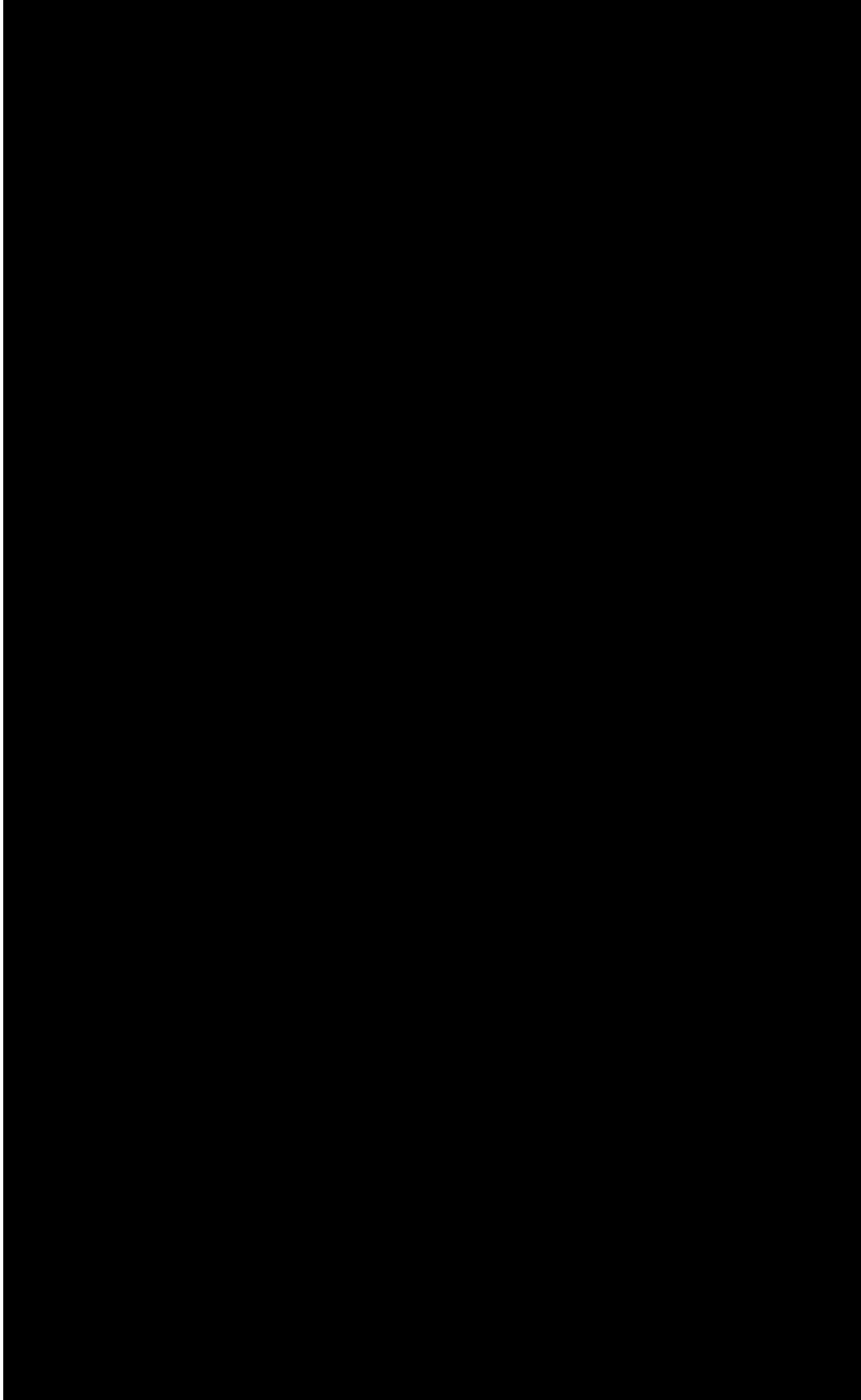


Figure 4. APE map showing previous projects and sites (2 of 2).

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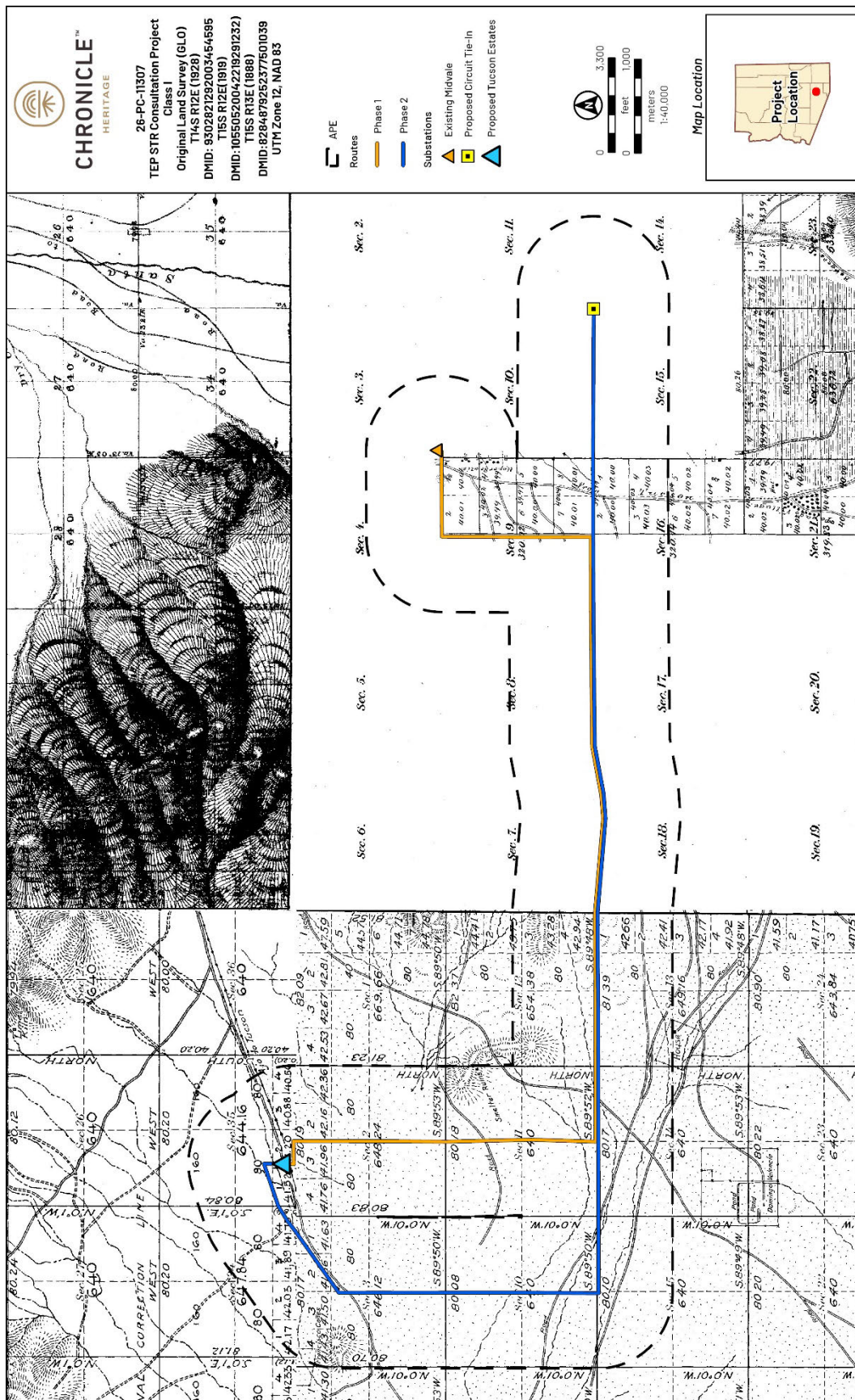


Figure 5. APE map showing GLO (1 of 2).

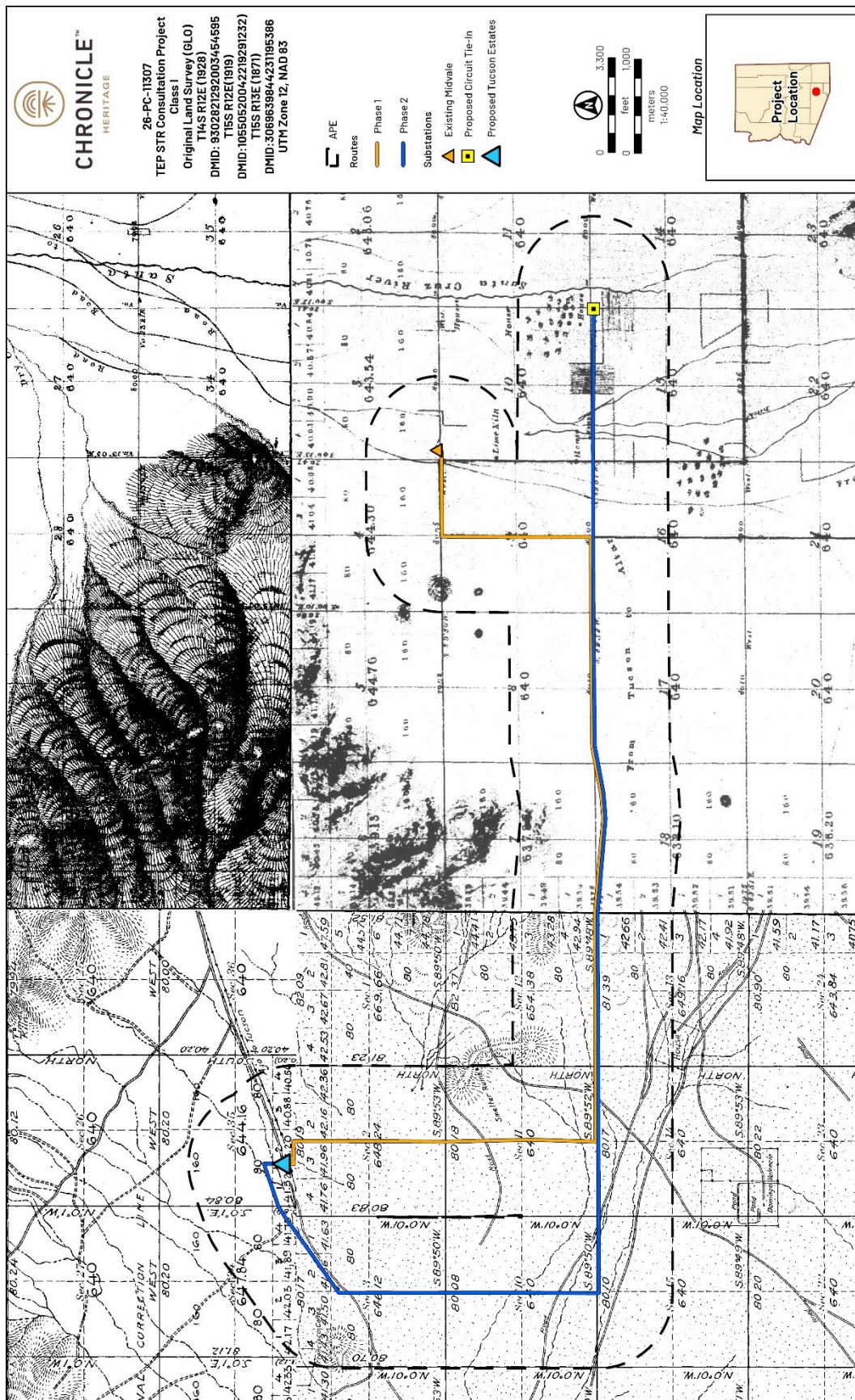
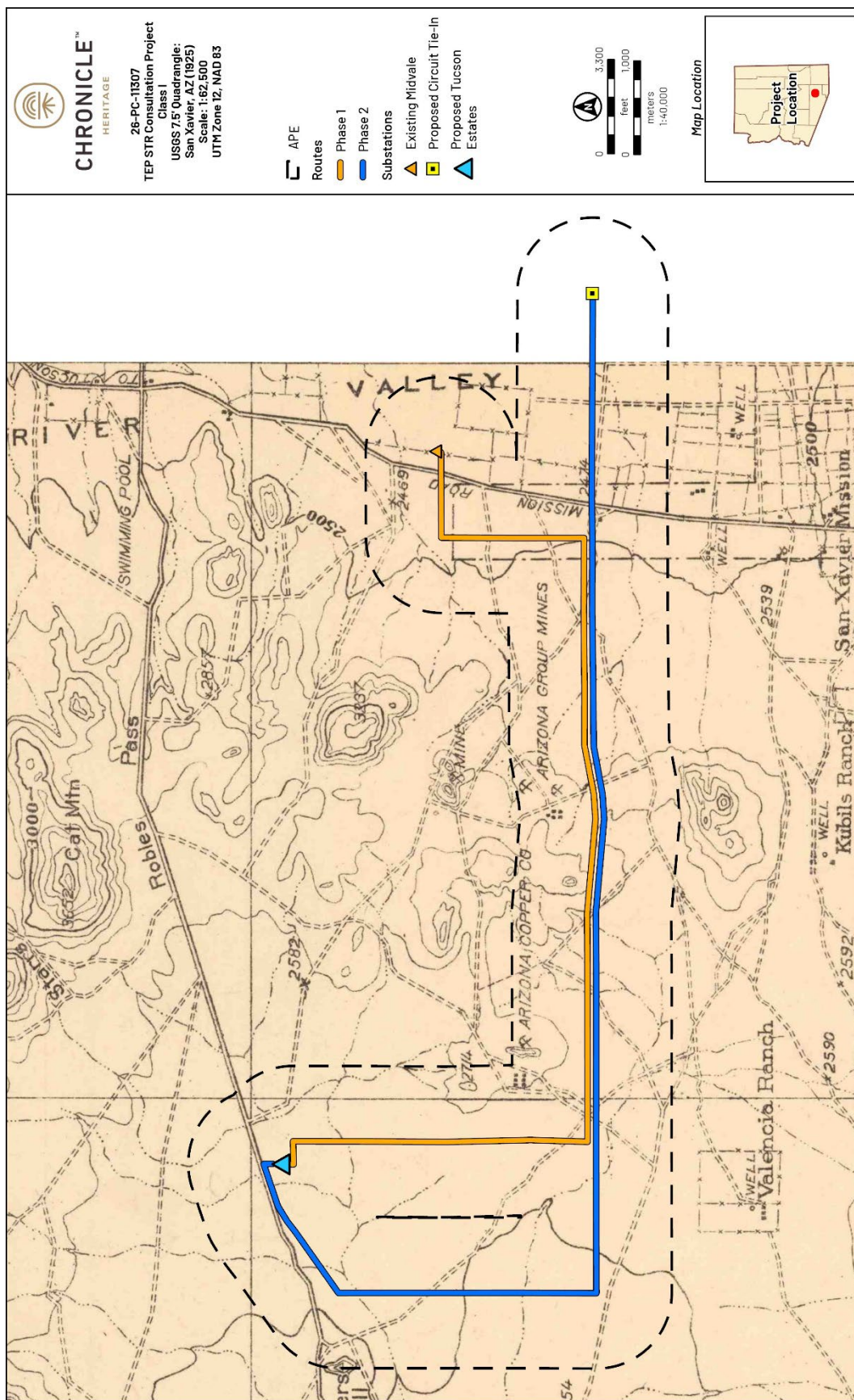


Figure 6. APE map showing GLO (2 of 2).



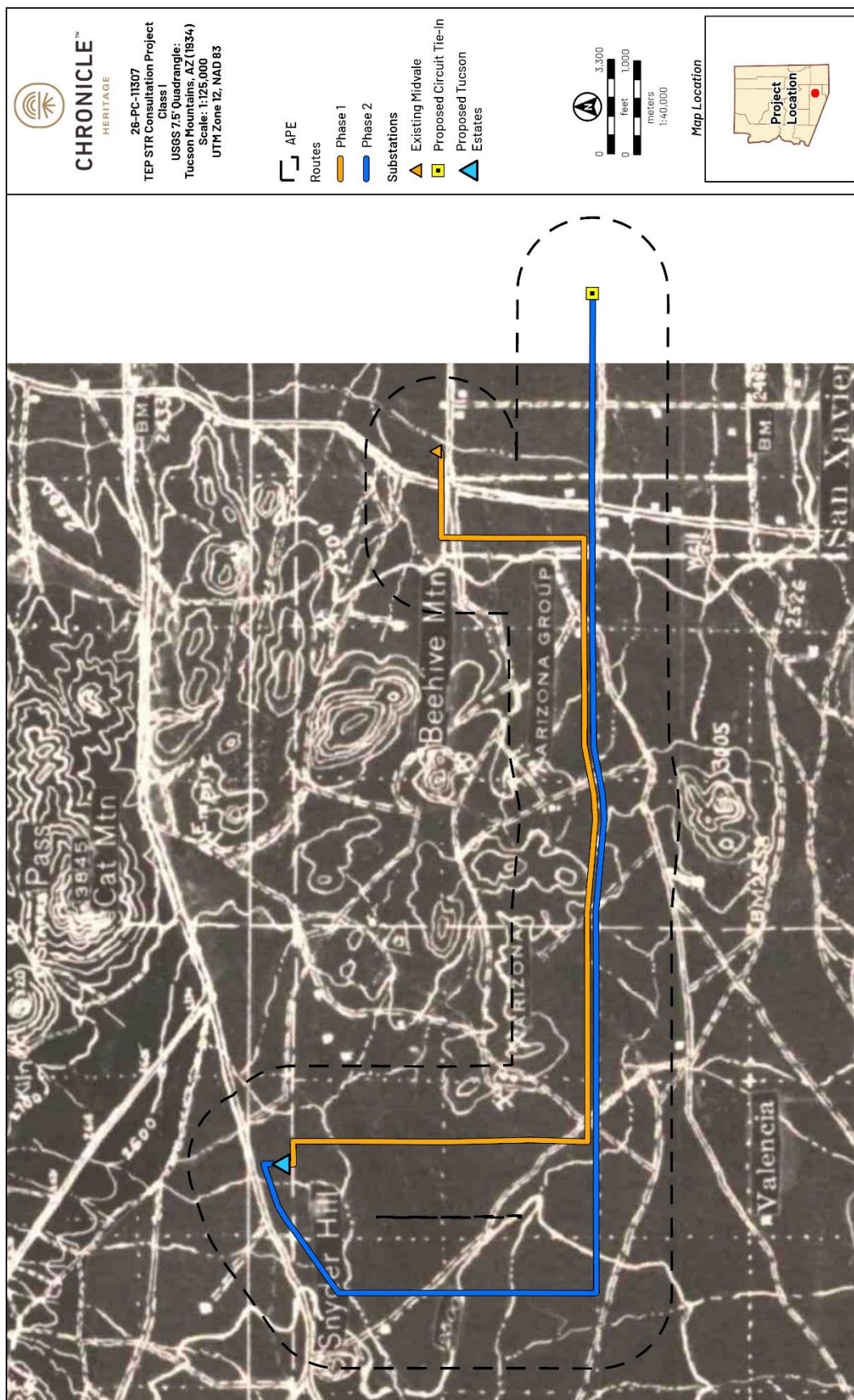


Figure 8. APE map showing USGS 7.5' Quadrangle Tucson Mountains, AZ (1934).

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Vint, James

1998 *Archaeological Survey of the Drexel/Mission Road Water Main Replacement Project Area*. Desert Archaeology, Inc., Tucson, Arizona.

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EXHIBIT F

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Exhibit F: Recreational Purposes and Aspects

As stated in Arizona Administrative Code R14-7-119 of the Rules of Practice and Procedure Before Power Plant and Transmission Line Siting Committee, Exhibits to Application, Exhibit F:

“State the extent, if any, the proposed site or route will be available to the public for recreational purposes, consistent with safety considerations and regulations and attach any plans the applicant may have concerning the development of the recreational aspects of the proposed site or route.”

F.1 Introduction

Tucson Electric Power Company (TEP) evaluated the potential impacts of the Southwest Tucson Reliability Project (Project) on existing recreation within the Area of Analysis, as well as the potential for the Public to utilize the right-of-way for recreational purposes. The following analysis describes recreational settings and features within the Area of Analysis and potential impacts to recreation from construction, operation, and maintenance of the Project.

F.2 Recreation in the Area of Analysis

Recreational opportunities within the Area of Analysis are primarily associated with trails and parks. This includes:

- Santa Cruz River Park & Trail
- Grijalva Park
- Lawrence District Park
- Branding Iron Park

F.3 Potential Impacts to Recreation

The Project entails a combination of new construction, reconstruction, and the use of existing transmission lines within existing road and utility rights-of-way (ROW) and will not impede existing recreation opportunities long-term. Potential impacts by recreation type are discussed below. These facilities are displayed in Exhibit F-1.

F.3.1 Parks

The parks located within the Area of Analysis are not adjacent to the Phase 1 or Phase 2 Routes and would not be affected by construction activities.

F.3.2 Trails

The Santa Cruz River Trail terminates on the north side of Valencia Road. Therefore, Phase 2 of the Project, which is located on the south side of Valencia Road will not cross or impact the built trail.

F.3 Potential Effects

F.3.1 Construction

Project construction may have temporary, minor impacts on recreational use of the public road ROWs, such as detours to the opposite side of the road. However, these detours are not expected to last more than a few days at a time, at any one location.

F.3.2 Operation and Maintenance

Operation is not anticipated to preclude recreational use or public enjoyment. Maintenance of the Project would be similar to construction in that temporary, minor impacts may occur.

Currently, TEP does not have any plans to make the ROW, outside public road ROWs, available to the public for recreational purposes.

F.4 Conclusion

The Phase 1 and Phase 2 Routes primarily utilize existing infrastructure along established roadways and utility corridors. In the areas that would require new construction, the routes are within road ROW and not in the vicinity of any recreation resources. As a result, the Project will not result in impacts to recreation resources.

Exhibit F-1
Recreational Purposes and Aspects Map

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Exhibit F-1 Southwest Tucson Reliability Study

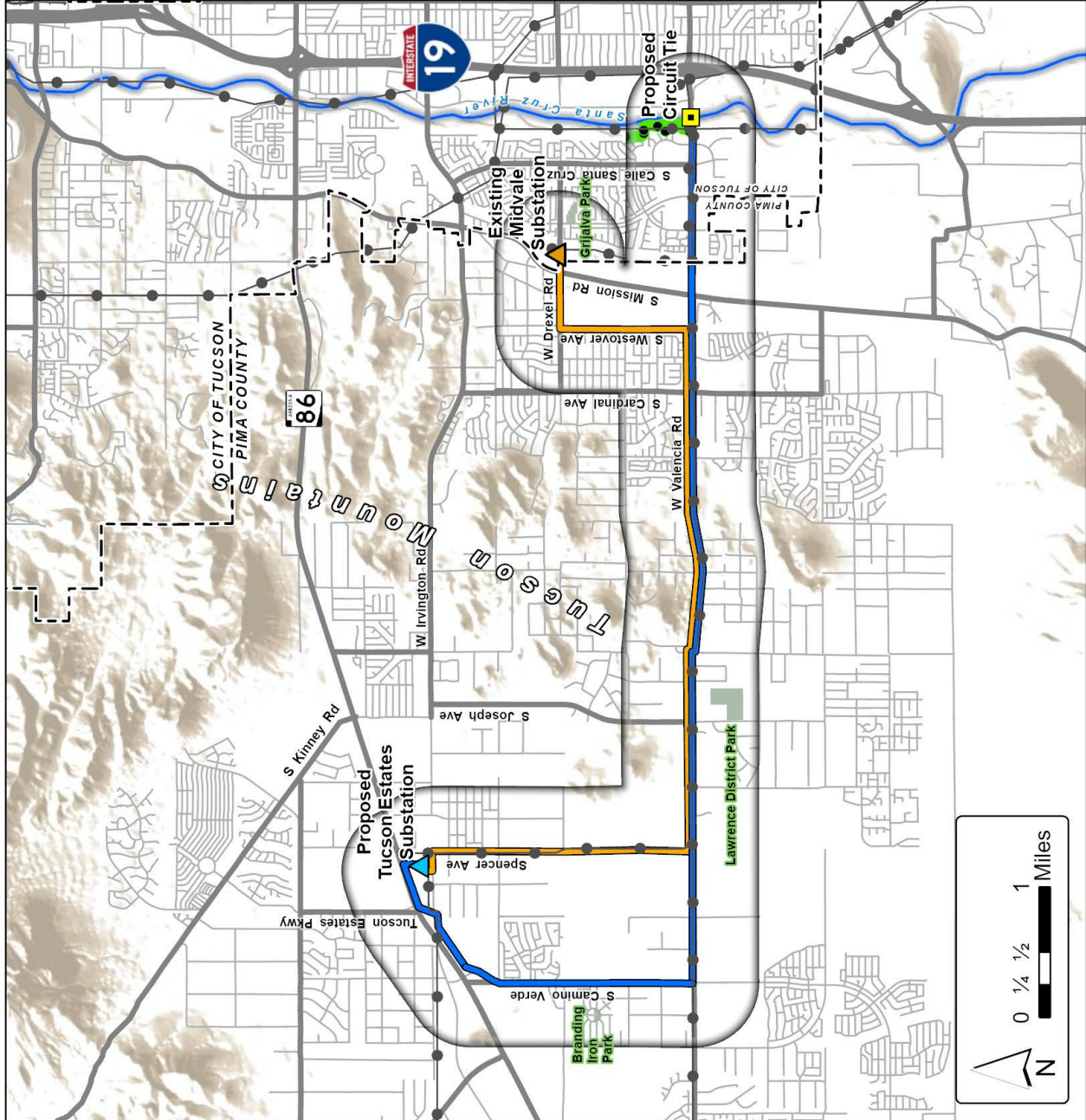
Recreation

-  Area of Analysis
-  Jurisdictional Boundaries
- Substations**
 -  Existing Midvale
 -  Proposed Tucson Estates
 -  Proposed Circuit Tie
- Routes**
 -  Phase 1
 -  Phase 2
-  Existing Transmission Lines
- Recreation**
 -  Santa Cruz River
 -  Park Trail
 -  Parks and Recreational Areas

TEP
Tucson Electric Power

Sources: City of Tucson, Pima County, TEP
Projection: NAD 1983 UTM Zone 12N
Base map: ESRI Topographic

This map is for planning purposes only.
Tucson Electric Power makes no warranty
of its accuracy.



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EXHIBIT G

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Exhibit G: Conceptual Drawings and Simulations

As required by Arizona Administrative Code R14-7-119, the Applicant provides the following in Exhibit G:

“Attach any artist's or architect's conception of the proposed plant or transmission line structures and switchyard, which applicant believes may be informative to the Committee.”

G.1 Introduction

Tucson Electric Power Company (TEP) evaluated the potential impacts of the Southwest Tucson Reliability Project (Project) on concepts of proposed facility. The Project will use a range of structure types, including the example conceptual drawings provided in this exhibit. This exhibit provides typical configurations for single and double circuit 138-kilovolt (kV) tangent and dead-end structures and double circuit 138-kV tangent with distribution underbuild, as illustrated with pole schematics and representative pole images. Additionally, photo-realistic simulations of the Project from the key observation points (KOPs) identified in Exhibit E are included in Exhibit G-6.

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Exhibit G-1
Single Circuit 138-kV Tangent Framing
Typical Configuration



UnSourceEnergy
Services

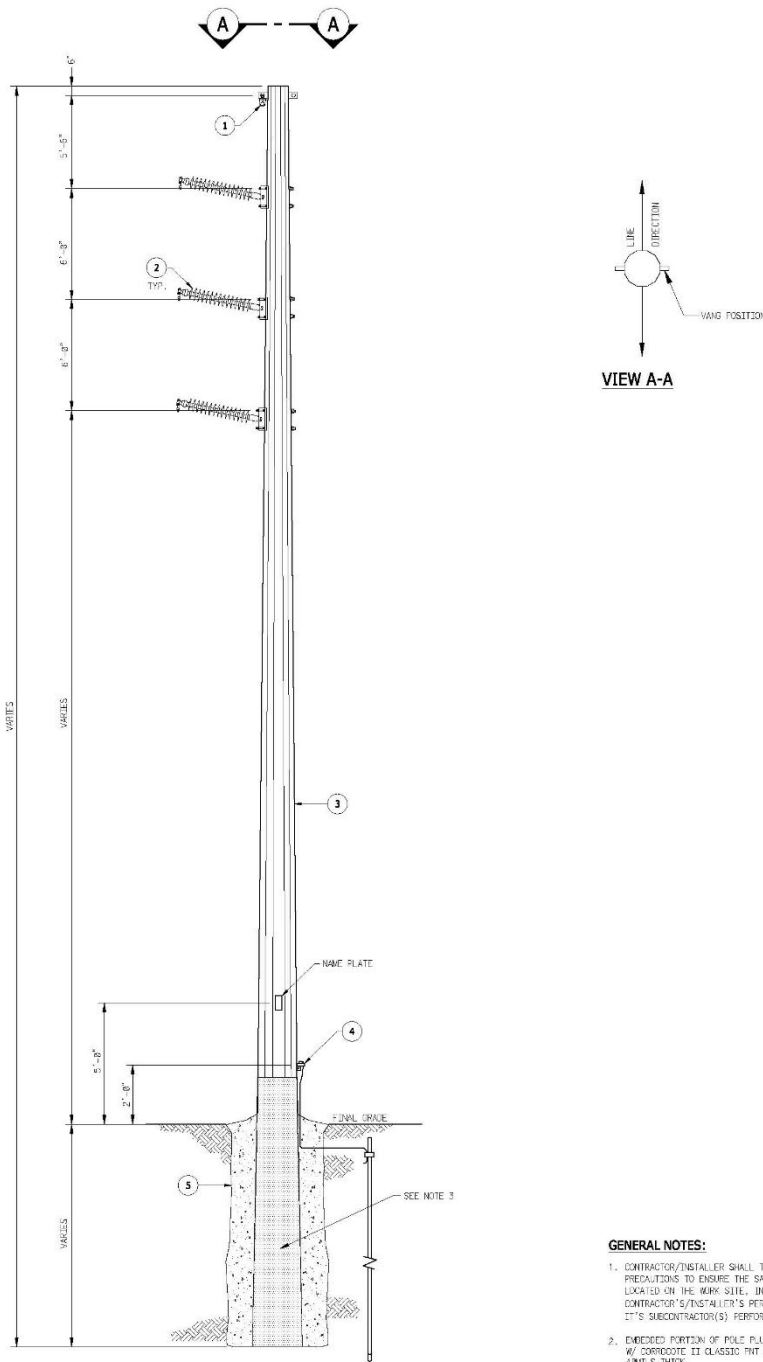
FRAMING, SINGLE CIRCUIT VERTICAL

TANGENT 0-3° (CONCRETE) 46/69/138KV
TRANSMISSION STANDARD

INITIATED
EFFECTIVE DATE

MF
12/31/11

TL0305.005-R00



TANGENT 0-3°, SINGLE CIRCUIT VERTICAL 46/69/138KV

GENERAL NOTES:

1. CONTRACTOR/INSTALLER SHALL TAKE ALL APPROPRIATE PRECAUTIONS TO ENSURE THE SAFETY OF ALL PEOPLE LOCATED ON THE WORK SITE, INCLUDING CONTRACTOR'S/INSTALLER'S PERSONNEL (OR THAT OF IT'S SUBCONTRACTOR(S) PERFORMING THE WORK).
2. EMBEDDED PORTION OF POLE PLUS 1'-8" COATED W/ CORROSION II CLASSIC THT 219A & 219B, 4BUILS THICK.

BILL OF MATERIAL

ITEM	DESCRIPTION	QTY.	DRAWING ASSEMBLY
1	OPGW/STATIC SUSP. ASSEMBLY	1	TL0304.001 TL0306.001
2	POST INSULATOR ASSEMBLY	3	TL0302.001 TL0302.002
3	SINGLE POLE	1	SEE CTE
4	GROUNDING ASSEMBLY	1	TL0302.001
5	FOUNDATION DETAIL	1	TL0700.005



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Exhibit G-2
Single Circuit 138-kV Double Dead-end Framing
Typical Configuration

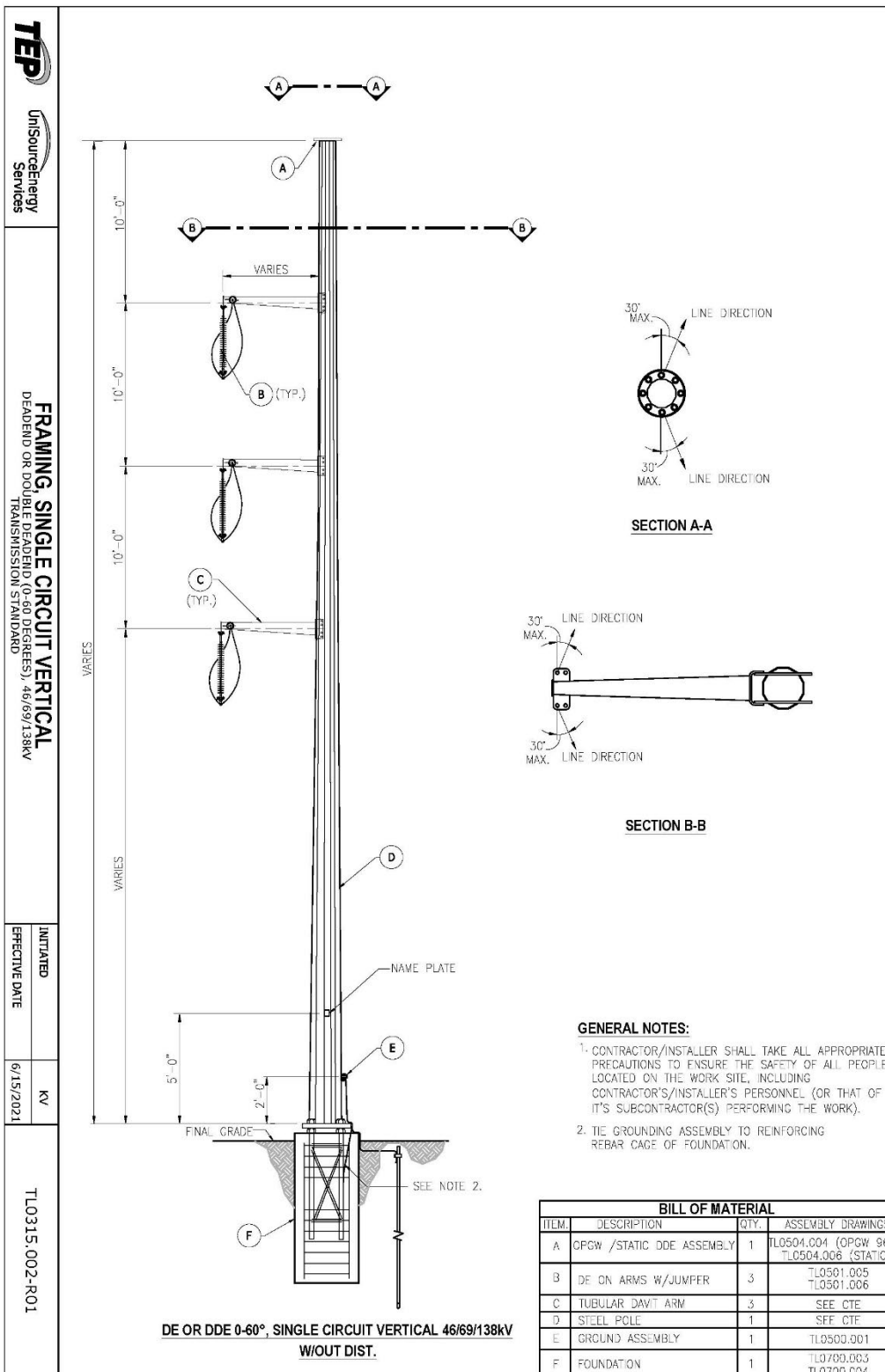




Exhibit G-3
Double Circuit 138-kV Tangent Framing
Typical Configuration

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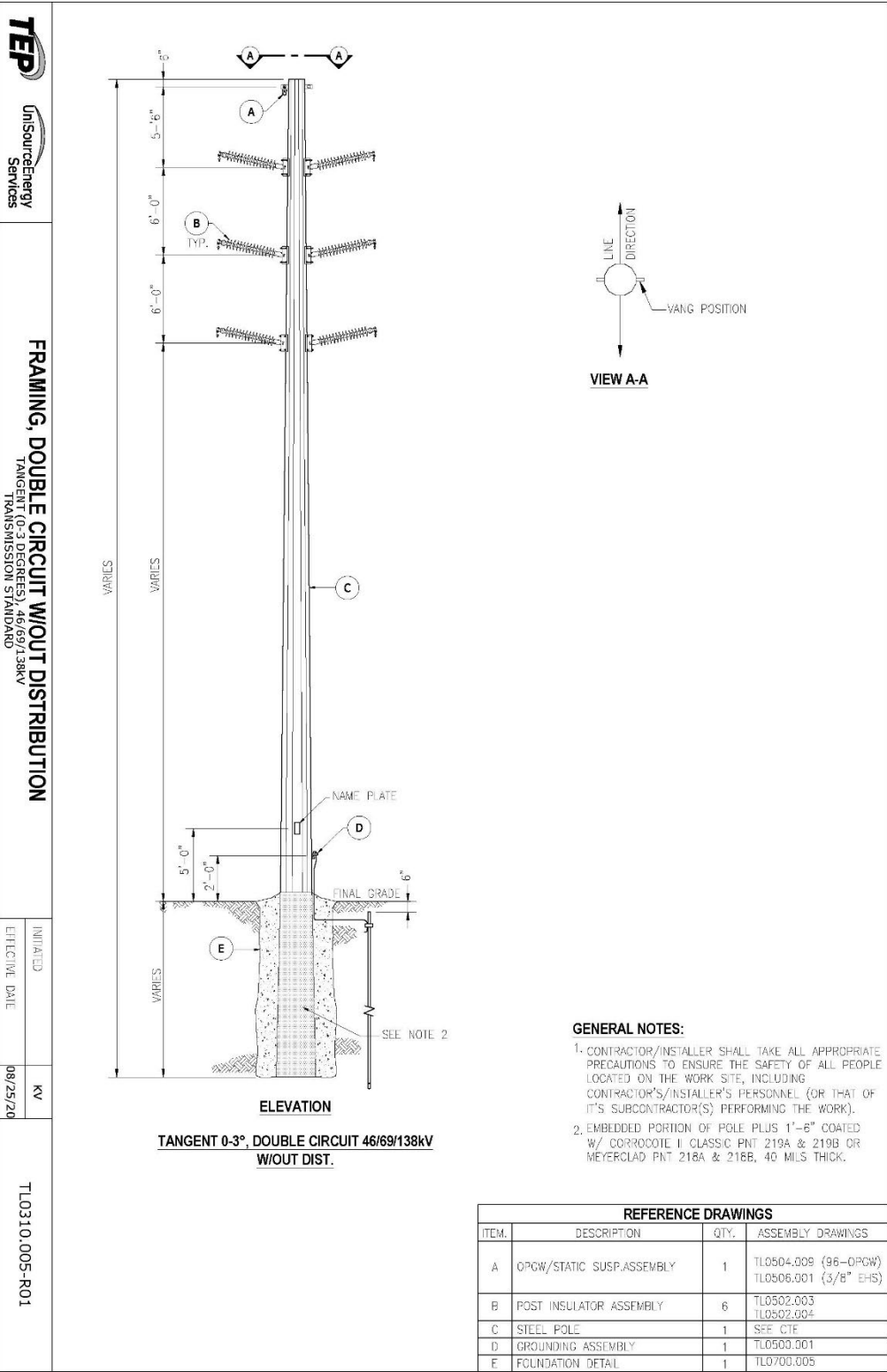




Exhibit G-4
Double Circuit 138-kV Double Dead-End Framing
Typical Configuration

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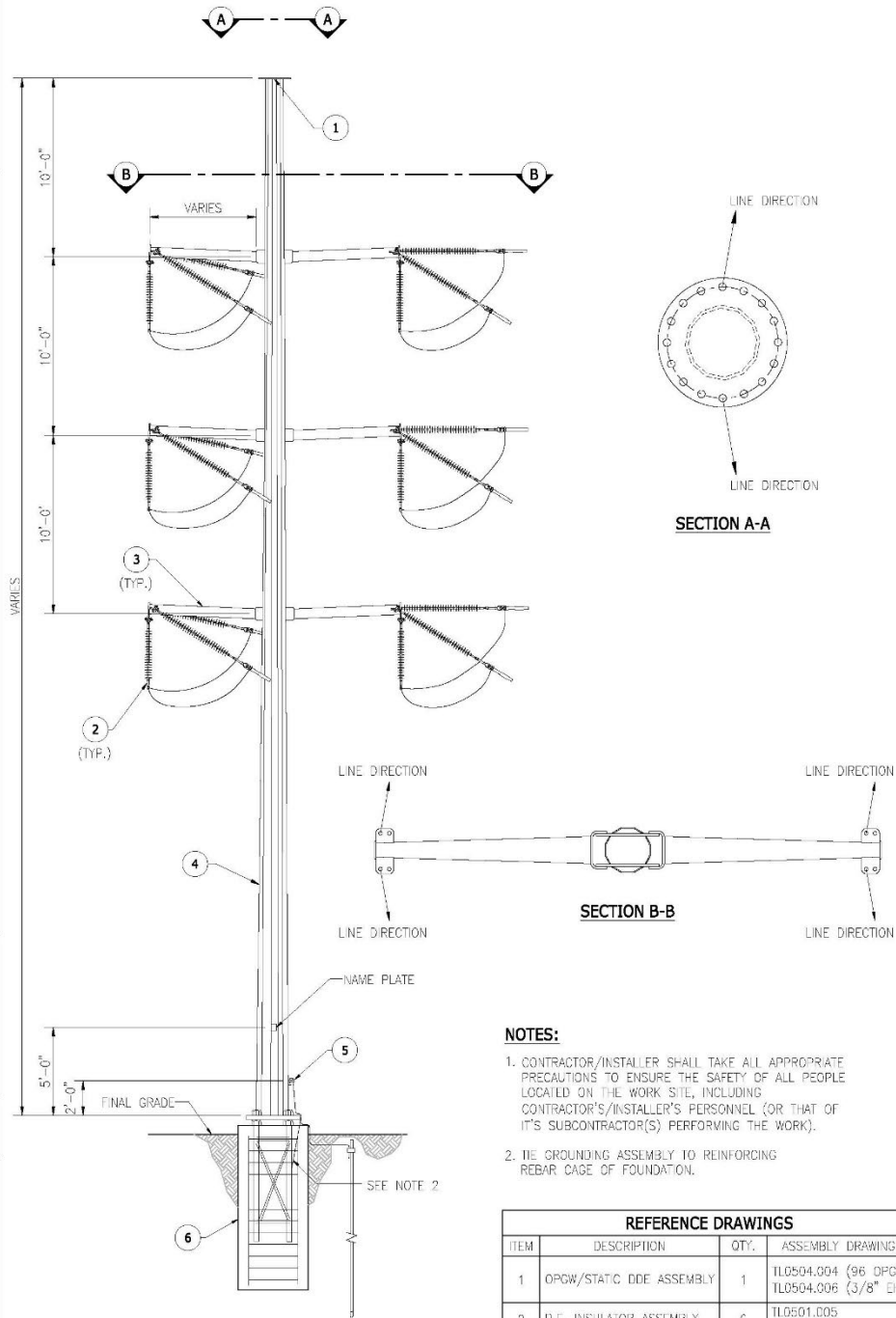
UnSourceEnergy
Services

**FRAMING DOUBLE CIRCUIT
DEADEND OR DOUBLE DEADEND ASSEMBLY, 46/69/138KV
TRANSMISSION STANDARD**

INITIATED
EFFECTIVE DATE

KV
6/16/21

TL0325.001-R01



**DE OR DDE ON ARMS, DOUBLE CIRCUIT 46/69/138KV
W/OUT DIST.**

NOTES:

1. CONTRACTOR/INSTALLER SHALL TAKE ALL APPROPRIATE PRECAUTIONS TO ENSURE THE SAFETY OF ALL PEOPLE LOCATED ON THE WORK SITE, INCLUDING CONTRACTOR'S/INSTALLER'S PERSONNEL (OR THAT OF IT'S SUBCONTRACTOR(S) PERFORMING THE WORK).
2. RE GROUNDING ASSEMBLY TO REINFORCING REBAR CASE OF FOUNDATION.

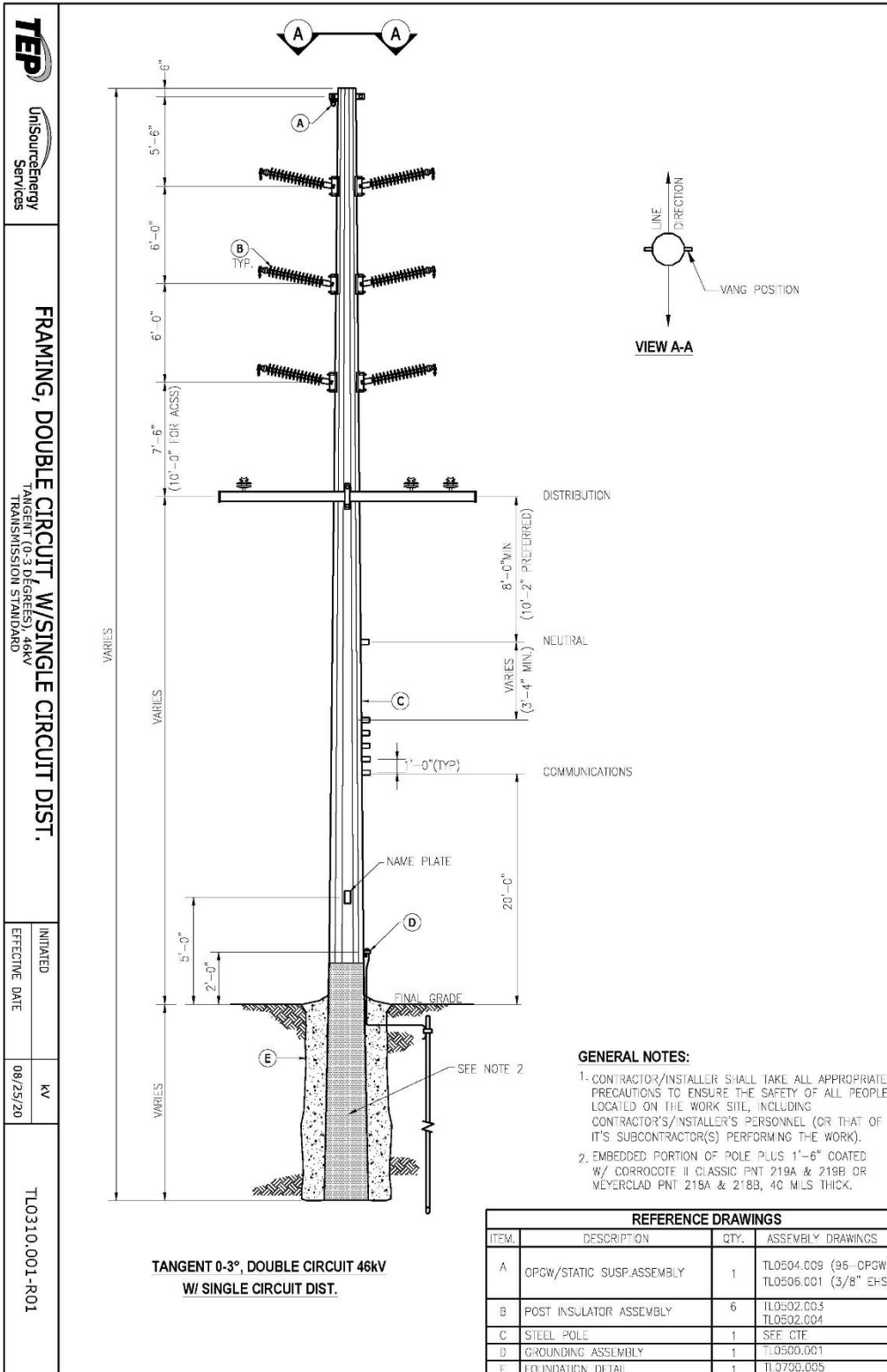
REFERENCE DRAWINGS

ITEM	DESCRIPTION	QTY.	ASSEMBLY DRAWINGS
1	OPGW/STATIC DDE ASSEMBLY	1	TL0504.004 (96 OPGW) TL0504.006 (3/8" D/S)
2	D.E. INSULATOR ASSEMBLY	6	TL0501.005 TL0501.006
3	TUBULAR DAVIT ARM	6	SEE CTE
4	STEEL POLE	1	SEE CTE
5	GROUND ASSEMBLY	1	TL0500.001
6	FOUNDATION	1	TL0700.003 TL0700.004



Exhibit G-5
Double Circuit 138-kV Tangent with Distribution
Typical Configuration

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Exhibit G-6
Visual Simulations



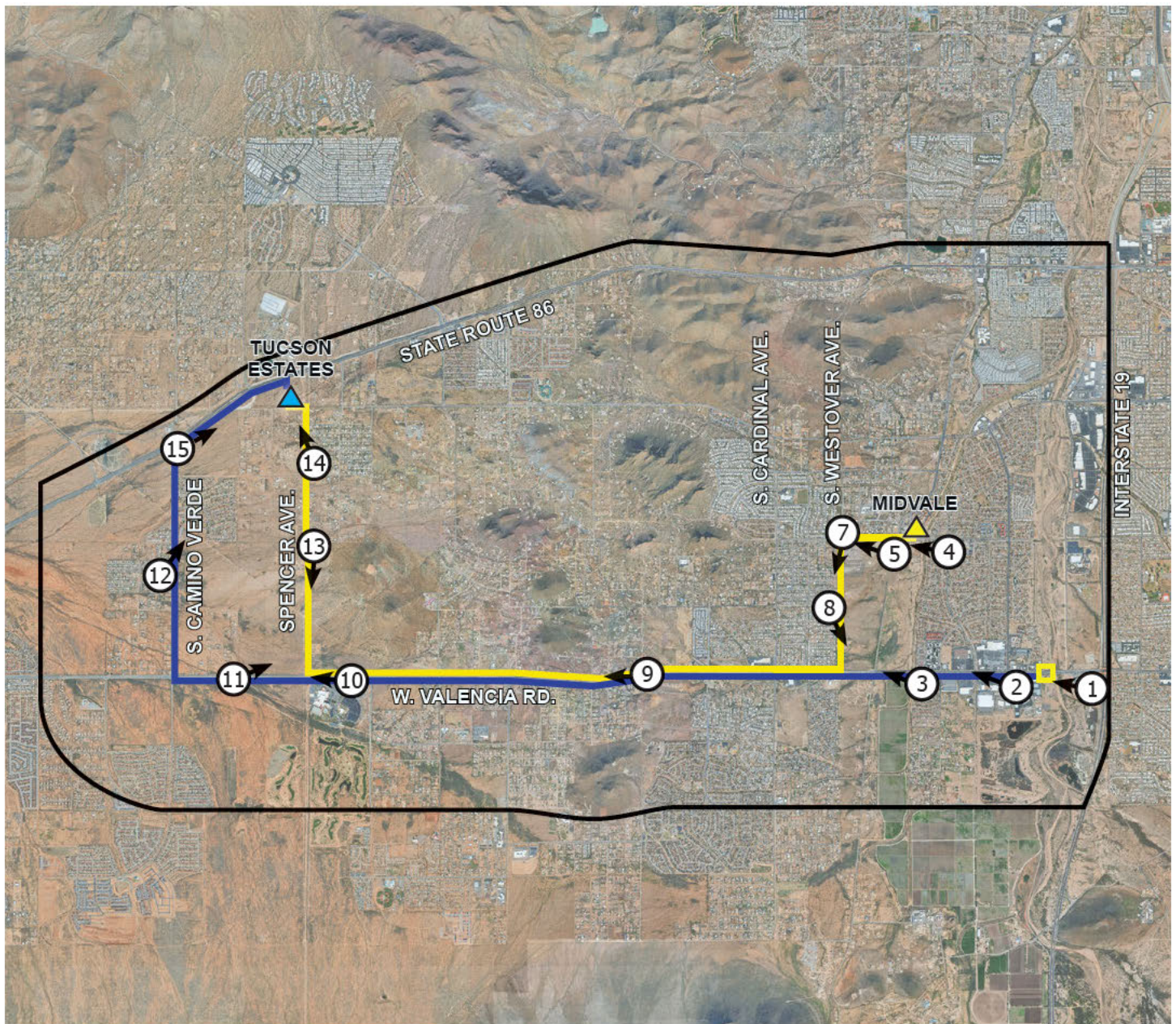
Southwest Tucson Reliability Project

Visual Simulation Package

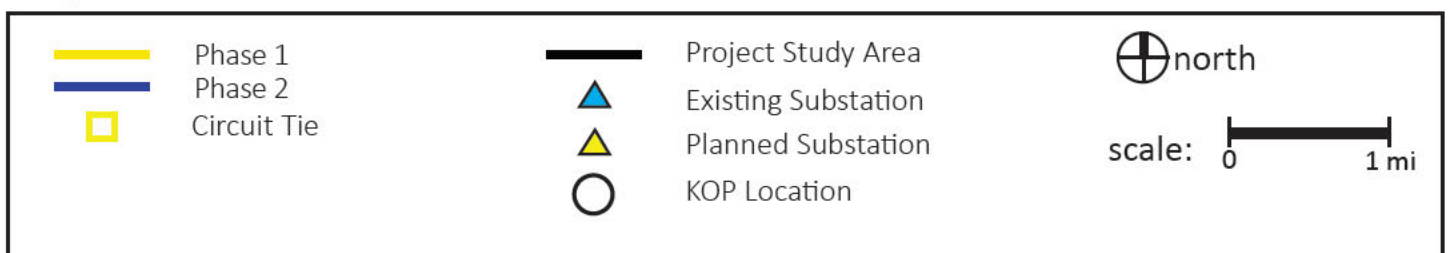
Prepared By:
Jeremy Palmer | Sole Proprietor

September 11th, 2026

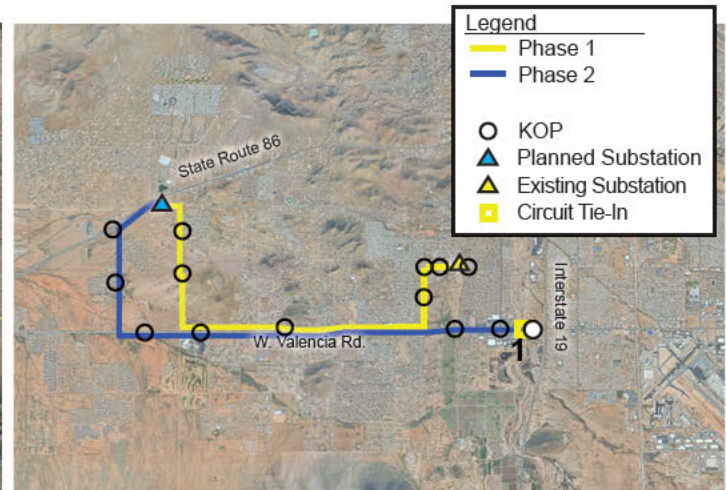
Southwest Tucson Reliability Project Key Observation Point (KOP) - Key Map



Legend



TEP Tucson Electric Power
Southwest Tucson Reliability Project
Key Observation Point (KOP) # 1



Notes:

Camera Information

- Type: Canon EOS RP
- Sensor: CMOS (Full-Frame) 35.9mm x 24mm
- Lens: Canon RF 24-105mm f/4-7.1 IS STM
- Focal Length: 50mm | F-Stop: f/10 | ISO:100
- Dimensions in pixel: 6240 x 4160

KOP

- Representative View for: westbound vehicular travelers
- Location: 1205W. Valencia Rd.
- Latitude: 32° 8'0.92"N; Longitude: 110°59'30.59"W
- View Point Elevation at Eye Level: 2,467 ft.
- Looking: west
- Structures Visible: Phase 2 poles/lines
- Image File Name: IMG_6266.JPG

Simulation Notes

- Photo Taken: June 2nd, 2026 at 11:39 am
- The image is based on a single photo and represents approximately 39.5 degree horizontal field of view.
- This view is approximately 772 feet east of the nearest pole represented in the simulation.
- The simulation is based on the best information available and is preliminary. Final alignment and structure locations are subject to change based on final engineering and other factors.

Key Observation Point (KOP) #1

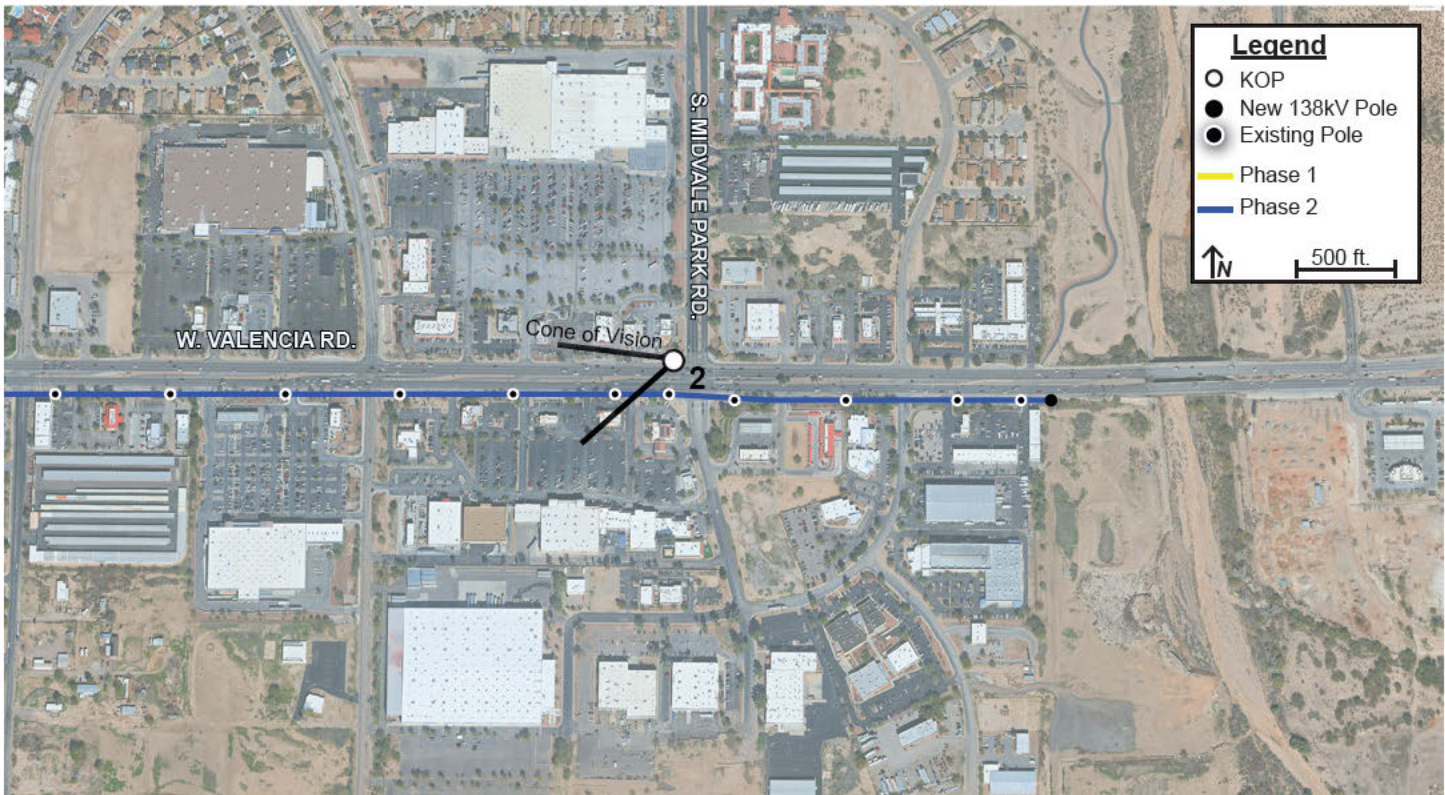
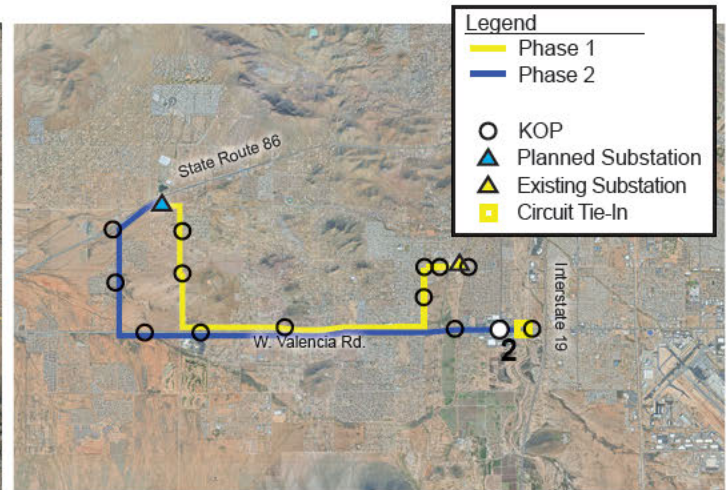


Existing Condition



Simulated Condition

TEP Tucson Electric Power
Southwest Tucson Reliability Project
Key Observation Point (KOP) # 2



Notes:

Camera Information

- Type: Canon EOS RP
- Sensor: CMOS (Full-Frame) 35.9mm x 24mm
- Lens: Canon RF 24-105mm f/4-7.1 IS STM
- Focal Length: 24mm | F-Stop: f/9 | ISO:100
- Dimensions in pixel: 6240 x 4160

KOP

- Representative View for: westbound vehicular travelers
- Location: 1606 W. Valencia Rd.
- Latitude: 32° 8' 2.18" N; Longitude: 110° 59' 58.00" W
- View Point Elevation at Eye Level: 2,474 ft.
- Looking: west
- Structures Visible: Phase 2 poles/lines
- Image File Name: IMG_6277.JPG

Simulation Notes

- Photo Taken: June 2nd, 2026 at 12:01 pm
- The image is based on a single photo and represents approximately 73.7 degree horizontal field of view.
- This view is approximately 201 feet northeast of the nearest pole represented in the simulation.
- The simulation is based on the best information available and is preliminary. Final alignment and structure locations are subject to change based on final engineering and other factors.

Key Observation Point (KOP) #2



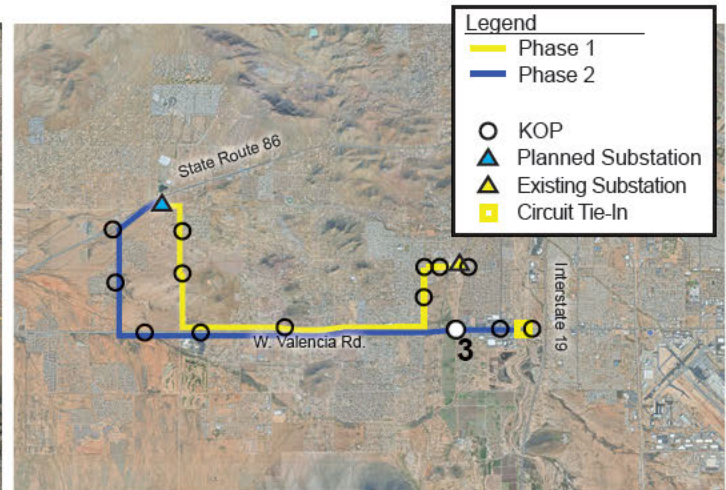
Existing Condition



Simulated Condition (no visible changes)

Phase 2

TEP Tucson Electric Power
Southwest Tucson Reliability Project
Key Observation Point (KOP) # 3



Notes:

Camera Information

- Type: Canon EOS RP
- Sensor: CMOS (Full-Frame) 35.9mm x 24mm
- Lens: Canon RF 24-105mm f/4-7.1 IS STM
- Focal Length: 24mm | F-Stop: f/9 | ISO:100
- Dimensions in pixel: 6240 x 4160

KOP

- Representative View for: westbound vehicular travelers
- Location: 1996 W. Valencia Rd.
- Latitude: 32° 8' 1.85"N; Longitude: 111° 0' 34.20"W
- View Point Elevation at Eye Level: 2,476 ft.
- Looking: west
- Structures Visible: Phase 2 poles/lines
- Image File Name: IMG_6305.JPG

Simulation Notes

- Photo Taken: June 2nd, 2026 at 12:16 pm
- The image is based on a single photo and represents approximately 73.7 degree horizontal field of view.
- This view is approximately 201 feet northeast of the nearest pole represented in the simulation.
- The simulation is based on the best information available and is preliminary. Final alignment and structure locations are subject to change based on final engineering and other factors.

Key Observation Point (KOP) #3



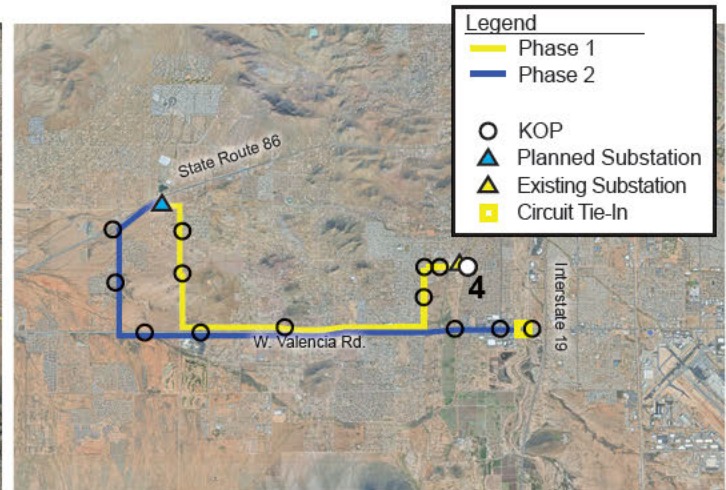
Existing Condition



Simulated Condition

Phase 2

TEP Tucson Electric Power
Southwest Tucson Reliability Project
Key Observation Point (KOP) # 4



Notes:

Camera Information

- Type: Canon EOS RP
- Sensor: CMOS (Full-Frame) 35.9mm x 24mm
- Lens: Canon RF 24-105mm f/4-7.1 IS STM
- Focal Length: 35mm | F-Stop: f/9 | ISO:100
- Dimensions in pixel: 6240 x 4160

KOP

- Representative View for: residential and recreational viewers
- Location: 2032 W. Drexel Rd.
- Latitude: 32° 8'53.82"N; Longitude: 111° 0'32.37"W
- View Point Elevation at Eye Level: 2,454 ft.
- Looking: west
- Structures Visible: Phase 1 poles/lines / Midvale Substation
- Image File Name: IMG_6389.JPG

Simulation Notes

- Photo Taken: June 2nd, 2026 at 12:47 pm
- The image is based on a single photo and represents approximately 54 degree horizontal field of view.
- This view is approximately 615 feet east of the nearest pole represented in the simulation.
- The simulation is based on the best information available and is preliminary. Final alignment and structure locations are subject to change based on final engineering and other factors.

Key Observation Point (KOP) #4

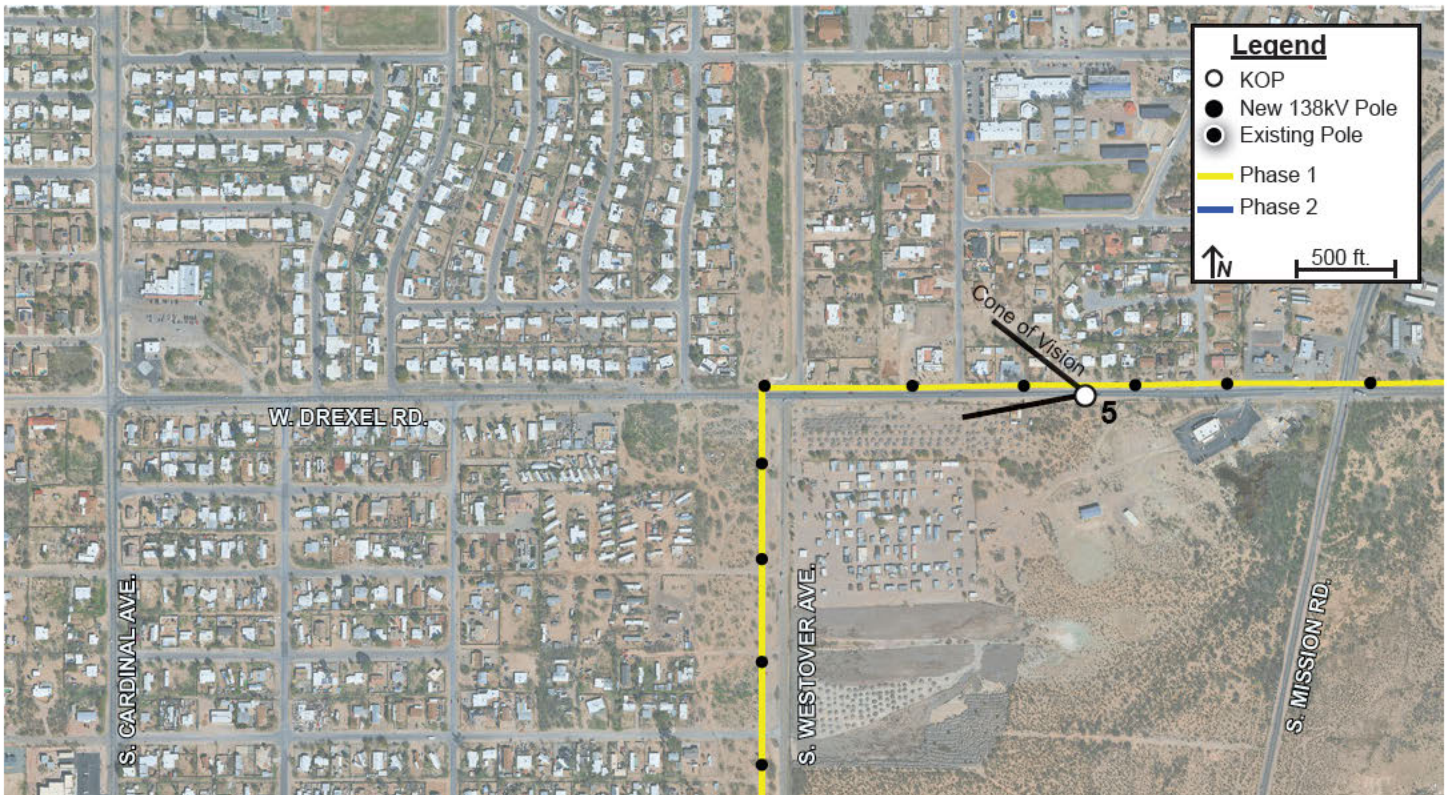
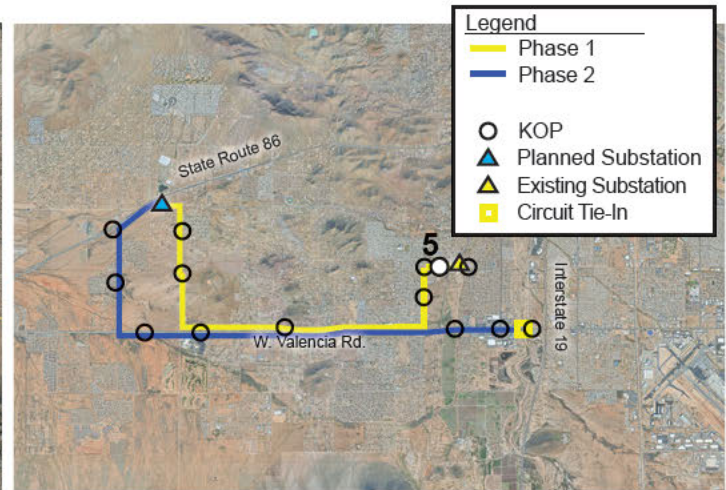


Existing Condition



Simulated Condition

TEP Tucson Electric Power
Southwest Tucson Reliability Project
Key Observation Point (KOP) # 5



Notes:

Camera Information

- Type: Canon EOS RP
- Sensor: CMOS (Full-Frame) 35.9mm x 24mm
- Lens: Canon RF 24-105mm f/4-7.1 IS STM
- Focal Length: 35mm | F-Stop: f/9 | ISO:100
- Dimensions in pixel: 6240 x 4160

KOP

- Representative View for: residential and recreational viewers
- Location: 2312 W. Drexel Rd.
- Latitude: 32° 8'53.84"N; Longitude:111° 0'59.03"W
- View Point Elevation at Eye Level: 2,469 ft.
- Looking: west
- Structures Visible: Phase 1 poles/lines
- Image File Name: IMG_6371.JPG

Simulation Notes

- Photo Taken: June 2nd, 2026 at 12:40 pm
- The image is based on a single photo and represents approximately 54 degree horizontal field of view.
- This view is approximately 530 feet east of the nearest pole represented in the simulation.
- The simulation is based on the best information available and is preliminary. Final alignment and structure locations are subject to change based on final engineering and other factors.

Key Observation Point (KOP) #5

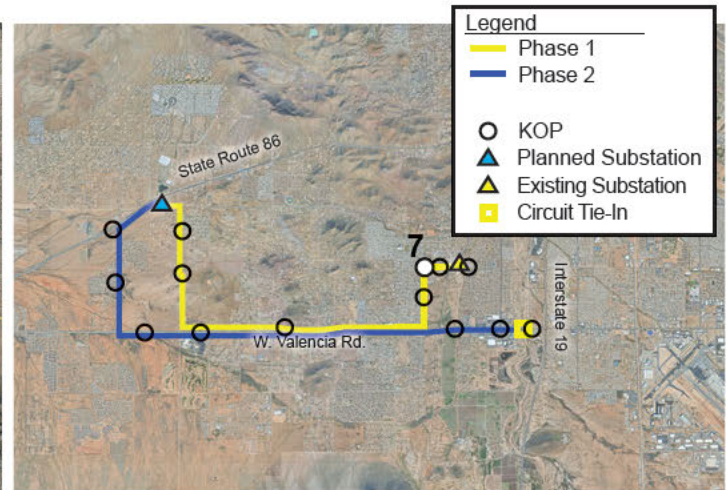


Existing Condition



Simulated Condition

TEP Tucson Electric Power
Southwest Tucson Reliability Project
Key Observation Point (KOP) # 7



Notes:

Camera Information

- Type: Canon EOS R7
- Sensor: CMOS (APS-C) 22.3mm x 14.8mm
- Lens: Canon RF -S 18-150mm f/3.5-6.3 IS STM
- Focal Length: 50mm | F-Stop: f/9 | ISO:100
- Dimensions in pixel: 6960 x 4640

KOP

- Representative View for: residential viewers
- Location: 5701 S. Westover Ave.
- Latitude: 32° 8'53.78"N; Longitude: 111° 1'12.54"W
- View Point Elevation at Eye Level: 2,484 ft.
- Looking: southwest
- Structures Visible: Phase 1 poles/lines
- Image File Name: Picture3.JPG

Simulation Notes

- Photo Taken: August 17th, 2026 at 8:53 am
- The image is based on a single photo and represents approximately 39.5 degree horizontal field of view.
- This view is approximately 189 feet northeast of the nearest pole represented in the simulation.
- The simulation is based on the best information available and is preliminary. Final alignment and structure locations are subject to change based on final engineering and other factors.

Key Observation Point (KOP) #7

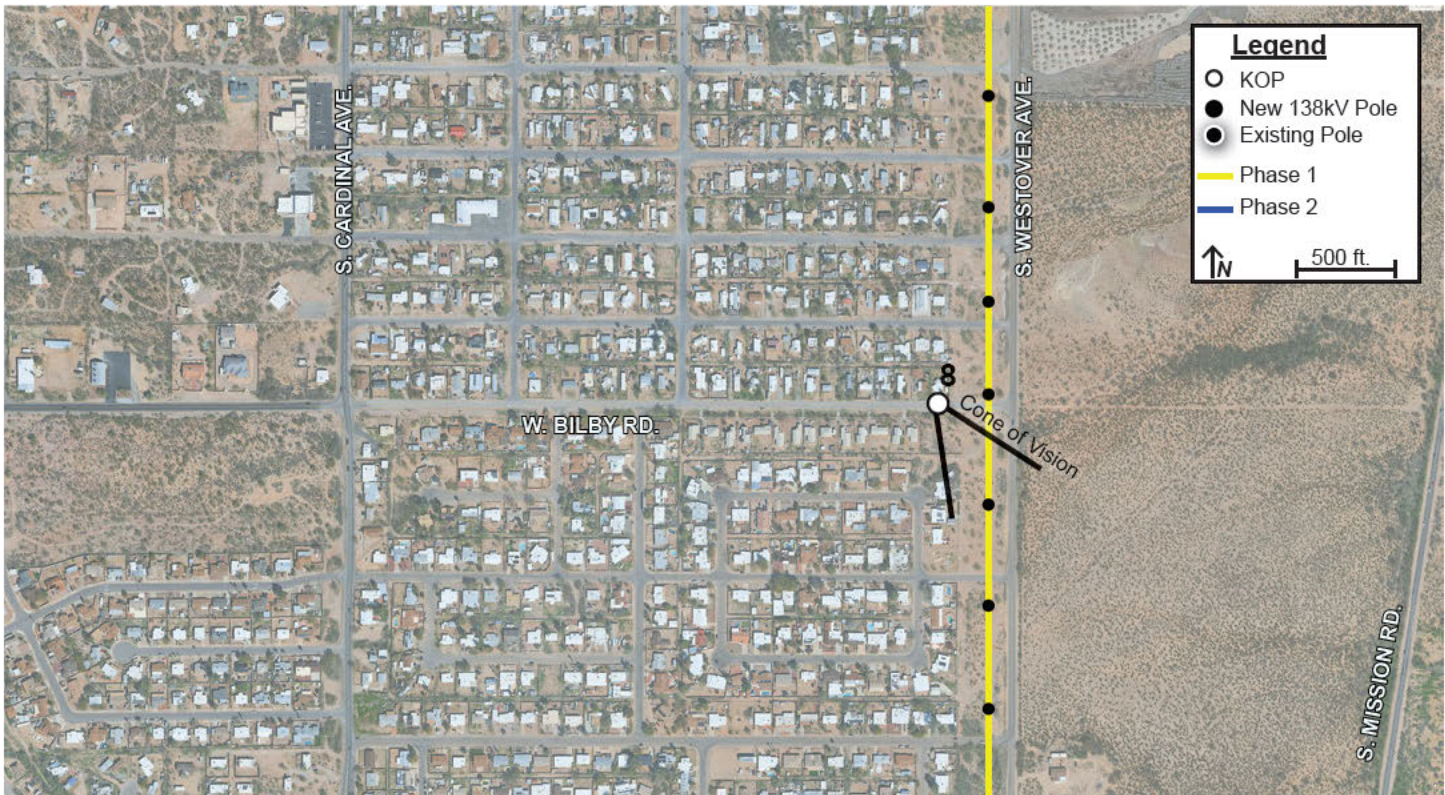
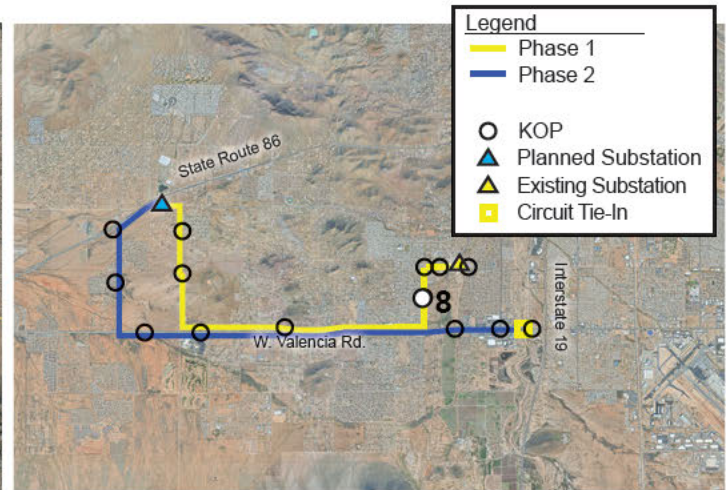


Existing Condition



Simulated Condition

TEP Tucson Electric Power
Southwest Tucson Reliability Project
Key Observation Point (KOP) # 8



Notes:

Camera Information

- Type: Canon EOS RP
- Sensor: CMOS (Full-Frame) 35.9mm x 24mm
- Lens: Canon RF 24-105mm f/4-7.1 IS STM
- Focal Length: 24mm | F-Stop: f/9 | ISO:100
- Dimensions in pixel: 6240 x 4160

KOP

- Representative View for: residential viewers
- Location: 2542 W. Bilby Rd.
- Latitude: 32° 8'27.95"N; Longitude: 111° 1'17.10"W
- View Point Elevation at Eye Level: 2,492 ft.
- Looking: southeast
- Structures Visible: Phase 1 poles/lines
- Image File Name: IMG_6363.JPG

Simulation Notes

- Photo Taken: June 2nd, 2026 at 12:36 pm
- The image is based on a single photo and represents approximately 73.7 degree horizontal field of view.
- This view is approximately 492 feet northwest of the nearest pole represented in the simulation.
- The simulation is based on the best information available and is preliminary. Final alignment and structure locations are subject to change based on final engineering and other factors.

Key Observation Point (KOP) #8



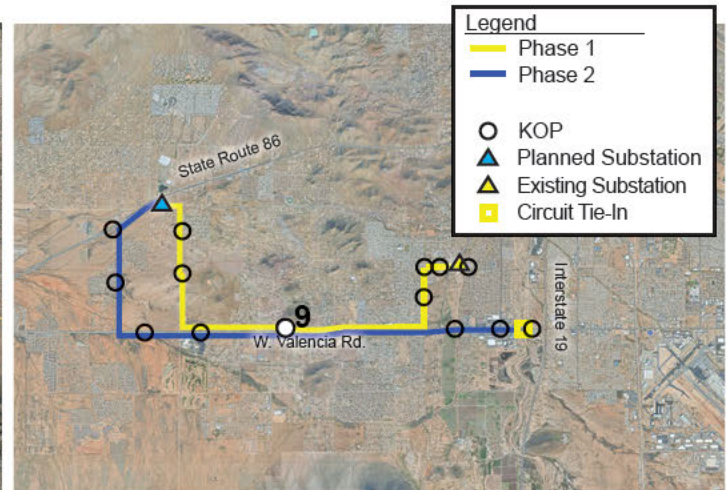
Existing Condition



Simulated Condition

Phase 1

TEP Tucson Electric Power
Southwest Tucson Reliability Project
Key Observation Point (KOP) # 9



Notes:

Camera Information

- Type: Canon EOS RP
- Sensor: CMOS (Full-Frame) 35.9mm x 24mm
- Lens: Canon RF 24-105mm f/4-7.1 IS STM
- Focal Length: 50mm | F-Stop: f/10 | ISO:100
- Dimensions in pixel: 6240 x 4160

KOP

- Representative View for: vehicular traffic
- Location: 4530 W. Valencia Rd.
- Latitude: 32° 8' 1.04"N; Longitude: 111° 3' 39.80"W
- View Point Elevation at Eye Level: 2,620 ft.
- Looking: west
- Structures Visible: Phase 1 & 2 poles/lines
- Image File Name: IMG_6428.JPG

Simulation Notes

- Photo Taken: June 2nd, 2026 at 1:05 pm
- The image is based on a single photo and represents approximately 39.5 degree horizontal field of view.
- This view is approximately 321 feet east of the nearest pole represented in the simulation.
- The simulation is based on the best information available and is preliminary. Final alignment and structure locations are subject to change based on final engineering and other factors.

Key Observation Point (KOP) #9



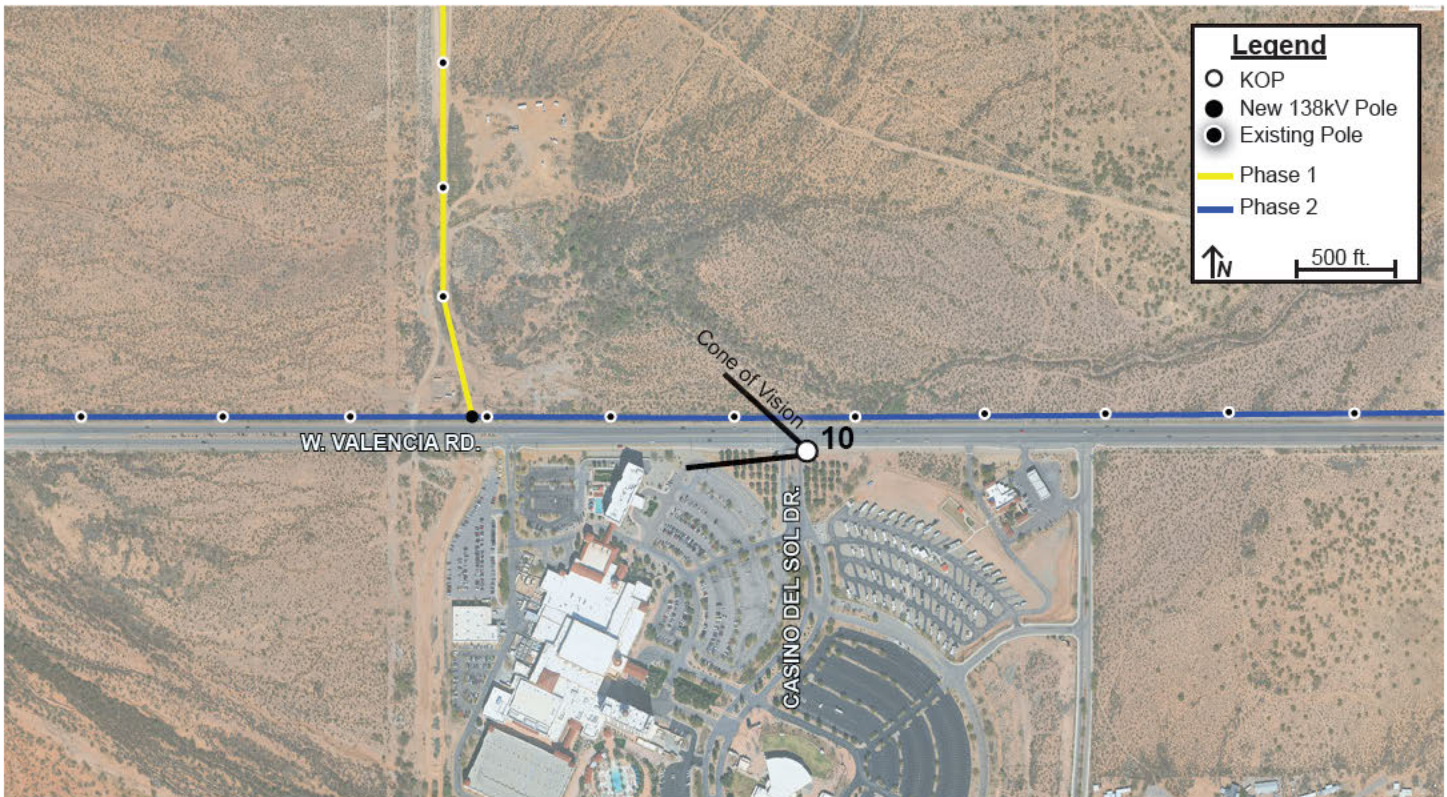
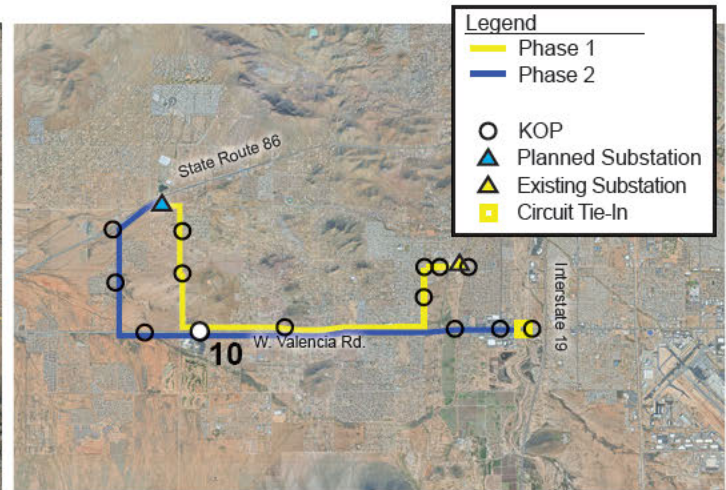
Existing Condition



Simulated Condition (no visible changes)

Phase 1 and 2

TEP Tucson Electric Power
Southwest Tucson Reliability Project
Key Observation Point (KOP) # 10



Notes:

Camera Information

- Type: Canon EOS RP
- Sensor: CMOS (Full-Frame) 35.9mm x 24mm
- Lens: Canon RF 24-105mm f/4-7.1 IS STM
- Focal Length: 24mm | F-Stop: f/9 | ISO:100
- Dimensions in pixel: 6240 x 4160

KOP

- Representative View for: casino/vehicular traffic
- Location: 5550 W. Valencia Rd.
- Latitude: 32° 7'59.78"N; Longitude: 111° 5'1.22"W
- View Point Elevation at Eye Level: 2,545 ft.
- Looking: west
- Structures Visible: Phase 1 & 2 poles/lines
- Image File Name: IMG_6435.JPG

Simulation Notes

- Photo Taken: June 2nd, 2026 at 1:11 pm
- The image is based on a single photo and represents approximately 39.5 degree horizontal field of view.
- This view is approximately 321 feet east of the nearest pole represented in the simulation.
- The simulation is based on the best information available and is preliminary. Final alignment and structure locations are subject to change based on final engineering and other factors.

Key Observation Point (KOP) #10



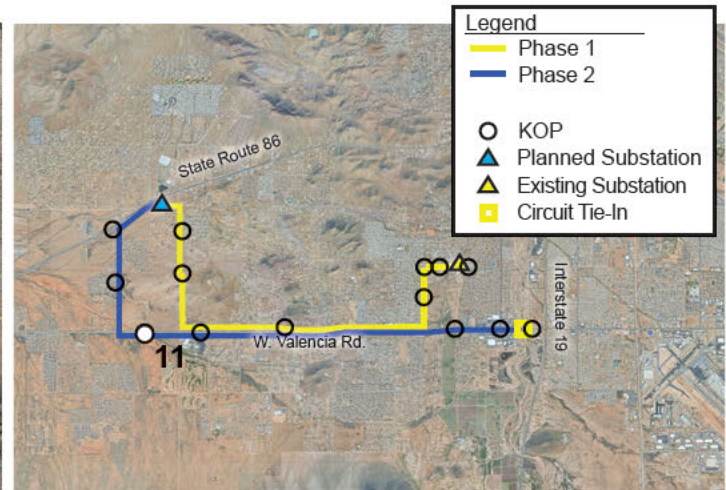
Existing Condition



Simulated Condition

Phase 1 and 2

TEP Tucson Electric Power
Southwest Tucson Reliability Project
Key Observation Point (KOP) # 11



Notes:

Camera Information

- Type: Canon EOS RP
- Sensor: CMOS (Full-Frame) 35.9mm x 24mm
- Lens: Canon RF 24-105mm f/4-7.1 IS STM
- Focal Length: 35mm | F-Stop: f/10 | ISO:100
- Dimensions in pixel: 6240 x 4160

KOP

- Representative View for: casino/vehicular traffic
- Location: 6195 W. Valencia Rd.
- Latitude: 32° 8'0.09"N; Longitude: 111° 5'49.89"W
- View Point Elevation at Eye Level: 2,510 ft.
- Looking: east
- Structures Visible: Phase 2 poles/lines
- Image File Name: IMG_6454.JPG

Simulation Notes

- Photo Taken: June 2nd, 2026 at 1:16 pm
- The image is based on a single photo and represents approximately 54 degree horizontal field of view.
- This view is approximately 313 feet west of the nearest pole represented in the simulation.
- The simulation is based on the best information available and is preliminary. Final alignment and structure locations are subject to change based on final engineering and other factors.

Key Observation Point (KOP) #11

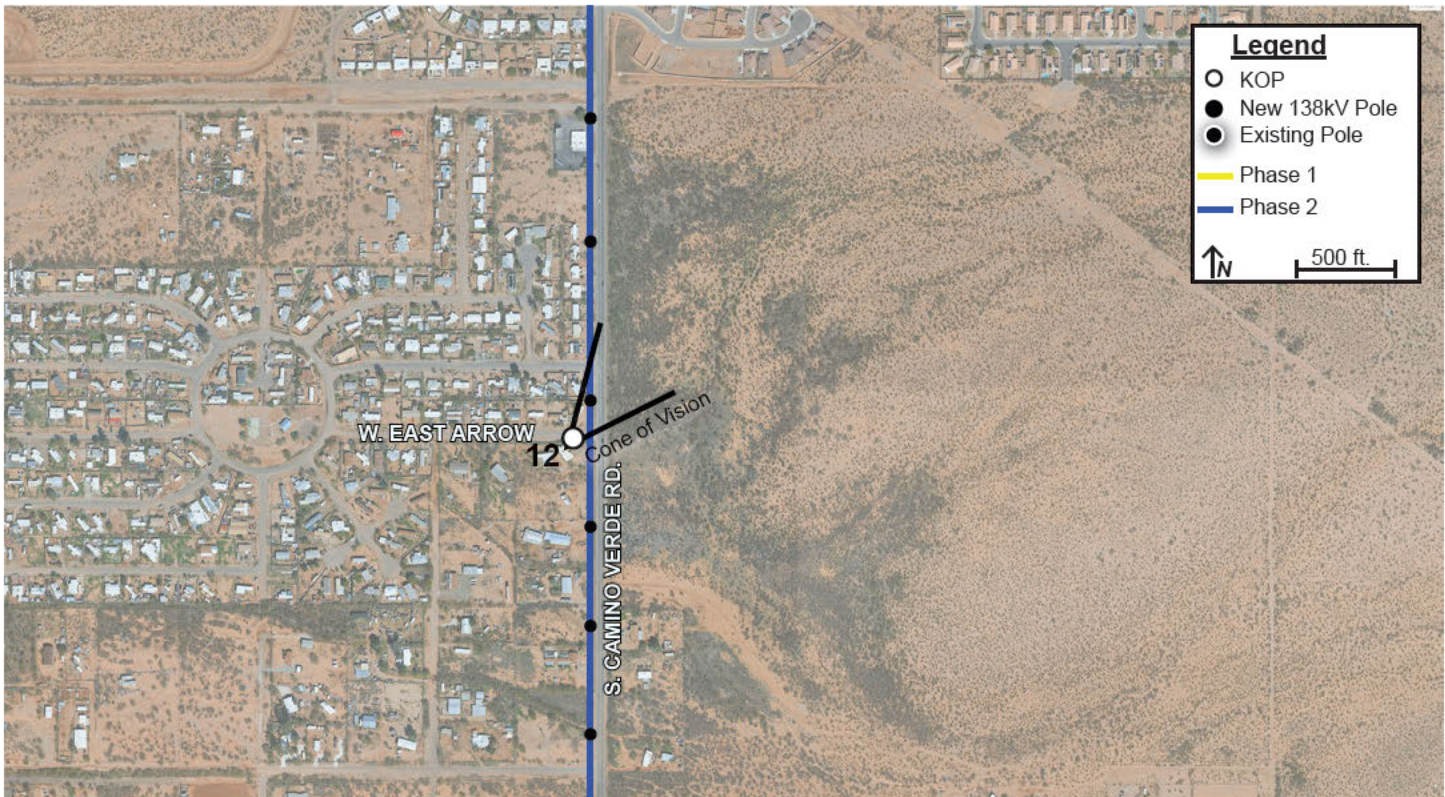
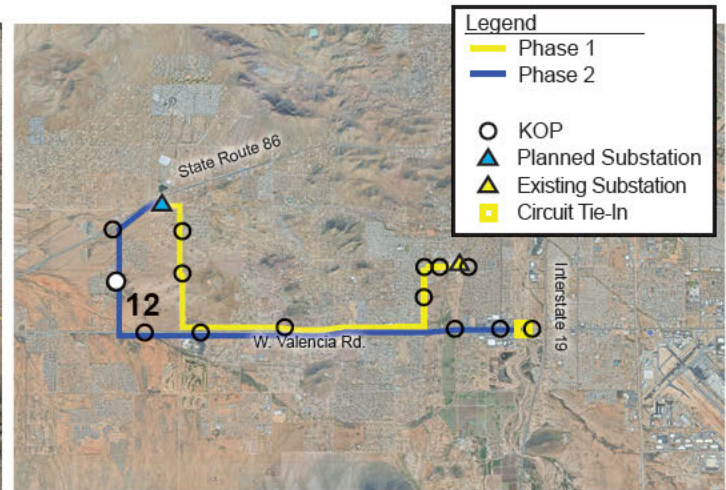


Existing Condition



Simulated Condition

TEP Tucson Electric Power
Southwest Tucson Reliability Project
Key Observation Point (KOP) # 12



Notes:

Camera Information

- Type: Canon EOS RP
- Sensor: CMOS (Full-Frame) 35.9mm x 24mm
- Lens: Canon RF 24-105mm f/4-7.1 IS STM
- Focal Length: 24mm | F-Stop: f/9 | ISO:100
- Dimensions in pixel: 6240 x 4160

KOP

- Representative View for: residential viewer
- Location: 6612 W. East Arrow
- Latitude: 32° 8'39.14"N; Longitude: 111° 6'24.59"W
- View Point Elevation at Eye Level: 2,485 ft.
- Looking: northeast
- Structures Visible: Phase 2 poles/lines
- Image File Name: IMG_6471.JPG

Simulation Notes

- Photo Taken: June 2nd, 2026 at 1:24 pm
- The image is based on a single photo and represents approximately 73.7 degree horizontal field of view.
- This view is approximately 214 feet southwest of the nearest pole represented in the simulation.
- The simulation is based on the best information available and is preliminary. Final alignment and structure locations are subject to change based on final engineering and other factors.

Key Observation Point (KOP) #12

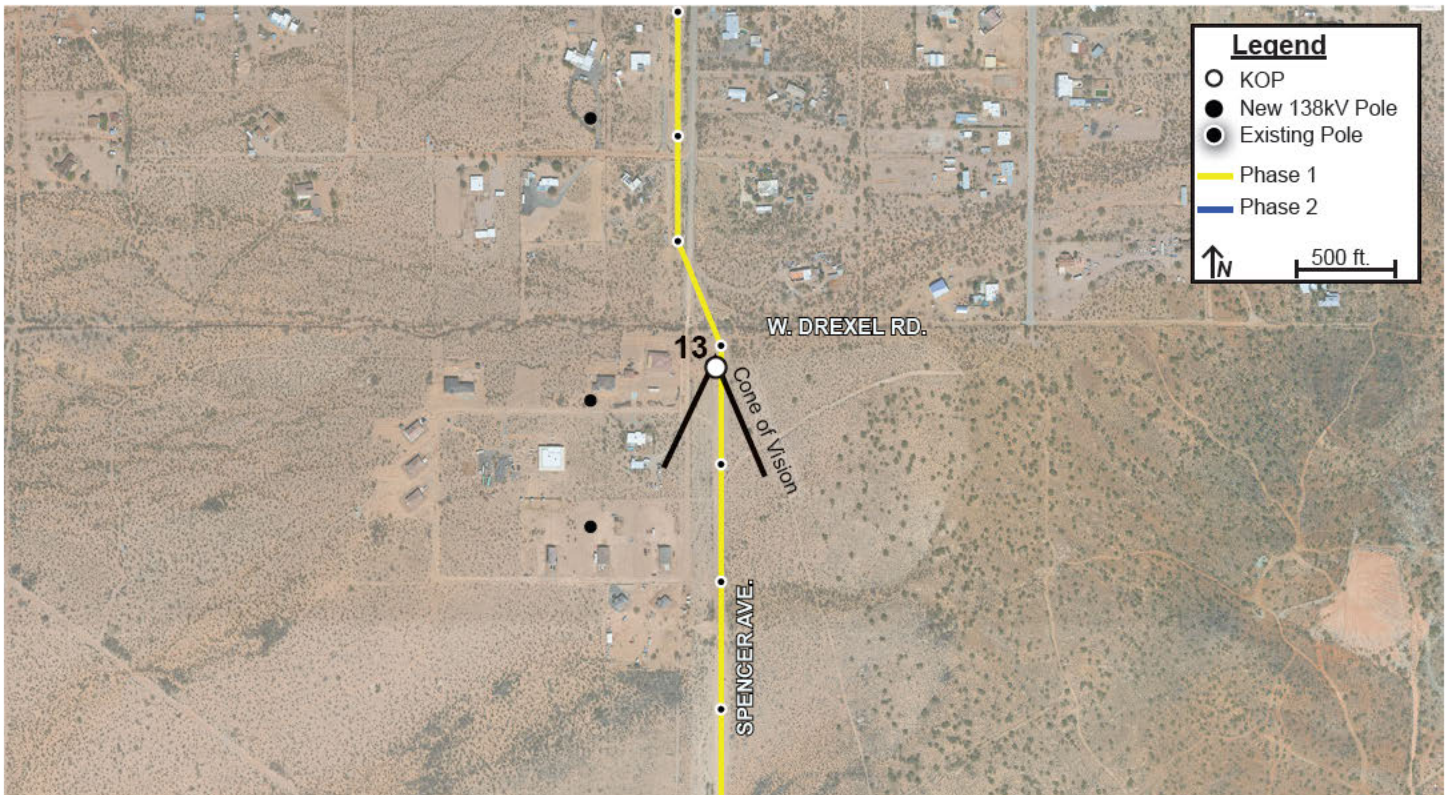
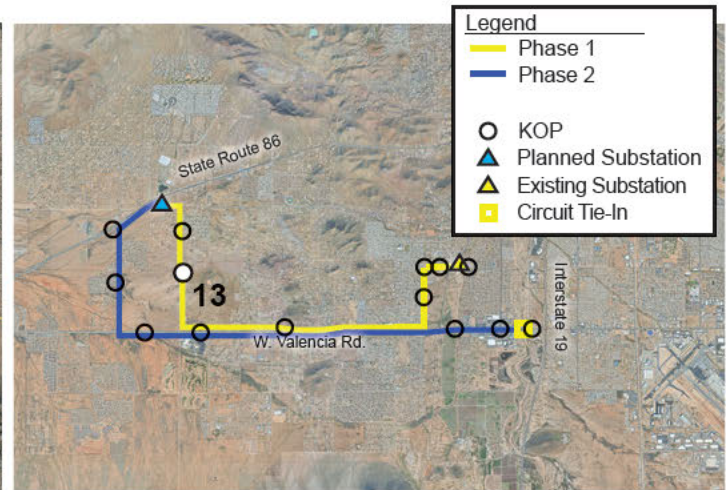


Existing Condition



Simulated Condition

TEP Tucson Electric Power
Southwest Tucson Reliability Project
Key Observation Point (KOP) # 13



Notes:

Camera Information

- Type: Canon EOS RP
- Sensor: CMOS (Full-Frame) 35.9mm x 24mm
- Lens: Canon RF 24-105mm f/4-7.1 IS STM
- Focal Length: 50mm | F-Stop: f/10 | ISO:100
- Dimensions in pixel: 6240 x 4160

KOP

- Representative View for: residential viewer
- Location: 5700 Spencer Ave.
- Latitude: 32° 8'51.55"N; Longitude: 111° 5'19.03"W
- View Point Elevation at Eye Level: 2,536 ft.
- Looking: south
- Structures Visible: Phase 1 poles/lines
- Image File Name: IMG_6477.JPG

Simulation Notes

- Photo Taken: June 2nd, 2026 at 1:33 pm
- The image is based on a single photo and represents approximately 39.5 degree horizontal field of view.
- This view is approximately 394 feet north of the nearest pole represented in the simulation.
- The simulation is based on the best information available and is preliminary. Final alignment and structure locations are subject to change based on final engineering and other factors.

Key Observation Point (KOP) #13

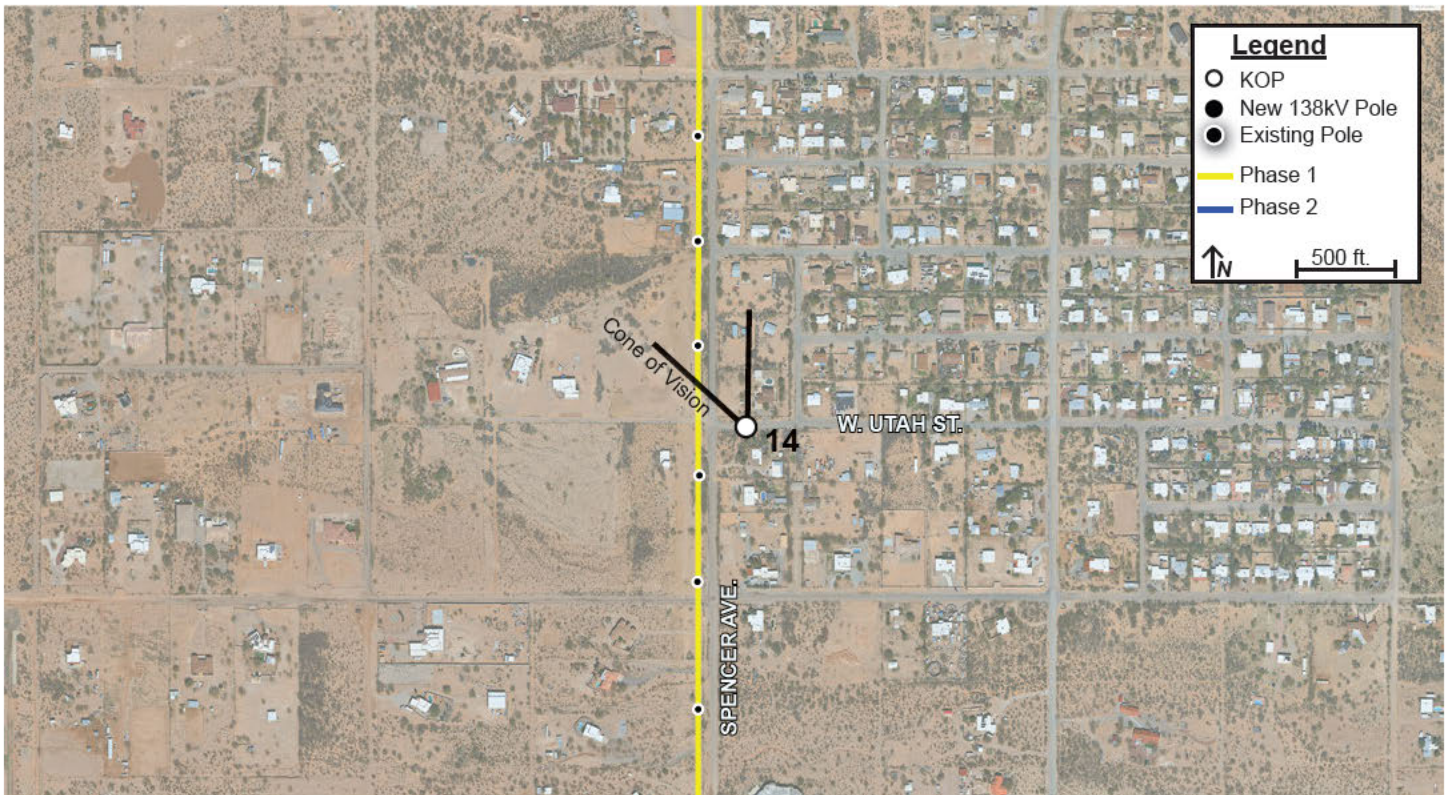
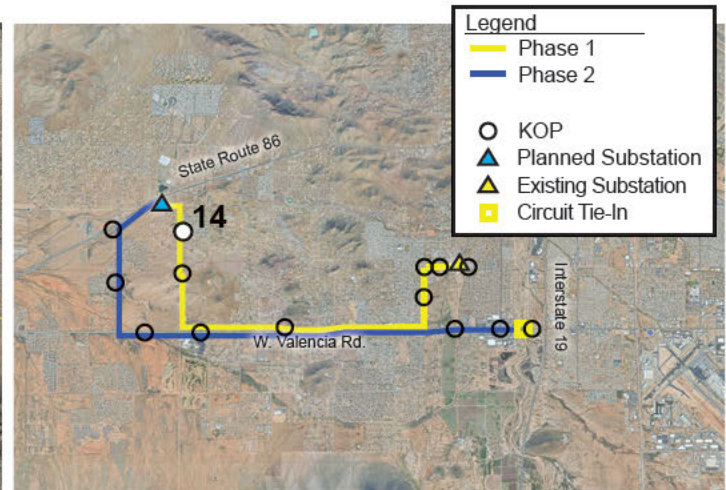


Existing Condition



Simulated Condition

TEP Tucson Electric Power
Southwest Tucson Reliability Project
Key Observation Point (KOP) # 14



Notes:

Camera Information

- Type: Canon EOS RP
- Sensor: CMOS (Full-Frame) 35.9mm x 24mm
- Lens: Canon RF 24-105mm f/4-7.1 IS STM
- Focal Length: 50mm | F-Stop: f/9 | ISO:100
- Dimensions in pixel: 6240 x 4160

KOP

- Representative View for: residential viewer
- Location: 5750 W. Utah St.
- Latitude: 32° 9' 25.07"N; Longitude: 111° 5' 18.66"W
- View Point Elevation at Eye Level: 2,538 ft.
- Looking: northwest
- Structures Visible: Phase 1 poles/lines
- Image File Name: IMG_6503.JPG

Simulation Notes

- Photo Taken: June 2nd, 2026 at 1:42 pm
- The image is based on a single photo and represents approximately 39.5 degree horizontal field of view.
- This view is approximately 357 feet southeast of the nearest pole represented in the simulation.
- The simulation is based on the best information available and is preliminary. Final alignment and structure locations are subject to change based on final engineering and other factors.

Key Observation Point (KOP) #14



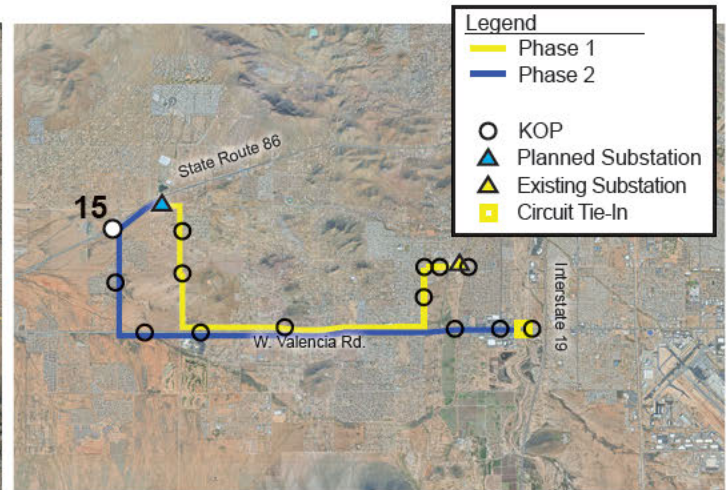
Existing Condition



Simulated Condition

Phase 1

TEP Tucson Electric Power
Southwest Tucson Reliability Project
Key Observation Point (KOP) # 15



Notes:

Camera Information

- Type: Canon EOS RP
- Sensor: CMOS (Full-Frame) 35.9mm x 24mm
- Lens: Canon RF 24-105mm f/4-7.1 IS STM
- Focal Length: 24mm | F-Stop: f/9 | ISO:100
- Dimensions in pixel: 6240 x 4160

KOP

- Representative View for: vehicular traveler
- Location: 5113 S. Camino Verde
- Latitude: 32° 9'31.33"N; Longitude: 111° 6'17.56"W
- View Point Elevation at Eye Level: 2,502 ft.
- Looking: northeast
- Structures Visible: Phase 2 poles/lines
- Image File Name: IMG_6517.JPG

Simulation Notes

- Photo Taken: June 2nd, 2026 at 1:53 pm
- The image is based on a single photo and represents approximately 73.7 degree horizontal field of view.
- This view is approximately 269 feet southwest of the nearest pole represented in the simulation.
- The simulation is based on the best information available and is preliminary. Final alignment and structure locations are subject to change based on final engineering and other factors.

Key Observation Point (KOP) #15



Existing Condition



Simulated Condition

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EXHIBIT H

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Exhibit H: Existing Plans

As stated in Arizona Administrative Code R14-7-119 of the Rules of Practice and Procedure Before Power Plant and Transmission Line Siting Committee, Exhibits to Application, Exhibit H:

To the extent applicant is able to determine, state the existing plans of the state, local government, and private entities for other developments at or in the vicinity of the proposed site or route.

H.1 Introduction

Tucson Electric Power Company (TEP) evaluated the potential impacts of the Southwest Tucson Reliability Project (Project) on existing land use plans within the broader Area of Analysis. This exhibit provides a summary and analysis of the potential impacts of the Project on current land uses, adopted land use plans, and any identified development proposals within the Area of Analysis, which was defined by a 0.5-mile buffer around the Phase 1 and Phase 2 Routes. General land use plan designations for the Project are illustrated in Exhibit H-1. The entire Area of Analysis is located within unincorporated Pima County and the City of Tucson (COT), Arizona.

H.2 Land Ownership and Jurisdiction

Land use jurisdiction refers to the limits of administrative authority maintained by federal, state, tribal, regional, or local government agencies responsible for land use planning and policies. The Area of Analysis includes land under the jurisdiction of Pima County, COT, the State of Arizona, including the Arizona State Land Department (ASLD) and the Arizona Department of Transportation (ADOT), the Bureau of Land Management (BLM), and the Pascua Yaqui and Tohono O'odham Tribes.

During Project outreach, TEP consulted with local agencies, government representatives, and stakeholders within the Siting Study Area and along the alternative route corridors to determine and understand existing plans. Outreach and public participation activities are detailed in Exhibit J.

H.3 Local Government Plans and Land Use Ordinances

Local agencies have established land use plans and regulations that govern the type, timing, and intensity of land use activities. TEP reviewed these applicable land use plans to identify those that may be relevant to the Project.

H.3.1 Pima County Comprehensive Plan

The Pima County Comprehensive Plan is a long-range policy document that guides land use, growth, and development across unincorporated areas of Pima County, Arizona. Originally adopted in 1992 and updated through the "Pima Prospers" initiative in 2015 and in 2025, the Pima County Comprehensive Plan outlines strategies to support sustainable development while preserving Pima County's natural, cultural, and scenic resources. It promotes compact and efficient development patterns, discourages urban sprawl, and emphasizes the importance of protecting open space and environmentally sensitive lands through integration with the Sonoran Desert Conservation Plan (Pima County 2015).

The Pima County Comprehensive Plan also coordinates infrastructure planning, such as transportation, water, and public services, with land use policies to ensure orderly and resource-conscious growth. In addition, it identifies

Community Character Areas to tailor land use strategies to the distinct needs of different regions within the county. While the Pima County Comprehensive Plan does not directly regulate the development of utility-scale transmission infrastructure (Pima County 2015), it provides a framework for evaluating such projects to ensure compatibility with land use designations, visual quality, and environmental priorities.

The Pima County Comprehensive Plan (Pima Prospers) includes regional goals, and infrastructure planning elements that are directly applicable to this Project. These components help guide development in a way that supports community values, environmental stewardship, and coordinated infrastructure growth. Below is a breakdown of how these elements relate to transmission line development and whether the project would be considered in conformance with the plan (Pima County 2015).

Pima Prospers included the Housing Supply and Analysis Study by the Drachman Institute. In the Drexel Heights and West Valencia Census Designated Places, adjacent to the Area of Analysis, the Drachman study identified over 5,827 new housing units that need to be constructed in the next 10 to 20 years to meet current and future demand. Pima Prospers' Land Use Element section policy states, "Prepare for projected population growth by identifying areas likely to experience the greatest growth, and planning accordingly for entitled lands, housing and employment centers, infrastructure, services, and recreation areas to support new residents."

The 2025 plan, as updated, is the current guiding plan. The Area of Analysis is located within the Comprehensive Plan's Southwest Planning Area. There are no conflicts between the Project and the Pima County Comprehensive Plan (see Exhibit A-4 for a map of Pima County's land use plan).

H.3.2 Pima County Special Area Policies

Two Pima County Special Area Policies are within the Area of Analysis.

Special Area Policy 17 – Tohono O'odham San Xavier District

In recognition of Tohono O'odham Nation boundaries, this special area overlays all areas planned for urban land use intensities along the Nation's boundaries. Currently, urban intensities are designated for portions of the San Xavier District boundary. The general purpose of the special area designation is to recognize tribal sovereignty and promote dialogue and coordination between the Nation, especially the San Xavier District and Pima County. A more specific objective is to mitigate negative impacts of potentially incompatible urban development with setback and landscaping requirements.

The policy specifically targets residential and non-residential setback requirements and bufferyards, as well as building heights. The policy does not specify any requirements or restrictions to utility development, therefore there is no conflict between this policy and the Project.

Special Area Policy 29 – Southwest Infrastructure Plan

The Southwest Infrastructure Plan is generally bounded by Tucson Mountain Park on the north, Mission Road on the east, the Tohono O'odham Nation - San Xavier District on the south, and Sandario Road on the west. This includes portions of the Black Wash Administrative Floodway located in the Area of Analysis. The policy is used to guide needs, obligations, funding, and provision of infrastructure and services related to transportation, flood control, wastewater, parks and recreation, and other governmental facilities. The policy is designed to restrict residential development in sensitive areas and restrict the issuance of building permits in flood prone areas until certain offsite flood control improvements are constructed to remove proposed development out of the Federal Emergency Management Agency (FEMA) 100-year floodplain.

Although Phase 2 of the Project crosses the Black Wash Administrative Floodway, it will use existing structures or rebuild structures in road right-of-way (ROW) and will not impact the floodway. Furthermore, the policy does not specify any requirements or restrictions to utility development, therefore there is no conflict between this policy and the Project.

H.3.3 Pima County Sonoran Desert Conservation Plan

The Pima County Sonoran Desert Conservation Plan (SDCP) is the County's comprehensive regional framework that balances environmental preservation with economic development across five key elements: critical habitats/biological corridors, riparian areas, mountain parks, historical/cultural assets, and ranch conservation. The Project falls under the Alter Valley and Middle Santa Cruz planning subareas. Under the SDCP, the Multi-Species Conservation Plan (MSCP) serves as a regional framework that acts as a pre-approved federal permit. It protects 44 specific species and their habitats, allowing local development to proceed without individual environmental approvals.

The SDCP provides for a "Conservation Lands System" (CLS), identifying lands necessary to achieve SDCP biological goals, while delineating areas suitable for development. The CLS designates different areas as "Important Riparian Areas", "Biological Core Management Areas", "Multiple Use Management Areas," and "Agriculture In-Holdings within the Conservation Lands System" (Exhibit H-2) (Pima County 2025). Within the Area of Analysis are Important Riparian Areas located along many of the washes (see Exhibit C-2) and Multiple Use Management Areas along the Santa Cruz River (Exhibit H-2). Each of these designations has its own set of associated land use policies and conservation guidelines.

In addition, the following CLS preservation lands are located within the Area of Analysis including:

- Black Wash Open Space, located on the north side of Valencia Road and west of Camino Verde. Phase 2 crosses through this area but exists today and no additional construction is required.
- Dakota Wash Open Space, located on Mission Road and Nebraska Street. This is north of Phase 1 and would not be impacted by the Project.
- Floodplain Parcel 138-22-002E, located directly south of the Circuit Tie. Dependent on siting and coordination with Pima County and COT, the Circuit Tie would either be in Valencia Road ROW or directly south on the parcel. A Floodplain Use permit would be required in this case.
- Valencia Archaeological Preserve, located north of Valencia Road between I-19 and Calle Santa Cruz. This is north and east of Phase 2 and would not be impacted by the Project.

Policies of the CLS are applicable when private developments apply for a rezoning or request other discretionary changes in land use. TEP does not require a rezoning as part of the Project and is not requesting any discretionary land use changes. As a result, the Project complies with the SDCP.

H.3.4 Pima County Zoning and Development Code

The Pima County Zoning and Development Code establishes regulations to guide land use and development within the County, with the primary purpose of protecting public health, safety, and general welfare. It serves as a tool for implementing the goals and objectives of the Pima County Comprehensive Plan by outlining zoning classifications, permitted land uses, development standards, and procedures for land use changes. The Pima County Zoning and Development Code designates a range of zoning categories including residential, commercial, industrial, and resource-based zones, each with specific regulations for density, setbacks, lot size, and permitted uses. It also addresses special use permits, variances, and performance criteria for sensitive areas such as floodplains, hillside development overlay zones, historic overlay zones, and environmentally sensitive lands.

Through these standards, the Pima County Zoning and Development Code aims to ensure orderly growth, preserve community character, and support sustainable development across unincorporated Pima County.

Within the portion of the Area of Analysis located in Pima County, the land is zoned as Rural (RH, SH, SR), Residential (CR-1, CR-2, CR-3, CR-4, CR-5, CMH-1, CMH-2, GR-1, TH, TR), Commercial (CB-1, CB-2), and Specific Plan (SP). For a detailed view of the zoning that is contained within the Area of Analysis, please refer to Exhibit H-3.

Electric transmission facilities are a permitted use within all zones. Therefore, the Project would comply with Pima County Zoning.

H.3.5 Pima County Major Streets and Scenic Routes

The Pima County Major Streets Plan is a map and an ordinance that establishes adequate future street widths along major streets for unincorporated Pima County (Pima County, 2026). Future ROW widths vary from 80 feet wide for a typical collector street and up to 200 feet wide for a high-volume arterial street. Within the project area, portions of Valencia Road are mapped as high volume arterial with a ROW width of between 150 and 175 feet.

The Pima County Scenic Routes Plan is a map and ordinance that establishes setbacks and other development regulations to preserve and enhance visual resources along designated roadways. The intent of the scenic route designation is to protect property values and the character of neighborhoods; protect and enhance the unique character of a community, including vegetation, architecture and geology; protect and enhance the economic value of tourism; and protect natural resources. In the project area, three roads are mapped as Pima County Scenic Routes: Valencia Road and Mission Road are classified as Scenic, Major Routes, and Ajo Way is classified as a Scenic State Highway. Per the Pima County Zoning and Development Code, all new utility lines along scenic routes shall be underground unless the line is a 46-kV or greater transmission line (PC Zoning, 18.77.040.E. 5. a); the Project proposes a 138-kV transmission line.

The Project is exempt from the Pima County Scenic Road regulations.

H.3.6 Pima County Rezoning Policies

One Pima County Rezoning Policy is within the Area of Analysis. Rezoning Policy 117 is located on the north and south sides of West Valencia Road, east of South Mark Road. The policy is specific to the development of parcels along Valencia Road; development shall promote mixed use and compact urban development, with residential uses at five residences per acre or higher to avail transit opportunities. CLS guidelines and Southwest Infrastructure Plan policies shall be applied.

The Project would utilize existing structures in this area and would not impact the applicable parcels. Furthermore, the rezoning policy does not specify any requirements or restrictions to utility development, therefore there is no conflict between this policy and the Project.

H.3.7 City of Tucson General Plan and Implementation

Plan Tucson (2025), the COT's General Plan, adopted in November 2025, presents guidance for the future growth and development of COT. Its scope is limited to the corporate limits of the COT. The General Plan is a policy document focusing on a wide range of elements, including environmental planning, cultural heritage, land use, transportation, parks, safety, public services, economic development, water resources, and housing. The Plan

Tucson Future Growth Scenario Map identifies neighborhood centers and corridors, mixed-use activity centers, and business centers within the Area of Analysis. Land Use guidelines “support mixed-use activity centers and activity nodes at major arterials and collector roads in order to increase transit use, reduce air pollution, increase water efficiency, improve the delivery of public and private services, and create inviting places to live, work, and play” (COT, 2025).

The General Plan does not include specific guidance for transmission line construction. The General Plan’s guidance for utility construction includes “improv[ing] the appearance of above-ground utilities and structures by requiring facilities to be located, installed, and maintained to minimize visual impact and preserve access to views (p 205)” and “[c]oordinat[ing] with utility companies and other public service providers for the planning of infrastructure, facilities, and services, making sure infrastructure and facility construction is sensitive to community health, environment, and historic resources (p 184)” (see Exhibit A-4 for a map of COT’s land use plan). There are no conflicts between the Project and the COT General Plan.

H.3.8 City of Tucson Specific Plans

The COT has adopted specific plans to implement the General Plan. Two COT specific plans are within the Area of Analysis including the Santa Cruz Area Plan and the Major Streets and Routes Plan (MS&R), are discussed below.

Santa Cruz Area Plan, 1984

The Santa Cruz Area Plan was adopted by COT Mayor and Council in 1984 with the intended goal to guide future development and coordinate governmental actions when developing the Santa Cruz River and its immediate environs as a major cultural and recreational resource, while stabilizing and improving adjacent neighborhoods. The Santa Cruz Area Plan includes an area extending approximately 14 miles from Los Reales Road on the south to Orange Grove Road on the north. It is bounded on the east by Interstates 10 and 19 and on the west by Mission and Silverbell Roads. The proposed Santa Cruz River Park concept extends throughout the length of the plan and is the central focus of the area.

Phase 2 of the Project along Valencia Road is within the plan area. Disturbance in this area is limited to the addition of the new Circuit Tie structure within an area that has been previously disturbed by infrastructure development. The addition of the Circuit Tie structure in-line with an existing transmission line will not impede the COT’s intended goals.

Major Streets and Routes Plan, 1982

The MS&R Plan (Resolution No. 12045, dated November 15, 1982) is a set of policies that guide “balancing the need to minimize disruption to existing land uses while safely and efficiently providing the necessary capacity to our streets.” The MS&R also designates scenic and gateway routes. Mission Road (scenic) and Valencia Road (gateway) are present in the Area of Analysis.

Mission Road

Phase 1 crosses Mission Road at Drexel Road. The Drexel Road ROW is under the jurisdiction of Pima County, with the scenic route designation beginning at the north Drexel Road ROW boundary and extending north, within the city limits. The Project would be sited outside of the area designated scenic by the COT.

Valencia Road

Phase 2 is located within the West Valencia Road ROW from the city limits at the east boundary of the Tohono O’odham Nation, east to the Circuit Tie. This section of Phase 2 entails re-energizing an existing 115-kilovolt (kV) transmission line to 138-kV and constructing the Circuit Tie structure on the south side of Valencia Road.

The MS&R provides the following guideline for Public Improvements of Gateway Routes (Policy 5.A): “Utilities in the right-of-way or visible from the street should be placed underground, wherever possible (Policy 5, Section A.4). The MS&R similarly sets forth the development guideline for Public Improvements of Scenic routes stating that, “[w]henver possible, new utilities or relocated utilities in the right-of-way or adjacent easements should be placed underground.”

Since the facilities located within a Gateway Route are not new, but existing, there are no conflicts between the Project and the MS&R Plan.

H.3.9 City of Tucson Zoning

The COT uses the Unified Development Code (UDC) as its official zoning code for all land development and land use regulation within the city limits. The purpose of the COT’s UDC is to protect and promote the general health, safety, and welfare of all present and future residents of the COT. More specifically, the UDC serves as a tool to implement the goals and policies described in the COT’s General Plan.

Within the portion of the Area of Analysis located in COT, the land is zoned as Rural (SH), Residential (R-1, R-2, R-3, RX-1, TH, TR), Commercial (CB-1, CB-2, O-3), Industrial (I-2, I-2) and Parking (P-1). For a detailed view of the COT zoning that is contained within the Area of Analysis, please refer to Exhibit H-3.

Gateway Corridor Zone Overlay District

The Gateway Corridor zone codifies the goals and policies outlined in the MS&R Plan. The Phase 2 Route is located within the Gateway Corridor Overlay zone along Valencia Road, between the Circuit Tie and the Tohono O’odham San Xavier District boundary.

The portion of Phase 2 located within the Gateway Corridor Zone is in compliance with requirements set forth under the UDC. First, because the Project uses existing structures and TEP does not propose an expansion to these structures, the Project does not include the installation of “new utilities” or an expansion of existing utilities that are subject to the overlay zone requirements (UDC, Article 5.5.4.B). Second, with respect to the single new pole that TEP proposes to install west of the Santa Cruz River on the south side of Valencia Road (Circuit Tie), since it will be set in line with an existing overhead system and does not extend the system, it is not considered a new utility subject to requirements of the overlay zone. Specifically, UDC Article 5.5.4.B.1.b provides: “When necessary to serve new development, a new pole set in line with, but not extending, an existing overhead system used to serve new development is not considered a new utility” and is therefore not subject to overlay zone requirements.

As a result, the Project is in compliance with COT zoning.

H.3.10 Tucson International Airport and Ryan Airfield

Tucson International Airport (TUS) is located in southcentral COT, between I-10 and I-19. TUS property comprises a total of 7,938 acres, and the airfield has an elevation of 2,643 feet above mean sea level (amsl). It is classified as a primary commercial service airport by the Federal Aviation Administration (FAA) since it has over 10,000 passenger boardings per year.

The current 2014 TUS Master Plan lays out the strategy for development of the airport. The Plan is used to identify the goals and objectives of TUS. The Plan also provides recommendations for ensuring compatible land uses surrounding the airport.

The Phase 2 Route at the Circuit Tie (closest point) is over 5,200’ beyond the designated approach and departure

corridor (west edge) of Pima County's Airport Environs Zone (160'-180' structural height restriction).

Ryan Airfield (RYN) is 14 miles southwest of Tucson in Pima County. RYN property comprises a total of 1,804 acres, and the airfield has an elevation of 2,417 feet amsl. It is classified as a general aviation (GA) reliever airport by the FAA, relieving TUS. RYN is one of five GA airports located in Pima County.

The current 2020 Ryan Airfield Master Plan is a 20-year blueprint responding to future airport demand by guiding timely development of new or expanded facilities. The Plan is used to evaluate the airport's capabilities, infrastructure needs and role in the economy in relation to forecasted aviation activity. The Plan also provides recommendations for ensuring compatible land uses surrounding the airport.

The Phase 2 Route at South Camino Verde and Ajo Highway is over 3,200' beyond the end of the designated approach and departure corridor of Pima County's Airport Environs Zone (280'-300' structural height restriction).

TEP has met with Tucson Airport Authority representatives, who operate both airports, and based on their recommendations, TEP utilized the FAA Obstruction Evaluation/Airport Airspace Analysis Pre-Screening Tool to determine if any of the proposed transmission line structures (based on preliminary design) would require FAA notice (FAA 2026). The results of the pre-screening indicated that portions of the Project requiring new or rebuilt structures may affect the National Airspace System. The pre-screening determined that TEP will be required to notice FAA by submitting Form 7460 for each new structure at least 60 days prior to construction. Once a route is approved and a final design is completed, TEP will submit the notice and coordinate with FAA to mitigate any potential impacts.

H.4 State (including Agencies) Government Plans

The State of Arizona does not have an adopted land use plan, and each State agency may have different mechanisms for project review and approval. The Phase 2 Route crosses lands administered by ASLD and would require TEP to obtain a ROW lease. ASLD attended Project stakeholder meetings and did not express any concerns related to the Project.

The Phase 2 Route may also require an encroachment permit from ADOT if it is constructed in or crossing Ajo Highway ROW. TEP met with ADOT and they stated that the Project should be located a safe distance from Ajo Highway.

H.5 Federal

H.5.1 Bureau of Land Management

The Phase 1 and Phase 2 routes cross lands managed by the BLM. The Phase 1 route is located on BLM lands along portions of Spencer Avenue, where TEP will add a second circuit to the existing 115-kV transmission line. In addition, a portion of the Phase 2 route would be constructed on BLM land south of West Valencia Road and east of South Camino Verde. This would require TEP to obtain a new right-of-way from BLM for the placement of the second circuit on the existing structures and the new construction.

These areas are managed under the Phoenix Resource Management Plan (RMP) (BLM 1988). Review of the RMP indicates that the Project is in compliance with the plan. As discussed in Exhibit E, the Project is in a Class 3 Visual Resource Management Area, which "allows for a moderate level of change, that may attract attention but should

not dominate the view”. The Project will be subject to the National Environmental Policy Act, however since the level of new disturbance will be minimal, it is expected that the Project will be Categorically Excluded.

TEP also met with BLM and Tucson Field Office staff did not express any concerns with the Project and went over the process for obtaining a right-of-way grant in these areas.

H.5.2 Military

The Project is not in the vicinity of Department of Defense Lands, Military Training Routes or Military Operation Areas. FAA policies that generally relate to Military Training Routes and Military Operation Areas are military airspace designations that define military airspace use as separate from civilian airspace.

H.6 Tribal

H.6.1 Tohono O’odham Nation

The Tohono O’odham Nation is a federally recognized tribe that includes approximately 28,000 members occupying tribal lands in Southwestern Arizona. The Nation is the second largest reservation in Arizona in both population and geographical size, with a land base of 2.8 million acres and 4,460 square miles, approximately the size of the State of Connecticut. The Project is located within the San Xavier District, a noncontiguous area of the Nation. TEP met with representatives of the San Xavier District Planning Department (Exhibit J) to provide an overview of the Project and to determine if there were any land use conflicts. The Phase 1 and Phase 2 Routes are adjacent to allotted lands located between Drexel Road, Valencia Road, Westover Avenue, and the West Branch of the Santa Cruz River. These allotted lands, for the most part, are undeveloped, except for a smoke shop, small restaurant, and former swap meet located on the south side of Drexel Road. The San Xavier District Planning Department indicated that these lands have no formal zoning and there are no immediate development plans on allotted lands that they are aware of. They did state that there are planned and proposed land uses on the Tribal lands south of Valencia Road; these include the planned Culinary Corner – a food truck city and the proposed “Marketplace WA:K”. The Project is not expected to conflict with the planned and proposed land uses.

The San Xavier District Planning Department did state that they recommend siting the Project on the north side of Drexel Road, to “avoid potential allottee impacts”.

H.6.2 Pascua Yaqui Tribe of Arizona

Pascua Yaqui Tribe of Arizona is a federally recognized tribe with a resident population of over 3,000 members. It has a land area of 1,194 acres, located south of Valencia Road in the southwestern part of the Tucson metropolitan area, amidst the suburban communities of Drexel Heights and Valencia West, and adjacent to the Tohono O’odham San Xavier District.

Within the Area of Analysis, the Tribe operates Casino Del Sol. The casino, hotel, outdoor amphitheater, convenience store, gas station, and golf course are sited on over 370 acres.

Other Pascua Yaqui land uses in the Area of Analysis include single-family residential and vacant land that has a Pima County rural residential (GR-1) zoning overlay. While the Pascua Yaqui tribe owns the land west of the existing Western Area Power Administration (WAPA) 115-kV transmission line between Valencia Road and Drexel Road, the Project is not expected to require any land use approvals from the Tribe, therefore no conflicts with Tribal land use plans are anticipated.

H.7 Existing Land Use

TEP conducted a land use inventory and an assessment of potential impacts that may occur as a result of construction and operation of the Project. The Area of Analysis is a mix of single-family residential, multi-family residential, undeveloped land, public and institutional, parks and open space, as well as commercial and industrial along Valencia Road and the I-19 corridor. This land use was analyzed as part of the Siting Study (Exhibit B-1).

Overall, the Area of Analysis is a developed urban area dominated by single-family residential. The land use categories are described below.

Residential

Residential land uses (which differ from residential zoning designations discussed previously) primarily include low- to medium-density single-family residential areas and apartment complexes throughout the Area of Analysis. Exhibit H-1 (Existing Land Use) depicts the locations of all residential use (as determined through GIS aerial photo analysis).

Commercial

Commercial businesses including office/business parks, retail, motel, etc. are concentrated along major arterial routes including Ajo Road, Mission Road, and Valencia Road.

Industry/Light Industry

A few industrial areas, including a construction materials operation and an existing and proposed industrial park, are located in the Area of Analysis in the vicinity of Valencia Road between I-19 and Midvale Park Road.

Utilities

Electrical substations, transmission and distribution lines, as well as telephone and cable lines are present in the Area of Analysis. Southwest Gas has active gas lines in the Area of Analysis and El Paso Natural Gas has a transmission line running from the southeast corner to the northwest corner of the Area of Analysis, as well as north from Valencia Road, along Westover Avenue.

COT has active water lines and Pima County has active wastewater lines in the Area of Analysis.

There are active communication towers in the study area, referenced in Exhibit I.

The Bureau of Reclamation operates the Snyder Hill Pumping Station along the CAP north of Ajo Highway, east of Tucson Estates Parkway and the CAP runs below ground from Ajo Highway to the southern edge of the Area of Analysis along the Spencer Avenue alignment.

Public/Institutional

Schools and places of worship are in the Area of Analysis and discussed further in Exhibit I.

Transportation

Several arterial streets cross the Area of Analysis, including State Route 86 (Ajo Highway), Irvington Road, Drexel Road, Valencia Road, Camino Verde Road, and Mission Road.

Vacant/Undeveloped Land

Vacant land within the Area of Analysis is concentrated on the west, with conservation and restricted lands located west of Mission at Nebraska Street and North of Valencia at I-19. Tribal lands along Mission Road are primarily undeveloped from Drexel Road to Valencia Road. The Saginaw Hill Regional Park, managed by the BLM, is

undeveloped and has historic mining uses that restrict future development. Other, small, vacant lots are scattered throughout the Area of Analysis.

Municipal Parks

Four municipal parks are located within the Area of Analysis and are discussed further in Exhibit F. These parks include:

- Santa Cruz River Park & Trail
- Grijalva Park
- Lawrence District Park
- Branding Iron Park

H.8 Proposed Land Uses and Developments

Proposed developments and other plans in the Area of Analysis were identified via GIS review of the COT and Pima County development permit websites, existing infrastructure plan documents, and through meetings held with jurisdictional agencies.

Proposed “future” land uses (Exhibit H-1) within the Area of Analysis are expected to be similar to existing land uses, as the Area of Analysis is largely residential. Future development on privately owned lands under county or municipal planning jurisdiction will require approval by the respective jurisdictions’ planning and development departments.

H.8.1 Pima County

Pima County lists one Capital Improvement Project within the Area of Analysis. A new 14,000 square foot library is planned at West Valencia Road and South Avenida Don Arturo (east of Mark Road). The Phase 1 and Phase 2 Routes would utilize the existing WAPA structures at this location. The Project would not impact the planned library.

H.8.2 Roadway and Infrastructure Projects

There are two planned roadway projects in the Area of Analysis. These include:

Valencia Road

Mission Road to Camino de la Tierra. The Pima County Department of Transportation (PCDOT) will be improving Valencia Road by widening the existing roadway to improve safety, reduce congestion, improve operations, and improve mobility. This will include additional lanes, sidewalks, bus shelters, and multi-use paths. The project is in the design phase. Both the Phase 1 and Phase 2 routes would utilize the existing WAPA structures in this area and the Project is not expected to conflict with the roadway project.

Drexel Road Bridge Project

The COT is planning to construct a two-lane bridge over the Santa Cruz River extending Drexel Road from Midvale Park Road to Calle Santa Cruz. The project will also include new sidewalks, bicycle lanes, and street lighting. The roadway project does not intersect with the Project alignment, and no conflict exists.

H.8.3 Tribal Development

The Pascua Yaqui Tribe has plans to develop a subdivision north of Valencia Road near Casino del Sol. The La Luna

plat was approved in 2008. This is located on fee owned land, not Tribal land. Both the Phase 1 and Phase 2 routes would utilize the existing WAPA structures in this area and the Project is not expected to conflict with the planned development.

H.8.4 Other Development

KB Home is currently in production of the Saguaro Haven single-family home community, north of Valencia Road. DR Horton is currently in production of Redford Estates, south of Valencia Road off Cardinal Road. Both the Phase 1 and Phase 2 routes would utilize the existing WAPA structures in this area and the Project is not expected to be in conflict with the planned developments.

H.9 Potential Effects on Land Use

Land use impacts may be defined as 1) incompatibility with existing plans or proposed land uses, plans, or developments or 2) restrictions on a land use that would result from the construction or operation of the Project. Potential effects on future or planned land use are generally associated with Project construction rather than operation because once construction is completed, no further land use changes are anticipated. Potential effects of the Project on adjacent land use within the Area of Analysis would be negligible, as the Project is compatible with existing land use plans.

Typically, restrictions on land use would result from ROW or easement acquisition across a property. The Phase 1 and Phase 2 Routes are generally within existing road and utility ROWs (see Table H.1 for details). These corridors include gateway arterial, arterial and collector streets, and existing WAPA 115-kV transmission and TEP 46-kV electric line corridors.

Table H.1. Project ROW and Utility Corridor Location (% of the phase)

Construction Type	Phase 1	Phase 2
Existing Structures in Road Rights-of-Way	52%	58%
Reconstructed Structures in Rights-of-Way	0%	30%
Existing Structures in Utility Corridors	20%	0%
New Structures in Rights-of-Way	28%	12%
Total	100%	100%

A review of the existing plans, zoning, and proposed developments applicable to, and potentially affected, by the Phase 1 and Phase 2 Routes indicated that the Project is in compliance with existing and future land use plans and future development projects within the Area of Analysis.

H.10 Conclusion

TEP determined that the Phase 1 and Phase 2 routes are consistent with local, state, and federal land use plans.

The majority of both phases would be co-located on existing transmission lines and within existing road and utility corridors. Land use impacts from either phase are anticipated to be negligible to minor. The Project supports and complies with the current and future land use plans of Pima County and the COT.

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Exhibit H-1
Existing Land Use Map

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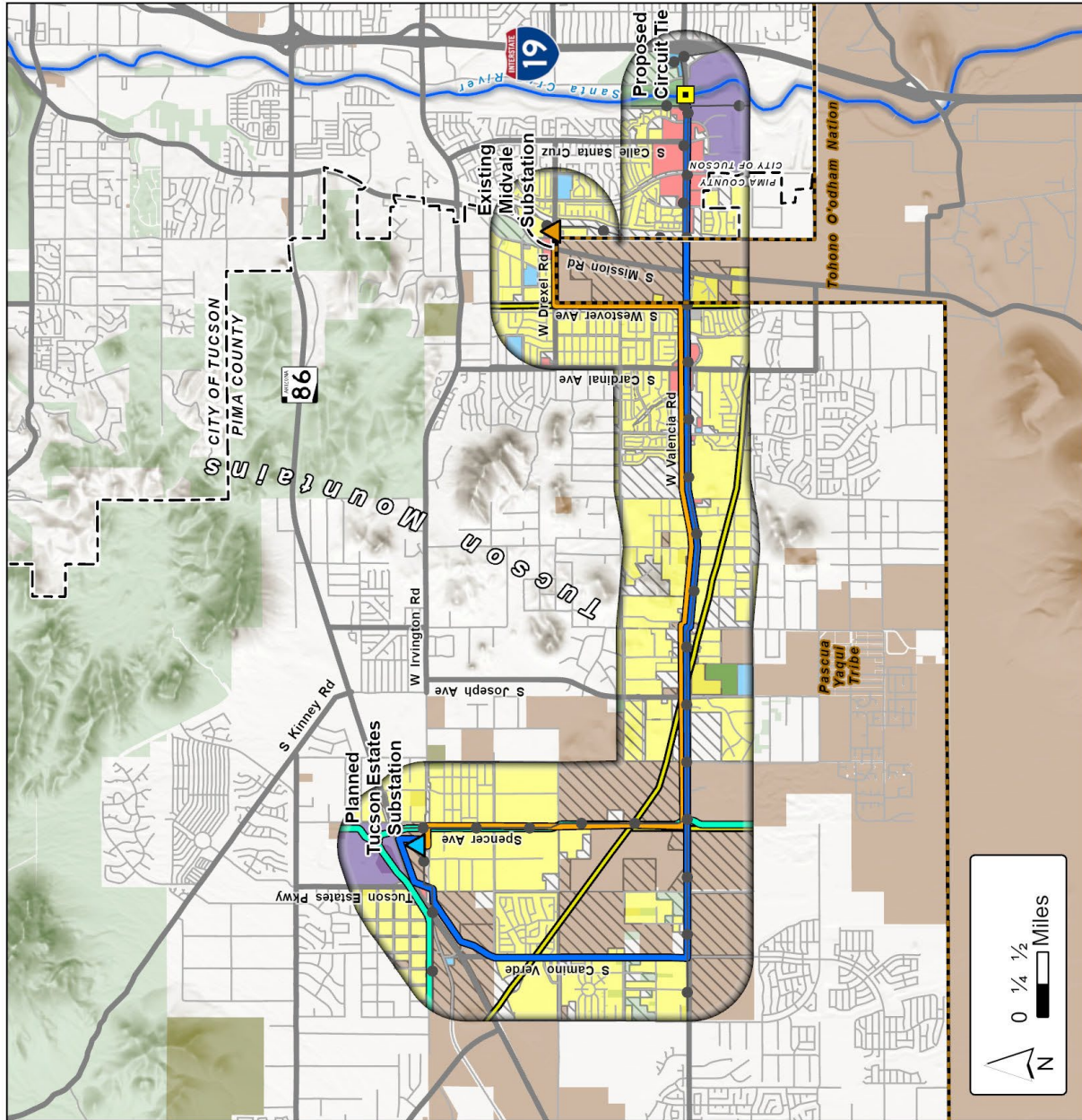
Exhibit H-1 Southwest Tucson Reliability Study Existing Land Use

- Area of Analysis
- Jurisdictional Boundaries
- Routes
 - Phase 1
 - Phase 2
- Existing Transmission Lines
- Gas Transmission Pipeline
- CAP Canal
- Tribal Boundary
- Land Use
 - Existing/Planned Residential
 - Commercial/Office
 - Institutional
 - Public
 - Industrial
 - Open Space
 - Undeveloped
 - Tribal

TEP
Tucson Electric Power

Sources: City of Tucson, Pima County, TEP
Projections: 2010 Census, USGS, TEP
Base map: ESRI Topographic

This map is for planning purposes only.
Tucson Electric Power makes no warranty
of its accuracy.



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Exhibit H-2
Conservation Lands System Map

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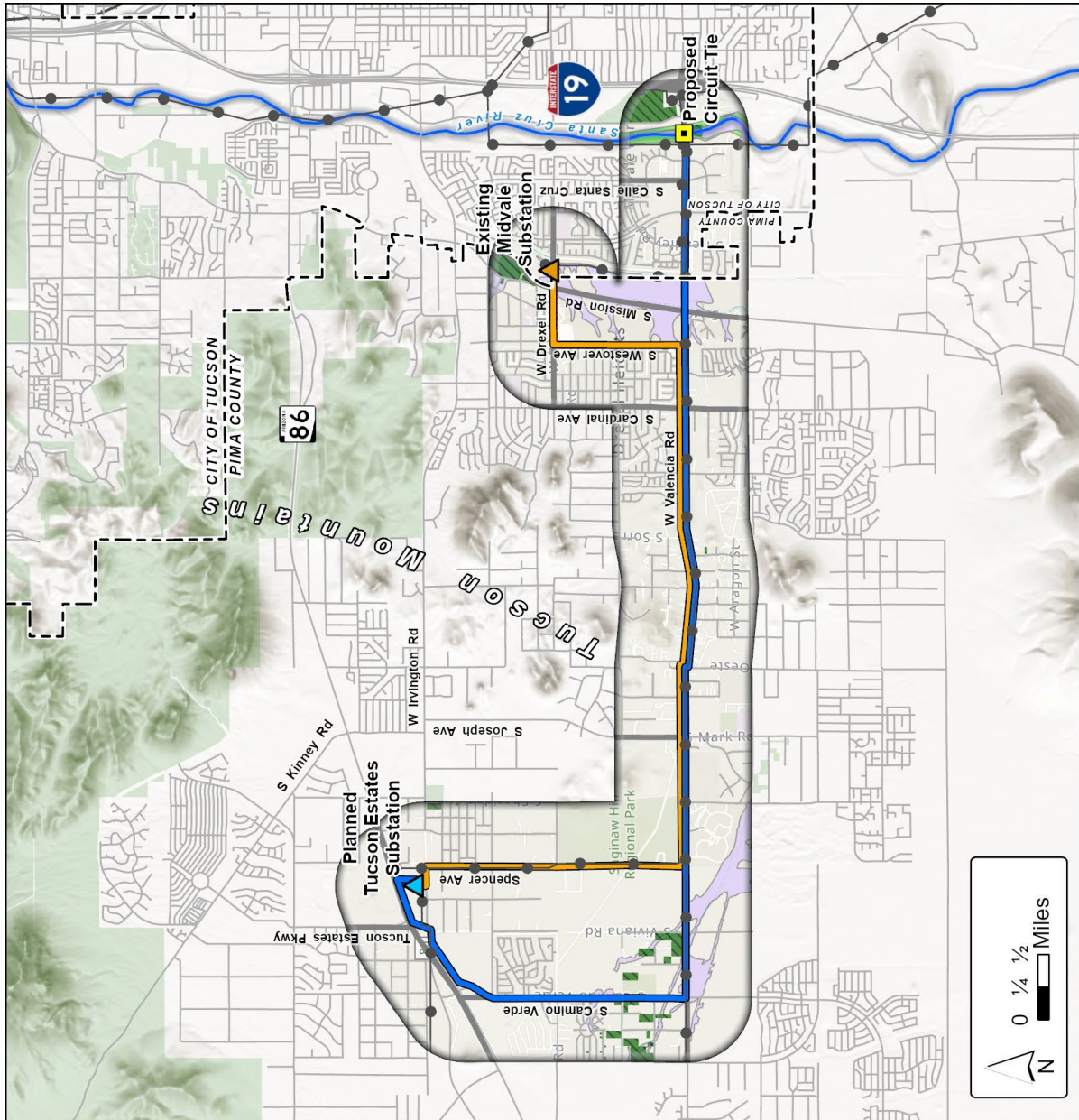
Exhibit H-2 Southwest Tucson Reliability Study

Conservation Lands System

- Area of Analysis
- Jurisdictional Boundaries
- Substations
 - Existing Midvale
 - Planned Tucson Estates
 - Proposed Circuit Tie
- Routes
 - Phase 1
 - Phase 2
- Existing Transmission Lines
- Conservation Lands System Categories
 - Multiple Use
 - Management Areas
 - Important Riparian Areas
 - Areas Outside CLS (No color)
 - Preservation Lands

TEP
Tucson Electric Power

Sources: City of Tucson, Pima County, TEP
Projection: NAD 1983 UTM Zone 12N
Base map: ESRI Topographic
The map is for planning purposes only.
Tucson Electric Power makes no warranty of its accuracy.



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Exhibit H-3
Zoning

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EXHIBIT I

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Exhibit I: Anticipated Noise and Interference with Communication Signals

As required by Arizona Administrative Code R14-7-119, the Applicant provides the following in Exhibit I:

Describe the anticipated noise emission levels and any interference with communication signals which will emanate from the proposed facilities.

I.1 Introduction

The following analysis describes the anticipated noise impacts and interference with communication signals within the Area of Analysis. The Area of Analysis includes a 0.5-mile buffer around the Phase 1 and Phase 2 routes, located in the City of Tucson and unincorporated Pima County, Arizona.

I.2 Sources of Noise

I.2.1 Baseline Condition

Baseline ambient noise levels in the Area of Analysis were estimated using the relationship between population density and noise levels. Populations for the majority of the area immediately adjacent to the Phase 1 and Phase 2 routes are residential and commercial land uses. Pima County has an average population density of 113.6 people per square mile. Typical ambient noise levels for residential and commercial areas are less than 65 A-weighted decibels (dBA). Typical ambient noise levels around major arterial roads can reach 60 to 70 dBA.

Sources of noise along the routes primarily relate to transportation and include traffic on Ajo Highway, Drexel Road, Westover Avenue, Valencia Road, and Camino Verde. Existing residential and commercial land uses do not contribute to noise levels beyond the traffic traveling to destination locations.

There are seven (7) sensitive noise receptors such as schools, places of worship, and assisted living facilities located in the Area of Analysis (Exhibit I.1).

1.2.2 Construction Noise

The Project will generate audible noise during both the construction and maintenance phases, and minor corona noise during operation. During construction, equipment used for assembly and erection of structures, wire pulling and splicing, and transportation of crews and materials will generate noise. Noise from construction activities will be audible, particularly to those in the immediate vicinity. This construction noise would not be considered a major impact because construction would occur during daytime hours when tolerance to noise is higher, and would be temporary, lasting only a few days at a time in any location.

Typical noise levels for construction equipment are displayed in Table I-1. The maximum noise levels generally range between 80 to 85 dBA at 50 feet from construction equipment after which they drop 6 dBA each time the distance from the point source is doubled.

Table I-1. Typical Noise Levels for Construction Equipment

Equipment	Typical Maximum dBA Levels at 50 Feet from Point Source
Front Loader	80
Backhoe, Excavator	80
Tractor, Dozer	85
Grader, Scraper	85
Dump truck	84
Pick-up truck	55
Concrete mixer truck	85
Crane (movable)	83
Pump	76
Generator	81
Compressor (air)	81
Pneumatic tools	85
Compactor (ground)	82

Construction in some areas will occur in commercial areas that are located on Valencia Road. These areas experience one-hour traffic volumes that can exceed 600 cars per hour, with an average annual daily traffic volume (AADT) ranging from just under 19,000 vehicles to just under 55,000 vehicles (PAG 2025, Table I.2). Average hourly traffic volume during peak hours from Mission Road to I-19 on Valencia Road was 3,053 (PAG 2025). Traffic volumes of 3000 vehicles per hour can generate 72.2 dBA at 40 miles per hour traffic speed (Table I.3) (ADOT 2021).

Table I.2. Traffic on Roads in the Project Area

Road	Speed Limit (mph)	AADT
Valencia Road	40-45	19,472 to 55,242

Table I.3. Noise Generated by Traffic (dBA) at 50 Feet

Vehicles/hour	Speed (mph)				
	35	40	45	50	55
500	63.2	64.4	65.6	66.8	67.9
1000	66.2	67.4	68.6	69.8	70.9
2000	69.2	70.4	71.6	72.8	73.9
3000	71.0	72.2	73.4	74.6	75.7

Construction criteria for acceptable noise limits as established by the Federal Highway Administration (FHWA) were used to assess impacts from construction noise due to the Project (Table I.4). These criteria are not standardized, but they are considered reasonable guidelines for determining construction noise impacts (FHWA,

2017). The acceptability standards are given in terms of the 1-hour equivalent noise level (Leq), the 8-hour equivalent noise level (Leq), and the weighted day-night average (Ldn) noise level.

Table I.4. General Construction Noise Assessment Criteria Acceptable Limits

Land use	One-hour Leq (dBA)		8-hour Leq (dBA)		Weighted Ldn (dBA)
	Day	Night	Day	Night	30-day avg.*,**
Residential	90	80	80	70	75
Commercial	100	100	85	85	80
Industrial	100	100	90	90	85
* In urban areas with very high ambient noise levels (Ldn >65 dBA), Ldn from construction should not exceed existing ambient plus-10 decibels.					
** 24-hour Leq, not Ldn					

I.2.3 Operations and Maintenance Noise

Long-term audible noise impacts from transmission line operation and maintenance activities are expected to be minimal.

Noise emanating from operation of a transmission line is caused by corona. Corona is the electrical ionization of the air that occurs near the surface of the energized conductor and suspension hardware due to electric field strength. Certain electromagnetic effects are inherently associated with overhead transmission of electrical power at high voltage. These effects are produced by the electric and magnetic fields (EMF) of the transmission line and include corona discharge. Corona effects are manifested as audible noise, radio interference, and television interference. While corona is more prevalent at 345 kilovolts (kV) and higher, it is less of a concern at lower voltages such as the proposed 138-kV transmission line. Further, these particular effects can be minimized by planned line location, line design, and construction practices.

I.3 Potential Effects from Noise

1.3.1 Potential Effects from Construction

Based on typical use factors, the average construction noise level is conservatively estimated to be 83 dBA at 50 feet from the centerline of the transmission line. Thus, from 0 to approximately 75 feet from the transmission line, construction noise levels would slightly exceed the USDOT 8-hour Leq standards for construction in residential areas.

Noise levels associated with transmission line construction are anticipated to decrease according to typical point source distance attenuation (Table I.5). As such, at a distance of approximately 75 feet and beyond, noise is expected to be within suitable limits. New construction in residential areas occurs along Drexel Road, Camino Verde, and Spencer Avenue. Construction noise impacts will be temporary and usually limited to discrete locations (e.g., structure or pull sites) and not occurring concurrently along the length of the transmission line. With the application of Best Management Practices listed in Exhibit D, noise would be managed to the greatest extent possible.

Furthermore, construction activity related to one transmission line structure with a concrete foundation is typically completed in three days total: one to two consecutive days to drill the foundation and pour the concrete and another day, at a later time, to set the pole. It generally takes less than a day to erect a typical direct embedded pole. This makes the duration of direct noise impacts within 100 feet of noise receptors brief and temporary. To reduce noise impacts whenever a receptor is within approximately 100 feet of the active transmission line construction area, any idling equipment will be parked as far away from the receptor and turned off when possible.

Table I.5. Construction Noise Level Estimates

Distance from Centerline (feet)	Estimated Construction Noise Levels Leq (dBA)	Estimated Ldn (dBA)
50	83	78
100	77	72
150	74	69
200	71	67
300	68	64
400	65	61
800	59	57

Based on the information provided above, the majority of construction noise impacts (i.e., those beyond 100 feet) are expected to have minor, short-term impacts. Typical noise levels for construction beyond 100 feet are below the acceptable USDOT limits. Most of the work is planned to occur during the daytime period, per local requirements. No nighttime work is planned. However, if nighttime work were necessary, TEP would notify affected residents in advance.

I.3.2 Potential Effects from Operation and Maintenance

Transmission line operation and maintenance activities are expected to have minimal long-term impacts on audible noise. Inspection crews will occasionally drive trucks along the line, and workers may replace poles if necessary.

The amount of corona produced by a transmission line is a function of the voltage of the line, the diameter of the conductors, the locations of the conductors in relation to each other, the elevation of the line above sea level, the condition of the conductors and hardware, and the local weather conditions. Corona typically becomes a design concern for transmission lines at 345-kV and above and is less noticeable from lines that are operated at lower voltages, such as the proposed 138-kV transmission line. Audible corona noise for lines less than 230-kV is typically very low or not noticeable. Audible corona noise levels for a 138-kV transmission line in rainy weather is well below 40 dBA at the edge of the ROW, often lower than the background sound in a quiet rural area — and usually not perceptible without close proximity (ATCO, 2026).

For both alternatives, corona noise is expected to be inaudible or indistinguishable from ambient background levels. Under both fair and foul weather conditions, corona noise from the 138-kV line is projected to attenuate to below ambient background levels at the edge of the right-of-way. Consequently, for nearby residents and at the nearest noise-sensitive receptors corona noise would remain inaudible or acoustically masked by existing environmental sounds.

To minimize corona, the Project design incorporates several strategies. Hardware will feature rounded surfaces

and recessed bolts to avoid sharp edges, and conductors will be installed under tension to maintain a smooth surface and prevent damage such as nicks or burrs. Overall, the Project will be engineered to reduce corona generation to the extent practicable.

I.4 Sources of Interference

Sources of interference as a result of the Project include corona, discussed above, and electric and magnetic fields (EMFs).

I.4.1 Electric and Magnetic Fields

I.4.1.1 Electric and Magnetic Fields Background

EMFs are ubiquitous, occurring naturally in every atom of matter. The Earth's surface has a natural electric field, which is created by electric charges in the upper atmosphere. The Earth also has a strong magnetic field, which is evidenced by the use of compasses for navigation. The magnetic field is created by electric currents that exist in magma at the Earth's core.

EMFs are also produced by power lines. These fields may induce voltages and currents on nearby conductive objects. Electric fields are produced whenever a conductor is connected to a source of electrical voltage. An example to illustrate this effect would be plugging a lamp into a wall outlet in a home: when the lamp is plugged in, a voltage is induced in the cord to the lamp, which causes an electric field to be created around the cord. Magnetic fields are produced whenever an electrical current flows through a conductor. In the lamp example, if the lamp is turned on (allowing electricity to flow to the lamp), a magnetic field is created around the lamp cord in addition to the electric field. These fields exist around overhead and underground power lines, house wiring, computers, power tools, appliances, and anything that carries or uses electricity, and their strength is measured in milligauss (mG).

Table I.6 summarizes magnetic field strengths associated with various common electrical sources (NIEHS 2002). On transmission line evaluations, it is standard practice to consider both electric and magnetic fields together when assessing potential effects at the edge of the right-of-way.

Table I.6. EMF Strength of Various Electrical Sources at Various Distances

EMF Source	Distance	Strength	Distance	Strength	Distance	Strength
Microwave Oven	0.5 feet	200 mG	1.0 feet	4 mG	4.0 feet	2 mG
Vacuum Cleaner	0.5 feet	300 mG	1.0 feet	60 mG	4.0 feet	1 mG
Hair Dryer	0.5 feet	300 mG	1.0 feet	1 mG	4.0 feet	0 mG
Electric Shaver	0.5 feet	100 mG	1.0 feet	20 mG	4.0 feet	0 mG
138-kV Transmission Line, vertical	0 feet	16.4 mG	50 feet	6.9 mG	500 feet	<0.14 mG

Past studies on 138-kV transmission lines have yielded results where maximum calculated magnetic fields were less than or equivalent to the median magnetic field produced by a food processor from 6 inches away, 30 mG. From these studies, at the edge of ROW, calculated magnetic fields were found to be weaker than the median

magnetic field while standing 6 inches away from a conventional video display terminal for a personal computer (Power Engineers 2019).

1.4.1.2 Existing EMFs Along the Routes

There are existing electrical facilities within the Area of Analysis. Within the vicinity of the Phase 1 route, TEP operates a 46-kV line along Valencia Road. Along the Spencer Avenue alignment from Valencia to the proposed Tucson Estates Substation, Western Area Power Administration operates a 115-kV line. Within the vicinity of the Phase 2 Route, TEP operates two 138-kV lines along Valencia Road near Commerce Court to the West Branch of the Santa Cruz and a 46-kV line along Valencia Road to Camino Verde, then north to Ajo Highway. Also, in the vicinity of the Phase 2 route, Western Area Power Administration operates a 115-kV line along Valencia Road from Spencer Avenue to Camino Verde.

1.5 Signal Interference

Signal interference may be caused when electromagnetic fields couple with nearby communication cables, antennas, or equipment, inducing unwanted voltages or currents that distort or corrupt the intended communication signal. This is most often associated with high-voltage power lines. This interference can affect radio, television, and cell tower operations.

1.5.1 Radio

Corona-generated radio interference is most likely to affect the amplitude modulation (AM) radio broadcast band (535 to 1,605 kilohertz); frequency modulation (FM) radio is rarely affected. Only AM receivers that are tuned to a weak station and located very near to transmission lines have the potential to be affected by radio interference. An example is the “humming” noise on an AM radio that happens when the radio is near a power line but diminishes as the radio moves away from the line. FM radio receivers usually do not pick up interference from transmission lines because corona-generated radio frequency noise currents decrease in magnitude with increasing frequency and are quite small in the FM broadcast band (88 to 108 megahertz). In addition, the excellent interference rejection properties inherent in FM radio systems make them virtually immune to amplitude-type disturbances.

The existing residential and commercial areas, as well as future developed areas located in the vicinity of the Phase 1 and Phase 2 routes, are in close proximity to other existing power lines. Additional radio interference resulting from the Project is not expected.

1.5.2 Television

Interference with traditional television reception affects only over-the-air signals of local television stations and does not impact cable or satellite stations. Any impacts from the transmission line’s corona effects may occur during periods of bad weather, but this is usually only a concern for transmission lines of 345-kV or greater, and only for receivers within 500 feet of the line. Because the voltage will not exceed 138-kV, television interference is not expected.

1.5.3 Communications

As part of the siting study, TEP identified five active cellular communication towers in the Area of Analysis. Of those, one tower site was terminated (Tower 1) and two tower sites (Tower 3 and 5) are located greater than 250 feet from the Phase 1 and Phase 2 routes. (Exhibit I-1). Tower 2 is located at 4515 West Valencia Road. Tower 4 is located on Drexel Road at the Midvale 138-kV Substation site. TEP has notified the two tower owners located

within 250 feet of the Project via letter (Exhibit I-2). No communication signal interference is anticipated from the Project.

TEP will make every reasonable effort to promptly investigate, identify, and correct, on a case-specific basis, any complaint of interference with radio or television signals from operation of the Project, and where such interference is caused by the Project take reasonable measures to mitigate such interference.

I.6 Conclusion

The Project will generate audible noise during the construction phase and minor corona noise during operation. Based on prior studies for 138-kV transmission lines, corona noise and communication signal interference, including EMF levels associated with the Phase 1 and Phase 2 routes, are expected to be comparable to other 138-kV transmission lines with similar properties. The EMF levels at the edge of the Project's ROW are expected to be less than or equal to common household appliances. There are seven sensitive receptors within the Area of Analysis, and four are within 500 feet of the routes. Three of the receptors are next to areas where construction will occur. With the application of Best Management Practices listed in Exhibit D, construction noise would be managed to the greatest extent possible. To reduce noise impacts whenever a receptor is within approximately 100 feet of the active transmission line construction area, any idling equipment will be parked as far away from the receptor and turned off when possible.

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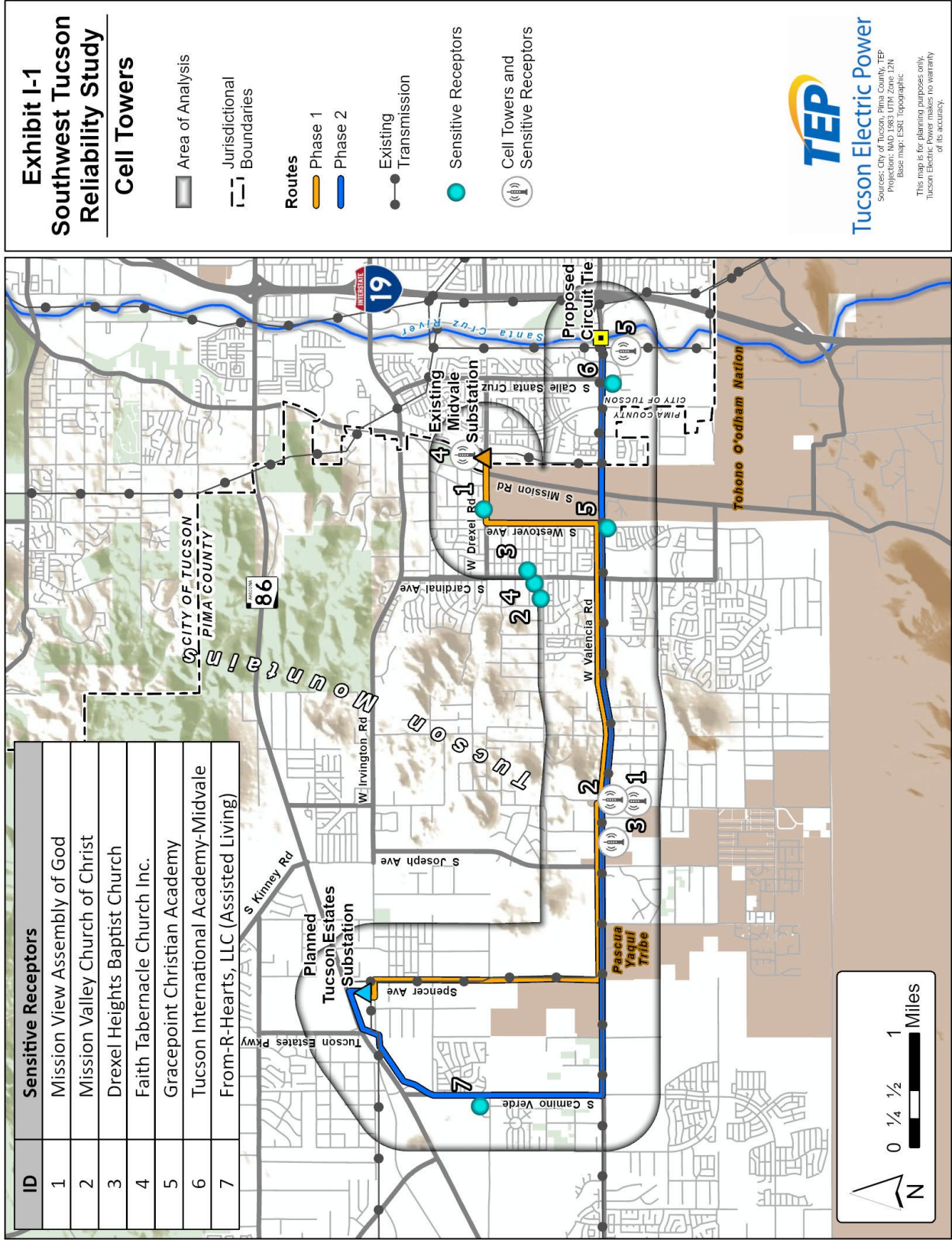
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Exhibit I-1
Communication Tower and Sensitive Receptor Locations

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Exhibit I-2
Cell Tower Owner Contact Letters

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Sonoran Land Resources, LLC
Your Path to Successful Outcomes!

Sonoran Land Resources, LLC
8750 E. Speedway Blvd, Suite 230
Tucson, AZ 85710
Phone: (520) 861-8080

August 6, 2026

Alltel Communications of the Southwest Limited Partnership
One Allied Drive B2F02-A
Little Rock, AR 72202

To Whom it May Concern,

Sonoran Land Resources on behalf of Tucson Electric Power (TEP) is contacting you regarding the Alltel tower located at 4515 West Valencia Road, Tucson AZ 85746 (see attached ASR registration). We are working on TEP's Southwest Tucson Reliability Project, which, in the area of the tower includes the proposed re-energization of an existing 115-kV transmission line to 138-kV along Valencia Road (Project). As part of our coordination efforts, we are requesting your input on whether the proposed voltage conversion may cause potential interference or other issues that should be considered during the design and construction of this portion of the Project.

Project Background

The Southwest Tucson Reliability Project will create a looped transmission system to provide greater reliability, power quality, and capacity to southwest Tucson. New transmission facilities will replace older, lower-voltage equipment that cannot keep pace with customers' growing energy needs.

The project will include building two new 138 kilovolt (kV) circuits and a new 138-kV substation.

The first phase will involve building a new transmission line from TEP's existing Midvale Substation, located near South Mission and West Drexel roads, to the planned Tucson Estates Substation, located near West Ajo Highway and South Tucson Estates Parkway. The substations are located about 5 miles apart.

The second phase will build a new transmission line from Tucson Estates Substation to tie into an existing 138kV transmission line located near West Valencia Road and Calle Santa Cruz. These two interconnection points are about 8 miles apart.

Please let me know at your earliest convenience if you have any questions or require additional information regarding the project. For additional details, please visit the Southwest Tucson Reliability Project webpage at <https://tep.com/southwest-tucson-reliability-project/>.

Best Regards,

Clarissa Campos, CAPM
Assistant Tribal ROW Project Manager
8750 E. Speedway Blvd., Suite 230
Tucson, AZ 85710
Cell: (520) 861-8080



Sonoran Land Resources, LLC
8750 E. Speedway Blvd, Suite 230
Tucson, AZ 85710
Phone: (520) 861-8080

Sonoran Land Resources, LLC
Your Path to Successful Outcomes!

August 6, 2026

AT&T Mobility Spectrum LLA
ATTN: National Regulatory Compliance
3400 W Plano Pkwy
Plano, TX 75075

To Whom it May Concern,

Sonoran Land Resources on behalf of Tucson Electric Power (TEP) is contacting you regarding the AT&T tower located at 2000 West Drexel Road, Tucson, AZ 85746 (see attached ASR registration). We are working on TEP's Southwest Tucson Reliability Project, which, in the area of the tower includes the Phase 1 construction of a new 138-kV transmission line extending west from the Midvale Substation along Drexel Road. As part of our coordination efforts, we are requesting your input on whether the proposed transmission line and may cause potential interference or other issues that should be considered during the design and construction of the Project.

Project Background

The Southwest Tucson Reliability Project will create a looped transmission system to provide greater reliability, power quality, and capacity to southwest Tucson. New transmission facilities will replace older, lower-voltage equipment that cannot keep pace with customers' growing energy needs.

The project will include building two new 138 kilovolt (kV) circuits and a new 138-kV substation.

The first phase will involve building a new transmission line from TEP's existing Midvale Substation, located near South Mission and West Drexel roads, to the planned Tucson Estates Substation, located near West Ajo Highway and South Tucson Estates Parkway. The substations are located about 5 miles apart.

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Please let me know at your earliest convenience if you have any questions or require additional information regarding the project. For additional details, please visit the Southwest Tucson Reliability Project webpage at <https://tep.com/southwest-tucson-reliability-project/>.

Best Regards,

Clarissa Campos, CAPM
Assistant Tribal ROW Project Manager
8750 E. Speedway Blvd., Suite 230
Tucson, AZ 85710
Cell: (520) 861-8080

EXHIBIT J

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Exhibit J: Special Factors

As stated in Arizona Administrative Code, Rules of Practice and Procedure Before Power Plant and Transmission Line Siting Committee, Exhibits to Application, Exhibit J:

Describe any special factors not previously covered herein, which applicant believes to be relevant to an informed decision on its application.

J.1 Introduction

The following summary describes special factors not covered in the other exhibits of the Certificate of Environmental Compatibility application, namely stakeholder outreach and engagement.

J.2 Public Involvement Program Summary

Public participation and engagement are important parts of Tucson Electric Power Company's (TEP) environmental planning and line siting process. TEP developed and implemented a comprehensive Public Engagement Plan (See Exhibit J-1) to ensure timely communication with the public and Project stakeholders. The plan encouraged input throughout the Project's development and afforded the public opportunities to influence the Project outcome.

Project stakeholders included residents, property owners, businesses, neighborhood groups, agencies, public officials, tribal communities, and other community partners. A Master Stakeholder List* is included in Exhibit J-2.

Engagement efforts included (Figure J-1. Outreach and Engagement Infographic):

- Meetings and Briefings (15)
 - Public Open Houses (3)
 - Agency Briefings (3)
 - Public Officials Briefings (1)
 - Miscellaneous Meetings with Community Partners (8)
- External Communication
 - Mailers**
 - Email Update Blasts**
 - Newspaper Advertisements**
 - Social Media Advertisements**
 - Street Signage**
 - Flyers**
 - Webpage**
 - Ways to Comment
 - Paper Comment Form**
 - Online Comment Form**
 - Project Phone Line**
 - Project Email**
 - Mail**

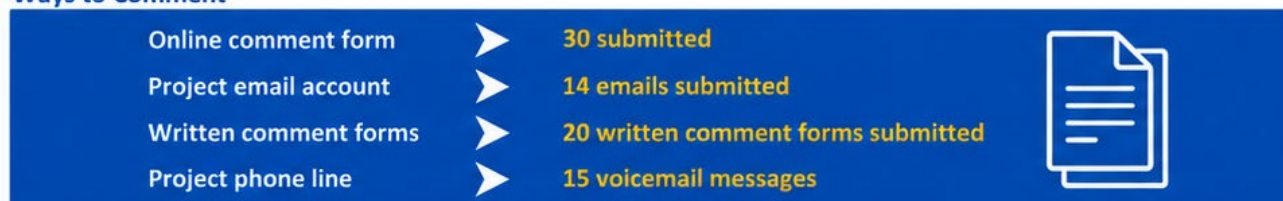
**Residents and property owners are not included for privacy purposes*

***Bilingual*

Public Meetings



Ways to Comment



External Communications



Figure J-1. Outreach and Engagement Infographic

J.3 Meetings and Briefings

J.3.1 Public Open Houses

Two open house meetings were held at Raul Grijalva Elementary School from 6 to 8 p.m. and one open house meeting was held at the Pima Community College Desert Vista Campus from 6 to 8 p.m. The meetings were in an open house format with stations representing different aspects of the siting process and to present details of the Project. All public open house events were noticed to the public via a postcard (Exhibits J-6.1 – J-6.3), email updates (Exhibits J-6.4 – J-6.6), public notice (Exhibits J-6.7 – J-6.9), social media (Exhibits J-6.10 – J-6.12), signage in road right-of-way (Exhibits J-6.13 – J-6.15), flyers (Exhibits J-6.16 – J-6.18), and webpages in English (Exhibit J-6.19) and Spanish (J-6.20).

Representatives from the TEP Customer Care Team attended the open houses to assist customers with billing inquiries, address concerns, or provide program information. Each meeting drew 25-34 members of the public and Project stakeholders, some of whom attended multiple meetings, for a total of 91 participants.

Three to five bilingual team members were available at each meeting to engage with the public and answer questions.

Open House No. 1 – March 5, 2026, Raúl M. Grijalva Elementary School

The purpose of the first public open house was to inform the community of the need for and benefits of the Project, introduce the Project study area and scope, share opportunities and constraints, share draft preliminary segments, gather input on community specific values to inform evaluation criteria, and to encourage public engagement and comment. Approximately 25 individuals attended, and 23 individuals signed in. See Exhibits J-7.1 and J-7.2 for the display boards and maps from the first open house. Photos of the open house are Exhibit J-7.3.

Open House No. 2 – May 14, 2026, Raúl M. Grijalva Elementary School

The purpose of the second open house was to present the Project's suitability assessment, refined segments, gather input on community specific values to inform evaluation criteria, and encourage public engagement and comment. Approximately 35 individuals attended, and 34 individuals signed in (Table J-1). See Exhibit J-7.4 and J-7.5 for the display boards and maps from the second open house. Photos of the open house are Exhibit J-7.6.

Open House No. 3 – August 6, 2026, Pima Community College (PCC)– Desert Vista Campus

The purpose of the third open house was to present the Project's compatibility analysis, draft proposed routes, and preliminary visual simulations of the transmission line, and to encourage public engagement and comment. Approximately 31 individuals attended, and 30 individuals signed in. See Exhibit J-7.7 and J-7.8 for the display boards and maps from the third open house. Photos of the open house are Exhibit J-7.9.

Table J-1. Open House Overview

Open House No.	Date	Location	Format	No. Attended	Board Exhibit No.
1	March 5, 2026	Raúl M. Grijalva Elementary School 1795 W. Drexel Rd. Tucson, AZ 85746	In-person	25	Exhibit J-7.1
2	May 14, 2026	Raúl M. Grijalva Elementary School 1795 W. Drexel Rd. Tucson, AZ 85746	In-person	35	Exhibit J-7.4
3	August 6, 2026	PCC – Desert Vista Campus 5901 S. Calle Santa Cruz Tucson, AZ 85746	In-person	31	Exhibit J-7.7

J.3.2 Agency Briefings

Three virtual agency briefings were held on March 5, 2026, May 13, 2026, and August 5, 2026 to gather input from federal, state, and local agencies; the business community; other utilities; and community partners. In total, the briefings drew 80 stakeholder representatives, some of whom attended multiple meetings. A summary of the meetings, which includes email notice sent, attendee list, the PowerPoint presentation, and main takeaways are included in Exhibit J-3.1 through J-3.3.

J 3.3 Public Official Briefings

All elected officials with jurisdiction within the Siting Study Area were also emailed regular Project updates and offered individual briefings.

The Project team had one individual briefing with Arizona House District 16 Representative, Chris Lopez on March 12, 2026. TEP provided a high-level overview of the Project. Representative Lopez expressed support for the Project.

J.3.4 Tribal Consultation

Using the Arizona Government to Government Consultation Toolkit (Arizona State Historical Preservation Office (SHPO) 2026), and based on TEP's experience working in the area, the following tribal communities were identified as having expressed an ancestral affiliation to the Project area, therefore they were engaged through informal consultation:

- Ak-Chin Indian Community
- Gila River Indian Community
- Hopi Tribe
- Mescalero Apache Tribe
- Pascua Yaqui Tribe
- Salt River Pima-Maricopa Indian Community
- Tohono O'odham Nation
- Tonto Apache Tribe
- White Mountain Apache Tribe
- Yavapai-Apache Nation
- Pueblo of Zuni

TEP informed and engaged tribal representatives from each of these tribal communities throughout the Project's development. Outreach included emails to provide Project updates and offers for in-person briefings.

Additionally, TEP presented to the Four Southern Tribes Cultural Resources Working Group – an organization that consists of the Tohono O'odham Nation, Salt River Pima Maricopa Indian Community, Gila River Indian Community, and Ak-Chin Indian Community - at their in-person meeting on March 20, 2026. On May 6, 2026, TEP received a "No Adverse Effect" Section 106 consultation letter from the White Mountain Apache Tribe's Historic Preservation Officer (THPO).

TEP submitted a copy of the Class I Cultural Resources report (Exhibit E-2) to the Tribes and the SHPO on August 21, 2026. On August 31, 2026, TEP received an email from the Pascua Yaqui Tribe's THPO requesting continued

communication throughout Project design and development. Tohono O’odham’s Asst. Director of Natural Resources also sent an email stating that they do not have any comments on the Class I report at this time.

Table J-2 provides a summary of the outreach efforts and materials shared with tribal representatives for the Project. Meeting summaries and notifications shared with the Tribal communities are in Exhibit J-5.

Table J-2. Overview of Tribal Outreach and Engagement

Outreach/Engagement Method	Date	Summary
Email	February 13, 2026	TEP provided a project overview including purpose and need and offered to provide a briefing. See Exhibit J-5.1 for example.
Meeting	March 20, 2026	TEP presented to Four Southern Tribes Cultural Resources Working Group. See Exhibit J-5.2.
Email	April 22, 2026	TEP provided a Project update and offered to provide a briefing. See Exhibit J-5.1 for example.
Email	May 6, 2026	White Mountain Apache Tribe- Tribal Historic Preservation Officer (THPO) Mark Altaha provided a “No Adverse Effect” consultation letter. See Exhibit J-5.3.
Email	July 22, 2026	TEP provided a Project update and offered to provide a briefing. See Exhibit J-5.1 for example.
Email	August 21, 2026	TEP provided a Project update and a Class I report to all Tribes listed in Section 7.3.4 and SHPO. See Exhibit J-5.1.
Email	August 31, 2026	Pascua Yaqui THPO requested continued communication throughout the Project process. See Exhibit J-5.3.
Email	September 9, 2026	Tohono O’odham stated they have no comments on the Class I report at this time. See Exhibit J-5.3.

J.3.5 State Historic Preservation Office (SHPO)

The SHPO was invited to and participated in the March 5, 2026, May 13, 2026, and August 5, 2026, Project Agency Briefings. The SHPO was provided a copy of the Class I report for review on August 21, 2026.

J.3.6 Miscellaneous Meetings

Ten miscellaneous meetings with community leaders and stakeholders were also held with the following entities. Summaries of each meeting are provided below.

National Park Service (3/13/2026)

TEP and the National Park Service (NPS) held a stakeholder meeting to discuss the Project’s proximity to the Juan Bautista de Anza National Historic Trail and the San Xavier Mission. TEP presented a regional map of existing and recently sited infrastructure to provide cumulative context for the proposed facilities. Estrella Sainburg from NPS confirmed the nearest project segment is about one mile from the San Xavier Mission, TEP provided a screenshot

of existing power lines and went over the agency PowerPoint presentation and noted that public comments will inform siting decisions before being submitted to the Arizona Corporation Commission. The NPS reviewed the presentation and provided comments by letter.

Western Area Power Administration, Bureau of Reclamation, and Central Arizona Project (4/8/2026)

TEP met with representatives of Western Area Power Administration (WAPA), Bureau of Reclamation (BOR), and the Central Arizona Project (CAP) regarding their facilities in the area and their potential use for co-locating or siting portions of the Southwest Tucson Reliability Project 138-kV transmission line. TEP provided a brief overview of the Project and the siting study area, pointing out the Project connection points (Midvale, future Tucson Estates Substation, the Circuit Tie, as well as the location of the “Del Bac System”). The agencies were not opposed to co-location and shared that a sealed bid sale of the facilities along Valencia Rd was anticipated soon.

Tucson Airport Authority (Tucson International Airport and Ryan Airfield) (5/22/2026)

TEP provided an overview of the Project and showed maps of the Revised Segment locations. These segments were discussed in relationship to Ryan Airfield and Tucson International Airport. TAA expressed support for the Project and potential for the Project to serve future development plans at Ryan Airfield. TAA also explained the need to screen the Project for potential pole height and navigation tool concerns once a preliminary design is available. TEP assured TAA that they would utilize the FAA criteria tool and file Form 7460 if the pre-screening determined it necessary. See Exhibit B for discussion of the results of this assessment.

Bureau of Land Management (6/2/2026)

TEP provided an overview of the Project and discussed locations where the Project routes may cross lands managed by the BLM. The locations where existing utility corridors and facilities versus new construction were also discussed. BLM did not express any concerns with any of the segments located on BLM and went over the process of obtaining a right-of-way grant in these areas.

City of Tucson Planning & Development Services Department (6/15/2026, 9/8/2026)

TEP provided an overview of the Project and discussed the Revised Segment locations in relationship to scenic and gateway corridors within the Siting Study Area, specifically at Drexel and Mission and along Valencia Road from I-19 to Tohono O’odham (TO) lands. TEP expressed a need for clarification of the Unified Development Code and criteria for a Special Exception Land Use Permit (SELUP). The City of Tucson (COT) indicated that they needed to look at the Project in more detail and would review further. TEP subsequently met again with the COT and shared the Phase 1 and Phase 2 Routes.

TEP described the Circuit Tie and placement of a new pole in-line with the existing system. The location of the Mission Road crossing at Drexel Road and whether this was in the City’s scenic corridor or in the County was also discussed. TEP stated that they believe the Project to be in compliance with the Scenic and Gateway Corridor Overlay Zones. The COT stated that they need to do more research.

Tohono O’odham – San Xavier District – Planning Department (6/16/2026, 8/26/2026)

TEP provided an overview of the Project and discussed the Revised Segment locations in relationship to Tribal lands within the Siting Study Area, specifically the south side of Drexel between Mission and Westover Avenue, along Westover Avenue, and along Valencia Road. Discussion included where the Project utilizes existing utility

corridors versus areas requiring new construction. TEP expressed a need for clarification of the status of road rights-of-way adjacent versus on Tribal land. The San Xavier District planning staff indicated they would like to discuss further once routes had been identified. Subsequently, TEP met with the San Xavier District and shared the Phase 1 and Phase 2 Routes. The San Xavier District Planning Department stated that they recommend siting the Project on the north side of Drexel Road, to “avoid potential allottee impacts”.

Pima County Real Property (7/30/2026)

TEP provided an overview of the Project and discussed the location of the alternative routes in relationship to planned, proposed, and possible future Pima County road projects and the status of Pima County land rights in those rights-of-way. Specifically, the Valencia Road widening project and the Drexel Road widening project. On Valencia Road, the poles are existing, so any road improvements that would require structure re-location fall under the standard process followed by TEP and Pima County.

The possible improvements to Westover Avenue, Spencer Avenue, and South Camino Verde were also discussed. Pima County indicated that they would look to see if there were any plans for improvement in these areas and get back to TEP.

Arizona Department of Transportation (ADOT) (8/7/2026)

TEP provided an overview of the Project and discussed the Phase 2 Route and its location in the ADOT right-of-way between South Camino Verde and the planned Tucson Estates Substation. ADOT indicated that due to safety and enforcement problems on Ajo Highway, they would prefer the transmission line to be sited south of the drainage channel that runs parallel to the highway. TEP stated that they would redesign the line to accommodate the request and submit a preliminary design to ADOT for a “clear zone” traffic review.

J.4 External Communication

The following communication methods were used to inform the public and project stakeholders of Project developments (see Figure J-1).

J.4.1 Mailers

Three sets of bilingual postcards, mailed to up to 43,239 recipients about two weeks prior to each public open house, provided a project update and encouraged the public to attend upcoming open houses. Mailing addresses were compiled through a variety of methods described below to reach residents, businesses, property owners and other stakeholders within the Project Notification Area extending one mile beyond the Siting Study Area.

The mailing list was developed using:

1. Publicly available data from the Pima County Assessor’s Office to capture mailing addresses for residents, businesses and property owners outside of the notification area,
2. Team-identified Project stakeholders,
3. A purchased Mail House list tailored to 9-digit zip codes in the notification area, and
4. A manual inspection to remove duplicate addresses to ensure data quality and minimize returns.

A copy of each of the postcards is available in Exhibit J-6.1, J-6.2, J-6.3.

J.4.2 Email Updates

Emails were sent to customers within the Project Notification Area with an email on file with TEP or who had requested to be included on the project email list. The emails were sent to 55,238 recipients and included project updates, and information about upcoming open houses and how to participate. Emails were sent:

- February 19, 2026 (18,654 recipients)
- May 7, 2026 (18,299 recipients)
- July 29, 2026 (18,285 recipients)

These emails are included in Exhibits J-6.4, J-6.5, J-6.6.

J.4.3 Newspaper Advertisements

A total of six (6) advertisements ran in the Arizona Daily Star and four bilingual advertisements in the Arizona Bilingual News publications, with four of these advertisements running twice. Six (6) of the meeting advertisements ran in the Arizona Daily Star approximately 2 weeks prior to each public meeting, with more than 360,000 Sunday readers. Newspaper advertisements are available in Exhibits J-6.7, J-6.8, and J-6.9.

- Arizona Daily Star
 - Notice #1: February 22, 2026 and March 1, 2026
 - Notice #2: May 3, 2026 and May 10, 2026
 - Notice #3: July 26, 2026 and August 2, 2026
- Arizona Bilingual News
 - Notice #1: March 1, 2026
 - Notice #2: May 1, 202,
 - Notice #3: July 1, 2026 and August 1, 2026

J.4.4 Street Signage

Six temporary bilingual signs were placed at major intersections within the Siting Study Area advertising the public open house meetings. The signs and a representative photo of sign placement are included in Exhibit J-6.13 for Open House #1, in Exhibit J-6.14 for Open House #2, and in Exhibit J-6.15 for Open House #3.

J.4.5 Flyers

Bilingual flyers were displayed at four public locations in February, six public locations in May, and eight public locations in July. Flyers were posted on February 17, 2026, May 5 and 8, 2026², and July 22, 2026¹. A list of locations is provided below in Table 3. The flyers and a representative photo of flyer placement are included in Exhibit J-6.16 for Open House #1, in Exhibit J-6.17 for Open House #2, and in Exhibit J-6.18 for Open House #3.

² Most flyer postings were unable to be photographed at the time because location workers needed to post them. We assume they were posted the same day.

Table J-3. Flyer Posting Locations and Dates

Location	Notice #1 Date Posted	Notice #2 Date Posted	Notice #3 Date Posted
Tucson Ward 1 Office at 940 W Alameda St, Tucson, AZ 85745	February 17, 2026	May 5, 2026	July 22, 2026
Valencia Library at 202 W. Valencia Rd, Tucson, AZ 85706	February 17, 2026	May 5, 2026	July 22, 2026
Drexel Heights Community Center at 5220 S. San Joaquin Ave, Tucson, AZ 85746	February 17, 2026	May 5, 2026	July 22, 2026
Southwest Library at 6855 S. Mark Rd, Tucson, AZ 85757	February 17, 2026	May 5, 2026	July 22, 2026
Richard Elías-Mission Library at 3770 S Mission Rd, Tucson, AZ 85713	N/A	May 8, 2026	July 22, 2026
Gracepointe at 2555 W Valencia Rd, Tucson, AZ 85746	N/A	May 8, 2026	July 22, 2026
Drexel Heights Baptist Church at 2802 W Mossman Rd, Tucson, AZ 85746	N/A	N/A	July 22, 2026
Tucson Mountain Baptist Church at 5757 W Ajo Hwy, Tucson, AZ 85735	N/A	N/A	July 22, 2026

J.4.6 Webpage

English and Spanish webpages were established at the inception of the Project and were continually updated throughout the Project's development. The pages included information about the need and benefits of the Project, project mailers and updates, outreach materials, project update videos, an interactive map, details about upcoming open houses, public and stakeholder comments and responses, and required approvals and timing. Public comment was also encouraged through email, phone, mail, and electronic comment form submission.

Printed materials including the project mailers and public notice advertisements in local newspapers included QR codes that directed visitors to the English and Spanish webpages. Printouts of the webpages are in Exhibit J-6.19 and J-6.20, with a screenshot of the interactive map in Exhibit J-6.21.

As of September 1, 2026, the English webpage had 4,795 views, 3,369 users and the Spanish-page had 233 views, 132 users.

The webpages, tep.com/southwest-Tucson-reliability-project/ and tep.com/southwest-Tucson-reliability-project-Spanish, will remain live until the Project is in-service.

J.4.7 Social Media

Geotargeted Facebook and Instagram ads were also used to notify residents and other stakeholders of upcoming open house meetings. The ads were directed to reach platform users in and one mile beyond the Project Siting Area and ran during the times identified in Figure J-2. Examples of social media ads and reports of social media results are in Exhibit J-6.10, J-6.11, J-6.12.

Social Media: Facebook and Instagram Ads

   		February – March 2026	May 2026	August 2026	Total	
		Impressions	286,501	116,437	148,620	551,558
		Reach	25,381	55,058	61,047	141,486
		Link Clicks	1,334	430	161	1,925
		Click-Through Rate	0.47%	0.37%	0.11%	0.35%

Figure J-2. Social Media Ads

J.4.8 Ways to Comment

The public was encouraged to provide feedback on the Project through the following bilingual options:

- Filling out a paper comment form
- Filling out an online comment form
- Sending email comments to swtucson@tep.com
- Calling 1-520-770-7522 and leaving a voicemail message
- Mailing a letter with comments to:
TEP SW Tucson Reliability Project
P.O. Box 711
Mail Stop CB200
Tucson, AZ 85701-0711

As a result, the public provided a total of 80 comments and questions, via the methods shown in Table J-4. Redacted comments are provided in Exhibit J-8.

Table J-4. Comment Methods

COMMENT METHOD	NUMBER	PERCENT
Online Comment Form	29	36.59%
Voicemail	15	18.29%
Letter	1	1.22%
Paper Comment Form	20	24.39%
Email	14	17.07%
Other	1	2.44%

The most frequently identified topics of concern were route and location, infrastructure and upgrades, and cost, rates, and affordability. Figure J-3 shows the percent of comments by the topics of concern.

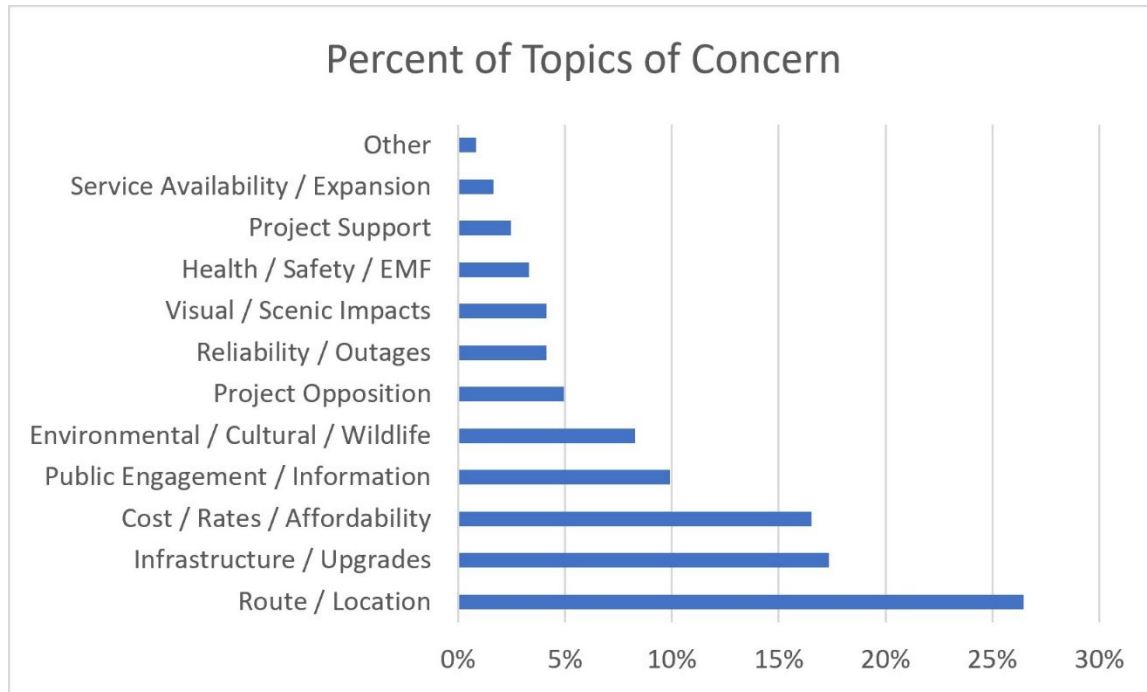


Figure J-3. Topics of Concern from Public Comment

J.4.9 News Media

There has been no coverage of the Project by news media.

J.5 Project Area Demographics

To inform its public involvement strategy, TEP reviewed publicly available demographic data to better understand the characteristics of communities located within the Siting Study Area. This review included information from the U.S. Census Bureau (U.S. Census Bureau 2023 and 2024) related to race, ethnicity, and income levels.

The Project is primarily located within the COT and Pima County. The COT is identified as a Census Designated Place, and its boundaries are consistent with the official town limits. According to census data, the Siting Study Area has a higher proportion of minority residents and low-income individuals compared to Pima County overall and the State of Arizona. Specifically, Hispanic or Latino individuals account for 69.4% of the population within the Siting Study Area.

As a result of this research, TEP made the decision to provide all Project related materials in both English and Spanish and included targeted Spanish language outreach.

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Exhibit J-1
Public Engagement Plan

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Southwest Tucson Reliability Project **Public & Stakeholder Engagement Plan**

Project Leads: Clark Bryner (TEP), Renee Darling (SLR)

Objective: Public & Stakeholder outreach and engagement throughout the siting process to determine a preferred alternative.

Timeline: October 2025 – November 2026

Public and stakeholder engagement creates opportunities for people and agencies to contribute to decision making and communicates how their input is collected and used.

Instructions:

- ***This plan is an internal tool to help the team plan communications and engagement activities.***
- ***This plan is a living document and will be updated throughout the siting process to remain current.***
- ***If you have questions about this plan, please contact***
[***rdarling@sonoranlandresources.com***](mailto:rdarling@sonoranlandresources.com)

Project Background

The Southwest Tucson Reliability Project will create a looped transmission system to provide greater reliability, power quality, and capacity to southwest Tucson. New transmission facilities will replace older, lower-voltage equipment that cannot keep pace with customers' growing energy needs.

The project will include building two new 138 kilovolt (kV) circuits and a new 138-kV substation.

The first phase will involve building a new transmission line from TEP's existing Midvale Substation, located near South Mission and West Drexel roads, to the planned Tucson Estates Substation, located near West Ajo Highway and South Tucson Estates Parkway. The substations are located about 5 miles apart.

The second phase will build a new transmission line from Tucson Estates Substation to tie into an existing 138kV transmission line located near West Valencia Road and Calle Santa Cruz. These two interconnection points are about 8 miles apart.

The planned Tucson Estates Substation will encompass about 15 acres on the southeast corner of West Ajo Highway and South Tucson Estates Parkway.

See Exhibit A.

The Project seeks a Certificate of Environmental Compatibility (CEC) from the Arizona Corporation Commission authorizing the transmission line.

Stakeholders

A complete list of Project Stakeholders is maintained in Appendix A.1. The **Key Stakeholders** have been identified to include:

- Tribal
- Federal
- State
- County
- City
- Utilities
- Neighborhoods
- Other
 - Landowners
 - Businesses
 - Renters
 - Ryan Airfield
 - FAA Tower Owners/Users
 - Economic Development Groups
 - Homebuilder Groups

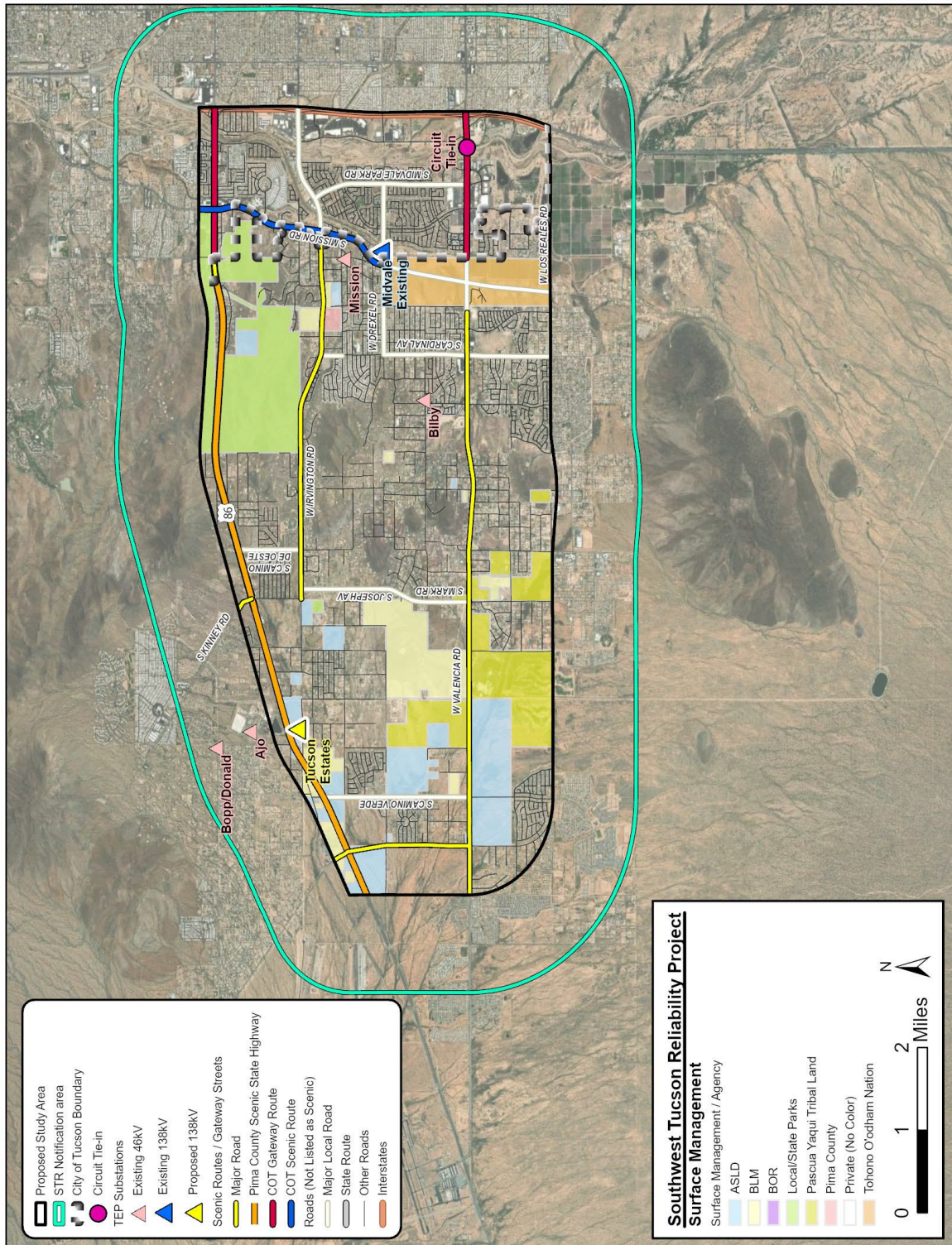


Figure 1. Project Vicinity & Preliminary Study Area

Key Decision Points

<i>Key decision Points</i>	<i>Decision Maker</i>	<i>Role of the Public & Stakeholders</i>
ID Project Study Area	Internal Siting Oversight Committee	Comment on the project Study Area
ID Project Opportunities and Constraints	Internal Siting Oversight Committee	Comment on the identified opportunities and constraints, and any additional ones to consider
ID Preliminary Segments	Internal Siting Oversight Committee	Comment on the preliminary segments
ID Refined Segments	Project Team	Provide input on evaluation criteria to consider and comment on resulting refined segments
ID Route Alternatives	Internal Siting Oversight Committee	Provide input on evaluation criteria to consider and comment on the route alternatives
ID Preferred Route	Internal Siting Oversight Committee	Comment on the preferred route

Engagement Questions

<i>Key decision Points</i>	<i>Information Needed from the Public</i>	<i>Question(s)</i>
N/A	<i>Understanding</i>	<i>Do you understand the Purpose and Need for the Project? Do you support the Project? Why? Why not?</i>
<i>ID Study Area</i>	<i>Opportunities</i>	<i>Do you know of any opportunities to siting the Project within the study area?</i>
<i>ID Study Area</i>	<i>Constraints</i>	<i>Do you know of any constraints to siting the Project within the study area?</i>
<i>ID Route Alternatives</i>	<i>Evaluation Criteria</i>	<i>What are the community values that should be considered?</i>

<i>ID Preferred Route</i>	<i>Support/Non-support</i>	<i>Do you have concerns with the location of the Preferred Route?</i> <i>Do you believe there is a better alternative?</i>
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Engagement Activities

<i>Engagement Activity</i>	<i>Timing</i>
Mailer #1	February 13, 2026
Public Elected Official Briefings	March 12, 2026
Virtual Agency Briefing #1	March 5, 2026
Flyer #1	February 17, 2026
Social Media Advertising Campaign	February 2026
Signs	February 11, 2026
Newspaper Advertisement	February 22 and March 1, 2026
Email Blast #1	February 19, 2026
Public Meeting #1	March 5, 2026
Four Southern Tribes Cultural Resources Working Group Outreach #1	March 20, 2026
Mailer #2	April 28, 2026
Virtual Agency Briefing #2	May 13, 2026
Four Southern Tribes Cultural Resources Working Group Outreach #2	April 2026
Flyer #2	May 5, 2026
Social Media Advertising Campaign	April 2026
Signs	May 1, 2026
Newspaper Advertisement	May 1, May 3, and May 10, 2026
Email Blast #2	May 7, 2026
Public Meeting #2	May 14, 2026

Mailer #3	July 22, 2026
Virtual Agency Briefing #3	August 5, 2026
Four Southern Tribes Cultural Resources Working Group Outreach #3	March 20, 2026
Flyer #3	May 8, 2026
Social Media Advertising Campaign	June 2026
Signs	July 23, 2026
Newspaper Advertisement	July 1, July 26, August 1, and August 2, 2026
Email Blast #3	July 29, 2026
Public Meeting #3	August 6, 2026
Flyer #4	July 22, 2026
Social Media Advertising Campaign	Oct-Nov, 2026
Signs	Oct-Nov, 2026
Newspaper Advertisement	Oct-Nov, 2026
Email Blast #4	Oct-Nov, 2026
Hearing Postcard Notice	Oct-Nov, 2026

Engagement Toolbox

Project Webpage	TEP will revise and maintain the Project Page at: tep.com/southwest-tucson-reliability-project/ SLR will provide text as necessary to continue updates. Webpage will be in both English and Spanish.
FAQ Sheets & Issue-specific PDFs	TEP and SLR will develop and/or update a Project FAQ sheet, if needed.
Project Telephone Line	TEP will transcribe phone messages and respond to phone calls. SLR will log all messages and response summaries. Project Phone # is: 520-770-7522.
Project Email	TEP will set up and ensure that all emails are forwarded to SLR. The Project email is: swtucson@tep.com

Project QR Code	The QR code is: 
Notification List	A notification list will be developed for the public and stakeholders. Public list to be developed using Pima County Assessor Parcel Data addresses and a USPS zip code list will be purchased from a mail house. The two lists will be combined, and redundancies deleted. The stakeholder list will be developed based on geography, legal req., agency, personal interest groups, etc.
Mailers	Three mailers will be prepared and mailed to everyone on the notification list for receipt within a min. of 10 days prior to the public meetings.
Email Blasts	TEP will send a minimum of four email updates to customers within the project study area. Other identified stakeholders will also be included in the email updates.
Flyers	Up to 6 flyers will be prepared and posted (at locations TBD) within a min. of 14 days prior to the public meetings.
Public Meeting Signage	Up to 6 notices of Public Meeting will be posted a min. of 14 days prior to the public meetings at TBD locations in the signage plan.
Newspaper Advertisements	Newspaper advertisements will be placed in the AZ Daily Star and the AZ Bilingual approximately 1 week prior to the public meetings.
Social media	TEP will coordinate all social media campaigns. SLR will assist as needed.
Comment Tracking Database	Utilizing Microsoft Access, SLR will record, track, and assist with responding to all verbal and written comments received. Comments will also be categorized to each Evaluation Criteria. Graphs, tables, and maps may be utilized to depict the results in outreach materials and the application.
PPTs	PowerPoint Presentations will be developed for use in Briefings and Online meetings.
Virtual Public Elected Official Briefings	TEP will schedule and document all Public Elected Official Briefings. SLR will attend, if requested.
Virtual Agency Meetings	Three rounds of virtual agency meetings will be held, one each in Phase 1, 3, and 5.
In-person Public Open House Meetings	Three public open house meetings will be held, one each in Phase 1, 3, and 5.

Posters	Directional, Welcome, Project Overview, Process, Maps, Visual Simulations, Comment Here Posters will be developed
Comment Form	Utilizing a TEP template, SLR will update comment forms for the project
Handouts	SLR will work with TEP to develop additional handouts as needed
Public Hearing Notice	SLR will prepare with assistance from TEP legal, a public hearing notice. SLR will publish and secure appropriate documentation of publishing, if requested by TEP.
Public Hearing Signage	Notice of Hearing signage will be posted a min. of 14 days prior to the public meetings at TBD locations in the approved signage plan.
Public Hearing Mailing	A mailer will be prepared and mailed to everyone on the notification list for receipt within a min. of 14 days prior to the Hearing.

Report Back to the Community

Information and input garnered from each engagement activity will be incorporated into the project's Siting Study and reported back to the community through subsequent outreach.

Exhibit J-2
Stakeholder Lists

Exhibit J-2.1
Agency List

Agency List			
Organization/Department	Title	First Name	Last Name
Federal			
Bureau of Land Management	Tucson Office Field Manager	Colleen	Dingman
	Realty Specialist	Tavia	Carlson
	Tucson Office Assistant Field Manager	Michael	Dixon
	District Manager	Lance	Brady
	Assistant Field Manager	Joan	Breiner
Western Area Power Administration	Natural Resources Manager	Rick	Duarte
	Acting Engineering & Construction Manager	Mike	Baird
	Desert Southwest Region Transmission Asset Planning Project Coordinator	Angela	Murphy
	Transmission Planning Engineer	Tomas	Espinosa
	Transmission Planning Manager	Eduardo	Uribe
		Shawn	Berkram
		Jacqueline	Brusoe
United States Fish & Wildlife Services	Supervisory Biologist	Scott	Richardson
Bureau of Reclamation	Area Manager	Alexander	Smith
	Realty Specialist	Christopher	Starr
	Mechanical Engineer	Jorge	Mora-Lopez
		Dominic J	Graziani
National Parks Service		Estrella	Sainburg
Davis Monthan Airforce Base	CIV USAF ACC 355 CES/CENPE	Stephen	Cassidy
Arizona			
Arizona Department of Transportation	Office of International Affairs Director	Mark	Sanders
	District Administrator	Andrew	Casselman
	Assistant District Engineer	Priscilla	Thompson
State Historic Preservation Office	Cultural Resources Compliance Manager	Mary-Ellen	Walsh
	Archaeological Compliance Specialist	Caroline	Klebacha
Arizona State Land Department	Real Estate Division Assistant Director	Ruben	Ojeda
	Real Estate Division Assistant Director	Karen	Dada
	Planner assigned to Tucson Estates Substation	Rhonda	Buss
	Real Estate Division Rights of Way Section Manager	Amber	Troidl
Pima County			
Pima County Regional Flood Control District	Committee Coordinator	Eric	Shepp
Pima County Office of Sustainability & Conservation	Cultural Resources and Heritage Preservation Manager	Ian	Milliken
Pima County Community Action Agency Board	Committee Coordinator	Manira	Cervantes
Pima County Planning & Zoning Commission	Donna Spicola, Commission Coordinator Development Services	Donna	Spicola

Pima County Development Services		Chris	Poirier
Pima County Natural Resources, Parks, and Recreation	Program Manager	Jenny	Neeley
	Range and Conservation Lands Division Manager	Karen	Simms
	Natural Resource Parks and Trails Division Manager	Julie	Parizek
Pima County Transportation	Director	Katherine	Skinner
Pima County Wastewater	Assistant is Mona Orozco	Jackson	Jenkins
	Engineering Division	Jaime	Rivera-Ortiz
Pima County Conservation Lands and Resources	Trails Manager	Patrick	Goodnight
	Historic Preservation Analyst	Scott	O'Mack
Pima County	Natural Resources Specialist	Vera	Merriott
		Geneve	Pacheco
	Real Property	George	Cardieri
		Ian	Murray
Pima County Energy Program Manager	Energy Program Manager	Eric	Wilson
City of Tucson			
COT Planning & Development Services	Director	Koren	Manning
COT Parks & Recreation	Director	Lara	Hamway
COT Transportation & Mobility		Samuel	Credio
COT Utility Coordinator		Nick	Gasior
Ryan Airfield/Tucson Airport Authority	Manager of Planning	Scott	Robidoux
	Director, Planning & Environmental Services	Tony	Bianchi
Tucson Water		Lane	Mandle
Tucson Unified School District	Energy Project Manager	Tina	Cook
Utilities			
Southwest Gas	Sr. Legislative Policy Advisor	Walter	Richter
Arizona Electric Power Cooperative		Teresa	Murphy
Kinder Morgan / El Paso Natural Gas		Kelley	Sims
		Kevin	Goudy
	Corrosion Supervisor	Justin	Denman
Regional Authorities			
Central Arizona Project (CAP)	General Manager	Brenda	Burman
	Right of Way Specialist	Adam	Sharp
	Supervisor, Lands and Survey	Tom	Fitzgerald
	Engineering Department Manager	Ryan	Johnson
Community Organizations			
Chamber of Southern Arizona	Chief Advocacy Officer	Michael	Guymon
Southern Arizona Home Builders Association		David	Godlweski

Exhibit J-2.2
Elected Official List

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Elected Officials List			
Organization	Title	First Name	Last Name
United States			
Senate	U.S. Senator	Mark	Kelly
	U.S. Senator	Ruben	Gallego
House of Representatives	U.S. Representative, Dist. 7	Adelita	Grijalva
Arizona			
Senate	State Senator, Dist. 16	Thomas "TJ"	Shope
	State Senator, Dist. 20	Sally Ann	Gonzalez
	State Senator, Dist. 23	Brian	Fernandez
House of Representatives	State Representative, Dist. 16	Chris	Lopez
	State Representative, Dist. 16	Teresa	Martinez
	State Representative, Dist. 20	Alma	Hernandez
	State Representative, Dist. 20	Betty	Villegas
	State Representative, Dist. 23	Michele	Peña
	State Representative, Dist. 23	Mariana	Sandoval
Office of the Governor	So. AZ Deputy Director	Nathalia	Untiveros
Pima County			
Board of Supervisors	District 3, Chair	Jennifer	Allen
	District 5	Andres	Cano
Administration	County Administrator	Jan	Lesher
City of Tucson			
Town Council	Mayor	Regina	Romero
	Ward 1	Lane	Santa Cruz

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Exhibit J-2.3
Tribal Outreach List

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Tribal Outreach List			
Organization/Department	Title	First Name	Last Name
Tribal			
Tohono O'odham Nation (TON)	Chairman	Verlon M.	Jose
		Matt	Smith
		Matt	P.
	Assistant Director Natural Resources Department	Eric	Verwys
TON San Xavier District	Planning Administrator	Mark	Pugh
	Principal Planner	John	Baskett
Ak Chin Indian Community	Chairman	Gabriel	Lopez
Gila River Indian Community	Governor	Stephen	Roe Lewis
	Lieutenant Governor	Regina	Antone
Salt River Pima-Maricopa Indian Community	President	Martin	Harvier
Pascua Yaqui Tribe	Chairman	Julian	Hernandez
	Development Services	Erin	Pazos
		Anissa	Valenzuela
	Vice Chairman	Peter	Yucupicio
	THPO	Karl	Hoerig
White Mountain Apache Tribe	Chairman	Kasey	Velasquez
	THPO	Mark	Altaha
Hopi Tribe	Chairman	Timothy	Nuvangyaoma
	THPO	Stewart	Koyiyumptewa
Four Southern Tribes Cultural Resources Working Group		Caroline	Antone
		Eric	Verwys
		Angela	Garcia-Lewis
		Barmaby	Lewis
Mescalero Apache Tribe	President	Thora	Walsh Padilla
	THPO	Holly	Houghten
Pueblo of Zuni	Governor	Arden	Kucate
	Director SHPO	Kurt	Dongoske
Tonto Apache Tribe	Chairman	Calvin	Johnson
	Cultural & NAGPRA Representative	Jeri	De Cola
Yavapai-Apache Nation	Chairman	Buddy	Rocha
	Director, Apache Culture	Barbara	McCabe
	Director, Yavapai Culture	Marley	Juan

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Exhibit J-3
Agency Briefing Summaries

Exhibit J-3.1
Agency Briefing 1 Summary (March 5, 2026)

Agency Meeting #1 Summary Report

Thursday, March 05, 2026, 9:00 a.m.

The Southwest Tucson Reliability Project will create a looped transmission system to provide greater reliability, power quality, and capacity to southwest Tucson. New transmission facilities will replace older, lower-voltage equipment that cannot keep pace with customers' growing energy needs.

1. Meeting Notification

TEP developed a stakeholder list utilizing the extent of the previously identified study area boundary and a 1-mile notification area beyond the study area boundary. Agencies with land ownership, jurisdiction, and/or resource management interest in the area were identified. In addition, agencies that have shown previous interest in TEP, or other similar projects were also included. Following identification of stakeholders, contact information for each was obtained.

The virtual agency meeting was noticed on February 13, 2026, via an email from Clark Bryner, TEP (Attachment 1).

2. Meeting Summary

- The virtual agency meeting was held Thursday, March 05, 2026, from 9:00 a.m. to 9:32 a.m. and included a power point presentation (Attachment 2) consisting of:
 - Project Overview – Need and Benefits
 - Planning & Siting Process – Public Engagement Opportunities
 - Required Approvals
 - Project Schedule
 - Q&A/Comments

Agency Representatives present at the meeting included:

Karen Dada, Assistant Real Estate Division Director, ASLD

Patrick Goodnight, Trails Manager, Pima County Conservation Lands and Resources

Amber Troidl, Section Manager - Rights of Way, Arizona State Land Department

Tomas Espinosa, Transmission Planning Engineer, WAPA DSW

Eduardo Uribe, Transmission Planning Manager, WAPA

Tavia Carlson, Realty Specialist, BLM- Tucson Field Office

Caroline Klebacha, Archaeology Compliance Specialist, SHPO

Adam Sharp, Right of Way Specialist, Central Arizona Project Lands and Survey
Tom Fitzgerald, Supervisor, Lands and Survey, Central Arizona Project
Michael Guymon, Chief Advocacy Officer, The Chamber of Southern Arizona
Eric Wilson, Energy Manager, Pima County
Jaime Rivera, Regional Wastewater Reclamation Department, Engineering Division
Scott Robidoux, Manager of Planning, Tucson Airport Authority
Jackson Jenkins, Pima County Wastewater
Angela Murphy, Pima County Wastewater
Kelley B. Sims, Kinder Morgan / El Paso Natural Gas
Geneve Pacheco, Pima County
Dominic J. Grazian, USBR
Stephen Cassidy, DMAFB
Priscilla Thompson, Asst. District Engineer, ADOT
Ernest Ansubyeabour, Unknown
Muhammad Tayyab, Unknown
Nick Gasior, Utility Coordinator, City of Tucson
Eric Shepp, Flood Control, Pima County

Tucson Electric Power staff and consultants attending the meeting included:

Clark Bryner, Manager, Siting, Outreach & Engagement Presenting
Jenna Reilly, Environmental Land Use Planner
Todd Lichtas, Supervisor of Transmission Planning
Alexander Skaug, Civil Engineering
Chris Ortiz y Pino, Siting, Outreach, & Engagement
Deb Vining, Right of Way Agent
Joe Barrios, Corp. Communication Manager

Christopher Koty, Transmission Planning

Kevin O'Brien, Construction Project Manager

Donovan Sandoval, Distribution Planning

Nate Palmer, Distribution Planning

Miranda Jackson, Transmission Line Engineering

Renee Darling, Director Environmental and Land Use Planning, Sonoran Land Resources,
and

Clarissa Campos, Project Coordinator, Sonoran Land Resources.

4. Follow Up Items

- Clark Bryner to provide draft preliminary segments to Tucson Airport Authority and schedule a meeting
- TEP Transmission Planning to schedule meeting with WAPA Transmission Planning

5. Q&A

Q: Can we schedule a future meeting to discuss potential impacts to aeronautical activities around Ryan Airfield? - Scott Robidoux, Tucson Airport Authority, Manager of Planning

A: Yes.

Q: Are you aware there are cultural sensitivity areas and some archeological sites in the Study Area to be taken into consideration? - Carlone Klebacha, Archaeology Compliance Specialist, SHPO

A: Yes, we are aware and will avoid to the greatest extent possible.

Q: What does this project mean for the WAPA System? The circuit tie looks to be at or near the Del Bac substation, are you pursuing any tie-ins? - Eduardo Uribe, Western Area Power Administration

A: TEP will set up a meeting to discuss further. There are no tie-ins as part of this Project, but in the future, yes. The configuration, modified slightly from last year, is included in TEP's 10-year plan, filed at the end of January 2026. It is public and available on AZCEC website.

Initially expressed concern that the basemap was outdated for various parks and conservation lands. - Patrick Goodnight, Trails Manager, Pima County Conservation Lands and Resources

A: Clark showed that the Pima county conservation lands were pulled from their website and are up to date in the constraints layer. P. Goodnight confirmed.

Q: Are you representing the AZCEC case? What circuits will be used? - Tomas Espinosa
WAPA DSW Transmission Planning Engineer

A: Configuration has changed slightly, still trying to connect Tucson Estates. Configuration is represented in AZCEC case.

ATTACHMENT 1

From: Bryner, Clark <CBryner@tep.com>

Sent: Thursday, January 29, 2026 4:14 PM

[REDACTED]

Subject: TEP - SW Tucson Reliability Project Agency Briefing

When: Thursday, March 5, 2026 9:00 AM-9:50 AM (UTC-07:00) Arizona.

Where: Microsoft Teams Meeting

TEP is planning to build new transmission facilities that will improve system reliability and boost energy capacity for customers in Southwest Tucson. Additional information can be found on the [project webpage](#).

We'd like to share a little about this important project with you, allow you to ask questions, and hear your thoughts to guide the development of the best project for the community.

Meeting Agenda

- Project Overview – Need and Benefits
- Planning & Siting Process – Public Engagement Opportunities
- Required Approvals
- Project Schedule
- Q&A/Comments

We hope you are able to join us. If not, we encourage you to forward this invitation to a delegate from your organization. If you are still unable to attend, please let us know and we'd be happy to find a time to meet with you and your organization individually.

Microsoft Teams meeting

Join: <https://teams.microsoft.com/meet/22417508567842?p=aEbpSg5BQOmd8m5PN2>

Meeting ID: 224 175 085 678 42

Passcode: kR7XF6e7

[Need help?](#) | [System reference](#)

Dial in by phone

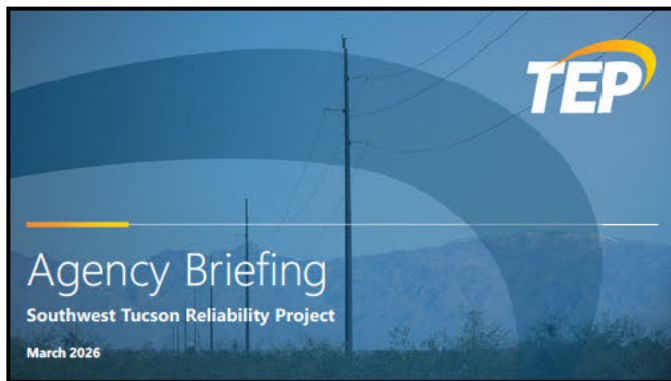
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[Find a local number](#)

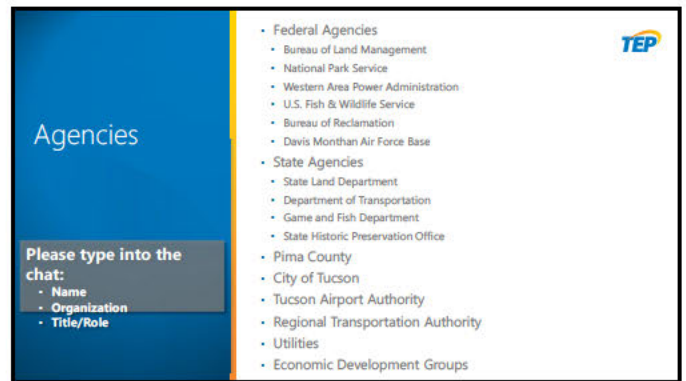
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For organizers: [Meeting options](#) | [Reset dial-in PIN](#)

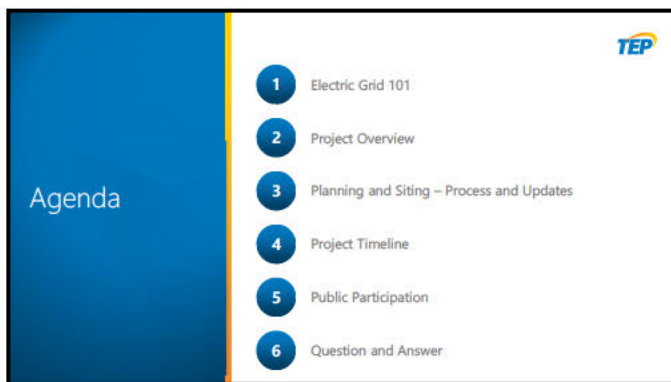
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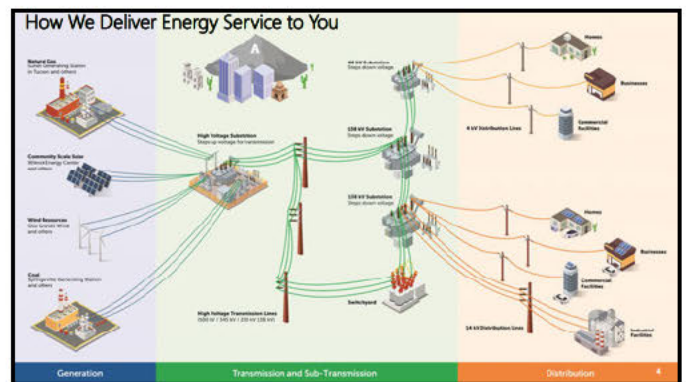
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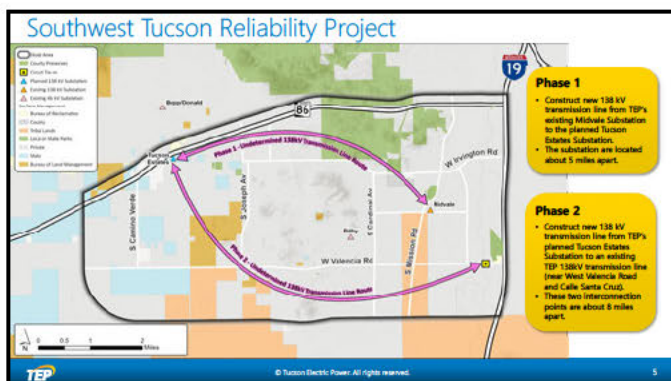
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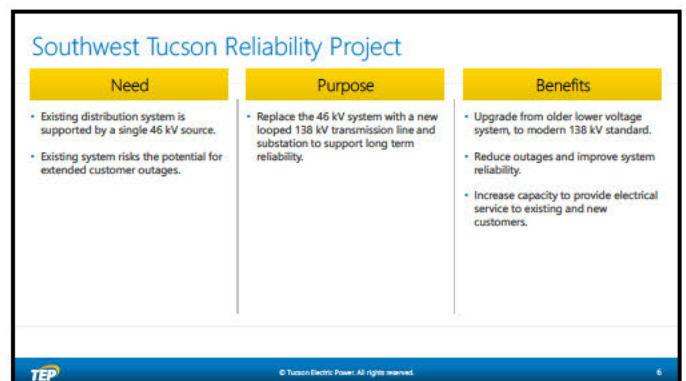
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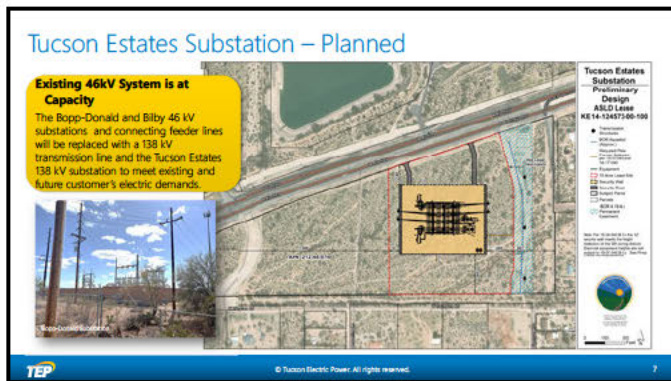
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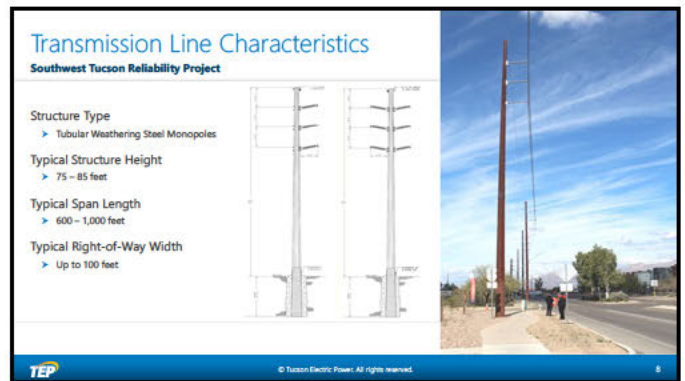
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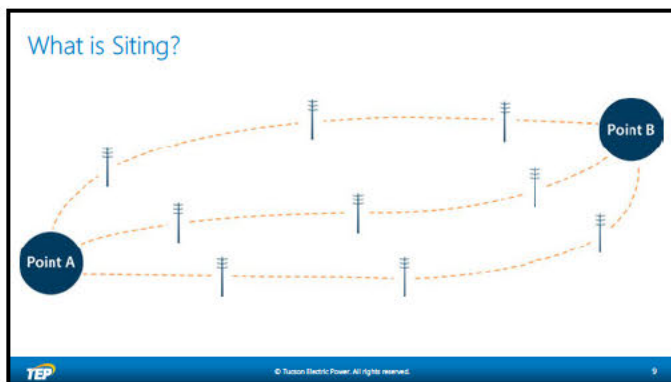
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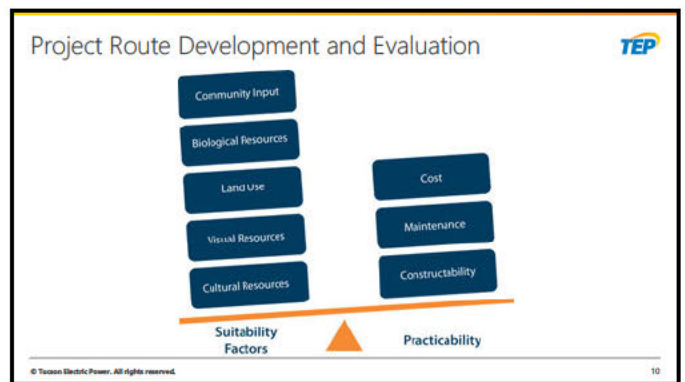
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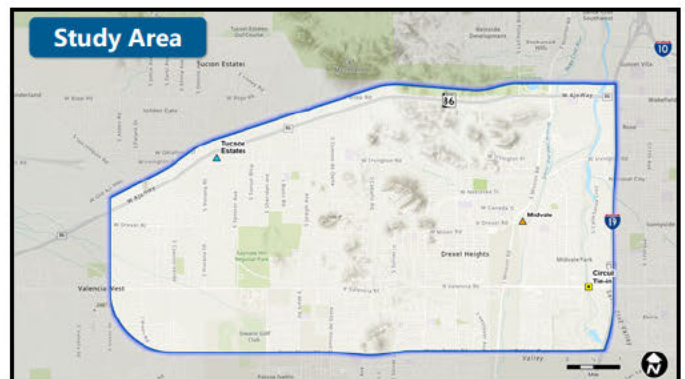
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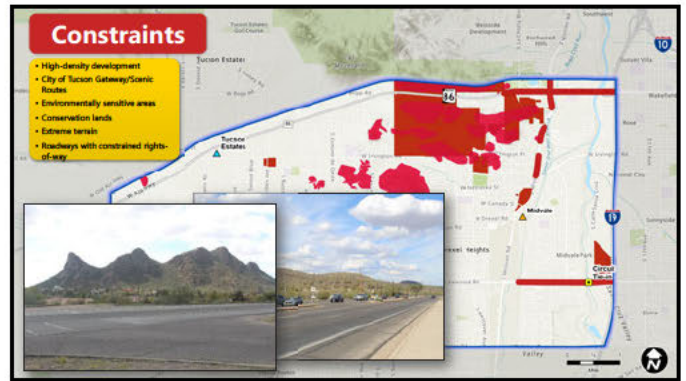
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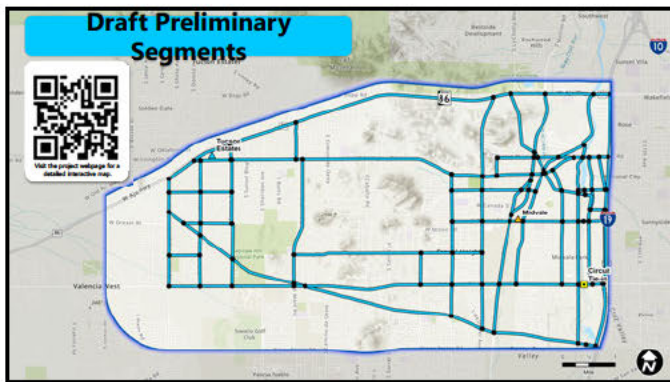
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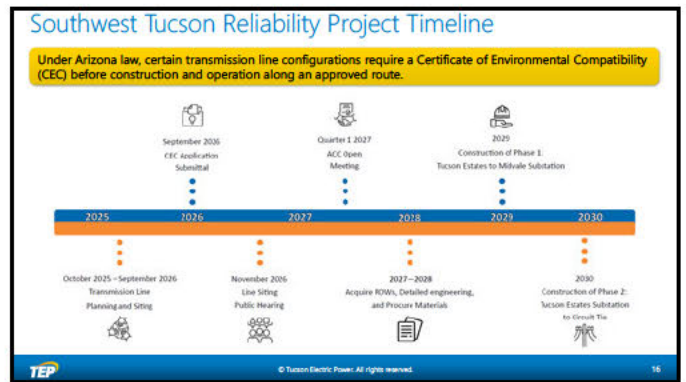
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15



16

Public Participation

Public Open House

- Fill out an online comment form at: tep.com/southwest-tucson-reliability-project
- Send comments to: swtucson@tep.com
- Call (520) 770-7522 and leave a voicemail message
- Mail a letter with comments to:
ATTN: TEP SW Tucson Reliability Project
P.O. Box 711
Mail Stop CB200
Tucson, AZ 85701-0711

Thursday, March 5, 2026
6:00 – 8:00 p.m.

Raúl M. Grijalva
Elementary School

1795 W. Drexel Rd.
Tucson, AZ 85746

TEP © Tucson Electric Power. All rights reserved.

17

Q&A Session

Please use the raise hand feature in MS Teams

or

Type your question into the chat

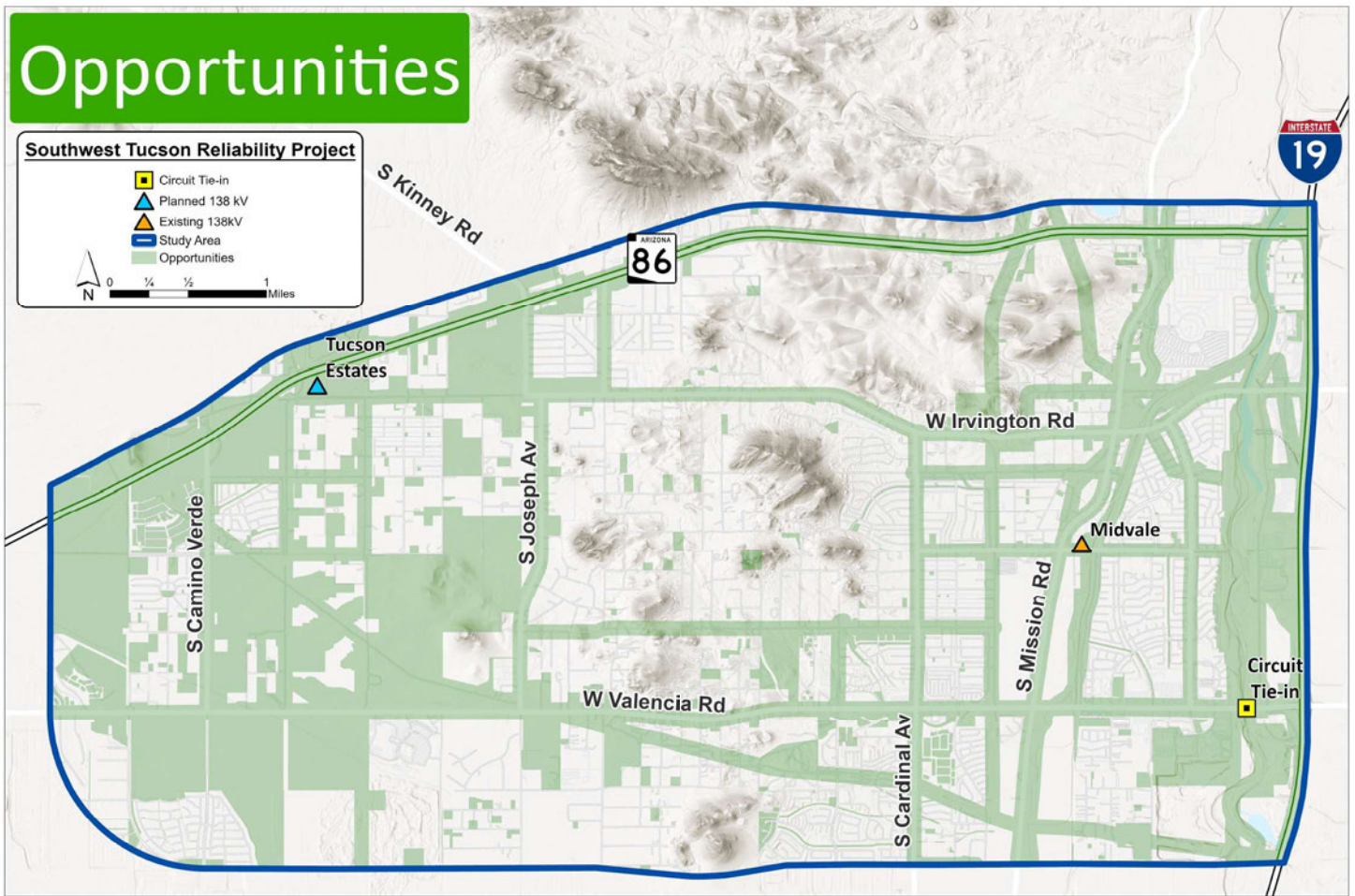
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18

Opportunities

Southwest Tucson Reliability Project

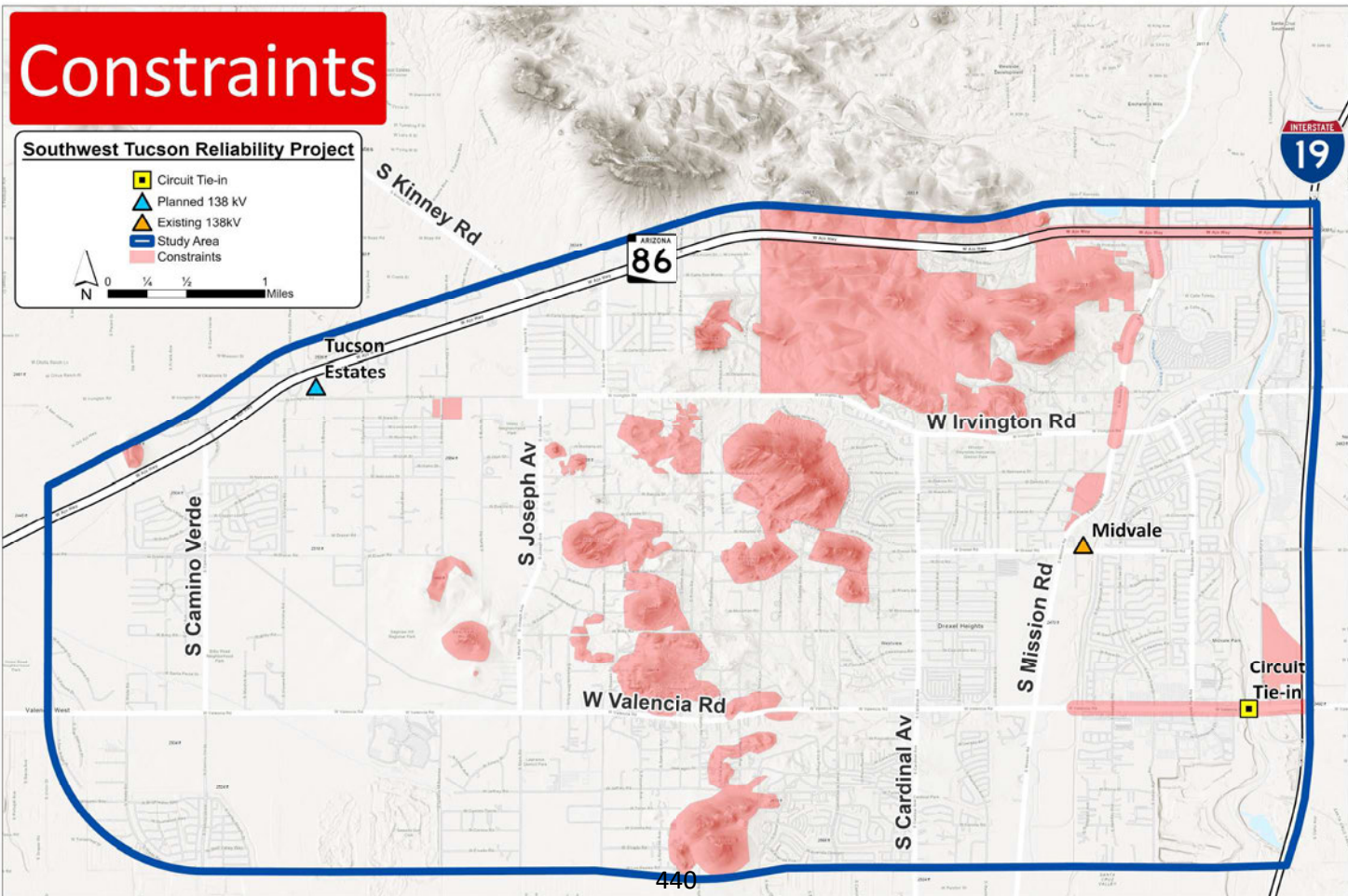
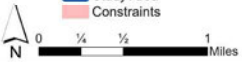
- Circuit Tie-in
- ▲ Planned 138 kV
- ▲ Existing 138kV
- Study Area
- Opportunities



Constraints

Southwest Tucson Reliability Project

- Circuit Tie-in
- ▲ Planned 138 kV
- ▲ Existing 138kV
- Study Area
- Constraints



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Exhibit J-3.2
Agency Briefing 2 Summary (May 13, 2026)

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Agency Meeting #2 Summary Report

Thursday, April 13, 2026, 10:00 a.m.

The Southwest Tucson Reliability Project will create a looped transmission system to provide greater reliability, power quality, and capacity to southwest Tucson. New transmission facilities will replace older, lower-voltage equipment that cannot keep pace with customers' growing energy needs.

1. Meeting Notification

TEP developed a stakeholder list utilizing the extent of the previously identified study area boundary and a 1-mile notification area beyond the study area boundary. Agencies with land ownership, jurisdiction, and/or resource management interest in the area were identified. In addition, agencies that have shown previous interest in TEP, or other similar projects were also included. Following identification of stakeholders, contact information for each was obtained.

The virtual agency meeting was noticed on April 22, 2026, via an email from Clark Bryner, TEP (Attachment 1).

2. Meeting Summary

- The virtual agency meeting was held Thursday, April 13, 2026, from 10:00 a.m. to 10:41 a.m. and included a power point presentation (Attachment 2) consisting of:
 - o Project Overview – Need and Benefits
 - o Updates on Planning & Siting Process
 - o Required Approvals
 - o Project Schedule
 - o Q&A/Comments

Agency Representatives present at the meeting included:

Caroline Klebacha, Archaeology Compliance Specialist, SHPO

Estrella Sainburg, Juan Bautista de Anza National Historic Trail, National Park Service

Scott Robidoux, Manager of Planning, Tucson Airport Authority

Ian Murray, Conservation Science & Education Division, Pima County Conservation Lands & Resources

Eduardo Uribe, Operations Engineering and Planning Manager, WAPA's DSW

Michael S. Dixon, Field Manager (acting), BLM

Jackie Brusoe, WAPA Project Manager (contract) for Vail to Tortolita Project

Jenny Neeley, Environmental Planning Analyst, Pima County Conservation Lands & Resources

Chris Starr, Realty Specialist, Bureau of Reclamation

Adam W. Sharp, Right of Way Specialist, Lands & Survey, Central Arizona Project

Jorge Mora-Lopez, Mechanical Engineer, Bureau of Reclamation

Vera Merriott, Natural Resources Specialist, Pima County

Eric Wilson, Pima County Energy Program Manager

Geneve Pacheco, Pima County

Kelley B Sims, Kinder Morgan

Nick Gasior, COT Utility Coordinator, Department of Transportation and Mobility

Tomas Espinosa, WAPA

Ryan Johnson, Engineering Department Manager, Central Arizona Project (CAP)

Stephen Cassidy, DMAFB

Jaime Rivera-Ortiz, Pima County

Amber Troidl, Rights of Way Section Manager, ASLD

Erin Pazos, Pascua Yaqui Development Services

Tucson Electric Power staff and consultants attending the meeting included:

Clark Bryner, Manager, Siting, Outreach & Engagement Presenting

Todd Lichtas, Supervisor of Transmission Planning

Alexander Skaug, Civil Engineering

Chris Ortiz y Pino, Siting, Outreach, & Engagement

Deb Vining, Siting Outreach & Engagement Project Manager

Joe Barrios, Corp. Communication Manager

Christopher Koty, Transmission Planning

Nathaniel Palma, Distribution Planning

Jake Hughes, Right-of-Way Agent

Renee Darling, Director Environmental and Land Use Planning, Sonoran Land Resources,

Brian Pugh, Manager Environmental and Land Use Planning, Sonoran Land Resources, and
Clarissa Campos, Project Coordinator, Sonoran Land Resources

4. Follow Up Items

- TEP to schedule meeting with Scott Robidoux, Tucson Airport Authority, Manager of Planning
- TEP to follow up with Erin Pazos, Pascua Yaqui Tribe, Planner

5. Q&A

Q: Will public comments be posted somewhere? - Estrella Sainburg, Juan Bautista de Anza National Historic Trail, National Park Service

A: Good question, we always include them in our application, we have sometimes posted them onto our project webpage and I can certainly make them available and post them on our project webpage.

Q: It was mentioned that in most cases the refined segments would be in an approximately 100 ft right-of-way, is that generally aligned with the ROW that is already there in cases where you're collocating a pre-existing stretch of utility line? - Ian Murray, Pima County Conservation Lands & Resources, Conservation Science & Education Division

A: Correct, basically if we were looking to co-locate like along Valencia Road, there's a number of facilities that were looking at the possibility of co-locating with, that would be in the same footprint and in many cases in the same facility. When we seek the 100 ft ROW, it's typically when we're going cross country outside of road ROW, it really depends.

Q: We do have some conservation lands west of Mission Road south of Nebraska, there are some conservation lands there. Would additional ROW be required in this area to rebuild the existing facilities? - Ian Murray, Pima County Conservation Lands & Resources, Conservation Science & Education Division

A: We looked at that in the field and it's a sub transmission line that exists today that would need to be re-built in order to accommodate this line. We will look into the ROW and make sure we can accommodate in the existing so we're not encroaching in the conservation area.

Q: It looks like on the western side of the project there's some state trust land that you might run in to and I'm not seeing that we have any existing TEP ROW there or that we have any applications in house for the new structure. - Amber Troidl, ASLD, Rights of Way Section Manager

A: Once we identify what route were going to take, we will submit those applications.

Q: The substation in Tucson Estates may be falling on a State Trust land parcel, we will want to start process sooner than later and evaluate as appropriate for the placement on State Trust land or not. – Amber Troidl, ASLD, Rights of Way Section Manager

A: We have already obtained a lease for Tucson Estates Substation from ASLD.

Q: Depending on what final route is decided on, FAA Form 7460 may need to be filed depending on the proximity to Ryan Airfield and Tucson Airport. It should be a minor FAA process, depending on pole height and placement. We can work together once it is more refined. - Scott Robidoux, Tucson Airport Authority, Manager of Planning

A: Will reach out after the meeting to discuss the details.

Q: The conservation lands west of Mission Road south of Nebraska that Ian mentioned previously are restricted by the multispecies conservation plan. If easement need to be expanded, this information is encouraged to be relayed quickly for consideration, as it is a process that can take quite a bit of time. - Jenny Neeley, Environmental Planning Analyst, Pima County Conservation Lands & Resources

A: We prefer to avoid those areas.

Q: We look forward to reviewing the cultural resources documentation and will reserve comments until we have reviewed. Thank you for the information! – Caroline Klebacha, Archaeology Compliance Specialist, SHPO

A: Thank you Caroline.

Q: Who do we reach out to if we want to further discuss the Project? – Erin Pazos, Pasqua Yaqui Tribe

A: I can follow up with you by email to schedule something.

ATTACHMENT 1

Subject: TEP - SW Tucson Reliability Project Agency Briefing #2

When: Wednesday, May 13, 2026 10:00 AM-10:50 AM.

Where: Microsoft Teams Meeting

TEP is planning to build new transmission facilities that will improve system reliability and boost energy capacity for customers in Southwest Tucson. Additional information can be found on the [project webpage](#).

Many of you attending an initial project briefing in March. We'd like to provide project updates, allow you an opportunity to ask questions, and hear your thoughts to guide the development of the best project for the community.

Meeting Agenda

- Brief Project Overview – Need and Benefits
- Updates on Planning & Siting Process, including how we incorporated public input
- Required Approvals
- Project Schedule
- Q&A/Comments

We hope you are able to join us. If not, we encourage you to forward this invitation to a delegate from your organization. If you are still unable to attend, please let us know and we'd be happy to find a time to meet with you and your organization individually.

Microsoft Teams meeting

Join: <https://teams.microsoft.com/meet/25634246270699?p=aDuKuOPvfKrJvqfiF0>

Meeting ID: 256 342 462 706 99

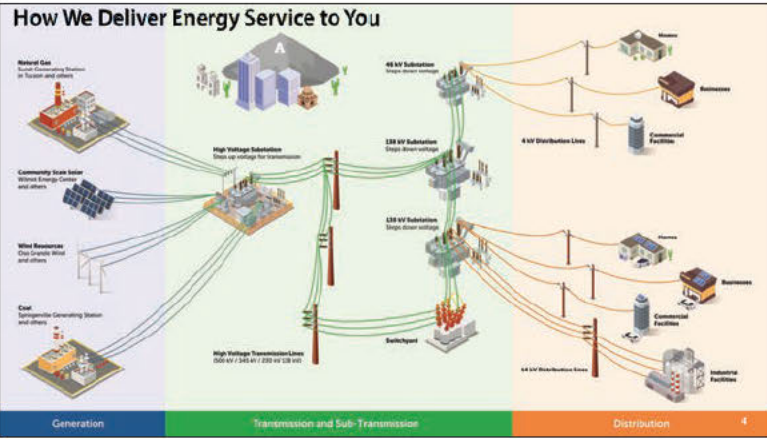
Passcode: aH7j5Fv2

ATTACHMENT 2

Agency Briefing

Southwest Tucson Reliability Project

May 2026

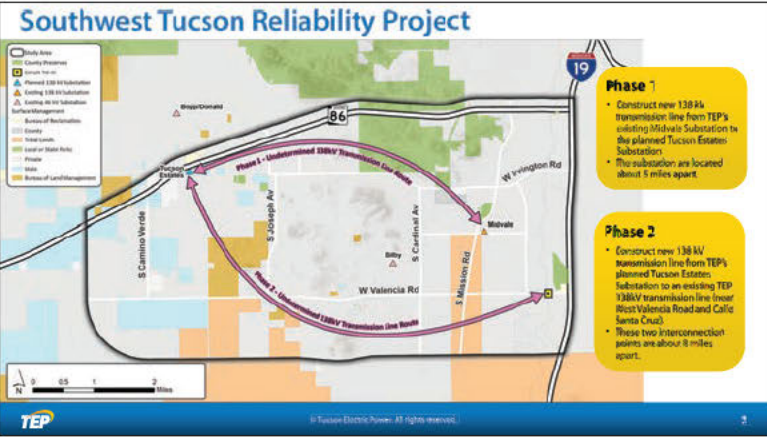


Agencies

Please type into the chat:

- Name
- Organization
- Title/Role

- Federal Agencies
 - Bureau of Land Management
 - National Park Service
 - Western Area Power Administration
 - U.S. Fish & Wildlife Service
 - Bureau of Reclamation
 - Davis Monthan Air Force Base
- State Agencies
 - State Land Department
 - Department of Transportation
 - Game and Fish Department
 - State Historic Preservation Office
- Pima County
- City of Tucson
- Tucson Airport Authority
- Regional Transportation Authority
- Utilities
- Economic Development Groups



Agenda

- Electric Grid 101
- Project Overview
- Planning and Siting – Process and Updates
- Project Timeline
- Public Participation
- Question and Answer

Southwest Tucson Reliability Project

Need	Purpose	Benefits
- Existing distribution system is supported by a single 46 kV source. - Existing system risks the potential for extended customer outages.	Replace the 46 kV system with a new looped 138 kV transmission line and substation to support long term reliability.	- Upgrade from older lower voltage system, to modern 138 kV standards. - Reduce outages and improve system reliability. - Increase capacity to provide electrical service to existing and new customers.

Tucson Estates Substation – Planned

Existing 46kV System is at Capacity
The 900p-Gonzalez and Bilby 46 kV substations and connecting feeder lines will be replaced with a 138 kV transmission line and the Tucson Estates 138 kV substation to meet existing and future customer's electric demands.



Planning and Siting Process

Southwest Tucson Reliability Project

Phase 1: Pre/Analysis

- Conduct Field Visits
- Develop Study Area
- Identify Opportunities and Constraints
- Engage with Public and Stakeholders
- Develop Preliminary Segments

Phase 2: Data Inventory

- Conduct Research and Collect Data

Phase 3: Suitability Assessment

- Develop Suitability Models
- Conduct Suitability Assessment
- Field Review
- Engage with Public and Stakeholders
- Refine Segments

Phase 4: Compatibility Analysis

- Conduct Compatibility Analysis
- Develop Route Alternatives
- Field Review

Phase 5: Concept Evaluation

- Engage with Public and Stakeholders
- Identify Preferred Route
- Submit CEO Application
- Public Notification and Hearing



Transmission Line Characteristics

Southwest Tucson Reliability Project

Structure Type

- Tubular Weathering Steel Monopoles

Typical Structure Height

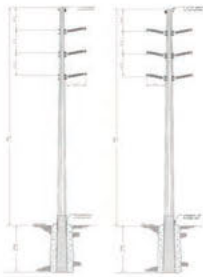
- 73-85 feet

Typical Span Length

- 600-1,000 feet

Typical Right-of-Way Width

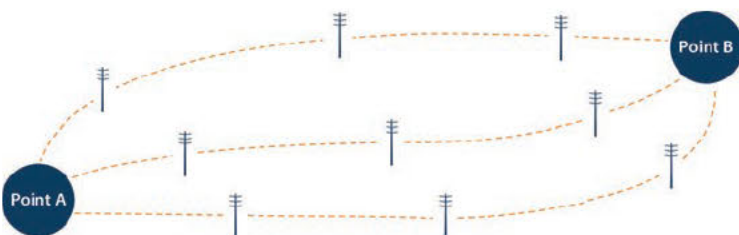
- Up to 100 feet



Study Area



What is Siting?



Opportunities

- Major roads
- Major roads in rural areas
- Railroads
- Existing utility infrastructure
- Existing planned industrial land use
- Vacant land, open space, natural/forest features



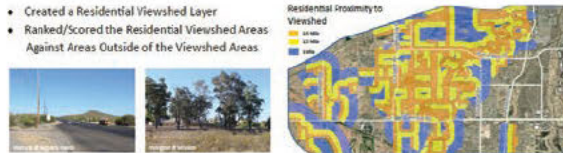


What we did to address residential visual impacts...

- Identified Existing & Planned Residential Areas
- Identified Peaks & Ridges Visible from Residential Areas



- Created a Residential Viewshed Layer
- Ranked/Scored the Residential Viewshed Areas Against Areas Outside of the Viewshed Areas



Project Route Development and Evaluation



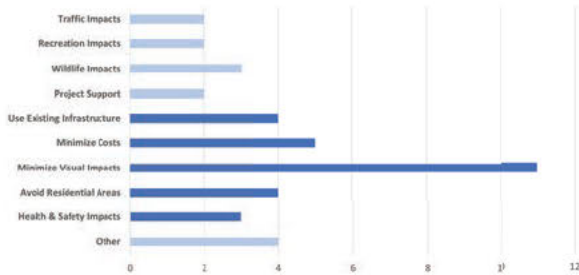
What we did to address residential visual impacts...

- Identified Existing Transmission/ Sub-Transmission Infrastructure that Could Potentially be Used



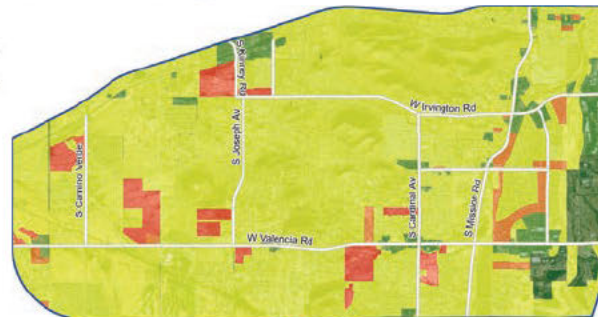
What We Heard...

Summary of Public Comments



Criteria Models – Existing Plans

Legend



Criteria Models – Built/Planned Residential



Criteria Models – Noise & Communication



Criteria Models – Conservation & Preservation



Criteria Models – Cultural Resources



Criteria Models – Biological Resources



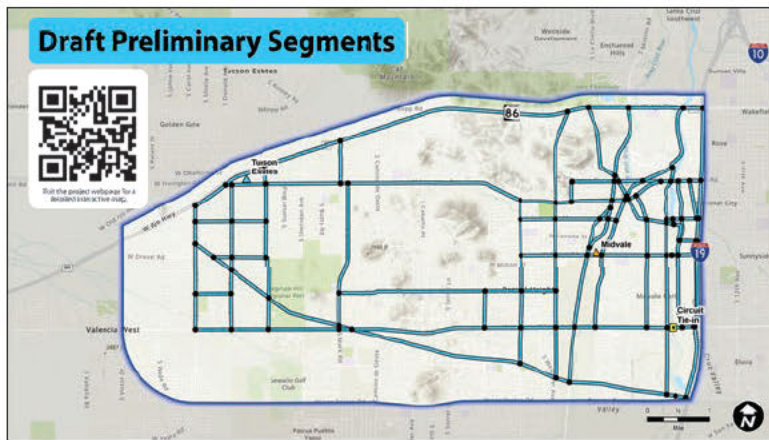
Criteria Models – Scenic & Visual Resource



[illegible][illegible][illegible]

Legend

- County
- Planning District
- Land Cover
- Water
- High Compatibility
- Low Compatibility



Public Participation

- Fill out an online comment form at: tep.com/southwest-tucson-reliability-project
- Send comments to: swtucson@tep.com
- Call (520) 770-7522 and leave a voicemail message
- Mail a letter with comments to:
ATTN: TEP SW Tucson Reliability Project
P.O. Box 711
Mail Stop CB200
Tucson, AZ 85701-0711

Public Open House

Thursday, May 14, 2026
6:00–8:00 p.m.

Raúl M. Grijalva Elementary School

1795 W. Drexel Rd.
Tucson, AZ 85746



Q&A Session



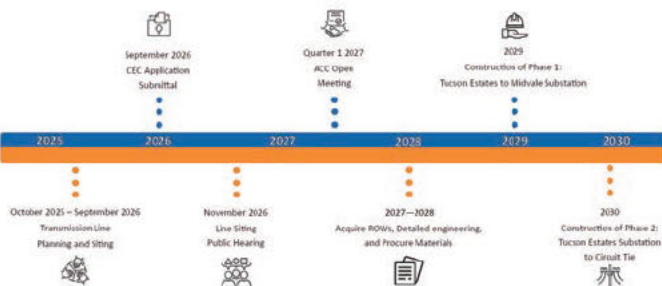
Please use the raise hand feature in MS Teams

OR

Type your question into the chat

Southwest Tucson Reliability Project Timeline

Under Arizona law, certain transmission line configurations require a Certificate of Environmental Compatibility (CEC) before construction and operation along an approved route.



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Exhibit J-3.3
Agency Briefing 3 Summary (August 5, 2026)

Agency Meeting #3 Summary Report

Thursday, August 05, 2026, 10:00 a.m.

The Southwest Tucson Reliability Project will create a looped transmission system to provide greater reliability, power quality, and capacity to southwest Tucson. New transmission facilities will replace older, lower-voltage equipment that cannot keep pace with customers' growing energy needs.

1. Meeting Notification

TEP developed a stakeholder list utilizing the extent of the previously identified study area boundary and a 1-mile notification area beyond the study area boundary. Agencies with land ownership, jurisdiction, and/or resource management interest in the area were identified. In addition, agencies that have shown previous interest in TEP, or other similar projects were also included. Following identification of stakeholders, contact information for each was obtained.

The virtual agency meeting was noticed on July 23, 2026, via an email from Clark Bryner, TEP (Attachment 1).

2. Meeting Summary

The virtual agency meeting was held Thursday, August 05, 2026, from 10:00 a.m. to 10:34 a.m. and included a power point presentation (Attachment 2) consisting of:

- Electric Grid 101
- Project Overview
- Planning and Siting
- Project Timeline

- Public Participation
- Q&A

Agency Representatives present at the meeting included:

Scott O'Mack, Historic Preservation Analyst, Pima County Conservation Lands & Resources

Scott Richardson, Supervisory Biologist, U.S. Fish and Wildlife Service

Mark Sanders, Office of International and Border Affairs, ADOT

Adam W. Sharp, ROW Specialist, Central Arizona Project Lands

Joan Breiner, Assistant Field Manager, BLM Tucson Field Office

Anissa Valenzuela, Pascua Yaqui

Teresa Murphy, Manager of Land Services, AEPCO

Dominic Graziani, Env. Manager, Reclamation, Phoenix area office

Tom Fitzgerald, Land and Survey Supervisor, Central Arizona Project

Erin Pazos, Executive Director, Pascua Yaqui

George Cardieri, Real Property, Pima County

Karen Dada, Assistant Director - Real Estate Division, AZ State Land Department

Tony Bianchi, Director, Planning & Environmental Services, Tucson Airport Authority

Scott Robidoux, Manager of Planning, Tucson Airport Authority

Christopher Starr, Realty Specialist, Bureau of Reclamation

Justin Denman, Corrosion Supervisor, Kinder Morgan

Priscilla Thompson, Southcentral District, ADOT

Jorge Mora-Lopez, Mechanical Engineer, Bureau of Reclamation

Amber Troidl, Rights of Way Section Manager, ASLD

Eric Shepp, Regional Flood Control District, Pima County

Stephen Cassidy, Davis Monthan Airforce Base

Leslie Beckett, WAPA

Chris Porier, Pima County Development Services

Tina Cook, TUSD

Joy Olivias, City Of Tucson

Jonathan Knight-Wisor, City of Tucson

Melanie Lawson, Public Outreach Director, PAG

Anthony Bianchi Director of Planning & Environmental Services, Tucson Airport Authority

Jacqueline Brusoe, WAPA Project Manager (contract) for Vail to Tortolita Project

James DeGrood, City of Tucson

Tavia Carlson, BLM

Geneve Pacheco, Pima County

Nicholas Ross

Kelley Sims, Kinder Morgan

Tucson Electric Power staff and consultants attending the meeting included:

Clark Bryner, Manager, Siting, Outreach & Engagement Presenting

Jenna Reilly, Environmental Land Use Planner

Teresa Bravo, Gov't Relations & Tribal Liaison

Jake Hughes, ROW Agent/Land Department

Diane Geerligs, Siting Outreach, Project Coordinator

Alexander Skaug, Civil Engineering

Deb Vining, Line Siting PM

Renee Darling, Director Environmental and Land Use Planning, Sonoran Land Resources

Clarissa Campos, Project Coordinator, Sonoran Land Resources

3. Follow Up Items

- TEP to schedule meeting with Erin Pazos, Pasqua Yaqui Tribe
- TEP to email Eric Shepp, Pima County Regional Flood Control District in regard to Tucson Estates Substation and potential floodplain permitting requirements
- TEP to follow up with Scott Robidoux, Manager of Planning, Tucson Airport Authority regarding results of FAA obstruction evaluation

4. Q&A

Q: Will the route that is co-locating with WAPA be on the north or south side of Valencia Road? - Amber Troidl, Rights of Way Section Manager, ASLD

A: Where the existing WAPA line is located in the vicinity of State Land, it is located on the north side of Valencia, or opposite to State Land.

Q: Will there be any ground disturbance associated with upgrading the 46-kV line to a 138-kV line? - Scott Richardson, Supervisory Biologist, U.S. Fish and Wildlife Service (USFWS)

A: Yes, upgrades along South Camino Verde will require rebuilding the line which will result in ground disturbance.

Q: Will Pima pineapple cactus (PPC) surveys be conducted prior to construction? - Scott Richardson, Supervisory Biologist, USFWS

A: PPC are addressed in the Biological evaluation; surveys would be conducted where warranted. The Biological Evaluation will be submitted to USFWS for review and comment.

Q: Regarding the difference in Alternative route 1A vs 1B, Route 1A would require an AC influence study to determine corrosion potential and mitigation requirements. This is fine, we do not have a problem with it being located there, so long as the study is done. - Justin Denman, Corrosion Supervisor, Kinder Morgan

A: In the event that is the approved alternative, TEP will conduct the required study and implement necessary mitigation.

Q: What happens to the 115-kV line if it is re-energized to 138-kV? What happens with the existing 46-kV and distribution? - Stephen Cassidy, Davis Monthan Airforce Base

A: Both the 115-kV and 46-kV lines were built to a 138-kV specification. The existing WAPA 115-kV line is actually already de-energized; it just needs to be re-energized at 138-kV. The Project is phased, so after Phase 1 is complete, the existing 46-kV can be re-energized to 138-kV. The existing distribution lines will stay as they are.

ATTACHMENT 1

Subject: TEP - SW Tucson Reliability Project Agency Briefing #3

When: Wednesday, August 5, 2026 10:00 AM-10:50 AM.

Where: Microsoft Teams Meeting

TEP is planning to build new transmission facilities that will improve system reliability and boost energy capacity for customers in Southwest Tucson. Additional information can be found on the [project webpage](#).

Many of you attended project briefings in March and May. This is our final planned project briefing prior to seeking approval of the project from the Arizona Corporation Commission. Your input continues to be valuable. We'll share a set of "Draft Proposed Routes" and would like to give you an opportunity to ask questions and hear your thoughts on these draft routes to guide the development of the best project for the community.

Meeting Agenda

- Brief Project Overview – Need and Benefits
- Updates on Planning & Siting Process – draft proposed routes
- Required Approvals
- Project Schedule
- Q&A/Comments

We hope you are able to join us. If not, we encourage you to forward this invitation to a delegate from your organization. If you are still unable to attend, please let us know and we'd be happy to find a time to meet with you and your organization individually.

Microsoft Teams meeting

Join: <https://teams.microsoft.com/meet/242115574037249?p=TCLhx5dWayCOZQo20r>

Meeting ID: 242 115 574 037 249

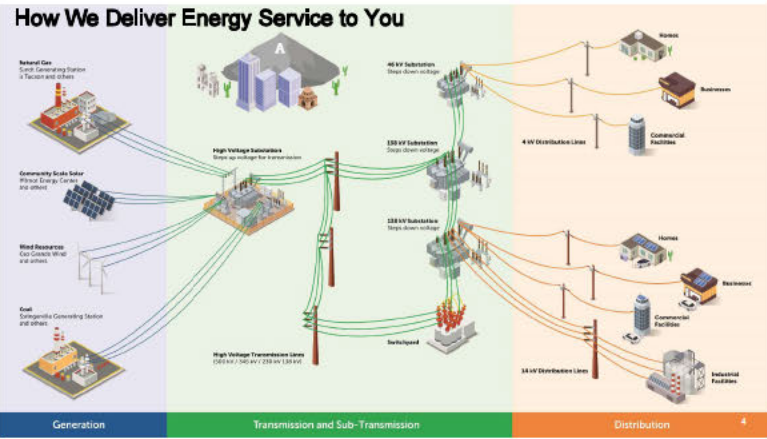
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ATTACHMENT 2

Agency Briefing

Southwest Tucson Reliability Project

August 2026

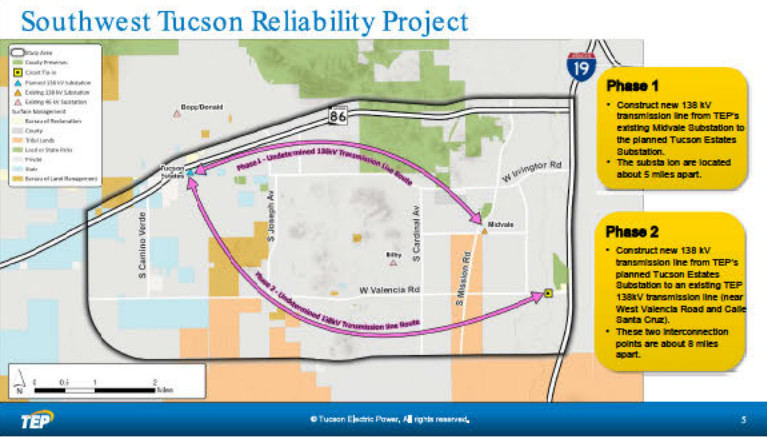


Agencies

Please type into the chat:

- Name
- Organization
- Title/Role

- Federal Agencies
 - Bureau of Land Management
 - Bureau of Reclamation
 - National Park Service
 - Western Area Power Administration
 - U.S. Fish & Wildlife Service
 - Bureau of Reclamation
 - Davis Monahan Air Force Base
- Tohono O'odham Nation-San Xavier District
- Pascua Yaqui Tribe
- State Agencies
 - State Land Department
 - Department of Transportation
 - Game and Fish Department
 - State Historic Preservation Office
- Pima County
- City of Tucson
- Tucson Airport Authority
- Regional Transportation Authority
- Utilities
- Economic Development Groups



Agenda

- Electric Grid 101
- Project Overview
- Planning and Siting-Process and Updates
- Project Timeline
- Public Participation
- Question and Answer

Southwest Tucson Reliability Project

Need	Purpose	Benefits
- Existing distribution system is supported by a single 46 kV source. - Existing system risks the potential for extended customer outages.	Replace the 46 kV system with a new looped 138 kV transmission line and substation to support long term reliability.	- Upgrade from older lower voltage system, to modern 138 kV standard. - Reduce outages and improve system reliability. - Increase capacity to provide electrical service to existing and new customers.

Tucson Estates Substation – Planned

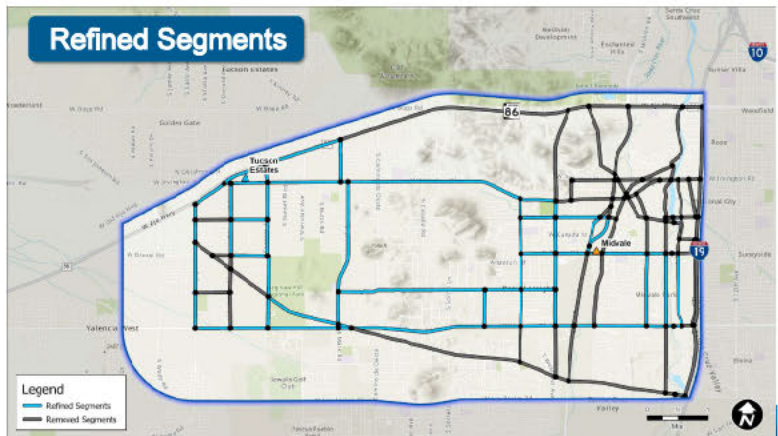
Existing 46kV System is at Capacity
The Bopp-Donald and Bilby 46 kV substations and connecting feeder lines will be replaced with a 138 kV transmission line and the Tucson Estates 138 kV substation to meet existing and future customer's electric demands.



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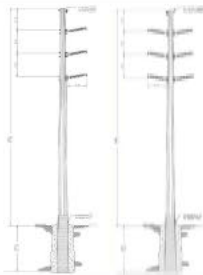
Refined Segments



Transmission Line Characteristics

Southwest Tucson Reliability Project

- Structure Type**
 - Tubular Weathering Steel Monopoles
- Typical Structure Height**
 - 75 – 85 feet
- Typical Span Length**
 - 600 – 1,000 feet
- Typical Right-of-Way Width**
 - Up to 100 feet

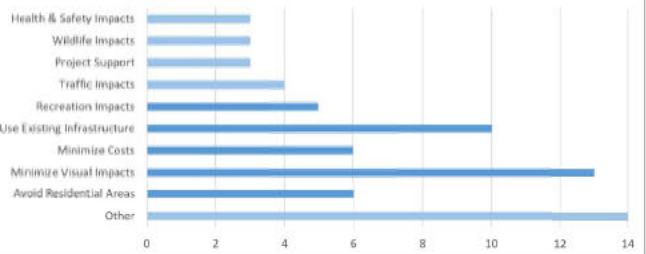


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8

What We Heard During Outreach 2...

Summary of Public Comments



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Planning and Siting Process

Southwest Tucson Reliability Project



★ WE ARE HERE

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9

Compatibility Analysis



Subject matter experts in 15 areas reviewed each refined segment to identify those with the lowest overall impacts.

- Existing and Planned Land Use
- Adjacent Residential Properties
- Conservation and Preservation
- Fish, Wildlife, and Plants
- Noise
- Communication Signal Interference
- Archaeological and Historical Resources
- Scenic Area
- Residential Visual Impact
- Total Environment
- Engineering and Construction
- System Operation
- Right-of-Way Acquisition
- Cost

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Exhibit J-4
Elected Official Outreach

Exhibit J-4.1

Example Correspondence with Elected Officials (February – August 2026)

TEP – Southwest Tucson Reliability Project

From Bravo, Teresa <Teresa.Bravo@tep.com>

Date Fri 2/13/2026 3:52 PM



Dear Chair Allen,

Tucson Electric Power (TEP) is planning to build new transmission facilities that will improve system reliability and boost energy capacity for customers in Southwest Tucson.

The Southwest Tucson Reliability Project will create a looped transmission system, which will allow TEP to deliver electricity through more than one path to customers. This design helps reduce the risk of outages, as power can be rerouted if one path is interrupted—much like having alternate roads available if one is closed. The project will include construction of two new 138-kilovolt (kV) circuits — high-capacity power lines capable of carrying large amounts of electricity — and a new 138-kV substation. These upgrades will replace older, lower-voltage equipment that can no longer keep pace with the growing energy needs of our community.

Construction is scheduled to begin in 2029 and is expected to be completed by mid-2030. Throughout the project, TEP will work hard to minimize disruptions to homes, businesses, and local roads.

These customer-focused improvements will benefit Southwest Tucson in practical ways. Homes will have more reliable power, with fewer unexpected outages and more stable voltage for everyday needs like heating, cooling, and electronics. Local businesses also will experience fewer interruptions, supporting productive operations and service to area residents.

TEP is conducting a thorough planning and siting process to determine the best routes for each phase of the project. This process includes multiple opportunities for meaningful public engagement, such as an upcoming public open house. So far, we have identified a study area and route “opportunities” – potential route segments that may be well suited for new transmission lines.

Please visit the project webpage at tep.com/southwest-tucson-reliability-project to view a map of the study area or to find more details about the project.

Should you have any questions or comments or desire a briefing on the project, please contact me directly at teresa.bravo@uns.com.

TEP will host an open house meeting on March 5th where the public can ask questions about the project and provide feedback. You are, of course, invited to attend as well.

Public Open House

Thursday, March 5, 2026, 6-8 p.m.
Grijalva Elementary School
1795 W Drexel Rd
Tucson, AZ 85746

Respectfully,

-Teresa

Teresa Bravo, MBA

Sr. Government Relations Rep., Local Affairs & Tribal Liaison

88 E. Broadway Blvd., Mail Stop HQE504, Tucson, AZ 85701

Email: teresa.bravo@uns.com Mobile: (520) 633-1112

UNS Energy Corporation



TEP – Southwest Tucson Reliability Project Update

From Bravo, Teresa <Teresa.Bravo@tep.com>

Date Wed 4/22/2026 9:33 AM

[REDACTED]

 1 attachment (4 MB)

SW Tucson - Refined Segments Map.pdf;

Dear Congresswoman, Grijalva/Mr. Robles,

Tucson Electric Power (TEP) is planning to build new power lines and other system improvements that will provide more reliable service to customers in southwest Tucson.

The Southwest Tucson Reliability Project will replace older equipment that can't keep pace with our customers' growing energy needs. The project will connect the new Tucson Estates Substation, located on Ajo Highway near Tucson Estates Parkway, to TEP's higher-voltage 138 kilovolt transmission system. These customer-focused improvements will benefit Southwest Tucson in practical ways. Homes will have more reliable power, with fewer unexpected outages and more stable voltage for everyday needs like heating, cooling, and electronics. Local businesses also will experience fewer interruptions, supporting productive operations and service to area residents.

Project Updates

TEP is conducting a thorough planning and siting process to determine the best routes for the project. This process includes multiple opportunities for meaningful public engagement, such as an upcoming public open house.

With input from area residents and stakeholders, we are making progress in identifying potential routes for the new power lines. We incorporated public feedback and also studied data about the environment and how land in the area is being used. As a result, we have eliminated several route segments from consideration. The remaining 69 route segments (see attached map) will be studied in greater detail before proposing route alternatives.

Please visit the project webpage at tep.com/southwest-tucson-reliability-project to learn more and to view an interactive map of the route segments under consideration.

Construction is scheduled to begin in 2029 and is expected to be completed by mid-2030. Throughout the project, TEP will work hard to minimize disruptions to homes, businesses, and local roads.

Should you have any questions or comments or desire a briefing on the project, please contact me directly at teresa.bravo@tep.com.

TEP will host an open house meeting on May 14th where the public can ask questions about the project and provide feedback. You are, of course, invited to attend as well.

Thursday, May 14, 2026, 6-8 p.m.

Grijalva Elementary School

1795 W Drexel Rd.

Tucson, AZ 8574

We appreciate your engagement in this important energy project.

Respectfully,

-Teresa

Teresa Bravo, MBA

Sr. Government Relations Rep., Local Affairs & Tribal Liaison

Government Relations & Public Affairs

88 East Broadway Boulevard- Mail Stop HQE504

Tucson, AZ 85701

Email: teresa.bravo@uns.com

Mobile: (520) 633-1112

UNS Energy Corporation



TEP – Southwest Tucson Reliability Project Update 7.22.26

From Bravo, Teresa <Teresa.Bravo@tep.com>

Date Wed 7/22/2026 1:19 PM

 1 attachment (88 KB)

paste.png;

Dear Ms. Untiveros,

Tucson Electric Power (TEP) is planning to build new power lines and other system improvements that will provide more reliable service to customers in southwest Tucson.

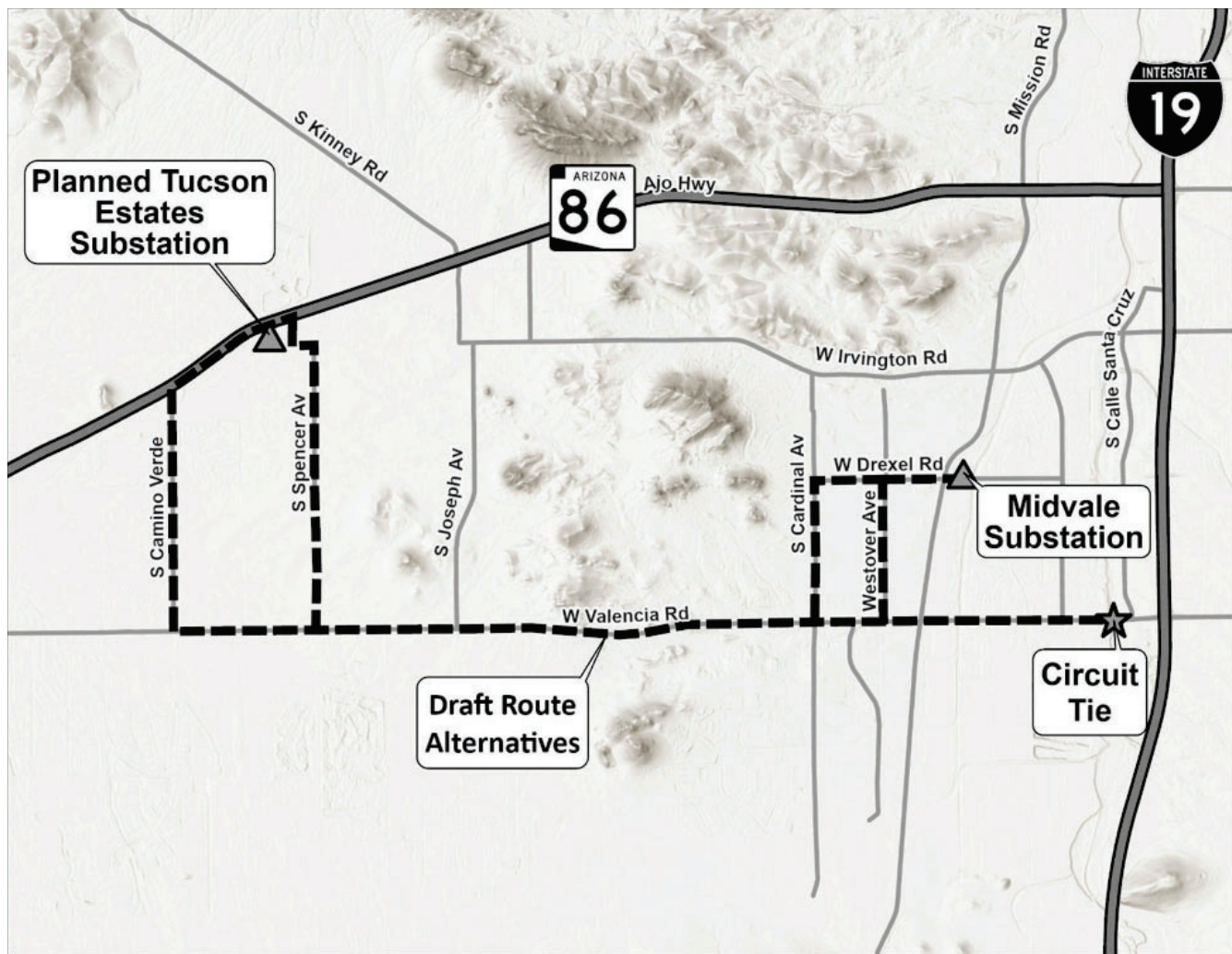
The Southwest Tucson Reliability Project will replace older equipment that can't keep pace with our customers' growing energy needs. The project will connect the planned Tucson Estates Substation, located on Ajo Highway near Tucson Estates Parkway, to TEP's higher-voltage 138 kilovolt transmission system.

These improvements will provide area customers with more reliable power, with fewer unexpected outages and more stable voltage for everyday energy needs like heating, cooling, and use of home electronics. Local businesses also will experience fewer interruptions, supporting productive operations and service to area residents.

Project Updates

TEP continues to conduct a thorough planning and siting process to determine the best routes for the project. This process includes multiple opportunities for the public to ask questions and provide feedback, including at an upcoming public open house.

With input from area residents and stakeholders, TEP identified potential routes for new power lines in both project phases. We listened to feedback from residents and others, and studied data about the environment and how land in the area is being used. As a result, we selected routes that minimized the need for new construction. Only 22 percent of the Project would require new construction, while 66 percent would utilize existing structures, and 12 percent would be rebuilt within existing utility line corridors.



Please visit the project webpage at tep.com/southwest-tucson-reliability-project to learn more and to view an interactive map of the routes under consideration.

Construction is scheduled to begin in 2029 and is expected to be completed by mid-2030. Throughout the project, TEP will work to minimize disruptions to homes, businesses, and local roads.

We would be happy to provide you with a briefing on the project, at your request. If you would like to request a briefing or have questions/comments, please contact me directly at teresa.bravo@tep.com.

TEP will host a third open house meeting for this project on August 6th where the public can ask questions about the project and provide feedback. You are, of course, invited to attend as well.

Public Open House Meeting

Thursday, August 6, 2026 6-8 p.m.

Pima Community College
Desert Vista Campus
5901 S. Calle Santa Cruz
Tucson, AZ 85709

***Please note this is a new meeting location**

TEP's customer outreach team will also be present at the open house to help with payment assistance for customers having trouble paying their bills, to assist them with enrollment in programs and rates that can save them money, and to answer questions about solar and energy efficiency.

We appreciate your engagement in this important energy project.

Respectfully,

-Teresa

Teresa Bravo, MBA

Sr. Government Relations Rep., Local Affairs & Tribal Liaison

Government Relations & Public Affairs

88 East Broadway Boulevard- Mail Stop HQE504

Tucson, AZ 85701

Email: teresa.bravo@uns.com

Mobile: (520) 633-1112

UNS Energy Corporation



Exhibit J-5
Tribal Outreach

Exhibit J-5.1

Example Correspondence to All Tribes and SHPO (February – August 2026)

Dear Mr. Verwys,

Tucson Electric Power (TEP) is planning to build new transmission facilities that will improve system reliability and boost energy capacity for customers in Southwest Tucson.

The Southwest Tucson Reliability Project will create a looped transmission system, which will allow TEP to deliver electricity through more than one path to customers. This design helps reduce the risk of outages, as power can be rerouted if one path is interrupted—much like having alternate roads available if one is closed. The project will include construction of two new 138-kilovolt (kV) circuits — high-capacity power lines capable of carrying large amounts of electricity — and a new 138-kV substation. These upgrades will replace older, lower-voltage equipment that can no longer keep pace with the growing energy needs of our community.

Construction is scheduled to begin in 2029 and is expected to be completed by mid-2030. Throughout the project, TEP will work hard to minimize disruptions to homes, businesses, and local roads.

These customer-focused improvements will benefit Southwest Tucson in practical ways. Homes will have more reliable power, with fewer unexpected outages and more stable voltage for everyday needs like heating, cooling, and electronics. Local businesses also will experience fewer interruptions, supporting productive operations and service to area residents.

TEP is conducting a thorough planning and siting process to determine the best routes for each phase of the project. This process includes multiple opportunities for meaningful public engagement, such as an upcoming public open house. So far, we have identified a study area and route “opportunities” – potential route segments that may be well suited for new transmission lines.

Please visit the project webpage at tep.com/southwest-tucson-reliability-project to view a map of the study area or to find more details about the project.

Should you have any questions or comments or desire a briefing on the project, please contact me directly at teresa.bravo@uns.com.

TEP will host an open house meeting on March 5th where the public can ask questions about the project and provide feedback. You are, of course, invited to attend as well.

Public Open House

Thursday, March 5, 2026, 6-8 p.m.
Grijalva Elementary School
1795 W Drexel Rd
Tucson, AZ 85746

Respectfully,

-Teresa

Teresa Bravo, MBA

Sr. Government Relations Rep., Local Affairs & Tribal Liaison

88 E. Broadway Blvd., Mail Stop HQE504, Tucson, AZ 85701

Email: teresa.bravo@uns.com Mobile: (520) 633-1112

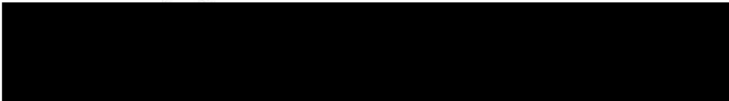
UNS Energy Corporation



TEP – Southwest Tucson Reliability Project Update

From Bravo, Teresa <Teresa.Bravo@tep.com>

Date Wed 4/22/2026 10:59 AM



 1 attachment (4 MB)

SW Tucson - Refined Segments Map.pdf;

Dear Chairman Lopez,

Tucson Electric Power (TEP) is planning to build new power lines and other system improvements that will provide more reliable service to customers in southwest Tucson.

The Southwest Tucson Reliability Project will replace older equipment that can't keep pace with our customers' growing energy needs. The project will connect the new Tucson Estates Substation, located on Ajo Highway near Tucson Estates Parkway, to TEP's higher-voltage 138 kilovolt transmission system. These customer-focused improvements will benefit Southwest Tucson in practical ways. Homes will have more reliable power, with fewer unexpected outages and more stable voltage for everyday needs like heating, cooling, and electronics. Local businesses also will experience fewer interruptions, supporting productive operations and service to area residents.

Project Updates

TEP is conducting a thorough planning and siting process to determine the best routes for the project. This process includes multiple opportunities for meaningful public engagement, such as an upcoming public open house.

With input from area residents and stakeholders, we are making progress in identifying potential routes for the new power lines. We incorporated public feedback and also studied data about the environment and how land in the area is being used. As a result, we have eliminated several route segments from consideration. The remaining 69 route segments (see attached map) will be studied in greater detail before proposing route alternatives.

Please visit the project webpage at tep.com/southwest-tucson-reliability-project to learn more and to view an interactive map of the route segments under consideration.

Construction is scheduled to begin in 2029 and is expected to be completed by mid-2030. Throughout the project, TEP will work hard to minimize disruptions to homes, businesses, and local roads.

Should you have any questions or comments or desire a briefing on the project, please contact me directly at teresa.bravo@tep.com.

TEP will host an open house meeting on May 14th where the public can ask questions about the project and provide feedback. You are, of course, invited to attend as well.

Thursday, May 14, 2026, 6-8 p.m.

Grijalva Elementary School

1795 W Drexel Rd.

Tucson, AZ 8574

We appreciate your engagement in this important energy project.

Respectfully,

-Teresa

Teresa Bravo, MBA

Sr. Government Relations Rep., Local Affairs & Tribal Liaison

Government Relations & Public Affairs

88 East Broadway Boulevard- Mail Stop HQE504

Tucson, AZ 85701

Email: teresa.bravo@uns.com

Mobile: (520) 633-1112

UNS Energy Corporation



TEP – Southwest Tucson Reliability Project Update 7.22.26

From Bravo, Teresa <Teresa.Bravo@tep.com>

Date Wed 7/22/2026 1:19 PM

 1 attachment (88 KB)

paste.png;

Dear Ms. Untiveros,

Tucson Electric Power (TEP) is planning to build new power lines and other system improvements that will provide more reliable service to customers in southwest Tucson.

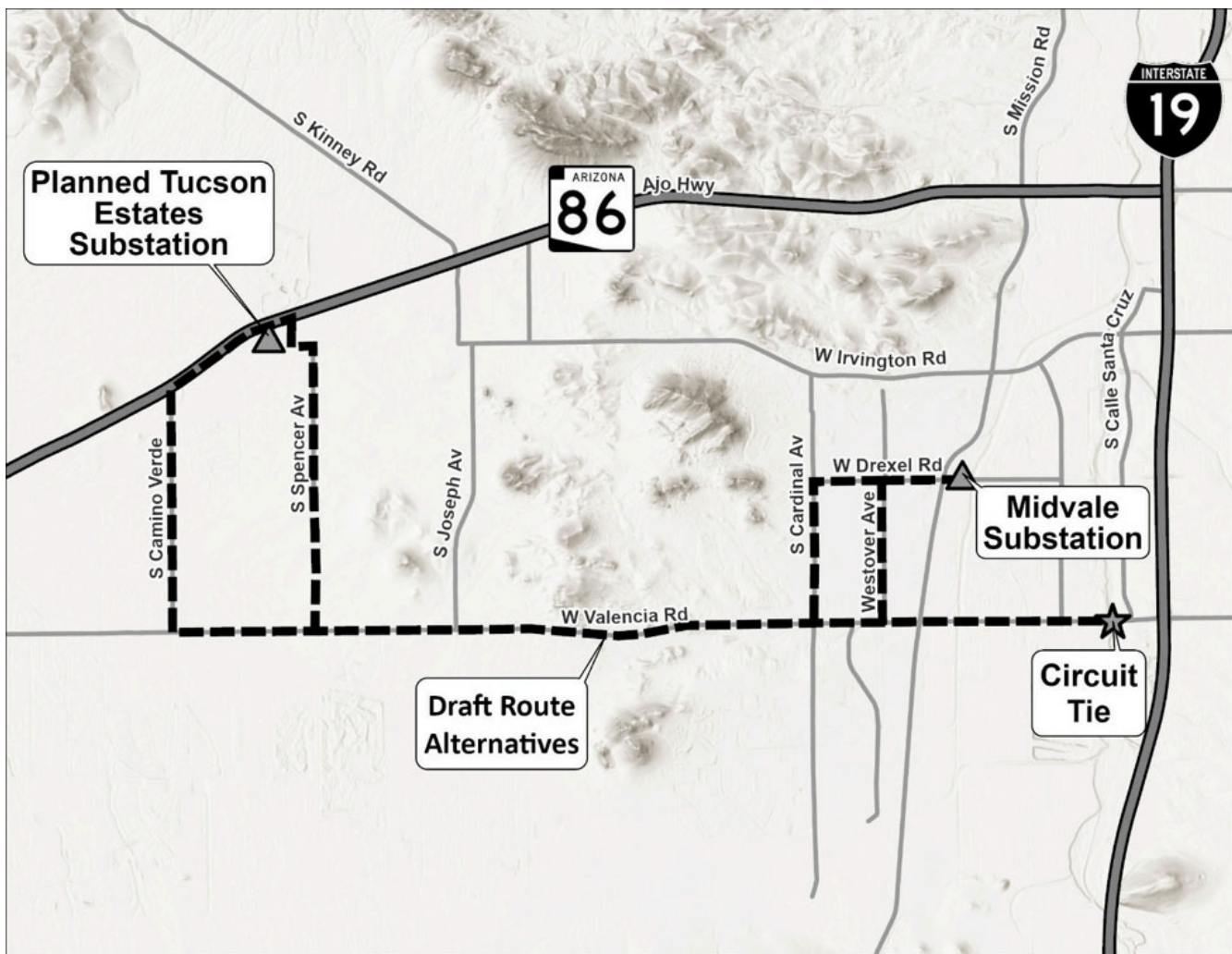
The Southwest Tucson Reliability Project will replace older equipment that can't keep pace with our customers' growing energy needs. The project will connect the planned Tucson Estates Substation, located on Ajo Highway near Tucson Estates Parkway, to TEP's higher-voltage 138 kilovolt transmission system.

These improvements will provide area customers with more reliable power, with fewer unexpected outages and more stable voltage for everyday energy needs like heating, cooling, and use of home electronics. Local businesses also will experience fewer interruptions, supporting productive operations and service to area residents.

Project Updates

TEP continues to conduct a thorough planning and siting process to determine the best routes for the project. This process includes multiple opportunities for the public to ask questions and provide feedback, including at an upcoming public open house.

With input from area residents and stakeholders, TEP identified potential routes for new power lines in both project phases. We listened to feedback from residents and others, and studied data about the environment and how land in the area is being used. As a result, we selected routes that minimized the need for new construction. Only 22 percent of the Project would require new construction, while 66 percent would utilize existing structures, and 12 percent would be rebuilt within existing utility line corridors.



Please visit the project webpage at tep.com/southwest-tucson-reliability-project to learn more and to view an interactive map of the routes under consideration.

Construction is scheduled to begin in 2029 and is expected to be completed by mid-2030. Throughout the project, TEP will work to minimize disruptions to homes, businesses, and local roads.

We would be happy to provide you with a briefing on the project, at your request. If you would like to request a briefing or have questions/comments, please contact me directly at teresa.bravo@tep.com.

TEP will host a third open house meeting for this project on August 6th where the public can ask questions about the project and provide feedback. You are, of course, invited to attend as well.

Public Open House Meeting

Thursday, August 6, 2026 6-8 p.m.

Pima Community College
Desert Vista Campus
5901 S. Calle Santa Cruz
Tucson, AZ 85709

***Please note this is a new meeting location**

TEP's customer outreach team will also be present at the open house to help with payment assistance for customers having trouble paying their bills, to assist them with enrollment in programs and rates that can save them money, and to answer questions about solar and energy efficiency.

We appreciate your engagement in this important energy project.

Respectfully,

-Teresa

Teresa Bravo, MBA

Sr. Government Relations Rep., Local Affairs & Tribal Liaison

Government Relations & Public Affairs

88 East Broadway Boulevard- Mail Stop HQE504

Tucson, AZ 85701

Email: teresa.bravo@uns.com

Mobile: (520) 633-1112

UNS Energy Corporation



From: [Bryner, Clark](#)
Subject: TEP – SW Tucson Reliability Project Certificate of Environmental Compatibility: Request for SHPO Review
Date: Friday, August 21, 2026 1:22:56 PM
Attachments: [image001.png](#)
[SHPO Request for Review - SW Tucson Reliability Project - TEP - Aug.212026.pdf](#)

Ms. Leonard,

Pursuant to Arizona Revised Statutes (ARS) § 40-360 et seq., Tucson Electric Power (TEP) is planning to file an application for a Certificate of Environmental Compatibility (CEC) for the Southwest Tucson Reliability Project in mid-September. A hearing before the Arizona Power Plant and Transmission Line Siting Committee is tentatively scheduled the first week of November at the Tucson office of the Arizona Corporation Commission, located at 400 W. Congress St., #218, Tucson, AZ 85701. The application and hearing information will be available on the project webpage at www.tep.com/southwest-tucson-reliability-project.

The attached letter contains information about the Project in accordance with the State Historic Preservation Office's (SHPO's) September 2022 "ACC-SHPO Consultation Checklist for Compliance with the State Historic Preservation Act". We respectfully request that the SHPO review and provide comment on the Project to support the Arizona Corporation Commission's compliance with the State Historic Preservation Act (Arizona Revised Statutes 41-861 through 41-864).

TEP respectfully requests your review and comments on this project by October 15, 2026. Please feel free to contact me (cbryner@tep.com), or our project consultant for cultural resources – Renee Darling (rdarling@sonoranlandresources.com), should you have any questions.

Thank you,

Clark Bryner, AICP

Manager, Siting, Outreach & Engagement

Tucson Electric Power Company

Mobile: 520-401-1175 / cbryner@tep.com



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Exhibit J-5.2

Four Southern Tribes Cultural Resources Working Group Meeting Summary

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AK-CHIN INDIAN COMMUNITY

Cultural Resources Office

42507 W Peters & Nall Road • Maricopa, Arizona 85138 • Telephone: (520) 568-1365



Four Southern Tribes Cultural Resource Working Group Meeting

Elements Event Center
16000 Maricopa Road
Maricopa, Arizona 85139

March 20, 2026

AGENDA:

(Breakfast will be served)

09:00 a.m. Call to Order & Welcome by Cultural Specialist, Ms. Tracy Wind
Introductions – All

PRESENTATIONS:

09:30 a.m. Tucson Electric Power Project Updates
Teresa Bravo, Tribal Liaison, TEP

10:00 a.m. Longroad Energy - Arizona Projects Update
Lindsey Kester, Environmental Manager, Longroad Energy

10:30 a.m. Break

10:45 a.m. SunZia and RioSol Transmission Line Projects
Steve Swanson, Agave Archaeology
Jennifer Gordon, Southwest Power Group

11:15 a.m. NAGPRA Updates
Tim Watkins, State Tribal Liaison

11:45 p.m. lunch

12:30 p.m. Tribal session

TRIBAL REPORTS:

Tohono O'odham Nation
Salt River Pima-Maricopa Indian Community
Gila River Indian Community
Ak-Chin Indian Community

ADJOURNMENT:

Next Four Tribes CRWG Meeting: Tohono O'odham Nation

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Exhibit J-5.3
Correspondence with Individual Tribes (February – August 2026)



White Mountain Apache Tribe

Office of Historic Preservation

PO Box 1032

Fort Apache, AZ 85926

Ph: (928) 338-3033 Fax: (928) 338-6055

To: Teresa Bravo, MBA – Sr. Government Relations Representative

Date: May 06, 2026

Re: *Tucson Electric Power Southwest Tucson Reliability Project*

.....

The White Mountain Apache Tribe Historic Preservation Office appreciates receiving information on the project dated; April 22, 2026. In regard to this, please refer to the following statement(s) below;

Thank you for allowing the White Mountain Apache tribe the opportunity to review and respond to the above proposed plans to build new power lines and other system improvements projects, in southwest Tucson, Pima County, Arizona.

Please be advised, we have reviewed the information provided and determined the proposed improvement projects will have "*No Adverse Effect*" to the tribe's cultural heritage resources and/or traditional cultural & historic properties.

Thank you for the continued tribal engagement and consultation, and collaborations in protecting and preserving places of cultural and historical importance.

Sincerely,

Mark Altaha

White Mountain Apache Tribe
Trial Historic Preservation Officer

From: Renee Darling <rdarling@sonoranlandresources.com>

Sent: Friday, August 21, 2026 1:56 PM

[REDACTED]

Subject: FW: Tucson Electric Power Company Southwest Tucson Reliability Project Tribal Consultation

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Dr. Hoerig,

Pursuant to Arizona Revised Statutes (ARS) § 40-360 et seq., Tucson Electric Power Company (TEP) is planning to file an application for a Certificate of Environmental Compatibility (CEC) for the Southwest Tucson Reliability Project in mid-September. A hearing before the Arizona Power Plant and Transmission Line Siting Committee is tentatively scheduled the first week of November at the Tucson office of the Arizona Corporation Commission, located at 400 W. Congress St., #218, Tucson, AZ 85701. The application and hearing information will be available on the project webpage at www.tep.com/southwest-tucson-reliability-project.

TEP respectfully requests your review of the attached letter and Class I report. In the event you have any comments, please provide them by October 15, 2026. Please feel free to contact (cbryner@tep.com), or myself, Renee Darling (rdarling@sonoranlandresources.com), should you have any questions.

Thank you,

Renee Darling
Director, Environmental & Land Use Planning
8750 E. Speedway Blvd. Suite 230
Tucson, AZ 85710
520-213-7665



Sonoran Land Resources, LLC

Your path to successful outcomes!



[Book time to meet with me](#)

[REDACTED]
Sent: Monday, August 31, 2026 12:28 PM

To: Renee Darling <rdarling@sonoranlandresources.com>

Cc: Bryner, Clark <CBryner@tep.com>; Bravo, Teresa <Teresa.Bravo@tep.com>

Subject: Re: Tucson Electric Power Company Southwest Tucson Reliability Project Tribal Consultation

Dear Ms. Darling,

Thank you to TEP and its consultants for providing a copy of the Class I cultural resources study completed in advance of the TEP Southwest Tucson Reliability Project CEC application. Because this project area is adjacent to Pascua Yaqui Tribe reservation and fee lands, please continue close communication with the Tribe throughout your planning and implementation processes.

With all best regards,
Karl Hoerig

Karl A. Hoerig, Ph.D.
Tribal Historic Preservation Officer
Pascua Yaqui Tribe
5100 W. Calle Tetakusim, Room 130
Tucson, AZ 85757
(520) 883-5116
[REDACTED]

FW: Tucson Electric Power Company Southwest Tucson Reliability Project Tribal Consultation

From Renee Darling <rdarling@sonoranlandresources.com>

Date Mon 8/24/2026 9:50 AM

[REDACTED]

Good morning Yaz,

Please save this email off. We may add this to the Other cultural resources correspondence in Exhibit J. We will also want to add it to the table in J, when we address comments after the 28th.

Thank you!

Renee

[REDACTED]
Sent: Monday, August 24, 2026 9:24 AM

To: Renee Darling <rdarling@sonoranlandresources.com>
[REDACTED]

Subject: RE: Tucson Electric Power Company Southwest Tucson Reliability Project Tribal Consultation

Dear Renee Darling,

Thank you for providing the Tucson Electric Power Company Southwest Tucson Reliability Project information for review as part of the Section 106 consultation process.

The Yavapai-Apache Nation has reviewed the Class I report and recommendations provided therein. We concur with the recommendation that a Class III pedestrian survey be conducted for the project area to identify and document any cultural resources that may be present.

At this time, the Yavapai-Apache Nation has no further comments or concerns regarding the project. We respectfully request that the Nation be kept informed and included in continued consultation as the project progresses, including notification of the results of the Class III survey and any subsequent findings or recommendations regarding historic properties.

Thank you for including the Yavapai-Apache Nation in this consultation process.

Sincerely,

Olivia McMahon
Tribal Archaeologist
Yavapai-Apache Nation

From: Renee Darling <rdarling@sonoranlandresources.com>

Sent: Friday, August 21, 2026 2:21 PM
[REDACTED]

Cc: Marley Juan <mjuan@yan-tribe.org>; Barbara McCabe <bmccabe@yan-tribe.org>; Olivia McMahon <omcmahon@yan-tribe.org>; Bryner, Clark <CBryner@tep.com>; Bravo, Teresa <Teresa.Bravo@tep.com>
Subject: FW: Tucson Electric Power Company Southwest Tucson Reliability Project Tribal Consultation

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Chairman Rocha, Director Juan, Director McCabe, and Ms. McMahon,

Pursuant to Arizona Revised Statutes (ARS) § 40-360 et seq., Tucson Electric Power Company (TEP) is planning to file an application for a Certificate of Environmental Compatibility (CEC) for the Southwest Tucson Reliability Project in mid-September. A hearing before the Arizona Power Plant and Transmission Line Siting Committee is tentatively scheduled the first week of November at the Tucson office of the Arizona Corporation Commission, located at 400 W. Congress St., #218, Tucson, AZ 85701. The application and hearing information will be available on the project webpage at www.tep.com/southwest-tucson-reliability-project.

TEP respectfully requests your review of the attached letter and Class I report. In the event you have any comments, please provide them by October 15, 2026. Please feel free to contact (cbryner@tep.com), or myself, Renee Darling (rdarling@sonoranlandresources.com), should you have any questions.

Thank you,

Renee Darling
Director, Environmental & Land Use Planning
8750 E. Speedway Blvd. Suite 230
Tucson, AZ 85710
520-213-7665



Sonoran Land Resources, LLC

Your path to successful outcomes!

 [Book time to meet with me](#)

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From: [Eric D. Verwys](#)
To: [Renee Darling](#); [Richard Saunders](#)
Cc: [Bryner, Clark](#); [Bravo, Teresa](#)
Subject: Re: Tucson Electric Power Company Southwest Tucson Reliability Project Tribal Consultation
Date: Wednesday, September 9, 2026 11:28:55 AM
Attachments: [image001.png](#)

Hello Renee,

I don't have any comments on the Class I report at this time, just some minor typos.

Thank you,

Eric Verwys

Assistant Director Natural Resources Department

P.O. Box 837

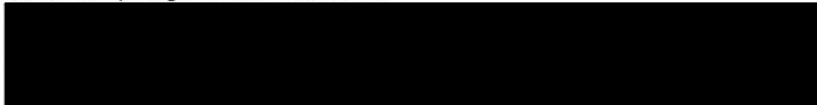
Sells, Arizona 85634

Office (520) 383-1511 Cell (520) 471-3458

Email Eric.verwys@tonation-nsn.gov

From: Renee Darling <rdarling@sonoranlandresources.com>

Sent: Friday, August 21, 2026 2:10 PM



Subject: Tucson Electric Power Company Southwest Tucson Reliability Project Tribal Consultation

Mr. Saunders and Mr. Verwys,

Pursuant to Arizona Revised Statutes (ARS) § 40-360 et seq., Tucson Electric Power Company (TEP) is planning to file an application for a Certificate of Environmental Compatibility (CEC) for the Southwest Tucson Reliability Project in mid-September. A hearing before the Arizona Power Plant and Transmission Line Siting Committee is tentatively scheduled the first week of November at the Tucson office of the Arizona Corporation Commission, located at 400 W. Congress St., #218, Tucson, AZ 85701. The application and hearing information will be available on the project webpage at www.tep.com/southwest-tucson-reliability-project.

TEP respectfully requests your review of the attached letter and Class I report. In the event you have any comments, please provide them by October 15, 2026. Please feel free to contact (cbryner@tep.com), or myself, Renee Darling (rdarling@sonoranlandresources.com), should you have any questions.

Thank you,

Renee Darling

Director, Environmental & Land Use Planning

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Exhibit J-6
External Communication

Exhibit J-6.1
Postcard 1 (February 18, 2026)

Southwest Tucson Reliability Project



Tucson Electric Power (TEP) is preparing plans for new 138 kilovolt (kV) transmission facilities that will increase energy capacity and enhance system reliability in southwest Tucson.

The Southwest Tucson Reliability Project will interconnect TEP's planned 138kV Tucson Estates Substation to TEP's existing Midvale Substation and tie into TEP's existing transmission line near the intersection of Valencia Rd. and Interstate 19.

These upgrades to TEP's local energy grid will strengthen the reliability of service to customers and provide greater capacity to support growing energy needs in the area.

We invite you to come to our in-person open house on March 5, 2026.

See the opposite side of this postcard for details.

We invite you to actively participate in the development of this important energy project by:

- Filling out an online comment form on the project web page:
tep.com/southwest-tucson-reliability-project/
- Sending an email with questions or comments to swtucson@tep.com
- Calling 1-520-770-7522 and leaving a voicemail message
- Mailing a letter to: TEP SW Tucson Reliability Project

P.O. Box 711
Mail Stop CB200
Tucson, AZ 85701-0711



Tucson Electric Power (TEP) está preparando planes para nuevas instalaciones de transmisión de 138 kilovoltios (kV) que aumentarán la capacidad y mejorarán la confiabilidad del servicio en el suroeste de Tucson.

El Proyecto de Confiabilidad del Suroeste de Tucson interconectará la subestación Tucson Estates planeado de 138 kV con la subestación de Midvale existente de TEP, y se integrará a la línea de transmisión existente de TEP cerca de la intersección de Valencia Rd. y la Interestatal 19.

Estas mejoras de la red eléctrica local de TEP reforzarán la confiabilidad del servicio a los clientes, y proporcionarán mayor capacidad para satisfacer las crecientes necesidades energéticas de su área.

We Value Your Input

Valoramos su opinión

You can help shape our future energy grid.
Visit our web page or join us at our open house to learn how.

Usted puede ayudar a dar forma a nuestra futura red energética. Visite nuestro página web o acompañenos en nuestra reunión abierta para saber cómo hacerlo.

Public Open House

Reunión abierta pública

Thursday, March 5, 2026 | 6-8 p.m.
Light refreshments will be provided.

Jueves, 5 de marzo | De 6 a 8 p.m.
Se proporcionarán refrigerios livianos.

Raúl M. Grijalva Elementary School
1795 W. Drexel Rd.
Tucson, AZ 85746

SW Tucson Reliability Project
P.O. Box 711
Mail Stop CB200
Tucson, AZ 85701-0711

**New, More Resilient Transmission Facilities Planned
for Your Area.**

**Se Planean Nuevas Instalaciones de Transmisión Más
Resistentes para su Área.**

Exhibit J-6.2
Postcard 2 (April 28, 2026)

Southwest Tucson Reliability Project



We invite you to our in-person open house on May 14, 2026 (Details on opposite side).

Tucson Electric Power (TEP) is planning to build new power lines and other system improvements that will provide more reliable service to customers in southwest Tucson. The Southwest Tucson Reliability Project will replace older equipment that can't keep pace with our customer's growing energy needs. The project will connect the new Tucson Estates Substation, located on Ajo Highway near Tucson Estates Parkway, to TEP's higher-voltage 138 kilovolt transmission system.

With your help, TEP continues to make progress in identifying potential routes for the new power lines. We listened to feedback from residents and other members of the public, and also studied data about the environment and how land in the area is being used. As a result, we have eliminated several route segments from consideration. The remaining 69 route segments will be studied in greater detail before proposing route alternatives. Please visit the project webpage to learn more and to view an interactive map of the route segments under consideration.

tep.com/southwest-tucson-reliability-project/



We invite you to participate in the development of this important energy project by:

- Filling out an online comment form on the project webpage
- Sending an email with questions or comments to swtucson@tep.com
- Calling 1-520-770-7522 and leaving a voicemail message
- Mailing a letter to: TEP SW Tucson Reliability Project
P.O. Box 711
Mail Stop CB200

Tucson Electric Power (TEP) está planeando construir nuevas líneas eléctricas con más capacidad y fuerza en el suroeste de Tucson.

Con su ayuda, TEP sigue avanzando en la identificación de posibles rutas para estas nuevas líneas eléctricas. Hemos escuchado las opiniones del público y de otras personas implicadas en el proyecto. Por favor, visite la página web del proyecto para obtener más información y ver un mapa de las rutas que estamos considerando.

También les invitamos a asistir una reunión abierta pública, el Jueves, 14 de Mayo. Detalles al reverso.

We Value Your Input

Valoramos su opinión

You can help shape our future energy grid. Visit our web page or join us at our open house to learn how.



Usted puede ayudar a dar forma a nuestra futura red energética. Visite nuestra página web o acompañenos en nuestra reunión abierta para saber cómo hacerlo.

Public Open House

Reunión abierta pública

Thursday, May 14, 2026 | 6-8 p.m.
Light refreshments will be provided.

Jueves, 14 de mayo | De 6 a 8 p.m.
Se proporcionarán refrigerios livianos.

Raúl M. Grijalva Elementary School
1795 W. Drexel Rd.
Tucson, AZ 85746

SW Tucson Reliability Project
P.O. Box 711
Mail Stop CB200
Tucson, AZ 85701-0711

Need help with your bill?

TEP's customer outreach team will be at the open house to help with payment assistance if you're behind on your bill, enroll you in programs and rates that can save you money, and answer questions about solar and energy efficiency.

¿Necesita ayuda con su factura?

El equipo de atención comunitaria de TEP estará presente en la reunión abierta para ayudarle con asistencia de pago si tiene facturas atrasadas, inscribirlo en programas y tarifas que pueden ahorrarle dinero, y responder a preguntas sobre energía solar y eficiencia energética.

Exhibit J-6.3
Postcard 3 (July 22, 2026)

Southwest Tucson Reliability Project



With Public Input, TEP Identifies Potential Transmission Line Routes: Learn more at Aug. 6 Open House

Tucson Electric Power (TEP) is planning to build new power lines and other system improvements that will provide more reliable service to customers in southwest Tucson. The Southwest Tucson Reliability Project will replace older equipment that can't keep pace with our customer's growing energy needs. The project will connect the planned Tucson Estates Substation, at Ajo Highway near Tucson Estates Parkway, to TEP's 138 kilovolt transmission system.

With input from you and other members of the public, TEP identified potential routes for new power lines in both project phases. We listened to feedback from residents and others, and studied data about the environment and how land in the area is being used. As a result, we selected routes that minimized the need for new construction. Only 22 percent of the Project would require new construction, the remaining 66 percent would utilize existing structures and 12 percent would be rebuilt within existing utility line corridors. Please visit the project webpage to learn more and to view an interactive map of the alternative routes under consideration.

tep.com/southwest-tucson-reliability-project/



We invite you to participate in the development of this important energy project by:

- Filling out an online comment form on the project webpage
- Sending an email with questions or comments to swtucson@tep.com
- Calling 1-520-770-7522 and leaving a voicemail message
- Mailing a letter to: TEP SW Tucson Reliability Project

P.O. Box 711
Mail Stop CB200

Tucson Electric Power (TEP) está planeando construir nuevas líneas eléctricas con más capacidad y fuerza en el suroeste de Tucson.

Con su ayuda, TEP ha identificado una ruta de Fase 1 con dos segmentos alternativos y una ruta de Fase 2 para las nuevas líneas eléctricas. Hemos escuchado las opiniones del público y de otras personas implicadas en el Proyecto. Por favor, visite la página web del Proyecto para obtener más información y ver un mapa de las rutas alternativas que estamos considerando.

También les invitamos a asistir una reunión abierta pública, el jueves, 6 de agosto. Detalles al reverso.

We Value Your Input

Valoramos su opinión

You can help shape our future energy grid. Visit our web page or join us at our open house to learn how.



Usted puede ayudar a dar forma a nuestra futura red energética. Visite nuestro página web o acompañenos en nuestra reunión abierta para saber cómo hacerlo.

Public Open House

Reunión abierta pública

Thursday, August 6, 2026 | 6-8 p.m.
Light refreshments will be provided.

Jueves, 6 de agosto | De 6 a 8 p.m.
Se proporcionarán refrigerios livianos.

Pima Community College- **NEW LOCATION**
Desert Vista Campus
5901 S. Calle Santa Cruz
Tucson, AZ 85709

SW Tucson Reliability Project
P.O. Box 711
Mail Stop CB200
Tucson, AZ 85701-0711

Need help with your bill?

TEP's customer outreach team will be at the open house to help with payment assistance if you're behind on your bill, enroll you in programs and rates that can save you money, and answer questions about solar and energy efficiency.

¿Necesita ayuda con su factura?

El equipo de atención comunitaria de TEP estará presente en la reunión abierta para ayudarle con asistencia de pago si tiene facturas atrasadas, inscribirlo en programas y tarifas que pueden ahorrarle dinero, y responder a preguntas sobre energía solar y eficiencia energética.

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Exhibit J-6.4
Email Update 1 (March 2026)

FW: [EXTERNAL E-Mail] TEP Plans New Transmission Line to Support Reliability

From Yazhmin Dozal Young <Yazhminoza@sonoranlandresources.com>

Date Mon 8/17/2026 2:41 PM

To Yazhmin Dozal Young <Yazhminoza@sonoranlandresources.com>

From: Southwest Tucson Reliability Project <swtucson@tep.com>

Sent: Thursday, February 19, 2026 9:04 AM

To: Southwest Tucson Reliability Project <SWTucson@tep.com>

Subject: [EXTERNAL E-Mail] TEP Plans New Transmission Line to Support Reliability

TEP Plans New Transmission Line to Support
Reliability

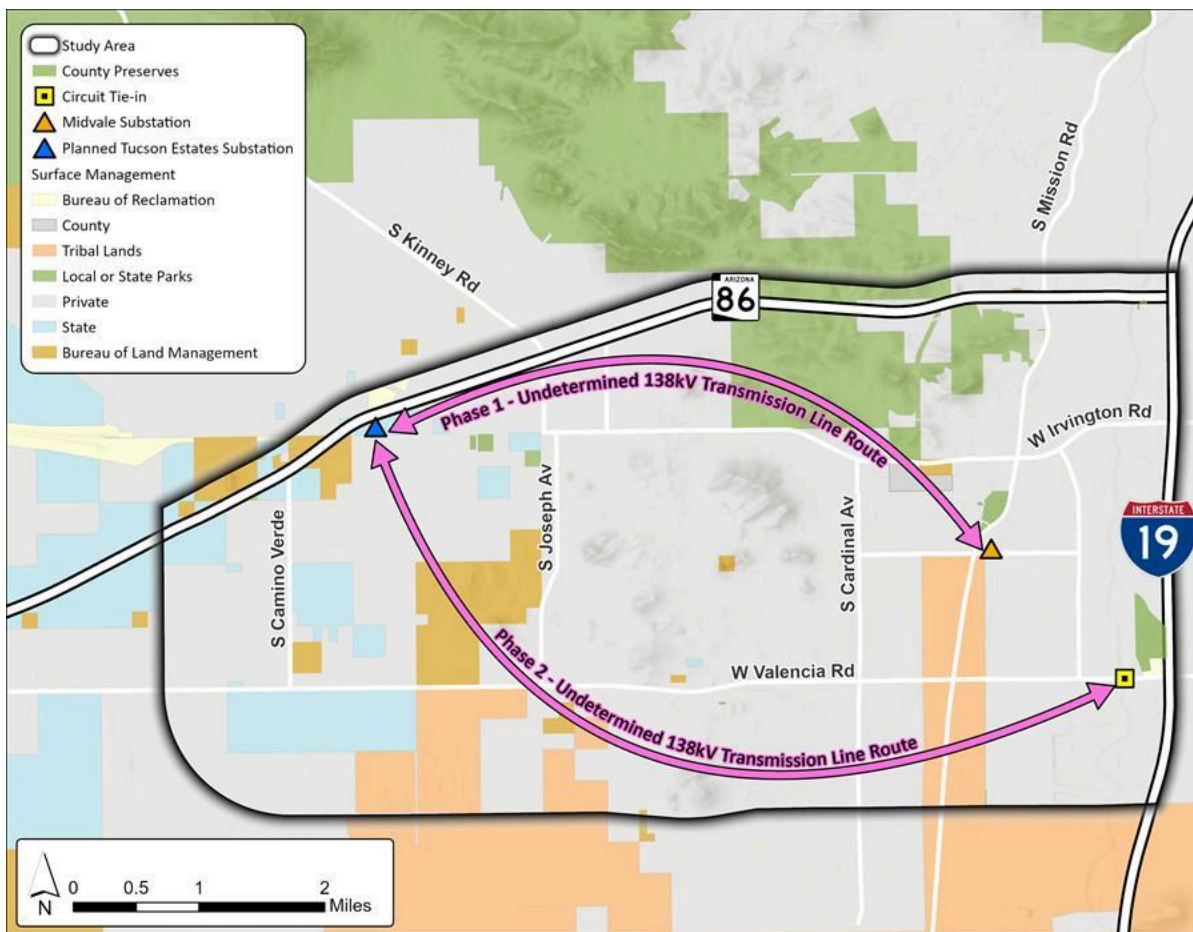


Southwest Tucson Reliability Project Introduction

Tucson Electric Power (TEP) is planning to build new transmission facilities that will improve system reliability and boost energy capacity for customers in Southwest Tucson.

You are invited to an open house meeting on March 5th (details below) where you can ask questions about the project and provide feedback.

The Southwest Tucson Reliability Project will create a looped transmission system, which will allow TEP to deliver electricity through more than one path to customers. This design helps reduce the risk of outages, as power can be rerouted if one path is interrupted—much like having alternate roads available if one is closed. The project will include construction of two new 138-kilovolt (kV) circuits — high-capacity power lines capable of carrying large amounts of electricity—and a new 138-kV substation. These upgrades will replace older, lower-voltage equipment that can no longer keep pace with the growing energy needs of our community.



Construction is scheduled to begin in 2029 and is expected to be completed by mid-2030.

Throughout the project, TEP will work hard to minimize disruptions to homes, businesses, and local roads.

These customer-focused improvements will benefit Southwest Tucson in practical ways. Homes will have more reliable power, with fewer unexpected outages and more stable voltage for everyday needs like heating, cooling, and electronics. Local businesses also will experience fewer interruptions, supporting productive operations and service to area residents.

TEP is conducting a thorough planning and siting process to determine the best routes for each phase of the project. This process includes multiple opportunities for meaningful public engagement, such as an upcoming public open house. So far, we have identified a study area and route “opportunities” – potential route segments that may be well suited for new transmission lines.

Please visit the project webpage at tep.com/southwest-tucson-reliability-project to view a map of the study area or to find more details about the project.

You are invited to an open house meeting on March 5th where you can ask questions about the project and provide feedback.

Public Open House Details

Date: Thursday, March 5

Time: 6:00 – 8:00 p.m.

Location: Grijalva Elementary School
Address: 1795 W Drexel Rd, Tucson, AZ 85746

At the open house, community members will have the opportunity to:

- Learn about the Southwest Tucson Reliability Project
- Engage in a meaningful way in the planning and siting process
- Provide feedback on specific community values and places to consider
- Review maps and information on provide input on potential routing opportunities, as well as challenges
- Ask questions of the project team

Required Approvals and Timeline

Under state law, TEP must secure a Certificate of Environmental Compatibility (CEC) to build the transmission lines. TEP plans to file a CEC application in late 2026 with the Arizona Power Plant and Transmission Line Siting Committee, which reviews CEC applications in a public process that allows neighbors and others to provide comments. The Arizona Corporation Commission (ACC) must review and approve the CEC before TEP can begin construction.



Public Participation

TEP encourages residents, property owners and other stakeholders to participate in the line siting process by:

- Attending public open houses
- Filling out an online comment form on our [project webpage](#)
- Sending email comments to swtucson@tep.com
- Calling **1-520-770-7522** and leaving a voicemail message
- Mailing a letter with comments to:
 - TEP SW Tucson Reliability Project
P.O. Box 711
Mail Stop CB200
Tucson, AZ 85701-0711

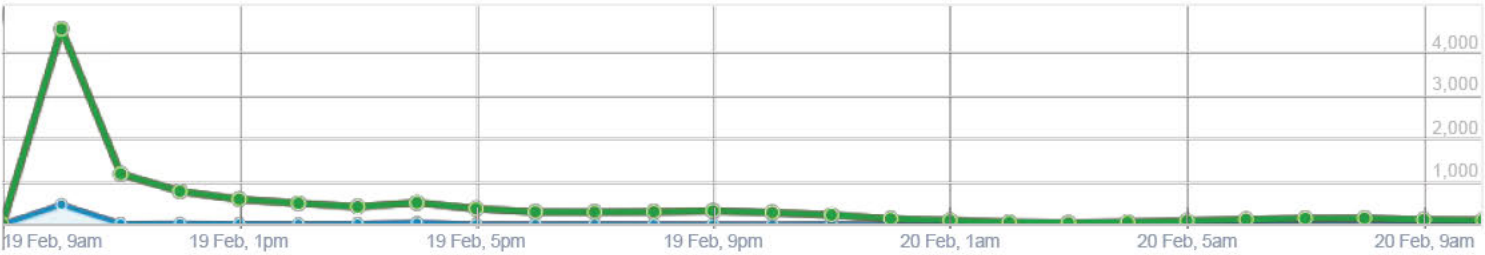


You are receiving this email because you are a customer with an active service agreement within the notification area for the Southwest Tucson Reliability Project, or you have requested to be on the project email list.

[Preferences](#) | [Unsubscribe](#)

Sent to 18,654 unique subscribers in Southwest Tucson Reliability Project

● Opens and ● Link Clicks for first day



Campaign Overview

8,588 Unique opens
16,495 total opens to date
692 Bounced
3.71% couldn't be delivered
9,374 Unopened
Open rates are only estimates

47.81% of all recipients opened so far
1.8% clicked a link (324 people)
0.17% unsubscribed (31 people)
0 people marked it as spam (0%)
0 shares across Facebook & email

Links Clicked

324 people clicked
Giving you a **3.77%** click rate.

736 total clicks
Made by 324 people

2.27 clicks per person
Average of all those who clicked.

8,264 didn't click
That's 96.23% of all those who opened.

Link (URL)	Unique	Total
https://www.tep.com/southwest-tucson-reliability-project/	317	551
https://www.tep.com/southwest-tucson-reliability-project/#timeline	47	97
https://www.tep.com/southwest-tucson-reliability-project/#comment	46	46
https://www.tep.com/southwest-tucson-reliability-project/#participation	42	42

Exhibit J-6.5
Email Update 2 (May 2026)

From: Tucson Electric Power <swtucson@tep.com>
Sent: Thursday, May 7, 2026 7:34 AM
To: Southwest Tucson Reliability Project
Subject: [EXTERNAL E-Mail] TEP - Update on New Transmission Line to Support Reliability



Tucson Electric Power

Southwest Tucson Reliability Project Update

Tucson Electric Power (TEP) is planning to build new transmission facilities that will improve system reliability and boost energy capacity for customers in Southwest Tucson.

**You are invited to an open house meeting on May 14th (details below)
where you can ask questions about the project and provide feedback.**

Need help with your bill?

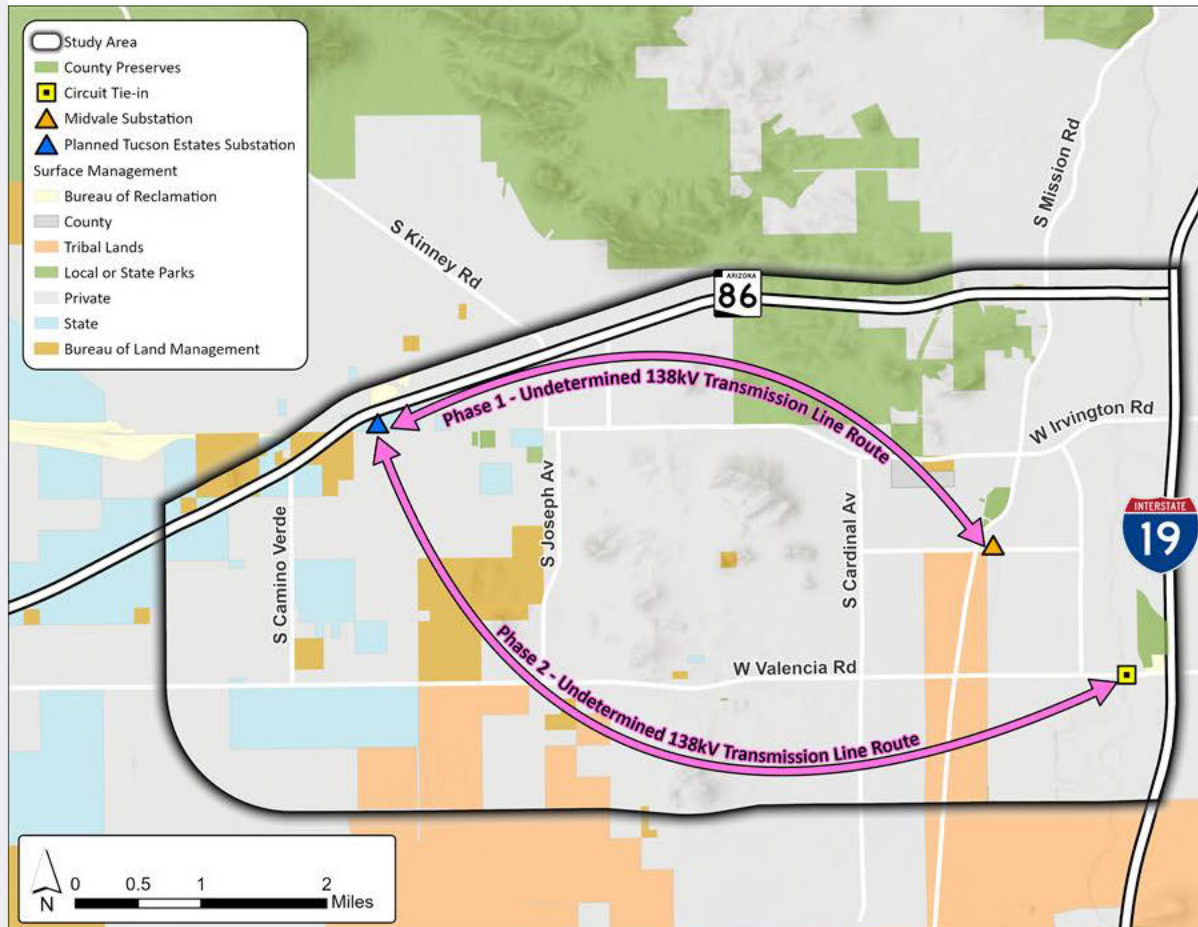
TEP's customer outreach team will be at the open house to help with payment assistance if you're behind on your bill, enroll you in programs and rates that can save you money, and answer questions about solar and energy efficiency.

¿Necesita ayuda con su factura?

El equipo de atención comunitaria de TEP estará presente en la reunión abierta para ayudarle con asistencia e pago si tiene facturas atrasadas, inscribirlo en programas y tarifas que pueden ahorrarle dinero, y responder a preguntas sobre energía solar y eficiencia energética.

The Southwest Tucson Reliability Project will replace older equipment that can't keep pace with our customers' growing energy needs. The project will connect the new Tucson Estates Substation, located on Ajo Highway near Tucson Estates Parkway, to TEP's higher-voltage 138 kilovolt transmission system.

These customer-focused improvements will benefit Southwest Tucson in practical ways. Homes will have more reliable power, with fewer unexpected outages and more stable voltage for everyday needs like heating, cooling, and electronics. Local businesses also will experience fewer interruptions, supporting productive operations and service to area residents.



Project Updates

TEP is conducting a thorough [planning and siting process](#) to determine the best routes for the project. This process includes multiple opportunities for meaningful public engagement, such as the upcoming public open house (details below).

With input from area residents and stakeholders, we are making progress in identifying potential routes for the new power lines. We incorporated public feedback and also studied data about the environment and how land in the area is being used. As a result, we have eliminated 88 route segments from consideration. The remaining 69 route segments will be studied in greater detail before proposing route alternatives.

Please visit the project webpage at tep.com/southwest-tucson-reliability-project to learn more and to view an [interactive map](#) of the route segments under consideration.

You are invited to an open house meeting on May 14th where you can ask questions about the project and provide feedback.

Public Open House Details

Date: Thursday, May 14

Time: 6:00 – 8:00 p.m.

Location: Grijalva Elementary School

Address: 1795 W Drexel Rd, Tucson, AZ 85746

At the open house, community members will have the opportunity to:

- Learn about the Southwest Tucson Reliability Project
- Engage in a meaningful way in the planning and siting process
- Provide feedback on specific community values and places to consider
- Review maps and information on potential route segments
- Ask questions of the project team
- Speak with a TEP Customer Service Representative

Public Participation

TEP encourages residents, property owners and other stakeholders to participate in the line siting process by:

- Attending public open houses
- Filling out an online comment form on our [project webpage](#)
- Sending email comments to swtucson@tep.com
- Calling 1-520-770-7522 and leaving a voicemail message
- Mailing a letter with comments to:
 - TEP SW Tucson Reliability Project
P.O. Box 711
Mail Stop CB200
Tucson, AZ 85701-0711

Required Approvals and Timeline

Under state law, TEP must secure a Certificate of Environmental Compatibility (CEC) to build the transmission lines. TEP plans to file a CEC application in late 2026 with the Arizona Power Plant and Transmission Line Siting Committee, which reviews CEC applications in a public process that allows neighbors and others to provide comments. The Arizona Corporation Commission (ACC) must review and approve the CEC before TEP can begin construction.

**October 2025–
September 2026**
**Transmission Line
Siting Process**

September 2026
**CEC Application
Filing**

November 2026
**Line Siting
Hearing**

Q1 2027
**ACC Open
Meeting**

Construction is scheduled to begin in 2029 and is expected to be completed by mid-2030. Throughout the project, TEP will work hard to minimize disruptions to homes, businesses, and local roads.

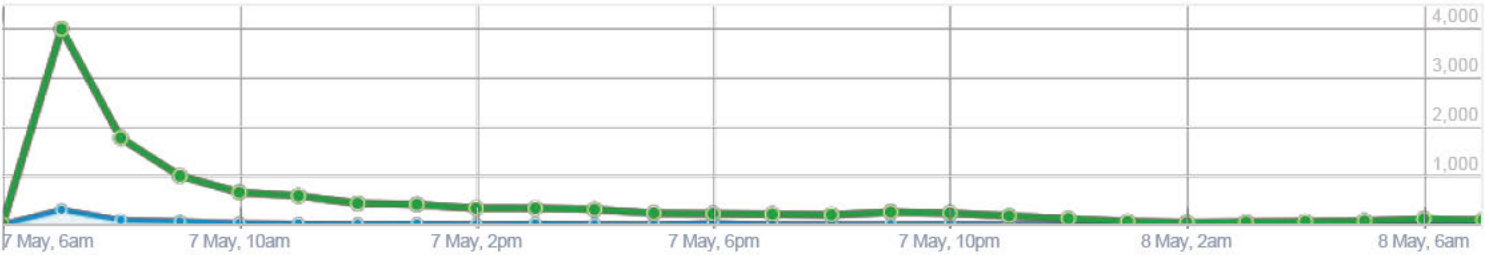


You are receiving this email because you are a customer with an active service agreement within the notification area for the Southwest Tucson Reliability Project, or you have requested to be on the project email list.

[Preferences](#) | [Unsubscribe](#)

Sent to 18,299 unique subscribers in Southwest Tucson Reliability Project

● Opens and ● Link Clicks for first day



Campaign Overview

9,012 Unique opens
16,334 total opens to date
397 Bounced
2.17% couldn't be delivered
8,890 Unopened
Open rates are only estimates

50.34% of all recipients opened so far
1.39% clicked a link (249 people)
0.13% unsubscribed (24 people)
2 people marked it as spam (0.01%)
0 shares across Facebook & email

Links Clicked

249 people clicked
Giving you a **2.76%** click rate.

671 total clicks
Made by 249 people

2.69 clicks per person
Average of all those who clicked.

8,763 didn't click
That's 97.24% of all those who opened.

Link (URL)	Unique	Total
https://www.tep.com/southwest-tucson-reliability-project/	215	412
https://www.tep.com/maps/southwest-tucson-reliability-project/	44	68
https://www.tep.com/southwest-tucson-reliability-project/#planning	22	40
https://www.tep.com/southwest-tucson-reliability-project/#timeline	20	60
https://www.tep.com/southwest-tucson-reliability-project/#comment	19	32
https://www.tep.com/southwest-tucson-reliability-project/#participation	17	59

Exhibit J-6.6
Email Update 3 (July 2026)

From: Tucson Electric Power <swtucson@tep.com>
Sent: Wednesday, July 29, 2026 7:30 AM
To: Southwest Tucson Reliability Project
Subject: [EXTERNAL E-Mail] Aug. 6 Meeting Offers Transmission Upgrade Update, Help with Your Bill

Summary of project updates, announcement of public open house on Aug. 6, and ways to get help with your bill.



Southwest Tucson Reliability Project

Read below:

- Project Updates
- Public Open House on Aug. 6
- Find Help if You're Behind on Your Bill & More

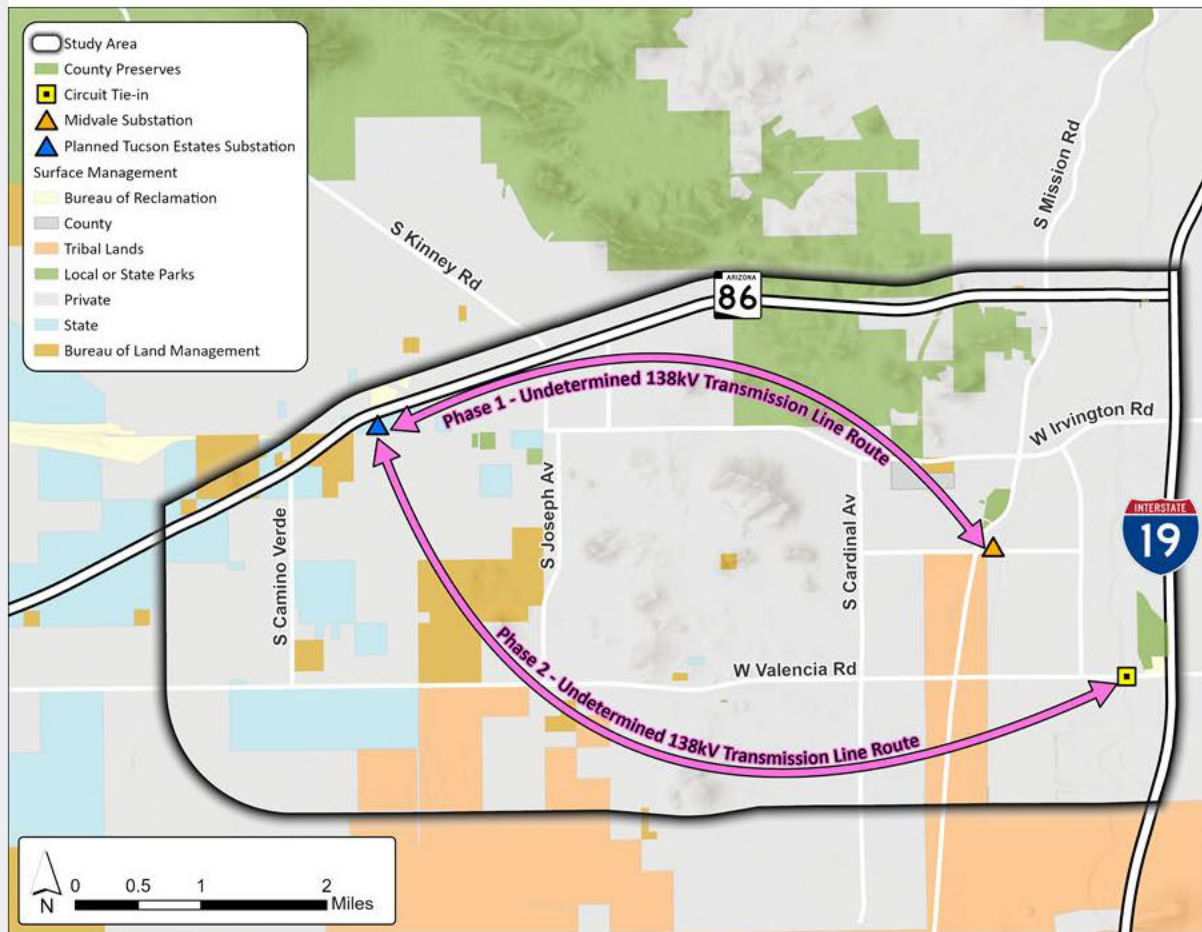
Project Overview

Tucson Electric Power (TEP) is planning to build new transmission facilities that will improve system reliability and boost energy capacity for customers in Southwest Tucson.

The Southwest Tucson Reliability Project will replace older equipment that can't keep pace with our customers' growing energy needs. The project will connect the planned Tucson Estates Substation, located on Ajo Highway near Tucson Estates Parkway, to TEP's higher-voltage 138 kilovolt transmission system.

These improvements will provide area customers with more reliable power, with fewer unexpected outages and more stable voltage for everyday energy needs like heating,

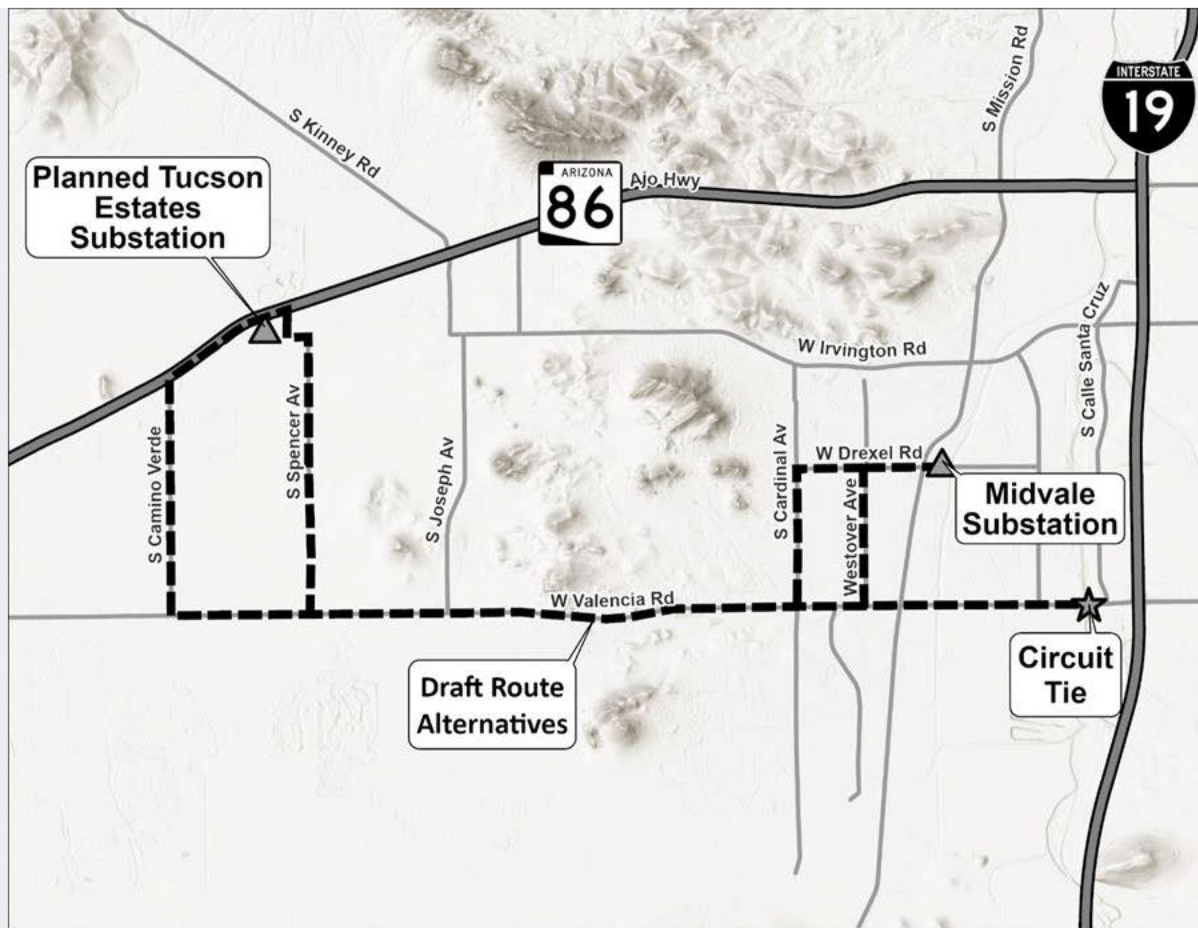
cooling, and use of home electronics. Local businesses also will experience fewer interruptions, supporting productive operations and service to area residents.



Project Updates

TEP continues to conduct a thorough [planning and siting process](#) to determine the best routes for the project. This includes multiple opportunities for the public to ask questions and provide feedback, including at an upcoming public open house.

With input from you and other members of the public, TEP identified potential routes for new power lines in both project phases. We listened to feedback from residents and others, and studied data about the environment and how land in the area is being used. As a result, we selected routes that minimized the need for new construction. Only 22 percent of the Project would require new construction, while 66 percent would utilize existing structures and 12 percent would be rebuilt within existing utility line corridors.



Please visit the project webpage at tep.com/southwest-tucson-reliability-project to learn more and to view an [interactive map](#) of the draft route alternatives under consideration.

Public Open House

You are invited to an open house meeting on August 6th where you can ask questions about the project and provide feedback.

Date: Thursday, August 6th

Time: 6:00 – 8:00 p.m.

***New Location*:** Pima Community College - Desert Vista Campus

Address: 5901 S Calle Santa Cruz, Tucson, AZ 85709

At the open house, community members will have the opportunity to:

- Learn about the Southwest Tucson Reliability Project
- Engage in a meaningful way in the planning and siting process
- Provide feedback on specific community values and places to consider
- Review maps and information on draft route alternatives

- Ask questions of the project team
- Speak with a TEP Customer Service Representative

Public Participation

TEP encourages residents, property owners and other stakeholders to participate in the line siting process by:

- Attending public open houses
- Filling out an online comment form on our [project webpage](#)
- Sending email comments to swtucson@tep.com
- Calling 1-520-770-7522 and leaving a voicemail message
- Mailing a letter with comments to:
 - TEP SW Tucson Reliability Project
P.O. Box 711
Mail Stop CB200
Tucson, AZ 85701-0711

Required Approvals and Timeline

Under state law, TEP must secure a Certificate of Environmental Compatibility (CEC) to build the transmission lines. TEP plans to file a CEC application in late 2026 with the Arizona Power Plant and Transmission Line Siting Committee, which reviews CEC applications in a public process that allows neighbors and others to provide comments. The Arizona Corporation Commission (ACC) must review and approve the CEC before TEP can begin construction.

October 2025– September 2026	September 2026	November 2026	Q1 2027
Transmission Line Siting Process	CEC Application Filing	Line Siting Hearing	ACC Open Meeting

Construction is scheduled to begin in 2029 and is expected to be completed by mid-2030. Throughout the project, TEP will work to minimize disruptions to homes, businesses, and local roads.

Need Help with Your Bill?

TEP's customer outreach team will be at the open house to help with payment assistance if you're having trouble paying your bill, enroll you in programs and rates that can save you money, and answer questions about solar and energy efficiency.

¿Necesita ayuda con su factura?

El equipo de atención comunitaria de TEP estará presente en la reunión abierta para ayudarle con asistencia e pago si tiene dificultades para abonar su factura, inscribirlo en programas y tarifas que pueden ahorrarle dinero, y responder a preguntas sobre energía solar y eficiencia energética.

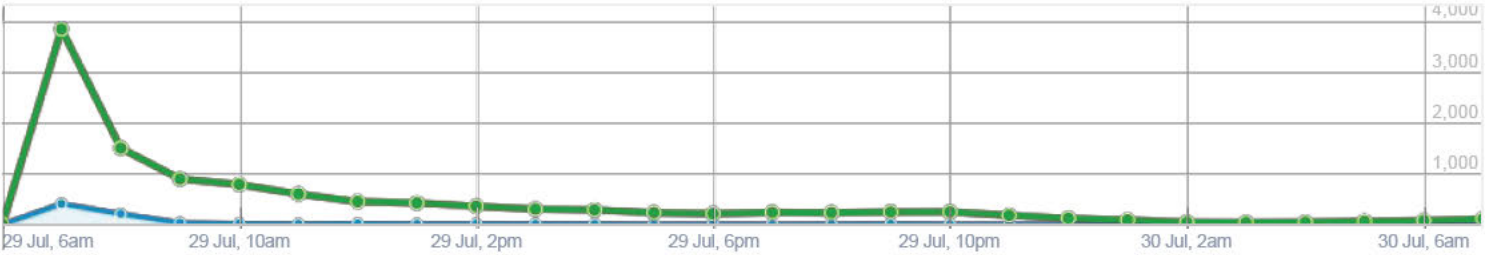


You are receiving this email because you are a customer with an active service agreement within the notification area for the Southwest Tucson Reliability Project, or you have requested to be on the project email list.

[Preferences](#) | [Unsubscribe](#)

Sent to 18,285 unique subscribers in Southwest Tucson Reliability Project

● Opens and ● Link Clicks for first day



Campaign Overview

8,631 Unique opens
15,047 total opens to date
419 Bounced
2.29% couldn't be delivered
9,235 Unopened
Open rates are only estimates

48.31% of all recipients opened so far
1.33% clicked a link (238 people)
0.18% unsubscribed (33 people)
1 person marked it as spam (0.01%)
0 shares across Facebook & email

Links Clicked

238 people clicked
Giving you a **2.76%** click rate.

884 total clicks
Made by 238 people

3.71 clicks per person
Average of all those who clicked.

8,393 didn't click
That's 97.24% of all those who opened.

Link (URL)	Unique	Total
https://www.tep.com/southwest-tucson-reliability-project/	207	439
https://www.tep.com/southwest-tucson-reliability-project/#participation	45	171
https://www.tep.com/southwest-tucson-reliability-project/#planning	45	62
https://www.tep.com/southwest-tucson-reliability-project/#timeline	29	130
https://www.tep.com/maps/southwest-tucson-reliability-project/	28	48
https://www.tep.com/southwest-tucson-reliability-project/#comment	19	34

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Exhibit J-6.7
Public Notices 1 (February and March 2026)

Steller

From B2

While the RTA board does provide a venue for regional discussion of transportation issues, that still happens at its sister organization, the Pima Association of Governments, where it happened for decades before RTA existed. The RTA board and the PAGO board have essentially the same jurisdiction.

20 years is too long

One of the lessons of the first RTA program is that things can change a lot over 20 years. Projects that seemed necessary, such as the large widening of Broadway and the expansion of North First Avenue, may not be necessary by the time we get to them. But the half-tones kept included into it projects. There are areas where the spending is double — as in which the arterial roads in the area will get reconstructed as part of the projected \$77 million in rehabilitation spending, or where exactly \$240 million

In safety spending will occur. The vast majority of the spending, though, is included into specific projects or services, such as Sun Tran.

The length of the RTA commission and just its spending on projects we might not want later but also on a way of doing business we might want to replace. By committing to this 20-year plan, we are probably establishing the possibility of any alternative vision that might arise because there's only so much too many people are willing to pay, and this plan lasts so long.

In other words, it was want to build a Tucson area that is truly here and on our travel, that vision will probably go unfulfilled if we pass RTA No. 1.

Tucson representation remains problematic

Formerly, Tucson's mayor and city council members have complained that the RTA voting system is unfair. It gives the mayor of Tucson, which has a population of around 540,000, the same voting rights as given to representatives of Maricopa, which has

Solentia, South Tucson, Pima County, the Pecos Valley, and the Pecos Valley. Tucson's population is 540,000.

It's one of the reasons many in the city proper remain suspicious of anything RTA, even if it's a transfer of power to the city.

Also, it is likely that, if RTA No. 1 is passed and if other voters later approve our own half-cent-per-dollar sales tax (and RTA), we'll instantly have a large amount of money available to use in projects in Tucson proper. Some have estimated the amount will be \$1.4 billion.

One of the 1400 million, over 20 years, because the sales tax would be applied only in the city and the revenue would stay in the city.

It's a troubling prospect, but of course, it's a big risk.

That's what makes the decision hard — either way you vote, you are accepting a risk or one of the most important subjects for the Tucson area future. Now, in my hand, I pick my risk.

Contact columnist Tim Steller at tsteller@tucson.com or 520-807-7799. Or follow @timsteller on Twitter.

Moving Up

Pros with promise.
Sundays in
Arizona Daily Star

VOLUNTEERS NEEDED FOR RESEARCH

Studies involve monitoring brain activity and behavior as you explore realistic environments in virtual reality.

TO PARTICIPATE, YOU MUST:

- Be between 18-30 or over 65 years of age
- Have learned English in childhood
- Be in good general health



Contact:
heidi.thermal@arizona.edu
(520) 621-9507

Visit times are flexible. Compensation and travel reimbursement will be provided.

Spatial Cognition Lab
University of Arizona

Psychology

The University of Arizona has received and approved this research project.

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Trusted by authors for nearly 100 years, Dorrance has made countless authors' dreams come true.

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877-933-2931
or www.dorranceinfo.com/azstar

Public Notice



Tucson Electric Power

Southwest Tucson Reliability Project

Tucson Electric Power (TEP) is preparing plans for new 138 kilovolt (kV) transmission facilities that will increase energy capacity and enhance system reliability in southwest Tucson.

The Southwest Tucson Reliability Project will interconnect TEP's planned 138kV Tucson Estates Substation to TEP's existing Midvale Substation and tie into TEP's existing transmission line near the intersection of Valencia Rd. and Interstate 19.

These upgrades to TEP's local energy grid will strengthen the reliability of service to customers and provide greater capacity to support growing energy needs in the area.

TEP invites the public to attend an open house to learn about the project, ask questions, and submit comments.

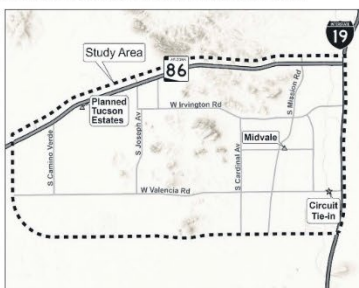
Para leer la versión de este aviso en español, por favor consulte tep.com/southwest-tucson-reliability-project-spanish.

Public Open House

Thursday, March 5 | 6-8 p.m.
Raul M. Grijalva Elementary School
1795 W. Drexel Rd.
Tucson, AZ 85746



Project web page:
tep.com/southwest-tucson-reliability-project



Land

From A2

moved to Al Marini, although it was farther, there were more, and all of the facilities to be able to expand the regular programming because there was more room and more opportunity to develop.

Conroy, if it's a step back, as he said, "I've said it a lot of times in the past, saying, 'I've been getting better and better' by the time we get to the end of the road."

In the end, the city's rail station development would have been a lot of money and a lot of time and a lot of money to do so.

But there's no doubt the property was taken over by the city and it was a lot of money and a lot of time and a lot of money to do so.

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Moving Up

Pros with promise.
Sundays in
Arizona Daily Star

Dillard's

TAKE THE 10-DAY WALK TEST

During March, purchase any pair of regular price Johnston & Murphy shoes and wear them for 10 days. If you're not completely satisfied, return them for a full refund.

JOHNSTON & MURPHY.

*To receive a full refund, shoes must be returned with the original receipt within 10 days from date of purchase. Women's Johnston & Murphy not available in all stores. Selection varies by size and store. Call 1-800-345-5273 to find a Dillard's store near you.

Public Notice



Tucson Electric Power

Southwest Tucson Reliability Project

Tucson Electric Power (TEP) is preparing plans for new 138 kilovolt (kV) transmission facilities that will increase energy capacity and enhance system reliability in southwest Tucson.

The Southwest Tucson Reliability Project will interconnect TEP's planned 138kV Tucson Estates Substation to TEP's existing Midvale Substation and tie into TEP's existing transmission line near the intersection of Valencia Rd. and Interstate 19.

These upgrades to TEP's local energy grid will strengthen the reliability of service to customers and provide greater capacity to support growing energy needs in the area.

TEP invites the public to attend an open house to learn about the project, ask questions, and submit comments.

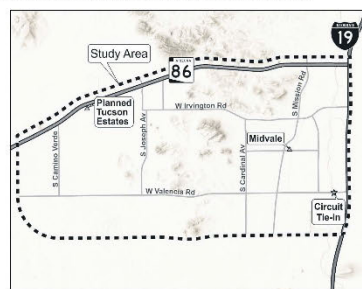
Para leer la versión de este aviso en español, por favor consulte tep.com/southwest-tucson-reliability-project-spanish.

Public Open House

Thursday, March 5 | 6-8 p.m.
Raul M. Grijalva Elementary School
1795 W. Drexel Rd.
Tucson, AZ 85746



Project web page:
tep.com/southwest-tucson-reliability-project



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Horario:
Lun-Vier. 6.00 am - 4.30pm
Sáb. 6.00am - 3.30pm
Dom. 6.00am - 2.00pm

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Ave. 5 de Mayo #308 Sur, Colonia Centro
Magdalena de Kino, Sonora, México
Tel.: (632) 322 3931, Fax: (632) 322 3958

Aviso Público



Tucson Electric Power

Proyecto de Confiabilidad del Suroeste de Tucson

Tucson Electric Power (TEP) está preparando planes para nuevas instalaciones de transmisión de 138 kilovoltios (kV) que aumentarán la capacidad energética y mejorarán la confiabilidad del servicio en el suroeste de Tucson.

El Proyecto de Confiabilidad del Suroeste de Tucson interconectará la subestación Tucson Estates planeado de 138 kV con la subestación de Midvale existente de TEP, y se integrará a la línea de transmisión existente de TEP cerca de la intersección de Valencia Rd. y la Interestatal 19.

Estas mejoras de la red eléctrica local de TEP reforzarán la confiabilidad del servicio a los clientes, y proporcionarán mayor capacidad para satisfacer las crecientes necesidades energéticas de su área.

TEP invita al público a asistir a una reunión abierta pública para conocer el proyecto, hacer preguntas y enviar comentarios.

To read the English version of this notice, please visit tep.com/southwest-tucson-reliability-project/

Reunión Abierta Pública

Jueves, 5 de marzo | 6-8 p.m.

Raúl M. Grijalva Elementary School

1795 W. Drexel Rd.
Tucson, AZ 85746



Página web del proyecto: tep.com/southwest-tucson-reliability-project-spanish.



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Exhibit J-6.8
Public Notices 2 (May 2026)

walls

"This adventure highlights the need to maintain connectivity between the United States and Mexico can populations of bats and the most not all of us to push back on the devastating plans of the new administration to cut the North American continent in half with more border walls and barriers," said Cynthia D'Amico, the Arizona and New Mexico director for "Mystery Watersheds" Project.

Added Michael Robinson, a senior conservation advocate for the Center for Biological Diversity: "Cesar could be the last job to truly represent a Trump completion of his destructive border wall."

Growth potential

There is a chance that some of these conservation could soon be extended to the border habitat for the first time.

They found a lot more than just a few butterflies. "We found a lot more than just a few butterflies," said D'Amico. "We found a lot more than just a few butterflies." She said the group also found a lot more than just a few butterflies.

Wilder already did his part for the habitat in mid-April, when he traveled with his wife and son to a place near Phoenix, Arizona, to help a butterfly conservation group. He said the group was looking for a place to establish a butterfly conservation area.

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A butterfly hangs from a vine in a natural setting. Photo by [Name] for [Publication].

Join the blitz

With only a month left, there's still time to take part in the 2024 Border Blitz.

To participate, you will need a smart phone with the free "Border Blitz" app. You will also need to have a valid ID and a valid driver's license.

Complete instructions and a list of safety recommendations can be found on the Border Blitz website: borderblitz.org.

Impacting wildlife populations on either side of the border, but they do hope to be able to do that over time, he said.

"That's the next phase, to really dig deeper and try to use what we've learned within the data," Wilder said.

Wilder is also hoping to secure some additional funding to bring on a second phase for future habitat.

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FROM THE FRONT PAGE

Mission

Fluoride Society. GIBBS: APFEX is a \$200 million mission to send the first American spacecraft from NASA's 7-year, \$1.2-billion Artemis program to the moon, which briefly touched down on the lunar surface in 2013 and delivered samples back to Earth in 2023 before sitting off on its next mission. Artemis is the principal investigator in charge of GIBBS: APFEX is a graduate-level astronaut professor who worked as deputy principal investigator for GIBBS: APFEX.

Other new and active NASA missions with ties to the university are also on the chopping block, including the \$1.2-billion Artemis program, which is set to launch in 2024 and deliver samples back to Earth in 2023 before sitting off on its next mission.

Historic cuts

The Trump administration tried to do the same thing to GIBBS: APFEX.

But last year, Congress ended the program, which was a part of the university's history. The university said the program was a part of its history.

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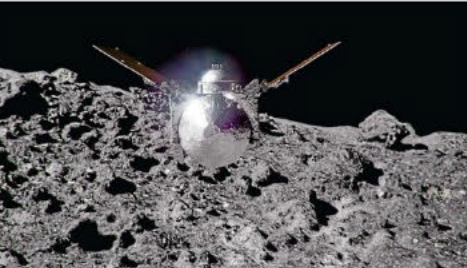
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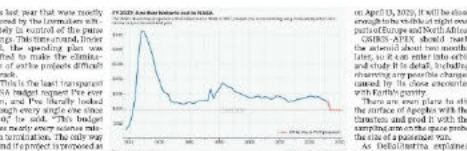
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A NASA satellite shows the space station orbiting Earth. The image is a composite of several images taken by the satellite.



According to the Fluoride Society, the Trump administration's proposed cuts to NASA for fiscal year 2025 would effectively return the space agency to its 1960s funding level.

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Public Notice

Southwest Tucson Reliability Project

Tucson Electric Power (TEP) is planning to build new power lines and other system improvements that will provide more reliable service to customers in southwest Tucson. The Southwest Tucson Reliability Project will connect the new Tucson Estates Substation, located on Ajo Highway near Tucson Estates Parkway, to TEP's higher-voltage 138 kilovolt transmission system.

With your help, TEP continues to make progress in identifying potential routes for the new power lines. We listened to feedback from residents and other members of the public, and also studied data about the environment and how land in the area is being used. As a result, we have eliminated several route segments from consideration. The remaining 68 route segments will be studied in greater detail before proposing route alternatives. Please visit the project webpage to learn more and to view an interactive map of the route segments under consideration.

TEP invites the public to attend our second open house to learn about the project, ask questions, and submit comments.

Para leer la versión de este aviso en español, por favor consulte tep.com/southwest-tucson-reliability-project-spanish.

Public Open House

Thursday, May 14 | 6-8 p.m.

Raul M. Grijalva Elementary School
1755 W. Denzel Rd.
Tucson, AZ 85716

Project web page:
tep.com/southwest-tucson-reliability-project

Public Notice

Southwest Tucson Reliability Project

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Public Open House

Thursday, May 14 | 6-8 p.m.

Raul M. Grijalva Elementary School
1755 W. Denzel Rd.
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Project web page:
tep.com/southwest-tucson-reliability-project

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Horario:
Lun-Vier. 6.00 am - 4.30pm
Sáb. 6.00am - 3.30pm
Dom. 6.00am - 2.00pm

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Ave. 5 de Mayo #308 Sur, Colonia Centro
Magdalena de Kino, Sonora, México
Tel.: (632) 322 3931, Fax: (632) 322 3958

Aviso Público



Tucson Electric Power

Proyecto de Confiabilidad del Suroeste de Tucson

Tucson Electric Power (TEP) está planeando construir nuevas líneas eléctricas con más capacidad y fuerza en el suroeste de Tucson. El Proyecto de Confiabilidad del Suroeste reemplazará el equipo antiguo que ya no puede mantener el ritmo de las crecientes necesidades energéticas de nuestros clientes. El Proyecto conectará la nueva subestación Tucson Estates ubicada en la Carretera Ajo cerca de Tucson Estates Parkway, al sistema de transmisión de 138 kilovoltios de mayor voltaje de TEP.

Con su ayuda, TEP sigue avanzando en la identificación de posibles rutas para estas nuevas líneas eléctricas. Hemos escuchado las opiniones del público y de otras personas implicadas en el Proyecto, y también estudiamos datos sobre el medio ambiente y cómo se está utilizando el suelo en el área. Como resultado, hemos eliminado varios segmentos de ruta de consideración. Los 69 segmentos de ruta restantes se estudiarán con mayor detalle antes de proponer alternativas de ruta. Por favor, visite la página web del proyecto para obtener más información y ver un mapa interactivo de las rutas que estamos considerando.

TEP invita al público a asistir a una segunda reunión abierta pública para conocer el proyecto, hacer preguntas y enviar comentarios.

To read the English version of this notice, please visit tep.com/southwest-tucson-reliability-project/

Reunión Abierta Pública

Jueves, 14 de mayo | 6-8 p.m.

Raúl M. Grijalva Elementary School

1795 W. Drexel Rd.
Tucson, AZ 85746



Página web del Proyecto: tep.com/southwest-tucson-reliability-project-spanish.



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Exhibit J-6.9
Public Notices 3 (July and August 2026)

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GRACE TRACY, ARIZONA BIRTH
 GRACE TRACY, ARIZONA BIRTH, was born in 1940 in Phoenix, Arizona. She is a pianist and a composer. She has composed several pieces of music, including "The Piano" and "The Piano and the Piano". She has also composed several pieces of music for the piano, including "The Piano and the Piano". She has also composed several pieces of music for the piano, including "The Piano and the Piano".



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Para leer la versión de este aviso en español, por favor consulte tep.com/southwest-tucson-reliability-project-spanish. El equipo de atención comunitaria de TEP estará presente en la reunión abierta para ayudarle con asistencia de pago si tiene facturas atrasadas, inscribirlo en programas y tarifas que pueden ahorrarle dinero, y responder a preguntas sobre energía solar y eficiencia energética.



Para leer la versión de este aviso en español, por favor consulte tep.com/southwest-lucson-reliability-project-spanish. El equipo de atención comunitaria de TEP estará presente en la reunión abierta para ayudarle con asistencia de pago si tiene facturas atrasadas, inscribirlo en programas y tarifas que pueden ahorrarle dinero, y responder a preguntas sobre energía solar y eficiencia energética.



Aviso Público



Proyecto de Confiabilidad del Suroeste de Tucson

Tucson Electric Power (TEP) está planeando construir nuevas líneas eléctricas con más capacidad y fuerza en el suroeste de Tucson. El Proyecto de Confiabilidad del Suroeste de Tucson reemplazará el equipo antiguo que ya no puede mantener el ritmo de las crecientes necesidades energéticas de nuestros clientes. El Proyecto conectará la nueva subestación Tucson Estates ubicada en la Carretera Ajo cerca de Tucson Estates Parkway, al sistema de transmisión de 138 kilovoltios de mayor voltaje de TEP.

Con su ayuda, TEP ha identificado rutas alternativas para estas nuevas líneas eléctricas. Hemos escuchado las opiniones del público y de otras personas implicadas en el Proyecto, y también estudiamos datos sobre el medio ambiente y cómo se está utilizando el suelo en el área. Por favor, visite la página web del proyecto para obtener más información y ver un mapa interactivo de las rutas alternativas que estamos considerando.

TEP invita al público a asistir a una tercera reunión abierta pública para conocer el proyecto, hacer preguntas y enviar comentarios.

To read the English version of this notice, please visit tep.com/southwest-tucson-reliability-project/

Reunión Abierta Pública

Jueves, 6 de agosto | 6-8 p.m.

Pima Community College
Desert Vista Campus
5901 S. Calle Santa Cruz
Tucson, AZ 85709



Página web del Proyecto:

tep.com/southwest-tucson-reliability-project-spanish.

CONTACT US!

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◆ MAGAZINE ADVERTISING

◆ EVENT PROMOTION & SPONSORSHIP

◆ DIGITAL STRATEGY

EL PERRO LOCO
SONORAN HOTDOGS & MORE

3 UBICACIONES:

- 3051 E 36th St 85713
(520)272-0229
- 1285 W Ajo Way 85713
(520)312-2603
- 2650 W Valencia Rd 85746
(520)332-5865

EN JULIO
LOS MARTES
2 hotdogs estilo Sonora
tradicional o regular
1 orden de papas fritas
1 soda de lata
\$10.99

SERVICIO DE CATERING Y EVENTOS ESPECIALES

MENÚ DE EVENTOS:

- Hot dog estilo Sonora
- Tacos de:
 - Carne asada al carbón
 - Pollo a la parilla
 - Frijoles
 - Birria de res
 - Caramelos
- Quesadillas
- Nachos Supreme con carne asada
- Frijoles refritos
- Aguas Frescas:
 - Horchata
 - Jamaica

OTROS SERVICIOS:

- Renta de espacio en Comisaría
- Renta o Venta de Food Trailer
- Proceso para trámites de Permisos para Health Department.

Reid Park Zoo making progress on expansion project

Construction continues on Reid Park Zoo's Pathway to Asia expansion, with major progress visible throughout the project.

Most new buildings are taking shape, and crews are also advancing tiger, gibbon, and other habitats, along with behind-the-scenes animal care spaces. The project remains on track to open later this year, weather and construction conditions permitting.

Zoo operations and guest access are not affected during construction of the addition. Learn more by watching the latest Zoo News video linked below.



Aviso Público



Tucson Electric Power

Proyecto de Confiabilidad del Suroeste de Tucson

Tucson Electric Power (TEP) está planeando construir nuevas líneas eléctricas con más capacidad y fuerza en el suroeste de Tucson. El Proyecto de Confiabilidad del Suroeste de Tucson reemplazará el equipo antiguo que ya no puede mantener el ritmo de las crecientes necesidades energéticas de nuestros clientes. El Proyecto conectará la subestación planificada de Tucson Estates ubicada en la Carretera Ajo cerca de Tucson Estates Parkway, al sistema de transmisión de 138 kilovoltios de TEP.

Con la contribución de los residentes del área y otros miembros del público, TEP ha identificado rutas alternativas para estas nuevas líneas eléctricas en ambas fases del Proyecto. Escuchamos las opiniones de los residentes y de otros, y estudiamos datos sobre el medio ambiente y cómo se utiliza la tierra en el área. Como resultado, seleccionamos rutas propuestas que minimizaran la necesidad de nueva construcción. Por favor, visita la página web del Proyecto para obtener más información y para ver un mapa interactivo de las rutas en consideración.

TEP invita al público a asistir a una tercera reunión abierta pública para conocer el Proyecto, hacer preguntas y comentarios.

To read the English version of this notice, please visit tep.com/southwest-tucson-reliability-project

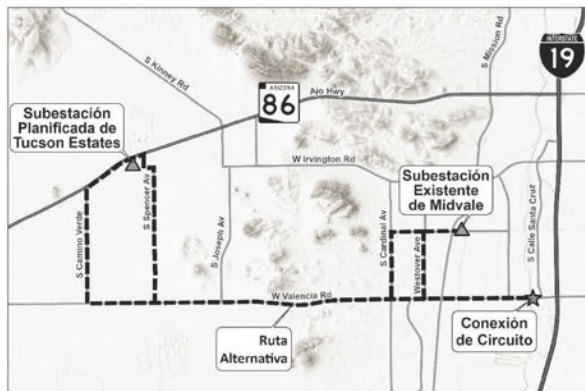
Reunión Abierta Pública

Jueves, 6 de agosto | 6-8 p.m.

Pima Community College

Desert Vista Campus

5901 S. Calle Santa Cruz
Tucson, AZ 85709



Página web del Proyecto: tep.com/southwest-Tucson-reliability-project-spanish

EL PERRO LOCO
SONORAN HOTDOGS & MORE

3 UBICACIONES:

- 3051 E 36th St 85713
(520)272-0229
- 1285 W Ajo Way 85713
(520)312-2603
- 2650 W Valencia Rd 85746
(520)332-5865

EN JULIO
LOS MARTES
2 hotdogs estilo Sonora
tradicional o regular
+ 1 orden de papas fritas
+ 1 soda de lata
\$10.99

SERVICIO DE CATERING Y EVENTOS ESPECIALES

MENÚ DE EVENTOS :

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 - Carne asada al carbón ,
 - Pollo a la parilla ,
 - Frijoles
 - Birria de res,
 - Caramelos
- Quesadillas,
- Nachos Supreme con carne asada,
- Frijoles refritos ,
- Aguas Frescas:
 - Horchata
 - Jamaica.

OTROS SERVICIOS :

- Renta de espacio en Comisaría
- Renta o Venta de Food Trailer
- Proceso para trámites de Permisos para Health Department.

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- DIGITAL STRATEGY

Exhibit J-6.10
Social Media Advertisements 1 (February and March 2026)



Tucson Electric Power

Ad ·



Join us at our public open house on Thursday, March 5 to learn how we're working to improve the electric system serving Southwest Tucson.



<https://tep.com>

**Help Shape Our Future
Energy Grid**

[Learn more](#)

51



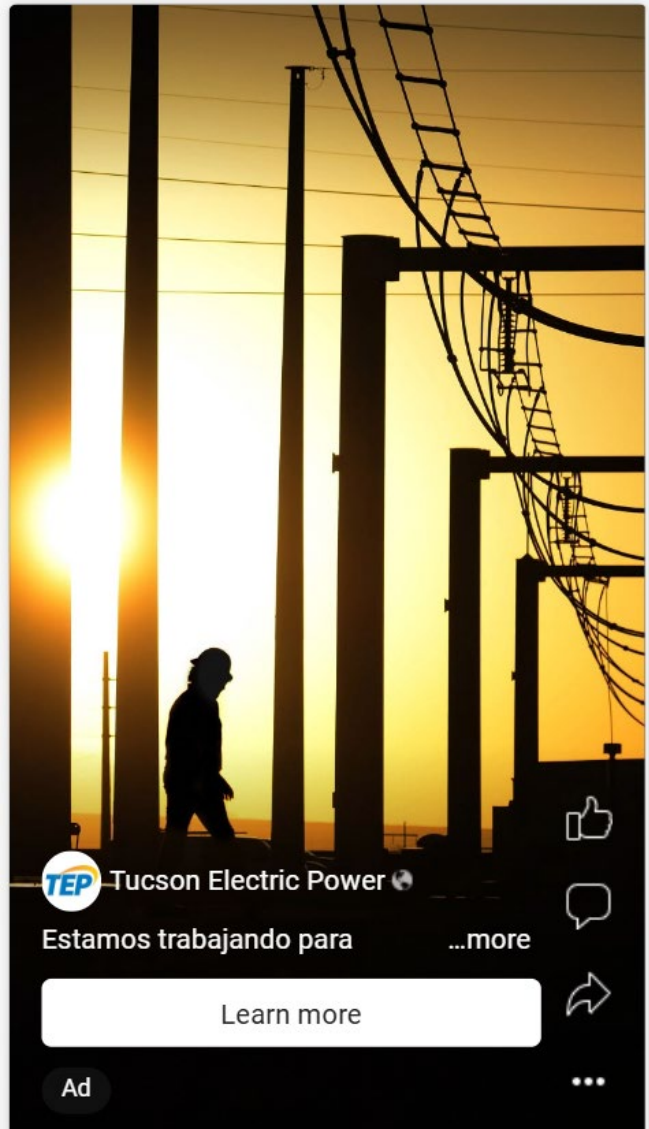
Like



Comment



Share



Tucson Electric Power

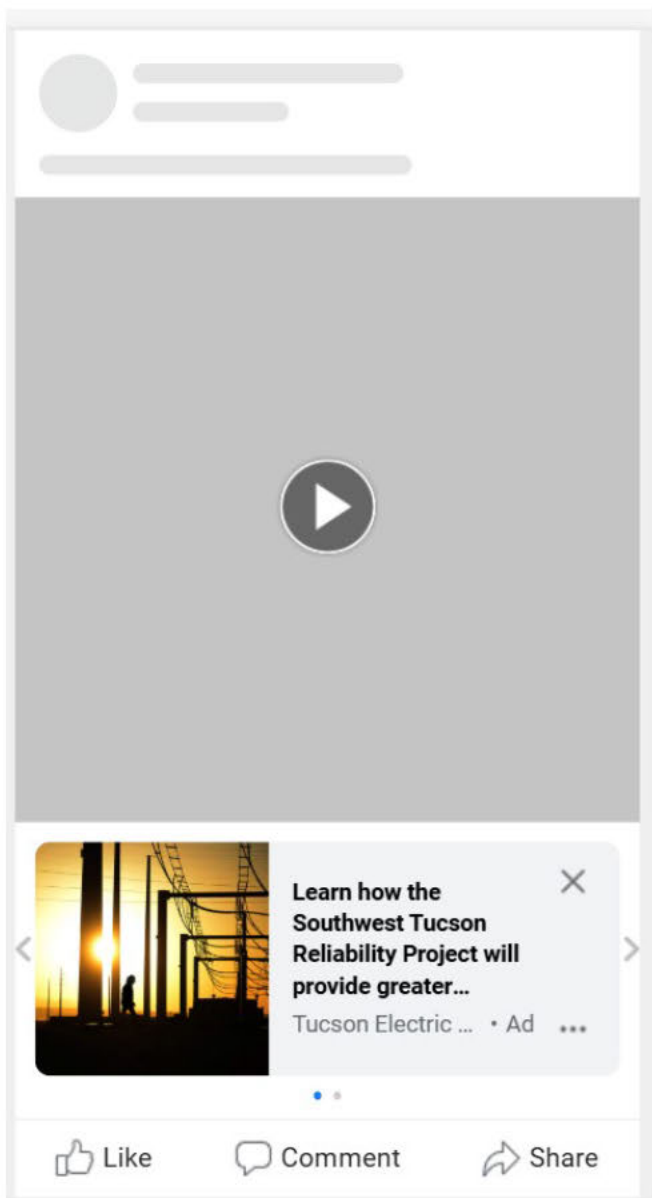
Estamos trabajando para

[...more](#)

[Learn more](#)

Ad





Metric	Total
Reach	25381
Impressions	286501
Link Clicks	1334
Click-Through Rate	0.47%

Exhibit J-6.11
Social Media Advertisements 2 (May 2026)



Tucson Electric Power

Ad · 

...

X

Estamos trabajando para mejorar la confiabilidad y resiliencia del sistema de transmisión eléctrica que presta

...See more



tep.com

Reunión abierta pública

TEP invita al público a asi...

See details

 Like

 Comment

 Share

TEP

Tucson Electric Power

Ad · 

...



We're working to improve the reliability and resilience of the electrical transmission system serving southwest Tucson. Learn more at our in-person public open house on May 14.



tep.com

Public Open House

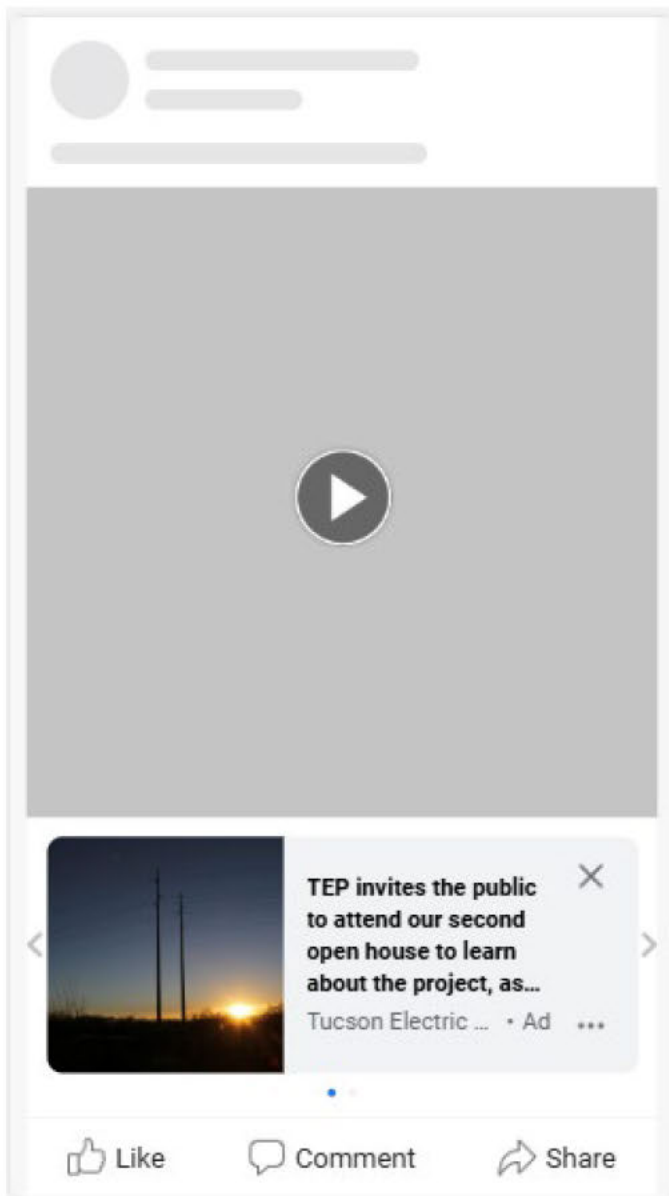
TEP invites the public to a...

See details

 Like

 Comment

 Share



Metric	Total	English	Spanish
Reach	55058	54498	6132
Impressions	116437	109948	6489
Clicks	430	406	24
Click-Through Rate	0.37%	0.37%	0.37%

Exhibit J-6.12
Social Media Advertisements 3 (August 2026)


Tucson Electric Power
 Sponsored ·

Public Open House

Thursday, August 6, 2026 | 6-8 p.m.

Light refreshments will be provided.

Pima Community College
 Desert Vista Campus
 5901 S. Calle Santa Cruz
 Tucson, AZ 85709

Need help with your bill?
 TEP's customer outreach team will be at the open house to help with payment assistance if you're behind on your bill, enroll you in programs and rates that can save you money, and answer questions about solar and energy efficiency. [See less](#)



TEP.COM

Public Open House

TEP invites the public to attend our open house t...

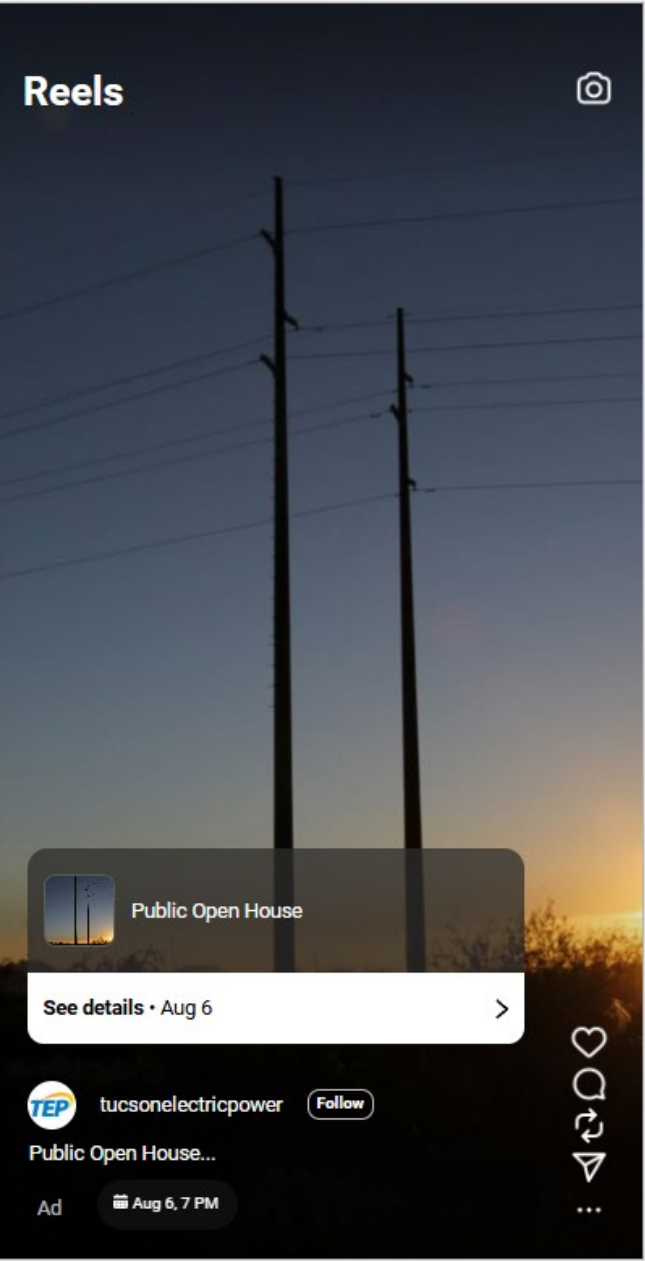
[See details](#)

👍 29 💬 ➦

👍

Reels







Public Open House

[See details](#) · Aug 6



tucsonelectricpower

[Follow](#)

Public Open House...

Ad

📅 Aug 6, 7 PM

👍 💬 ➦ ❤️

⋮



Tucson Electric Power

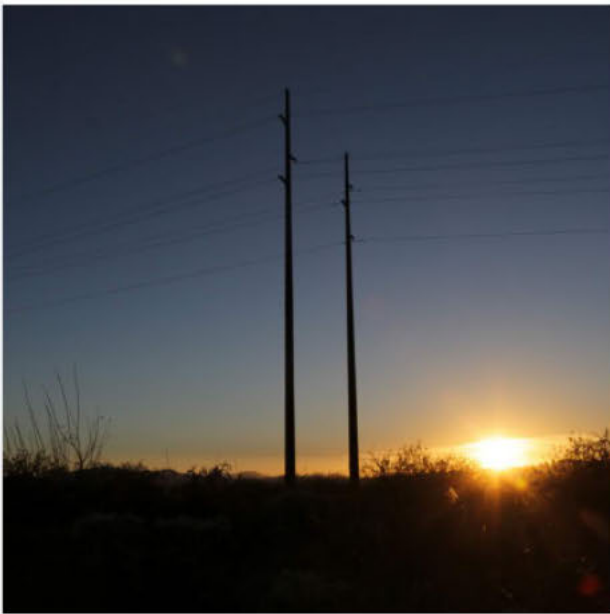
Ad · 

...

X

Reunión abierta pública
 Jueves, 6 de agosto | De 6 a 8 p.m.

...See more



Proyecto de confiabilidad del
 suroeste de Tucson

See details

 9

 Like

 Comment

 Share

Metric	Total	English	Spanish
Reach	61,047	44,288	40,536
Impressions	148,620	88,252	60,368
Clicks	168	107	61
Click-Through Rate	0.11%	0.12%	0.10%

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Exhibit J-6.13
Street Signage 1 (February 11, 2026)



Tucson Electric Power

SOUTHWEST TUCSON RELIABILITY PROJECT OPEN HOUSE

**MARCH 5, 2026
GRIJALVA ELEMENTARY
6:00 - 8:00 PM**

VISIT PROJECT WEBPAGE FOR DETAILS



tep.com/southwest-tucson-reliability-project

AJO & MISSION



IRVINGTON & MISSION



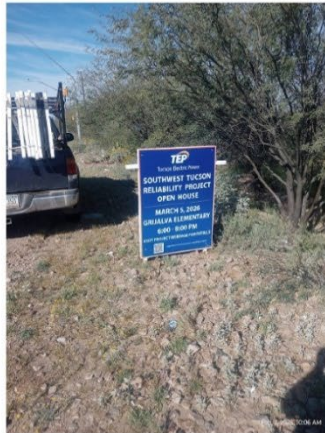
VALENCIA & MIDVALE



AJO & KINNEY

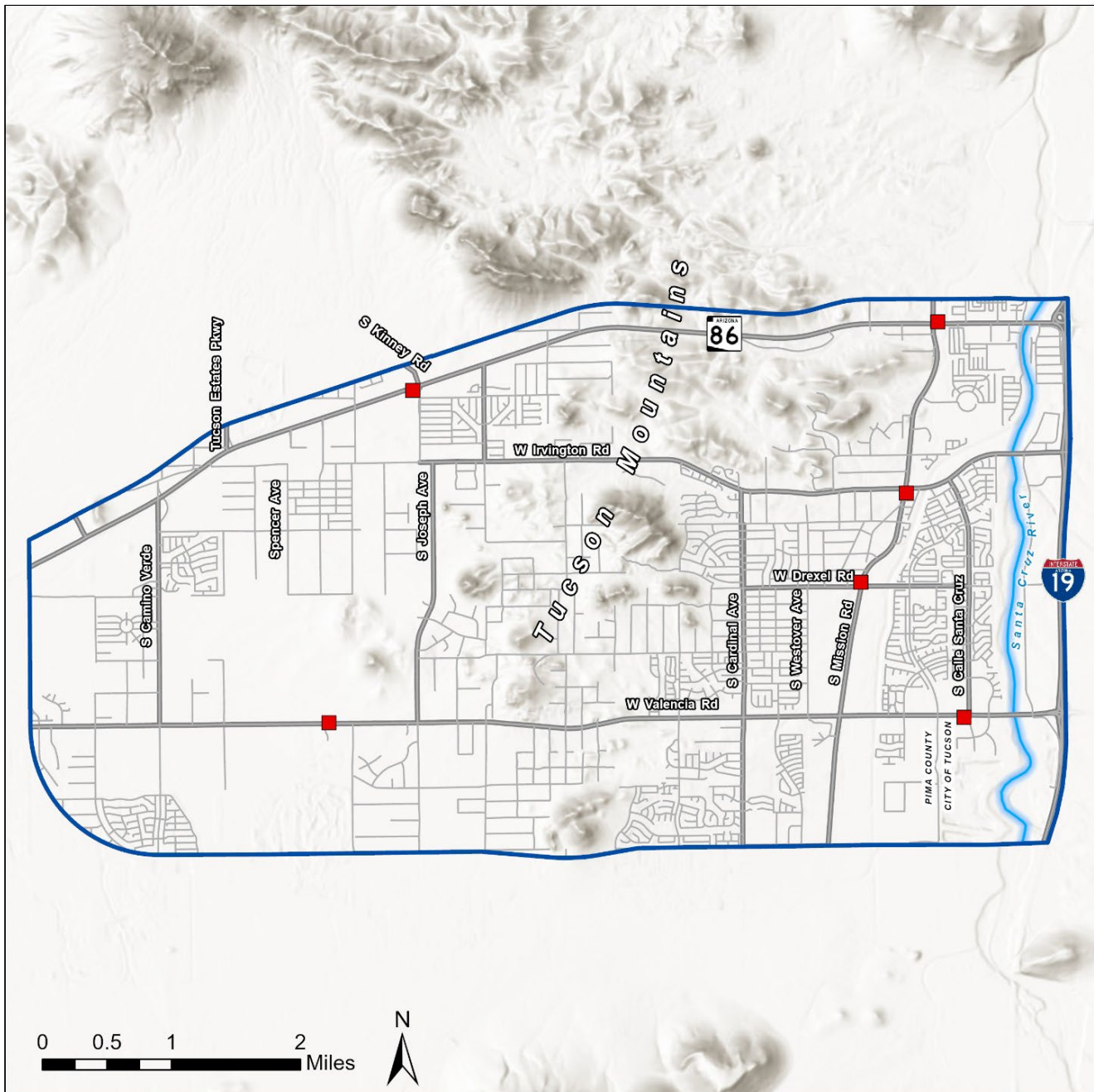


VALENCIA & CASINO DEL SOL



MISSION & DREXEL





Tucson Electric Power

Southwest Tucson Reliability Project

Open House #1 and #2 Street Sign Locations

- ▭ Siting Study Area
- Open House #1 & #2 Sign Location



Exhibit J-6.14
Street Signage 2 (May 1, 2026)



Tucson Electric Power

SOUTHWEST TUCSON RELIABILITY PROJECT OPEN HOUSE

MAY 14, 2026

GRIJALVA ELEMENTARY

6:00 - 8:00 PM

VISIT PROJECT WEBPAGE FOR DETAILS



tep.com/southwest-tucson-reliability-project

AJO & MISSION



CASINO DEL SOL & VALENCIA



AJO & KINNEY



MISSION & IRVINGTON

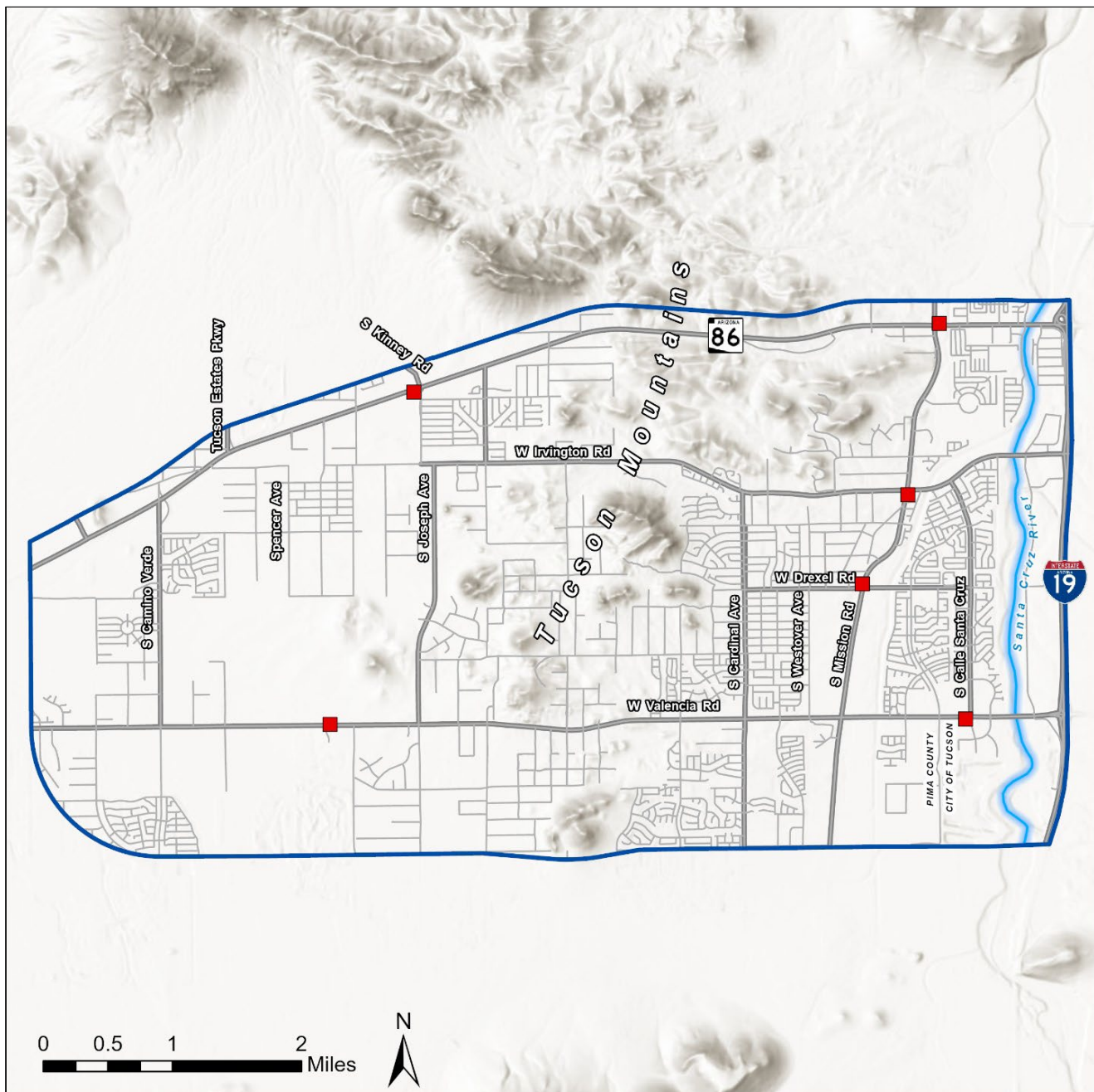


MISSION & DREXEL



VALENCIA & MIDVALE





Tucson Electric Power

Southwest Tucson Reliability Project

Open House #1 and #2 Street Sign Locations

- ▭ Siting Study Area
- Open House #1 & #2 Sign Location

TEP
Tucson Electric Power

Exhibit J-6.15
Street Signage 3 (July 23, 2026)



Tucson Electric Power

SOUTHWEST TUCSON RELIABILITY PROJECT OPEN HOUSE

AUGUST 6, 2026

PCC- DESERT VISTA CAMPUS

5901 S. CALLE SANTA CRUZ, TUCSON, AZ

6:00 - 8:00 PM

VISIT PROJECT WEBPAGE FOR DETAILS



tep.com/southwest-tucson-reliability-project

CARDINAL & DREXEL



CAMINO VERDE & DREXEL



VALENCIA & CASINO DEL SOL



AJO & KINNEY

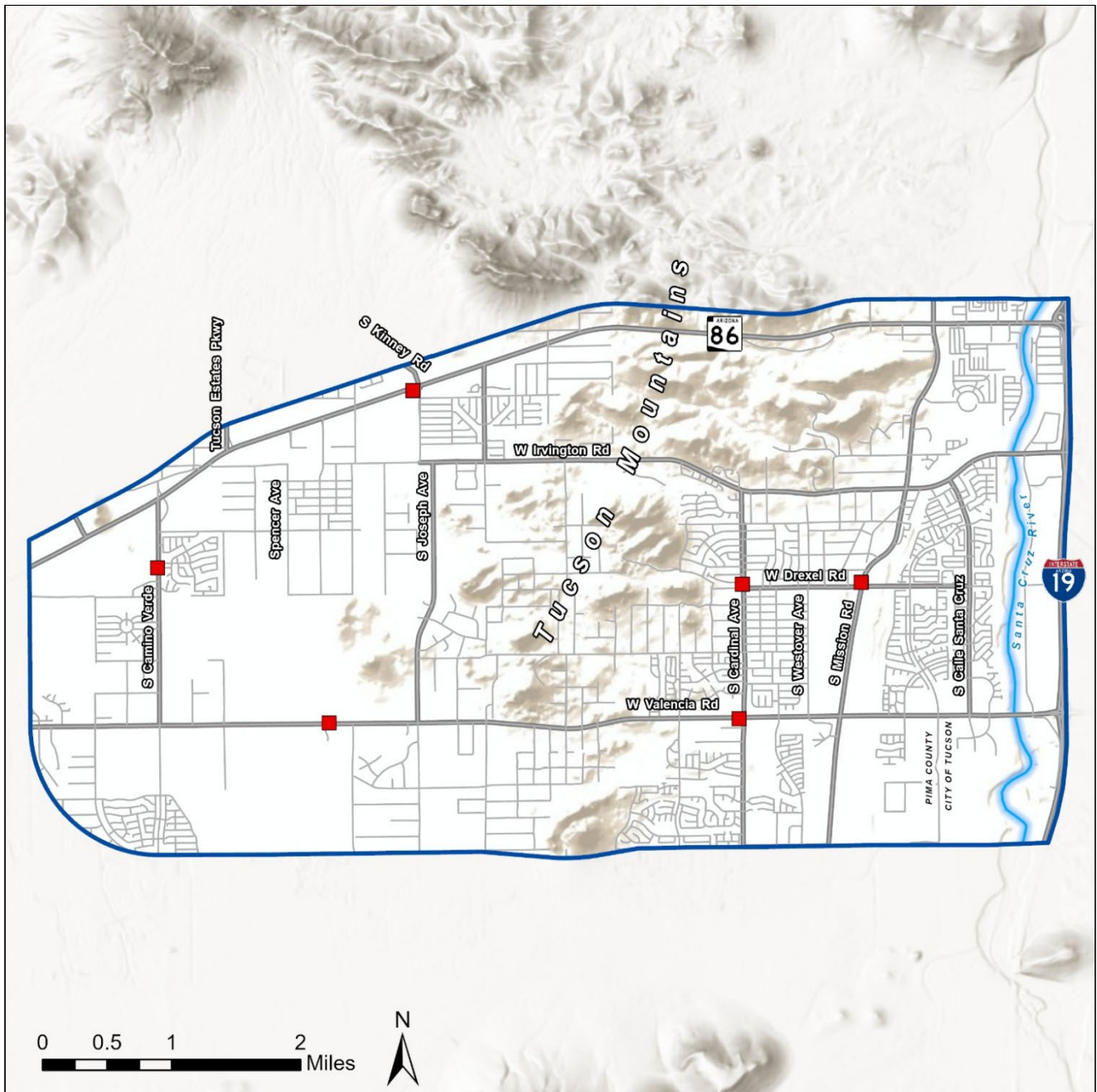


VALENCIA & CARDINAL



MISSION & DREXEL





Tucson Electric Power

Southwest Tucson

Reliability Project

Open House #3 Street Sign Locations

 Siting Study Area

 Open House #3
Sign Location


Tucson Electric Power

Exhibit J-6.16
Open House 1 Flyer (February 17, 2026)



SOUTHWEST TUCSON RELIABILITY PROJECT

OPEN HOUSE REUNIÓN ABIERTA PÚBLICA

**MARCH 5, 2026
5 DE MARZO DE 2026**

**RAÚL M. GRIJALVA ELEMENTARY
1795 W. DREXEL RD.
TUCSON, AZ 85746
6:00 - 8:00 PM**



VISIT PROJECT WEBPAGE FOR DETAILS
tep.com/southwest-tucson-reliability-project.

VISITA LA PÁGINA WEB DEL PROYECTO PARA MÁS DETALLES
tep.com/southwest-Tucson-reliability-project-spanish.



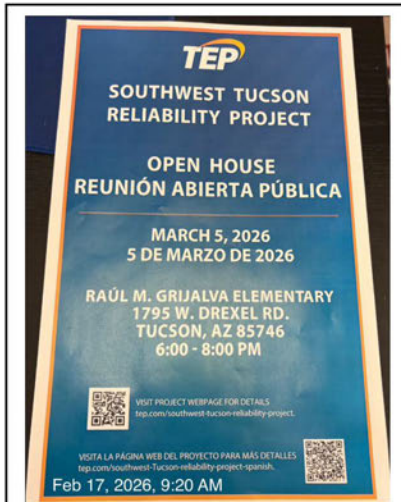


Photo 1: Southwest Tucson Reliability Project public open house flyer posted at the Tucson Ward 1 office at 940 W Alameda St, Tucson, AZ 85745, on February 17th, 2026.

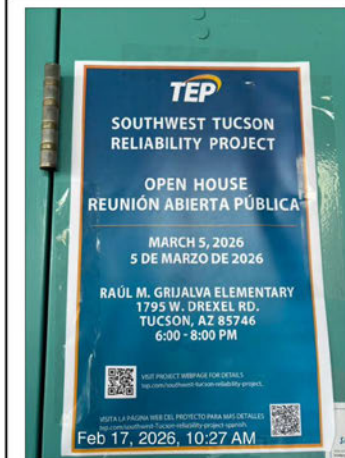


Photo 3: Southwest Tucson Reliability Project public open house flyer posted at Drexel Heights Community Center at 5220 S. San Joaquin Ave, Tucson, AZ 85746, on February 17th, 2026.



Photo 2: Southwest Tucson Reliability Project public open house flyer posted at the Valencia Library at 202 W. Valencia Rd, Tucson, AZ 85706, on February 17th, 2026.

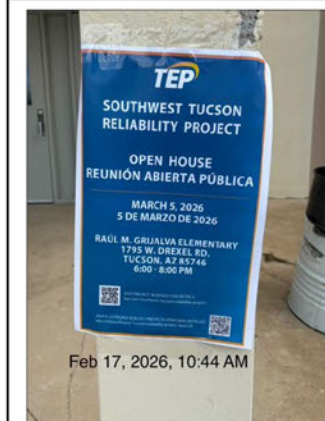


Photo 4: Southwest Tucson Reliability Project public open house flyer posted at the Southwest Library at 6855 S. Mark Rd, Tucson, AZ 85757, on February 17th, 2026.

Exhibit J-6.17
Open House 2 Flyer (May 5 and 8, 2026)



SOUTHWEST TUCSON RELIABILITY PROJECT

OPEN HOUSE REUNIÓN ABIERTA PÚBLICA

**May 14, 2026
14 DE MAYO DE 2026**

**RAÚL M. GRIJALVA ELEMENTARY
1795 W. DREXEL RD.
TUCSON, AZ 85746
6:00 - 8:00 PM**



VISIT PROJECT WEBPAGE FOR DETAILS
tep.com/southwest-tucson-reliability-project.

VISITA LA PÁGINA WEB DEL PROYECTO PARA MÁS DETALLES
tep.com/southwest-Tucson-reliability-project-spanish.





SOUTHWEST TUCSON RELIABILITY PROJECT

OPEN HOUSE REUNIÓN ABIERTA PÚBLICA

**May 14, 2026
14 DE MAYO DE 2026**

**RAÚL M. GRIJALVA ELEMENTARY
1795 W. DREXEL RD.
TUCSON, AZ 85746
6:00 - 8:00 PM**



VISIT PROJECT WEBPAGE FOR DETAILS
tep.com/southwest-tucson-reliability-project.

VISITA LA PÁGINA WEB DEL PROYECTO PARA MÁS DETALLES
tep.com/southwest-Tucson-reliability-project-spanish.



May 5, 2026 10:14 AM

Exhibit J-6.18
Open House 3 Flyer (July 22, 2026)



SOUTHWEST TUCSON RELIABILITY PROJECT

OPEN HOUSE REUNIÓN ABIERTA PÚBLICA

**AUGUST 6, 2026
6 DE AGOSTO DE 2026**

**PIMA COMMUNITY COLLEGE
DESERT VISTA CAMPUS
5901 S. CALLE SANTA CRUZ
TUCSON, AZ 85709
6:00 - 8:00 PM**



VISIT PROJECT WEBPAGE FOR DETAILS
tep.com/southwest-tucson-reliability-project

VISITA LA PÁGINA WEB DEL PROYECTO PARA MÁS DETALLES
tep.com/southwest-Tucson-reliability-project-spanish



TEP
**SOUTHWEST TUCSON
RELIABILITY PROJECT**
**OPEN HOUSE
REUNIÓN ABIERTA PÚBLICA**
**AUGUST 6, 2026
6 DE AGOSTO DE 2026**
**PIMA COMMUNITY COLLEGE
DESERT VISTA CAMPUS
5901 S. CALLE SANTA CRUZ
TUCSON, AZ 85709
6:00 - 8:00 PM**
 VISIT PROJECT WEBPAGE FOR DETAILS
tep.com/southwest-tucson-reliability-project
VISITA LA PÁGINA WEB DEL PROYECTO PARA MÁS DETALLES
tep.com/southwest-tucson-reliability-project-spanish

Tucson Ward 1
Jul 22, 2026, 10:21 AM

TEP
**SOUTHWEST TUCSON
RELIABILITY PROJECT**
**OPEN HOUSE
REUNIÓN ABIERTA PÚBLICA**
**AUGUST 6, 2026
6 DE AGOSTO DE 2026**
**PIMA COMMUNITY COLLEGE
DESERT VISTA CAMPUS
5901 S. CALLE SANTA CRUZ
TUCSON, AZ 85709
6:00 - 8:00 PM**
 VISIT PROJECT WEBPAGE FOR DETAILS
tep.com/southwest-tucson-reliability-project
VISITA LA PÁGINA WEB DEL PROYECTO PARA MÁS DETALLES
tep.com/southwest-tucson-reliability-project-spanish

Valencia Library
Jul 22, 2026, 10:36 AM

TEP
**SOUTHWEST TUCSON
RELIABILITY PROJECT**
**OPEN HOUSE
REUNIÓN ABIERTA PÚBLICA**
**AUGUST 6, 2026
6 DE AGOSTO DE 2026**
**PIMA COMMUNITY COLLEGE
DESERT VISTA CAMPUS
5901 S. CALLE SANTA CRUZ
TUCSON, AZ 85709
6:00 - 8:00 PM**
 VISIT PROJECT WEBPAGE FOR DETAILS
tep.com/southwest-tucson-reliability-project
VISITA LA PÁGINA WEB DEL PROYECTO PARA MÁS DETALLES
tep.com/southwest-tucson-reliability-project-spanish

Gracepointe
Jul 22, 2026, 10:56 AM

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Exhibit J-6.19
Webpage – English

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Southwest Tucson Reliability Project

Tucson Electric Power is preparing plans for new transmission facilities that will enhance system reliability and increase energy capacity for customers in Southwest Tucson.

[Español](#)

[Benefits](#)

[Project Map](#)

[Planning and Siting Process](#)

[Timeline](#)

[Outreach Materials](#)

[Public Participation](#)

[Comment Form](#)

Project Description

The Southwest Tucson Reliability Project will create a looped transmission system to provide greater reliability, power quality, and capacity to southwest Tucson. New transmission facilities will replace older, lower-voltage equipment that cannot keep pace with customers' growing energy needs.

The project will include building two new 138 kilovolt (kV) circuits and a new 138-kV substation.

The first phase will involve building a new transmission line from TEP's existing Midvale Substation, located near South Mission and West Drexel roads, to the planned Tucson Estates Substation, located near West Ajo Highway and South Tucson Estates Parkway. The substations are located about 5 miles apart.

The second phase will build a new transmission line from Tucson Estates Substation to tie into an existing 138kV transmission line located near West Valencia Road and Calle Santa Cruz. These two interconnection points are about 8 miles apart.

The planned Tucson Estates Substation will encompass about 15 acres on the southeast corner of West Ajo Highway and South Tucson Estates Parkway.

The project will help reduce the duration and frequency of power outages in the area, while also supporting options for maintenance and emergency repairs.

[Click here for more information about the proposed Tucson Estates Substation.](#)

New 138-kV transmission systems will provide greater capacity to help meet the current and future energy needs of the community.

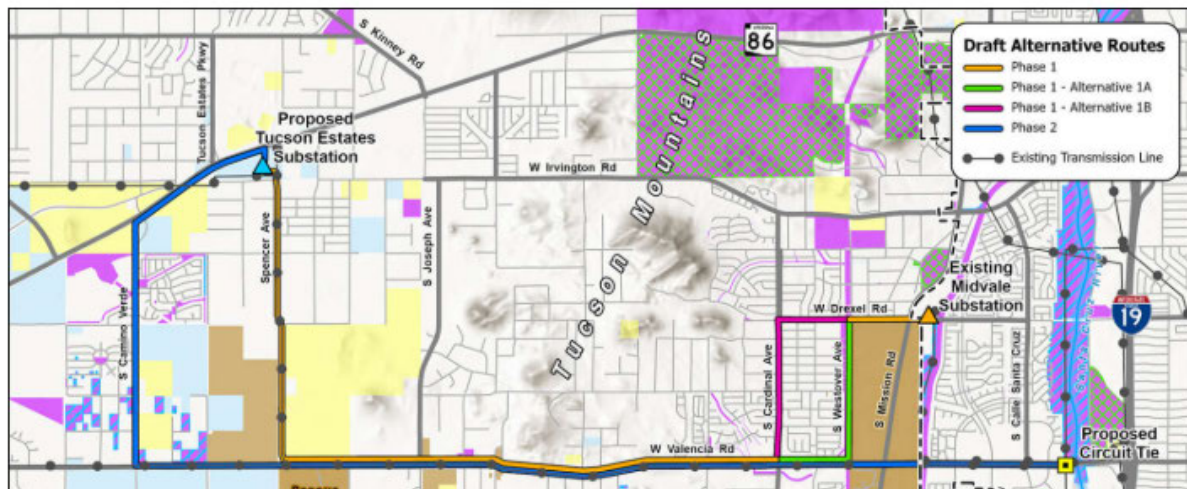


The creation of a looped transmission system will provide redundancy and greater service stability, improving service reliability to customers.



New 138-kV facilities will allow for the eventual retirement of two older 46-kV substations, preventing potential reliability issues.

[Click here to view Interactive Map](#)





Planning and Siting Process

TEP's planning and siting process prioritizes public and stakeholder outreach to learn about community values specific to the project area. These values directly inform the siting of the project and the selection of transmission line routes.

This process involves five phases:



TEP is now in Phase 5 of the planning and siting process.

With input from you and other members of the public, TEP identified potential routes for new power lines in both project phases. We listened to feedback from residents and others, and studied data about the environment and how land in the area is being used. As a result, we selected routes that minimized the need for new construction. Only 22 percent of the Project would require new construction, while 66 percent would utilize existing structures and 12 percent would be rebuilt within existing utility line corridors.

Please view the [interactive project map](#) to see details on each of the draft proposed routes.

Required Approvals and Timeline

Under state law, TEP must secure a Certificate of Environmental Compatibility (CEC) to build the transmission lines. TEP plans to file a CEC application in late 2026 with the Arizona Power Plant and Transmission Line Siting Committee, which reviews CEC applications in a public process that allows neighbors and others to provide comments. The Arizona Corporation Commission (ACC) must review and approve the CEC before TEP can begin construction.

Construction of the first phase is expected to begin in 2028, with an in-service date in 2029. The second phase is expected to be constructed and in-service by 2030.



Outreach Materials

August 2026

- [Open House Posters](#)
- [Briefing No. 3](#)

May 2026

- [Open House Posters](#)
- [Briefing No. 2](#)

March 2026

- [Open House Posters](#)
- [Briefing No. 1](#)

Public Participation

TEP encourages residents, property owners and others to participate in the line siting process. Please submit your comments and questions by:

- Attending public open houses
- Filling out an online comment below
- Sending email comments to swtucson@tep.com
- Calling 1-520-770-7522 and leaving a voicemail message
- TEP SW Tucson Reliability Project
P.O. Box 711
Mail Stop CB200
Tucson, AZ 85701-0711

 English (United States) ▾

Online Comment Form

Your Name *

First Name

Last Name

Email *

example@example.com

Phone Number

Please enter a valid phone number.

☐ I would like to be added to the project email distribution list

Your Message *

Please verify that you are human *



I'm not a robot



reCAPTCHA

You may voluntarily provide the personal information required to complete this form. TEP uses this information to fulfill the purpose for which it was obtained. To find out more about the categories of personal information TEP collects and the purposes for which such information will be used, please refer to our [Privacy Policy](#).

Submit

Call us

Our Customer Care team is available to assist you, Monday - Friday, 7 a.m. - 6 p.m. at 520-623-7711

Please report all outages or emergencies to:
Emergency Hotline - 520-623-7711

Connect with us



Download our app



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[Billing Guidelines](#)

[How to Read Your Meter](#)

[Report Graffiti](#)

[Green Tariff](#)

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[Resource Planning](#)

[CCR Rule Information](#)

[Customer Storage Program](#)

[Distribution Material Standards](#)

[Electric Service Requirements](#)

[Sustainability Performance](#)

[Generation Interconnection Services](#)

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[Service Territory and Service Area](#)

[Suppliers](#)

[Telecommunication Pole Attachments](#)

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[OASIS](#)

[UNS Energy Corporation](#)

[Volunteer Site](#)

Exhibit J-6.20
Webpage – Spanish

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Proyecto de confiabilidad del suroeste de Tucson

Tucson Electric Power está preparando planes para nuevas instalaciones de transmisión que aumentarán la capacidad energética y mejorarán la confiabilidad del sistema para los clientes del suroeste de Tucson.

[Inglés](#)

[Beneficios](#) [Mapas de proyectos](#) [Proceso de planificación](#) [Cronograma](#)
[Participación pública](#) [Formulario de Comentarios](#)

Descripción del proyecto

El Proyecto de Confiabilidad del Suroeste de Tucson creará un sistema de transmisión en bucle para proporcionar mayor confiabilidad, calidad de energía y capacidad al suroeste de Tucson. Las nuevas instalaciones de transmisión reemplazarán a los equipos antiguos de bajo voltaje que ya no pueden satisfacer las crecientes necesidades energéticas de los clientes.

El proyecto incluirá la construcción de dos nuevos circuitos de 138 kilovoltios (kV) y una nueva subestación de 138 kV.

La primera fase comprende la construcción de una nueva línea de transmisión desde la subestación existente de Midvale de TEP, ubicada cerca de las carreteras South Mission y West Drexel, hasta la subestación planificada Tucson Estates, ubicada cerca de West Ajo Highway y South Tucson Estates Parkway. Las subestaciones se encuentran a unas 5 millas de distancia.

La primera fase comprende la construcción de una nueva línea de transmisión desde la subestación existente de Midvale de TEP, ubicada cerca de las carreteras South Mission y West Drexel, hasta la subestación planificada Tucson Estates, ubicada cerca de West Ajo Highway y South Tucson Estates Parkway. Las subestaciones se encuentran a unas 5 millas de distancia.

La subestación planificada de Tucson Estates abarcará aproximadamente 15 acres en la esquina sureste de West Ajo Highway y South Tucson Estates Parkway.

El proyecto ayudará a reducir la duración y frecuencia de los cortes de energía en la zona y a la vez respaldará opciones de mantenimiento y reparaciones de emergencia.

Los postes de transmisión típicos tendrán una altura de unos 75 a 90 pies y estarán separados entre 500 y 600 pies aproximadamente. Algunos postes pueden ser más altos para adaptarse a problemas de despeje específicos del sitio. Las líneas se diseñarán para acomodar dos circuitos mediante monopolos tubulares de acero autopatinable con superficies no reflectantes. Los conductores (cables) tendrán un acabado no especular para reducir la visibilidad.

Beneficios



Mayor capacidad

Los nuevos sistemas de transmisión de 138 kV proporcionarán una mayor capacidad para ayudar a satisfacer las necesidades energéticas actuales y futuras de la comunidad.



Confiabilidad del sistema

La creación de un sistema de transmisión en bucle proporcionará redundancia y una mayor estabilidad del servicio, lo que mejora la confiabilidad del servicio a los clientes.



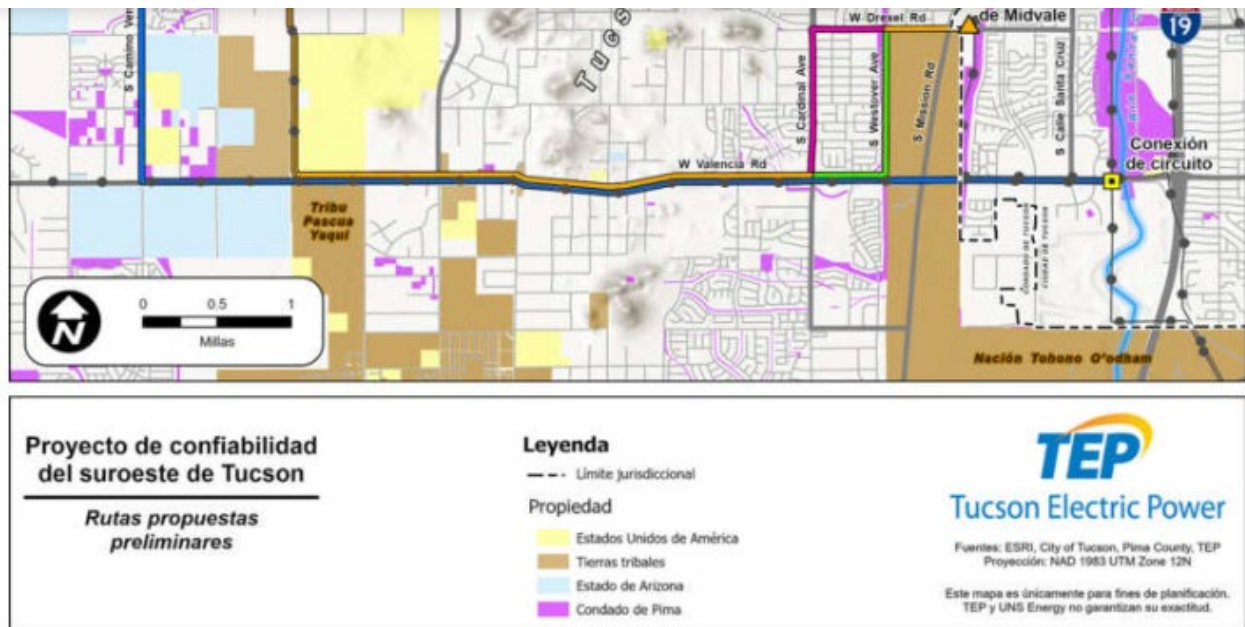
Actualizaciones del sistema

Las nuevas instalaciones de 138 kV permitirán la eventual retirada de dos subestaciones de 46 kV más antiguas, lo que evitará posibles problemas de confiabilidad.

Mapas del proyecto

[Haga clic aquí para ver el mapa interactivo](#)

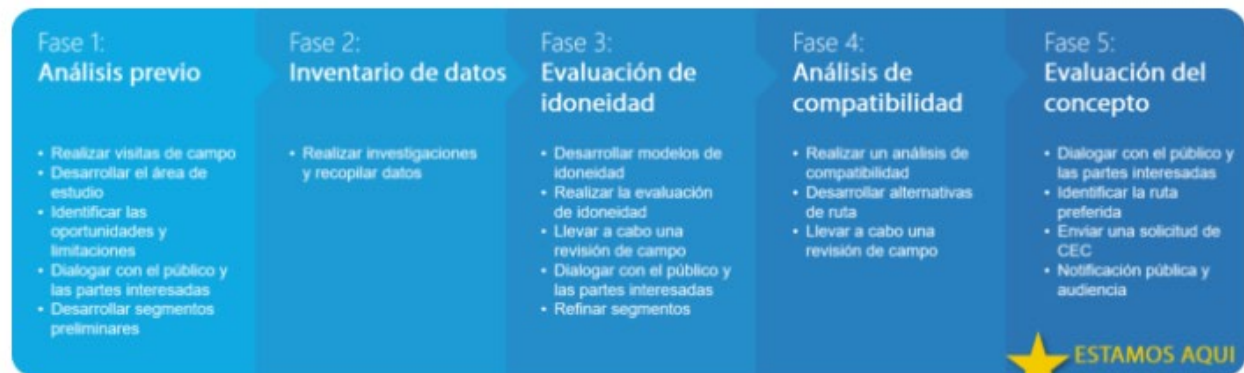




Proceso de planificación y emplazamiento

El proceso de planificación y emplazamiento de TEP prioriza la participación pública y de las partes interesadas para conocer los valores comunitarios específicos del área del proyecto. Estos valores influyen directamente en el emplazamiento del proyecto y la selección de las rutas de las líneas de transmisión.

Este proceso consta de cinco fases:



En este momento, TEP se encuentra en la fase 5 del proceso de planificación y emplazamiento.

Gracias a las aportaciones de usted y de otros miembros de la comunidad, TEP identificó posibles rutas para nuevas líneas eléctricas en ambas fases del proyecto. Tuvimos en cuenta las opiniones de los residentes y de otras personas, y analizamos datos sobre el medio ambiente y el uso del suelo en la zona. Como resultado, seleccionamos rutas que minimizaban la necesidad de nuevas construcciones. Solo el 22 por ciento del proyecto requeriría nuevas construcciones, mientras que el 66 por ciento utilizaría estructuras existentes y el 12 por ciento se reconstruiría dentro de los corredores de líneas de servicios públicos ya existentes. Consulte [el mapa interactivo del proyecto](#) para ver detalles de cada una de las rutas preliminares.

Aprobaciones requeridas y cronograma

Conforme a la ley estatal, TEP debe obtener un Certificado de Compatibilidad Ambiental (Certificate of Environmental Compatibility, CEC) para construir las líneas de transmisión. TEP planea presentar una solicitud de CEC a finales de 2026 ante el Comité de Ubicación de Centrales Eléctricas y Líneas de Transmisión de Arizona, el cual revisa las solicitudes de CEC en un proceso público que permite a los vecinos y a otras partes interesadas proporcionar comentarios. Arizona Corporation Commission (ACC) debe revisar y aprobar la solicitud de CEC antes de que TEP pueda comenzar la construcción.

Se espera que la construcción de la primera fase comience en 2028, con fecha de puesta en servicio para 2029. Se espera que la segunda fase se construya y entre en servicio en el 2030.

De octubre de 2025 a
septiembre de 2026

**Proceso de
ubicación de la
línea de
transmisión**

Septiembre de 2026

**Presentación de la
solicitud del CEC**

Noviembre de 2026

**Audiencia de
ubicación de la
línea**

T1 de 2027

**Reunión abierta
de ACC**

Participación pública

TEP alienta a los residentes, los propietarios y otros a participar en el proceso de ubicación de la línea. Envíe sus comentarios y preguntas de la siguiente manera:

- Completar un formulario de comentarios
- Enviar comentarios por correo electrónico a swtucson@tep.com
- Llamar al 1-520-770-7522 y dejar un mensaje de correo de voz
- Enviar una carta por correo postal a la siguiente dirección:
 - Proyecto de confiabilidad del suroeste de Tucson
P.O. Box 711

Mail Stop CB200
Tucson, AZ 85701-0711

 Español ▾

Formulario de comentarios

Su Nombre *

Nombre

Apellido

Correo electrónico *

ejemplo@ejemplo.com

Número de teléfono

Favor ingrese un número de teléfono válido.

☐ Me gustaría que me añadieran a la lista de distribución de correo electrónico del proyecto.

Comentario *

Favor verificar que usted es humano *

☐ I'm not a robot


reCAPTCHA

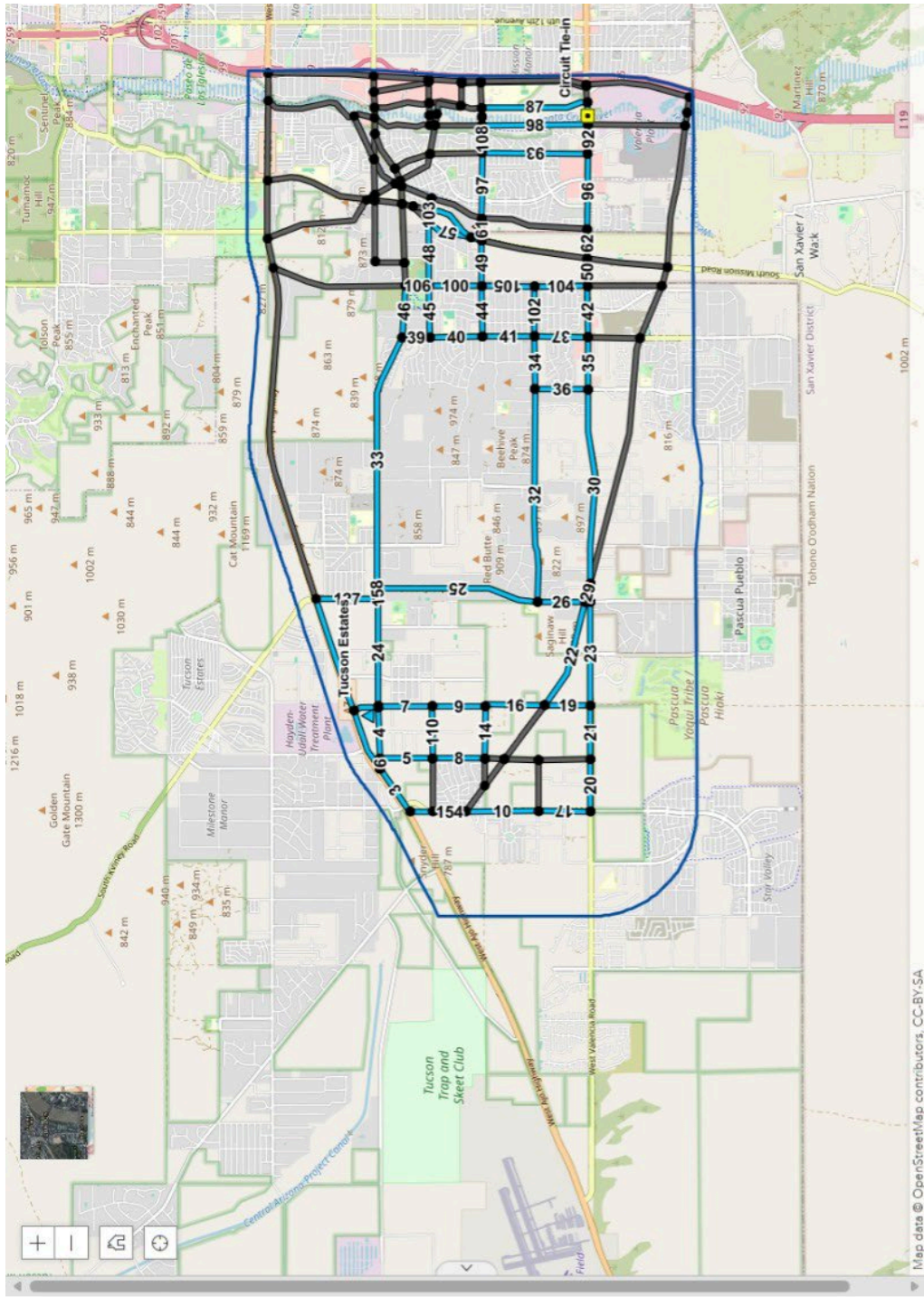
You may voluntarily provide the personal information required to complete this form. TEP uses this information to fulfill the purpose for which it was obtained. To find out more about the categories of personal information TEP collects and the purposes for which such information will be used, please refer to our [Privacy Policy](#).

Enviar

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Exhibit J-6.21
Webpage – Interactive Map

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Transmission Line Project

SW Tucson Reliability Project

Map Tips

Click map features to show details.
Zoom in for best results.

Study Area (Área de Estudio)



TEP Substation (Subestación TEP)

Existing 138kV Substation (Subestación Existente de 138 kV)



Planned 138kV Substation (Subestación Planeado de 138 kV)

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Exhibit J-7
Open House Materials

Exhibit J-7.1
Open House 1 Boards (March 5, 2026)

Welcome
Please Sign In

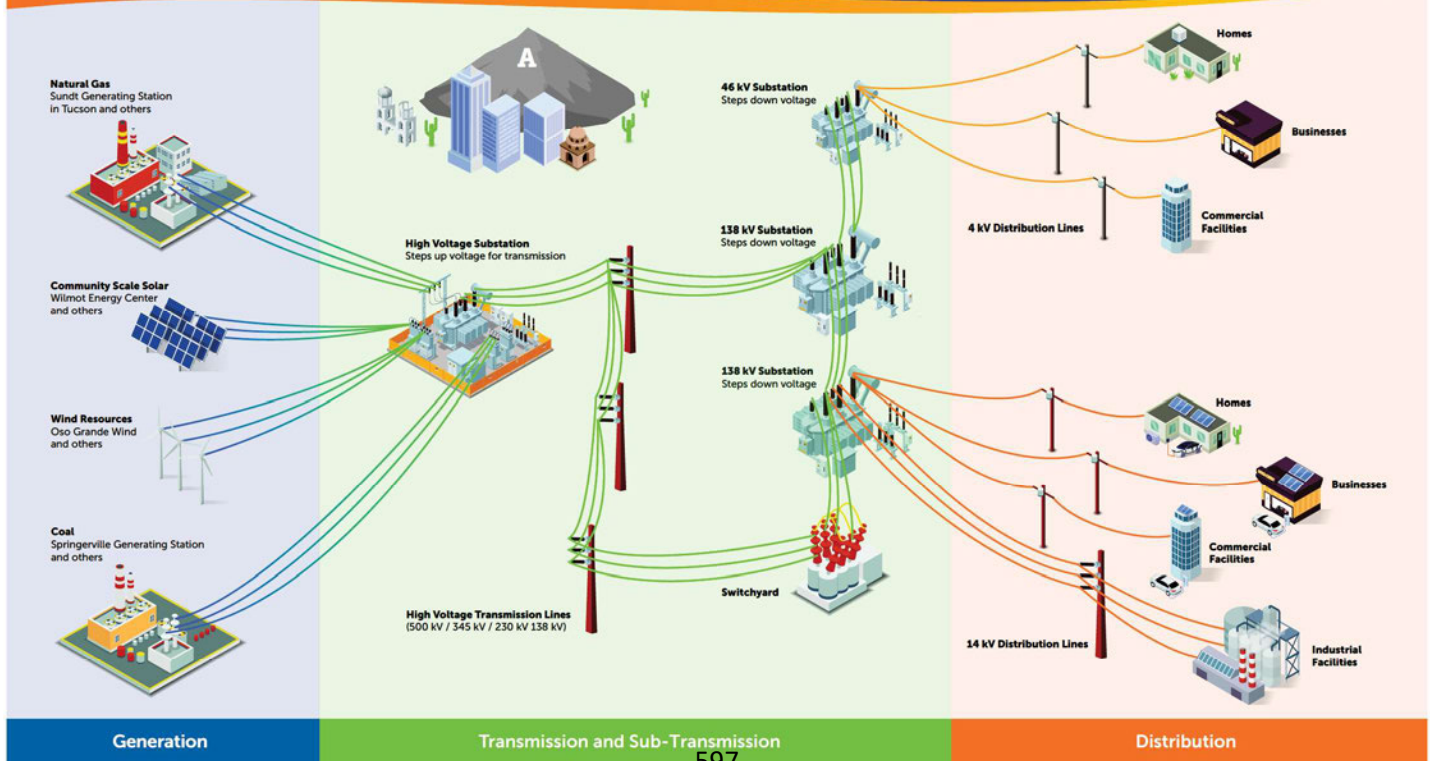
Bienvenidos
(Hablamos Español)
Por Favor Regístrese



tep.com/southwest-tucson-reliability-project

Our Energy Grid How we deliver electric service to you

TEP
Tucson Electric Power



Southwest Tucson Reliability Project



Purpose

- Replace the 46 kV system with a new looped 138 kV transmission line and substation to support long term reliability.

Need

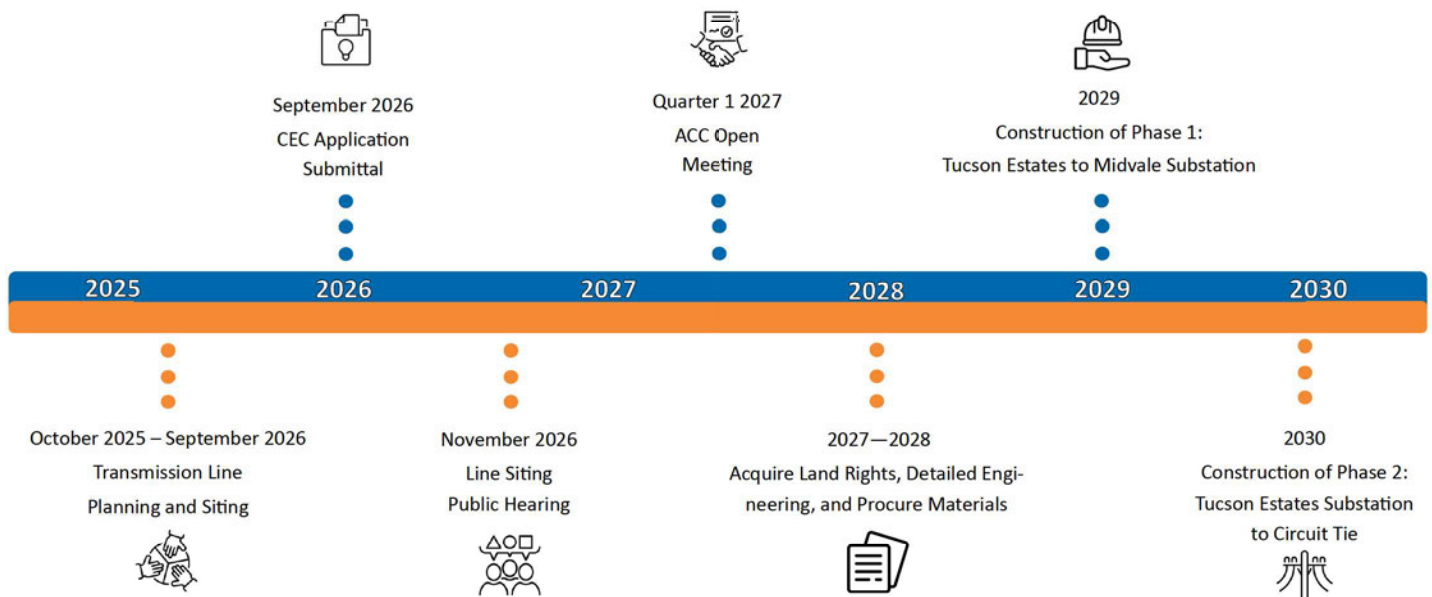
- Existing distribution system is supported by a single 46 kV source.
- Existing system risks the potential for extended customer outages.

Benefits

- Upgrade from older lower voltage system, to modern 138 kV standard.
- Reduce outages and improve system reliability.
- Increase capacity to provide electrical service to existing and new customers.



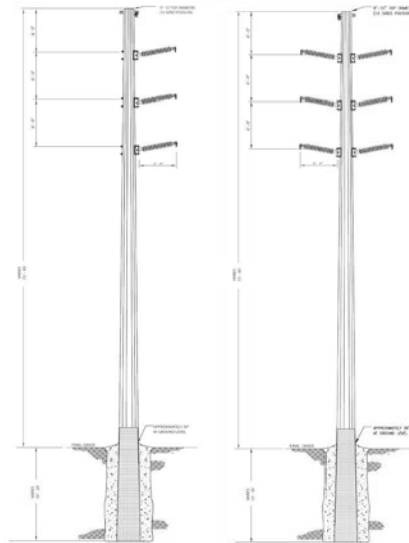
Southwest Tucson Reliability Project



Transmission Line Characteristics

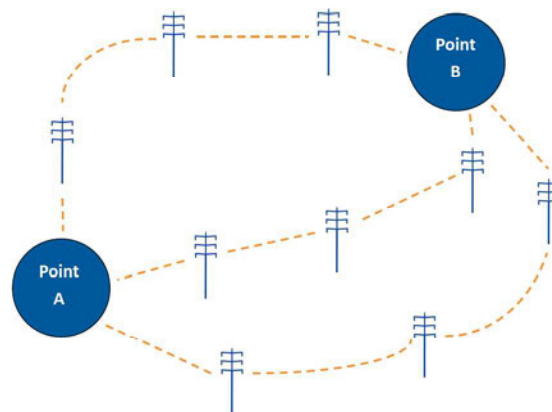
Single or Double-Circuit 138 Kilovolt

Structure Type	Tubular, weathering steel monopoles
Typical Structure Height	75-85 feet
Typical Span Length	600-1,000 feet
Typical Right-of-Way Width	Up to 100 feet



What is Siting?

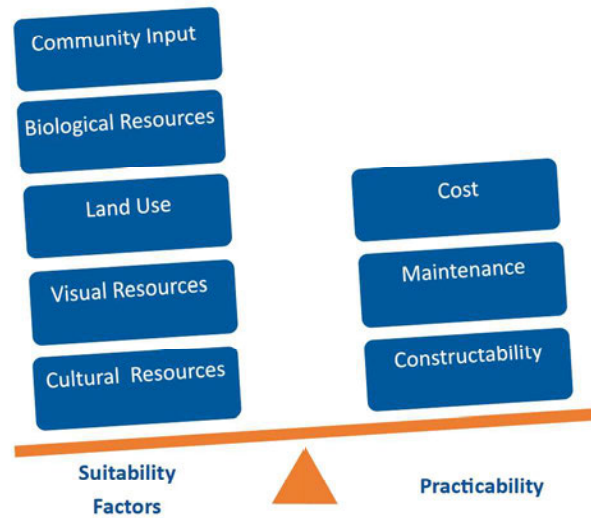
The process of determining the exact route or location where a high-voltage transmission line will be built between two or more points. These points could be new or existing substations, switchyards or energy resources.



A component of siting is permitting. Under Arizona law (A.R.S. § 40-360 et seq.), certain transmission line configurations require a Certificate of Environmental Compatibility (CEC) before construction and operation along an approved route.

Project Route Development and Evaluation

Tucson Electric Power considers factors important to the community and environment, and balances them with constructability, maintenance, and cost to find the most suitable path for the transmission line that satisfies the need for the project.



Siting Criteria

Tucson Electric Power (TEP) will be applying for a Certificate of Environmental Compatibility (CEC) from the Arizona Corporation Commission. Several criteria are considered under the Arizona Revised Statutes when making the decision to issue a CEC. TEP also considers additional factors identified through public engagement and feedback to evaluate route segments, and when selecting a preferred route.

 Public input	 Scenic areas, historic & cultural sites
 Wildlife & plants	 Existing or potential recreation uses
 Existing & planned land use	 Engineering & construction feasibility
 Overall environment	 Project costs & potential impact on customer rates
 Noise emission levels & interference with communication signals	

In your opinion, which criteria are most important in developing a route for the Project? Let us know what you think and if there are any other criteria we should consider.



Siting Process Flowchart



Opportunities and Constraints

Opportunities

- Major roads
- Minor roads in rural areas
- Railroads
- Existing utility infrastructure
- Existing/planned industrial land use
- Vacant land, open space, natural linear features



Constraints

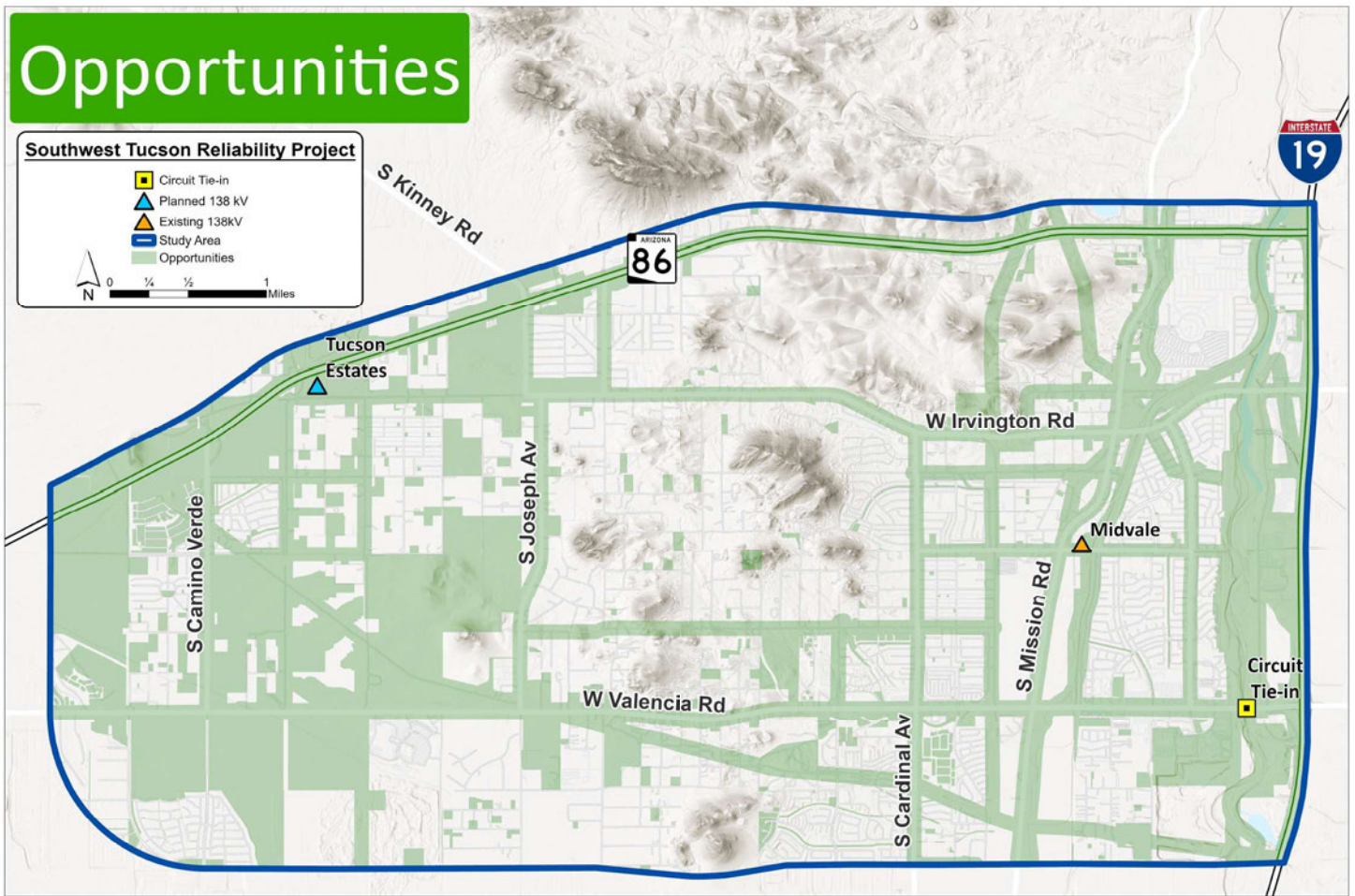
- High-density development
- City of Tucson Gateway/Scenic Routes
- Environmentally sensitive areas
- Conservation lands
- Extreme terrain
- Roadways with constrained rights-of-way



Opportunities

Southwest Tucson Reliability Project

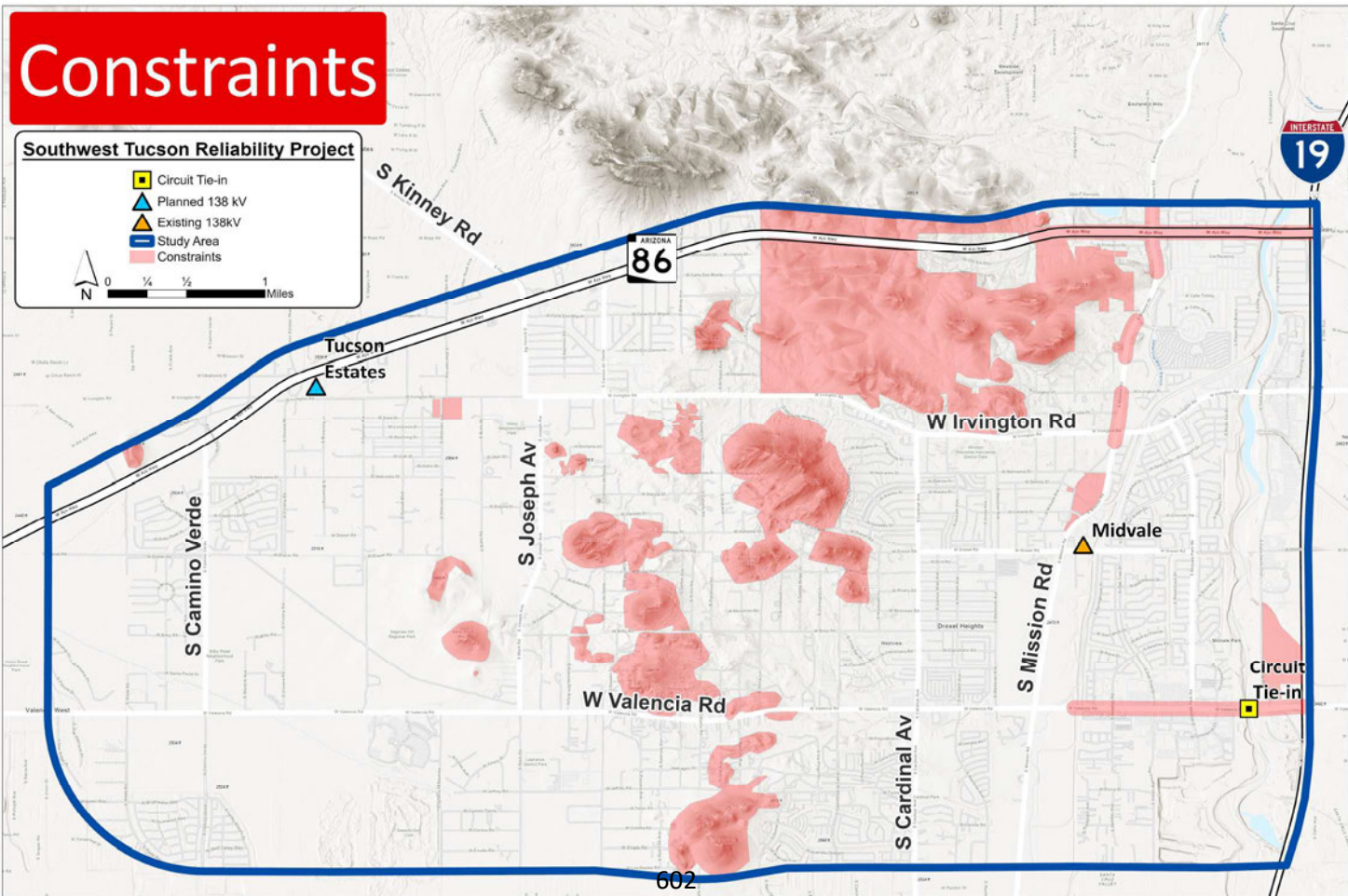
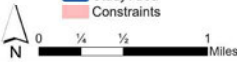
- Circuit Tie-in
- ▲ Planned 138 kV
- ▲ Existing 138kV
- Study Area
- Opportunities



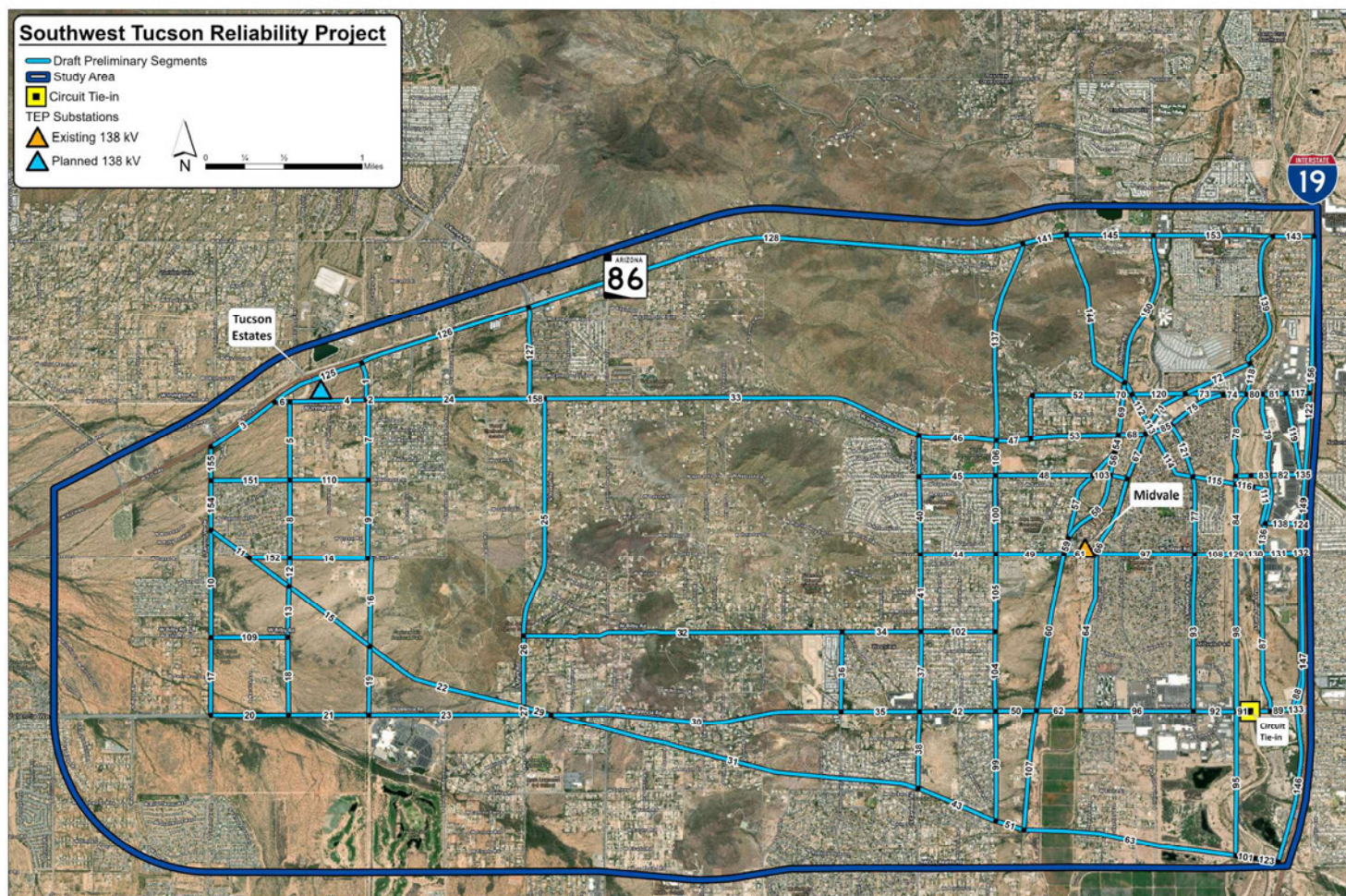
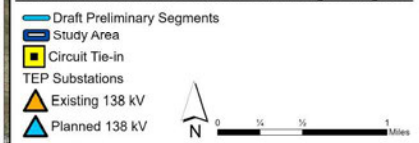
Constraints

Southwest Tucson Reliability Project

- Circuit Tie-in
- ▲ Planned 138 kV
- ▲ Existing 138kV
- Study Area
- Constraints



Southwest Tucson Reliability Project



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Exhibit J-7.2
Open House 1 Table Map (March 5, 2026)

Exhibit J-7.3
Open House 1 Photos (March 5, 2026)



Photo 1: Tucson Electric Power Company (TEP) employee/contractor presenting table map with preliminary segments to public.



Photo 2: TEP presenting informational board to public.



Photo 3: The public signing in for the open house.



Photo 4: Members of the public interacting with the comment table.



Photo 5: Image of the Raúl M. Grijalva Elementary School cafeteria with the open house set up and members of the public.



Photo 6: Image of the public interacting with table map with preliminary segments.

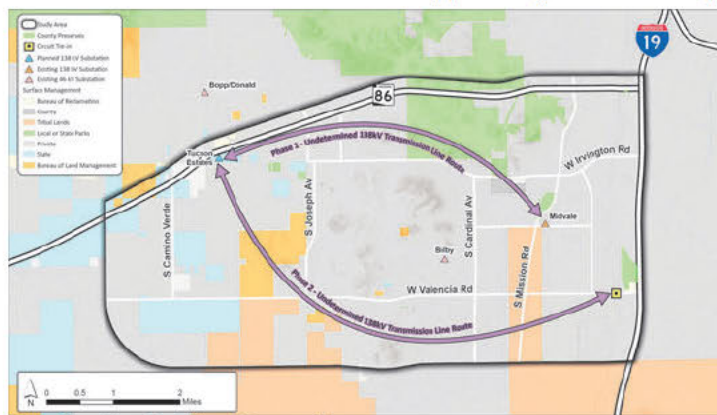
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Exhibit J-7.4
Open House 2 Boards (May 14, 2026)

Southwest Tucson Reliability Project **TEP**

Purpose

- Replace the 46 kV system with a new looped 138 kV transmission line and substation to support long-term reliability.



Project Map—Phase 1 and Phase 2 Conceptual Routes

Need

- Existing distribution system is supported by a radial 46 kV source.
- Existing system is at risk, with the potential for extended customer outages.

Benefits

- Upgrade from older lower voltage system, to modern 138 kV standard.
- Reduce outages and improve system reliability.
- Increase capacity to provide electrical service to existing and new customers.

Southwest Tucson Reliability Project **TEP**

Siting Process Flowchart

Phase 1: Pre-Analysis

- Conduct Field Visits
- Develop Study Area
- Identify Opportunities & Constraints
- Conduct Public & Stakeholder Outreach
- Develop Preliminary Segments

Phase 2: Data Inventory

- Conduct Research & Collect Data

Phase 3: Suitability Assessment

- Develop Suitability Models
- Conduct Suitability Assessment
- Field Review
- Engage with Public & Stakeholders
- Refine Segments

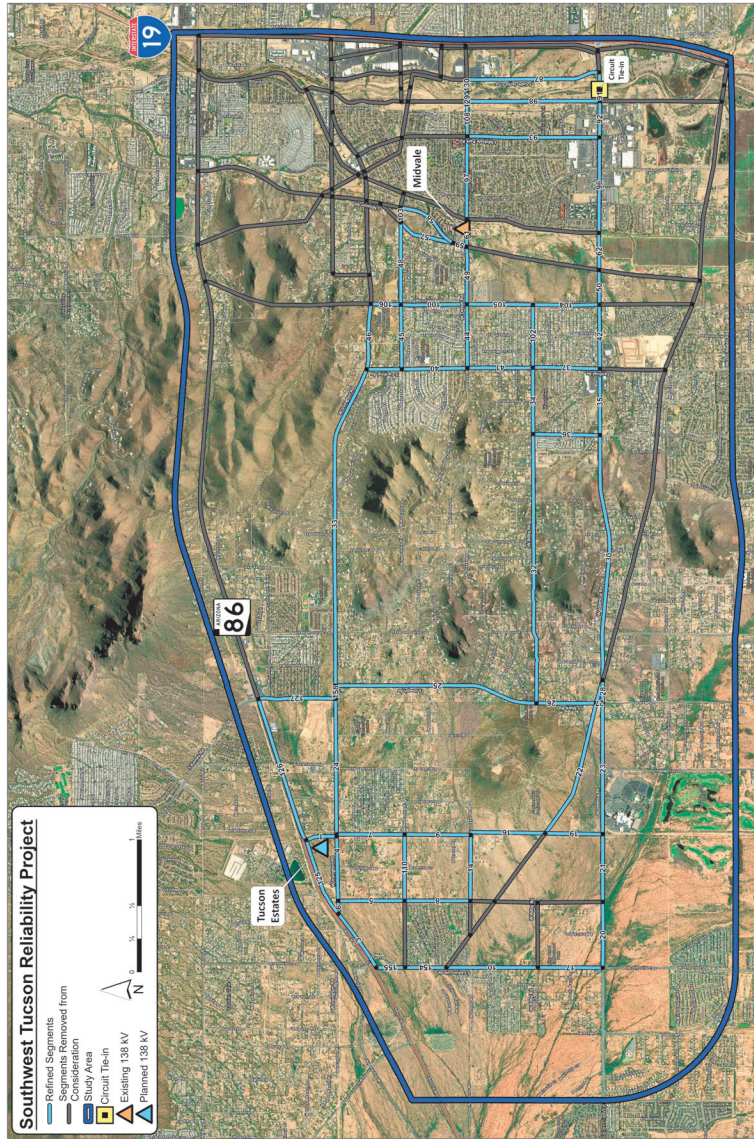


Phase 4: Compatibility Analysis

- Conduct Compatibility Analysis
- Develop Route Alternatives
- Field Review

Phase 5: Concept Evaluation

- Engage with Public & Stakeholders
- Identify Preferred Route
- Submit CEC Application
- Public Notification and Hearing



Southwest Tucson Reliability Project

TEP

Suitability Criteria Models



[illegible]

[illegible]

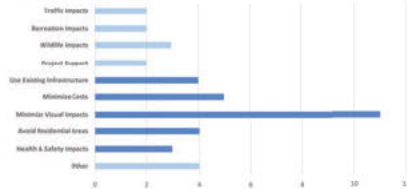


Southwest Tucson Reliability Project **TEP**

Your Input Matters!

What we heard...

Summary of Public Comments

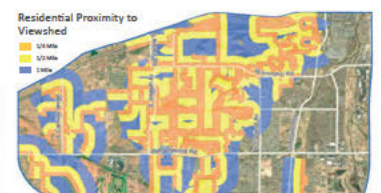


What we did to address residential visual impacts...

- Identified Existing & Planned Residential Areas
- Identified Peaks & Ridges Visible from Residential Areas



- Created a Residential Viewshed Layer
- Ranked/Scored the Residential Viewshed Areas Against Areas Outside of the Viewshed Areas



- Identified Existing Transmission/ Sub-Transmission Infrastructure that Could Potentially be Used





Come visit us ! ¡Ven a visitarnos!

We can help you:

- Lower your electricity bill
- Get help if you're behind on payments
- Sign up for programs that make life easier
- Learn simple ways to save energy-some are free!

¡Estamos aquí para ayudar!

TEP is reaching out neighbor to neighbor.



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Exhibit J-7.5
Open House 2 Table Map (May 14, 2026)

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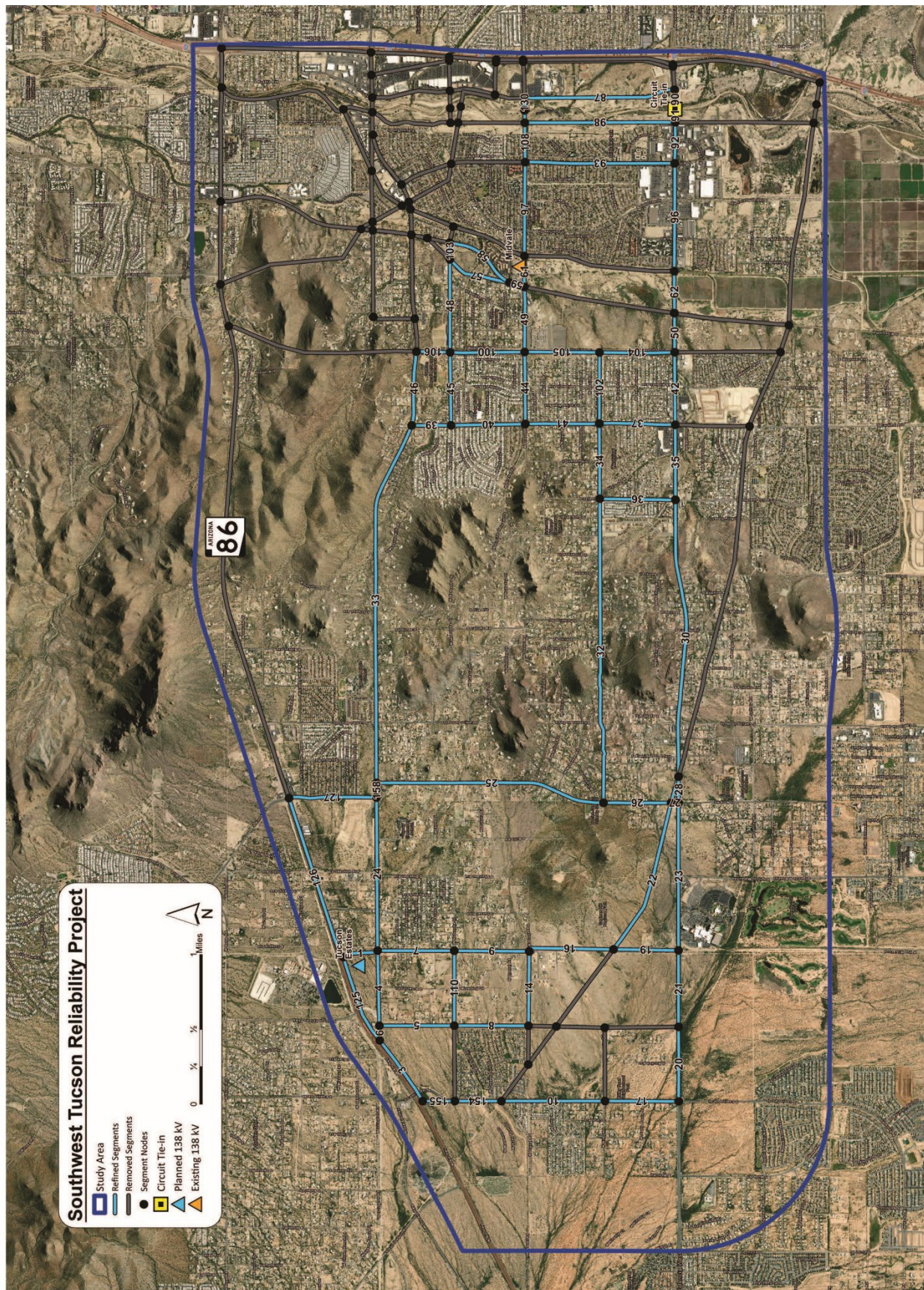


Exhibit J-7.6
Open House 2 Photos (May 14, 2026)



Photo 1: Tucson Electric Power Company (TEP) open house #2 initial set up with informational boards, sign in table, table map, and geographic information system (GIS) station.



Photo 2: TEP customer service area.



Photo 3: Suitability model poster set up.



Photo 4: Informational poster set up.



Photo 5: Table map and comment card area.



Photo 6: TEP presenting suitability models to public.



Photo 7: Directional signage for open house outside of cafeteria.



Photo 8: Directional signage for open house outside in courtyard.



Photo 9: Directional signage for open house in Raúl M. Grijalva Elementary School parking lot.



Photo 10: Directional signage for open house on Drexel Road.



Photo 11: Directional signage for open house in front of school entrance.



Photo 12: TEP presenting suitability model boards to public.



Photo 13: TEP interacting with the public with table map.



Photo 14: TEP presenting informational boards to public.



Photo 15: TEP presenting table map with proposed segments to public.



Photo 16: Picture of TEP employees and contractors with boards.



Photo 17: Picture of TEP employees and contractors with boards and tabletop map.



Photo 18: Picture of table map after the second open house meeting public input.

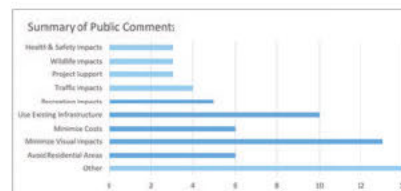
Exhibit J-7.7
Open House 3 Boards (August 6, 2026)

Siting Process Flowchart



Your Input Matters!

What we heard...

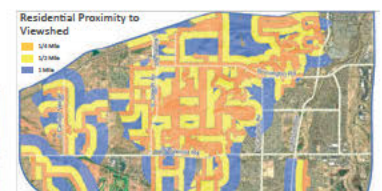


What we did to address residential visual impacts...

- Identified Existing & Planned Residential Areas
- Identified Peaks & Ridges Visible from Residential Areas



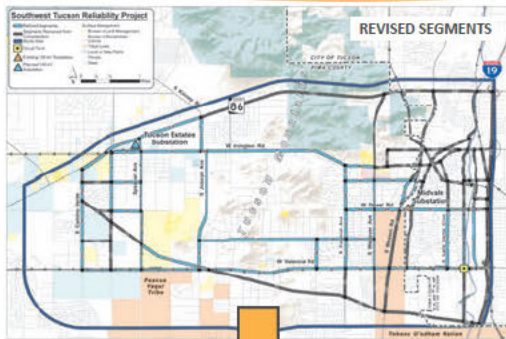
- Created a Residential Viewshed Layer
- Ranked/Scored the Residential Viewshed Areas Against Areas Outside of the Viewshed Areas



- Identified Existing Transmission/ Sub-Transmission Infrastructure that Could Potentially be Used



Southwest Tucson Reliability Project Compatibility Analysis



Subject matter experts in 15 areas reviewed each refined segment to identify those with the lowest overall impacts.

- Existing and Planned Land Use
- Adjacent Residential Properties
- Conservation and Preservation
- Fish, Wildlife, and Plants
- Noise
- Communication Signal Interference
- Archaeological and Historical Resources
- Scenic Area
- Residential Visual Impact
- Total Environment
- Engineering and Construction
- System Operation
- Right-of-Way Acquisition
- Cost

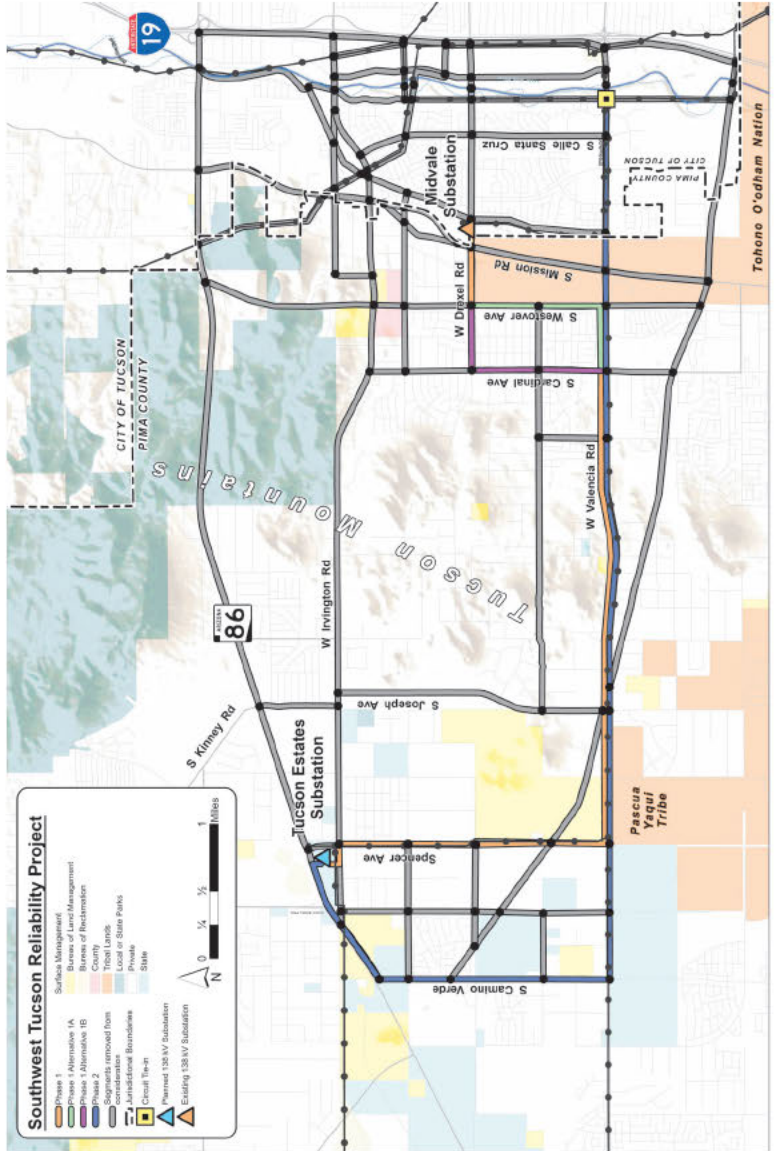
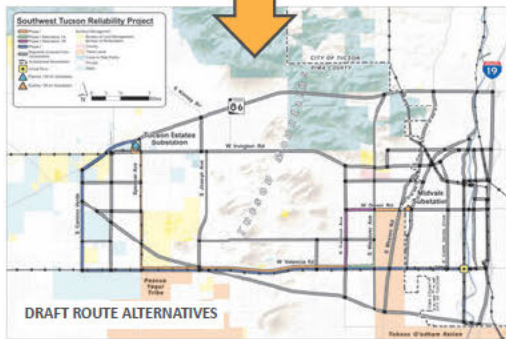




Exhibit J-7.5
Open House 3 Table Map (August 6, 2026)

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Exhibit J-7.9
Open House 3 Photos (August 6, 2026)



Photo 1: Tucson Electric Power Company (TEP) open house #3. TEP's Customer Care Team was present to assist members of the public with any billing/program questions.



Photo 2: Public interacting with the GIS Interactive Map Station.



Photo 3: Members of the public learning about the Draft Route Alternatives.



Photo 4: Members of the Public providing written comments.



Photo 5: TEP engineers ready to answer questions.

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Exhibit J-8
Public Comments Received (Redacted)

Southwest Tucson Reliability Project

Public Comment Record

Date Received: 8/20/2026

Phone: [REDACTED]

Commentor: [REDACTED]

Email: [REDACTED]

Category: Online Comment Form

Address:

Concern Topics: Outages/ Reliability

N/A

Heard About The Project Through: N/A

Comment Submitted:

We have been dealing with multiple power outages each summer for the past 23 years. This upgrade should have been done many years ago. It is most unsettling in the deadly heat of Summer not to know how long an outage is going to last.

Please try to expedite this project and get Southwest Tucson relief from these outages sooner rather than later. Thank you, [REDACTED]

Response Notes:

Thank you for your comment. We hear your concern and the urgency behind it, and we will do our best to deliver this project as soon as possible.

We will include your comment in our project record that will be submitted to the Arizona Corporation Commission.

For the latest updates on the project, I invite you to visit the project webpage at <https://www.tep.com/southwest-tucson-reliability-project/>.

Thank you,

Clark Bryner

Southwest Tucson Reliability Project

Public Comment Record

Date Received: 8/20/2026

Phone: [REDACTED]

Commentor: [REDACTED]

Email: [REDACTED]

Category: Online Comment Form

Address:

Concern Topics: Location/ Route

N/A

Heard About The Project Through: N/A

Comment Submitted:

I think TEP should use Westover street for the new poles for the project, because there is a lot of space between the street and the neighborhood. Cardinal Ave should not be used at all because of the small size of the street and the closeness of home to the street.

Response Notes:

[REDACTED]

Thank you for your comment. We will consider your thoughts, together with other comments received from the public and project stakeholders, as we determine the final routes to include in our application for a Certificate of Environmental Compatibility. We will also include your comment in our project record that will be submitted to the Arizona Corporation Commission.

For the latest updates on the project, I invite you to visit the project webpage at <https://www.tep.com/southwest-tucson-reliability-project/>.

Thank you,

Clark Bryner

Southwest Tucson Reliability Project

Public Comment Record

Date Received: 8/18/2026

Heard About The Project Through: N/A

Commentor: [REDACTED]

Phone: [REDACTED]

Category: Project Phone Line

Email: N/A

Concern Topics: Service Availability/
Expansion/ Lifeline

Address:

N/A

Comment Submitted:

Spanish – called requested information about the Project.

Response Notes:

Called and learned that customer was interested in Lifeline discounts and if TEP had plans to provide service in her area. Learned the individual was a Trico customer.

Southwest Tucson Reliability Project

Public Comment Record

Date Received: 8/13/2026

Phone: [REDACTED]

Commentor: [REDACTED]

Email: [REDACTED]

Category: Email

Address:

Concern Topics: Tour Inquiry

N/A

Heard About The Project Through: N/A

Comment Submitted:

To, Clark Bryner,

The meeting I had with you and Diane was wonderful. Learned a lot. I look forward to any new information coming out in the future on this project. I also wanted to comment how wonderful it was talking with Diane, your assistant, as she is very knowledgeable of what's going on and how it's happening. We had a great conversation.

There is one more thing I would like to ask of you, and that is. Is it possible for me to get a tour of the plant? Years ago when I worked at the city I had work with Mr. Barrios and had asked him if it was possible to get a tour of the plant and he says yes. I never had the time with my busy schedule so I never wrote and ask to make that possible. Now that I'm retired, I am still so interested in seeing the plant and how everything works if it is possible.

I will await an answer when you have time.

Again, thank you for everything.

Response Notes:

[REDACTED]

Diane is great, thanks for acknowledging that and I'll be sure to pass along your compliments.

Regarding your request to go on a tour of the power plant at Irvington Road. I reached out to the plant manager and he would be happy to include you on the next tour. Its not set up

yet, but is expected to be sometime in mid-September. I'll be in touch as soon as I learn details.

I hope you have a great weekend!

Clark Bryner

Southwest Tucson Reliability Project

Public Comment Record

Date Received: 8/6/2026

Phone: [REDACTED]

Commentor: [REDACTED]

Email: [REDACTED]

Category: Online Comment Form

Address:

Concern Topics: Route/ Location

N/A

Heard About The Project Through: N/A

Comment Submitted:

The proposed plan that uses infrastructure already in place on Valencia looks good. I would like to 'cast my vote' to use S Westover Ave instead of Cardinal. Cardinal is already a narrow, busy street, with houses going right to the road edge, no need to add more to this street.

Thanks

Response Notes:

Thank you for your comment. We will consider your thoughts, together with other comments received from the public and project stakeholders, as we determine the final routes to include in our application for a Certificate of Environmental Compatibility. We will also include your comment in our project record that will be submitted to the Arizona Corporation Commission.

For the latest updates on the project, I invite you to visit the project webpage at <https://www.tep.com/southwest-tucson-reliability-project/>.

Thank you,

Clark Bryner

Southwest Tucson Reliability Project

Public Comment Record

Date Received: 8/6/2026

Phone: [REDACTED]

Commentor: [REDACTED]

Email: [REDACTED]

Category: Public Comment Form

Address:

Concern Topics: Traffic/ Visuals/ Routes

[REDACTED]
[REDACTED]

Heard About The Project Through: Email

Comment Submitted:

I am concerend with the traffic and looks. I believe the phase 1 alternative A is better than the alternative B

Response Notes:

Southwest Tucson Reliability Project

Public Comment Record

Date Received: 8/6/2026

Commentor: [REDACTED]

Category: Public Comment Form

Concern Topics: Route/Location

Heard About The Project Through: N/A

Phone: [REDACTED]

Email: N/A

Address: N/A

Comment Submitted:

Don't use Cardinal, Westover preferred

Response Notes:

Southwest Tucson Reliability Project

Public Comment Record

Date Received: 8/6/2026

Phone: [REDACTED]

Commentor: [REDACTED]

Email: [REDACTED]

Category: Public Comment Form

Address:

Concern Topics: Route/Location

[REDACTED]
[REDACTED]

Heard About The Project Through: N/A

Comment Submitted:

Do not use Cardinal, use westover instead, next to gas line.

Response Notes:

Southwest Tucson Reliability Project

Public Comment Record

Date Received: 8/6/2026

Commentor: [REDACTED]

Category: Public Comment Form

Concern Topics: Location/ Routes

Heard About The Project Through: Flier

Phone: [REDACTED]

Email: [REDACTED]

Address: N/A

Comment Submitted:

Would greatly prefer Drexel to Westover rather than Drexel to Cardinal. Although it not being proposed Mission to Valencia seems like the best option as there are no houses on this route. Please no lines on Cardinal Ave

Response Notes:

Southwest Tucson Reliability Project

Public Comment Record

Date Received: 8/6/2026

Phone: [REDACTED]

Commentor: [REDACTED]

Email: [REDACTED]

Category: Public Comment Form

Address:

Concern Topics: Views/Location/Routes

[REDACTED]

Heard About The Project Through: Email

Comment Submitted:

These are large lines that block mountain views and really should be pplaced away from residents.

I'd prefer to see the lines run through Drexel-Westover rather than over on Cardinal. Mission also really seems like an ideal road to use if at all possible as its less residential.

Response Notes:

Southwest Tucson Reliability Project

Public Comment Record

Date Received: 7/31/2026

Phone: N/A

Commentor: [REDACTED]

Email: [REDACTED]

Category: Email

Address:

Concern Topics: Location/ Cost

N/A

Heard About The Project Through: N/A

Comment Submitted:

What about Camino Verde I have there since 1984 every year the power goes off alot more than it should. So bad I had to buy a generator.do something about that area u sure love to up the tep bill but not take of this

Response Notes:

Good afternoon!

Thank you for your comment. Providing greater electric reliability to this area, including along Camino Verde, is the primary driver for this project.

Today, the area is served by an older 46-kilovolt (46kV) system. This is a radial system, which means it has only one source of power. If anything happens to that source, all customers in the area lose power until repairs can be made. It sounds like this is something you have experienced firsthand.

The objective of the Southwest Tucson Reliability Project is to address this situation by replacing the old 46kV system with a modern, looped 138kV transmission system and substation. This will result in fewer power outages, and when outages do occur, they will be shorter in duration.

If you would like to discuss the project further, please join us at our upcoming public open house on August 6, from 6:00 p.m. to 8:00 p.m. at Pima Community College – Desert Vista Campus.

For the latest project updates, I invite you to visit the project website at <https://www.tep.com/southwest-tucson-reliability-project/>.

Thank you,
Clark Bryner

Southwest Tucson Reliability Project

Public Comment Record

Date Received: 7/29/2026

Phone: N/A

Commentor: [REDACTED]

Email: [REDACTED]

Category: Email

Address:

Concern Topics: Rates

N/A

Heard About The Project Through: N/A

Comment Submitted:

If you keep raising the rates more people will go without food or medicine to pay for your projects. The help you give is \$20 on a \$200 dollar bill is ridiculous.

Yeah, I have no doubt you can lower rates but you won't because it would mean giving less money to your CEO and other so called executives while the public suffers.

You may need the projects you want to hike up our rates for but you can also do them in a way that won't hurt the people you are serving...by the way is your company serving the people or are we serving you?

Next time you hear/read about a heat related death because they were using fans only it is on your head.

I'm sure I am not the only one who feels this way. Take a survey of seniors and low- mid income people and see how they feel about your money grab.

Response Notes:

Good afternoon!

Thank you for your comment. We will include your comment in our project record that will be submitted to the Arizona Corporation Commission.

If you would like to discuss the proposed project, or would like to speak with a representative from our Customer Care team about programs and rates that can save you money, please join us at our upcoming public open house on August 6th, from 6:00 – 8:00pm at the Pima Community College – Desert Vista Campus.

For the latest updates on the project, I invite you to visit the project webpage at <https://www.tep.com/southwest-tucson-reliability-project/>.

Thank you,

Clark Bryner

Southwest Tucson Reliability Project

Public Comment Record

Date Received: 7/29/2026

Heard About The Project Through: N/A

Commentor: [REDACTED]

Phone: [REDACTED]

Category: Online Comment Form

Email: [REDACTED]

Concern Topics: Environmental Impacts/
Water resources/ Cost

Address:

N/A

Comment Submitted:

Please do not build these new power lines. Tucson needs as much untouched land as it can to preserve its untreated water, aquaphores, and above ground foliage. These power lines and extra power requirement is not going to help anyone enough to justify the cost. Building more is not the answer, Tucson is not a city that needs to expand at this rapid of a rate.

If possible please put this project off for a few more years to see how large power centers are going to be affecting other cities and collect actual data on how it affects the citizens.

Response Notes:

Good afternoon!

Thank you for your comment. We will include it in the project record that will be submitted to the Arizona Corporation Commission.

To clarify, the primary purpose of this project is to improve electric service reliability for existing customers, not to serve a large new customer such as a data center. This area is located at the edge of TEP's service territory and is currently served by a single line. If maintenance is required on that line, or if an outage occurs, we have no way to provide backup power or restore service quickly. As a result, customers in the area experience more frequent and longer-duration power outages.

The proposed project will address this issue by retiring two older substations and replacing them with a single fully redundant substation served by a looped transmission system.

The proposed draft routes maximize the use of existing infrastructure. In fact, more than 75% of the project, as currently contemplated, will not require any ground disturbance. Instead, it will involve either converting the voltage of an existing line or adding an additional circuit to an existing line. Utilizing existing infrastructure helps reduce costs, minimize environmental impacts, and align with the preferences we have heard from the community.

If you would like to discuss the project further, please join us at our upcoming public open house on August 6, from 6:00 p.m. to 8:00 p.m. at Pima Community College – Desert Vista Campus.

For the latest project updates, I invite you to visit the project website at <https://www.tep.com/southwest-tucson-reliability-project/>.

Thank you,

Clark Bryner

Southwest Tucson Reliability Project

Public Comment Record

Date Received: 7/28/2026

Heard About The Project Through: N/A

Commentor: [REDACTED]

Phone: N/A

Category: Email

Email: [REDACTED]

Concern Topics: Location/ Safety/ Power level

Address:
N/A

Comment Submitted:

Hello, we live on the corner of Iowa Street & Spencer. I plan on attending the meeting on August 6th, but want to know the following:

1. Will you be installing high power transmission lines along Spencer?

If so what side of the road, east or west?

2. Is there any danger to homes located nearby or across the street from these lines?

3. How much electricity will these lines be carrying?

Please advise. Thank you.

Response Notes:

Good morning,

Thank you for your questions. I will answer each in the order posed:

Yes and no. Our proposed route for Phase 1 of the project is on Spencer Road, but there is an existing transmission line installed already that is operated by Western Area Power Administration (federal government) and it can accommodate a second circuit. So, TEP would not install new poles along Spencer, we would simply add three additional conductors (wires) to those poles, mirroring the existing wires on the opposite side of the pole.

No

The current line is operated at 115 kilovolts or kV, the proposed new circuit would be operated at 138 kV.

I look forward to seeing you on August 6th at the open house, and hope you will continue to stay engaged in the project and provide your thoughts, comments, or any additional questions that you may have.

For the latest updates on the project, I invite you to visit the project webpage at <https://www.tep.com/southwest-tucson-reliability-project/>.

Thank you,

Clark Bryner

Southwest Tucson Reliability Project

Public Comment Record

Date Received: 7/28/2026

Phone: [REDACTED]

Commentor: [REDACTED]

Category: Online Comment Form

Concern Topics: Traffic/ Safety
/Development

Email: [REDACTED]

Address:

Heard About The Project Through: N/A

N/A

Comment Submitted:

I live on S. Joseph Avenue. My road is the only N/S connection between Irvington Road and Valencia Road in this part of Tucson. As such, it gets more and more traffic due to the number of new subdivisions being built on the Southwest side. Kinney Road runs south from Ajo Way and ends at Irvington. Traffic then jogs east to Joseph in order to continue south to Valencia. The road is already congested and increasingly dangerous! Adding electric service construction to this problem will make it impossible for traffic to move. I propose that a new, four-lane extension to Kinney Road, going south, be constructed, with the power poles installed during the construction, solving two problems at once. The subdivision developers should be responsible for partial payment of the road, as it serves the residents of the developments. Please give serious consideration to this proposal - it is the only way to solve the problems of growth and service. Thank you!

Response Notes:

[REDACTED]

Thank you for your comments and creative solutions. I always appreciated out of the box ideas and thinking. We will include your comment in our project record that will be submitted to the ACC.

After a substantial amount of review, which included heavy consideration of comments received from the public up to this point, we actually eliminated Joseph Avenue from consideration. For the north/south portion of the project between Irvington and Valencia, we are proposing to place one of the new lines on existing poles in the Spencer Avenue

alignment; for the other line, Phase 2 of the project, we are proposing to rebuild an existing line along Camino Verde. By making use of this existing infrastructure, it results in lower costs, lower environmental impacts, and is in line with the desires we've heard from the community.

If you would like to discuss further, we're having a public open house on August 6th, from 6:00 – 8:00pm at the Pima Community College – Desert Vista Campus.

I hope you will continue to stay engaged in the project and provide your thoughts, comments, or any questions that you may have.

For the latest updates on the project, I invite you to visit the project webpage at <https://www.tep.com/southwest-tucson-reliability-project/>.

Thank you,

Clark Bryner

Southwest Tucson Reliability Project

Public Comment Record

Date Received: 7/28/2026

Phone: [REDACTED]

Commentor: [REDACTED]

Email: [REDACTED]

Category: Online Comment Form

Address:

Concern Topics: Support

N/A

Heard About The Project Through: N/A

Comment Submitted:

I/we approve of the reliability project in what TEP determines to be the best form it should take.

The plan looks complicated and I believe TEP will make the best choices/decisions in the final determination.

I sincerely hope that this is not in regard to a data harvesting center, in which case I would not approve in any form!

Sincerely, [REDACTED]

Response Notes:

Thank you for sharing your support for the project. We have noted your comment and it will be included in our project record that will be submitted to the ACC.

The purpose of the project is to create a looped transmission system in the area to provide greater reliability, power quality, and capacity to local customers.

We have an upcoming public open house where we'll share all the details of the project and give you an opportunity to ask questions. The open house is August 6, from 6:00–8:00 p.m. at Pima Community College – Desert Vista Campus.

I hope you will continue to stay engaged in the project and provide your thoughts or any additional comments and questions that you may have.

For the latest updates on the project, I invite you to visit the project webpage at <https://www.tep.com/southwest-tucson-reliability-project/>.

Thank you,

Clark Bryner

Southwest Tucson Reliability Project

Public Comment Record

Date Received: 7/27/2026

Heard About The Project Through: N/A

Commentor: [REDACTED]

Phone: [REDACTED]

Category: Online Comment Form

Email: [REDACTED]

Concern Topics: Map/ Infrastructure size
and location

Address:

N/A

Comment Submitted:

A better map than the one on this email would be better for us to understand what roads, the height of the 13 8 kv poles or towers and where the substations would be located?

Response Notes:

[REDACTED]

Thank you for your comments.

I'll refer you to an interactive map on our project website. Here you'll be able to zoom in, look up your address, etc. in order to see exactly where the line and substation are proposed. You can even click on the lines to learn a little more.

Over 75% of the lines we're proposing to use are actually existing and would just be repurposed. In the few areas where we are proposing to construct new, in general, the poles would be between 75-85 feet tall.

I hope that information helps. We'll also be hosting a public open house on August 6th, from 6:00 – 8:00pm at the Pima Community College – Desert Vista Campus. If you are available, it would be great to have you stop by at your convenience to learn more about the planned project, and discuss further.

I hope you will continue to stay engaged in the project and provide any further thoughts or questions that you may have.

For the latest updates on the project, I invite you to visit the project webpage at <https://www.tep.com/southwest-tucson-reliability-project/>.

Thank you,
Clark Bryner

Southwest Tucson Reliability Project

Public Comment Record

Date Received: 7/25/2026

Heard About The Project Through: N/A

Commentor: [REDACTED]

Phone: [REDACTED]

Category: Online Comment Form

Email: [REDACTED]

Concern Topics: Cost / Public
Participation

Address:

N/A

Comment Submitted:

I do realize the need for another plant due to our city's growth but with this growth comes extra income from new customers, for TEP, moving to our city. As long as another plant does not incur higher bills on the public, I'm with the agreement to proceed. Maybe a public quorum is crucial so that community input is fully considered and decisions reflect the interests of all residents.

Response Notes:

[REDACTED]

Thank you for reaching out and providing your comments. We will include your comment in our project record that will be submitted to the ACC.

Based on my interpretation of your comment, it appears there may be a misunderstanding about what TEP is proposing, so I'd like to clarify.

TEP has been providing electric service to this area for more than 125 years. We are not proposing to build a new electric plant; rather, we are proposing to upgrade the transmission portion of the system in this area to modern-day standards.

Transmission lines bring power from where it is generated to the communities where it is consumed. The power then goes into a substation, where the voltage is lowered so it can be distributed to homes and businesses. TEP's proposal is to upgrade the existing lines and substations in the area to a looped 138kV transmission system and a fully redundant substation.

This will result in greater electric reliability for the area, including fewer and shorter outages. As you pointed out, it will also help us serve more customers as the community continues to grow. I hope that clarifies what TEP is proposing and why.

To this point, TEP has been engaging with the public since early this year to seek feedback on where the new transmission lines will be located. We have an upcoming public open house for this purpose on August 6, from 6:00–8:00 p.m. at Pima Community College – Desert Vista Campus. I invite you to attend, where you can learn more about the planned project, speak with the project team, and provide additional comments and feedback to help shape the project.

Lastly, later this year, there will be a public hearing before the Arizona Power Plant and Transmission Line Siting Committee to do just as you suggested: hear the voice of the community regarding the project. We will provide more information and specific dates once that hearing is scheduled. You, along with all members of the community, are invited to participate.

I hope you will continue to stay engaged in the project and provide your thoughts or any additional questions that you may have.

For the latest updates on the project, I invite you to visit the project webpage at <https://www.tep.com/southwest-tucson-reliability-project/>.

Thank you,

Clark Bryner

Southwest Tucson Reliability Project

Public Comment Record

Date Received: 7/24/2026

Phone: [REDACTED]

Commentor: [REDACTED]

Email: N/A

Category: Project Phone Line

Address:

Concern Topics: Coverage

Heard About The Project Through: N/A

Comment Submitted:

This is [REDACTED] at [REDACTED]. And my question is TEP going to extend coverage to this area? If not, then don't send me any more of this stuff.

Response Notes:

Removed from mailing list.

Southwest Tucson Reliability Project

Public Comment Record

Date Received: 7/23/2026

Heard About The Project Through: N/A

Commentor: [REDACTED]

Phone: [REDACTED]

Category: Online Comment Form

Email: [REDACTED]

Concern Topics: Infrastructure Safety
Concern

Address:

N/A

Comment Submitted:

Many of the electric poles in the Tucson estates mobile home park are old and leaning.

Response Notes:

[REDACTED]

Thank you for sharing your concern. I will pass it along to the appropriate group at TEP to look into and follow-up on, as appropriate.

Thanks,

Clark Bryner

Southwest Tucson Reliability Project

Public Comment Record

Date Received: 7/23/2026

Heard About The Project Through: N/A

Commentor: [REDACTED]

Phone: [REDACTED]

Category: Online Comment Form

Email: [REDACTED]

Concern Topics: Infrastructure, EMF,
Appearance

Address:

N/A

Comment Submitted:

I live at Cardinal and Drexel. Im concerned about the power lines, electric magnetic fields, attraction of lightning, and ugly wires going through our neighbors

Response Notes:

[REDACTED]

Thank you for your comments. We have noted these for consideration as we finalize the proposed routes that will be including in our application to the Arizona Corporation Commission. In addition, we will include these comments in our project record that will be submitted to the ACC.

We have information posted on the TEP website regarding electric and magnetic fields related to transmission lines. All of our lines are designed with lightning protection to safely direct any lightning strikes to ground without damaging the equipment or creating a safety hazard. Lastly, we are preparing a number of photo realistic simulations of the draft proposed routes that we'll share at an upcoming public open house on August 6th, from 6:00 – 8:00pm at the Pima Community College – Desert Vista Campus. If you are available, it would be great to have you stop by at your convenience to view the photo simulations, learn more about the planned project, and discuss further. If you're unable to attend, we'll be posting the photo simulations to our project webpage as well.

I hope you will continue to stay engaged in the project and provide your thoughts or any additional questions that you may have.

For the latest updates on the project, I invite you to visit the project webpage at <https://www.tep.com/southwest-tucson-reliability-project/>.

Thank you,
Clark Bryner

Southwest Tucson Reliability Project

Public Comment Record

Date Received: 7/23/2026

Phone: [REDACTED]

Commentor: [REDACTED]

Email: [REDACTED]

Category: Online Comment Form

Address:

Concern Topics: Cost

N/A

Heard About The Project Through: N/A

Comment Submitted:

What you want to do is fine with me as long as it doesn't cost me one more penny! The realitors and developers in that area should pay for it. They can recoup there money when they sell there houses. If I do have to pay for it ,then I am totally against it. You need to take care of the areas that are already struggling, that are already there first. I know there are places in my area already struggling! It's just common sense.

Response Notes:

[REDACTED]

Thank you for your comments. We have noted these for consideration. In addition, we will include these comments in our project record that will be submitted to the Arizona Corporation Commission.

The primary purpose of this project is to increase electric reliability for existing TEP customers in the area. The area is at the edge of TEP's system and is currently served by a lower voltage 46kV system that lacks redundancy. Any time we need to take an outage for maintenance or anything happens to our equipment, customers are out of power until we can make repairs and restore service. With the proposed project, two higher voltage 138kV lines will serve an upgraded substation that will be fully redundant, greatly reducing the frequency and duration of electrical outages in the area.

The costs of projects like this one could be incorporated into TEP rates paid by all customers because systems like these help provide reliable service day and night, all year long to the community. However, it's too early to say if this will affect your bill at this time, and any statement I made on the matter would be purely speculative.

I hope you will continue to stay engaged in the project and provide your thoughts or any additional questions that you may have. We'll also be hosting a public open house in a couple of weeks, on August 6th, from 6:00 – 8:00pm at the Pima Community College – Desert Vista Campus if you'd like to stop by at your convenience to learn more about the planned project and discuss further.

For the latest updates on the project, I invite you to visit the project webpage at <https://www.tep.com/southwest-tucson-reliability-project/>.

Thank you,

Clark Bryner

Southwest Tucson Reliability Project

Public Comment Record

Date Received: 6/14/2026

Heard About The Project Through: N/A

Commentor: [REDACTED]

Phone: [REDACTED]

Category: Online Comment Form

Email: [REDACTED]

Concern Topics: Upgrades

Address: N/A

Comment Submitted:

How can I determine if my electrical needs to be upgraded, who would I call to inspect the electrical box, and who would I contact if it needs to be upgraded?

Response Notes:

Thank you for your inquiry.

The proposed Southwest Tucson Reliability Project will upgrade the “transmission” portion of the electrical system in the area. This would result in more reliable electrical service and higher quality power without any upgrades to your equipment.

If you are looking at making improvements to your home that will result in substantially higher electrical usage, it's possible you may need to upgrade your service and electrical panel. An electrician can let you know if that is needed. If you learn that you need to upgrade your service, you can start the process with TEP by calling 520-918-8300 (select Option 3) or by filling out an online application form. For additional information, I'll refer you to our list of Frequently Asked Questions ([link](#)).

Thank you,

Clark Bryner

Southwest Tucson Reliability Project

Public Comment Record

Date Received: 6/10/2026

Heard About The Project Through: N/A

Commentor: [REDACTED]

Phone: N/A

Category: Email

Email: [REDACTED]

Concern Topics: Segments/ Routes

Address: N/A

Comment Submitted:

Why was Segment 60 removed from possible routes?

Segment 60 seems like a clean, low-cost, least impactful route segment? In removing it, it seems to encourage routing this new line further west and north.

Please do not route these lines along Irvington, Cardinal and Mission roads. The Valencia Corridor appears to be the route with least environmental impact while also providing the most flexibility in the future for TEP to tie into given all the recent & forecasted growth along Valencia Rd and West... plus if/when I-11 is routed thru there, your power lines would be conveniently located there as well.

Again, PLEASE DO NOT ROUTE THESE NEW ABOVE-GROUND POWER LINES ALONG, NOR ANYWHERE NEAR, IRVINGTON, CARDINAL AND MISSION ROADS!.

Regards,

Concerned Citizen and Taxpayer

Response Notes:

[REDACTED],

Thank you for your additional questions and comments.

Segment 60 is located along Mission Road and was eliminated primarily because of its location on Tribal lands and because it is along the Juan Bautista de Anza National Historic Trail – Auto Tour Route that was an expressed concern of the National Park Service.

We will consider your concerns regarding routes along Irvington, Cardinal and Mission roads as part of our current analysis and efforts to identify route alternatives.

I encourage you to continue to stay engaged with the project and express any questions or concerns as they may arise.

Thank you,

Clark Bryner

Southwest Tucson Reliability Project

Public Comment Record

Date Received: 6/8/2026

Heard About The Project Through: N/A

Commentor: [REDACTED]

Phone: [REDACTED]

Category: Project Phone Line

Email: N/A

Concern Topics: Cultural Resources/
Environmental Impacts/ Wildlife

Address: N/A

Comment Submitted:

Hello, my name is [REDACTED], my number is [REDACTED]. I would like a call back regarding your Southwest Tucson Reliability Project. I saw the area that will be impacted on the website that you provided. I also noticed that we received the flyer, like 2 days before the actual meeting, so we weren't able to attend. I'm hopeful that you plan to have more public meetings in the future. And I'd also like information about if you're going to do any cultural resources in the area, what the plan is for environmental impacts, including wildlife. And I'd just like more basic information about the project because there will be disruptions and with what I've seen along Greasewood and the work that's being done there for those large transmission lines, there's a lot to be, you know, left to be desired. It's just not going well. Your contractors, their traffic plan along that busy arterial just leaves a lot to be desired. So yeah, I'd like a call back. Again, my name is [REDACTED]. [REDACTED]. Thank you. I look forward to hearing from you. Bye.

Response Notes:

Answered the questions she had posed. Confirmed that we are conducting biological resource and cultural resource studies, and are working to identify a route that minimizes environmental impact. Provided an update on major concerns we've heard from the public, including protecting views of the Tucson Mtns from residential areas and a desire to co-locate on existing facilities. Shared that we plan to have another public open house in August. And she provided her email address to be included in electronic communications.

Southwest Tucson Reliability Project

Public Comment Record

Date Received: 6/7/2026

Phone: N/A

Commentor: [REDACTED]

Email: [REDACTED]

Category: Email

Address: [REDACTED]
[REDACTED]

Concern Topics: Routes/ Infrastructure

Heard About The Project Through: N/A

Comment Submitted:

To Whom It May Concern:

I think the best route for TEP Poles and lines from Kenny Road and Ajo to the Substation at Mission and Drexel would be to use the poles along Valencea Road west of Camino Oeste to Mission Road, and then put poles along Mission Road to Drexel Drexel. This is the most direct route. Also there are poles all along Valencia that can be used for the lines.

There are no homes or structures along that section of Mission Road, Therefore, the poles and lines would not harm any one or interfere with individual properties. I know it is Native property, but I am sure TEP can negotiate with the Tohono O'odham tribe. And it could be a win, win situation for both parties.

Putting Poles along Cardinal Road is a very,very bad idea. Too many homes and a very narrow road. Plus the residents in that area don't want the poles blocking their views of the mountains. Also, it would then have to go down Drexel, which has numerous homes on that road and nearby.

Also, poles alone Westover Road is not really good because of the pipeline and It would have to go along Drexel Road to Mission Road.

It is my understanding that the substation at Drexel and Mission will serve the Midvale Area and it is best that it doesn't harm or interfere with the residents in nearby communities.

This is my input please consider it.

Sincerely,

[REDACTED]

[REDACTED]
[REDACTED]
[REDACTED]

Response Notes:

[REDACTED]

Thank you for your comments. We have noted these for consideration as we move into the next phase of our planning and siting process. In addition, we will include these comments in our project record that will be submitted to the Arizona Corporation Commission.

I hope you will continue to stay engaged in the project and provide your thoughts or any additional questions that you may have.

For the latest updates on the project, I invite you to visit the project webpage at <https://www.tep.com/southwest-tucson-reliability-project/>.

Thank you,

Clark Bryner

Southwest Tucson Reliability Project

Public Comment Record

Date Received: 6/2/2026

Phone: [REDACTED]

Commentor: [REDACTED]

Email: [REDACTED]

Category: Online Comment Form

Address:

Concern Topics: Parcels/ Location

N/A

Heard About The Project Through: N/A

Comment Submitted:

Greetings,

Are parcels 212-48-010N and 212-48-009A affected by this project?

Thank you,

[REDACTED]

Response Notes:

Hello [REDACTED]

Thank you for your interest in the project. We will include your questions and answers in our project record that will be submitted to the Arizona Corporation Commission.

I have checked the parcel numbers you provided and confirmed that your properties are outside of the Project Study Area. You have been receiving communications on the project because your property is within the Notification Area, which is a one-mile radius of the Project Study Area. I invite you to visit the interactive project web map to see the refined segments in your area that are south of Ajo Hwy.

I hope you will continue to stay engaged in the project and provide your thoughts or any additional questions that you may have. For the latest updates on the project, I invite you to visit the project webpage at <https://www.tep.com/southwest-tucson-reliability-project/>.

Thank you,

~Chris

Southwest Tucson Reliability Project

Public Comment Record

Date Received: 6/1/2026

Heard About The Project Through: N/A

Commentor: [REDACTED]

Phone: [REDACTED]

Category: Project Phone Line

Email: N/A

Concern Topics: Affordability

Address: N/A

Comment Submitted:

Mi nombre es [REDACTED], y estoy hablando de [REDACTED]. Y estoy hablando, ah... soy del south side acá, y estoy hablando porque yo necesito ayuda para que, para pagar la luz. Quiero saber en cómo aplicar, y en donde, tengo 64 anos. ahorita no estoy trabajando pues no tengo mucho income. Muchas gracias. mi número es [REDACTED]

Response Notes:

No call back. Forwarded to Customer Care

Southwest Tucson Reliability Project

Public Comment Record

Date Received: 5/19/2026

Heard About The Project Through: N/A

Commentor: [REDACTED]

Phone: N/A

Category: N/A

Email: [REDACTED]

Concern Topics: Inquiry

Address: N/A

Comment Submitted:

N/A

Response Notes:

[REDACTED]

I received your inquiry, through [REDACTED], regarding the Southwest Tucson Reliability Project.

Project Overview

The purpose of the project is to strengthen the transmission system in the southwest portion of Tucson, which then strengthens the distribution system resulting in greater electric reliability to homes and businesses... including schools.

Today the area served by TEP west of the Tucson Mountains along State Route 86, is served through an older 46 kilovolt (kV) system. This is a radial system, which means it only has one source of power. If anything happens to that source all of the customers in the area will be out of power until a repair can be made. In addition, the 46kV system is limited on its ability to serve customers electrical needs. Today, the circuits in this area are at capacity.

The objective of the Southwest Tucson Reliability Project is to remedy the current situation, by replacing the old 46kV system with a modern looped 138kV transmission system and substation (see map).

The project will be built in two phases. The first phase will include the construction of the Tucson Estates Substation along Ajo Highway and Tucson Estates Parkway. The new

substation will be connected through a new 138kV transmission circuit originating at the Midvale Substation, located near the intersection of Drexel and Mission roads.

The second phase will loop the new Tucson Estates Substation through a second source, by constructing a transmission circuit from the new substation to a point where it can tie into TEP's existing 138kV system near Valencia Road and Interstate 19.

Routes for the project have not been selected yet. TEP is conducting a comprehensive planning and siting process, inclusive of a lot of public outreach/engagement, to identify the best routes for these new facilities. Any comment on traffic impacts or outages would be purely speculative at this point.

I would be happy to schedule a meeting if you'd like to discuss more details. Also, would you like to be included in our next agency briefing, tentatively scheduled for late July/early August?

Thanks!

Clark Bryner

Southwest Tucson Reliability Project

Public Comment Record

Date Received: 5/16/2026

Heard About The Project Through: N/A

Commentor: [REDACTED]

Phone: [REDACTED]

Category: Project Phone Line

Email: N/A

Concern Topics: Tree Program

Address: N/A

Comment Submitted:

Hi, my name is [REDACTED], and I was calling because we had gone to the open house at Grijalva School on Thursday May 14th, and we had tried to sign up for the tree program, where you are able to purchase a tree for \$5. And, the computers, they were struggling with the computers, so they got our information down and they were supposed to get back with us on delivery date, but we have not heard from anyone. I called back last Thursday, May 21st, the regular TEP line, and when she looked it up there was no order for us yet, and we were supposed to receive another call back, but it's been a few days now, and we still haven't heard. So, if it's possible, if I could get a call at [REDACTED]. Thank you.

Response Notes:

Routed to Customer Care to respond.

Southwest Tucson Reliability Project

Public Comment Record

Date Received: 5/15/2026

Heard About The Project Through: N/A

Commentor: [REDACTED]

Phone: [REDACTED]

Category: Email

Email: [REDACTED]

Concern Topics: Inquiry

Address: N/A

Comment Submitted:

Hi I missed the open house today I was wondering if I can meet someone in person because I am deaf I can't hear if someone can help me only way to contact me on here or text me at [REDACTED] thanks

[REDACTED]

Response Notes:

[REDACTED]

Thank you for reaching out. Can you please email Michele Estavillo at advocate@tep.com (copied) and they will reach out to see how we can help.

Thank you,

Clark Bryner

Southwest Tucson Reliability Project

Public Comment Record

Date Received: 5/15/2026

Heard About The Project Through: N/A

Commentor: [REDACTED]

Phone: [REDACTED]

Category: Online Comment Form

Email: [REDACTED]

Concern Topics: Route/ Location

Address: N/A

Comment Submitted:

I was at the meeting yesterday and saw the map. I accept that you probably need this substation. I think for you and us the best idea is to use the current large transmission poles which run along the river and then Valencia. I don't think that Going up Mark/ Joseph is a good idea. This road is used by too many people to get between Ajo Way and Valencia and goes by an Elementary School. People drive too fast here because it looks rural in places. A less busy route would be better.

Response Notes:

[REDACTED],

Thank you for your comments. We have noted these for consideration as we move into the next phase of our planning and siting process. In addition, we will include these comments in our project record that will be submitted to the Arizona Corporation Commission.

I hope you will continue to stay engaged in the project and provide your thoughts or any additional questions that you may have.

For the latest updates on the project, I invite you to visit the project webpage at <https://www.tep.com/southwest-tucson-reliability-project/>.

Thank you,

Clark Bryner

Tucson Electric Power – Southwest Tucson Reliability Project Team

P.O. Box 711

Mailstop CB200

Tucson, AZ 85701

Phone: 1-520-770-7522

E-mail: swtucson@tep.com

Webpage: www.tep.com/southwest-tucson-reliability-project/

Southwest Tucson Reliability Project

Public Comment Record

Date Received: 5/14/2026

Heard About The Project Through: N/A

Commentor: [REDACTED]

Phone: N/A

Category: Email

Email: [REDACTED]

Concern Topics: Rates/ Affordability/

Address: N/A

Comment Submitted:

To Whom It May Concern,

I am writing regarding the proposed electricity rate increase. Unfortunately, I was unable to attend the public open house, but I still wanted to express my concerns.

Many families are already struggling with the rising cost of living. Utility bills, gas prices, groceries, insurance, and everyday necessities continue to increase, while many people's income has not kept up. It feels unfair to raise electricity rates again so soon after the last increase.

Electricity is not a luxury it is a necessity, especially here in Arizona where families rely heavily on air conditioning during extreme heat. Another increase would place an even greater burden on seniors, working families, and people living on fixed incomes.

I respectfully ask that you reconsider this proposed increase and look for alternative solutions that do not continue placing additional financial burden on the community.

Thank you for taking the time to hear public concerns and comments.

Sincerely,

[REDACTED]

Response Notes:

[REDACTED]

Thank you for sharing your concern. We will include your comment in our project record that will be submitted to the Arizona Corporation Commission.

We understand that some of our customers may struggle financially, and we strive to keep our rates as affordable as possible. Our current rates reflect costs from 2021, and while our proposed request would increase residential customer bills by about 13 percent when they take effect, that's less than the level of inflation since 2021.

For more information about rates and the requested rate increase and process, I invite you to visit: www.tep.com/2026-rates/.

We do have resources to help customers who are struggling and falling behind on their bills. We offer extended payment arrangements, payment extensions, monthly discounts for low income customers and more. For payment assistance details, I invite you to visit: <https://www.tep.com/payment-assistance/> or visit our Neighbor Connect webpage for additional resources at: <https://www.tep.com/neighbor-connect/>

Thank you,

Clark Bryner

Southwest Tucson Reliability Project

Public Comment Record

Date Received: 5/14/2026

Heard About The Project Through: N/A

Commentor: [REDACTED]

Phone: [REDACTED]

Category: Online Comment Form

Email: [REDACTED]

Concern Topics: Infrastructure/
Reliability

Address: N/A

Comment Submitted:

I live on [REDACTED] and nearest area to me would be 32

I would like to see more modern poles in our area rather than the old wood posts

Which in 2022 or 2023 all of PALOMINO RD AND CABALLO RD post snapped in half and were out of power for 4 DAYS.

YES we do need improvement

Sincerely

[REDACTED]

Response Notes:

[REDACTED],

Thank you for your comments. We have noted these for consideration as we move into the next phase of our planning and siting process. In addition, we will include these comments in our project record that will be submitted to the Arizona Corporation Commission.

I hope you will continue to stay engaged in the project and provide your thoughts or any additional questions that you may have.

For the latest updates on the project, I invite you to visit the project webpage at <https://www.tep.com/southwest-tucson-reliability-project/>.

Thank you,

Clark Bryner

Southwest Tucson Reliability Project

Public Comment Record

Date Received: 5/14/2026

Heard About The Project Through: N/A

Commentor: [REDACTED]

Phone: [REDACTED]

Category: Project Phone Line

Email: [REDACTED]

Concern Topics: Affordability

Address: N/A

Comment Submitted:

Hello, this is [REDACTED]. My last name is [REDACTED] and I am calling to see if you could contact me, I missed the open house today. And I need some help with my bill. To help get them reduced. I also am deaf, I'm calling through a sign language interpreter. The phone number is [REDACTED], if you could text me at that number, or you could e-mail me at [REDACTED]. Thank you very much. This message has been left to the Purple Video Relay Service interpreter [REDACTED] to repeat.

Response Notes:

Responded to an email inquiry already, with instructions on assistance.

Southwest Tucson Reliability Project

Public Comment Record

Date Received: 5/14/2026

Commentor: [REDACTED]

Category: Public Comment Form

Concern Topics: Infrastructure/ Route/
Opposition

Heard About The Project Through:

Newsletter Mailing

Phone: [REDACTED]

Email: [REDACTED]

Address: [REDACTED]
[REDACTED]

Comment Submitted:

No power poles along Cardinal ave - No room along the and blocks view. No Rio. Use Westover - No poles on Irvington and no Tucson Park

Response Notes:

Southwest Tucson Reliability Project

Public Comment Record

Date Received: 5/14/2026

Commentor: [REDACTED]

Category: Public Comment Form

Concern Topics: Infrastructure/ Wildlife/
Community

Heard About The Project Through:

Signage

Phone: [REDACTED]

Email: [REDACTED]

Address: [REDACTED]
[REDACTED]

Comment Submitted:

Please use all existing infrastructure! No new poles. Be mindful of environment, animals, parks and community

Response Notes:

Southwest Tucson Reliability Project

Public Comment Record

Date Received: 5/14/2026

Commentor: [REDACTED]

Category: Public Comment Form

Concern Topics: Infrastructure/
Environment

Heard About The Project Through:

Newsletter Mailing

Phone: [REDACTED]

Email: [REDACTED]

Address: [REDACTED]
[REDACTED]

Comment Submitted:

Use of existing infrastructure is paramount. TEP remain sensitive to views and environment

Response Notes:

Southwest Tucson Reliability Project

Public Comment Record

Date Received: 5/14/2026

Heard About The Project Through: Flier

Commentor: [REDACTED]

Phone: [REDACTED]

Category: Public Comment Form

Email: [REDACTED]

Concern Topics: Infrastructure/ Route/
Plans

Address: [REDACTED]

Comment Submitted:

Wildlife, health, schools, parks, Robles Pass. No Irvington, no Cardinal, Utilize current poles on Valencia, use shorter poles in neighborhood. When did this plan concept start? Are there any plans to continue TEP plans west of current boundary? Will this potentially service any data centers?

Response Notes:

Southwest Tucson Reliability Project

Public Comment Record

Date Received: 5/14/2026

Commentor: [REDACTED]

Category: Public Comment Form

Concern Topics: Infrastructure/ Wildlife/
Scenic Areas

Heard About The Project Through:

Newsletter Mailing, Public Meeting,
Project Webpage

Phone: [REDACTED]

Email: [REDACTED]

Address: [REDACTED]
[REDACTED]

Comment Submitted:

Maintaining the wildness of the area and vistas. Please no on Segment 32. Pay attention to existing infrastructure and utilize i.

Response Notes:

Southwest Tucson Reliability Project

Public Comment Record

Date Received: 5/14/2026

Phone: [REDACTED]

Commentor: [REDACTED]

Email: [REDACTED]

Category: Public Comment Form

Address: [REDACTED]

Concern Topics: Infrastructure/ Route

[REDACTED]

Heard About The Project Through:

Newsletter Mailing

Comment Submitted:

Use existing powerlines/poles. No new infrastructure; use existing infrastructure. Use infrastructure along Valencia

Response Notes:

Southwest Tucson Reliability Project

Public Comment Record

Date Received: 5/14/2026

Phone: (907)952-0320

Commentor: [REDACTED]

Email: [REDACTED]

Category: Public Comment Form

Address: [REDACTED]
[REDACTED]

Concern Topics: Infrastructure/ Route

Heard About The Project Through:

Newsletter Mailing, Public Meeting,
Project Webpage

Comment Submitted:

Use existing powerlines, poles. No new route - stick with already impacted areas. Use infrastructure along Valencia

Response Notes:

Southwest Tucson Reliability Project

Public Comment Record

Date Received: 5/14/2026

Phone: N/A

Commentor: [REDACTED]

Email: [REDACTED]

Category: Public Comment Form

Address: [REDACTED]

Concern Topics: Route

Heard About The Project Through:

Newsletter Mailing

Comment Submitted:

This project will from the scenic view off Irvington. Take away the route if possible could go through Bilby

Response Notes:

Southwest Tucson Reliability Project

Public Comment Record

Date Received: 5/13/2026

Heard About The Project Through: N/A

Commentor: [REDACTED]
[REDACTED]

Phone: [REDACTED]

Email: [REDACTED]

Category: Email

Address: [REDACTED]
[REDACTED]

Concern Topics: Cultural Resources/
Visual Impacts/ Recreation/ Location

Comment Submitted:

Dear Tucson Electric Power Company:

The National Park Service appreciates the opportunity to review the TEP SW Tucson Reliability Project. Our comments primarily address potential impacts to the Juan Bautista de Anza National Historic Trail (Anza NHT), due to our responsibility to administer, coordinate, preserve and enhance this component of the National Trails System.

Overview of the Anza NHT

The National Park Service (NPS) has a special interest in ensuring the protection of the Anza NHT. Congress, under the National Trails System Act ([NTSA], 16 USC 1241 et. seq.), established the Anza NHT in 1990. The Act states that “National historic trails shall have as their purpose the identification and protection of the historic route and its historic remnants and artifacts for public use and enjoyment.” NPS as the administrator of the Anza NHT is charged with implementing this vision in collaboration with other federal, state, and local agency partners, such as Pima County, the State of Arizona, and the City of Tucson. The NPS owns very little of the trail route; only where it passes through NPS units does the NPS own land. Other land managers, such as the Bureau of Land Management, and many cities and counties along the route, take the lead role in building and maintaining segments of the trail within their jurisdiction. The Anza NHT has three linear components established in the Comprehensive Management and Use Plan (CMP): Historic Corridor with associated historic sites, Recreational Trail, and Auto Tour Route, as described below. The study area for the TEP SW Tucson Reliability Project encompasses the Auto Tour Route, the Recreation Trail, and the Historic Corridor with an Historic Campsite.

Historic Corridor

The Historic Corridor is the route designated by Congress that traces the historic path of the 1775-1776 Juan Bautista de Anza expedition. The corridor is shown as a polygon of varying width. Much of the Historic Corridor near metropolitan areas lacks scenic or other integrity due to modern land use changes (transportation infrastructure, residential, commercial, industrial development, etc.). However, in more remote areas, trail segments and entire landscapes of the trail route are essentially undisturbed since the time of the expedition. These segments with high integrity and/or proximity to sites associated with the Anza NHT are sometimes referred to as high potential route segments, and they are areas we strive to protect.

The study area is adjacent to an Historic Anza Expedition Campsite. This site is open to the public and has significant historical value. An Historic Campsite is the place where the expedition stopped, rested, and refueled before continuing their journey. These campsites encompass a broad vicinity as the expedition group included over 240 people and about 1000 head of livestock. The site is Expedition Camp #17, located at Mission of San Xavier del Bac. The Mission is on the National Register of Historic Places and has been designated a National Historic Landmark indicating the value in preserving the properties for the American people.

Auto Tour Route

The Auto Tour Route is shown on NPS publications and generally follows the Historic Corridor on highways, allowing people to connect with related historic sites and Recreational Trail segments by vehicle. The Auto Tour Route through the study area follows South Mission Road and guides the public to Mission Garden, an Historic Campsite, and the high potential recreational route segment. More on these resources below.

Recreational Retracement Route

The CMP calls for the establishment of a continuous "Recreation Retracement Route" (Recreational Trail) from Nogales, Arizona to San Francisco, California, and in the East Bay. The trail would ideally allow for multi-use travel by pedestrians, bicyclists, and equestrians. Approximately 484 miles of the recreation trail exists along the entire 1,200 miles of the trail in the U.S. Because the trail travels through so many different environments, varying from metropolitan areas to remote desert, the Recreational Trail varies significantly in its construction and the experience it offers.

The project area includes the Recreational Trail beginning at West Valencia Road following the Santa Cruz River. One of the route segments in consideration for the siting of a new power line is part of the Santa Cruz River Park, an approximately 13-mile Historic Trail

Segment identified in the CMP. The CMP defines a high potential route segment as a segment that affords a high-quality recreation experience greater than average scenic values or an opportunity to vicariously share the experience of the original users of a historic route ([NTSA], 16 USC 1251). The park is a significant regional recreation resource for the City and County and welcomes birders, cyclists, runners, horse-back riders, walkers, and more. The undertaking thus has the potential to degrade the experience of the trail user due to viewshed impact and noise pollution from the transmission line.

NPS has special concerns regarding the TEP SW Tucson Reliability Project. We request to understand the impact of a new transmission line within the study area on Anza NHT cultural and recreation resources to a greater extent and that the information be provided publicly. For any clarification of our comments or for further information relevant to the Anza NHT, please contact [REDACTED].

Sincerely,

[REDACTED]

[REDACTED]

Response Notes:

[REDACTED],

On behalf of Tucson Electric Power (TEP), thank you for your May 13, 2026 comment letter regarding TEP's proposed Southwest Tucson Reliability Project (Project). We appreciate your review of the Project and the background you provided on the Juan Bautista de Anza National Historic Trail (Anza NHT), as well as your information about potential impacts to the trail.

TEP is currently conducting a siting study to identify the most suitable routes for two new electric transmission circuits southwest of Tucson, Arizona. At this stage, we are evaluating potential effects on environmental resources, land uses, and community values across the areas under consideration. Our goal is to identify route options that balance these factors while minimizing overall impacts.

The information you provided about potential impacts to the Anza NHT has been valuable and has informed our siting analysis.

NPS' comment letter indicates three main areas of concern: the Historic Corridor, the Auto Tour Route, and the Recreational Retracement Route.

Historic Corridor

A review of the Historic Corridor's location indicates that it runs north to south through the Project Study Area, generally between Mission Road and Interstate 10 and west of the Santa Cruz River. Although this area is in a metropolitan setting and has limited scenic integrity due to existing transportation and utility infrastructure, TEP determined that segments crossing or paralleling the Historic Corridor are less compatible than segments that either do not parallel the corridor or do so within an existing utility corridor. As a result, TEP has removed from further consideration all segments that parallel the Historic Corridor outside an existing utility corridor.

We also noted the Historic Anza Expedition Campsite at Mission San Xavier del Bac; however, the site is nearly 2 miles from the nearest segment still under consideration and would not be affected by the Project.

Auto Tour Route

A review of the Auto Tour Route on the NPS website indicates that it follows Interstate 19, which forms the eastern boundary of the Project Study Area. However, your comment letter states that Mission Road is the Auto Tour Route within the Project Study Area. Accordingly, TEP considered all segments along Mission Road to be less compatible and has removed them from further consideration.

Recreational Retracement Route

Regarding the Recreational Retracement Route, TEP understands that it follows the Santa Cruz River Park and multi-use pathway through the Project Study Area and that this corridor offers a higher-quality recreational experience than other areas in the study area. As a result, TEP considered all segments paralleling the park and pathway to be less compatible and has removed them from further consideration.

TEP understands NPS' concerns about the Project's potential effects on the cultural and recreational resources of the Anza NHT. In response, and as part of its analysis of community values, environmental resources, and land use considerations, TEP has removed the segments with the greatest potential impacts.

As requested, NPS's comment letter and TEP's response will be posted to the Project website.

Sincerely,

Clark Bryner
Manager, Siting, Outreach & Engagement

Southwest Tucson Reliability Project

Public Comment Record

Date Received: 5/11/2026

Heard About The Project Through: N/A

Commentor: [REDACTED]

Phone: [REDACTED]

Category: Online Comment Form

Email: [REDACTED]

Concern Topics: Reliability/
Infrastructure

Address: N/A

Comment Submitted:

With Southwest Tucson growing is this project going to improve service in the Cardinal/Valencia area? Will this tie in with other substations in case of an outage?

Response Notes:

Thank you for your questions and interest in the project. We will include your questions and answers in our project record that will be submitted to the Arizona Corporation Commission.

Yes, the Southwest Tucson Reliability Project will result in increased electric reliability in the Cardinal/Valencia area, and in fact a much broader area on both the east and west sides of the Tucson Mountains.

Today the Cardinal/Valencia area is served through a circuit out of TEP's Bilby Substation, located at the intersection of Camino de la Tierra and Bilby Rd. This substation has a single source, which means any issues with that source results in electrical outages in the area. The proposed project will replace this substation, as well as another substation, with the new Tucson Estates Substation located near Tucson Estates Parkway and Ajo Highway. The new 138kV substation will eventually become the source for the circuit feeding the Cardinal/Valencia area. This new substation will be fed from a looped transmission source increasing overall reliability. This circuit will also maintain its ties to adjacent substations which can also be utilized as a source for the area in a contingency situation.

I hope you will continue to stay engaged in the project and provide your thoughts or any additional questions that you may have. We'll also be hosting a public open house this week, on May 14th, from 6:00 – 8:00pm at Grijalva Elementary School if you'd like to stop by at your convenience to learn more about the planned project and discuss further.

For the latest updates on the project, I invite you to visit the project webpage at <https://www.tep.com/southwest-tucson-reliability-project/>.

Thank you,

Clark Bryner

Southwest Tucson Reliability Project

Public Comment Record

Date Received: 5/11/2026

Phone: [REDACTED]

Commentor: [REDACTED]

Email: N/A

Category: Other

Address: [REDACTED]
[REDACTED]

Concern Topics: Inquiry

Heard About The Project Through: N/A

Comment Submitted:

Resident did not call in, but shared their concern with a family member of a TEP employee who passed it along to the project team.

Resident is a Trico customer and lives at [REDACTED] They were confused about why they were getting information on a project for Tucson Electric Power.

Response Notes:

I spoke with [REDACTED] and explained the intricacies of TEP and Trico's service territories in this area. I then explained a little bit about the project and why it was needed. I then shared some details about our siting process to identify routes for these new transmission lines and the importance of hearing from residents in these neighborhoods. She appreciated the information and said that she planned to come to the public open house to learn more.

Southwest Tucson Reliability Project

Public Comment Record

Date Received: 5/11/2026

Heard About The Project Through: N/A

Commentor: [REDACTED]

Phone: [REDACTED]

Category: Project Phone Line

Email: N/A

Concern Topics: Affordability

Address: N/A

Comment Submitted:

Hi, my name is [REDACTED]. My number is [REDACTED]. And the question I have is in order, you could talk about different programs for saving money, and I didn't know if by any chance the tree program was part of it. I had called before and it's like it's mainly online that you have to go, and we have no online access. We do not participate with anything e-mail or anything, so I was wondering if we go to this open house in person if someone would be able to set us up for the program to get some trees to help with electric bill. Appreciate the call back. Thank you. The number is [REDACTED]. Thank you

Response Notes:

Called back and shared with her that yes, TEP representatives would be able to help her order trees at the open house.

Southwest Tucson Reliability Project

Public Comment Record

Date Received: 5/7/2026

Heard About The Project Through: N/A

Commentor: [REDACTED]

Phone: [REDACTED]

Category: Online Comment Form

Email: [REDACTED]

Concern Topics: Affordability

Address: N/A

Comment Submitted:

So what are you going to do about low income help? Is LIHEAP going to be raised? Are you going to send subsidy checks to low income seniors? We know you make record high profits off your rates, sharing some would probably go a long way toward soothing the anger that is going to erupt if you start charging people who can't afford it. Your life line credit is an insult. Do you think people say "thank goodness for a \$20 credit" with a bill of over \$100? We may be old but we're not stupid.

If people die because they cannot afford their electric bill it's on your shoulders.

Response Notes:

[REDACTED]

Thank you for reaching out with your concerns.

I'm going to pass your information along to our Customer Advocacy group who will reach out to discuss ways to help.

If you'd prefer to talk with someone in-person, these customer advocates will also be at our upcoming public open house, this week, on May 14th, from 6:00 – 8:00pm at Grijalva Elementary School. Not only will you have an opportunity to speak with them, but you can also learn more about the Southwest Tucson Reliability Project and why is an important energy project for the area.

For the latest updates on the project, I invite you to visit the project webpage at <https://www.tep.com/southwest-tucson-reliability-project/>.

Thank you,

Clark Bryner

Southwest Tucson Reliability Project

Public Comment Record

Date Received: 5/7/2026

Heard About The Project Through: N/A

Commentor: [REDACTED]

Phone: [REDACTED]

Category: Online Comment Form

Email: [REDACTED]

Concern Topics: Attendance

Address: N/A

Comment Submitted:

LIKE TO GO ALL THE MEETING

Response Notes:

[REDACTED],

Thank you for your interest in the project. I look forward to meeting you at the upcoming public open house this week, on May 14th, from 6:00 – 8:00pm at Grijalva Elementary School (1795 W. Drexel Rd. Tucson, AZ 85746).

For the latest updates on the project, I invite you to visit the project webpage at <https://www.tep.com/southwest-tucson-reliability-project/>.

Thank you,

Clark Bryner

Southwest Tucson Reliability Project

Public Comment Record

Date Received: 5/7/2026

Heard About The Project Through: N/A

Commentor: [REDACTED]

Phone: [REDACTED]

Category: Online Comment Form

Email: [REDACTED]

Concern Topics: Environmental/
Opposition

Address: N/A

Comment Submitted:

I am concerned about the undetermined route as shown of very vague drawing. Seems like you are creating an island where it could affect lifestyle of residents and by surrounding us with large significant towers all around us. I object to this especially when you are asking to raise rates of users. It appears that you want raise rates to cover the cost of construction. I have not seen the environmental study and it would be interesting to find any impacts to archeological sites that may be found in the area. I suspect there is much more to what you call justification for this project.

Response Notes:

[REDACTED],

Thank you for your comments.

If you'd like to see a much more detailed map of route segments currently under consideration as part of our siting study, I would encourage you to view the online interactive map available on the project webpage. We have not yet determined any proposed routes for the new transmission lines, but we have narrowed down the possibilities substantially from those under consideration earlier this year. One of many factors that is considered in finding the best route for these facilities is cultural resources, including potential impacts the project may have on archaeological sites.

TEP's goal is to identify transmission line routes that minimize impacts to the environment, land uses, and is most in harmony with the values of the local community. Your input is important, and will shape the outcome of the project.

Full environmental studies will be included in the application for a Certificate of Environmental Compatibility which will be prepared following the identification of proposed routes – expected in the September timeframe.

Lastly, the project need and justification is exactly as explained on the project webpage.

We will include your comments in our project record that will be submitted to the Arizona Corporation Commission.

I hope you will continue to stay engaged in the project and provide your thoughts or any additional questions that you may have. We'll also be hosting a public open house this week, on May 14th, from 6:00 – 8:00pm at Grijalva Elementary School if you'd like to stop by at your convenience to learn more about the planned project and discuss further.

For the latest updates on the project, I invite you to visit the project webpage at <https://www.tep.com/southwest-tucson-reliability-project/>.

Thank you,

Clark Bryner

Southwest Tucson Reliability Project

Public Comment Record

Date Received: 5/7/2026

Heard About The Project Through: N/A

Commentor: [REDACTED]

Phone: [REDACTED]

Category: Project Phone Line

Email: N/A

Concern Topics: Affordability

Address: N/A

Comment Submitted:

Sí, estoy hablando porque estoy interesada en los descuentos. My nombre es [REDACTED] y mi número es [REDACTED]. Gracias.

Response Notes:

Routed to Customer Care to respond.

Southwest Tucson Reliability Project

Public Comment Record

Date Received: 5/6/2026

Heard About The Project Through: N/A

Commentor: [REDACTED]

Phone: N/A

Category: Email

Email: [REDACTED]

Concern Topics: Engagement

Address: N/A

Comment Submitted:

Greetings,

Following the previous open house's low attendance, I have outlined several recommendations to increase participation for the upcoming May 14 event. FYI, I was at the last one.

School & Community Partnerships

Grijalva Elementary: Partner with the school to send promotional flyers home with students. While the monthly newsletter may have already passed its deadline, a direct backpack flyer is often more effective. Other schools in the area (White Elementary and Warren Elementary)

Faith-Based Outreach: Drop off flyers or request announcements at the area's largest churches, including Desert Dove Christian Church, Drexel Heights Baptist Church, and GracePointe. Bilingual Marketing: Ensure all promotional materials are available in both English and Spanish.

Incentives & Engagement

Early Bird Prizes: Incentivize prompt arrival by offering gift cards (e.g., Dutch Bros, In-N-Out, or Taco Bell) to the first 25 visitors.

U of A Partnership: Leverage TEP's sponsorship of U of A Athletics by inviting Wilbur and Wilma Wildcat for the first hour.

Social Media Integration: Create a branded TEP/U of A photo booth frame. This encourages guests to take photos and share the event on social media.

The "Passport Game" Strategy

To ensure guests engage with every information booth, I recommend implementing a Passport Game:

The Entry: Give each guest a "Passport" card with 4–6 empty slots upon arrival.

The Journey: Place "Stamp Stations" at each key information booth.

The Action: Guests must visit every station to receive a stamp from the staff.

The Reward: Completed passports serve as an entry into a grand prize drawing or can be traded for a small immediate prize.

What is TEP doing on May 12 and May 13 to drive awareness?

While snacks and water are excellent for hospitality, they do not drive initial attendance. With 20 years of experience in non-profit outreach and community engagement, I am confident these high-visibility tactics will significantly increase turnout.

Best of Luck!

[REDACTED]

Response Notes:

[REDACTED],

Thank you for your suggestions. We're always looking for better, more effective ways to both spread awareness of our projects and facilitate understanding that leads to engagement in the project.

You have a lot of great ideas and we've taken your suggestions under advisement and will incorporate them as practicable. Many of these ideas need some more advanced planning, but we may be able to include some as part of our next open house meeting on this project which is tentatively scheduled for early August.

I hope you will continue to stay engaged in the project and provide your thoughts or any comments that you may have.

For the latest updates on the project, I invite you to visit the project webpage at <https://www.tep.com/southwest-tucson-reliability-project/>.

Thank you,

Clark Bryner

Southwest Tucson Reliability Project

Public Comment Record

Date Received: 5/4/2026

Heard About The Project Through: N/A

Commentor: [REDACTED]

Phone: [REDACTED]

Category: Project Phone Line

Email: N/A

Concern Topics: Affordability

Address: N/A

Comment Submitted:

Sí, buenos días. Estoy hablando para pedir información acerca de la ayuda para utilidades o la luz, no sé. Este, no sé si les pueden devolver la llamada. Mi nombre es [REDACTED] y pues mi número los puede marcar o si no al [REDACTED]. Gracias.

Response Notes:

Routed to Customer Care to respond.

Southwest Tucson Reliability Project

Public Comment Record

Date Received: 5/2/2026

Heard About The Project Through: N/A

Commentor: [REDACTED]

Phone: [REDACTED]

Category: Project Phone Line

Email: N/A

Concern Topics: Affordability

Address: N/A

Comment Submitted:

Mi nombre es [REDACTED]. Mi teléfono es [REDACTED]. Gracias.

(muffled words in the background to someone stating that he is calling about the high electric bill)

Response Notes:

Routed to Customer Care to respond.

Southwest Tucson Reliability Project

Public Comment Record

Date Received: 4/30/2026

Heard About The Project Through: N/A

Commentor: [REDACTED]

Phone: [REDACTED]

Category: Online Comment Form

Email: [REDACTED]

Concern Topics: Route/ Opposition/
Location

Address: N/A

Comment Submitted:

Please do not route these above ground lines along Cardinal Ave nor along Irvington Rd. These routes are heavily populated residential areas and having these ugly above ground power lines would not only deter from the beautiful mountain and city views but also lower property values (= less taxes paid to Gov't). I suspect that those of us who value our homes in these locations would no longer want to live in this area as well. I understand the need for what this project is trying to address; however, there are better, less obtrusive, less negatively impactful routes that can be taken. The Valencia Rd Corridor is already industrialized, as such, adding power lines along that road would likely not get as much negative feedback; plus with the growth of Star Valley and beyond, having these transmission lines extended near the Casino del Sol seems like a win-win-win situation, with minimal drawbacks for the commercial growth in that area - the Reservation there - and for TEP not having a disgruntled public being forever mad at them; potentially making business more difficult for TEP in the future. Those of us who are active participants in the well-being of our communities are also voters who have impacts on where we spend our money and who we want our elected officials to be. Please use common-sense and not just the bottom-line in helping you make these very impactful decisions for us who live and work in this area.

Response Notes:

[REDACTED],

Thank you for your comments. We have noted these for consideration in future analysis as part of the next phase of our planning and siting process. In addition, we will include these in our project record that will be submitted to the Arizona Corporation Commission.

I hope you will continue to stay engaged in the project and provide your thoughts or any additional questions that you may have. We'll also be hosting a public open house in a couple of weeks, on May 14th, from 6:00 – 8:00pm at Grijalva Elementary School if you'd like to stop by at your convenience to learn more about the planned project and discuss further.

For the latest updates on the project, I invite you to visit the project webpage at <https://www.tep.com/southwest-tucson-reliability-project/>.

Thank you,

Clark Bryner

Southwest Tucson Reliability Project

Public Comment Record

Date Received: 4/30/2026

Heard About The Project Through: N/A

Commentor: [REDACTED]

Phone: N/A

Category: Online Comment Form

Email: [REDACTED]

Concern Topics: Location/ Infrastructure

Address: N/A

Comment Submitted:

In addition to the map please supply an areal layover, such as an oblique image, google earth or whatever image software you use. This would give us a better understanding of where the lines would be constructed in relationship to parks, schools, shopping center and residences .

I do not support going through the local/state park fronting Irvington Rd.

Are the poles you are raising the same height as the poles recently raised along Anklam Rd. (by Pima collage)?

Response Notes:

[REDACTED],

Thank you for your comment, question, and request.

With respect to your comment, we have noted this for consideration in future analysis as part of the next phases of our planning and siting process. In addition, we will include your comment in our project record that will be submitted to the Arizona Corporation Commission.

To answer your question, there is quite a bit of work going on, or planned, in the area around Anklam and Pima Community College. TEP is removing a number of poles along the north side of the roadway to accommodate a new transmission line being constructed by Western Area Power Administration in partnership with TEP. That project is a higher voltage, 230kV, transmission line. Those poles are much taller than what we're proposing to install on this project. A better example of poles for reference on this project would be those installed along Valencia Road in the vicinity of Midvale Park Road. We are proposing poles generally 75-85 feet tall.

Lastly, if you go to the Interactive Project Map on the project webpage, there is a toggle in the upper left hand corner of the map to change the basemap to an aerial image. It also appears you are a Google Earth user, so I have attached a KMZ file for your use as well.

I hope you will continue to stay engaged in the project and continue to provide your thoughts and comments. We'll also be hosting a public open house in a couple of weeks, on May 14th, from 6:00 – 8:00pm at Grijalva Elementary School if you'd like to stop by at your convenience to learn more about the planned project and discuss further.

For the latest updates on the project, I invite you to visit the project webpage at <https://www.tep.com/southwest-tucson-reliability-project/>.

Thank you,

Clark Bryner

,

You can find the legend on the map in two different places (see image below). When viewing from a computer, the legend appears on the bottom left hand side of the screen. Or you can click the symbol on the upper right that looks like a stack of papers and it will appear. Alternatively, if you click on elements of the map, details will appear on the left side of the screen.

If viewing from a mobile device, you'll want to click on the stack of papers symbol in the upper right and the legend will appear at the bottom of the screen.

I hope this explanation helps.

Clark Bryner

Southwest Tucson Reliability Project

Public Comment Record

Date Received: 4/30/2026

Heard About The Project Through: N/A

Commentor: [REDACTED]

Phone: [REDACTED]

Category: Project Phone Line

Email: N/A

Concern Topics: Inquiry

Address: N/A

Comment Submitted:

Hi, my name is [REDACTED], can you call me back? My phone number is [REDACTED], thank you. I have a question.

Response Notes:

[REDACTED] wanted to confirm that someone would be at the open house meeting who she could speak with about programs to help lower her bill. I confirmed that would be the case and she said that she would be there.

Southwest Tucson Reliability Project

Public Comment Record

Date Received: 4/29/2026

Heard About The Project Through: N/A

Commentor: [REDACTED]

Phone: N/A

Category: Online Comment Form

Email: [REDACTED]

Concern Topics: Upgrades

Address: N/A

Comment Submitted:

Hello,

I am curious but with the upgrade of powers in this neighborhood, will that include upgrades to internet lines like having fiber internet?

Thank you

Response Notes:

[REDACTED],

Thank you for asking your question. Unfortunately, internet is provided by different service providers other than TEP, so no upgrades to internet are planned as part of this project.

I hope you will continue to stay engaged in the project and provide your thoughts or any additional questions that you may have. We'll also be hosting a public open house in a couple of weeks, on May 14th, from 6:00 – 8:00pm at Grijalva Elementary School if you'd like to stop by at your convenience to learn more about the planned project.

For the latest updates on the project, I invite you to visit the project webpage at <https://www.tep.com/southwest-tucson-reliability-project/>.

Thank you,

Clark Bryner

Southwest Tucson Reliability Project

Public Comment Record

Date Received: 4/29/2026

Phone: [REDACTED]

Commentor: [REDACTED]

Email: N/A

Category: Project Phone Line

Address: [REDACTED]
[REDACTED]

Concern Topics: Rates

Heard About The Project Through: Mail

Comment Submitted:

Hi, my name is [REDACTED] and [REDACTED] I just got your Southwest Tucson Reliability Project paper, but on May 4th my husband's having surgery, so we won't be able to come. Is there anyway you could mail me the routes of what the meeting is going to be about. My address is [REDACTED]. Thank you, and my phone number is [REDACTED]. Thank you.

Response Notes:

She was hoping to speak with someone about why her bill is so high and what she might be able to do about it. I asked if she'd like to speak with one of Customer Care Representatives about that and if she was okay if I passed her number along. She graciously accepted the offer.

Shared her information with Customer Care.

Southwest Tucson Reliability Project

Public Comment Record

Date Received: 4/22/2026

Heard About The Project Through: Email

Commentor: [REDACTED]

Phone: [REDACTED]

Category: Email

Email: [REDACTED]

Concern Topics: Routes

Address: N/A

Comment Submitted:

Hi Clark,

Thank you so much. It has been on my to-do to get a letter to you. This is a nice push in that direction. Do you have any idea why these lines were removed as options, but 87 and 98 were not?

Response Notes:

Good morning, [REDACTED]!

In short, we conducted a suitability assessment to inform which route segments were eliminated, and which were carried forward. While the suitability results were similar for all segments in the vicinity of the Santa Cruz River (see attached), the segments you've highlighted would have resulted in longer routes. Which equals greater costs and greater potential impacts.

If you're interested in a longer and more technical answer. The suitability assessment was conducted by GIS analysis using a number of suitability models (existing plans, residential, conservation/preservation, biological resources, noise/communication, cultural resources, scenic/visual, total environment, and construction/maintenance) that were combined and weighted to create four composite models (balanced, environmentally preferred, construction/maintenance preferred, and residential/visual preferred).

We then used a least cost path tool in GIS to identify the routes between our three project end points that would result in the least impact to these combined resources. We ran this tool for each model, and then limited the model based on known constraints (physical, political, environmental) and ran the least cost path tool again. We ran one final iteration of the least cost path tool by altering the model to recognize a few areas where existing

infrastructure could be utilized (resulting in zero impact in those areas). The combination of all of these least cost paths, plus a couple that were manually added because they were substantially similar in impact but slightly longer, are what we're proposing to carry forward for further consideration in our siting study. Route segments that were not identified on any of these paths were eliminated from further consideration.

Like any model, this method is only as good as the data going into it, so of course there is room to scrutinize and question.

I welcome any thoughts or concerns you may have, or additional feedback that we can consider as we move into our next level of review, which is not performed by a computer model, rather by subject matter experts (environmental, land use, visual, engineering, and construction to name a few).

As always, I appreciate the time and energy you put into engaging with us on these important energy projects and look forward to hearing your thoughts.

Thanks,

Clark Bryner

Southwest Tucson Reliability Project

Public Comment Record

Date Received: 3/23/2026

Heard About The Project Through: N/A

Commentor: [REDACTED]

Phone: [REDACTED]

Category: Project Phone Line

Email: N/A

Concern Topics: Inquiry

Address: N/A

Comment Submitted:

Yes, I'm calling regarding the public open house. I missed the date, and I wanted to inquire as to some of the issues that were brought up, and certainly a little bit more about the reliability project. If somebody could give me a call, my name is [REDACTED]. And my number is [REDACTED]. Thank you.

Response Notes:

I shared with her the three main points that were made at the open house: 1) protect views of Tucson Mountains, 2) avoid residential areas, and 3) utilize existing facilities to the extent possible. She supported the need for the project. She asked if any of the project would be built underground – I explained in basic terms the distribution and transmission systems and that TEP does not build transmission underground as a matter of practice in order to keep customer costs lower. I briefly explained the process and how public input shapes the outcome of the project. She shared that she would like to stay involved throughout the project.

Southwest Tucson Reliability Project

Public Comment Record

Date Received: 3/23/2026

Phone: [REDACTED]

Commentor: [REDACTED]

Email: N/A

Category: Project Phone Line

Address: [REDACTED]
[REDACTED]

Concern Topics: Support

Heard About The Project Through: N/A

Comment Submitted:

Hello my name is [REDACTED]. I live at [REDACTED]. I know I'm calling a little bit late, but I have gotten this in the mail about the project that they want to do. Right around, you know the area for the south. And I'm fully agreed with it. I'm sorry I'm calling so late, but I can't walk so I rely on people taking me. They were going to have a meeting at the Grijalva school but I wasn't able to go and I put the paper away, the post, the thing they sent and I misplaced it and now I found it and I'm calling pretty late. I don't know if it still matters but I thought I would call anyway. OK, thank you. My phone number is [REDACTED]. It doesn't matter if you don't. I just want to say that I have with the project. Thank you. OK, have a good. Bye bye.

Response Notes:

Supports the project if it will improve reliability. Explained that one segment under consideration is along the gas pipeline adjacent to her home. She was not concerned about that segment and shared that she would support the project wherever it was best. No concerns.

Southwest Tucson Reliability Project

Public Comment Record

Date Received: 3/6/2026

Commentor: [REDACTED]

Category: Public Comment Form

Concern Topics: Route/ Location

Heard About The Project Through:

Newsletter Mailing

Phone: [REDACTED]

Email: [REDACTED]

Address: [REDACTED]

Comment Submitted:

The Robles Pass Park is really nice there are places there that seem inspirit. I can get a sense of really being in nature there. Also the mountains west of the freeway have an important natural quality to this community.

Response Notes:

Southwest Tucson Reliability Project

Public Comment Record

Date Received: 3/6/2026

Phone: N/A

Commentor: [REDACTED]

Email: [REDACTED]

Category: Public Comment Form

Address: [REDACTED]
[REDACTED]

Concern Topics: Infrastructure

Heard About The Project Through:

Newsletter Mailing

Comment Submitted:

Regarding the proposed transmission lines:

Will they be above ground with transmission towers or underground?

If above ground:

- What is the height of each tower?
- What is the footprint size of each pad?

What is the minimum distance from the nearest tower to single-family homes?

See attached map

Our address is [REDACTED]

Thank you

[REDACTED]

Response Notes:

[REDACTED],

Thank you for your questions. Let me answer each:

Q - Will they be above ground with transmission towers or underground?

A – The transmission line and structures will be above ground.

Q – What is the height of each tower?

A – The final height will be determined through engineering, and we need to identify a route before we complete engineering. All that said, structures will typically be 75 -85 feet above ground.

Q – What is the footprint size of each pad?

A – Pending engineering, most structures are directly embedded in the soil with a footprint 2-3 feet in diameter. The larger structures will be placed on a foundation 5-6 feet in diameter.

Q – What is the minimum distance from the nearest tower to single-family homes?

A – TEP designs its lines in accordance with the National Electrical Safety Code (NESC). The NESC doesn't specify a horizontal distance (line to building), just a vertical clearance. That said, TEP does not build transmission lines over homes. We have not yet identified a route for these new transmission facilities but recognize the sensitivity of many homeowners to high voltage transmission lines in proximity to their homes and will use that as one of the criteria used to evaluate and identify potential routes.

I thank you for your questions. We will include your comment in our project record that will be submitted to the Arizona Corporation Commission.

I hope you will continue to stay engaged in the project and continue to provide your thoughts and comments. For the latest updates on the project, I invite you to visit the project webpage at <https://www.tep.com/southwest-tucson-reliability-project/>. We'll also be hosting a public open house on March 5th from 6:00 – 8:00pm at Grijalva Elementary School if you'd like to stop by at your convenience to learn more about the project and discuss further.

Thank you,

Clark Bryner

Southwest Tucson Reliability Project

Public Comment Record

Date Received: 3/5/2026

Heard About The Project Through: N/A

Commentor: [REDACTED]

Phone: [REDACTED]

Category: Online Comment Form

Email: [REDACTED]

Concern Topics: Infrastructure/
Opposition/ Rates

Address: N/A

Comment Submitted:

I would like to be added to the project email distribution list

Do not approve overhead lines especially westward near Tucson Mountains. TEP should lobby federal government to subsidize costs to TEP customers or amortize the underground improvements over long periods of time to keep monthly costs low.

I see too often TEP decision makers not being mindful about long term impacts of large power poles and how they affect the surrounding neighborhoods.

Response Notes:

[REDACTED],

Thank you for your comment and suggestions. We have noted these for consideration in future analysis as part of the next phases of our planning and siting process. In addition, we will include these in our project record that will be submitted to the Arizona Corporation Commission.

I hope you will continue to stay engaged in the project and continue to provide your thoughts and comments. For the latest updates on the project, I invite you to visit the project webpage at <https://www.tep.com/southwest-tucson-reliability-project/>.

Thank you,

Clark Bryner

Southwest Tucson Reliability Project

Public Comment Record

Date Received: 3/5/2026

Phone: [REDACTED]

Commentor: [REDACTED]

Email: N/A

Category: Public Comment Form

Address: [REDACTED]
[REDACTED]

Concern Topics: Route/ Location

Heard About The Project Through:

Newsletter Mailing

Comment Submitted:

Would prefer rout to be by existing power lines Valencia Rd.

Response Notes:

Southwest Tucson Reliability Project

Public Comment Record

Date Received: 3/5/2026

Phone: [REDACTED]

Commentor: Jim Trader

Email: N/A

Category: Public Comment Form

Address: [REDACTED]
[REDACTED]

Concern Topics: N/A

Heard About The Project Through:

Newsletter Mailing

Comment Submitted:

(No Comment)

Response Notes:

Southwest Tucson Reliability Project

Public Comment Record

Date Received: 3/5/2026

Phone: [REDACTED]

Commentor: [REDACTED]

Email: [REDACTED]

Category: Public Comment Form

Address: [REDACTED]

Concern Topics: Route/ Location

[REDACTED]

Heard About The Project Through:

Newsletter Mailing

Comment Submitted:

Disrupting views around neighborhood and hiking/recreational areas. Would prefer a path south on mission to valencia west or underground burial on ajo. Would not like to see route down Irvington or through Drexel Heights/Cardinal Rd area

Response Notes:

Southwest Tucson Reliability Project

Public Comment Record

Date Received: 3/5/2026

Heard About The Project Through: Email

Commentor: [REDACTED]

Phone: N/A

Category: Public Comment Form

Email: N/A

Concern Topics: Infrastructure/ Wildlife/
Location

Address: [REDACTED]
[REDACTED]

Comment Submitted:

Use existing transmission line infrastructure on Valencia, do not add more transmission lines on Irvington/Ajo. Be mindful of environmen, EMF and radiation emmisions and wildlife. Tucson mountains are an asset we must protect.

Response Notes:

Southwest Tucson Reliability Project

Public Comment Record

Date Received: 3/5/2026

Phone: N/A

Commentor: [REDACTED]

Email: N/A

Category: Public Comment Form

Address: [REDACTED]

Concern Topics: Meetings/ Infrastructure

Heard About The Project Through:

Newsletter Mailing

Comment Submitted:

The transmission lines will be large visually dominant features in a densely populated residential area. I have concerns regarding property value in an area that already has a lot of visible power lines. I would encourage lines to be placed away from residential properties, however possible. Running along major roads and underground far preferable for 80ft burial down Ajo rd or Midvale to Mission Valencia West?

Response Notes:

Southwest Tucson Reliability Project

Public Comment Record

Date Received: 3/2/2026

Heard About The Project Through: N/A

Commentor: [REDACTED]

Phone: [REDACTED]

Category: Online Comment Form

Email: [REDACTED]

Concern Topics: Alternative Power/
Affordability

Address: N/A

Comment Submitted:

What steps are being taken to encourage electricity generation by wind power, solar, and water power?

Not TEP's responsibility, however, do you know what steps are being taken to help affordable homeowners to install double or even triple glazing, home insulation and state of the Art, furnaces, boilers and of course air conditioning Units?

Response Notes:

[REDACTED],

Thank you for your inquiries. While not directly related to the Southwest Tucson Reliability Project, I'm happy to provide a response to your questions in the order asked.

What steps are being taken to encourage electricity generation by wind power, solar, and water power?

TEP's latest Integrated Resource Plan pursues a balanced approach on development of future energy resources. You can read more about TEP's current energy resource mix, along with our plan to make progress towards a cleaner, greener grid on Our Energy Mix webpage.

Not TEP's responsibility, however, do you know what steps are being taken to help affordable homeowners to install double or even triple glazing, home insulation and state of the Art, furnaces, boilers and of course air conditioning Units?

We don't have programs for everything you've listed, but TEP is currently offering rebates for the following:

<https://www.tep.com/residential-insulation-program/> which offers a rebate of up to \$800.00

<https://www.tep.com/efficient-home-water-heating/> offers a rebate of up to \$400

<https://www.tep.com/efficient-home-program/> offers rebate the following rebates:

High efficiency heat pump quality installation – up to \$720

High efficiency air conditioner quality installation – up to \$600

Duct sealing (varies based on actual leakage reduced) – up to \$300

Mini split heat pump or air conditioner – up to \$100/ton

AC tuneup:

Refrigerant charge repair - \$80

Indoor coil cleaning - \$40

Outdoor coil cleaning - \$40

Thank you for your questions.

I hope you will continue to stay engaged in the project and continue to provide your thoughts and comments. For the latest updates on the project, I invite you to visit the project webpage at <https://www.tep.com/southwest-tucson-reliability-project/>. We'll also be hosting a public open house this week, on March 5th, from 6:00 – 8:00pm at Grijalva Elementary School if you'd like to stop by at your convenience to learn more about the project and discuss further.

Thank you,

Clark Bryner

Southwest Tucson Reliability Project

Public Comment Record

Date Received: 2/26/2026

Phone: N/A

Commentor: [REDACTED]

Email: N/A

Category: Mail

Address: [REDACTED]
[REDACTED]

Concern Topics: Location

Heard About The Project Through: N/A

Comment Submitted:

My area not covered by TEP!

Response Notes:

Southwest Tucson Reliability Project

Public Comment Record

Date Received: 2/24/2026

Heard About The Project Through: N/A

Commentor: [REDACTED]

Phone: [REDACTED]

Category: Email

Email: [REDACTED]

Concern Topics: Location

Address: N/A

Comment Submitted:

Will this proposed project cause any disruptions in service to any of the businesses on Valencia Rd?

Thank you.

Response Notes:

[REDACTED],

Thank you for your inquiry.

To answer your question, at this stage it's too early to say if there would be any impact, or disturbance, to businesses along Valencia. We have not yet identified a route for the new facilities.

I can say that once a route has been identified, TEP will minimize disruption and impacts to the greatest extent possible, no matter where that is. In general, construction of a transmission line will only take 2-3 days in any given area before we're complete and onto a different section of the line.

I thank you for your question. We will include your comment in our project record that will be submitted to the Arizona Corporation Commission.

I hope you will continue to stay engaged in the project and continue to provide your thoughts and comments. For the latest updates on the project, I invite you to visit the project webpage at <https://www.tep.com/southwest-tucson-reliability-project/>. We'll also be hosting a public open house on March 5th from 6:00 – 8:00pm at Grijalva Elementary School if you'd like to stop by at your convenience to discuss further.

Thank you,

Clark Bryner

Southwest Tucson Reliability Project

Public Comment Record

Date Received: 2/24/2026

Heard About The Project Through: N/A

Commentor: [REDACTED]

Phone: N/A

Category: Email

Email: [REDACTED]

Concern Topics: Cost

Address: N/A

Comment Submitted:

Hello, is the price for this project going to be paid by citizens/homeowners?

Response Notes:

[REDACTED],

Thank you for your inquiry.

The investment that TEP would make into this project, just like other projects we have throughout the metropolitan area to maintain safe, reliable power to our customers, are generally rolled into the “rate” that all of our customers pay for their electricity. However, any investment that we make is reviewed by the Arizona Corporation Commission and must be approved. If you’d like to learn more about this process, I’ll refer you to our Rates webpage.

I thank you for your question. We will include your comment in our project record that will be submitted to the Arizona Corporation Commission.

I hope you will continue to stay engaged in the project and continue to provide your thoughts and comments. For the latest updates on the project, I invite you to visit the project webpage at <https://www.tep.com/southwest-tucson-reliability-project/>. We’ll also be hosting a public open house on March 5th from 6:00 – 8:00pm at Grijalva Elementary School if you’d like to stop by at your convenience to learn more about the project and discuss further.

Thank you,

Clark Bryner

Southwest Tucson Reliability Project

Public Comment Record

Date Received: 2/24/2026

Heard About The Project Through: N/A

Commentor: [REDACTED]

Phone: [REDACTED]

Category: Project Phone Line

Email: N/A

Concern Topics: Inquiry

Address: N/A

Comment Submitted:

Mi nombre es [REDACTED]. Mi numero es el [REDACTED]. Me gustaria saber de que se trata y que alguien me explicara si es un buen programa a escuchar o algo. Muchas gracias.

My name is [REDACTED]. My number is [REDACTED]. I would like to know what this is about and have someone explain to me if it's a good program to listen to or something. Thank you very much.

Response Notes:

[REDACTED] just wanted to get information about the project and how it will affect her usage.

She was pleased that we called her back.

Southwest Tucson Reliability Project

Public Comment Record

Date Received: 2/20/2026

Heard About The Project Through: N/A

Commentor: [REDACTED]

Phone: [REDACTED]

Category: Online Comment Form

Email: [REDACTED]

Concern Topics: Opposition/
Environment/ Reliability

Address: N/A

Comment Submitted:

To whom it may concern.

We are fully against this project.

We have not experienced any outages nor capacity issues.

Isn't there is already is a new substation around Star Valley that could be accessed if needed?

We take pride in our property in Manzanita Terrace and enjoy the access to beautiful views of the Catalinas, amongst other mountains which now would be obstructed.

Not to mention the affect upon wildlife like birds, and flora.

The neighborhood directly to the south of Cardinal and Drexel has power lines and the neighborhood looks trashy.

Don't turn our small paradise into an industrial type of environment.

Response Notes:

[REDACTED],

Thank you for your sharing your thoughts and concerns. We will take your concerns into consideration, together with other community values and perspectives, as we go through a detailed planning and siting process to identify the least impactful route for these new facilities.

We will include your comment in our project record that will be submitted to the Arizona Corporation Commission.

I hope you will continue to stay engaged in the project and continue to provide your thoughts and comments. For the latest updates on the project, I invite you to visit the project webpage at <https://www.tep.com/southwest-tucson-reliability-project>. We'll also be hosting a public open house on March 5th from 6:00 – 8:00pm at Grijalva Elementary School if you'd like to stop by at your convenience to learn more about the project and discuss further.

Thank you,

Clark Bryner

Southwest Tucson Reliability Project

Public Comment Record

Date Received: 2/20/2026

Heard About The Project Through: N/A

Commentor: [REDACTED]

Phone: [REDACTED]

Category: Online Comment Form

Email: [REDACTED]

Concern Topics: Location

Address: N/A

Comment Submitted:

Good morning. There is a utility easement for power running through our neighborhood (Oakbrook Villas). The easement is within the two proposed "arcs". How may we confirm if they easement is under consideration for the route?

Response Notes:

[REDACTED],

Thank you for your inquiry.

To answer your question, yes, the utility easement through your neighborhood is a location that TEP identified as an "opportunity" for the new facilities. An "opportunity" is simply a high-level pass, at the beginning of our siting study, to identify places that might make sense to place these new facilities. We look at things like major roads, railroads, existing utility infrastructure, and even natural linear features. Since there is an existing electrical transmission line running through your neighborhood, it's a natural location to consider adding a similar facility in the same location in order to minimize disturbance and impacts.

All that said, the utility easement through your neighborhood is 100 feet wide and the transmission line running through it is currently being rebuilt to accommodate a second electrical circuit. Because there is not any vacant land on either side of this infrastructure, it is likely not feasible for TEP to construct an adjacent line in this area. So, I suspect that we will quickly eliminate the utility corridor through your neighborhood from consideration.

I thank you for your question and pointing out this constraint for our consideration. We will include your comment in our project record that will be submitted to the Arizona Corporation Commission.

I hope you will continue to stay engaged in the project and continue to provide your thoughts and comments. For the latest updates on the project, I invite you to visit the project webpage at <https://www.tep.com/southwest-tucson-reliability-project/>. We'll also be hosting a public open house on March 5th from 6:00 – 8:00pm at Grijalva Elementary School if you'd like to stop by at your convenience to discuss further.

Thank you,

Clark Bryner

Southwest Tucson Reliability Project

Public Comment Record

Date Received: 2/20/2026

Heard About The Project Through: N/A

Commentor: [REDACTED]

Phone: [REDACTED]

Category: Online Comment Form

Email: [REDACTED]

Concern Topics: Support

Address: N/A

Comment Submitted:

We're all for it. Area needs forward thinking projects that assure reliable power. Keep up the good work.

Response Notes:

[REDACTED]

Thank you for your supportive comment!

We will include your comment in our project record that will be submitted to the Arizona Corporation Commission.

I hope you will continue to stay engaged in the project and continue to provide any further thoughts and comments. For the latest updates on the project, I invite you to visit the project webpage at <https://www.tep.com/southwest-tucson-reliability-project/>. We'll also be hosting a public open house on March 5th from 6:00 – 8:00pm at Grijalva Elementary School if you'd like to stop by at your convenience to learn more about the project and discuss further.

Thank you,

Clark Bryner

Southwest Tucson Reliability Project

Public Comment Record

Date Received: 2/19/2026

Heard About The Project Through: N/A

Commentor: [REDACTED]

Phone: N/A

Category: Email

Email: [REDACTED]

Concern Topics: Cost

Address: N/A

Comment Submitted:

How much is this going to raise cost?

Response Notes:

[REDACTED],

Thank you for your inquiry. To answer your question, it's too soon to say. We're at the very beginning stages of the project and don't even have a route for the transmission line identified at this point. It is possible that project costs could be incorporated into electric rates because this project would help provide reliable service day and night, all year long to TEP customers in the area. However, we really can't speculate about how the project might impact your bill – there are many factors that influence what you pay. I will say that we work hard to keep project costs down, and when evaluating different routing options, the cost to construct, operate, and maintain is one of the factors we include. I thank you for your question. We will include your comment in our project record that will be submitted to the Arizona Corporation Commission. I hope you will continue to stay engaged in the project and continue to provide your thoughts and comments. For the latest updates on the project, I invite you to visit the project webpage at <https://www.tep.com/southwest-tucson-reliability-project/>. We'll also be hosting a public open house on March 5th from 6:00 – 8:00pm at Grijalva Elementary School if you'd like to stop by at your convenience to learn more about the project and discuss further.

Thank you,

Clark Bryner

Southwest Tucson Reliability Project

Public Comment Record

Date Received: 2/19/2026

Heard About The Project Through: N/A

Commentor: [REDACTED]

Phone: [REDACTED]

Category: Online Comment Form

Email: [REDACTED]

Concern Topics: Opposition/ Reliability/
Infrastructure/ Location

Address: N/A

Comment Submitted:

We understand the desire for more reliable power to that area but do not support the use of any above-ground solution for that. I am a life-long resident of Pima County and moved my family to the beautiful area of Manzanita Terrace and surrounding neighborhoods more than 25yrs ago. Our experience is that power in our area is very reliable; no major issues at all. Phase 1 especially, utilizing utility poles, will adversely affect the beautiful views and natural landscape in our area (= reducing property values = less taxes paid). Try proposing above-ground poles and wires in Oro Valley, Vail, Catalina Foothills areas and it does not even get a whiff ... are their areas more beautiful than ours; I argue that they are not. Rather, I suspect that our area is not as important (\$\$) in the eyes of our Pima County 'Leaders' and that is why there is an air of audacity to even propose this to us.

I AM NOT SUPPORTIVE OF THIS PLAN!

Why can't TEP upgrade existing utilities instead? Or why can't new transmission lines (in both Phase 1 & 2) follow the already commercialized Valencia Rd corridor instead and then follow the planned I-11 Corridor that will intersect Valencia Rd & up along the back-side of the Tucson Mountains? This seems like a less impactful route for above-ground lines; while still supporting growth to the SW part of Tucson.

Thank you for the opportunity to comment on this; however, I feel that all this is just window-dressing just to say the Public's input was 'incorporated' and no change to the plan is actually going to be considered. If I start to see large poles and transmission lines scarring our beautiful deserts and mountains along Irvington Rd, then I may seriously consider moving to another County.

Response Notes:

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Thank you for your sharing your concern.

We're at the very beginning stages of the project and don't yet have a route identified for the transmission line. The pink arrows on the map shared with you are simply to illustrate that we need to identify a route to connect those two points with a transmission line.

In order to identify the best route for these electric transmission facilities, we're conducting a detailed siting study, that is heavily influenced by the local community. You raise several very valid concerns for us to consider, including: 1) looking for opportunities to utilize existing poles, 2) protecting the beautiful views of the surrounding natural areas, especially from Irvington Rd, and 3) looking at opportunities along major road corridors like Valencia Rd.

I thank you for providing us with this valuable feedback for our consideration. I assure you that your input, as well as input received from other residents in the area really matters and does influence the outcome of the project. TEP wants to be a community partner, and while this project is needed to provide electrical service to our customers, we'd like to find the best route that results in the least impact to the environment and the surrounding community.

We will include your comment in our project record that will be submitted to the Arizona Corporation Commission.

I hope you will continue to stay engaged in the project and continue to provide your thoughts and comments. For the latest updates on the project, I invite you to visit the project webpage at <https://www.tep.com/southwest-tucson-reliability-project/>. We'll also be hosting a public open house on March 5th from 6:00 – 8:00pm at Grijalva Elementary School if you'd like to stop by at your convenience to learn more about the project and discuss further.

Thank you,

Clark Bryner

Southwest Tucson Reliability Project

Public Comment Record

Date Received: 2/18/2026

Heard About The Project Through: N/A

Commentor: [REDACTED]

Phone: [REDACTED]

Category: Online Comment Form

Email: [REDACTED]

Concern Topics: Rates

Address: N/A

Comment Submitted:

Is this to support all the new data centers TEP continues to encourage? And raise our residential rates to pay for it?

Response Notes:

[REDACTED]

Thank you for your inquiry.

To answer your question, no, this project is not needed to support new data centers.

The southwest portion of Tucson has seen substantial growth, both residential and commercial. Currently this area is served from an antiquated lower voltage system that can no longer keep pace with customers' growing energy needs. The Southwest Tucson Reliability Project will replace the older lower voltage equipment and create a looped transmission system that provides greater reliability, power quality, and capacity to existing and future customers in this area.

I thank you for your question. We will include your comment in our project record that will be submitted to the Arizona Corporation Commission.

I hope you will continue to stay engaged in the project and continue to provide your thoughts and comments. For the latest updates on the project, I invite you to visit the project webpage at <https://www.tep.com/southwest-tucson-reliability-project/>. We'll also be hosting a public open house on March 5th from 6:00 – 8:00pm at Grijalva Elementary School if you'd like to stop by at your convenience to learn more about the project discuss further.

Thank you,

Clark Bryner

Southwest Tucson Reliability Project

Public Comment Record

Date Received: 2/12/2026

Heard About The Project Through: N/A

Commentor: [REDACTED]

Phone: N/A

Category: Online Comment Form

Email: [REDACTED]

Concern Topics: Info Request

Address: N/A

Comment Submitted:

I would like to receive update information on this project please. Thank you!

Response Notes:

[REDACTED],

Thank you for your interest in the project. I have added your email address to our project distribution list, and you will be included on all future project-related communications.

I hope you will continue to stay engaged in the project and provide any thoughts and comments you may have. For the latest updates on the project, I invite you to visit the project webpage at <https://www.tep.com/southwest-tucson-reliability-project/>. We'll also be hosting a public open house on March 5th from 6:00 – 8:00pm at Grijalva Elementary School if you'd like to stop by at your convenience to learn more about the project and discuss further.

Thank you,

Clark Bryner