Application

for a

Certificate of Environmental Compatibility

Wilmot Energy Center II
Interconnection Project

Prepared for:

State of Arizona
Power Plant and Transmission Line Siting Committee

Submitted by:

Wilmot Energy Center II, LLC

December 1, 2023

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INTRODUCTION

Pursuant to Arizona Revised Statutes (ARS) 40-360 et seq., Wilmot Energy Center II, LLC (Applicant), an indirect, wholly owned subsidiary of NextEra Energy Resources, LLC (NEER), is seeking a Certificate of Environmental Compatibility (CEC) for its proposed Wilmot Energy Center II Interconnection Project (Interconnection Project). The Interconnection Project is an aboveground, approximately 6.6-mile-long, 138-kilovolt (kV) generation tie transmission line (gen-tie) that will connect the Wilmot Energy Center II 100-MW renewable energy generating station and 100-MW battery energy storage system (Solar Facility to the regional electric grid through the existing Tucson Electric Power (TEP) 138 kV Cisne Switchyard.

The Interconnection Project will traverse Arizona State Trust land in the City of Tucson and private property in unincorporated Pima County. The Solar Facility and the Solar Facility collection substation (Project Substation) will be in unincorporated Pima County. The Applicant proposes to construct and operate the Interconnection Project to connect the Solar Facility to the regional electric grid. Although the Solar Facility and Project Substation are mentioned in this Application, the Applicant seeks a CEC only for the Interconnection Project.

Applicant is a wholly owned indirect subsidiary of NEER, which is a subsidiary of NextEra Energy, Inc. NEER is a global leader in renewable energy and is the largest generator of renewable energy in wind and solar resources in North America.

The Interconnection Project was included in the Applicant's Ten-Year Transmission System Plan filed with the Arizona Corporation Commission (Commission) on February 15, 2023. Project construction is anticipated to begin as early as the fourth quarter of 2024, with an expected commercial operation date as early as the second quarter of 2026.

Interconnection Project Overview

The Interconnection Project consists of a 138-kV alternating current, single circuit transmission line, or gen-tie. The proposed route is approximately 6.6 miles within an approximate 100-foot-wide right-of-way (ROW), beginning at the Project Substation and terminating at the existing Cisne Switchyard. The Interconnection Project is needed to serve the Solar Facility and will allow for the connection of the Solar Facility to the regional electric grid.

The Applicant requests approval of a CEC corridor which is generally 600 feet wide (CEC Corridor); the CEC Corridor includes an approximately 1,600 feet east-west by 2,640 feet north-south rectangular area within which the project substation, and hence the start of the Interconnection Project, will be sited. An approximate 100-foot-wide ROW will be established within the CEC Corridor. The requested CEC Corridor extends 300 feet to each side of the proposed alignment for almost the entire Interconnection Project except near the Project substation. The CEC Corridor is described in more detail below. The CEC Corridor includes private property and Arizona State Trust land.

The Applicant anticipates that structures for the Interconnection Project will be spaced between 200 and 1,100 feet apart, depending on structure type, terrain, turns, and other factors. Transmission structures for the Interconnection Project are expected to be approximately 45 to 199 feet tall; transmission structures will be made of steel and will be self-supporting. Structure types for the Interconnection Project are anticipated to include three-pole deadend structures, deadend monopoles, and tangent monopoles. The Applicant may, depending on final engineering, install a short segment of the Interconnection Project underground; if an underground segment is necessary, the Applicant would install overhead-to-underground transition structures at each end of the underground segment. An A-frame or H-frame structure will likely be required within the Project Substation. The Applicant notes that it may refine minor design characteristics for the Interconnection Project during its final engineering phase. Representative diagrams of the anticipated transmission towers are included in Exhibit G.

The Interconnection Project is sited adjacent to existing linear features, including roadways and high-voltage transmission lines. Along Wilmot Road, the Interconnection Project will also parallel an existing 138-kV transmission line for approximately 3.1 miles (48% of the Interconnection Project's total route). West of Wilmot Road, the Interconnection Project would be adjacent to the Wilmot Energy Center I – an existing, approximately 100-megawatt (MW) photovoltaic solar energy generating station, also owned and operated by NEER.

Proposed Route

The proposed route for the Interconnection Project starts at the Project Substation. The Project Substation will be located approximately 1 mile east of Wilmot Road, on the south side of Andrada Road.

From the Project Substation, the Interconnection Project will proceed north for a short distance, crossing Andrada Road and entering Arizona State Trust land, before turning west. The Interconnection Project will proceed west along the north side of Andrada Road for approximately 1 mile before turning north. The Interconnection Project will proceed north, east of Wilmot Road, for approximately 2.6 miles before reaching an existing, approximately 500-foot-wide, east-west transmission ROW.

At the transmission ROW, the Interconnection Project will make a perpendicular crossing of the existing transmission lines, either as an overhead or underground line. The Applicant proposes to cross the ROW as an overhead line and is working closely with relevant transmission owners to identify an acceptable engineering solution for crossing the existing transmission lines.

On the north side of the transmission ROW, the Interconnection Project will proceed north for approximately 0.5 mile before turning west. The Interconnection Project will proceed west for approximately 500 feet, crossing Wilmot Road.

From the west side of Wilmot Road, the Interconnection Project will proceed west-southwest for approximately 0.3 mile. The Interconnection Project will then proceed west-northwest for approximately 1.3 miles, turn north, and proceed for approximately 0.2 mile. The Interconnection Project will then turn northwest for approximately 0.2 mile, then turn west for approximately 0.2 mile. Finally, the Interconnection Project will turn south for approximately 260 feet, entering the Cisne Switchyard, which is the point of interconnection.

Approximately 2.3 miles (34%) of the Interconnection Project would be on private property. Approximately 4.3 miles (66%) of the Interconnection Project would be on Arizona State Trust land that is managed by the Arizona State Land Department (ASLD). Figure 1 shows the proposed route for the Interconnection Project.

Requested CEC Corridor

The Applicant requests approval of the CEC Corridor within which a 100-foot right-of-way will be established. At its southern terminus, the CEC Corridor begins as a rectangular area approximately 1,600 feet east-west by 2,640 feet north-south; the rectangular area includes a portion of State Trust land and two privately-owned parcel (parcels 305-23-0140 and 305-22-0050). The Project Substation, and hence the beginning of the Interconnection Project, will be sited within the rectangular area. The rectangular area is approximately 1 mile east of Wilmot Road, immediately south of Andrada Road. North of the rectangular area, the CEC Corridor has a uniform width of 600 feet and is centered on the above-described route for the Interconnection Project (i.e., 300 feet on each side of the proposed alignment).

The requested CEC Corridor is in the Township, Range, and Sections identified in Table 1, below. In total, the requested CEC Corridor is approximately 564 acres, consisting of 315 acres (56%) of Arizona State Trust land and 249 acres (44%) of private property. Regarding land jurisdiction, approximately 250 acres (44%) is in unincorporated Pima County and approximately 314 acres (56%) is in the city of Tucson. The requested CEC Corridor is displayed on Figure 2.

Table 1. Requested CEC Corridor Location

Township	Range	Section
16S	14E	13
16S	14E	14
16S	15E	18
16S	15E	19
16S	15E	30
16S	15E	31
16S	15E	32
16S	15E	5
16S	15E	6
17S	15E	5
17S	15E	6

Proposed Interconnection

The point of interconnection (POI) for the Interconnection Project is the existing 138 kV Cisne Switchyard. The 138 kV Cisne Switchyard is owned and operated by TEP. To interconnect to the regional electric grid, the Applicant must execute a Large Generator Interconnection Agreement with TEP. As part of the interconnection agreement process, TEP will complete a system impact study to assess the need for transmission system upgrades triggered by the Interconnection Project. The Applicant filed an interconnection request with TEP in March 2022. The Interconnection Project is pending System Impact Study (SIS) results. The Large Generator Interconnection Agreement will require the Applicant to support an appropriate share of system upgrades identified through the SIS that are deemed necessary to ensure the safe and reliable operation of the regional transmission system. Any new equipment and other upgrades required at the TEP 138 kV Cisne Switchyard will be performed in accordance with applicable utility standards.

The Cisne Switchyard is in Township 16S, Range 14E, Section 14.

Solar Facility Description

The Solar Facility is a renewable energy generating station that includes a solar photovoltaic generating station and battery energy storage system. The Solar Facility is proposed on approximately 900 acres of private property, entirely in unincorporated Pima County. The Solar Facility is predominantly in a Pima County–designated Renewable Energy Incentive District (REID). The Solar Facility will be reviewed by Pima County through the County's REID program and Conditional Use Permit (CUP) process. A CUP is required for portions of the Solar Facility outside of the REID. The Applicant applied for a CUP in September 2023.

The Solar Facility is planned as an approximately 100-MW solar energy generating station and 100-MW battery energy storage system. The Solar Facility will include arrays of solar photovoltaic panels on fixed support structure or trackers, lower-voltage (e.g., 34.5 kV) collection lines, inverter stations, and transformers. The battery energy storage system will involve steel enclosures housing lithium-ion battery cells. The enclosures will also involve cooling systems and intelligent fire detection systems. Final specifications for the battery energy storage system will ultimately be determined by off-taker preference and contract terms.

Project Substation

The purpose of the Project Substation is to increase the voltage of electricity generated by the Solar Facility to match the point of interconnection (i.e., 138 kV). Electricity generated or stored by the Solar Facility would travel through lower-voltage (e.g., 34.5 kV) collector lines to the Project Substation where power transformers will increase the voltage to 138 kV for delivery onto the TEP system via the Interconnection Project. The Project Substation will include major equipment such as step-up power transformers, buses and circuit breakers, disconnect switches, control house, and riser structure (e.g., an H-frame or A-frame structure); the Project Substation will be enclosed by an approximately 7-foot-tall security fence. All collector lines will terminate at the Project Substation.

The Project Substation is proposed on private property and will occupy approximately 33 acres in Township 17S, Range 15E, Sections 5 and 6.

Purpose and Need

The Interconnection Project is needed to deliver renewable energy from the Solar Facility to the regional electric transmission grid. The purpose of this CEC application is to secure approval for the Interconnection Project that will connect the Solar Facility to the regional transmission system at the existing TEP 138-kV Cisne Switchyard. The Applicant will execute power purchase agreements for the Solar Facility, which will likely support the load growth and peak demand requirements of Arizona-based utilities. Adding renewable energy projects meets several objectives at the local, state, and federal levels, including the need for additional energy supplies to serve the region and the priority placed on meeting this need with clean, renewable energy.

The Interconnection Project has been identified as an optimal location based on the recognized need to interconnect renewable energy sources to local electrical utilities, the existence of compatible adjacent and nearby land uses, and the proximity to the existing TEP 138-kV Cisne Switchyard. The location reduces the need for a long gen-tie or costly system upgrades and sites the proposed facilities in an area of existing compatible land uses.

Environmental and Public Siting Process

Siting Process

The Applicant's siting process for the Interconnection Project focused on identifying a reasonably direct route between the Solar Facility to the TEP 138-kV Cisne Switchyard. The Applicant sought to minimize environmental impacts and expenses by selecting a direct route, while considering existing land use and infrastructure.

The Interconnection Project is proposed to be sited adjacent to existing infrastructure, including roadways and high-voltage transmission lines. Along Wilmot Road, the Interconnection Project will also parallel an existing 138-kV transmission line for approximately 3.1 miles (48% of the Interconnection Project's total route). West of Wilmot Road, the Interconnection Project will be adjacent to the Wilmot Energy Center I – an existing, approximately 100-MW photovoltaic solar energy generating station, also owned and operated by NEER.

Constructing the Interconnection Project adjacent to existing transmission facilities and other existing renewable energy developments (i.e., Wilmot Energy Center I) will help consolidate energy infrastructure and minimize the overall impact of the Interconnection Project.

Public Outreach Process

The Applicant has coordinated with property owners, agencies, and other stakeholders to present information about the Interconnection Project and Solar Facility. The Applicant provided multiple ways to submit comments during the outreach process. The Applicant's public outreach process is thoroughly described in Exhibit J. In summary, outreach activities included an informational mailing to property and stakeholders, establishing a project website and dedicated points of contact for the project team, running newspaper and digital advertisements for the Interconnection Project, and hosting an in-person open house.

Summary of Environmental Compatibility

After conducting an environmental analysis and minimizing or avoiding environmental impacts, based on the factors outlined in ARS § 40-360.06, the Applicant believes the Interconnection Project to be environmentally compatible. The Project would use little water and would produce no carbon or other emissions while working to meet Arizona's growing electricity demand.

Additionally, as discussed in the following exhibits, the Interconnection Project:

- would be compatible with existing plans in the vicinity of the proposed site (see Exhibits A, B, and H);
- would not disturb any areas of unique biological wealth and would not impact special-status species (see Exhibits C and D);
- would have minimal visual effects and would not disturb any known archaeological or historical sites of significance (see Exhibit E);
- would not affect any recreation opportunities in the area (see Exhibit F); and
- is not anticipated to result in significant impacts associated with noise or signal interference (see Exhibit I).

Conclusion

This Application includes the environmental analysis and documentation relevant to the Interconnection Project as specified by Arizona Administrative Code Rule R14-3-219. Applicant is committed to avoiding and minimizing environmental impacts and believes the Interconnection Project is environmentally compatible.

The Applicant further believes that the Interconnection Project is in the public interest because the Solar Facility's contribution to meeting the need for adequate, economical, and reliable supply of electric power outweighs the impact of the Interconnection Project on the environment and ecology of the state. The Applicant therefore respectfully requests that the Arizona Power Plant and Transmission Line Siting Committee grant, and the Commission approve, a CEC for the Interconnection Project.

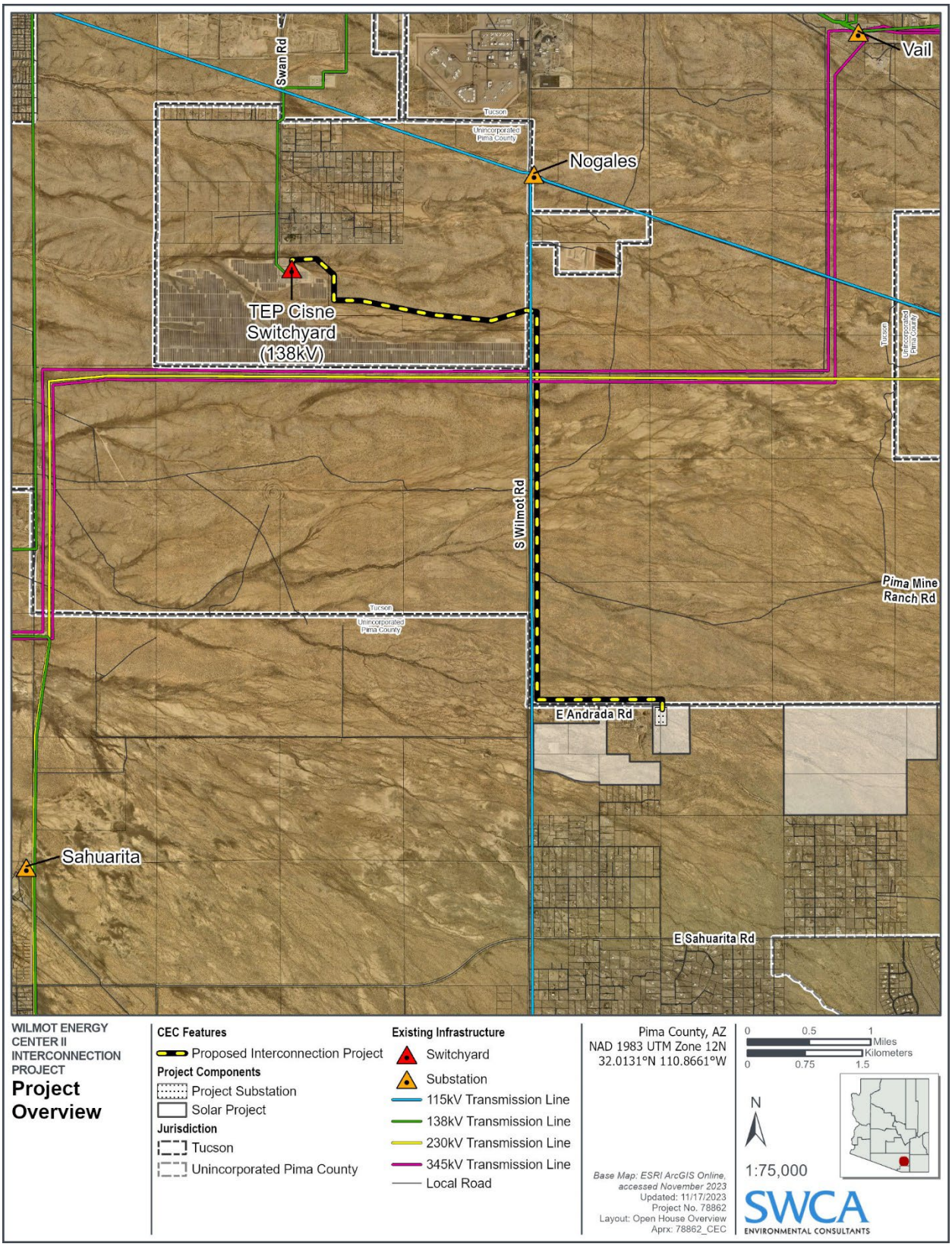


Figure 1. Interconnection Project.

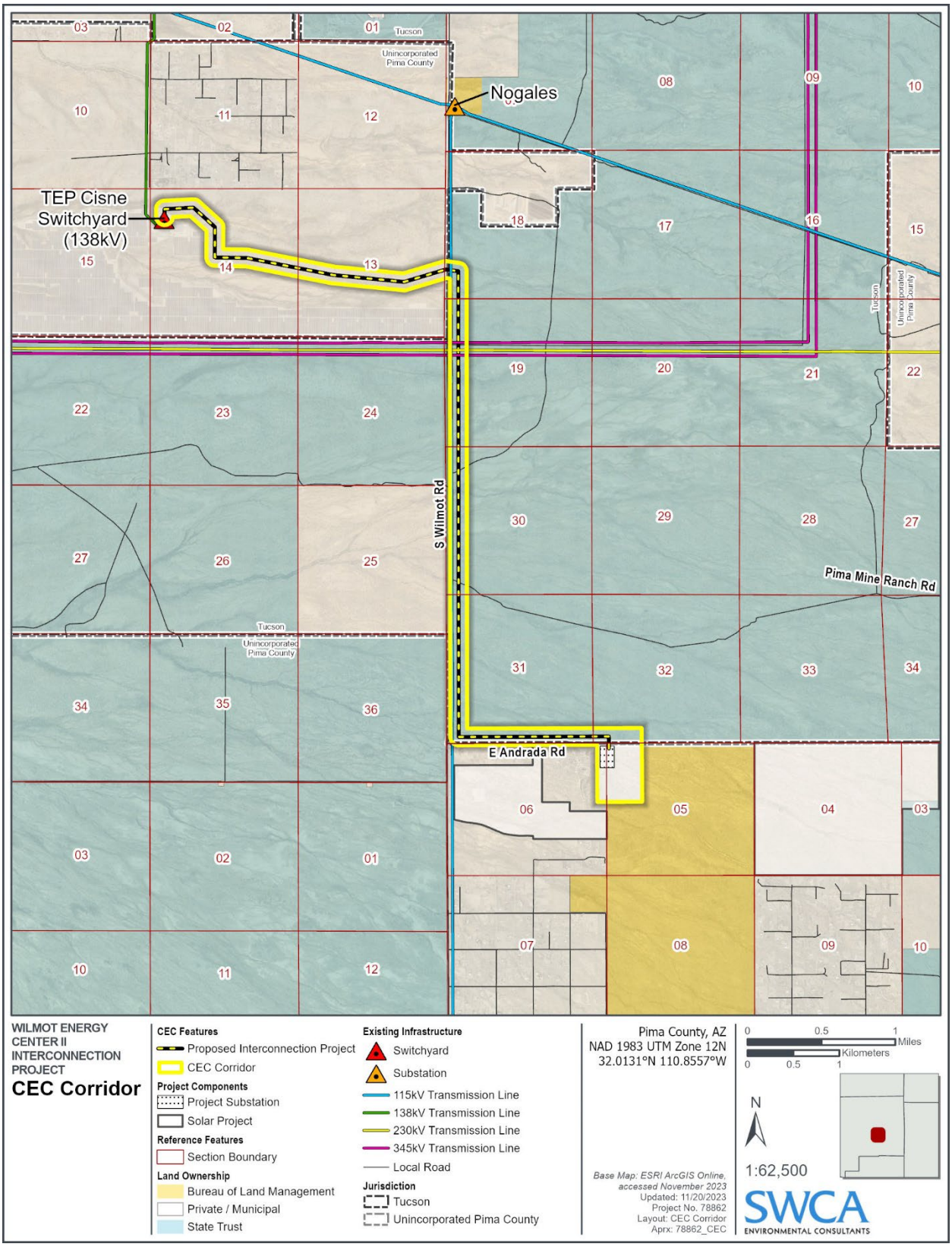


Figure 2. Requested CEC Corridor.

Application For
Certificate of Environmental Compatibility

1. **Name and address of the Applicant**

   Wilmot Energy Center II, LLC
   700 Universe Blvd.
   Juno Beach, FL 33408

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**

   Stephanie Rush
   Lead Project Manager, Development
   Wilmot Energy Center II, LLC
   700 Universe Blvd.
   Juno Beach, FL 33408
   (561) 386-7611
   Stephanie.rush@nexteraenergy.com

3. **Date on which the applicant filed a Ten Year Plan in compliance with A.R.S. § 40-360.02, in which the facilities for which this application is made were described**

   The Applicant filed a Ten Year Plan in Docket E-99999A-21-0009 on February 15, 2023.

4. **Description of the proposed facility, including:**

   a. **With respect to an electric generating plant:**

      The Project does not include an electrical generating plant that is jurisdictional to A.R.S. 40-360.

   b. **With respect to a proposed 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 Interconnection Project is 138 kV alternating current, single circuit.

         (2) Description of the proposed structures:

         The Applicant plans to use a combination of self-supporting steel transmission structures including three-pole deadend structures, deadend monopoles, and tangent monopoles for the Interconnection Project. The Applicant may, depending on final engineering, install a short segment of the Interconnection Project underground; if an underground segment is necessary, the Applicant would install overhead-to-underground transition structures at each end of the underground segment. The steel transmission line structures will be capable of holding three conductors (i.e., one conductor for each of the three phases); conductors

with a minimum 20.6 feet of ground clearance (National Electric Safety Code). The transmission structures are expected to range aboveground height from 45 to 199 feet and will be spaced apart anywhere from 200 feet to 1,100 feet. The Applicant anticipates that A-frame or H-frame structures will be used in the Project Substation and TEP 138-kV Cisne Switchyard design. Exhibit G includes conceptual drawings for the proposed structure types.

(3) Description of proposed switchyards and substations:

The Project Substation will increase the voltage of electricity generated by the Solar Facility to match the point of interconnection (i.e., 138 kV). Electricity generated or stored by the Solar Facility would travel through lower-voltage (e.g., 34.5 kV) collector lines to the Project Substation where power transformers will increase the voltage to 138 kV for delivery onto the TEP system. The Project Substation will include major equipment such as step-up power transformers, buses and circuit breakers, disconnect switches, control house, and riser structures (e.g., an H-frame or A-frame structure); the Project Substation will be enclosed by an approximately 7-foot-tall security fence. All collector lines will terminate at the Project Substation. The Project Substation is proposed on private property and will occupy approximately 33 acres in Township 17S, Range 15E, Sections 5 and 6.

TEP will install necessary equipment within the existing 138-kV Cisne Switchyard for the Interconnection Project. The existing TEP 138-kV Cisne Switchyard is in Section 16S, Range 14E, Section 14.

(4) Purpose for constructing said transmission line:

The purpose of the Interconnection Project is to deliver renewable energy from the Solar Facility (i.e., the 100-MW renewable energy generating station and 100-MW battery energy storage system) to the transmission grid in the southwestern United States.

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:

The Interconnection Project will originate at parcel numbers 305-23-0140 and 305-22-0050, on the southside of Andrada Road, approximately 1 mile east of Wilmot Road.

The Interconnection Project would terminate at the existing TEP 138-kV Cisne Switchyard located at 11425 South Swan Road, Tucson, AZ 85756. The TEP 138kV Cisne Switchyard is located on parcel number 303-09-007B, approximately 1.9 miles west of Wilmot Road.

(2) Straight-line distance between such points:

The straight-line distance between the Project Substation and the TEP 138-kV Cisne Switchyard is approximately 4.7 miles.

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

Not applicable.

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:

The Interconnection Project ROW will be approximately 100 feet wide. The ROW will be located within the requested 600-foot-wide CEC Corridor.

(2) Nominal length of spans:

For the Interconnection Project, span lengths between structures will be approximately 200 feet to 1,100 feet. Variation in span length may be needed to meet site-specific engineering requirements, including topography.

(3) Maximum height of supporting structures:

The maximum height of the supporting structures is anticipated to be approximately 199 feet.

(4) Minimum height of conductor above ground:

The minimum height of the conductor above the existing grade will be 20.6 feet. All clearances will be in accordance with applicable codes and regulations.

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.)

The estimated cost for the Interconnection Project is $11.1 million.

No alternative route is being proposed.

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 proposed route for the Interconnection Project starts at the Project Substation. The Project Substation will be located approximately 1 mile east of Wilmot Road, on the south side of Andrada Road on parcel numbers 305-23-0140 and 305-22-0050.

From the Project Substation, the Interconnection Project will proceed north for a short distance, crossing Andrada Road and entering Arizona State Trust land, before turning west. The Interconnection Project will proceed west along the north side of Andrada Road for approximately 1 mile before turning north. The Interconnection Project will proceed north, east of Wilmot Road, for approximately 2.6 miles before reaching an existing, approximately 500-foot-wide, east-west transmission ROW.

At the transmission ROW, the Interconnection Project will make a perpendicular crossing of the existing transmission lines, either as an overhead or underground line. The Applicant proposes to cross the ROW as an overhead line and is working closely with relevant transmission owners to identify an acceptable engineering solution for crossing the existing transmission lines.

On the north side of the transmission ROW, the Interconnection Project will proceed north for approximately 0.5 mile before turning west. The Interconnection Project will proceed west for approximately 500 feet, crossing Wilmot Road.

From the west side of Wilmot Road, the Interconnection Project will proceed west-southwest for approximately 0.3 mile. The Interconnection Project will then proceed west-northwest for approximately 1.3 miles, turn north and proceed for approximately 0.2 mile. The Interconnection Project will then turn northwest for approximately 0.2 mile, then turn west for approximately 0.2 mile. Finally, the Interconnection Project will turn south for approximately 260 feet, entering the Cisne Switchyard, which is the point of interconnection.

Figure 1 shows the proposed route for the Interconnection Project.

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

The Applicant proposes a single, approximately 6.6-mile-long route for the Interconnection Project. Approximately 2.3 miles (34%) of the Interconnection Project will be on private property. Approximately 4.3 (66%) miles of the Interconnection Project will be on Arizona State Trust land that is managed by the ASLD. No alternative routes are proposed in this application.

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 Interconnection Project will traverse Arizona State Trust land in the City of Tucson and private property in unincorporated Pima County. Therefore, the areas of jurisdiction, as defined in ARS § 40-360(1) are the ASLD, the City of Tucson, and Pima County.

The proposed route for the Interconnection Project is consistent with the underlying zoning districts, as designated by Pima County and the City of Tucson. The Interconnection Project is also compatible with the underlying planned land use categories, as designated by the 2015 Pima County Comprehensive Plan, *Pima Prospers,* and the 2013 City of Tucson General Plan, *Plan Tucson*.

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.**

The Applicant has evaluated available secondary and field data related to biological resources, visual resources, cultural resources, recreational resources, land use, noise levels, and communications signals to assess the potential impacts that may result from the construction, operation, and maintenance of the Interconnection Project. These evaluations are included in Exhibits B, C, D, E, F, H, and I to this application.

Wilmot Energy Center II, LLC

/s/ _____

By Anthony Pedroni, Vice President

I HEREBY CERTIFY that on this 1st day of December 2023, I have delivered to the Arizona Corporation Commission twenty-five (25) copies of this Application for a Certificate of Environmental Compatibility.

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EXHIBIT A. LOCATION MAP AND LAND USE MAPS

In accordance with Arizona Administrative Code Rules of Practice and Procedure R14-3-219, Exhibit 1, the applicant provides the following location maps and land use information:

> *Where commercially available**, 1) a topographic map, 1:250,000 scale, showing any proposed transmission line route longer than 50 miles and the adjacent area; and 2) a topographic map, a scale of 1:62,500, for routes shorter than 50 miles showing any proposed transmission line route and the adjacent area.*
>
> *Where commercially available, a topographic map,1:62,500 scale, of each proposed transmission line route longer than 50 miles 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 on an overlay.*
>
> ***If a topographic map is not commercially available, a map of similar scale, which reflects prominent or important physical features of the area in the vicinity of the proposed site or route, shall be substituted.*

Land Use Overview

The following exhibits are required by the Arizona Corporation Commission's *Rules of Practice and Procedure* R14-3-219 to support the land use studies conducted for this Application:

- Exhibit A-1 illustrates the land ownership and surface jurisdiction for the location of proposed Project facilities (Interconnection Project) and land within 1 mile of the Interconnection Project (Study Area).
- Exhibit A-2 illustrates existing land use within the 1-mile Study Area.
- Exhibit A-3 illustrates planned land use within the 1-mile Study Area.

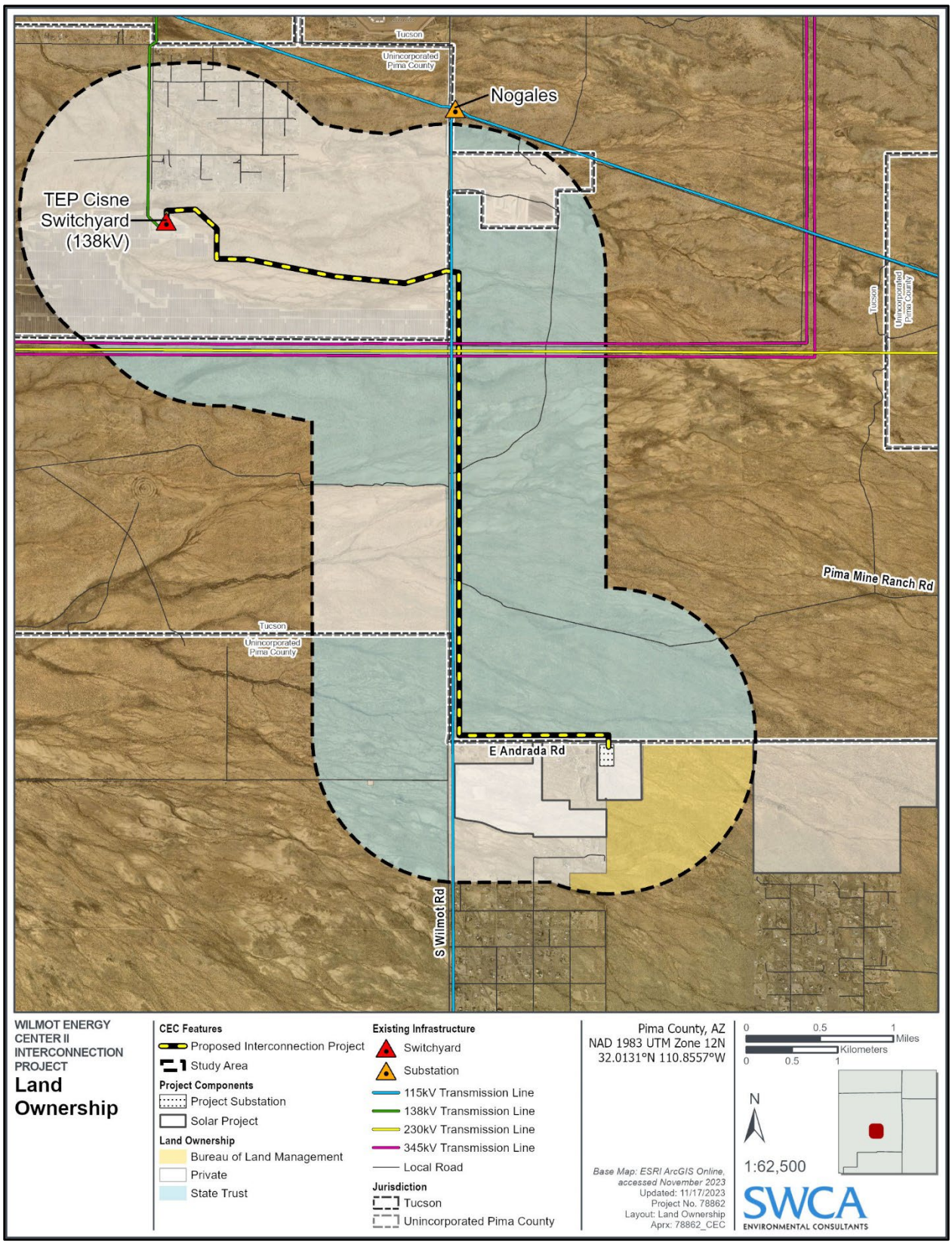


Exhibit A-1. Land ownership and surface jurisdiction.

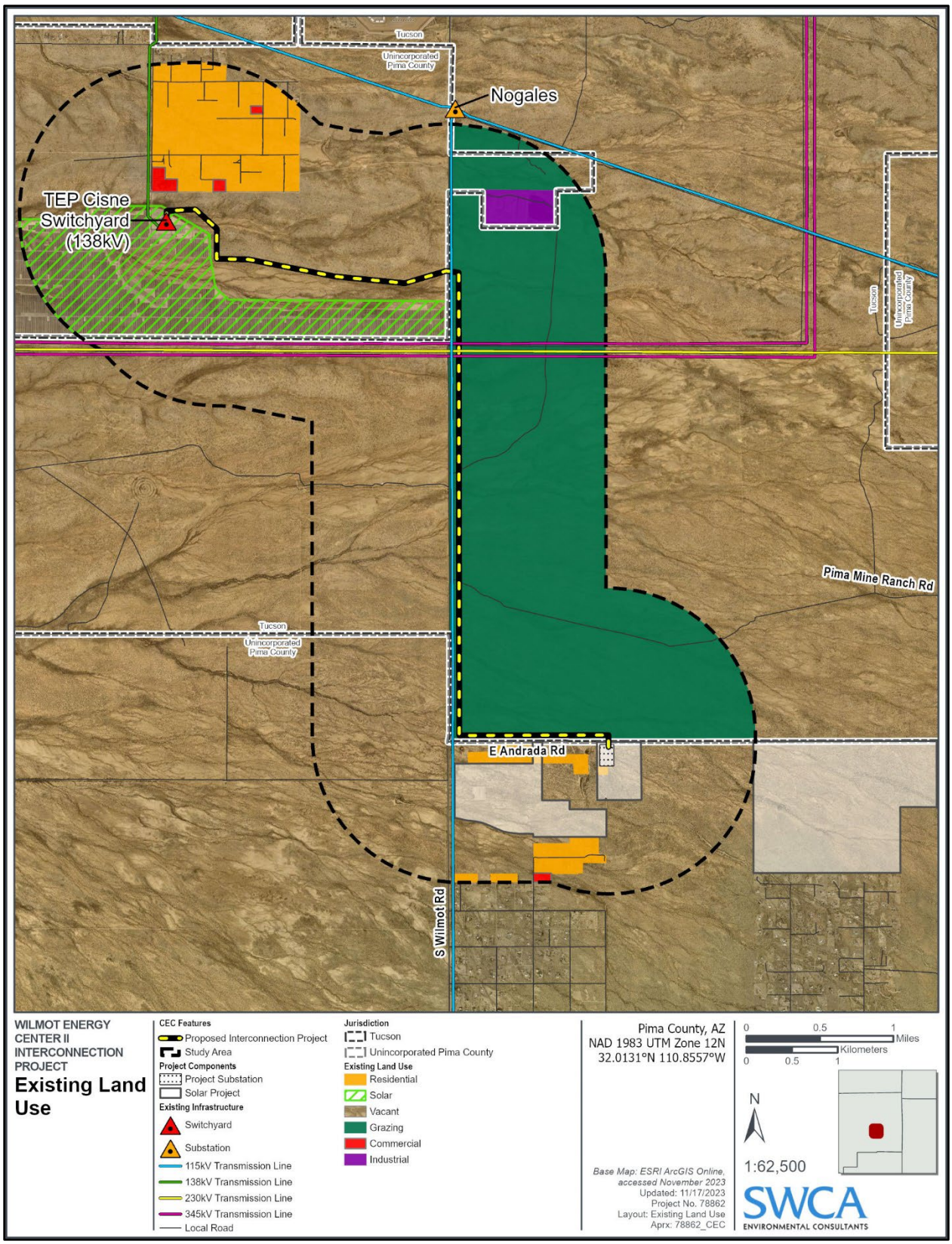


Exhibit A-2. Existing land uses.

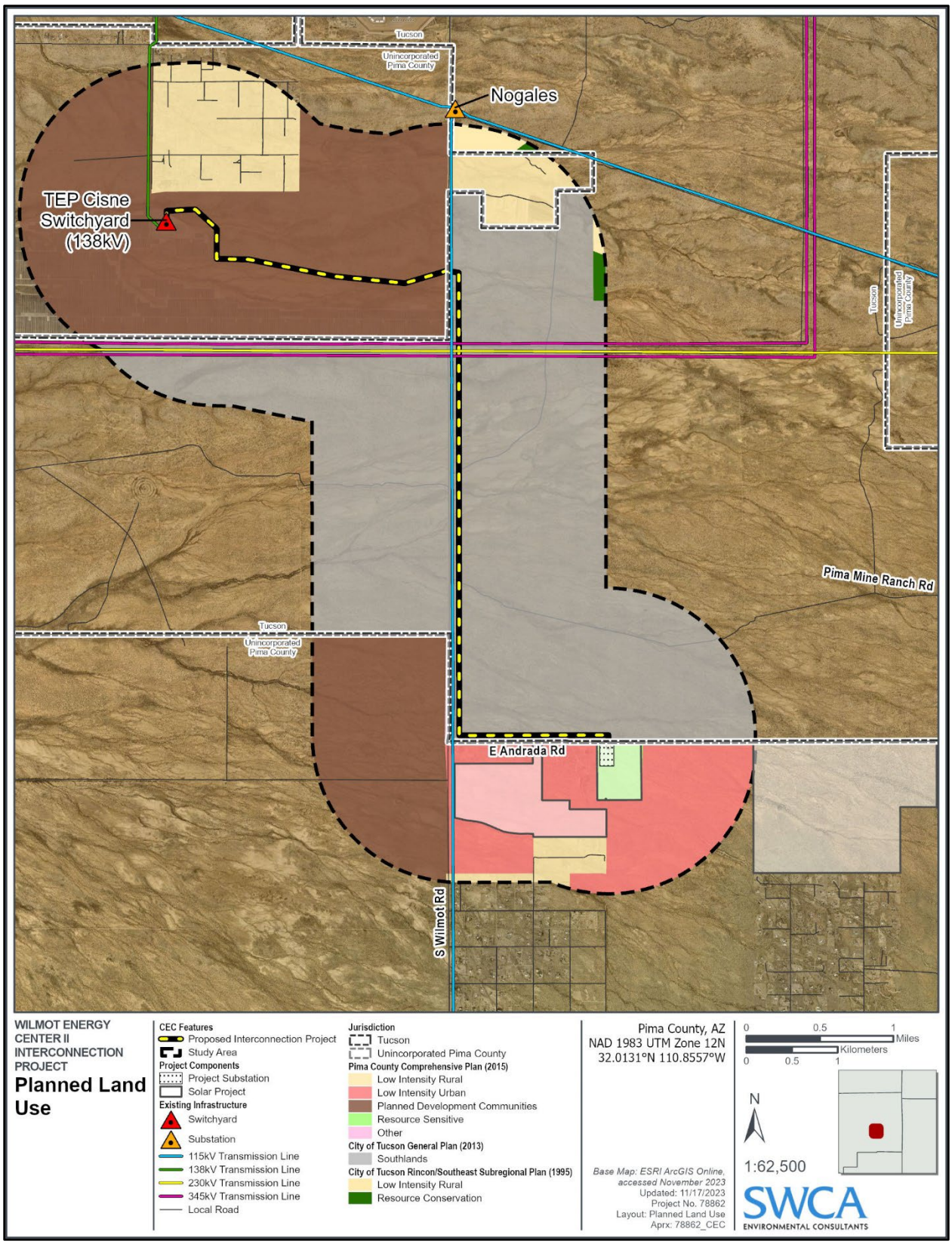


Exhibit A-3. Planned land uses.

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EXHIBIT B. ENVIRONMENTAL STUDIES

As stated in the Arizona Corporation Commission Rules of Practice and Procedure R14-3-219, Exhibit 1:

> *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.*

Introduction

SWCA Environmental Consultants (SWCA) was retained by Wilmot Energy Center II, LLC (the Applicant), to complete environmental analyses for the Interconnection Project, which includes the evaluation of land use as well as biological, visual, cultural, and recreation resources. In general, a 1-mile "study area" (Study Area) around the Interconnection Project (i.e., 1 mile on each side of the Interconnection Project) was used for the land use analysis and other environmental resource analyses contained in this application. Land jurisdictions crossed by the Interconnection Project are unincorporated Pima County (approximately 37% of the Interconnection Project) and the City of Tucson (approximately 63% of the Interconnection Project). Land ownership within the requested CEC corridor includes private property (44%) and Arizona State Trust land (56%); Arizona State Trust land is managed by the Arizona State Land Department (ASLD).

This exhibit provides an inventory and evaluation of existing and planned land use within the 1-mile Study Area. Biological, visual, recreational, and cultural resource and noise evaluations are discussed in the subsequent Exhibits C, D, E, F, and I. Other environmental studies related to the proposed route for the Interconnection Project are described below and attached as exhibits.

Land Use

Inventory

The methodology used for this land use inventory included field verification and a review of desktop data including maps, aerial imagery, general plans, and other supportive documents including the *Pima Prospers Comprehensive Plan* (Pima County 2015a), *the City of Tucson General Plan* (City of Tucson 2013), *the Rincon/Southeast Subregional Plan* (City of Tucson 1995), Pima County's PimaMaps interactive mapping service (Pima County 2023), and the City of Tucson's interactive mapping service (City of Tucson 2018). The inventory also included communication with government agencies, municipalities, and other stakeholders within the Study Area to gather information regarding further development plans or known development projects. Additional information regarding coordination with these entities can be found in Exhibit H.

Jurisdiction and Land Ownership

The Study Area includes lands under the jurisdiction of unincorporated Pima County and the City of Tucson. Land ownership within the Study Area consists of privately and publicly owned parcels including Bureau of Land Management and ASLD land as shown in Exhibit A-1.

Existing Land Use

The primary existing land uses within the Study Area are vacant, grazing, solar, and residential. Other land uses in the Study Area include commercial and industrial. Overall, the Study Area can be described as rural in character with vacant land, agriculture, solar, and some residential present. Several high-voltage transmission lines exist within the Study Area, as shown in Table B-1. The existing land uses within the Study Area are displayed in Exhibit A-2 and described in detail below.

Table B-1. Transmission Lines in the Immediate Vicinity of the Project

Owner	Voltage
Tucson Electric Power Company	345 kV
Unknown	345 kV
Tucson Electric Power Company	230 kV
Unknown	138 kV
Unknown	115 kV

Vacant – Numerous large tracts of privately and publicly owned undeveloped land are present within the Study Area.

Grazing – With the exception of a recycling and landfill facility, the portion of the Study Area east of South Wilmot Road and north of East Andrada Road is composed of ASLD grazing leases.

Residential – Several small areas of single-family, low-density residences are present within the Study Area. The nearest residences are at least 400 feet from Interconnection Project, on the south side of East Andrada Road (ease of South Wilmot Road). The portion of the Interconnection Project along Andrada Road will parallel existing overhead utility lines.

Solar – The Wilmot I Solar Facility is located in the northwest portion of the Study Area. The Wilmot I Solar Facility also interconnects to the TEP 138 kV Cisne Switchyard.

Commercial – There are a few commercial properties in the northwest portion of the Study Area and one in the southeast portion of the Study Area. Leon's Tree Service and TC Tree Service are located approximately 0.13 and 0.22 mile north of the Interconnection Project, respectively. DJ Dugan Custom Sawmilling is located approximately 0.17 mile northeast of the Interconnection Project. E & R Pork is located approximately 0.76 mile northeast of the Interconnection Project. High Plains Arena is located approximately 1 mile south of the Interconnection Project.

Industrial – Tank's Wilmot Recycling and Landfill Facility is located in the northeast portion of the Study Area approximately 0.40 mile south of the Interconnection Project.

Transportation – Within the Study Area, Wilmot Road is classified as a Major Collector and Sahuarita Road is classified as a Principle Arterial Roads (ADOT 2014). Dirt roads off Wilmot Road provide access to residential properties south of Andrada.

Land Use Plans

The planned route for the Interconnection Project is in unincorporated Pima County and the City of Tucson. Planned land uses and zoning ordinances in each jurisdiction are described in the following sections.

Information included in the following section is largely from key planning documents including *Pima Prospers Comprehensive Plan Initiative* (Pima County 2015a), the *Southeast Planning Area Planned Land Use Map* (Pima County 2015b), the Swan Southlands Specific Plan and Zoning Document (Diamond

Ventures 2010), *Plan Tucson* (City of Tucson 2013a), and *Rincon Southeast Subregional Plan* (City of Tucson 1995). Planned land designations from the above-referenced documents were compiled to create Exhibit A-3. In general, planned land use categories from Pima County are related to low-density residential land uses. Portions of the Study Area in the city of Tucson are predominantly designated as "Southlands," which is a category that Tucson uses to broadly categorize large tracts of undeveloped land located in the southeast and southern perimeters of the city, primarily consisting of Arizona State Trust land managed by the Arizona State Land Department (City of Tucson 2013a:3.145)

In September 2023, the Applicant sent letters to the relevant jurisdictions to provide Project information and request new or additional information on plans or planned developments within the Study Area. Exhibit H provides a copy of the letter, written responses, and other correspondence from relevant jurisdictions.

Pima County

PIMA COUNTY COMPREHENSIVE PLAN – PIMA PROSPERS (2015)

The northern portion of the Interconnection Project is located in unincorporated Pima County. The 2015 update of the Pima County Comprehensive Plan, *Pima Prospers Comprehensive Plan Initiative* (Comprehensive Plan), is the County's principal long-range planning document (Pima County 2015a). According to *Pima Prospers*, the County generally supports alternative energy sources that can help meet current and future energy demands while decreasing reliance on fossil fuels (Pima County 2015a:4.16).

Pima Prospers delineates 13 planning areas in both incorporated and unincorporated areas of the County (Pima County 2015a:2.7). The northern section of the Interconnection Project in unincorporated Pima County is located within the southeast planning area (Pima County 2015a:2.8). The map shows that the Interconnection Project would cross an area with a planned land use intensity category of Planned Development Community (PDC) with an overlay of Rezoning Policy 59 (RP-59) (Pima County 2015b).

PDCs designate existing approved specific plans with detailed information such as individual planning and zoning districts within the plan area (Pima County 2015c:2), and rezoning policies apply to discrete areas and frequently reflect either approved, individual plan amendments or a policy carried forward from a previous (rescinded) area, community, or neighborhood plan (Pima County 2015a:9.19). For denoted specific plan-related rezoning policies, the specific plan documents, conditions of zoning if any, and development agreements as they exist or may be amended govern the land use of the property, not the applicable rezoning policy (Pima County 2015a:9.19).

The specific plan associated with this PDC is called Swan Southlands (or Verano), which has policies that were incorporated as the rezoning policies of RP-59 in the Comprehensive Plan (Diamond Ventures 2010; Pima County 2015a:9.28-9.33). An existing solar facility, Wilmot I Solar, was developed with the same PDC as which the Interconnection Project will cross.

PIMA COUNTY ZONING

The Interconnection Project would traverse areas in unincorporated Pima County zoned as Specific Plan (SP) (Pima County 2023). As described above, the SP zone allows for developers and property owners to tailor allowed uses and development standards to specific areas within unincorporated Pima County (§18.90.010; Pima County 2020). The Pima County zoning code further stipulates that "[n]othing in this code shall prevent the location, erection, alteration or maintenance of pipes, poles, wires, and similar installations necessary to distribute public facilities," (§18.07.040(B)(1)); Pima County 2020. The Applicant is working closely with Pima County planning department staff to permit the Solar Facility through the County's Conditional Use Permit (CUP) process. The Applicant submitted a CUP application for the solar facility to Pima County in August 2023.

City of Tucson

CITY OF TUCSON GENERAL PLAN – PLAN TUCSON

Most of the Interconnection Project is in the City of Tucson (Tucson). Tucson's principal long-range planning document is *Plan Tucson*; *Plan Tucson* states that its purpose is, "intended to guide decisions affecting elements that shape the city, such as housing, jobs, land use, transportation, water, and energy resources," (Tucson 2013b: 1.2). *Plan Tucson* contains a "Future Growth Scenario Map" that depicts various land use designations intended to guide orderly growth and development in the City (City of Tucson 2013b).

The Future Growth Scenario Map indicates that the Interconnection Project traverses two land use designations called "Potential Annexation Areas" and "Southlands" (City of Tucson 2013c). Potential Annexations are outside of the Tucson's current municipal boundary, but within Tucson's overall planning area (City of Tucson 2013d: 3.145). Areas designated as "Potential Annexation Areas" are also covered by the Rincon Southeast Subregional Plan, described in more detail below. Areas designated as "Southlands" are long-term growth areas, specifically described as:

> "formed predominantly by large tracts of undeveloped land located at the southeastern and southern perimeters of the city. A large portion of this area is administered by the State Land Department. Prior to releasing these lands for development, the State will initiate planning efforts to promote orderly phased development that reflects sustainable and innovative community design," (City of Tucson 2013d: 3.145).

The Applicant is working closely with the ASLD to secure a right-of-way lease for the Interconnection Project.

CITY OF TUCSON GENERAL PLAN – RINCON SOUTHEAST SUBREGIONAL PLAN

As part of the City of Tucson's General Plan, the City developed subregional plans to establish future land use and development direction for areas that are adjacent to the City and have potential for future City annexation (Pima County 1995). Portions of the Interconnection Project intersect the subregional planning area referred to as "Rincon Southeast" (City of Tucson 2019).

The *Rincon Southeast Subregional Plan* was developed by Tucson and includes "Subregional Plan Policies" which apply to the entire subregion planning area (City of Tucson 1995:3). The Rincon Southeast Subregional Plan includes policies related to "public services and facilities;" however, beyond acknowledging that "development puts demands on public services and infrastructure," (City of Tucson 1995:46) this plan does not include any policies related to transmission lines or renewable energy generation facilities.

The Rincon Southeast Subregional Plan states that the subregional plan only becomes effective for an area that is located within plan boundaries after the area is annexed into the City and that portion of the plan is adopted by the City of Tucson Mayor and Council (City of Tucson 1995:1). Portions of the Interconnection Project that intersect the Rincon Southeast subregional planning area are not under active consideration for annexation. The Rincon Southeast Subregional Plan further states that, "the Land Use Map and plan Policies are implemented through the rezoning or planned area development process," and that "all rezoning requests must comply with the Land Use Map," (City of Tucson 1995:27).

Because the Interconnection Project does not require a zoning change in either Tucson or unincorporated Pima County, the Interconnection Project is not expected to interfere with long-range planning objectives of Tucson.

CITY OF TUCSON ZONING

The Interconnection Project is in an area of Tucson zoned as Rural Homestead (RH) (Pima County 2023; City of Tucson 2022). The RH zone is intended to encourage rural development in areas lacking facilities for urban development and to provide for agriculture, commercial, and industrial development only where appropriate and necessary to serve the needs of the rural area (§4.7.3; City of Tucson 2023).

The Interconnection Project within Tucson's municipal boundaries is consistent with the Zoning Code's definition of "transmission lines" under the Utilities Use Group, which includes "[u]tility lines … for the transmission of electrical energy for sale, including transmission lines for a public utility company…" (§11.3.11(E); City of Tucson 2023). According to City of Tucson planning staff, an encroachment permit will be needed for the Interconnection Project where it crosses or enters a City-owned right-of-way (e.g., crossing Wilmot Road).

Land Use Impact Assessment and Results

Land use impacts may be defined as restrictions on land use that would result from construction or operation of the Interconnection Project, or incompatibility with existing land use plans. Typically, restrictions on land use would result from right-of-way or easement acquisition across a property. To minimize land use impacts, Interconnection Project routes were sited to generally follow existing linear features, such as existing transmission lines and roadways where feasible.

The Interconnection Project will be located on both private and publicly owned land. It will parallel existing linear features including Wilmot Road, Andrada Road, and an existing 115-kV overhead transmission line. The Interconnection Project requires neither a Comprehensive or General Plan amendment nor a zone district change. Therefore, impacts to existing and future land uses resulting from the Interconnection Project are expected to be minimal.

Environmental Studies Made or Obtained in Connection with the Proposed Route

In addition to the land use inventory described above, and the environmental analysis contained in this CEC application, the Applicant has completed or plans to complete additional environmental studies in connection with the Interconnection and Solar Facility. These studies include the following:

- **Aquatic Resources Assessment**. The Applicant contracted with SWCA to complete an aquatic resources assessment, which was completed on May 2, 2023. The aquatic resources assessment is a technical memorandum that involves a desktop review and summary of aquatic resources data and a review of prior jurisdictional delineation reporting and U.S. Army Corps of Engineers (USACE) jurisdictional determinations for waters of the United States (WOTUS). The information in this memorandum may be used to inform the design of the solar development and minimize potential impacts to ephemeral washes and riparian areas. See Attachment B-1.
- **ASLD Native Plant Inventory**. The Applicant contracted with SWCA to conduct native plant surveys per ASLD protocols, which were completed on October 31, 2023. The native plant inventory involved estimating the number of native trees, shrubs, and cactus plants that would be removed from state lands as a result of the Interconnection Project. This estimate will be used to calculate the fee needed to be paid to the ASLD to compensate for the loss of vegetation from state lands. The native plant inventory will support the Interconnection Project's ASLD right-of-way application. See Attachment B-2.
- **Biological Resources Evaluation (BRE)**. The Applicant contracted with SWCA to complete a BRE, completed on October 23, 2023. The BRE addressed compliance with the Endangered

Species Act, the Migratory Bird Treaty Act, the Bald and Golden Eagle Protection Act, the Arizona Native Plant Law, Arizona noxious weed regulations, and Pima County Ordinance 18.72, Native Plant Preservation. The BRE also addressed relevant items from the Arizona Game and Fish Department *Guidelines for Solar Development in Arizona*, such as wildlife corridors and linkages, habitat, the State Wildlife Action Plan, and Species of Greatest Conservation Need. See Attachment B-3.

- **Cultural Resources Inventory**. The Applicant completed Class III pedestrian surveys for cultural resources for portions of the Interconnection Project and the Solar Facility that had not previously been surveyed. The Applicant's cultural consultant will submit the full Class III inventory report to the ASLD, Arizona State Museum, and State Historic Preservation Office, once completed. If any archaeological resources are found, and are eligible for inclusion in the National Register of Historic Places, they will be avoided. The cultural resources inventory report was submitted directly to the Arizona State Land Department and Arizona State Historic Preservation Office. See Exhibit E for a description of cultural and historic resources.

The Interconnection Project does not involve a "federal action" that would require review under the National Environmental Policy Act of 1969 (NEPA). Therefore, no environmental reports have been prepared for any federal agency and no federal agency has prepared an environmental statement pursuant to Section 102 of the NEPA for the Interconnection Project.

EXHIBIT B – ATTACHMENT B-1

Aquatic Resources Assessment; May 2023

SWCA
ENVIRONMENTAL CONSULTANTS
Sound Science. Creative Solutions.®

343 West Franklin Street
Tucson, Arizona 85701
Tel 520.325.9194 Fax 520.325.2033
www.swca.com

TECHNICAL MEMORANDUM

To: Alex Simons, Senior Environmental Specialist
NextEra Energy Resources, LLC
4200 Smith School Road
Austin, Texas 78744

From: Tim Jordan, Associate Project Environmental Scientist

Date: May 2, 2023

Re: **Aquatic Resources Assessment for the Wilmot II Solar Project, Pima County, Arizona / SWCA Project No. 78862**

INTRODUCTION

SWCA Environmental Consultants (SWCA) was contracted by NextEra Energy Resources, LLC (NextEra), to complete an aquatic resources assessment for the Wilmot II Solar Project (project) in unincorporated Pima County, Arizona. NextEra is proposing to develop the solar energy facility on private land within two discrete areas: a western, approximately 359-acre area known as Wilmot Park, and an eastern, approximately 708-acre area known as Hook M, for a combined total solar facility area of approximately 1,067 acres (project area). The project includes constructing a generation-tie (gen-tie) transmission line to connect the solar facility to an existing substation in a yet to be determined alignment within an approximately 1,366-acre gen-tie evaluation area (Figure 1). The approximately 2,433-acre combined solar facility and gen-tie evaluation area is herein referred to as the study area.

The proposed solar facility is located on private land and includes portions of Sections 3–6, Township 17 South, Range 15 East, Gila and Salt River Baseline and Meridian, as depicted on the U.S. Geological Survey (USGS) Corona de Tucson, Arizona, 7.5-minute quadrangle topographic map (Figure 2).
The proposed gen-tie transmission line is located on both private land and land managed by the Arizona State Land Department (ASLD) in portions of Section 6, Township 17 South, Range 15 East; Sections 18, 19, and 30–32, Township 16 South, Range 15 East; and Sections 13 and14, Township 16 South, Range 14 East, Gila and Salt River Baseline and Meridian; as depicted on the USGS Corona de Tucson and Tucson SE, Arizona, 7.5 minute quadrangle topographic maps (USGS 2023) (see Figure 2). The approximate center point of the study area is 31.9841°, −110.8306° (see Figure 1).

This technical memorandum was prepared as part of NextEra's environmental due diligence for the project. It includes a desktop review of aquatic resources data sources and a review of prior jurisdictional delineation reporting and U.S. Army Corps of Engineers (USACE) jurisdictional determinations for waters of the U.S. (WOTUS) within the project area subject to federal regulation under Section 404 of the Clean Water Act (CWA). The information in this memorandum may be used to inform the design of the solar development to minimize and avoid impacts to potential WOTUS to the maximum extent practicable.

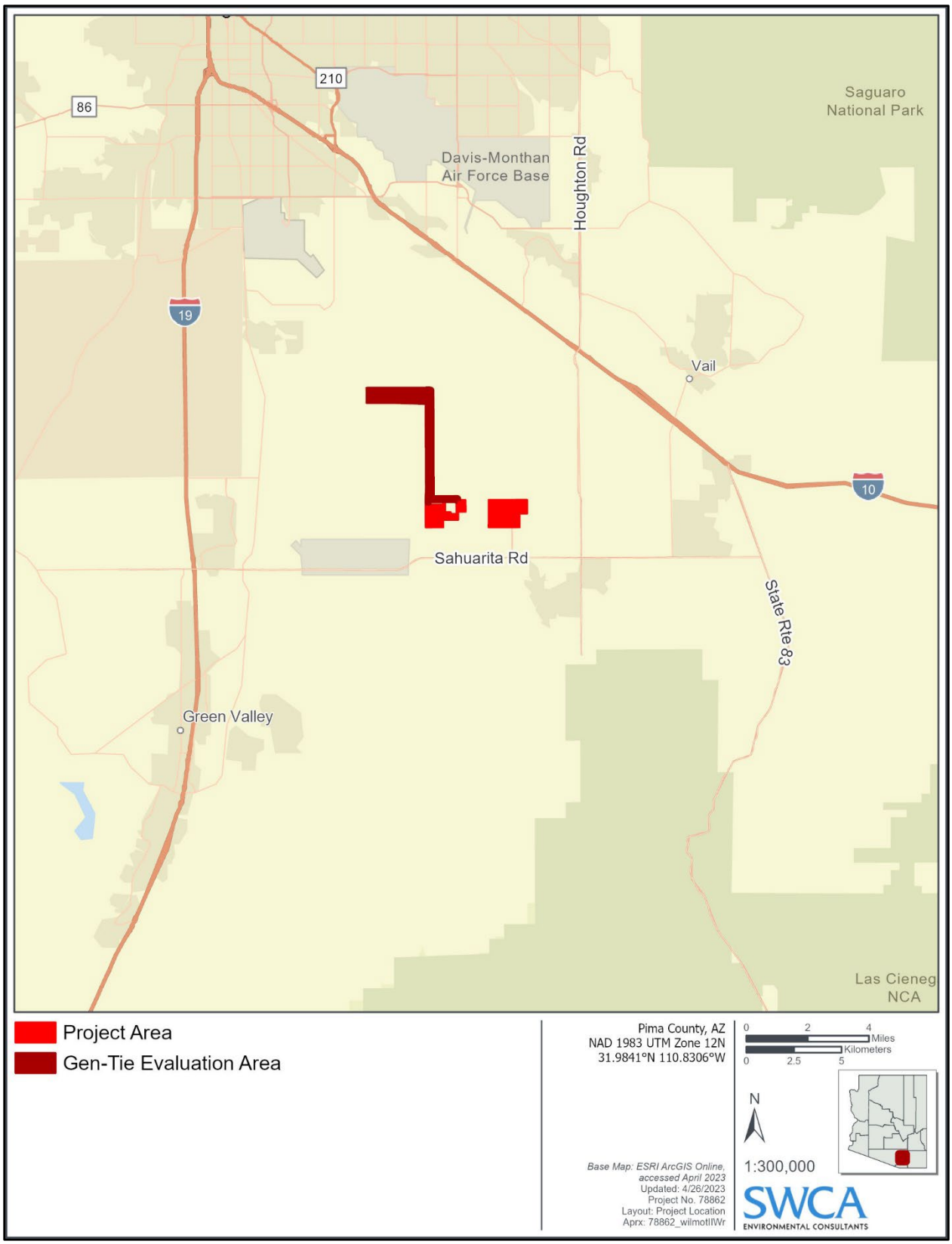


Figure 1. Study area location overview.

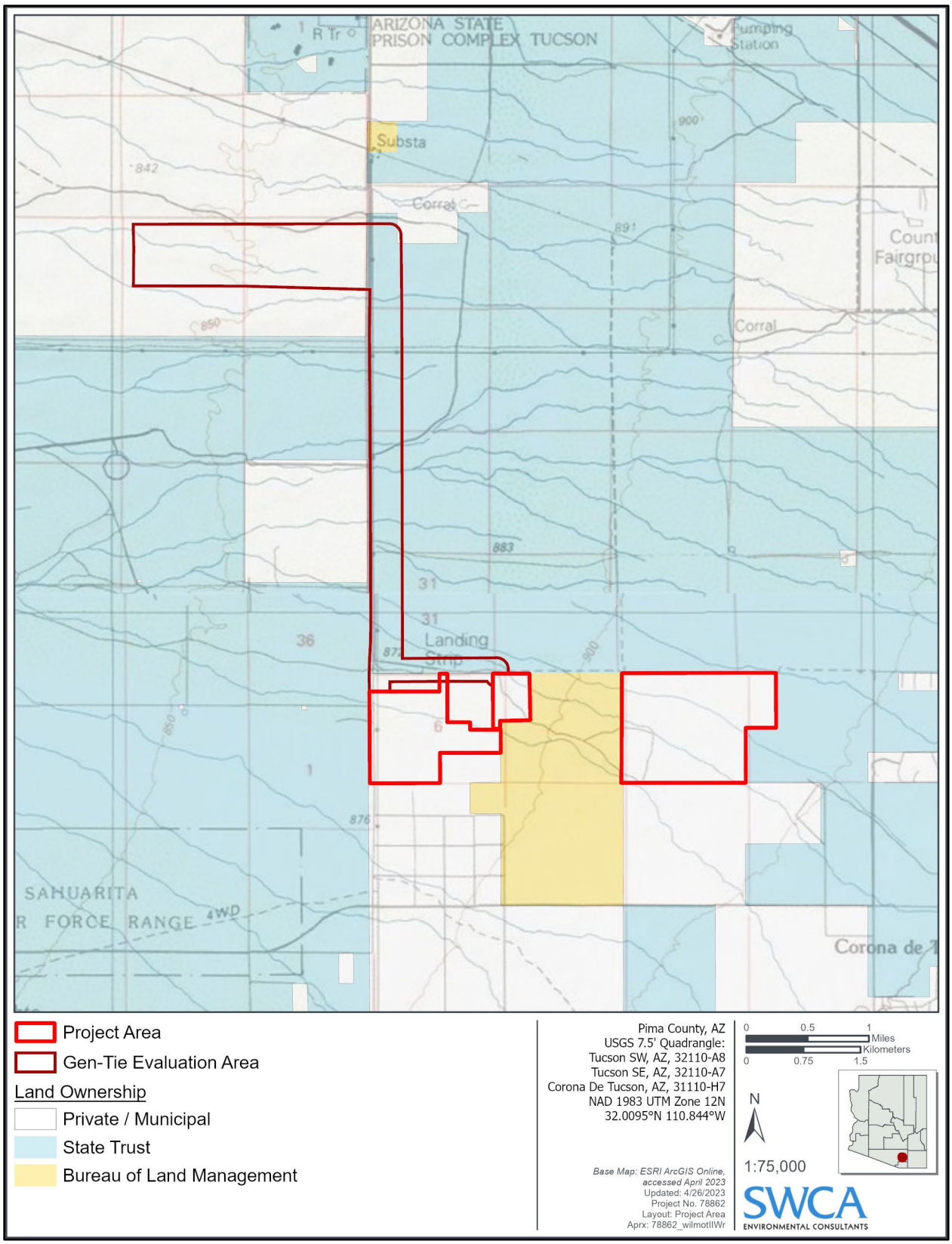


Figure 2. Topographic map of the study area.

METHODS

SWCA accessed the following public databases to characterize aquatic resources in the study area:

- Aerial imagery (Google Earth 2023)
- U.S. Environmental Protection Agency (EPA) Watershed Assessment, Tracking & Environmental Results System (WATERS) Surface Water Information System, which includes National Hydrography Dataset (NHD) streams, USGS watersheds, and other surface water feature data (EPA 2023)
- U.S. Fish and Wildlife Service (USFWS) National Wetlands Inventory (NWI) mapper (USFWS 2023)
- Arizona Department of Environmental Quality (ADEQ) eMaps (ADEQ 2023)
- USGS topographic map (Corona de Tucson and Tucson SE, Arizona, 7.5-minute quadrangles) (USGS 2023)
- Natural Resources Conservation Service (NRCS) Soil Survey data (NRCS 2023)
- Federal Emergency Management Agency (FEMA) flood insurance rate map (FEMA 2023)
- Arizona Department of Water Resources (ADWR) registry of wells in Arizona (Wells 55) (ADWR 2023)
- National Oceanic and Atmospheric Administration (NOAA) Regional Climate Centers Applied Climate Information System (NOAA 2023)
- Pima County Ordinance 2005-FC2 Regulated Riparian Habitat (Pima County 2005)

Prior jurisdictional delineation reporting and USACE jurisdictional determinations that were reviewed for the project area included the following:

- Hook M
    - USACE SPL-2015-00436-PC Preliminary Jurisdictional Determination, dated August 18, 2015 (USACE 2015)
- Wilmot Park
    - USACE SPL-2016-00816 Preliminary Jurisdictional Determination, dated February 24, 2017 (USACE 2017)
    - Approved Jurisdictional Determination Request, dated July 9, 2021 (Bowers 2021)
    - USACE SPL-2016-00816 Approved Jurisdictional Determination, dated March 3, 2023 (USACE 2023)

RESULTS

Study Area Setting

Topography and Land Use

The study area is on the northwestern alluvial fan of the Santa Rita Mountains, approximately 8.6 miles northwest of Mount Fagan and approximately 6 miles east of the Santa Cruz River. Elevations in the project area range from approximately 2,865 feet above mean sea level at the northwest corner of the Wilmot Park area to approximately 3,075 feet at the southeast corner of the Hook M area. Elevations in

the gen-tie evaluation area range from approximately 2,865 feet at the south end to approximately 2,756 feet at the north end.

The project area consists of undeveloped open rangeland and is bordered on the west, north, and east by ASLD-managed land. Undeveloped Bureau of Land Management-administered land lies between the Wilmot Park and Hook M areas. Low-density rural residential development is north and south of the Wilmot Park area, with residential development south of the Hook M area. The north-south segment of the gen-tie evaluation area crosses undeveloped open rangeland on ASLD land, and the east-west segment crosses private land to terminate at the existing Wilmot I solar facility substation.

Hydrography

The entire Hook M area and most of the Wilmot Park area lie within the approximately 39,196-acre Tunnel Spring watershed (Hydrologic Unit Code [HUC] 150503010707). The southwest corner of the Wilmot Park area is within the approximately 46,881-acre Sycamore Canyon watershed (HUC 150503010706), as defined by the USGS Watershed Boundary Dataset (EPA 2023). Most of the gen-tie evaluation area is within the Tunnel Spring watershed, and its north end is within the 15,489-acre Missile Tank (HUC 150503010708) watershed. Stormwater flows are generally southeast to west across the study area.

The NWI and NHD datasets identify 13 coincident modeled linear surface water features in the project area with a total modeled length of approximately 9.2 miles. NWI classifies these linear features as R4SBC, which translates to riverine, intermittent, streambed, seasonally flooded; NHD classifies the features as streams/rivers. NHD also identifies one 0.07-acre waterbody classified as a lake/pond in the western portion of the Hook M area that corresponds to a human-made livestock tank. Four of the NWI R4SBC/NHD streams/river linear surface water features in the project area continue downstream through the southern portion of the gen-tie evaluation area, and an additional 10 features cross it to the north for a total length of approximately 6.3 miles (Appendix A) (EPA 2023; USFWS 2023).

A search of the ADWR's online database of registered Groundwater Site Inventory wells near the study area indicates that the depth to groundwater ranges from 302 feet (well 315924110505801) to 314 feet (well 315920110510301) below ground level (ADWR 2023).

No Outstanding Arizona Waters or waterbodies designated as impaired or not attaining water quality standards are within or near the study area; the closest such feature is a reach of the Santa Cruz River in Tucson, approximately 27 river miles to the northwest. This reach is mapped by ADEQ as a perennial stream that is not attaining water quality standards for *Escherichia coli* (ADEQ 2023).

The mean annual precipitation, recorded at the nearest weather station with recent, consistent data collection for 20 years (Green Valley, Arizona, 2001–2021) is 13.52 inches, with no snowfall (NOAA 2023).

Review of FEMA Flood Insurance Rate Map (FIRM) panels 04019C3500L, 04019C2925L, and 04019C2900L (see Appendix A) indicates that the study area is mapped as Zone X, an area of minimal flood hazard (FEMA 2023).

Vegetation

The study area is in the Arizona Upland subdivision of the Sonoran Desertscrub biotic community, as described and mapped by Brown (1994). Dominant plant species observed in the project area during SWCA's biological evaluation field surveys included velvet mesquite (*Prosopis velutina*), yellow paloverde (*Parkinsonia microphylla*), whitethorn acacia (*Vachellia constricta*), catclaw acacia (*Senegalia*

greggii), creosote bush (*Larrea tridentata*), and jumping cholla (*Opuntia fulgida*). Other plants observed included fourwing saltbush (*Atriplex canescens*), spiny hackberry (*Celtis ehrenbergiana*), lotebush (*Ziziphus obtusifolia*) desert wolfberry (*Lycium macrodon*), candy barrel cactus (*Ferocactus wislizeni*), Christmas cactus (*Cylindropuntia leptocaulis*), tree cholla (*Cylindropuntia imbricata*), cactus apple (*Opuntia engelmannii*), Pima pineapple cactus (*Coryphantha scheeri* var. *robustispina*), saguaro (*Carnegiea gigantea*), ocotillo (*Fouquieria splendens*), burroweed (*Isocoma tenuisecta*), fairyduster (*Calliandra eriophylla*), brittlebush (*Encelia farinose),* triangle bur ragweed (*Ambrosia deltoidea*), and spidergrass (*Aristida ternipes*) (SWCA 2023).

No plant species with hydrophytic indicator status (i.e., facultative wetland or obligate wetland species) were observed in the project area; all species are either listed as Upland or not listed in the National Wetland Plant List and therefore, are considered upland species for wetland delineation purposes (USACE 2020).

Soils

According to NRCS data, the soil map units in the project area are primarily of the Bucklebar-Sahuarita complex, 0 to 3 percent slopes (70.4%); followed by Tubac gravelly loam, 1 to 8 percent slopes (11.1%); Yaqui fine sandy loam, 1 to 3 percent slopes (10.2%); the Hayhook-Sahuarita complex, 1 to 5 percent slopes (5.4%); Hantz loam, 0 to 1 percent slopes (1.9%); and the Arizo-Riverwash complex, 0 to 3 percent slopes (0.9%). Hantz loam, Tubac gravelly loam, Yaqui fine sandy loam, and the Bucklebar-Sahuarita complex are also found in the gen-tie evaluation area with relative abundances of 26.4%, 20.7%, 7.0%, and 4.8%, respectively. Soil map units unique to the gen-tie evaluation area include primarily Sahuarita soils, Mohave soils, and urban land, 1 to 5 percent slopes (38.1%) and Cave soils and urban land, 0 to 8 percent slopes (3.0%) (see Appendix A). All soils in the project area are classified as well drained, except for the Arizo-Riverwash complex, which is classified as excessively drained. None of these soils are identified as hydric (NRCS 2023).

Pima County Regulated Riparian Habitat

Pima County regulated riparian habitat is present in the study area, as mapped under Pima County Ordinance 2005-FC2, including Xeroriparian C and D areas, an Important Riparian Area (IRA), and IRAs C and D (Tables 1 and 2; see Appendix A). Xeroriparian areas are primarily associated with ephemeral washes and are categorized from A to D based on the relative vegetation volume (i.e., density) that may be present, with A having the highest vegetation density and D the least. IRAs are part of the County's Conservation Land System and provide critical watershed and water resource management functions, as well as providing a framework for landscape linkages and biological corridors. IRAs can have an underlying xeroriparian category, as is the case with Important Riparian Areas C and D.

Table 1. Regulated Riparian Habitat Within the Project Area

Riparian Habitat Classification	Acres
Xeroriparian C	95.12
Xeroriparian D	5.39
IRA	2.04
IRA C	58.81

Table 2. Regulated Riparian Habitat Within the Gen-tie Evaluation Area

Riparian Habitat Classification	Acres
Xeroriparian C	53.22
Xeroriparian D	16.21
IRA C	162.78
IRA D	56.84

Waters of the U.S.

REGULATORY BACKGROUND

Section 404 of the Federal Water Pollution Control Act (33 U.S.C. 1251 et seq.), also known as the CWA, authorizes the USACE to review and approve permit applications for the discharge of dredge and fill material within WOTUS, including wetlands. Under the 2008 post-Rapanos guidance (EPA and USACE 2008), which was codified by the 2022 WOTUS definition (33 CFR 328, 40 CFR 120) that went into effect on March 20, 2023, and is the regulatory guidance in effect in Arizona at the time of this assessment, jurisdiction of non-navigable tributaries that are not relatively permanent (including ephemeral streams) is decided by the USACE using one of two processes known as an Approved Jurisdictional Determination (AJD) or a Preliminary Jurisdictional Determination (PJD).

The USACE's PJD process assumes jurisdiction over surface water features that exhibit ordinary high water marks (OHWMs) and a bed and banks, regardless of downstream connectivity or nexus to a traditional navigable water (TNW). In accordance with USACE Regulatory Guidance Letter 16-01 (USACE 2016), a USACE-verified PJD is not an official determination of jurisdictional WOTUS; rather, it is a nonbinding written indication that there may be WOTUS in the review area that would be used to calculate impacts to determine the appropriate CWA Section 404 Permit. Under current rules, a PJD allows an expedited USACE review of a property, compared with an official determination provided under an AJD with a significant nexus analysis (i.e., following 2008 post-Rapanos guidance [EPA 2022; EPA and USACE 2008] and 2022 definition of WOTUS). The PJD process can be used to support the USACE's processing of a Section 404 Permit, or for due diligence in the case of a non-notifying nationwide permit coverage, if needed for unavoidable impacts to WOTUS.

Alternatively, the AJD process is based on fact-specific analysis to determine whether each surface water feature on-site that exhibits an OHWM has a significant nexus with a TNW. Hydrologic information (e.g., historical records of water flow, personal observations), physical characteristics of the feature (i.e., a reliable OHWM and bed and banks), and contextual factors (e.g., size of the watershed, average annual rainfall, channel dimensions) are considered when determining whether a significant nexus is present between a tributary and its downstream TNW. If no surface water features on-site exhibit an OHWM, the AJD process can be used to obtain written determination from the USACE of no WOTUS on-site.

PRIOR REPORTING AND USACE JURISDICTIONAL DETERMINATIONS

The 2016 and 2017 PJDs for the project area determined that there "may" be WOTUS within the project area (USACE 2016, 2017). These determinations have a 5-year lifespan and have since expired; although the determination for the Wilmot Park portion of the project area was subject to a subsequent AJD request in July 2021 (Bowers 2021) that USACE approved this request in March 2023 with a determination that WOTUS were not present due to the lack of a significant nexus to a TNW (USACE 2023). A summary of the surface water features identified in the project area and their current jurisdictional status is presented

in Table 3. Jurisdictional delineation fieldwork has not been conducted and a subsequent USACE jurisdictional determination has not been made for the gen-tie evaluation area. A summary of the potentially jurisdictional modeled NWI/NHD surface water features in the gen-tie evaluation area is presented in Table 4.

Table 3. Surface Water Features in the Project Area and Their Jurisdictional Status

Area	Feature	Area (acres)	Length (feet)	USACE File	WOTUS?	Determination Type
Hook M	1	0.67	2,171	SPL-2015-00436-PC	Potential	PJD (2016)
	2	0.29	1,104	SPL-2015-00436-PC	Potential	PJD (2016)
	3	3.55	4,925	SPL-2015-00436-PC	Potential	PJD (2016)
	4	1.31	2,859	SPL-2015-00436-PC	Potential	PJD (2016)
	5	1.07	2,759	SPL-2015-00436-PC	Potential	PJD (2016)
	6	4.08	6,557	SPL-2015-00436-PC	Potential	PJD (2016)
	7	0.51	412	SPL-2015-00436-PC	Potential	PJD (2016)
	8	0.07	612	SPL-2015-00436-PC	Potential	PJD (2016)
	9	0.07	412	SPL-2015-00436-PC	Potential	PJD (2016)
	10	0.08	485	SPL-2015-00436-PC	Potential	PJD (2016)
	11	0.05	358	SPL-2015-00436-PC	Potential	PJD (2016)
	12	0.05	466	SPL-2015-00436-PC	Potential	PJD (2016)
	Subtotal	*11.80*	*23,120*			
Wilmot Park	1	1.52	2,842	SPL-2016-00816	No	PJD (2017), AJD (2023)
	2	0.21	489	SPL-2016-00816	No	PJD (2017), AJD (2023)
	3	0.33	1,398	SPL-2016-00816	No	PJD (2017), AJD (2023)
	4	2.19	3,396	SPL-2016-00816	No	PJD (2017), AJD (2023)
	5	1.65	3,403	SPL-2016-00816	No	PJD (2017), AJD (2023)
	6	0.66	2,537	SPL-2016-00816	No	PJD (2017), AJD (2023)
	7	0.07	514	SPL-2016-00816	No	PJD (2017), AJD (2023)
	8	0.26	2,777	SPL-2016-00816	No	PJD (2017), AJD (2023)
	Subtotal	*6.89*	*17,356*			
	Total	**18.69**	**40,476 (7.7 miles)**			

Table 4. Potentially Jurisdictional Surface Water Features in the Gen-tie Evaluation Area

Feature	Length (feet)	NWI	NHD	WOTUS?
1	8,659	R4SBC	Stream / river	Potential
2	1,901	R4SBC	Stream / river	Potential
3	1,426	R4SBC	Stream / river	Potential
4	1,531	R4SBC	Stream / river	Potential
5	1,426	R4SBC	Stream / river	Potential
6	1,478	R4SBC	Stream / river	Potential

Feature	Length (feet)	NWI	NHD	WOTUS?
7	1,426	R4SBC	Stream / river	Potential
8	1,426	R4SBC	Stream / river	Potential
9	1,162	R4SBC	Stream / river	Potential
10	1,690	R4SBC	Stream / river	Potential
11	1,637	R4SBC	Stream / river	Potential
12	2,746	R4SBC	Stream / river	Potential
13	5,491	R4SBC	Stream / river	Potential
14	1,056	R4SBC	Stream / river	Potential
Total	**33,053 (6.3 miles)**			

Conclusions

As mentioned above, the USACE PJD determination for the Hook M area has expired. To reverify the jurisdictional status of the surface water features in the Hook M area, jurisdictional fieldwork would need to be updated due to the length of time that has passed since the original 2016 survey and a new determination request would need to be submitted to USACE. Similarly, jurisdictional delineation fieldwork would need to be conducted in the gen-tie evaluation area, and a determination request would need to be submitted to USACE, if a determination of WOTUS is desired for that area.

There are no special aquatic sites (including wetlands), relatively permanent waters, intermittent or perennial waters, or TNWs in the study area. The nearest TNW in relation to the project area is Reach B of the Santa Cruz River in Tucson from the Roger Road wastewater treatment plant downstream to the Pima/Pinal County line, approximately 27 miles downstream of the project area via unnamed washes and non-TNW reaches of the Santa Cruz River.

The climate, low-gradient topography, and soil characteristics of the study area promote low volumes and low velocities of stormwater runoff. The potential for a hydrological nexus and/or contribution of flows to the nearest TNW, given the low flow levels and extensive distance (approximately 27 river miles downstream to the northwest of the project area), would be speculative. Any stormwater runoff crossing the project area that may reach the nearest receiving TNW would be at such low levels that it would have, at most, an insignificant effect on the biological, chemical, and/or physical integrity of the TNW. Because the significant nexus of each surface water feature to a downstream TNW is speculative, none of the surface waters features on the study area would likely be considered WOTUS or subject to CWA Section 404 permitting regulations.

USACE determined that WOTUS were not present in the Wilmot Park portion of the project area because the surface water features in that portion of the project area did not have a significant nexus to the Santa Cruz River TNW. The surface water features in the Hook M portion of the project area are even farther away from the TNW than those in the Wilmot Park portion of the project area, and it is likely that USACE would determine that the Hook M surface water features are not WOTUS due to a lack of a significant nexus to a TNW. It is likely that construction of the gen-tie line would have no permanent impacts on potential WOTUS if all surface water features would be spanned by the line and structures placed in uplands between the features.

LIMITATIONS AND WARRANTY

The results and conclusions of this report represent the best professional judgment of SWCA scientists and are based on information provided by the project proponent and on information obtained from agencies and other sources during the study. No other warranty, expressed or implied, is made.

The USACE and the EPA have the ultimate authority to issue a binding determination of WOTUS, including wetlands, in the project area for CWA permitting purposes.

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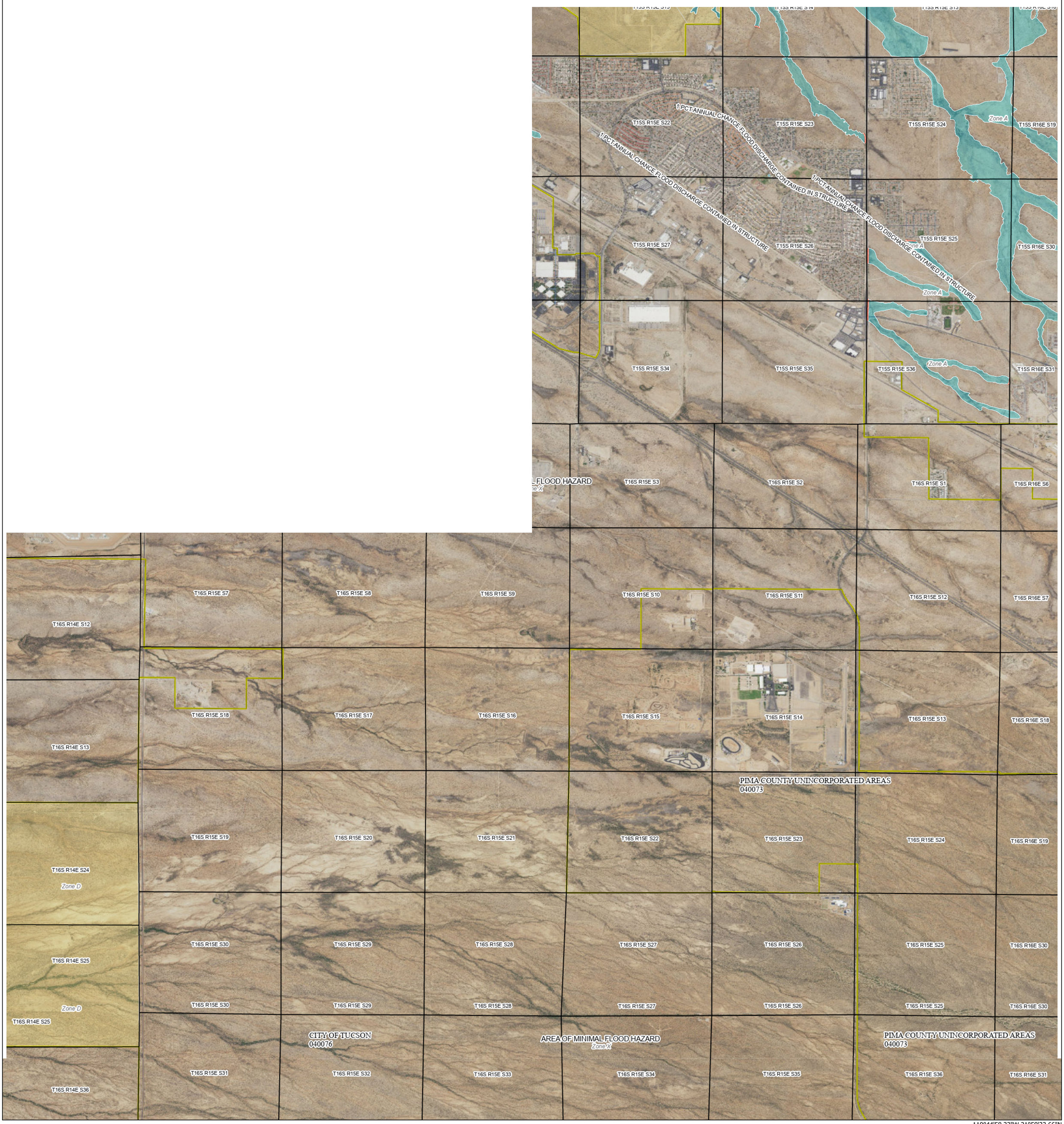
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APPENDIX A

Supporting Agency Data

Federal Emergency Management Agency Flood Insurance Rate Maps
National Resource Conservation Service Soil Maps
Pima County Ordinance 2055-FC2 Regulated Riparian Habitat Maps
U.S. Geological Survey National Hydrography Dataset
and U.S. Fish and Wildlife Service National Wetlands Inventory Maps



110°44'58.33"W 31°59'33.66"N

FLOOD HAZARD INFORMATION

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR DRAFT FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS
- Without Base Flood Elevation (BFE) *Zone A, V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD
- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee See Notes *Zone X*
- Area with Flood Risk due to Levee *Zone D*

OTHER AREAS
- NO SCREEN Area of Minimal Flood Hazard *Zone X*
- Effective LOMRs
- Area of Undetermined Flood Hazard *Zone D*

GENERAL STRUCTURES
- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES
- 20.2 Cross Sections with 1% Annual Chance
- 17.5 Water Surface Elevation
- Coastal Transect
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature
- 513 Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary

NOTES TO USERS

For information and questions about this Flood Insurance Rate Map (FIRM), available products associated with this FIRM, including historic versions, the current map date for each FIRM panel, how to order products, or the National Flood Insurance Program (NFIP) in general, please call the FEMA Map Information eXchange at 1-877-FEMA-MAP (1-877-336-2627) or visit the FEMA Flood Map Service Center website at https://msc.fema.gov. Available products may include previously issued Letters of Map Change, a Flood Insurance Study Report, and/or digital versions of this map. Many of these products can be ordered or obtained directly from the website.

Communities annexing land on adjacent FIRM panels must obtain a current copy of the adjacent panel as well as the current FIRM Index. These may be ordered directly from the Flood Map Service Center at the number listed above.

For community and countywide map dates, refer to the Flood Insurance Study Report for this jurisdiction.

To determine if flood insurance is available in this community, contact your Insurance agent or call the National Flood Insurance Program at 1-800-638-6620.

Basemap information shown on this FIRM was provided in digital format by the United States Geological Survey (USGS). The basemap shown is the USGS National Map: Orthoimagery. Last refreshed October, 2020.

This map was exported from FEMA's National Flood Hazard Layer (NFHL) on **4/19/2023 3:50 PM** and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time. For additional information, please see the Flood Hazard Mapping Updates Overview Fact Sheet at https://www.fema.gov/media-library/assets/documents/118418

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards. This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date.

SCALE

Map Projection:
GCS, Geodetic Reference System 1980;
Vertical Datum: No elevation features on this FIRM
For information about the specific vertical datum for elevation features, datum conversions, or vertical monuments used to create this map, please see the Flood Insurance Study (FIS) Report for your community at https://msc.fema.gov

N

1 inch = 2,000 feet 1:24,000

0 1,000 2,000 4,000 6,000 8,000 Feet

0 210 420 840 1,260 1,680 Meters

NATIONAL FLOOD INSURANCE PROGRAM

FLOOD INSURANCE RATE MAP

PANEL 2925 OF 4725

Panel Contains:

COMMUNITY	NUMBER	PANEL
CITY OF TUCSON	040076	2925
PIMA COUNTY UNINCORPORATED AREAS	040073	2925

MAP NUMBER
04019C2925L
EFFECTIVE DATE
June 16, 2011



110°50'35.83"W 31°59'33.66"N

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- 17.5 Water Surface Elevation
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SCALE

Map Projection:
GCS, Geodetic Reference System 1980;
Vertical Datum: No elevation features on this FIRM
For information about the specific vertical datum for elevation features, datum conversions, or vertical monuments used to create this map, please see the Flood Insurance Study (FIS) Report for your community at https://msc.fema.gov

N

1 inch = 2,000 feet 1:24,000

0 1,000 2,000 4,000 6,000 8,000 Feet

0 210 420 840 1,260 1,680 Meters

FEMA National Flood Insurance Program

NATIONAL FLOOD INSURANCE PROGRAM

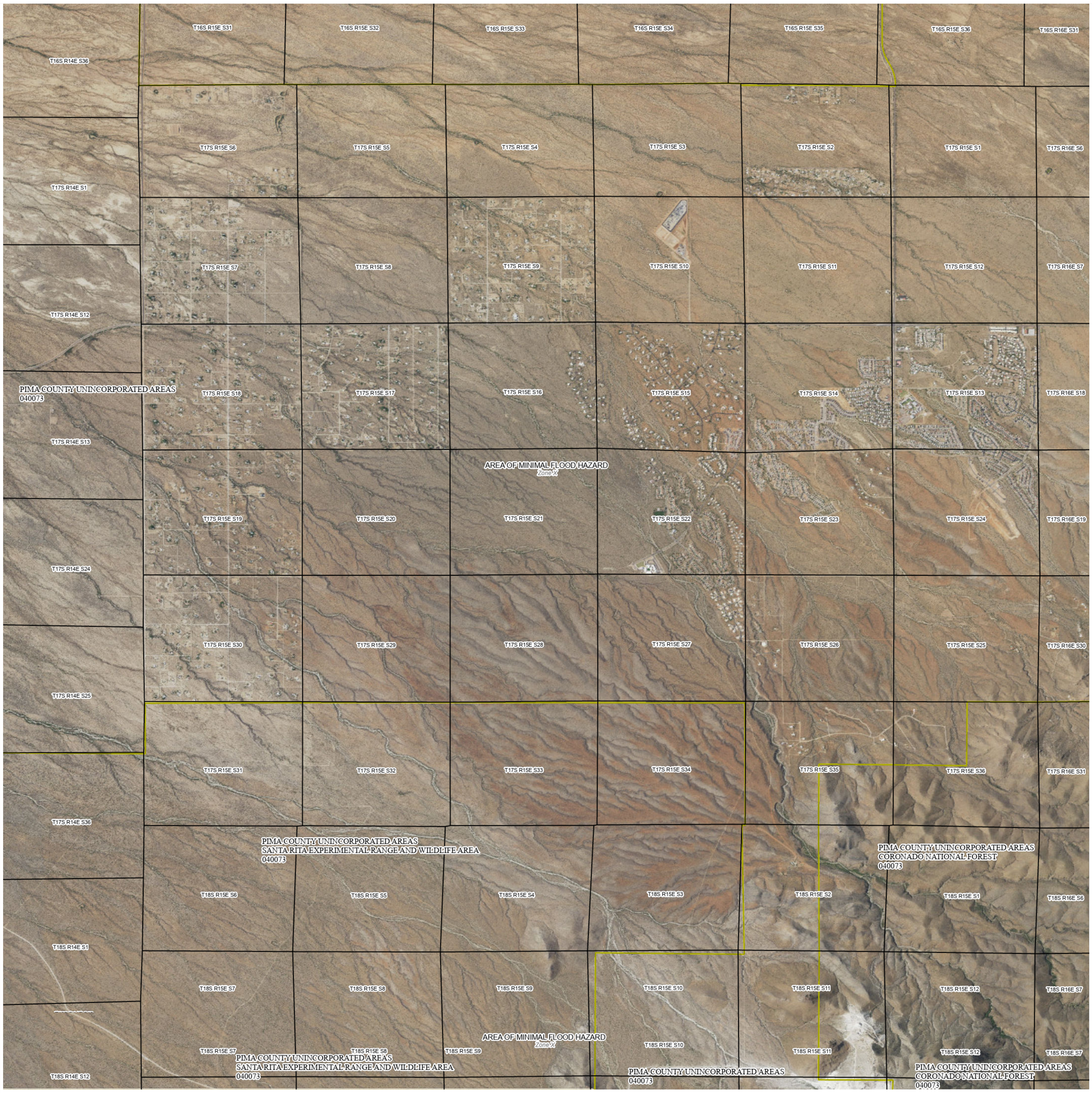
FLOOD INSURANCE RATE MAP

PANEL **2900** OF **4725**

Panel Contains:

COMMUNITY	NUMBER	PANEL
CITY OF TUCSON	040076	2900
PIMA COUNTY UNINCORPORATED AREAS	040073	2900

MAP NUMBER
04019C2900L
EFFECTIVE DATE
June 16, 2011



FLOOD HAZARD INFORMATION

SEE FIS REPORT FOR DETAILED LEGEND AND INDEX MAP FOR DRAFT FIRM PANEL LAYOUT

SPECIAL FLOOD HAZARD AREAS

- Without Base Flood Elevation (BFE) *Zone A, V, A99*
- With BFE or Depth *Zone AE, AO, AH, VE, AR*
- Regulatory Floodway

OTHER AREAS OF FLOOD HAZARD

- 0.2% Annual Chance Flood Hazard, Areas of 1% annual chance flood with average depth less than one foot or with drainage areas of less than one square mile *Zone X*
- Future Conditions 1% Annual Chance Flood Hazard *Zone X*
- Area with Reduced Flood Risk due to Levee See Notes *Zone X*
- Area with Flood Risk due to Levee *Zone D*

OTHER AREAS

- NO SCREEN Area of Minimal Flood Hazard *Zone X*
- Effective LOMRs
- Area of Undetermined Flood Hazard *Zone D*

GENERAL STRUCTURES

- Channel, Culvert, or Storm Sewer
- Levee, Dike, or Floodwall

OTHER FEATURES

- 20.2 Cross Sections with 1% Annual Chance
- 17.5 Water Surface Elevation
- Coastal Transect
- Coastal Transect Baseline
- Profile Baseline
- Hydrographic Feature
- 513 Base Flood Elevation Line (BFE)
- Limit of Study
- Jurisdiction Boundary

NOTES TO USERS

For information and questions about this Flood Insurance Rate Map (FIRM), available products associated with this FIRM, including historic versions, the current map date for each FIRM panel, how to order products, or the National Flood Insurance Program (NFIP) in general, please call the FEMA Map Information eXchange at 1-877-FEMA-MAP (1-877-336-2627) or visit the FEMA Flood Map Service Center website at https://msc.fema.gov. Available products may include previously issued Letters of Map Change, a Flood Insurance Study Report, and/or digital versions of this map. Many of these products can be ordered or obtained directly from the website.

Communities annexing land on adjacent FIRM panels must obtain a current copy of the adjacent panel as well as the current FIRM Index. These may be ordered directly from the Flood Map Service Center at the number listed above.

For community and countywide map dates, refer to the Flood Insurance Study Report for this jurisdiction.

To determine if flood insurance is available in this community, contact your Insurance agent or call the National Flood Insurance Program at 1-800-638-6620.

Basemap information shown on this FIRM was provided in digital format by the United States Geological Survey (USGS). The basemap shown is the USGS National Map: Orthoimagery. Last refreshed October, 2020.

This map was exported from FEMA's National Flood Hazard Layer (NFHL) on **4/17/2023 12:52 PM** and does not reflect changes or amendments subsequent to this date and time. The NFHL and effective information may change or become superseded by new data over time. For additional information, please see the Flood Hazard Mapping Updates Overview Fact Sheet at https://www.fema.gov/media-library/assets/documents/118418

This map complies with FEMA's standards for the use of digital flood maps if it is not void as described below. The basemap shown complies with FEMA's basemap accuracy standards. This map image is void if the one or more of the following map elements do not appear: basemap imagery, flood zone labels, legend, scale bar, map creation date, community identifiers, FIRM panel number, and FIRM effective date.

SCALE

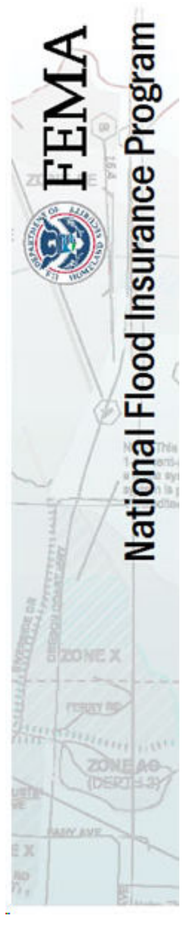
Map Projection:
GCS, Geodetic Reference System 1980;
Vertical Datum: No elevation features on this FIRM
For information about the specific vertical datum for elevation features, datum conversions, or vertical monuments used to create this map, please see the Flood Insurance Study (FIS) Report for your community at https://msc.fema.gov

N

1 inch = 2,000 feet 1:24,000

0 1,000 2,000 4,000 6,000 8,000 Feet

0 210 420 840 1,260 1,680 Meters



NATIONAL FLOOD INSURANCE PROGRAM

FLOOD INSURANCE RATE MAP

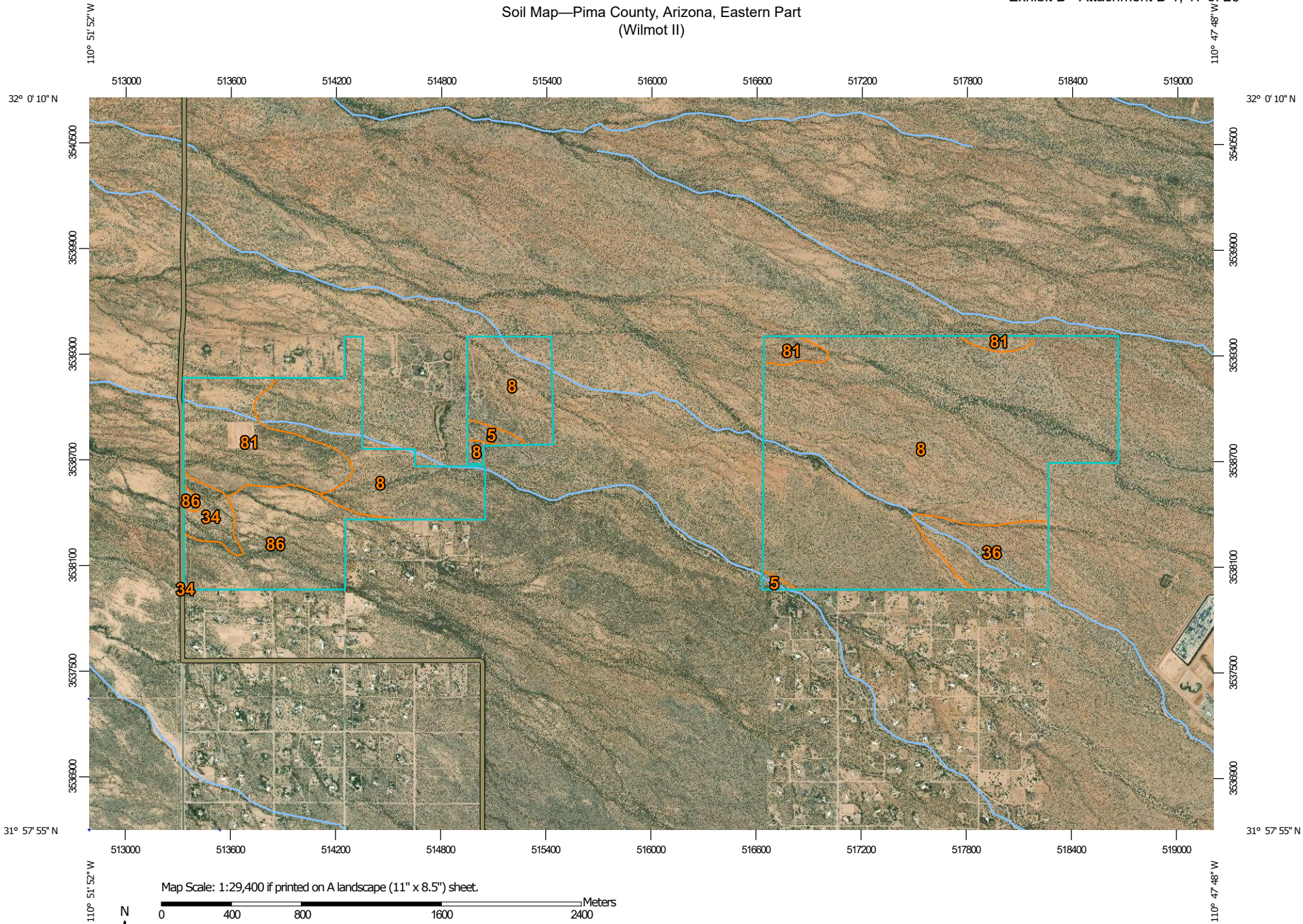
PANEL **3500** OF **4725**

Panel Contains:

COMMUNITY	NUMBER	PANEL
CITY OF TUCSON	040076	3500
PIMA COUNTY UNINCORPORATED AREAS	040073	3500

MAP NUMBER
04019C3500L
EFFECTIVE DATE
June 16, 2011

Soil Map—Pima County, Arizona, Eastern Part (Wilmot II)



Map Scale: 1:29,400 if printed on A landscape (11" x 8.5") sheet.

N

Meters: 0 400 800 1600 2400

Feet: 0 1000 2000 4000 6000

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 12N WGS84

Soil Map—Pima County, Arizona, Eastern Part
(Wilmot II)

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

Special Point Features
- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

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

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

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

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

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

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

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

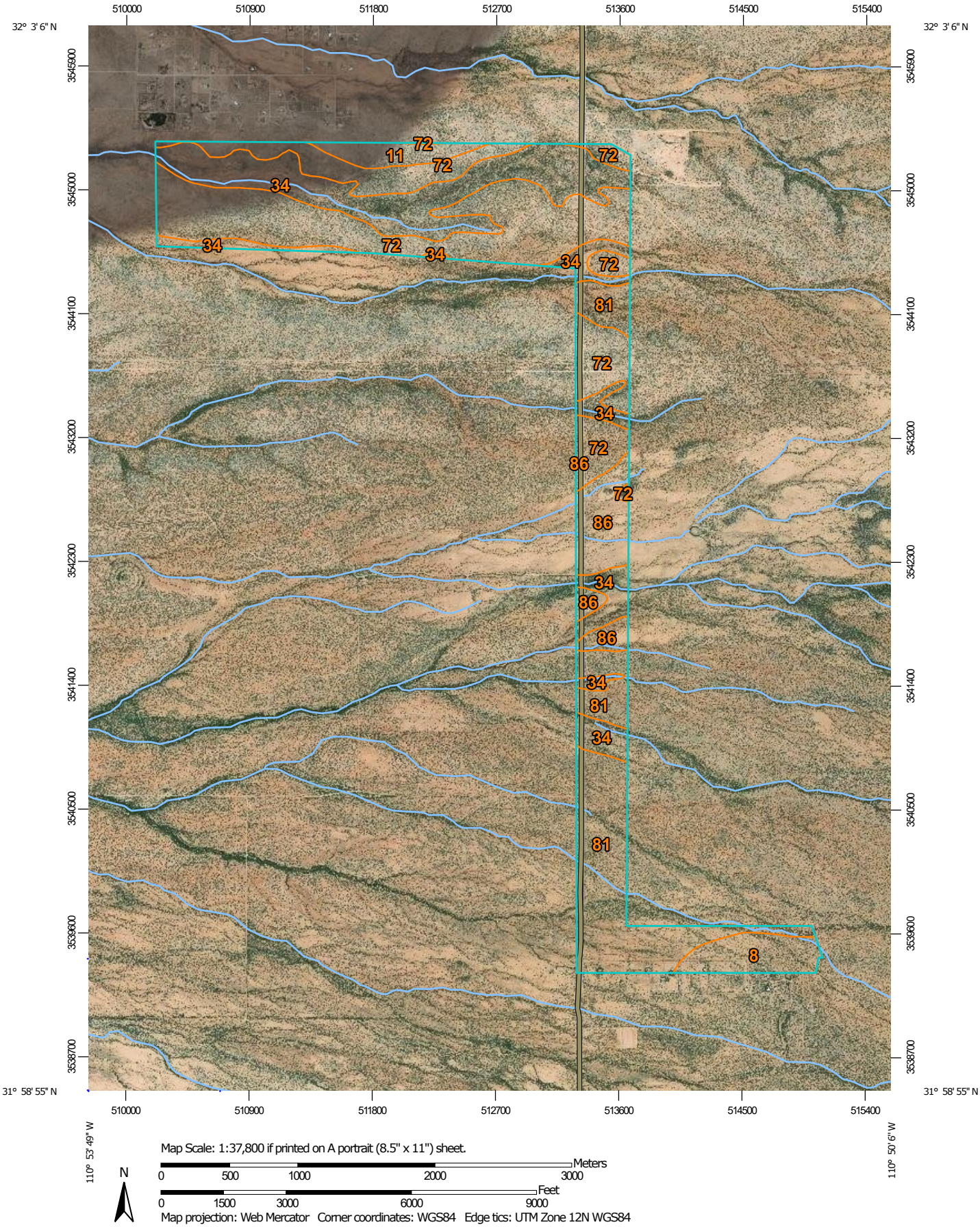
Date(s) aerial images were photographed: Dec 31, 2009—Nov 17, 2017

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

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
5	Arizo-Riverwash complex, 0 to 3 percent slopes	9.7	0.9%
8	Bucklebar-Sahuarita complex, 0 to 3 percent slopes	767.8	70.4%
34	Hantz loam, 0 to 1 percent slopes	20.7	1.9%
36	Hayhook-Sahuarita complex, 1 to 5 percent slopes	59.1	5.4%
81	Tubac gravelly loam, 1 to 8 percent slopes	121.3	11.1%
86	Yaqui fine sandy loam, 1 to 3 percent slopes	111.4	10.2%
Totals for Area of Interest		**1,090.0**	**100.0%**

Soil Map—Pima County, Arizona, Eastern Part
(Wilmot II gen-tie)



Map Scale: 1:37,800 if printed on A portrait (8.5" x 11") sheet.

N

Meters: 0 500 1000 2000 3000

Feet: 0 1500 3000 6000 9000

Map projection: Web Mercator Corner coordinates: WGS84 Edge tics: UTM Zone 12N WGS84

Soil Map—Pima County, Arizona, Eastern Part
(Wilmot II gen-tie)

MAP LEGEND

Area of Interest (AOI)
- Area of Interest (AOI)

Soils
- Soil Map Unit Polygons
- Soil Map Unit Lines
- Soil Map Unit Points

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- Blowout
- Borrow Pit
- Clay Spot
- Closed Depression
- Gravel Pit
- Gravelly Spot
- Landfill
- Lava Flow
- Marsh or swamp
- Mine or Quarry
- Miscellaneous Water
- Perennial Water
- Rock Outcrop
- Saline Spot
- Sandy Spot
- Severely Eroded Spot
- Sinkhole
- Slide or Slip
- Sodic Spot
- Spoil Area
- Stony Spot
- Very Stony Spot
- Wet Spot
- Other
- Special Line Features

Water Features
- Streams and Canals

Transportation
- Rails
- Interstate Highways
- US Routes
- Major Roads
- Local Roads

Background
- Aerial Photography

MAP INFORMATION

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

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

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

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

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

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

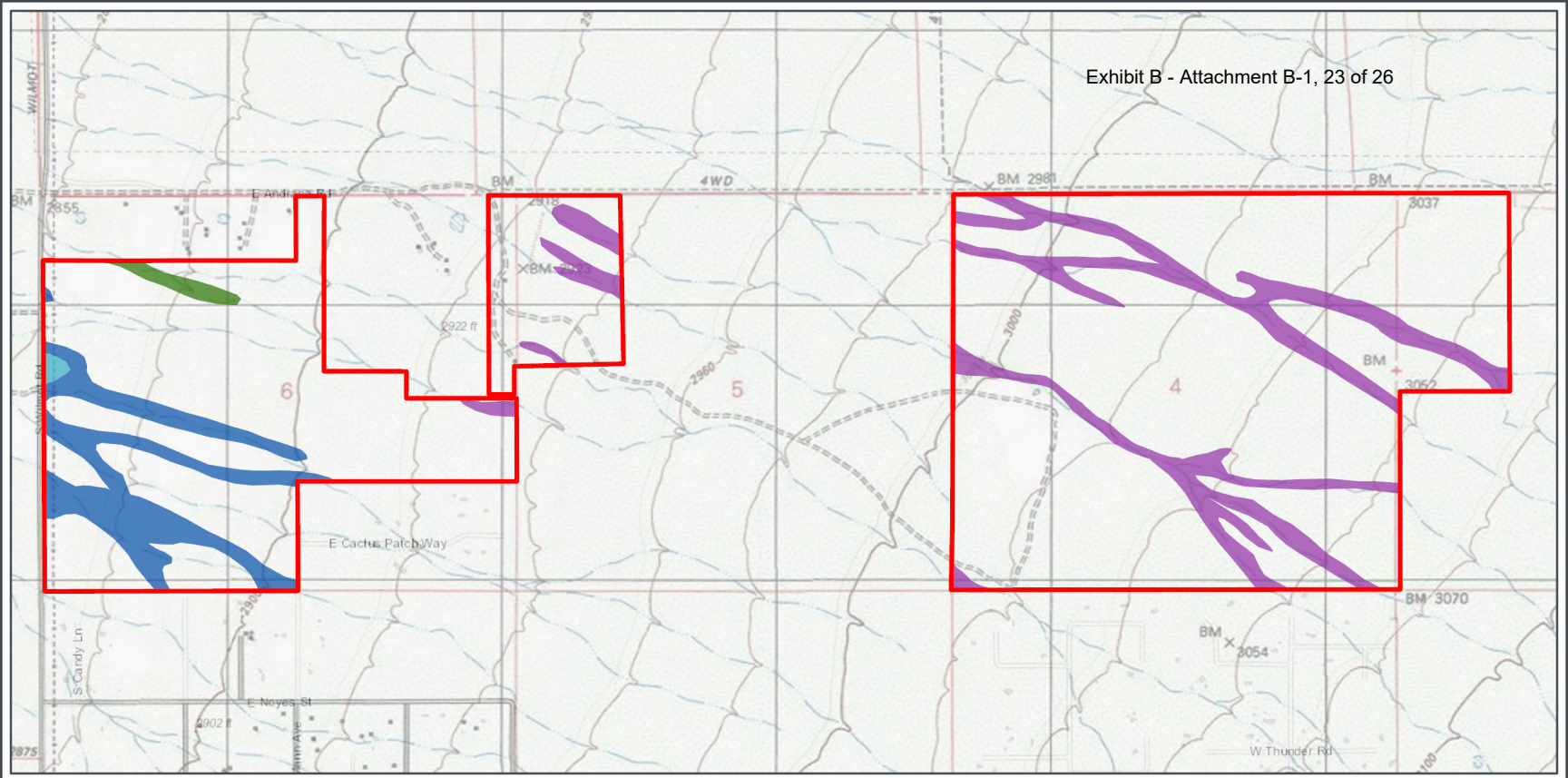
Soil map units are labeled (as space allows) for map scales 1:50,000 or larger.

Date(s) aerial images were photographed: Dec 31, 2009—May 1, 2018

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

Map Unit Legend

Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
8	Bucklebar-Sahuarita complex, 0 to 3 percent slopes	62.8	4.8%
11	Cave soils and urban land, 0 to 8 percent slopes	39.2	3.0%
34	Hantz loam, 0 to 1 percent slopes	345.9	26.4%
72	Sahuarita soils, mohave soils and urban land, 1 to 5 percent slopes	499.1	38.1%
81	Tubac gravelly loam, 1 to 8 percent slopes	271.3	20.7%
86	Yaqui fine sandy loam, 1 to 3 percent slopes	91.4	7.0%
Totals for Area of Interest		**1,309.8**	**100.0%**



Project Area

Pima County Ordinance 2005-FC2 Regulated Riparian Habitat

- Xeroriparian D
- Xeroriparian C
- Important Riparian Area-C
- Important Riparian Area

Pima County, AZ
USGS 7.5' Quadrangle:
Corona De Tucson, AZ, 31110-H7
T16S R15E Section 33
T17S R15E Section
03,04,05,06,07,08,09,10
NAD 1983 UTM Zone 12N
31.9841°N 110.8303°W

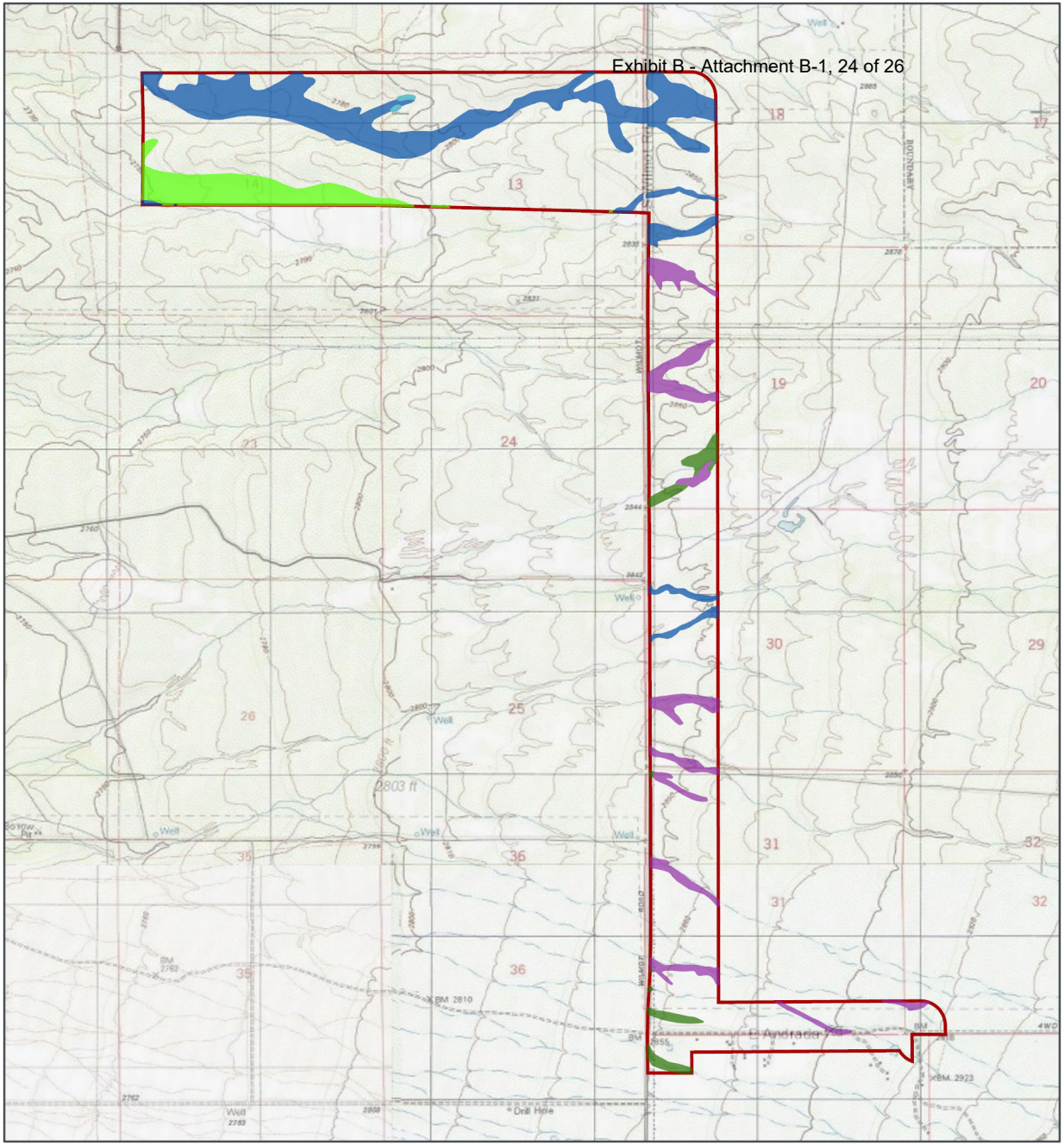
Base Map: ESRI ArcGIS Online, accessed April 2023
Updated: 4/26/2023
Project No. 78862
Layout: Riparian
Aprx: 78862_wilmotIIWr

0 1,000 2,000 Feet
0 260 520 Meters

N

1:25,000

SWCA ENVIRONMENTAL CONSULTANTS



Gen-Tie Evaluation Area

Pima County Ordinance 2005-FC2 Regulated Riparian Habitat

- Xeroriparian C
- Xeroriparian D
- Important Riparian Area-C
- Important Riparian Area-D
- Important Riparian Area

Pima County, AZ
USGS 7.5' Quadrangle:
Tucson SW, AZ, 32110-A8
Tucson SE, AZ, 32110-A7
Corona De Tucson, AZ, 31110-H7
T16S R15E Section 18,19,30,31,32
T16S R14E Section 13,14
T17S R15E Section 05,06
NAD 1983 UTM Zone 12N
32.0162°N 110.8664°W

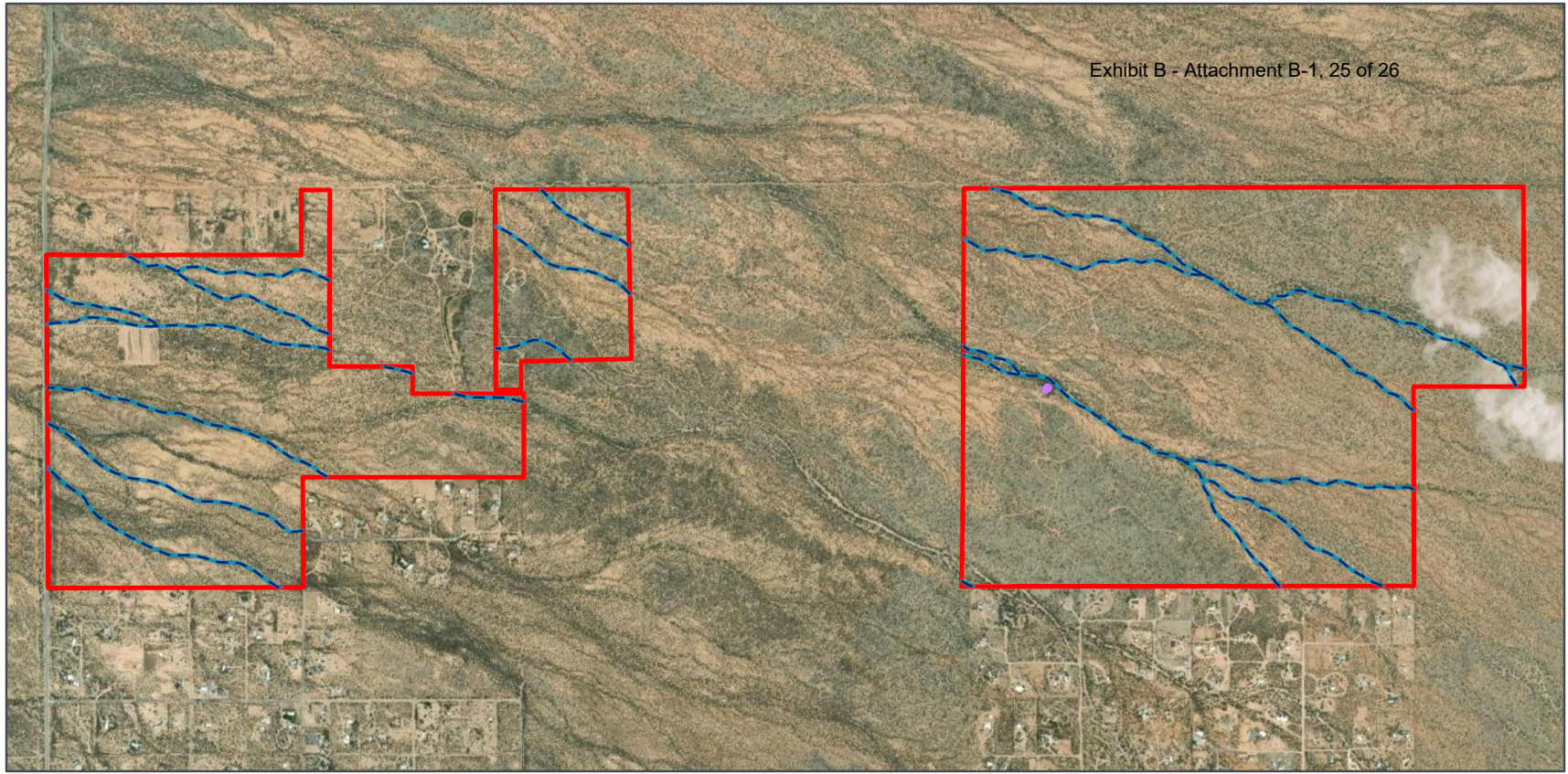
Base Map: ESRI ArcGIS Online, accessed April 2023
Updated: 4/26/2023
Project No. 78862
Layout: Riparian Gentie
Aprx: 78862_wilmotIIWr

0 1,000 2,000 Feet
0 500 1,000 Meters

N

1:40,000

SWCA ENVIRONMENTAL CONSULTANTS



Project Area

National Hydrography Dataset (NHD)

Stream/River

Lake/Pond

National Wetland Inventory

Riverine

Pima County, AZ
USGS 7.5' Quadrangle:
Corona De Tucson, AZ, 31110-H7
T16S R15E Section 33
T17S R15E Section
03,04,05,06,07,08,09,10
NAD 1983 UTM Zone 12N
31.9841°N 110.8306°W

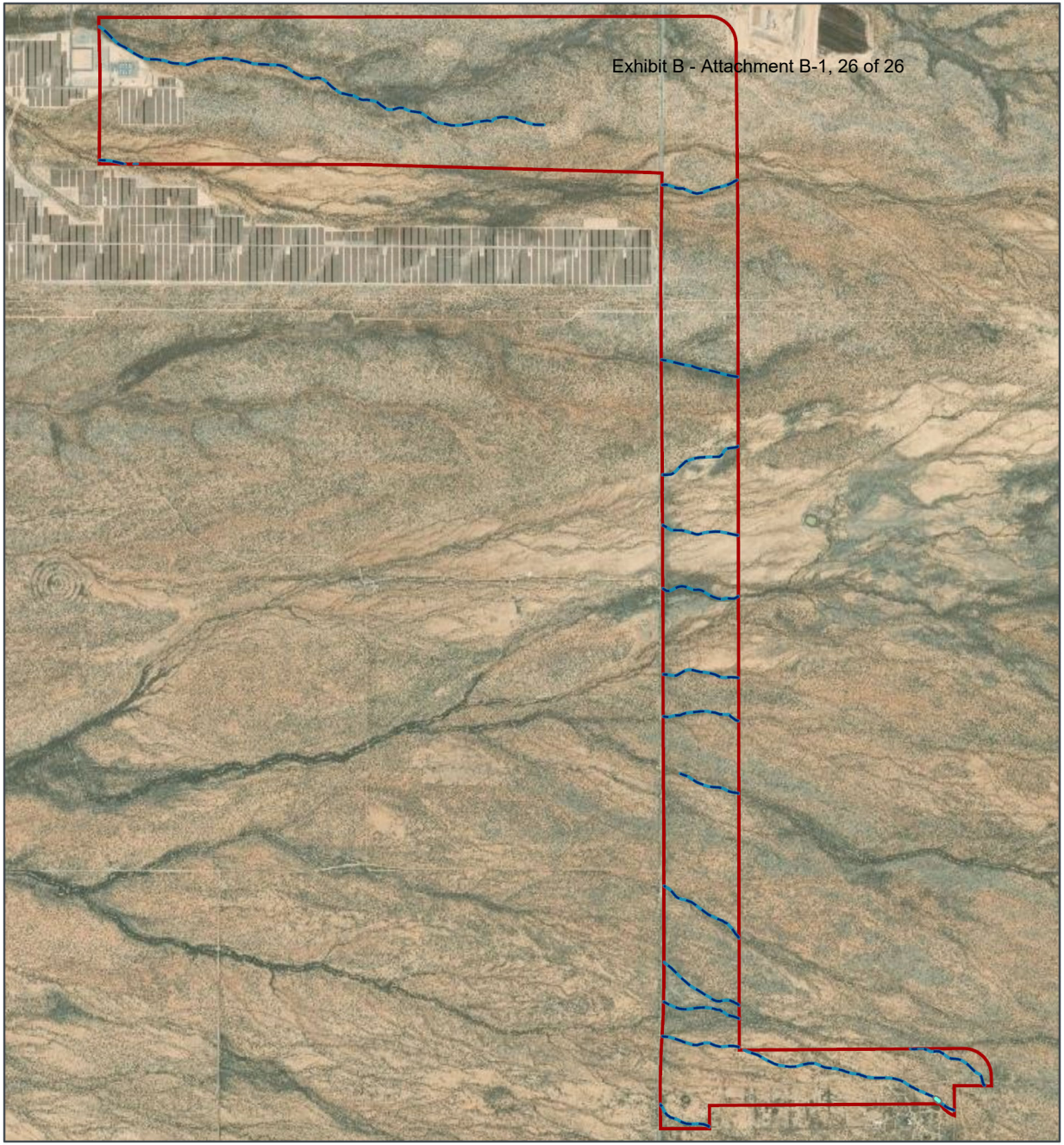
0 1,000 2,000 Feet
0 260 520 Meters

N

1:25,000

Base Map: ESRI ArcGIS Online, accessed April 2023
Updated: 4/13/2023
Project No. 78862
Layout: Water Resource
Aprx: 78862_wilmotIIWr

SWCA ENVIRONMENTAL CONSULTANTS



Gen-Tie Evaluation Area

National Hydrography Dataset (NHD)

Stream/River

Artifical Path

National Wetland Inventory

WETLAND_TYPE

Riverine

Pima County, AZ
Imagery: February 17, 2021
T16S R15E Section 18,19,30,31,32
T16S R14E Section 13,14
T17S R15E Section 05,06
NAD 1983 UTM Zone 12N
32.0162°N 110.8664°W

0 1,000 2,000
Feet
0 500 1,000
Meters

N

1:36,000

Base Map: ESRI ArcGIS Online, accessed April 2023
Updated: 4/26/2023
Project No. 78862
Layout: Water Resource Gentie
Aprx: 78862_wilmotIIWr

SWCA ENVIRONMENTAL CONSULTANTS

EXHIBIT B – ATTACHMENT B-2

Arizona State Land Department, Native Plant Inventory; October 2023

SWCA ENVIRONMENTAL CONSULTANTS
Sound Science. Creative Solutions.

Tucson Office
343 West Franklin Street
Tucson, AZ 85701
Tel 520.325.9194 Fax 520.325.2033
www.swca.com

TECHNICAL MEMORANDUM

Prepared for: Alex Simons
Senior Environmental Specialist
Wilmot Energy Center, LLC
Submitted via email: Alex.Simons@NextEraEnergy.com

From: Jenn Katalinich, SWCA Project Manager

Date: July 11, 2023, revised October 5, 2023, revised October 31, 2023

Re: **Results of the Arizona State Land Department Native Plant Inventory for the Wilmot Energy Center II Generation-Tie Area in Pima County, Arizona / SWCA Project No. 78862 / ASLD Application No. 014-124189-00-100**

INTRODUCTION

SWCA Environmental Consultants (SWCA), under contract by Wilmot Energy Center, LLC, conducted a native plant inventory (NPI) on Arizona State Land Department (ASLD)-administered land for the proposed Wilmot Energy Center II generation-tie (gen-tie) area that is situated in the City of Tucson and in unincorporated Pima County, Arizona (Figure 1). The 100-megawatt Wilmot Energy Center II (referred to as the project area in the report) consists of a non-contiguous solar array totaling approximately 961.3 acres and a gen-tie area that runs adjacent north of the two solar array parcels, which redirect northward for about 3.5 miles along South Wilmot Road before diverting westward to interconnect with an existing substation at the Tucson Electric Power Wilmot Energy Center. The Wilmot Energy Center II solar array parcels reside on privately owned land and are excluded from this report since an NPI is only mandated on ASLD-administered land. The gen-tie area will include the 138-kilovolt gen-tie transmission corridor once the final alignment is determined, traverses both ASLD-administered land and privately owned land. This NPI report will focus on the gen-tie area that is situated solely within ASLD-administered land (survey area, Figure 2). The survey area covers approximately 1,030 acres of ASLD-administered land in Sections 18, 19, 30-34, Township 16 South, Range 15 East, and in Section 3, Township 17 South, Range 15 East, Gila and Salt River Meridian, as depicted on the U.S. Geological Survey (USGS) Corona de Tucson and Tucson SE, 7.5-minute quadrangle. The area surveyed for the NPI is larger than the area expected to be impacted by gen-tie construction.

The objectives of the NPI for the survey area are as follows: record all ASLD native plants which include certain trees, cacti, and succulent species; document the presence of non-native and noxious weed species; and survey for any Endangered Species Act (ESA)-listed plant species for Pima County. This technical memorandum presents the findings of the NPI objectives. Wilmot Energy Center, LLC intends to leave the plant remnants on-site during the construction of this project.

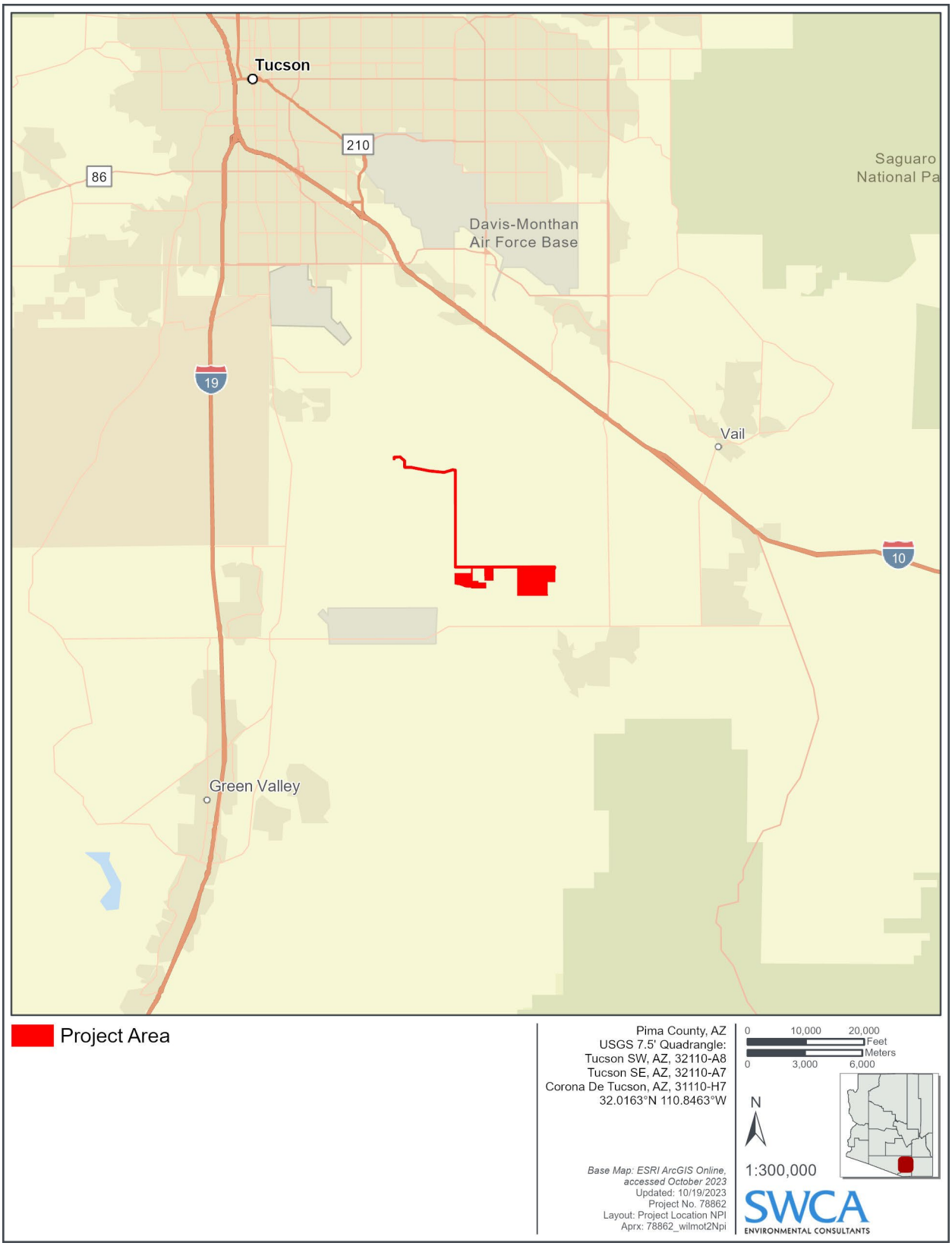


Figure 1. General location of the project area and survey corridor.

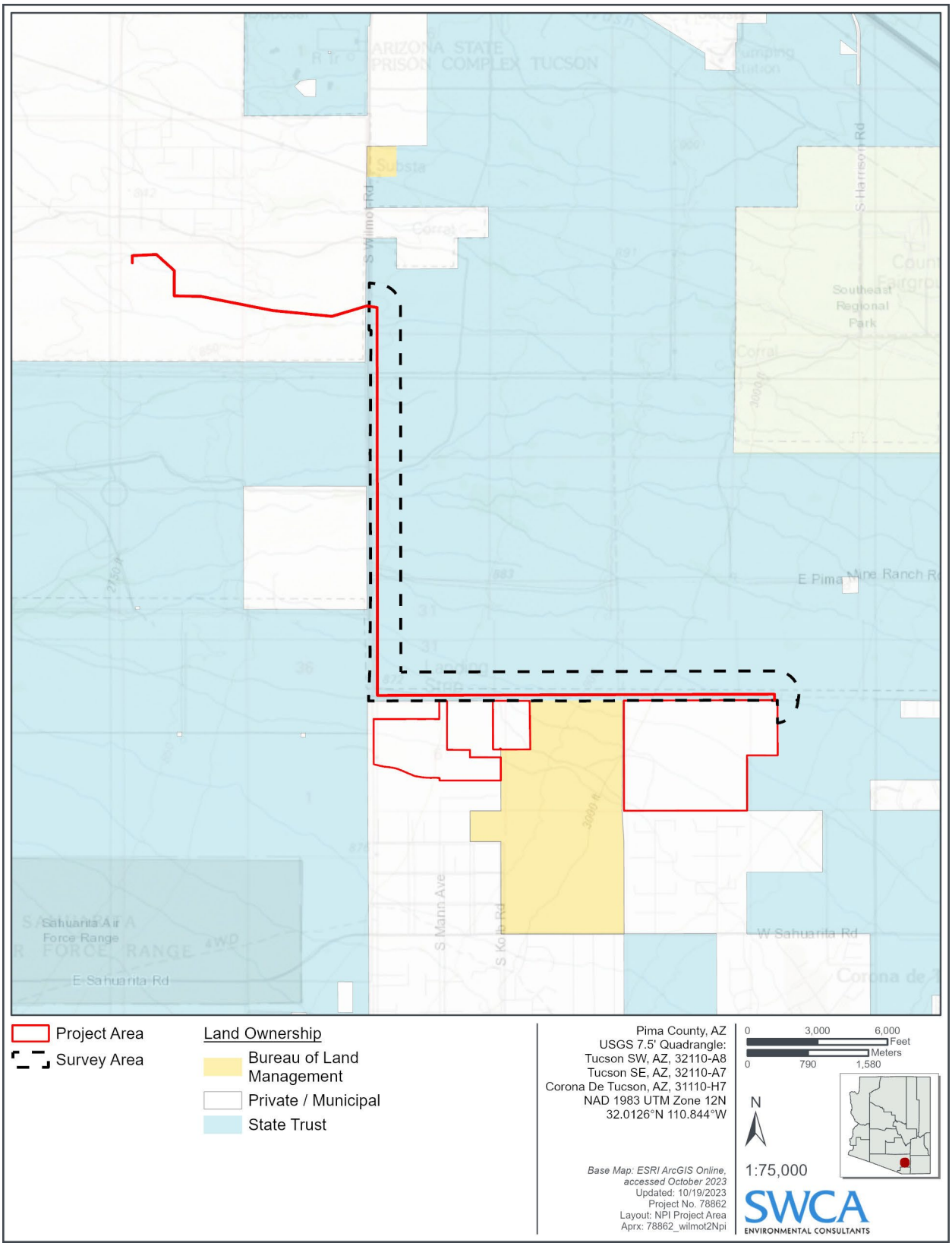


Figure 1. Landownership of project and survey areas.

METHODS

SWCA biologists conducted an NPI of the survey area on intermittent days between June 1 and June 7, 2023, to obtain native plant counts in accordance with the ASLD *Native Plant Disposition and Valuation* Instructional Memo No. 12.05, dated May 1, 2011, and the August 2020 *Disposition of Natural Products and Native Plant Valuation List* Policy No. P79-1 (Appendix A) for those portions of the survey area on Arizona State Trust Lands.

Before conducting the field survey, data for surface geology and vegetation types in the survey area were evaluated to determine the number of soil/vegetation types present and their locations in the survey area. A standard 1,000-square-meter (m^2) rectangle, 15 × 66.7 meters (m) in dimension sample plot will be established within each soil/vegetation combination within the survey area following these parameters: for combinations of 0.5 to 2 acres, one sample plot will be completed; for combinations of 2 to 5 acres, two sample plots will be completed; and for combinations greater than 5 acres, three sample plots will be completed. A 1,000-foot buffer was established on both sides of the proposed gen-tie corridor to avoid additional surveys should the project boundary require a slight adjustment during development. Soil/soil slope categories were from the Natural Resources Conservation Service's Soil Survey Geographic (SSURGO) soil map units.[1] Landcover categories were from the USGS's National Gap Analysis Program data.[2] Plant counts from the sample plots for each unique vegetation type/soil type combination will be totaled and extrapolated based on the number of acres in each unique combination for the portion of the project on ASLD-administered lands. This process provides a sampling strategy to reasonably estimate the number of native trees, cacti, and succulents that would be removed by the project. The extrapolated plant totals from each unique vegetation combination will then be tallied for an overall total by species. Each ASLD native plant species listed in ASLD Instructional Memo No. 12.05 (Appendix A) that occurs in the sample plots will be counted. Within each sample plot, the biologists will individually count and categorize by size class (defined in the Plant Value List provided in Policy No. P79-1 of Appendix A) all relevant native plants. Each sample plot will be photographed from the starting point to the end point and from the end point to the starting point.

All shrubs, sub-shrubs, forbs, and grasses will be accessed on a per-acre basis based in animal units (AUs) listed by the ASLD in Instructional Memo No. 12.05 (Appendix A) once the final disturbance footprint within the survey area is known. The price per plant is determined by whether remnants of the vegetation will remain on-site or be removed. If the remnants remain on-site, then the ASLD value fee will be used; conversely, if the remnants will be removed, then the fair market fee will apply, as indicated in Policy No. P79-1 (Appendix A).

RESULTS

Ecological Overview

The survey area is partially located within the City of Tucson limits and unincorporated Pima County, Arizona. Prominent features beyond the survey area boundary include Interstate 10 and the Tucson International Airport, both located approximately 5.5 miles to the north and northwest, respectively. The community of Green Valley and Interstate 19 are situated about 12 miles southwest of the survey area. Closer to the survey area, a small residential community can be found bordering the southwest boundary of the survey area as South Wilmot Road runs parallel to the western boundary of the survey area. Largely undeveloped land borders the remainder of the survey area.

[1] Natural Resources Conservation Service. 2023. Soil Survey Geographic (SSURGO) Database. Web Soil Survey. Available at: https://www.nrcs.usda.gov/resources/data-and-reports/web-soil-survey. Accessed June 2023.

[2] U.S. Geological Survey (USGS). 2016. Southwest Regional Gap Analysis Project. Available at: http://swregap.org/. Accessed June 2023.

The vegetation community within the survey area, as mapped by Brown[3], is within the Arizona Upland Subdivision of the Sonoran desertscrub biotic community at an elevation that ranges between 2,840 to 3,069 feet above mean sea level. The topography of the survey area is flat with ephemeral washes that generally flow from east to west. Similar to the surrounding land, the survey area is largely undeveloped land used for cattle ranching, and the area was under active grazing at the time of the NPI. The survey area was dominated by an overstory of velvet mesquite (*Prosopis velutina*) and cholla (*Cylindropuntia* spp.). Scattered to locally dense shrubs within the survey area include brittlebush (*Encelia farinosa*), burroweed (*Isocoma tenuisecta*), catclaw acacia (*Senegalia greggii*), creosote bush (*Larrea tridentata*), desertbroom (*Baccharis sarothroides*), desert globemallow (*Sphaeralcea ambigua*), desert wolfberry (*Lycium macrodon*), fourwing saltbush (*Atriplex canescens*), lotebush (*Ziziphus obtusifolia*), silverleaf nightshade (*Solanum elaeagnifolium*), triangle bur ragweed (*Ambrosia deltoidea*), and whitethorn acacia (*Vachellia constricta*). The density of vegetation is enhanced along the ephemeral washes as velvet mesquite remains a highly dominant species with the sporadic occurrence of catclaw acacia and yellow paloverde (*Parkinsonia microphylla*). The understory is dominated by perennial and annual species, (such as Arizona sandmat [*Chamaesyce arizonica*], devil's spineflower [*Chorizanthe rigida*], and spidergrass [*Aristida ternipes*]) with occasional pockets of open spaces.

SWCA identified 10 plant species in the survey area that are protected under the Arizona Native Plant Law:[4] Arizona cholla (*Cylindropuntia arbuscula*), candy barrelcactus (*Ferocactus wislizeni*), Engelmann's hedgehog cactus (*Echinocereus engelmannii*), jumping cholla (*Opuntia fulgida*), Pima pineapple cactus (*Coryphantha scheeri* var. *robustispina*), saguaro (*Carnegiea gigantea*), soaptree yucca (*Yucca elata*), tree cholla (*Cylindropuntia imbricata*), velvet mesquite, and yellow paloverde (Table B-1 in Appendix B). The plant species observed in the survey area and their relative abundance are provided in Table B-2 of Appendix B.

Native Plant Survey Results

Table 1 and Figure 3 present the vegetation and soil/slope combinations identified within the survey area. Twenty-eight sample plots were distributed among 10 combinations.

Table 1. Number of Survey Plots Established per Soil/Slope and Vegetation Combination Identified within the Survey Area

Vegetation Community	Soil/Slope	Total Acres	Plots
Apacherian-Chihuahuan Mesquite Upland Scrub	Bucklebar-Sahuarita complex, 0 to 3 percent slopes	11.00959	2
Apacherian-Chihuahuan Mesquite Upland Scrub	Hantz loam, 0 to 1 percent slopes	40.58943	2
Apacherian-Chihuahuan Mesquite Upland Scrub	Sahuarita soils, mohave soils and urban land, 1 to 5 percent slopes	46.57141	2
Apacherian-Chihuahuan Mesquite Upland Scrub	Tubac gravelly loam, 1 to 8 percent slopes	213.7399	4
Apacherian-Chihuahuan Mesquite Upland Scrub	Yaqui fine sandy loam, 1 to 3 percent slopes	46.45079	2

[3] Brown, D.E. (ed.). 1994. *Biotic Communities; Southwestern United States and Northwestern Mexico*. Salt Lake City; University of Utah Press.

[4] Arizona Department of Agriculture (ADA). 2016. Protected Native Plants by Category. Available at: https://agriculture.az.gov/plantsproduce/native-plants. Accessed June 2023.

Vegetation Community	Soil/Slope	Total Acres	Plots
Desert Scrub (combined)	Bucklebar-Sahuarita complex, 0 to 3 percent slopes	152.3807	3
Desert Scrub (combined)	Hantz loam, 0 to 1 percent slopes	52.81161	2
Desert Scrub (combined)	Sahuarita soils, mohave soils and urban land, 1 to 5 percent slopes	71.69103	3
Desert Scrub (combined)	Tubac gravelly loam, 1 to 8 percent slopes	348.6926	6
Desert Scrub (combined)	Yaqui fine sandy loam, 1 to 3 percent slopes	46.3392	2

Native Plant Valuation

A full project valuation has not been completed at this time because the final project footprint for the gen-tie corridor has not been determined at the time of this report submittal. The 28 ASLD sample plots represent a reasonable estimate of the number of native trees, cacti, and succulents that would be removed by the project. Tables 2 through 11 present the valuation of relevant plants, based on ASLD's Plant Value List (see Policy No. P79-1 in Appendix A) that may be removed or destroyed by the project by soil and vegetation combination. Once the final project impacts are known, these per-acre values can be used to extrapolate a total cost for the project based on the proportion of each soil and vegetation type that occurs. Table 12 summarizes the final cost per acre for each soil and vegetation type.

Table 2. Plant Species, Size Classification, and Extrapolated Values Per Acre in the Apacherian-Chihuahuan Mesquite Upland Scrub / Bucklebar-Sahuarita Complex, 0 to 3 Percent Slopes

Scientific Name	Common Name (Size Class)	Number of Plants Per Acre* (Extrapolated Value)	ASLD Value Per Plant	Cost Per Acre
Protected Native Plants				
Ferocactus wislizeni	Barrel Cactus (Small)	2.023431335	$7.50	$15.18
Ferocactus wislizeni	Barrel Cactus (Large)	2.023431335	$30.00	$60.70
Cylindropuntia spp.	Cholla spp. (Small)	161.8745068	$4.50	$728.44
Cylindropuntia spp.	Cholla spp. (Medium)	95.10127274	$9.00	$855.91
Cylindropuntia spp.	Cholla spp. (Large)	48.56235204	$13.50	$655.59
Parkinsonia microphylla	Yellow paloverde (8–10 c.i.)	2.023431335	$220.00	$445.15
Prosopis velutina	Velvet mesquite (<3 c.i.)	6.070294005	$10.00	$60.70
Prosopis velutina	Velvet mesquite (3–4 c.i.)	2.023431335	$25.00	$50.59
Prosopis velutina	Velvet mesquite (4–6 c.i.)	12.14058801	$100.00	$1,214.06
Prosopis velutina	Velvet mesquite (6–8 c.i.)	4.04686267	$150.00	$607.03
Prosopis velutina	Velvet mesquite (8–10 c.i.)	6.070294005	$225.00	$1,365.82
Prosopis velutina	Velvet mesquite (10–12 c.i.)	2.023431335	$300.00	$607.03
Prosopis velutina	Velvet mesquite (12–14 c.i.)	2.023431335	$400.00	$809.37
Prosopis velutina	Velvet mesquite (16–18 c.i.)	2.023431335	$625.00	$1,264.64
Total				**$8,740.21**

*Extrapolated number of plants was not rounded before calculating cost.

c.i. = caliper inches

Table 3. Plant Species, Size Classification, and Extrapolated Values Per Acre in the Apacherian-Chihuahuan Mesquite Upland Scrub / Hantz Loam, 0 to 1 Percent Slopes

Scientific Name	Common Name (Size Class)	Number of Plants Per Acre* (Extrapolated Value)	ASLD Value Per Plant	Cost Per Acre
Protected Native Plants				
Cylindropuntia spp.	Cholla spp. (Small)	18.21088201	$4.50	$81.95
Cylindropuntia spp.	Cholla spp. (Medium)	10.11715667	$9.00	$91.05
Cylindropuntia spp.	Cholla spp. (Large)	2.023431335	$13.50	$27.32
Prosopis velutina	Velvet mesquite (<3 c.i.)	16.18745068	$10.00	$161.87
Prosopis velutina	Velvet mesquite (3–4 c.i.)	2.023431335	$25.00	$50.59
Prosopis velutina	Velvet mesquite (4–6 c.i.)	12.14058801	$100.00	$1,214.06
Prosopis velutina	Velvet mesquite (6–8 c.i.)	4.04686267	$150.00	$607.03
Prosopis velutina	Velvet mesquite (8–10 c.i.)	2.023431335	$225.00	$455.27
Prosopis velutina	Velvet mesquite (10–12 c.i.)	4.04686267	$300.00	$1,214.06
Prosopis velutina	Velvet mesquite (12–14 c.i.)	6.070294005	$400.00	$2,428.12
Prosopis velutina	Velvet mesquite (14–16 c.i.)	2.023431335	$500.00	$1,011.72
Prosopis velutina	Velvet mesquite (18–20 c.i.)	2.023431335	$750.00	$1,517.57
Total				**$8,860.61**

*Extrapolated number of plants was not rounded before calculating cost.

c.i. = caliper inches

Table 4. Plant Species, Size Classification, and Extrapolated Values Per Acre in the Apacherian-Chihuahuan Mesquite Upland Scrub / Sahuarita Soils, Mohave Soils, and Urban Land, 1 to 5 Percent Slopes

Scientific Name	Common Name (Size Class)	Number of Plants Per Acre* (Extrapolated Value)	ASLD Value Per Plant	Cost Per Acre
Protected Native Plants				
Ferocactus wislizeni	Barrel Cactus (Small)	4.04686267	$7.50	$30.35
Ferocactus wislizeni	Barrel Cactus (Medium)	8.093725339	$15.00	$121.41
Ferocactus wislizeni	Barrel Cactus (Multiple heads)	2.023431335	$37.50	$75.88
Cylindropuntia spp.	Cholla spp. (Small)	34.39833269	$4.50	$154.79
Cylindropuntia spp.	Cholla spp. (Medium)	38.44519536	$9.00	$346.01
Cylindropuntia spp.	Cholla spp. (Large)	34.39833269	$13.50	$464.38
Prosopis velutina	Velvet mesquite (<3 c.i.)	6.070294005	$10.00	$60.70
Prosopis velutina	Velvet mesquite (3–4 c.i.)	10.11715667	$25.00	$252.93
Prosopis velutina	Velvet mesquite (4–6 c.i.)	8.093725339	$100.00	$809.37
Prosopis velutina	Velvet mesquite (10–12 c.i.)	4.04686267	$300.00	$1,214.06
Total				**$3,529.88**

*Extrapolated number of plants was not rounded before calculating cost.

c.i. = caliper inches

Table 5. Plant Species, Size Classification and Extrapolated Values Per Acre in the Apacherian-Chihuahuan Mesquite Upland Scrub / Tubac Gravelly Loam, 1 to 8 Percent Slopes

Scientific Name	Common Name (Size Class)	Number of Plants Per Acre* (Extrapolated Value)	ASLD Value Per Plant	Cost Per Acre
Protected Native Plants				
Ferocactus wislizeni	Barrel Cactus (Small)	3.035147002	$7.50	$22.76
Ferocactus wislizeni	Barrel Cactus (Medium)	3.035147002	$15.00	$45.53
Cylindropuntia spp.	Cholla spp. (Small)	82.96068473	$4.50	$373.32
Cylindropuntia spp.	Cholla spp. (Medium)	60.70294005	$9.00	$546.33
Cylindropuntia spp.	Cholla spp. (Large)	68.79666539	$13.50	$928.75
Prosopis velutina	Velvet mesquite (<3 c.i.)	4.04686267	$10.00	$40.47
Prosopis velutina	Velvet mesquite (3–4 c.i.)	7.082009672	$25.00	$177.05
Prosopis velutina	Velvet mesquite (4–6 c.i.)	18.21088201	$100.00	$1,821.09
Prosopis velutina	Velvet mesquite (6–8 c.i.)	7.082009672	$150.00	$1,062.30
Prosopis velutina	Velvet mesquite (8–10 c.i.)	4.04686267	$225.00	$910.54
Prosopis velutina	Velvet mesquite (10–12 c.i.)	3.035147002	$300.00	$910.54
Prosopis velutina	Velvet mesquite (12–14 c.i.)	2.023431335	$400.00	$809.37
Prosopis velutina	Velvet mesquite (14–16 c.i.)	1.011715667	$500.00	$505.86
Prosopis velutina	Velvet mesquite (16–18 c.i.)	1.011715667	$625.00	$632.32
Total				**$8,786.23**

*Extrapolated number of plants was not rounded before calculating cost.

c.i. = caliper inches

Table 6. Plant Species, Size Classification, and Extrapolated Values Per Acre in the Apacherian-Chihuahuan Mesquite Upland Scrub / Yaqui Fine Sandy Loam, 1 to 3 Percent Slopes

Scientific Name	Common Name (Size Class)	Number of Plants Per Acre* (Extrapolated Value)	ASLD Value Per Plant	Cost Per Acre
Protected Native Plants				
Cylindropuntia spp.	Cholla spp. (Small)	16.18745068	$4.50	$72.84
Cylindropuntia spp.	Cholla spp. (Medium)	2.023431335	$9.00	$18.21
Cylindropuntia spp.	Cholla spp. (Large)	2.023431335	$13.50	$27.32
Prosopis velutina	Velvet mesquite (3–4 c.i.)	2.023431335	$25.00	$50.59
Prosopis velutina	Velvet mesquite (8–10 c.i.)	2.023431335	$225.00	$455.27
Total				**$624.23**

*Extrapolated number of plants was not rounded before calculating cost.

c.i. = caliper inches

Table 7. Plant Species, Size Classification, and Extrapolated Values Per Acre in the Desert Scrub / Bucklebar-Sahuarita Complex, 0 to 3 Percent Slopes

Scientific Name	Common Name (Size Class)	Number of Plants Per Acre* (Extrapolated Value)	ASLD Value Per Plant	Cost Per Acre
Protected Native Plants				
Ferocactus wislizeni	Barrel Cactus (Small)	1.348954224	$7.50	$10.12
Ferocactus wislizeni	Barrel Cactus (Medium)	10.79163379	$15.00	$161.87
Ferocactus wislizeni	Barrel Cactus (Large)	2.697908446	$30.00	$80.94
Cylindropuntia spp.	Cholla spp. (Small)	51.26026048	$4.50	$230.67
Cylindropuntia spp.	Cholla spp. (Medium)	39.11967247	$9.00	$352.08
Cylindropuntia spp.	Cholla spp. (Large)	63.40084849	$13.50	$855.91
Parkinsonia microphylla	Yellow paloverde (8–10 c.i.)	1.348954223	$80.00	$107.92
Prosopis velutina	Velvet mesquite (<3 c.i.)	8.093725339	$10.00	$80.94
Prosopis velutina	Velvet mesquite (3–4 c.i.)	9.442679563	$25.00	$236.07
Prosopis velutina	Velvet mesquite (4–6 c.i.)	13.48954223	$100.00	$1,348.95
Prosopis velutina	Velvet mesquite (6–8 c.i.)	14.83849646	$150.00	$2,225.77
Prosopis velutina	Velvet mesquite (8–10 c.i.)	17.5364049	$225.00	$3,945.69
Prosopis velutina	Velvet mesquite (10–12 c.i.)	5.395816893	$300.00	$1,618.75
Prosopis velutina	Velvet mesquite (12–14 c.i.)	1.348954223	$400.00	$539.58
Total				**$11,795.26**

*Extrapolated number of plants was not rounded before calculating cost.

c.i. = caliper inches

Table 8. Plant Species, Size Classification, and Extrapolated Values Per Acre in the Desert Scrub / Hantz Loam, 0 to 1 Percent Slopes

Scientific Name	Common Name (Size Class)	Number of Plants Per Acre* (Extrapolated Value)	ASLD Value Per Plant	Cost Per Acre
Protected Native Plants				
Ferocactus wislizeni	Barrel Cactus (Small)	2.023431335	$7.50	$15.18
Ferocactus wislizeni	Barrel Cactus (Medium)	2.023431335	$15.00	$30.35
Cylindropuntia spp.	Cholla spp. (Small)	42.49205803	$4.50	$191.21
Cylindropuntia spp.	Cholla spp. (Medium)	14.16401934	$9.00	$127.48
Cylindropuntia spp.	Cholla spp. (Large)	10.11715667	$13.50	$136.58
Echinocereus engelmannii	Hedgehog (Medium)	2.023431335	$7.50	$15.18
Prosopis velutina	Velvet mesquite (<3 c.i.)	16.18745068	$10.00	$161.87
Prosopis velutina	Velvet mesquite (3–4 c.i.)	16.18745068	$25.00	$404.69
Prosopis velutina	Velvet mesquite (4–6 c.i.)	16.18745068	$100.00	$1,618.75
Prosopis velutina	Velvet mesquite (6–8 c.i.)	16.18745068	$150.00	$2,428.12
Prosopis velutina	Velvet mesquite (8–10 c.i.)	10.11715667	$225.00	$2,276.36
Prosopis velutina	Velvet mesquite (10–12 c.i.)	10.11715667	$300.00	$3,035.15

Scientific Name	Common Name (Size Class)	Number of Plants Per Acre* (Extrapolated Value)	ASLD Value Per Plant	Cost Per Acre
Prosopis velutina	Velvet mesquite (12–14 c.i.)	6.070294005	$400.00	$2,248.12
Total				**$12,869.04**

*Extrapolated number of plants was not rounded before calculating cost.

c.i. = caliper inches

Table 9. Plant Species, Size Classification, and Extrapolated Values Per Acre in the Desert Scrub / Sahuarita Soils, Mohave Soils, and Urban Land, 1 to 5 Percent Slopes

Scientific Name	Common Name (Size Class)	Number of Plants Per Acre* (Extrapolated Value)	ASLD Value Per Plant	Cost Per Acre
Protected Native Plants				
Ferocactus wislizeni	Barrel Cactus (Small)	10.79163379	$7.50	$80.94
Ferocactus wislizeni	Barrel Cactus (Medium)	6.744771116	$15.00	$101.17
Cylindropuntia spp.	Cholla spp. (Small)	5.395816893	$4.50	$24.28
Cylindropuntia spp.	Cholla spp. (Medium)	2.697908446	$9.00	$24.28
Cylindropuntia spp.	Cholla spp. (Large)	1.348954223	$13.50	$18.21
Prosopis velutina	Velvet mesquite (<3 c.i.)	4.04686267	$10.00	$40.47
Prosopis velutina	Velvet mesquite (3–4 c.i.)	4.04686267	$25.00	$101.17
Prosopis velutina	Velvet mesquite (4–6 c.i.)	2.697908446	$100.00	$269.79
Prosopis velutina	Velvet mesquite (6–8 c.i.)	10.79163379	$150.00	$1,618.75
Prosopis velutina	Velvet mesquite (8–10 c.i.)	4.04686267	$225.00	$910.54
Prosopis velutina	Velvet mesquite (10–12 c.i.)	4.04686267	$300.00	$1,214.06
Total				**$4,403.66**

*Extrapolated number of plants was not rounded before calculating cost.

c.i. = caliper inches

Table 10. Plant Species, Size Classification, and Extrapolated Values Per Acre in the Desert Scrub / Tubac Gravelly Loam, 1 to 8 Percent Slopes

Scientific Name	Common Name (Size Class)	Number of Plants Per Acre* (Extrapolated Value)	ASLD Value Per Plant	Cost Per Acre
Protected Native Plants				
Ferocactus wislizeni	Barrel Cactus (Small)	2.697908446	$7.50	$20.23
Ferocactus wislizeni	Barrel Cactus (Medium)	3.372385558	$15.00	$50.59
Ferocactus wislizeni	Barrel Cactus (Large)	0.674477112	$30.00	$20.23
Cylindropuntia spp.	Cholla spp. (Small)	132.871991	$4.50	$597.92
Cylindropuntia spp.	Cholla spp. (Medium)	74.86695939	$9.00	$673.80
Cylindropuntia spp.	Cholla spp. (Large)	24.95565313	$13.50	$336.90
Carnegiea gigantea	Saguaro	11.12887234	$8.25	$91.81
Parkinsonia microphylla	Yellow paloverde (4–6 c.i.)	0.674477112	$80.00	$53.96

Scientific Name	Common Name (Size Class)	Number of Plants Per Acre* (Extrapolated Value)	ASLD Value Per Plant	Cost Per Acre
Prosopis velutina	Velvet mesquite (<3 c.i.)	18.88535913	$10.00	$188.85
Prosopis velutina	Velvet mesquite (3–4 c.i.)	12.14058801	$25.00	$303.51
Prosopis velutina	Velvet mesquite (4–6 c.i.)	9.442679563	$100.00	$944.27
Prosopis velutina	Velvet mesquite (6–8 c.i.)	6.744771116	$150.00	$1,011.72
Prosopis velutina	Velvet mesquite (8–10 c.i.)	5.395816893	$225.00	$1,214.06
Prosopis velutina	Velvet mesquite (12–14 c.i.)	3.372385558	$400.00	$1,348.95
Total				**$6,856.80**

*Extrapolated number of plants was not rounded before calculating cost.

c.i. = caliper inches

Table 11. Plant Species, Size Classification, and Extrapolated Values Per Acre in the Desert Scrub / Yaqui Fine Sandy Loam, 1 to 3 Percent Slopes

Scientific Name	Common Name (Size Class)	Number of Plants Per Acre* (Extrapolated Value)	ASLD Value Per Plant	Cost Per Acre
Protected Native Plants				
Prosopis velutina	Velvet mesquite (<3 c.i.)	24.28117602	$10.00	$242.81
Prosopis velutina	Velvet mesquite (3–4 c.i.)	10.11715667	$25.00	$252.93
Prosopis velutina	Velvet mesquite (6–8 c.i.)	2.023431335	$150.00	$303.51
Total				**$799.25**

*Extrapolated number of plants was not rounded before calculating cost.

c.i. = caliper inches

Table 12. Total Price Per Acre Summary for all Soil and Vegetation Combinations

Vegetation Community	Soil/Slope	Total Plant Price Per Acre* (Extrapolated Value)
Apacherian-Chihuahuan Mesquite Upland Scrub	Buckle-Sahuarita complex, 0 to 3 percent slopes	$8,740.21
Apacherian-Chihuahuan Mesquite Upland Scrub	Hantz loam, 0 to 1 percent slopes	$8,860.61
Apacherian-Chihuahuan Mesquite Upland Scrub	Sahuarita soils, mohave soils and urban land, 1 to 5 percent slopes	$3,529.88
Apacherian-Chihuahuan Mesquite Upland Scrub	Tubac gravelly loam, 1 to 8 percent slopes	$8,786.23
Apacherian-Chihuahuan Mesquite Upland Scrub	Yaqui fine sandy loam, 1 to 3 percent slopes	$624.23
Desert scrub (combined)	Bucklebar-Sahuarita complex, 0 to 3 percent slopes	$11,795.26
Desert scrub (combined)	Hantz loam, 0 to 1 percent slopes	$12,869.04
Desert scrub (combined)	Sahuarita soils, mohave soils and urban land, 1 to 5 percent slopes	$4,403.66
Desert scrub (combined)	Tubac gravelly loam, 1 to 8 percent slopes	$6,856.80

Vegetation Community	Soil/Slope	Total Plant Price Per Acre* (Extrapolated Value)
Desert scrub (combined)	Yaqui fine sandy loam, 1 to 3 percent slopes	$799.25
Total		$67,265.17

*Extrapolated number of plants was not rounded before calculating cost.

Because the area of impact within the survey area is not known at this time, the price per acre for the AU value of the project cannot be calculated. According to the ASLD's Instructional Memo No. 12.05 (Appendix A), the survey area includes AUs ranging from 2 to 6. Therefore, two AU categories would apply: 0 to 5 and 5 to 7.5 AUs. For the 0 to 5 AU category, the price per acre is $75.00 and $125.00 for the 5 to 7.5 AU category (see Policy Memo No. P79-1 in Appendix A). In the approximately 5.5-mile long gen-tie area, 3.5 miles fall into the 0 to 5 AU category, with the remaining 2 miles covering the 5 to 7.5 AU category.

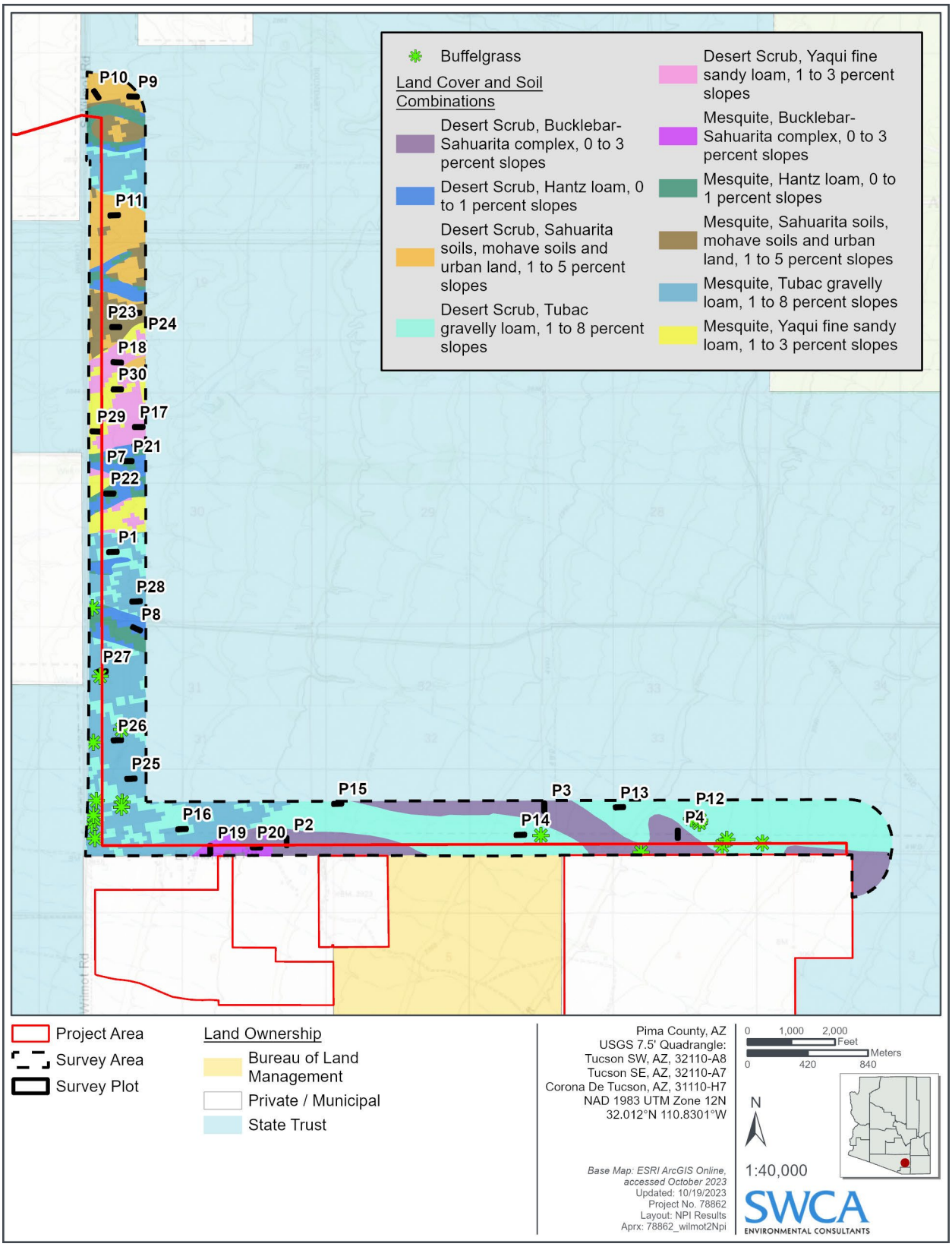


Figure 3. Survey plot locations within the soil/slope-vegetation combinations identified within the survey area.

Endangered Species Act-Listed Plant Species for Pima County, Arizona

SWCA requested and reviewed a project-specific species and critical habitat list for Pima County, Arizona through the U.S. Fish and Wildlife Service Information for Planning and Consultation (IPaC) System.[5] Nine plant species were listed under the ESA for Pima County: Acuña cactus (*Echinomastus erectocentrus* var. *acunensis*), Arizona eryngo (*Eryngium sparganophyllum*), Bartram's stonecrop (*Graptopetalum bartramii)*, beardless chinchweed (*Pectis imberbis*), Huachuca water umbel (*Lilaeopsis schaffneriana* var. *recurva*), Kearney's blue-star (*Amsonia kearneyana*), Nichol's Turk's head cactus (*Echinocactus horizonthalonius* var. *nicholii*), Pima pineapple cactus, and Wright's marsh thistle (*Cirsium wrightii*). Two of these ESA-listed plant species for Pima County are listed as threatened: Bartram's stonecrop and Wright's marsh thistle. The remaining seven ESA-listed plant species for Pima County are listed as endangered.

Of the nine ESA-listed plant species for Pima County, the project and survey areas both feature the habitat and range requirements for the federally endangered Pima pineapple cactus. The project and survey areas are both clearly beyond the known geographic or elevational range of the remaining eight ESA-listed plant species, or these areas do not contain landscape features known to support these species. Furthermore, these eight ESA-listed plant species were not observed in the project and/or survey areas; therefore, there would be no project impacts to these species.

In the survey area, one Pima pineapple cactus was documented during the NPI less than 20 feet east of NPI vegetation sample plot No. 26. No Pima pineapple cacti were observed within any vegetation sample plot. A species-specific survey for Pima pineapple cactus has not been completed within the survey area at the time of this report submittal. Pima pineapple cactus, listed as endangered under the ESA in 1993, is found in alluvial basins and on ridges in desert grasslands and Sonoran desertscrub with little to no slope and sparse vegetation between 2,300 and 4,200 above mean sea level. Within Arizona, the species is found in Pima and Santa Cruz Counties, and its range is bounded by the Santa Rita Mountains to the east, the Baboquivari Mountains to the west, the City of Tucson to the north, and the U.S.–Mexico border to the south. [6] The potential is high for additional Pima pineapple cactus to be present in the survey area as habitat requirements are suitable for the species.

Invasive Non-Native Plants and Noxious Weeds

Two non-native plant species were observed in the survey area: Bermudagrass (*Cynodon dactylon*) and buffelgrass (*Pennisetum ciliare*).

Buffelgrass is classified as an Arizona Department of Agriculture (ADA) Class C noxious weed.[7] Class C noxious weeds are categorized "as a species of plant that is widespread but may be recommended for active control based on risk assessment." Buffelgrass was common along the boundaries of the ephemeral washes, both as individual weeds and large populations. The probability of dispersal of buffelgrass seeds is high during high precipitation events when stormflow occurs within the washes; seeds are transported downstream, resulting in a proliferation of buffelgrass coverage. Active cattle ranching is present in the survey area and grazing of buffelgrass was evident, leading to another method for seed dispersal. At the time of the survey, buffelgrass seed heads were largely absent as the buffelgrass was in a dormant state.

[5] U.S. Fish and Wildlife Service. 2023. Information for Planning and Consultation (IPaC). List of threatened and endangered species for Pima County. Available at: https://ipac.ecosphere.fws.gov/. Accessed June 25, 2023.

[6] Arizona Game and Fish Department. 2023. Arizona's Natural Heritage Program. Species abstracts. Available at: https://www.azgfd.com/wildlife-conservation/on-the-ground-conservation/cooperative-programs/az-natural-heritage-program/. Accessed June 2023.

[7] Arizona Department of Agriculture (ADA). R3-4-245. Noxious Weeds. Available at: https://agriculture.az.gov/pestspest-control/agriculture-pests/noxious-weeds. Accessed June 2023.

Buffelgrass is ranked "High" on Arizona Wildlands Invasive Plant Working Group's (AZ-WIPWG's) list of invasive, non-native plants that threaten wildlands in Arizona.[8] Plant species ranked "High" by the AZ-WIPWG "have severe ecological impacts on ecosystems, plant and animal communities, and vegetational structure; invasiveness attributes are conducive to moderate to high rates of dispersal and establishment; and species are usually widely distributed, both among and within ecosystems/communities."

Bermudagrass was observed in light concentrations along the ephemeral washes. The species was observed in light to moderate concentrations bordering the utility line access road that runs between the project area and survey area.

Bermudagrass is ranked "Medium" on the AZ-WIPWG list. Plant species ranked "Medium" by the AZ-WIPWG "have substantial and apparent ecological impacts on ecosystems, plant and animal communities, and vegetation structure; invasiveness attributes are conducive to moderate to high rates of dispersal, often enhanced by disturbance; and ecological amplitude (diversity of ecosystems/communities) and distribution (within an ecosystem/community) range from limited to widespread."

[8] Arizona Wildlands Invasive Plant Working Group. 2005. Invasive Non-Native Plants that Threaten Wildlands in Arizona. Available at: https://www.swvma.org/wp-content/uploads/Invasive-Non-Native-Plants-that-Threaten-Wildlands-in-Arizona.pdf. Accessed June 2023.

APPENDIX A

Native Plant Disposition and Valuation (Instructional Memo No. 12.05)
and
Disposition of Natural Products and Native Plant Valuation List
(Policy No. P79-1)

STATE LAND DEPARTMENT POLICY MEMO NO. P79-1

DATE ISSUED: 11/23/1979
AMENDED: 08/05/2020

TO: DIVISION DIRECTORS

FROM: Lisa A. Atkins 8/11/2020
STATE LAND COMMISSIONER

SUBJECT: DISPOSITION OF NATURAL PRODUCTS AND NATIVE PLANT VALUATION LIST

SCOPE

Under certain permits or leases issued by the ASLD, removal of native plants, and similar natural products, is necessary to complete an authorized use and generate revenue for the Trust portfolio. Examples would include clearing rights-of-way for roadway, power or communication lines, enlarging a mining pit operation, wind and solar energy development, clearing a small site for communication towers, etc.

PURPOSE

The purpose of this Policy Memo is to provide guidelines for disposition and valuation method of natural products taken or negatively impacted *in situ* and incidental to authorized use(s), except for sales[1] and perpetual rights of way for transportation where vegetation has been inherently considered in the value.

RESPONSIBILITY

The Agricultural Leasing Section Manager, Natural Resources Division, is responsible for the administration of this policy.

Disposition of protected native plants or other natural products may be authorized by the Manager of the Agricultural Leasing Section or the Director of the Natural Resources Division under the following limitations and conditions:

1. Disposition of natural products without auction may only be authorized as an incidental and secondary taking to an authorized land use instrument and will not be authorized if the Commissioner determines an auction is in the best interest of the trust.

[1] The disposition of product while a Certificate of Purchase is in effect is governed by A.R.S. §37-246.

2. Natural products shall be appraised and disposed of at their true market value. For vegetation, true market value is established in the Department's approved Plant Value List, which is attached and derived from the Arizona Department of Agriculture and the Arizona Department of Fire and Forestry Management.

3. The Department may establish a bond, where necessary, for the performance and restoration of damage resulting from the removal of the natural product.

4. A permit is necessary from Arizona Department of Agriculture to remove protected native plants. Proof of such permit will be required at the time of an ASLD application.

5. Disposition may be authorized to an existing lessee or to other applicants. All other removal or destruction of vegetation on State Trust land without prior written approval is considered unlawful, and inconsistent with provisions of this policy.

6. Native trees that are not listed as protected will adhere to the "other tree" value, which is based on either the Stumpage or Wholesale rate. The Stumpage rate, in this case, applies to any part or parts of an Arizona native tree that has been destroyed but remains on the State Trust Land Parcel for natural resource habitat rehabilitation purposes. The Wholesale rate applies to any part or parts of an Arizona native tree destroyed and removed from the State Trust Land Parcel.

AZ PROTECTED NATIVE PLAN	Examples include:	Size Classification	Fair Market Value	Assesement	ASLD Value
Highly Safeguarded Protected	All Plants included on this list will be independently evaluated and assessed.				tbd
Salvage Restricted Protected Native Plants	agave (not highly safeguarded nor salvage assessed)	small ++	$35.00	15%	$5.25
		medium ++	$75.00	15%	$11.25
		large ++	$150.00	15%	$22.50
	barrel cacti	small (<2')	$50.00	15%	$7.50
		medium (2' to 4')	$100.00	15%	$15.00
		large (4' to 6')	$200.00	15%	$30.00
		multiple heads	$250.00	15%	$37.50
	cholla, all species	small ++	$30.00	15%	$4.50
		medium ++	$60.00	15%	$9.00
		large ++	$90.00	15%	$13.50
	hedgehog (not highly safeguarded)	small ++	$25.00	15%	$3.75
		medium ++	$50.00	15%	$7.50
		large ++	$100.00	15%	$15.00
	pincushions (not highly safeguarded)	all	$35.00	15%	$5.25
	ocotillo	up to 20 canes	$60.00	15%	$9.00
		20 to 40 canes	$115.00	15%	$17.25
		40 to 60 canes	$190.00	15%	$28.50
		60 + canes	$375.00	15%	$56.25
	organ pipe	6 arms ~ 10'tall	$300.00	15%	$45.00
		10 arms ~ 6' tall	$600.00	15%	$90.00
	saguaro	height plus total length of arms	$55.00 per lf	15%	$8.25 per lf
	senita	6 arms ~ 10'tall	$200.00	15%	$30.00
		10 arms ~ 6' tall	$400.00	15%	$60.00
	sotol	small ++			$5.00
		medium ++	$75.00	15%	$11.25
		large ++	$160.00	15%	$24.00
		x-large ++	$200.00	15%	$30.00
	vauquelina (rosewood)	small ++			$2.00
		medium ++	$10.00	15%	$2.00
		large ++	$40.00	15%	$6.00
		x-large ++	$200.00	15%	$30.00
	yucca (not harvest restricted)	small ++	$75.00	15%	$11.25
		medium ++	$100.00	15%	$15.00
		large ++	$150.00	15%	$22.50
	yucca, joshua tree	2-3 heads	$200.00	15%	$30.00
		5 heads	$300.00	15%	$45.00

AZ PROTECTED NATIVE PLANTS	Examples include:	Size Classification	Fair Market Value	Assesement	ASLD Value
Salvage Assessed	desert willows and smoke	<3 c.i.			$20.00
Protected Native Plants	trees	3 to 4 c.i.	$200.00	20%	$40.00
		4 to 6 c.i.	$400.00	20%	$80.00
		6 to 8 c.i.	$700.00	20%	$140.00
		8 - 10 c.i.	$1,100.00	20%	$220.00
		10 - 12 c.i.	$1,400.00	20%	$280.00
		12 -14 c.i.	$1,700.00	20%	$340.00
		larger than 14"	priced individually		
	palo verde, blue or foothills	<3 c.i.			$20.00
		3 to 4 c.i.	$200.00	20%	$40.00
		4 to 6 c.i.	$400.00	20%	$80.00
		6 to 8 c.i.	$700.00	20%	$140.00
		8 - 10 c.i.	$1,100.00	20%	$220.00
		10 - 12 c.i.	$1,400.00	20%	$280.00
		12 - 14 c.i.	$1,700.00	20%	$340.00
		14 - 16 c.i.	$2,200.00	20%	$440.00
		16 - 18 c.i.	$2,300.00	20%	$460.00
		18 - 20 c.i.	$3,000.00	20%	$600.00
		20 - 24 c.i.	$3,600.00	20%	$720.00
	ironwood *	< 3 c.i			$40.00
		3 to 4 c.i.	$300.00	25%	$75.00
		4 to 6 c.i.	$500.00	25%	$125.00
		6 to 8 c.i.	$700.00	25%	$175.00
		8 - 10 c.i.	$1,200.00	25%	$300.00
		10 - 12 c.i.	$1,500.00	25%	$375.00
		12 - 14 c.i.	$1,900.00	25%	$475.00
		14 - 16 c.i.	$2,400.00	25%	$600.00
		16 - 18 c.i.	$2,900.00	25%	$725.00
		18 - 20 c.i.	$3,400.00	25%	$850.00
		20 - 24 c.i.	$4,000.00	25%	$1,000.00
Salvage Assessed Protected	mesquite (all species) **	< 3 c.i			$10.00
Protected Native Plants		3 to 4 c.i.	$100.00	25%	$25.00
		4 to 6 c.i.	$400.00	25%	$100.00
		6 to 8 c.i.	$600.00	25%	$150.00
		8 - 10 c.i.	$900.00	25%	$225.00
		10 - 12 c.i.	$1,200.00	25%	$300.00
		12 - 14 c.i.	$1,600.00	25%	$400.00
		14 - 16 c.i.	$2,000.00	25%	$500.00
		16 - 18 c.i.	$2,500.00	25%	$625.00
		18 - 20 c.i.	$3,000.00	25%	$750.00
		20 - 24 c.i.	$3,400.00	25%	$850.00

AZ PROTECTED NATIVE PLANTS	Examples includes:	Size Classificatior	Fair Market Valu	Assessment	ASLD Value
Harvest Restricted	nolina species	small ++	$12.00	25%	$3.00
Protected Native Plants		medium ++	$45.00	25%	$11.25
		large ++	$160.00	25%	$40.00
	bananna yucca	small ++	$75.00	25%	$18.75
		medium ++	$100.00	25%	$25.00
		large ++	$150.00	25%	$37.50
	Mohave yucca	small ++	$75.00	25%	$18.75
		medium ++	$100.00	25%	$25.00
		large ++	$150.00	25%	$37.50
	ironwood *			25%	see above
	mesquite (all species)**			25%	see above
OTHER ARIZONA NATIVE PLANT	Examples:	Stumpage	Wholesale	Assessment	ASLD Value
	Ponderosa Pine***	$8.00/Cord	$65.00/Cord	25%	$2/$16.25
	Pinyon Pine***	$8.00/Cord	$65.00/Cord	25%	$2/$16.25
	Oak***	$35.00/Cord	$100/Cord	25%	$8.75/$25
	Juniper***	$8.00/Cord	$65.00/Cord	25%	$2/$16.25
	shrubs, sub-shrubs, forbs,	based on AUs/Section per ASLD GIS			per acre
	grasses (not highly	commerical / ag class			$75.00
	safeguarded)	0 - 5 AUs			$75.00
		5 - 7.5 AUs			$125.00
		7.5 - 10 AUs			$150.00
		10 - 15 AUs			$175.00
		15 + AUs			$200.00

AU = animal unit
c.i. = caliper inch
lf = linear foot
tbd = to be determined

++ small = 1 gallon container
++ medium = 3-5 gallon container
++ large = 10-15 gallon container
++ x-large = 24" box

for multi-stem trees, use sum of caliper inch * ironwood is both Salvage Assesed and Harvest Restricted

** mesquite is both Salvage Assessed and Harvest Restricted

*** if trees are removed from State Trust Land completley than Wholesale value will apply

***if tree remains are left on State Trust Land for habitat rehabilitation than the Stumpage Value applies

Arizona
State Land Department

INSTRUCTIONAL MEMO NO. 12.05

Natural Resources Division

SECTION 12.05 Native Plant Disposition and Valuation

Issued: May 1, 2011

Approved: SLC: /s/ **Last Amended:**

PURPOSE:

The purpose of this instructional memo is to establish procedures for the implementation of State Land Department Policy Memo No. P79-1 (Disposition of Natural Products) in consort with the Department's Strategic Plan Goal II: "Manage Trust Resources to protect and enhance the long term value of the assets, land and resources."

The subject of valuation was previously covered in Instructional Memo 14.02.

RESPONSIBILITIES:

The Natural Resources Division has the responsibility to review and maintain this Instructional Memo and associated exhibits.

The Natural Resource Conservation Section Manager shall review all plant surveys, prepare a billing statement for same, and forward it to the appropriate administrator.

The current Arizona Department of Agriculture's *Fair Market Value of Protected Native Plants* list shall be used as the primary source for values.

The Land Department Chief Appraiser will review and approve values as submitted.

Amended:
text:
form:

PROCEDURES:

Removal of Vegetation Incidental to Permitted Uses:

1) A native plant survey shall be conducted for all permitted uses of Trust land that involve surface disturbance, other than provided for under Policy Memo P79-1, and except for disturbances on grazing and commercial leases which are processed under "Application to Place Improvements" or "Land Treatment Applications." The survey must indicate how much of the area will be disturbed. A survey *Sampling Protocol* (Exhibit A) may be utilized for large scale projects. Large scale projects are defined as greater than 20 acres in size. On site specific surveys, the survey shall indicate which trees, cacti and succulents will be removed, preserved in place or salvaged.
2) All data shall be supplied to the administrator in an electronic spreadsheet format, in addition to a printed report. The data shall be retained in the respective lease file(s). The United States Department of Agriculture Natural Resources Conservation Service "Plants" database will be used for nomenclature.
3) The Trust shall be compensated per the *Plant Value List* (Exhibit B). The assessment will be based on the total land under application. Exceptions are urban commercial uses which may include undisturbed buffers, greenways, etc., and overhead transmission lines where only the areas of planned disturbance require a survey (e.g. a 50' radius around wood poles or a 100' radius around large towers and all new access / construction roads within the right-of-way, or where vegetation may be cleared for safety purposes).
4) The applicant shall submit a *Vegetation Checklist* (Exhibit C) with the plant survey.
5) The billing shall reflect the application number and be posted to "09-Unscheduled Royalty."
6) Compensation to the Trust may be adjusted subject to an approved reclamation plan, a reclamation bond and a performance bond.

Removal or damage of Vegetation associated with unpermitted activities:

1) An assessment of vegetated lands, similar to the damaged lands, may be used to ascertain the approximate numbers, sizes and types of plants removed.
2) Retail native plant prices, including prices for shrubs, sub-shrubs, forbs and grasses, shall be used for curing defaults and settling trespass cases. Arizona State Land Department reserves the right to exceed the attached price list under special circumstances including but not limited to the following examples: the trees are of commercial value, are 'old growth,' are removed from riparian areas or located in an urban setting where local standards / restrictions may apply.

Removal of cordwood and / or timber:

Commercial and personal cordwood sales and timber sales are not covered in this instructional memo.

Removal of Vegetation for Scientific Research, etc.

Under certain limited circumstances such as scientific research and small scale seed collection, Special Land Use Permits may be issued for removal of natural products when the true value of the product is less than the costs: (1) of advertising (ten weeks); (2) the public auction, and; (3) the administrative cost, per State Land Department Policy Memo No. P79-1.

APPENDIX B

Native Plant Survey Results

Table B-1. ASLD Native Plant Survey Results for Valued Plants in the Survey Area

ASLD-Valued Plants		ADA Protected?		Protected Category	T and E*
Scientific Name	**Common Name**	**Yes**	**No**		
Carnegiea gigantea	Saguaro	X		Salvage Restricted	No
Coryphantha scheeri var. *robustispina*	Pima pineapple cactus	X		Salvage Restricted	Yes
Cylindropuntia arbuscula	Arizona cholla	X		Salvage Restricted	No
Cylindropuntia imbricata	Tree cholla	X		Salvage Restricted	No
Echinocereus engelmannii	Engelmann's hedgehog cactus	X		Salvage Restricted	No
Ferocactus wislizeni	Candy barrelcactus	X		Salvage Restricted	No
Opuntia fulgida	Jumping cholla	X		Salvage Restricted	No
Parkinsonia microphylla	Yellow paloverde	X		Salvage Assessed	No
Prosopis velutina	Velvet mesquite	X		Salvage Assessed	No
Yucca elata	Soaptree yucca	X		Salvage Restricted	No

* T and E = Threatened and endangered species.

Table B-2. Plant Species Observed in the Survey Area and Relative Abundance

Scientific Name	Common Name	Abundance
Ambrosia deltoidea	Triangle bur ragweed	Common
Acourtia nana	Dwarf desertpeony	Uncommon
Aristida ternipes	Spidergrass	Common
Astragalus didymocarpus	Dwarf white milkvetch	Uncommon
Atriplex canescens	Fourwing saltbush	Uncommon
Baccharis sarothroides	Desertbroom	Uncommon
Carnegiea gigantea	Saguaro	Uncommon
Celtis ehrenbergiana	Spiny hackberry	Uncommon
Chamaesyce arizonaica	Arizona sandmat	Common
Chorizanthe rigida	Devil's spineflower	Common
Coryphantha scheeri var. *robustispina*	Pima pineapple cactus	Uncommon
Cylindropuntia arbuscula	Arizona cholla	Uncommon
Cylindropuntia imbricata	Tree cholla	Uncommon
Cynodon dactylon	Bermudagrass	Common
Echinocereus engelmannii	Engelmann's hedgehog cactus	Uncommon
Encelia farinosa	Brittlebush	Common
Ferocactus wislizeni	Candy barrelcactus	Common
Isocoma tenuisecta	Burroweed	Common
Larrea tridentata	Creosote bush	Common
Lycium macrodon.	Desert wolfberry	Uncommon
Opuntia engelmannii	Cactus apple	Common
Opuntia fulgida	Jumping cholla	Common
Parkinsonia microphylla	Yellow paloverde	Common

Scientific Name	Common Name	Abundance
Pennisetum ciliare	Buffelgrass	Common
Phoradendron californicum	Mesquite mistletoe	Common
Prosopis velutina	Velvet mesquite	Common
Rafinesquia neomexicana	New Mexico plumeseed	Uncommon
Senegalia greggii	Catclaw acacia	Uncommon
Solanum elaeagnifolium	Silverleaf nightshade	Common
Sphaeralcea ambigua	Desert globemallow	Uncommon
Vachellia constricta	Whitethorn acacia	Common
Yucca elata	Soaptree yucca	Uncommon
Ziziphus obtusifolia	Lotebush	Uncommon

EXHIBIT B – ATTACHMENT B-3

Biological Resources Evaluation; October 2023

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TECHNICAL MEMORANDUM

Prepared for: Alex Simons, Senior Environmental Specialist
Wilmot Energy Center, LLC
Albuquerque, New Mexico
Sent via email to Alex.Simons@nexteraenergy.com

From: Neil Clark, Staff Biologist

Date: July 11, 2023, revised August 31, 2023, revised October 23, 2023

Re: **Biological Resources Evaluation for the Wilmot Energy Center II Project, Pima County, Arizona / SWCA Project No. 78862**

INTRODUCTION

SWCA Environmental Consultants (SWCA) has prepared this biological resources evaluation (BRE) to address compliance with federal, state, and local biological regulations for the proposed Wilmot Energy Center II Project in Pima County, Arizona (project). Wilmot Energy Center, LLC, proposes to develop a solar energy project on two distinct and separate parcels. The study area for this BRE includes the solar facilities (the solar project area), a generation-tie overhead transmission line (gen-tie project) right-of-way (gen-tie project area), and additional areas that were originally considered but subsequently removed from the project areas (Figures 1 and 2). The final solar project area totals approximately 961.3 acres of private lands and is entirely within unincorporated Pima County. The west parcel totals approximately 316.1 acres and the east parcel totals approximately 645.2 acres. The gen-tie project consists of 8.75 miles of a gen-tie corridor along the northern boundary of the solar project area, along the east side of Wilmot Road before turning west, crossing Wilmot Road to connect with an existing substation. This BRE evaluated a wider gen-tie project area corridor to allow flexibility on gen-tie siting; however, the gen-tie project area for purposes of this BRE is a 100-foot-wide corridor totaling approximately 106.6 acres (27.2 acres on private land and 79.4 acres on land administered by the Arizona State Land Department [ASLD]). The study area is approximately 1,987.6 acres (1,368.7 acres on private land and 618.9 acres on land administered by ASLD).

The study area is 4.7 miles southwest of Interstate 10 (I-10) both east and west of South Wilmot Road, in portions of Sections 13 and 14, Township 16 South, Range 14 East; Sections 18 and 19 and 30 through 34, Township 16 South, Range 15 East; and Sections 3 through 6, Township 17 South, Range 15 East, Gila and Salt River Baseline Meridian on the Tucson SW, Tucson SE, and Corona de Tucson, Arizona, U.S. Geological Survey 7.5-minute quadrangles (see Figure 2).

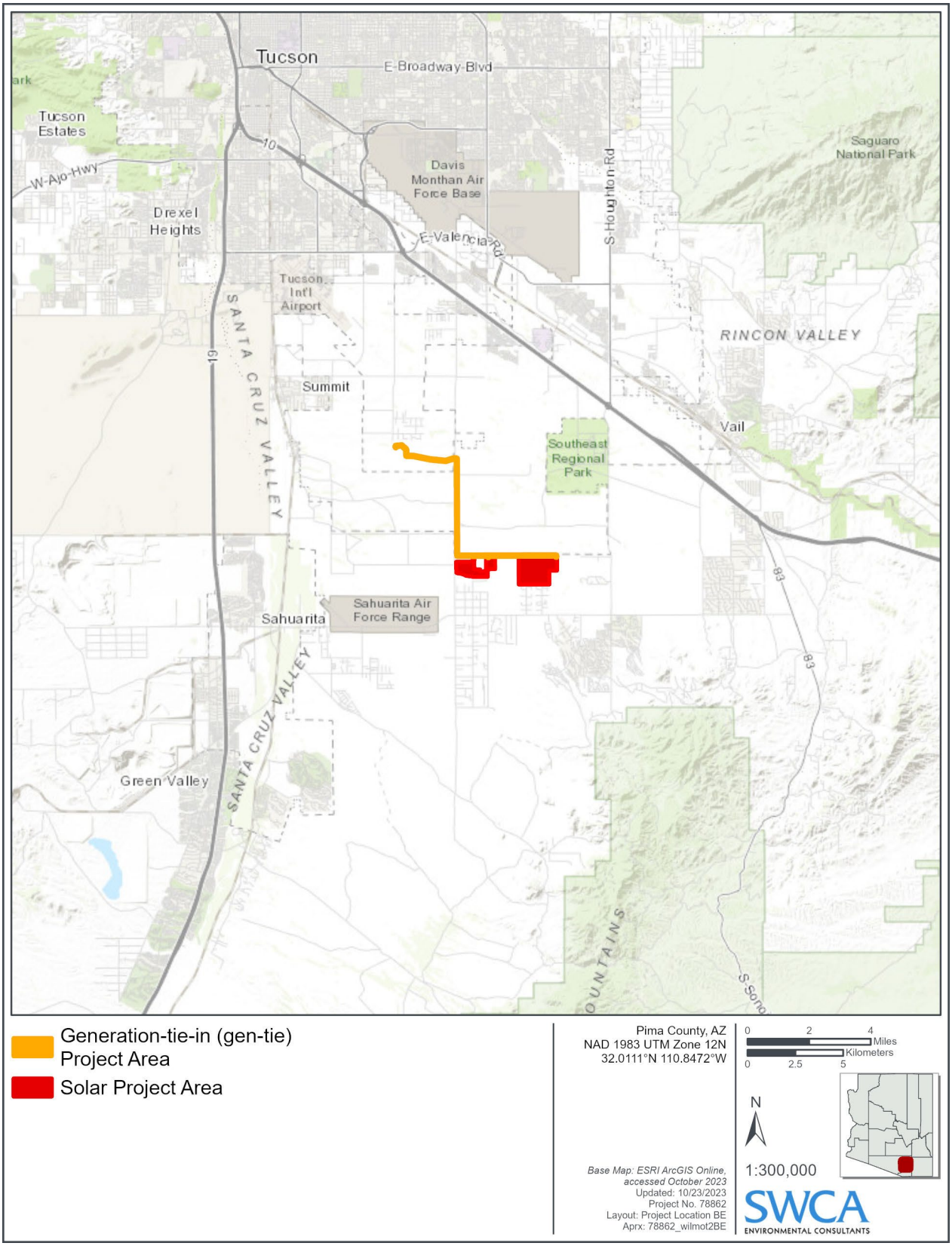


Figure 1. General location of the project areas.

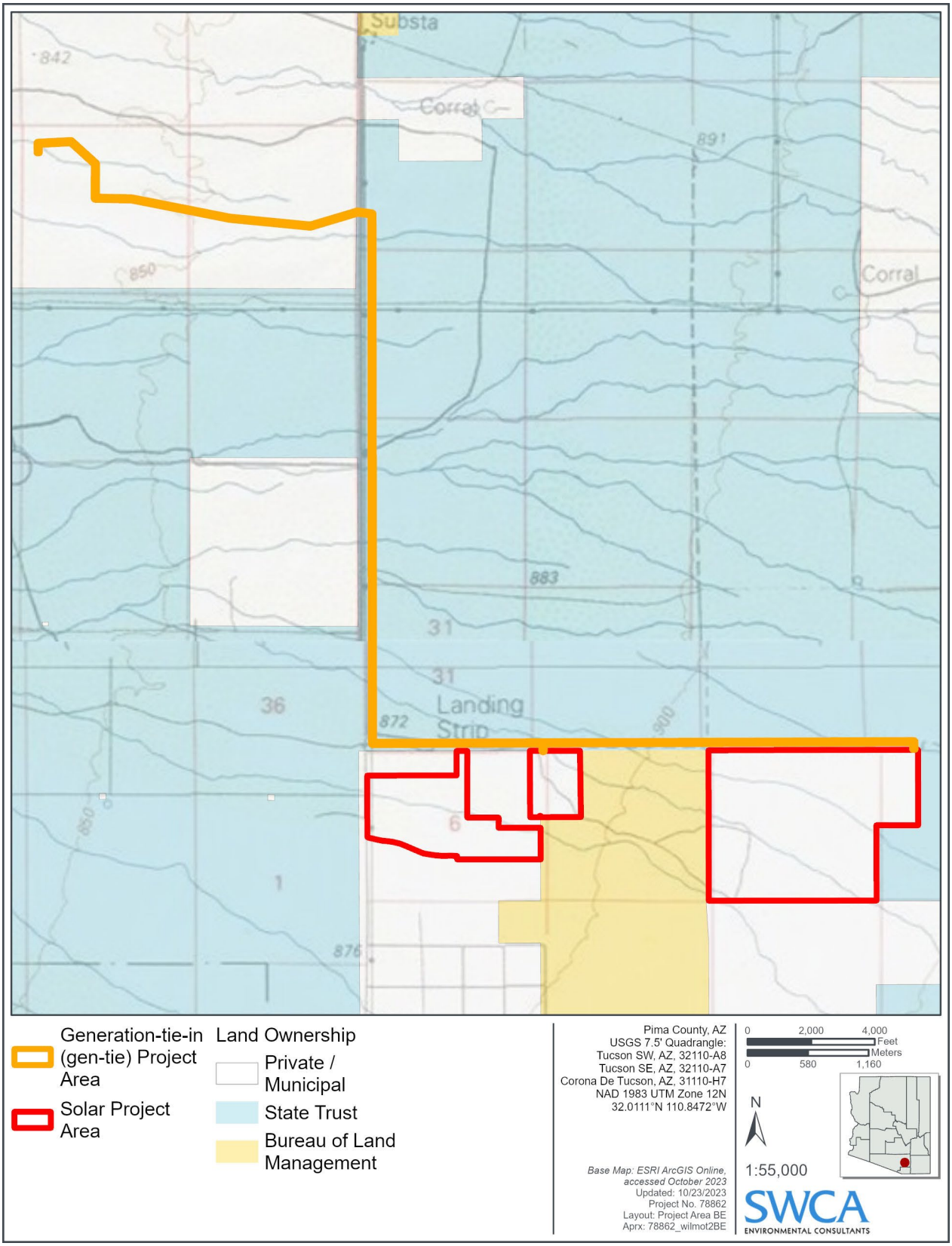


Figure 2. Location of project areas and study area.

This BRE addresses the Endangered Species Act of 1973 (16 United States Code [USC] 1531 et seq.) (ESA), the Migratory Bird Treaty Act of 1918 (16 USC 703–712) (MBTA), the Bald and Golden Eagle Protection Act of 1940, as amended (16 USC 668–668d or 50 Code of Federal Regulations 22) (Bald and Golden Eagle Act), the Arizona Department of Agriculture (ADA)–administered Arizona Native Plant Law (Arizona Revised Statutes 3-904), the ADA's noxious weed regulations (Arizona Administrative Code R3-4-245), and Pima County Ordinance 18.72, Native Plant Preservation. In addition, this report addresses relevant items in the Arizona Game and Fish Department (AGFD) *Guidelines for Solar Development in Arizona* (*Guidelines*) (AGFD 2010), such as biological resource categories (i.e., wildlife corridors and linkages) and wildlife habitat, and in Arizona's State Wildlife Action Plan (AGFD 2022), such as special-status species (i.e., Species of Greatest Conservation Need [SGCN]). The Pima County Ordinance No. 2010 FC5, Watercourse and Riparian Habitat Protection and Mitigation Requirements, will be addressed in a separate technical memorandum. Regulated riparian habitat occurs within both the solar project area and the gen-tie project area; however, the gen-tie project is either within incorporated city of Tucson limits (and therefore the ordinance does not apply) or avoids or spans regulated riparian habitat west of Wilmot Road. Additionally, the City of Tucson Native Plant Preservation Ordinance (NPPO) applicability was researched for the gen-tie project area within city limits, and unless a permit is required from the City of Tucson for the gen-tie construction, the City of Tucson NPPO does not apply. Lastly, a native plant inventory required by ASLD as part of the gen-tie (i.e., utility) right-of-way acquisition is addressed in a separate report.

Portions of the solar project are within the Renewable Energy Incentive District (REID) (Figure 3). Other portions will require a conditional use permit from Pima County, which requires the preparation of a biological impact report. SWCA prepared biological impact report separately. The biological impact report and this BRE were attached to the conditional use permit application.

The REID includes the following requirements related to biological resources. Pima County Ordinance 18.72, Native Plant Preservation (Pima County NPPO), shall be waived in part as follows:

- An inventory and mitigation plan for any saguaro (*Carnegiea gigantea*), desert ironwood (*Olneya tesota*), and safeguarded species as listed in Table 18.72.040-1 of the zoning code on the site shall be conducted by a qualified practitioner as defined in Pima County Ordinance Section 18.72.070 and provided upon submittal of the REID site plan.
- Where saguaro, ironwood, and safeguarded species cannot be preserved in place, they shall be transplanted on site or replaced at a 1:1 mitigation ratio when transplantation is not feasible. Pima pineapple cactus (*Coryphantha scheeri* var. *robustispina*) shall be transplanted and supplemented with one additional Pima pineapple cactus. Pima pineapple cactus will be replaced at a 2:1 mitigation ratio when transplantation is not feasible. Replacement specimens for saguaro shall be a minimum of 4 feet in height. The size of replacement specimens for ironwood and safeguarded species will conform to Table 18.72.090-1.
- The proposed location of transplanted plants shall be shown on the REID site plan, or if necessary for clarity on a separate plan, but a separate plan is not otherwise required.
- Replacement specimens and transplanted plants may be in any required buffer yard; and
- Off-site mitigation is an option subject to approval by the planning director or their designee.

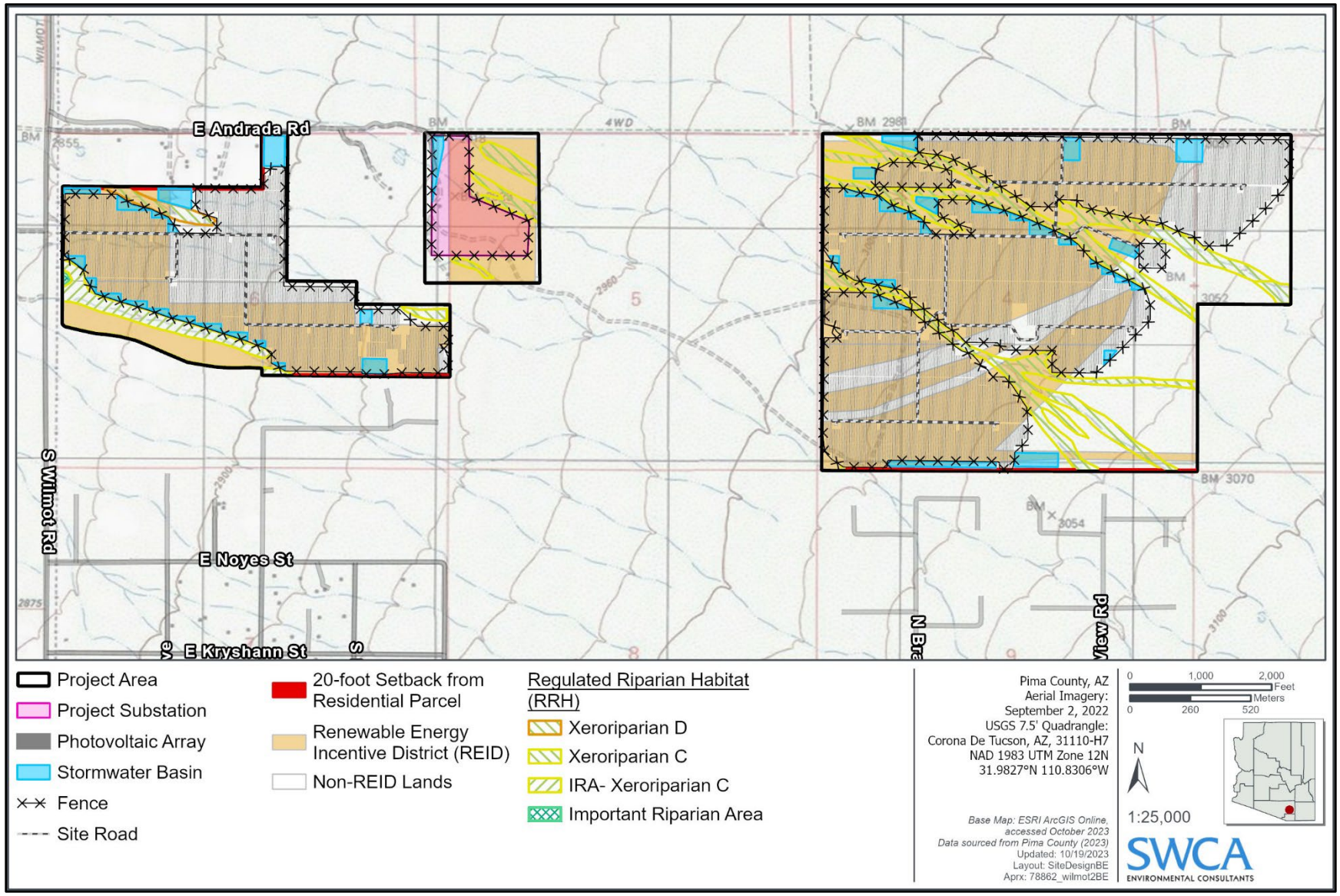


Figure 3. Solar project area depicting project plans, REID areas, and Regulated Riparian Habitat.

METHODS

SWCA biologists visited the study area described above on February 13 and 14, 23 and 24, and 27 and 28; March 1 through 3, 6 through 10, and 13 through 15 and June 5 through 7 and 9. The site visits consisted of a pedestrian survey to evaluate vegetation and other habitat features considered important to the potential occurrence of special-status plant and animal species. This field reconnaissance included a species-specific survey for the saguaro cactus (*Carnegiea gigantea*) and the federally endangered Pima pineapple cactus within the solar project area. Pima pineapple cactus surveys followed a modified Roller protocol (Roller 1996), with surveyors walking 4 to 6 meters apart in belt transects. Pima pineapple cactus surveys are planned once the specific impact locations (i.e., structures for the overhead line) are known for the gen-tie project area.

Vegetation was classified to the community level according to the map "Biotic Communities of the Southwest" (Brown 1994). The Natural Resources Conservation Service PLANTS database was used for plant naming conventions (Natural Resources Conservation Service 2023). Federally listed plants are referred to by the nomenclature used by the U.S. Fish and Wildlife Service (USFWS) for listing.

ECOLOGICAL OVERVIEW

The study area is within the Arizona Upland subdivision of the Sonoran Desertscrub biotic community (Brown 1994) at elevations ranging from approximately 2,720 to 3070 feet above mean sea level (amsl). The Santa Rita Mountains occur approximately 5 miles southeast of the study area and the Santa Cruz River lies approximately 6 miles west of the study area. There are no state-level wildlife corridors or wildlife linkages mapped within the study area. One Pima County riparian movement area as mapped in *The Pima County Wildlife Connectivity Assessment: Report on Stakeholder Input* (AGFD 2012) overlaps with the footprint of the project: the Lee Moore Wash Flow Corridors. This wildlife linkage connects the Santa Rita Experimental Range/Coronado National Forest Wildland Block with the Santa Cruz River Riparian Area, although no focal species have been identified within the corridor (AGFD 2012). The extreme eastern section of the eastern solar project area occurs within two Pima County Conservation Land Systems, a Multiple Use Management Area and Biological Core Management Area (Pima County Maps 2023). The extreme eastern part of the gen-tie project area will overlap with a Multiple Use Management Area (Pima County Maps 2023); however, in this area, the gen-tie project area is within city of Tucson limits. Land uses in the study area and surrounding areas include primarily desertscrub, rural residential development, and grazing. The topography of the study area is relatively flat and slopes roughly from the southeast to the northwest with a few ephemeral surface water features throughout the study area.

VEGETATION

The vegetation community species and structure were similar between the solar and gen-tie project areas. A full list of plant species observed during surveys is in Appendix A. The study area was dominated by creosote bush (*Larrea tridentata*), catclaw acacia (*Senegalia greggii*), jumping cholla (*Cylindropuntia fulgida*), velvet mesquite (*Prosopis velutina*), whitethorn acacia (*Vachellia constricta*), and yellow paloverde (*Parkinsonia microphylla*). Other species that commonly occurred were brittlebush (*Encelia farinosa*), burroweed (*Isocoma* tenuisecta), cactus apple (*Opuntia engelmannii*), candy barrel cactus (*Ferocactus wislizeni*), Christmas cactus (*Cylindropuntia leptocaulis*), desert wolfberry (*Lycium macrodon*), fairyduster (*Calliandra eriophylla*), fourwing saltbush (*Atriplex canescens*), lotebush (*Ziziphus obtusifolia*), ocotillo (*Fouquieria splendens*), saguaro, spidergrass (*Aristida ternipes*), spiny hackberry (*Celtis ehrenbergiana*), tree cholla (*Cylindropuntia imbricata*), and triangle bur ragweed (*Ambrosia deltoidea*).

Pima pineapple cactus was observed in the solar project area and within the study area outside of the project areas. No milkweed (*Asclepias* spp.) plants were observed in the study area.

Nonnative plant species observed consisted of Bermudagrass (*Cynodon dactylon*), buffelgrass (*Pennisetum ciliare*), prickly Russian thistle (*Salsola tragus*), and Asian mustard (*Brassica tournefortii*).

WILDLIFE

Twenty-eight avian species were documented within the study area during the site visit (see Appendix A for the full list).

Other wildlife observed were antelope jackrabbit (*Lepus alleni*), black-tailed jackrabbit (*Lepus californicus*), desert cottontail (*Sylvilagus audubonii*), round-tailed ground squirrel (*Xerospermophilus tereticaudus*), and coyote (*Canis latrans*)

ENDANGERED SPECIES ACT

The species evaluated in this BRE were based on the species listed as endangered or threatened under the ESA, as well as non-essential experimental population (EXPN) and candidate species for Pima County, Arizona. The ESA specifically prohibits the "take" of a listed wildlife species. However, the ESA does not provide the same take protections of plant species, except on federal land. Take is defined as "to harass, harm, pursue, hunt, shoot, wound, kill, trap, capture, or collect, or to engage in any such conduct."

In addition, project-specific information regarding protected species and their critical habitat is available online through the USFWS Information for Planning and Consultation (IPaC) database (USFWS 2023a). The project-specific IPaC list (Appendix B) includes species that are currently listed as endangered or threatened under the ESA, as well as EXPN and candidate species (USFWS 2023a). The following 10 species appear on the project-specific list: Arizona eryngo (*Eryngium sparganophyllum*), California least tern (*Sterna antillarum browni*), Chiricahua leopard frog (*Rana chiricahuensis*), Gila chub (*Gila intermedia*), jaguar (*Panthera onca*), monarch butterfly (*Danaus plexippus*), ocelot (*Leopardus pardalis*), Pima pineapple cactus, Sonoyta mud turtle (*Kinosternon sonoriense longifemorale*), and yellow-billed cuckoo (*Coccyzus americanus*). Table 1 provides additional information on these species. To determine whether any federally listed species have been documented in or near the project areas, SWCA also accessed the Arizona Heritage Geographic Information System (AZHGIS) database (AGFD 2023a) (Appendix C).

Two of the 27 species listed for Pima County by the USFWS have the potential to occur in the project areas, the monarch butterfly and Pima pineapple cactus. This project *may impact individual* monarch butterflies but is *not likely to result in a trend toward federal listing or loss of population viability*. Thirteen Pima pineapple cactus individuals were found in the project areas, 10 of which were found during species-specific surveys of the solar project area and three of which were recorded during other natural resources surveys in the gen-tie project area and study area. Based on the current site plan, the project footprint would directly impact six Pima pineapple cactus individuals in the solar project area. Therefore, the project *may affect* and is *likely to adversely affect* Pima pineapple cactus individuals. These impacted cacti will be transplanted out of harm's way before construction or will be avoided during construction, as allowed for by the REID and coverage provided by Pima County's Habitat Conservation Plan (HCP). Because impact locations are unknown within the gen-tie project area, impacts to Pima pineapple cactus are not yet known in that portion of the project area. The project areas are either clearly beyond the known geographic or elevational range of the remaining 25 species or it do not contain vegetation or landscape features known to support these species, or both (see Table 1). The project, as proposed, would have no effect on any of the remaining 25 species listed under the ESA. The results of

the IPaC project-specific query (see Appendix B) indicate no proposed or designated critical habitat in the solar project area or gen-tie project area.

Table 1. Federally Listed Species Potentially Occurring in Pima County, Arizona

Common Name (Scientific Name)	Status*	Range or Habitat Requirements	Potential for Occurrence in Project Areas	Determination of Effect
Acuña cactus (*Echinomastus erectocentrus* var. *acunensis*)	E	Found on the tops or upper halves of the side slopes of broad, dissected hills of granite or andesite at elevations between 1,200 and 2,600 feet above mean sea level (amsl) in the Arizona Upland subdivision of the Sonoran desertscrub biome. In Arizona, known to occur in the Puerto Blanco Mountains, Little Ajo and Sauceda Mountains, and hills between Florence and Kearney, north and south of the Gila River.	Unlikely to occur. No side slopes of broad, dissected hills of granite or andesite are in the project areas, and the project areas are distant from the nearest known populations of this species.	No effect.
Arizona eryngo (*Eryngium sparganophyllum*)	E	This perennial forb occurs in spring-fed ciénega wetlands in moist to saturated organic alkali soils (USFWS 2020a). Plants thrive in full sun in areas without nonnative plant species or excessive woody vegetation. In Arizona, occurs in three disjunct populations in Pima and Cochise Counties at elevations from 2,707 to 4,000 feet amsl: Agua Caliente Ranch, where it is extirpated but reintroduced; La Cebadilla Cienega, near Tanque Verde Wash east of Tucson; and in Lewis Springs Cienega within the San Pedro Riparian National Conservation Area.	Unlikely to occur. The project areas are not within the current range of this species and do not contain ciénega wetland habitat.	No effect.
Bartram's stonecrop (*Graptopetalum bartramii*)	T	Occurs on rocky outcrops in shrub live oak (*Quercus* spp.) grasslands along meandering arroyos on sides of rugged canyons at elevations from 3,650 to 6,700 feet amsl. Typically occurs in areas with heavy litter cover and shade, where moisture drips from rocks, and often within Madrean evergreen woodland. In Arizona, occurs in the Atascosa-Pajarito, Baboquivari, Chiricahua, Dragoon, Mule, Patagonia, Rincon, Santa Rita, and Whetstone Mountains.	Unlikely to occur. The project areas are below the elevational range of this species, are far from known locations, and suitable habitat is not present.	No effect.
Beardless chinchweed (*Pectis imberbis*)	E	Typically occurs in grasslands at lower elevations and oak woodlands and tropical deciduous forests at higher elevations. Found at elevations from 3,773 to 5,660 feet amsl. However, has also been observed on disturbed road cuts, arroyo cuts, and unstable rocky slopes in areas where it has little competition for sunlight. In the United States, it occurs in the Atascosa-Pajarito, Huachuca, Patagonia, and Santa Rita Mountains, and the Canelo Hills.	Unlikely to occur. The project areas are below the elevational range of this species, are far from known locations, and suitable habitat is not present.	No effect.

Common Name (Scientific Name)	Status*	Range or Habitat Requirements	Potential for Occurrence in Project Areas	Determination of Effect
Cactus ferruginous pygmy-owl (*Glaucidium brasilianum cactorum*)	T	Found in heavily wooded xeroriparian washes with large saguaros (*Carnegiea gigantea*) or trees with suitable cavities in Sonoran desertscrub or semidesert grassland. This species' distribution is currently limited to portions of Pima County in Arizona. In addition, "pygmy-owls continue to be absent from Pinal County and around Tucson where they were found as recently as the early 2000s" (USFWS 2023c). This species still occupies historical locations in the Altar Valley, Avra Valley, and Organ Pipe Cactus National Monument, and it is known to occur on the Tohono O'odam Nation (USFWS 2022). Its population appears stable in the Altar Valley, but it is extirpated or declining in areas outside the Altar Valley (USFWS 2022).	Unlikely to occur. The project areas contain heavily wooded washes and suitable saguaro or tree habitat, and the project areas are within the published range of this species (USFWS 2023b). However, this species is unlikely to occur. The project areas are outside the current distribution of this species (i.e., 1990–current distribution as digitized from Figure 4.6 in USFWS 2022). In addition, the project areas are separated from the Altar Valley by more than 20 miles, with the Pima Mine, the Mission Mine, and associated pit mines, dumps, and tailings ponds and I-19 acting as likely barriers to dispersal from a known population to the project areas. No sites surveyed west of I-10 or I-19 had evidence of pygmy-owl occupancy in spring 2020 (USFWS 2022).	No effect.
California least tern (*Sternula antillarum browni*)	E	Forms nesting colonies on barren to sparsely vegetated areas. Nests in shallow depressions on open sandy beaches, sandbars, gravel pits, or exposed flats along shorelines of inland rivers, lakes, reservoirs, and drainage systems at elevations below 2,000 feet amsl. Found in Maricopa, Mohave, and Pima Counties.	Unlikely to occur. The project areas do not contain habitats similar to those used by this species; there are no open sandy beaches, sand bars, gravel pits, or exposed shorelines of inland rivers, lakes, reservoirs, or drainage systems.	No effect.
Chiricahua leopard frog (*Rana chiricahuensis*)	T	Restricted to springs, livestock tanks, and streams in the upper portions of watersheds at elevations between 3,281 and 8,890 feet amsl in central, east-central, and southeastern Arizona. Populations in central and east-central Arizona are disjunct from those in southeastern Arizona and may be distinct species.	Unlikely to occur. No suitable habitat for this species is within or adjacent to the project areas.	No effect.
Desert pupfish (*Cyprinodon macularius*)	E	Found in shallow waters of desert springs, small streams, and marshes at elevations below 5,000 feet amsl. One natural population still occurs in Quitobaquito Springs and Quitobaquito Pond in Pima County, and reintroductions have been made in Pima, Pinal, Maricopa, Graham, Cochise, La Paz, and Yavapai Counties.	Unlikely to occur. No aquatic habitats are in or adjacent to the project areas.	No effect.
Gila chub (*Gila intermedia*)	E	Normally found in smaller headwater streams, ciénegas, and springs or marshes of the Gila River Basin at elevations between 2,720 and 5,420 feet amsl.	Unlikely to occur. No aquatic habitats are in or adjacent to the project areas.	No effect.

Common Name (Scientific Name)	Status*	Range or Habitat Requirements	Potential for Occurrence in Project Areas	Determination of Effect
Gila topminnow (including Yaqui) (*Poeciliopsis occidentalis*)	E	Occurs in small streams, springs, and ciénegas at elevations below 4,500 feet amsl, primarily in shallow areas with aquatic vegetation and debris for cover. In Arizona, most of the remaining native populations are in the Santa Cruz River system.	Unlikely to occur. No aquatic habitats are in or adjacent to the project areas.	No effect.
Huachuca water umbel (*Lilaeopsis schaffneriana* var. *recurva*)	E	Semiaquatic to aquatic perennial found in shallow water or saturated soil of ciénegas or marshy wetlands at elevations between 4,000 and 6,500 feet amsl. Known to occur in the Huachuca Mountains, Canelo Hills, headwaters of the Santa Cruz River downstream to Black Draw, and the San Pedro River.	Unlikely to occur. No aquatic habitats are in or adjacent to the project areas. Further, the project areas are below the elevational range of this species.	No effect.
Jaguar (*Panthera onca*)	E	Of 25 reliable historical jaguar sightings (from 1902 to 2001), most were in scrub grasslands (56%) and Madrean evergreen forests (20%). All were within 6.2 miles of a water source, and most occurred in moderately rugged to extremely rugged terrain. All sightings were at elevations between 3,399 and 8,999 feet amsl (Hatten et al. 2005). Additionally, river valleys and other drainage features likely provide travel corridors for jaguars, along with higher prey densities, cooler air, and denser vegetation than surrounding habitats (Jaguar Recovery Team and USFWS 2012).	Unlikely to occur. Although the project areas are within the geographic range of this species, jaguars are unlikely to occur because of the proximity to human populations and the lack of suitable habitat in the project areas.	No effect.
Kearney's blue-star (*Amsonia kearneyana*)	E	Found on dry, open slopes (20 to 30 degrees) at elevations between 4,000 and 6,000 feet amsl in the transition zone between Madrean evergreen woodland and interior chaparral. Also occurs at elevations between 3,600 and 3,800 feet amsl on stable, partially shaded, coarse alluvium along dry washes under deciduous riparian trees and shrubs in the Sonoran desertscrub or desertscrub-grassland ecotone. Known only from a west-facing drainage in the Baboquivari Mountains.	Unlikely to occur. This species is only known to occur in a few small populations in the Baboquivari Mountains more than 40 miles southwest of the project areas.	No effect.
Masked bobwhite (*Colinus virginianus ridgwayi*)	E	Found at elevations between 1,000 and 4,000 feet amsl in desert grasslands with diverse, moderately dense native grasses and forbs and adequate brush cover. This subspecies has been found to be closely associated with prairie acacia (*Acacia angustissima*). Known only from reintroduced populations on Buenos Aires National Wildlife Refuge.	Unlikely to occur. The habitats in the project areas are not similar to those used by the species, and the project areas are more than 45 miles northeast of the Buenos Aires National Wildlife Refuge.	No effect.
Mexican spotted owl (*Strix occidentalis lucida*)	T	Found in mature montane forests and woodlands and steep, shady, wooded canyons. Can also be found in mixed-conifer and pine–oak (*Pinus* spp.–*Quercus* spp.) vegetation types. Generally nests in older forests of mixed conifers or ponderosa pine (*Pinus ponderosa*)–Gambel oak (*Quercus gambelii*). Nests in live trees on natural platforms (e.g., dwarf mistletoe [*Arceuthobium* spp.] brooms), snags, and canyon walls at elevations between 4,100 and 9,000 feet amsl.	Unlikely to occur. There are no mature montane forests; steep, shady wooded canyons; or appropriate vegetation types within the project areas. The project areas are also outside the elevational range of this species.	No effect.

Common Name (Scientific Name)	Status*	Range or Habitat Requirements	Potential for Occurrence in Project Areas	Determination of Effect
Mexican wolf (*Canis lupus baileyi*)	E/EXPN	Prefer mountain woodlands, in areas with access to water, adequate denning sites, abundant prey, and lack of roads or other human disturbance.	Unlikely to occur. The project areas contain significant human disturbance and do not contain suitable mountain woodland habitat. The project is within the 10(j) Experimental Population Area Zone 2 but there are no known or planned introductions in this vicinity (USFWS 2015).	No effect.
Monarch butterfly (*Danaus plexippus*)	C	A migratory species found in a variety of habitats. Monarchs require milkweed (*Asclepias* spp.) for breeding (USFWS 2020b). During fall migration in Arizona, monarchs favor nectar from native plants including sunflowers (*Helianthus* spp.), rabbitbrush (*Chrysothamnus* spp.), desertbroom (*Baccharis sarothroides*), sweetbush (*Bebbia juncea*), thistles (Family Asteraceae), mule-fat (*Baccharis salicifolia*), milkweeds, and a variety of other native and garden plants (Morris et al. 2015). Populations in Arizona can migrate either to California or Mexico for winter (USFWS 2020b) or may overwinter in the low deserts in California or Arizona (Morris et al. 2015). In the southwestern United States, migrating monarchs often occur near water sources (e.g., rivers, streams, riparian corridors, roadside ditches, irrigated gardens) (USFWS 2020b). In the low deserts of Arizona, monarchs breed in late August to early September (Morris et al. 2015).	May occur seasonally. Although no milkweed plants that could be used for reproduction were identified within the project areas, flowering plants are available within the project areas and vicinity that this species could use while foraging during migration or when otherwise seasonally present in southern Arizona.	May impact individuals but is not likely to result in a trend toward federal listing or loss of viability.
Nichol's Turk's head cactus (*Echinocactus horizonthalonius* var. *nicholii*)	E	Found in Sonoran desertscrub with limestone-derived alluvium at elevations between 2,000 and 3,600 feet amsl. In Arizona, its known range is limited to the Waterman and Vekol Mountains.	Unlikely to occur. Although they have been recorded within 5 miles of the site in the past, this is likely a mistaken identification record. No limestone-derived alluvium soils are in the project areas, and the nearest known population of this species is more than 42 miles northwest of the project areas in the Waterman Mountains.	No effect.
Northern aplomado falcon (*Falco femoralis*)	EXPN	The species has somewhat variable habitat preferences, with historical habitats in Arizona, including semidesert grassland or riparian associations with scattered trees and shrubs at elevations from 3,300 to 4,900 feet amsl. They do not build their own nests but occupy old stick nests left by raptors, and those of Chihuahuan ravens (*Corvus cryptoleucus*) are used extensively. Nests are typically in mesquite (*Prosopis* spp.), yucca (*Yucca* spp.), or low bushes.	Unlikely to occur. Although the boundary of the 10(j) reintroduction area includes all of New Mexico and Arizona, birds have only been released in New Mexico. This species has not been credibly recorded in Arizona since 1940 (AGFD 2022), and the last nesting record is from 1887 (Wheeler 2003). The project areas are below the elevational range of this species and do not contain suitable grassland habitat.	No effect.

Common Name (Scientific Name)	Status*	Range or Habitat Requirements	Potential for Occurrence in Project Areas	Determination of Effect
Northern Mexican gartersnake (*Thamnophis eques megalops*)	T	This species is most abundant at elevations between 3,000 and 5,000 feet amsl in densely vegetated habitat surrounding ciénegas, streams, and stock tanks, in or near water along streams in valley floors and generally open areas, but not in steep mountain canyon stream habitat (Rosen and Schwalbe 1988). Considered extant in fragmented populations within the middle to upper Verde River drainage, middle to lower Tonto Creek, Cienega Creek, and a small number of isolated wetland habitats elsewhere in southeastern Arizona.	Unlikely to occur. No aquatic or semiaquatic habitats are in or adjacent to the project areas.	No effect.
Ocelot (*Leopardus pardalis*)	E	In Arizona, typically observed in dense, brushy thickets at elevations below 8,000 feet amsl and often found in riparian bottomlands. Dense cover near the ground is an important habitat component, and ocelots completely avoid open country. In Arizona, there are seven recent confirmed sightings: one from Gila County (2010), five from Cochise County (2009, 2011, and 2012), and one from Pima County (2014), along with unconfirmed sightings in the Huachuca, Chiricahua, and Peloncillo Mountains.	Unlikely to occur. Ocelots are extremely rare; there are only a few ocelots currently known to occur in southern Arizona. The nearest known ocelot sighting is in the Santa Rita Mountains, more than 25 miles south of the project areas. The project areas are close to development. This makes the project areas unlikely to be used by this species.	No effect.
Pima pineapple cactus (*Coryphantha scheeri* var. *robustispina*)	E	Found on alluvial bajadas in sand or rocky loam soils that are on slopes with less than 10% grade within desert grassland and Sonoran desertscrub at elevations between 2,800 and 3,500 feet amsl. In Arizona, found in the Santa Cruz and Altar Valleys and Patagonia Mountains.	See species discussion, below.	See species discussion, below.
Sonoran pronghorn (*Antilocapra americana sonoriensis*)	E/EXPN	Found in Sonoran desertscrub within broad, intermountain, alluvial valleys with creosote bush (*Larrea tridentata*)–bursage (*Ambrosia* spp.) and paloverde (*Parkinsonia* spp.)–mixed cacti associations at elevations between 2,000 and 4,000 feet amsl. The only extant U.S. population is in southwestern Arizona.	Unlikely to occur. The project areas are not in a broad, intermountain alluvial valley. Additionally, the project areas are not in any known reintroduction areas and are far from the current occupied range of the species.	No effect.
Sonoyta mud turtle (*Kinosternon sonoriense longifemorale*)	E	In Arizona, found only in pond and stream habitat at Quitobaquito Springs in Organ Pipe Cactus National Monument. This subspecies of the more common Sonora mud turtle (*Kinosternon sonoriense sonoriense*) also occurs in Rio Sonoyta, Mexico.	Unlikely to occur. In Arizona, this species is found only in Quitobaquito Springs, more than 100 miles southwest of the project areas.	No effect.
Southwestern willow flycatcher (*Empidonax traillii extimus*)	E	Found in dense riparian habitats along streams, rivers, and other wetlands where cottonwood (*Populus* spp.), willow (*Salix* spp.), boxelder (*Acer negundo*), saltcedar (*Tamarix* spp.), Russian olive (*Elaeagnus angustifolia*), buttonbush (*Cephalanthus* spp.), and arrow weed (*Pluchea sericea*) are present. Nests are found in thickets of trees and shrubs, primarily those that are 13 to 23 feet tall among dense, homogeneous foliage. Habitat occurs at elevations below 8,500 feet amsl.	Unlikely to occur. There are no dense riparian habitats or streams, rivers, or other wetlands in the project areas.	No effect.

Common Name (Scientific Name)	Status*	Range or Habitat Requirements	Potential for Occurrence in Project Areas	Determination of Effect
Wright's marsh thistle (*Cirsium wrightii*)	T	A wetland obligate that occurs in wet, alkaline soils in spring seeps and marsh edges at elevations from 3,450 to 7,850 feet amsl (USFWS 2017). In Arizona, only known from the San Bernardino Cienega in Cochise County; however, the species is likely extirpated from Arizona as recent surveys failed to find the plant and the known site was devoid of suitable habitat (USFWS 2017). This species is currently known to occur in New Mexico within eight general localities.	Unlikely to occur. There are no wetlands in the project areas. Further, the project areas are distant from the known occurrences of this plant in New Mexico.	No effect.
Yellow-billed cuckoo (*Coccyzus americanus*)	T	Typically found in riparian woodland vegetation (cottonwood, willow, or saltcedar) at elevations below 6,600 feet amsl. Dense understory foliage appears to be an important factor in nest site selection. The highest concentrations in Arizona are along the Agua Fria, San Pedro, upper Santa Cruz, and Verde River drainages and Cienega and Sonoita Creeks.	Unlikely to occur. They have been recorded at Sahuarita Lake once, which is within 5 miles of the project areas, but the lake provides suitable habitat, and that individual was most likely a migrant. The project areas lack the suitable habitat the species favors.	No effect.

Note: Range or habitat information is from the AGFD Heritage Data Management System (AGFD 2023b); Arizona Rare Plant Field Guide (Arizona Rare Plant Committee. n.d. [2001]); and Arizona Breeding Bird Atlas (Corman and Wise-Gervais 2005); and USFWS Environmental Conservation Online System (USFWS 2023b).

* USFWS status definitions:

C = Candidate. Candidate species are those for which the USFWS has sufficient information on biological vulnerability and threats to support proposals to list as endangered or threatened under the ESA. However, proposed rules have not yet been issued because such actions are precluded at present by other listing activity.

E = Endangered. An animal or plant species in danger of extinction throughout all or a significant portion of its range.

EXPN = Non-Essential Experimental Population. Experimental populations of a species designated under Section 10(j) of the ESA for which the USFWS, through the best available information, believes is not essential for the continued existence of the species. Regulatory restrictions are considerably reduced under an EXPN designation.

T = Threatened. An animal or plant species likely to become endangered within the foreseeable future throughout all or a significant portion of its range.

Pima pineapple cactus (*Coryphantha scheeri* var. *robustispina*)

Taxonomy: There are three Pima pineapple cactus varieties: var. *valida*, found in southeastern Arizona to Texas and Chihuahua, Mexico; var. *scheeri*, found in Mexico; and var. *robustispina*, found in south-central Arizona (AGFD 2023b).

Threats and Limiting Factors: Threats to Pima pineapple cactus include habitat loss due to mining, agriculture, road construction, and urbanization, as well as degradation of habitat from livestock grazing, introduction and spread of nonnative plant species, recreation and border activities, and changing fire regimes and intensities due to increased fuel levels from nonnative plant species. Other threats or stressors that may also be impacting populations of this species include drought or climate change; illegal collection of the species; disease or predation on individuals, particularly those already affected by drought; small population size and isolation; and the fact that most individuals of this species occur on private or State Trust land where they are not subject to federal protection (USFWS 2016).

Habitat and Range Requirements: Pima pineapple cactus is found in alluvial basins and on ridges in desert grasslands and Sonoran desertscrub with little to no slope and sparse vegetation, between 2,300 and 4,200 feet amsl. The species blooms for only a short period during the summer rains and reproduces both by seed and asexually. Pollination is primarily accomplished by small black and white bees (AGFD 2023b; USFWS 2016, 2023b).

Range-wide Distribution and Abundance: Pima pineapple cactus is found in south-central Arizona and north-central Sonora, Mexico. Within Arizona, the species is found in Pima and Santa Cruz Counties, and its range is bounded by the Santa Rita Mountains to the east, the Baboquivari Mountains to the west, the city of Tucson to the north, and the U.S.-Mexico border to the south (AGFD 2023b).

Habitat Suitability and Potential for Occurrence: The project areas are within the geographical range of this species and contain suitable Sonoran desertscrub habitat. There are occurrence records for this species within 5 miles of the project areas (AGFD 2023a). This species is known to occur in the solar project area and overall study area.

Ten individual Pima pineapple cactus were identified during species-specific surveys within the solar project area, six of which are in the areas designated for solar panels or substations in the most current project layout (see *Native Plant Survey for the Wilmot II Energy Center Project in Pima County, Arizona* [SWCA 2023a] for detailed plant location information). Approximately 845 acres of upland habitat suitable for Pima pineapple cactus occurs within the solar project area.

Three individuals were identified incidentally during natural resource surveys of the gen-tie project area. All three individuals occurred in or near the study area but outside the gen-tie project area. The precise location of impacts within the gen-tie project area is unknown (i.e., the footprint for new gen-tie structures and any access roads needed). Because impact locations are not known within the gen-tie project area, it is unknown whether any individual Pima pineapple cactuses would be directly impacted by construction activities within the gen-tie project area.

Effects: Impacts to plants would occur during the salvage and transplanting efforts. Individuals that can be avoided will be left in place and avoided during construction activities (e.g., by fencing, flagging, worker education). Any individuals that cannot be avoided will be transplanted out of harm's way to a portion of the site that will not be developed. Qualified biologists will salvage and transplant the cacti. In addition, ground disturbance can shower a layer of dust on the Pima pineapple cactus, which could have a minor and temporary impact on plant respiration. Pima pineapple cactus seeds are likely present on or within the ground soil of the solar project area. Construction may prevent or disrupt seed germination and growth. Ground-disturbing activities could lead to increased spread of invasive plant species, which can compete with Pima pineapple cactus individuals for space and resources (USFWS 2016). This could modify fire regimes, causing an increase in the frequency and severity of fire events, which could in turn negatively impact Pima pineapple cactus. The site already contains infestations of buffelgrass (mainly along the wash corridors), which is also known to occur abundantly along roads in the region (iMapInvasives 2023). Construction of solar array structures and associated infrastructure would reduce the number of buffelgrass plants in the project areas, potentially reducing the size of the immediate source population. Noxious weed management would reduce the likelihood of the reemergence of buffelgrass in the project area.

Determination of Effect

Solar Project Area: Project construction *may affect*, and is *likely to adversely affect*, Pima pineapple cactus. Direct effects to Pima pineapple cactus would occur to any individuals that cannot be avoided during construction and must be salvaged and transplanted. Indirect effects include the potential for project activities to contribute to the introduction or spread of buffelgrass in the region, which could cause an increase in the potential for fire or reduce the viability or reproduction of Pima pineapple cactus by preventing or disrupting seed generation and increasing competition for space or water availability (i.e., increase competition for resources).

Gen-tie Project Area: Effects for this portion of the project area cannot be determined until the locations of impacts are known but would be expected to be similar to those of the solar project area, albeit on a reduced scale because of the limited ground disturbance associated with gen-tie construction.

Incidental Take Coverage

Although effects to the Pima pineapple cactus are expected to occur, no formal Section 7 consultation with the USFWS would be required because there is no federal nexus on the project; the client plans to secure a certificate of coverage under the Pima County HCP (i.e., its Multi-Species Conservation Plan Section 10 permit).

MIGRATORY BIRD TREATY ACT AND BALD AND GOLDEN EAGLE PROTECTION ACT

Twenty-eight avian species—all of which are covered under the MBTA except the Gambel's quail (*Callipepla gambelii*)—were observed in the study area during the site visit (see Appendix A).

Migratory bird species, including others that could occur but were not observed in the area, are protected under the MBTA, which provides federal protection to all migratory birds, including nests and eggs. To relocate or alter any MBTA-protected individuals or nests, a permit must be obtained from the USFWS to maintain compliance with the MBTA.

However, Section 1 of the Interim Empty Nest Policy of the USFWS, Region 2, states that if the nest is completely inactive at the time of destruction or movement, a permit is not required to comply with the MBTA. If vegetation clearing is expected to take place during the nesting season (i.e., between mid-February and late September, with the nesting season for raptors being January through late June), it is recommended that a nesting bird survey be conducted within 1 month of vegetation clearing activities to locate any active nests. Measures should then be taken to protect the nest from destruction and to avoid a violation of the MBTA.

Three great horned owl (*Bubo virginianus*) nests, one red-tailed hawk (*Buteo jamaicensis*) nest, and one crested caracara (*Caracara plancus*) nest were found in the study area, all in large multi-armed saguaros. Dozens of small passerine-type bird nests were also observed, mostly in jumping cholla. These passerine nests were generally inactive, with only a few observed to be active.

Bald eagle (*Haliaeetus leucocephalus*) and golden eagle (*Aquila chrysaetos*) are protected under both the MBTA and the Bald and Golden Eagle Act. No suitable bald eagle nesting or foraging habitat (e.g., flowing rivers or lakes containing fish), and no tall trees or cliffs suitable for eagle perching are within the project areas. The project areas do not contain nesting sites for golden eagles, but individuals may fly over the project areas while foraging. Similarly, bald eagles could fly over the project areas during dispersal. No impacts would be expected to occur to either eagle species as a result of this project.

STATE OF ARIZONA SPECIAL-STATUS SPECIES

SGCN is an AGFD listing status that defines wildlife of conservation priority in the state of Arizona (described nationally as Wildlife of Greatest Conservation Need). As discussed in the State Wildlife Action Plan (AGFD 2022), SGCN are species of vertebrates, crustaceans, and mollusks that rank high in the vulnerability category and have been identified for immediate action. Each species was assessed in terms of vulnerability and assigned either a Tier 1, Tier 2, or Tier 3 ranking, with Tier 1 being the highest threat level (AGFD 2022).

The AZHGIS report (see Appendix C) indicates that there are records of occurrence for 33 special-status species within a 5-mile radius of the project areas: Abert's towhee (*Melozone aberti*), American kestrel *(Falco sparverius*), Bailey's pocket mouse (*Chaetodipus baileyi*), black-throated sparrow (*Amphispiza bilineata*), Brazilian free-tailed bat (*Tadarida brasiliensis*), broad-billed hummingbird (*Cynanthus latirostris*), Bullock's oriole (*Icterus bullockii*), cactus wren (*Campylorhynchus brunneicapillus*), canyon towhee (*Melozone fusca*), cave myotis (*Myotis velifer*), Costa's hummingbird (*Calypte costae*), Gila monster (*Heloderma suspectum*), Gila woodpecker (*Melanerpes uropygialis*), gilded flicker (*Colaptes chrysoides*), Harris' antelope squirrel (*Ammospermophilus harrisii*), Harris's hawk (*Parabuteo unicinctus*), lesser long-nosed bat (*Leptonycteris yerbabuenae*), pinkflower hedgehog cactus (*Echinocereus fasciculatus*), needle-spined pineapple cactus (*Echinomastus erectocentrus* var. *erectocentrus*), Nichol Turk's head cactus (*Echinocactus horizonthalonius* var. *nicholii*), Pima pineapple cactus, pyrrhuloxia (*Cardinalis sinuatus*), regal horned lizard (*Phrynosoma solare*), Rivoli's hummingbird (*Eugenes fulgens*), rufous-winged sparrow (*Peucaea carpalis*), Sinaloan narrow-mouthed toad (*Gastrophryne mazatlanensis*), Sonoran desert toad (*Incilius alvarius*), Sonoran desert tortoise (*Gopherus morafkai*), Swainson's hawk (*Buteo swainsoni*), Tumamoc globe-berry (*Tumamoca macdougalii*), verdin (*Auriparus flaviceps*), western yellow bat (*Lasiurus xanthinus*), and yellow-billed cuckoo. The AZHGIS report also indicates that a bat colony occurs within 5 miles of the project areas. This bat colony is likely in the nearby Santa Rita Mountains, as no caves, mines, or adits occur within the project areas. Nichol Turk's head cactus, Pima pineapple cactus, and yellow-billed cuckoo are discussed in Table 1.

Black-throated sparrow, cactus wren, Gila woodpecker, gilded flicker, pinkflower hedgehog cactus, and verdin were all observed in the study area (see Appendix A). The Brazilian free-tailed bat, cave myotis, and lesser long-nosed bat have the potential to forage in the project areas but would be unlikely to roost within it as no suitable hibernacula or day roosts occur (caves, abandoned buildings, cliff faces, riparian woodlands, or palm trees) (AGFD 2023b). However, a bat colony is also known to occur within 5 miles. The following bird species are unlikely to occur because the habitat they prefer does not occur in the project areas: Abert's towhee (i.e., brush along streams, woodlands, or suburban landscapes), broad-billed hummingbird (i.e., forests), Bullock's oriole (i.e., open woodlands), Rivoli's hummingbird (i.e., forests) (The Cornell Lab 2023). The following bird species occur in desert scrublands or desert grasslands (The Cornell Lab 2023) and may occur in the project areas: American kestrel, canyon towhee, Costa's hummingbird, Harris' hawk, pyrrhuloxia, rufous-winged sparrow, and Swainson's hawk. The following plant species have the potential to occur, although they were not observed during surveys: needle-spined pineapple cactus and Tumamoc globe-berry (AGFD 2023b). The Gila monster and regal horned lizard may occur in the project areas because suitable desertscrub habitat occurs (AGFD 2023c). The Sonoran desert tortoise may disperse across the project area, but its preferred habitat type (caliche caves or bajadas) (AGFD 2023b) does not occur on-site. The Sonoran desert toad may occur in the project areas in mud cracks, roadside puddles, or other locations in which water collects during monsoon storms; however, because no cattle tanks or streams occur, the species would be unlikely to breed in the project areas (AGFD 2023c). The Sinaloan narrow-mouthed toad is unlikely to occur because this species is usually found in the vicinity of streams, springs, and rain pools (AGFD 2023b). Bailey's pocket mouse and Harris' antelope squirrel have the potential to occur in the project areas because both species use desertscrub habitats (NatureServe 2023).

The AZHGIS report (see Appendix C) also indicates that the predicted range models for 15 SGCN species intersect the project footprint. Because of the moderate amount of biological diversity in the project areas, most of the 15 species will use the project areas either on a limited, seasonal, or year-round basis.

Finally, the AZHGIS report (see Appendix C) indicates that six Species of Economic and Recreation Importance are predicted to occur in or within a 5-mile radius of the project areas: Gambel's quail, mule

deer (*Odocoileus hemionus*), javelina (*Pecari tajacu*), mountain lion (*Puma concolor*), white-winged dove (*Zenaida asiatica*), and mourning dove (*Zenaida macroura*). All these species, except for mountain lions, are likely to occur in the project areas because they are habitat generalists with widespread distributions in the Southwest. Mountain lions are unlikely to occur in the project areas because they are a relatively rare species that typically avoids areas with human activity, although they could use the area when moving from other more suitable habitat areas in the vicinity.

ARIZONA DEPARTMENT OF AGRICULTURE ARIZONA NATIVE PLANT LAW

Protected native plants classified under the Arizona Native Plant Law (Arizona Revised Statutes 3-904) are present in the study area. This law states that protected plants cannot be salvaged and transported from any land, including private land, without permission and a permit from the ADA, and it also requires notification prior to land clearing even if the plants would be destroyed. Highly Safeguarded native plants are those species for which removal is not allowed except with an ADA scientific permit; no collection of these plants is allowed. One species in the Highly Safeguarded category was observed, Pima pineapple cactus. Salvage Restricted native plants are those plants for which a salvage permit is required; collection is allowed only with a permit. Twelve Salvage Restricted plants were observed, Arizona pencil cholla (*Cylindropuntia arbuscula*), cactus apple, candy barrel cactus, Christmas cactus, Graham's nipple cactus (*Mammillaria grahamii*), jumping cholla, night-blooming cereus (*Peniocereus greggii*), ocotillo (*Fouquieria splendens*), pinkflower hedgehog cactus, saguaro, soaptree yucca (*Yucca elata*), and tree cholla. The Salvage Assessed category includes native plants for which a salvage permit is required for removal. Three species in this category were observed: blue paloverde (*Parkinsonia florida*), velvet mesquite, and yellow paloverde. Plants in the Harvest Restricted category are protected because they are subject to excessive harvesting or overcutting as a result of the intrinsic value of their byproducts, fiber, or woody parts, and a harvest permit is required. One species in this category, velvet mesquite, was observed in the study area. Velvet mesquite is in both the Salvaged Assessed and Harvest Restricted categories.

The ADA Notice of Intent to Clear Land form is in Appendix D of this report. This form must be completed and submitted to the ADA prior to vegetation-removal activities. As noted on page 2 of the form, the advance notice required for submittal of the form is dependent on the amount of land that will be cleared. If native plants will be salvaged and replanted off-site, the applicant needs to include this information with the Notice of Intent to Clear Land form at the time of its submittal and request salvage permits.

ARIZONA DEPARTMENT OF AGRICULTURE NOXIOUS WEED REGULATIONS

The ADA defines three classes of noxious weeds in the State of Arizona:

- A Class A noxious weed is categorized as a species of plant that is not known to exist or that is of limited distribution in the state and is a high-priority pest for quarantine, control, or mitigation.
- A Class B noxious weed is categorized as a species of plant that is known to occur but of limited distribution in the state and may be a high-priority pest for quarantine, control, or mitigation if a significant threat to a crop, commodity, or habitat is known to exist.
- A Class C noxious weed is categorized as a species of plant that is widespread but may be recommended for active control based on risk assessment.

One Class B species (Saharan mustard, *Brassica tournefortii*) and one Class C species (buffelgrass) listed as Arizona noxious weed species were observed in the study area. Saharan mustard was found

sporadically throughout the study area. Buffelgrass was common and observed along most of the washes in the study area.

ARIZONA GAME AND FISH DEPARTMENT SOLAR DEVELOPMENT GUIDANCE

The AGFD *Guidelines* outline regulations and important biological resource categories, such as wildlife corridors and linkages, and wildlife habitat (AGFD 2010). Arizona's State Wildlife Action Plan (AGFD 2023a) describes special-status species, including SGCN. The relevant biological regulations as well as special-status species that should be considered for solar developments are addressed in this report.

The AGFD *Guidelines* also refer to potential solar site categories. In SWCA's opinion, the project areas fall under Resource Category III, which is defined by AGFD as follows: "Habitats in this category are of high to medium value for Arizona wildlife species and are relatively abundant on a statewide basis" (AGFD 2010).

The AGFD provided avoidance and minimization measures to reduce impacts to wildlife and their habitat to be considered for this type of project, which is categorized as "Energy Storage/Production/Transfer, Energy Production (generation), photovoltaic solar facility (new)," in the AZHGIS report (see Appendix C).

PIMA COUNTY NATIVE PLANT PRESERVATION ORDINANCE AND REGULATED RIPARIAN HABITAT ORDINANCE

Native Plant Preservation Ordinance

Twelve of the plant species documented in the study area are protected under the Pima County NPPO (see Appendix A): blue paloverde, candy barrel cactus, catclaw acacia, night-blooming cereus, ocotillo, Pima pineapple cactus, saguaro, soaptree yucca, spiny hackberry, velvet mesquite, whitethorn acacia, and yellow paloverde. This ordinance applies to the project areas that are within unincorporated Pima County and require a conditional use permit or other county permit. The potential for and extent of impacts on Pima County NPPO plants will be determined once the native plant mitigation plan is drafted. Required surveys for desert ironwood, saguaro, and Pima pineapple cactus to satisfy Pima County NPPO requirements for the 30% set-aside method for the solar project area were detailed in a separate report (SWCA 2023a).

Regulated Riparian Habitat Ordinance

The Regulated Riparian Habitat Ordinance (Pima County Ordinance 2005-FC-16.30) protects watercourses and washes by preserving or enhancing riparian vegetation and habitat along watercourses and floodplains. This ordinance applies to REID and non-REID areas within unincorporated Pima County. Figure 3 identifies regulated riparian habitats mapped within the solar project area. Pima County's *Regulated Riparian Habitat Mitigation Standards and Implementation Guidelines* (Pima County Regional Flood Control District 2011) contain mitigation guidelines and standards and include the documentation required for a Riparian Habitat Mitigation Plan that would be necessary for impacts to regulated riparian habitat over 0.3 acre by project development activities. This ordinance was addressed for the solar project area in a separate report (SWCA 2023b).

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APPENDIX A

Floral and Faunal List

Table A.1. Plant Species Observed in the Project Area and Their Status

Common Name	Scientific Name	Observed in Solar Project Area	Observed in Transmission Project Area	Arizona Native Plant Law Protected Native Plant*	Pima County NPPO	ADA Noxious Weed Species
Arizona pencil cholla	*Cylindropuntia arbuscula*	X	X	SR		
Arizona sandmat	*Chamaesyce arizonica*	X	X			
Asian mustard† (=Saharan mustard)	*Brassica tournefortii*	X				Class B
Bajada lupine	*Lupinus concinnus*	X				
Bermudagrass†	*Cynodon dactylon*	X	X			
Blue paloverde	*Parkinsonia florida*	X	X	SA	X	
Brittlebush	*Encelia farinosa*	X				
Burroweed	*Isocoma tenuisecta*	X	X			
Buffelgrass†	*Pennisetum ciliare*	X	X			Class C
Cactus apple	*Opuntia engelmannii*	X	X	SR		
Candy barrel cactus	*Ferocactus wislizeni*	X	X	SR	X	
Catclaw acacia	*Senegalia greggii*	X	X		X	
Christmas cactus	*Cylindropuntia leptocaulis*	X	X	SR		
Creosote bush	*Larrea tridentata*	X	X			
Desert evening primrose	*Oenothera primiveris*	X				
Desert globemallow	*Sphaeralcea ambigua*	X	X			
Desert marigold	*Baileya multiradiata*	X				
Desert tobacco	*Nicotiana obtusifolia*	X	X			
Desert wolfberry	*Lycium macrodon*	X				
Desert zinnia	*Zinnia acerosa*	X				
Desertbroom	*Baccharis sarothroides*	X	X			
Devil's spineflower	*Chorizanthe rigida*	X	X			
Doubleclaw	*Proboscidea parviflora*	X	X			
Downy prairie clover	*Dalea neomexicana*	X				
Dwarf desertpeony	*Acourtia nana*	X				
Dwarf white milkvetch	*Astragalus didymocarpus*	X				
Fairyduster	*Calliandra eriophylla*	X				
Fourwing saltbush	*Atriplex canescens*	X	X			
Graham's nipple cactus	*Mammillaria grahamii*	X	X	SR		

Common Name	Scientific Name	Observed in Solar Project Area	Observed in Transmission Project Area	Arizona Native Plant Law Protected Native Plant*	Pima County NPPO	ADA Noxious Weed Species
Jumping cholla	*Cylindropuntia fulgida*	X	X	SR		
Lotebush	*Ziziphus obtusifolia*	X				
Menzies' fiddleneck	*Amsinckia menziesii*	X				
Mule-fat	*Baccharis salicifolia*	X				
New Mexico plumeseed	*Rafinesquia neomexicana*	X				
Nightblooming cereus	*Peniocereus greggii*	X		SR	X	
Ocotillo	*Fouquieria splendens*	X	X	SR	X	
Pima pineapple cactus	*Coryphantha scheeri* var. *robustispina*	X	X	HS	X	
pinkflower hedgehog cactus	*Echinocereus fasciculatus*	X		SR		
Prickly Russian thistle†	*Salsola tragus*	X	X			
Saguaro	*Carnegiea gigantea*	X	X	SR	X	
Soaptree yucca	*Yucca elata*	X	X	SR	X	
Spidergrass	*Aristida ternipes*	X	X			
Spiny hackberry	*Celtis ehrenbergiana*	X	X		X	
Tree cholla	*Cylindropuntia imbricata*	X	X	SR		
Triangle bur ragweed	*Ambrosia deltoidea*	X				
Velvet mesquite	*Prosopis velutina*	X	X	SA, HR	X	
Whitethorn acacia	*Vachellia constricta*	X	X		X	
Yellow paloverde	*Parkinsonia microphylla*	X	X	SA	X	

Note: Plant names follow the PLANTS database (Natural Resources Conservation Service 2023), except plants listed by USFWS are named according to listing documents.

* Arizona Native Plant Law status codes: HR = Harvest Restricted; HS = Highly Safeguarded; SA = Salvage Assessed; SR = Salvage Restricted.

† Nonnative species.

Table A.2. Bird Species Observed in the Project Area

Common Name	Scientific Name	Observed in Solar Project Area	Observed in Transmission Project Area
Abert's towhee	*Melozone aberti*	X	X
American kestrel	*Falco sparverius*	X	
Ash-throated flycatcher	*Myiarchus cinerascens*	X	X
Black-tailed gnatcatcher	*Polioptila melanura*	X	X

Black-throated sparrow	*Amphispiza bilineata*	X	X
Brewer's sparrow	*Spizella breweri*	X	
Cactus wren	*Catherpes mexicanus*	X	X
Common raven	*Corvus corax*	X	X
Cooper's hawk	*Accipiter cooperii*	X	
Crested caracara	*Caracara cheriway*	X	
Curve-billed thrasher	*Toxostoma curvirostre*	X	X
Gambel's quail	*Callipepla gambelii*	X	X
Gila woodpecker	*Melanerpes uropygialis*	X	X
Gilded flicker	*Colaptes chrysoides*	X	X
Great horned owl	*Bubo virginianus*	X	
Greater roadrunner	*Geococcyx californianus*	X	X
House finch	*Haemorhous mexicanus*	X	X
Ladder-backed woodpecker	*Picoides scalaris*	X	
Lesser goldfinch	*Spinus psaltria*	X	
Lucy's warbler	*Oreothlypis luciae*	X	X
Mallard	*Anas platyrhynchos*	X	
Mourning dove	*Zenaida macroura*	X	X
Phainopepla	*Phainopepla nitens*	X	
Red-tailed hawk	*Buteo jamaicensis*	X	X
Turkey vulture	*Cathartes aura*	X	X
Verdin	*Auriparus flaviceps*	X	X
White-crowned sparrow	*Zonotrichia leucophrys*	X	
White-winged dove	*Zenaida asiatica*	X	X
Zone-tailed hawk	*Buteo albonotatus*	X	

Table A.3. Wildlife Species Observed in the Project Area

Common Name	Scientific Name	Observed in Solar Project Area	Observed in Transmission Project Area
Antelope jackrabbit	*Lepus alleni*	X	
Black-tailed jackrabbit	*Lepus californicus*	X	
Coyote	*Canis latrans*	X	
Desert cottontail	*Sylvilagus audubonii*	X	X
Round-tailed ground squirrel	*Xerospermophilus tereticaudus*	X	X

APPENDIX B

USFWS IPaC Species List for the Project Area

IPaC **U.S. Fish & Wildlife Service**

IPaC resource list

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KNOWN DKEY ISSUE: We are experiencing time outs when multiple projects are attempting to run Determination Keys (DKeys) simultaneously, especially the Northern Long-eared Bat DKey and Northeast Endangered Species DKey. We working on a solution to address this issue as soon as possible. If you encounter a time out when running a DKey, please **wait** and try your project again, optimally when there is low system use (early mornings/evenings). We appreciate your patience while we address this issue.

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.

NOT FOR CONSULTATION

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

NOT FOR CONSULTATION

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 species[1] 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 Fisheries[2]).

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.

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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).

NOT FOR CONSULTATION

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 *Panthera onca* 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 *Leopardus (=Felis) pardalis* Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/4474	Endangered

Birds

NAME	STATUS
California Least Tern *Sterna antillarum browni* Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/8104	Endangered
Yellow-billed Cuckoo *Coccyzus americanus* There is **final** critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/3911	Threatened

Reptiles

NAME	STATUS
Sonoyta Mud Turtle *Kinosternon sonoriense longifemorale* Wherever found There is **final** critical habitat for this species. https://ecos.fws.gov/ecp/species/7276	Endangered

Amphibians

NAME	STATUS

NOT FOR CONSULTATION

NAME	STATUS
Chiricahua Leopard Frog Rana chiricahuensis 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	Threatened

Fishes

NAME	STATUS
Gila Chub Gila intermedia 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	Endangered

Insects

NAME	STATUS
Monarch Butterfly Danaus plexippus Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/9743	Candidate

Flowering Plants

NAME	STATUS
Arizona Eryngo Eryngium sparganophyllum There is **final** critical habitat for this species. https://ecos.fws.gov/ecp/species/10705	Endangered
Pima Pineapple Cactus Coryphantha scheeri var. robustispina Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/4919	Endangered

NOT FOR CONSULTATION

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 Act and the Migratory Bird Treaty Act.

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 conservation measures, as described below.

Additional information can be found using the following links:

- Eagle Managment 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 conservation measures for birds https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf

There are bald and/or golden eagles in your project area.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list,click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON

NOT FOR CONSULTATION

Golden Eagle *Aquila chrysaetos* Breeds Dec 1 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 and understand the FAQ "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 (■)

NOT FOR CONSULTATION

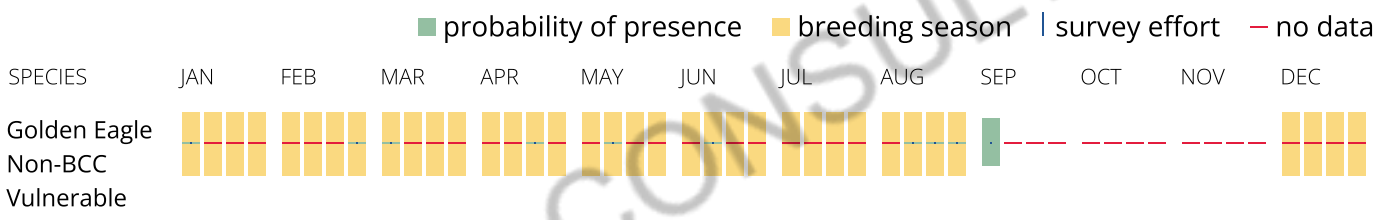
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

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.



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 a BCC species in that area, an eagle (Eagle Act requirements may apply). To see a list of all birds potentially present in your project area, please visit the Rapid Avian Information Locator (RAIL) Tool.

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

The Migratory Bird Resource List is comprised of USFWS Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location.

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) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply), or a species that has a particular vulnerability to offshore activities or development.

NOT FOR CONSULTATION

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, please visit the Rapid Avian Information Locator (RAIL) Tool.

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the Eagle Act should such impacts occur. Please contact your local Fish and Wildlife Service Field Office if you have questions.

Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act[1] and the Bald and Golden Eagle Protection Act[2].

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats should follow appropriate regulations and consider implementing appropriate conservation measures, as described below.

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:

- Birds of Conservation Concern https://www.fws.gov/program/migratory-birds/species
- Measures for avoiding and minimizing impacts to birds https://www.fws.gov/library/collections/avoiding-and-minimizing-incidental-take-migratory-birds
- Nationwide conservation measures for birds https://www.fws.gov/sites/default/files/documents/nationwide-standard-conservation-measures.pdf

The birds listed below are birds of particular concern either because they occur on the USFWS Birds of Conservation Concern (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ below. This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To see exact locations of where birders and the general public have sighted birds in and around your project area, visit the E-bird data mapping tool (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found below.

NOT FOR CONSULTATION

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
Costa's Hummingbird Calypte costae 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 Melanerpes uropygialis 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
Gilded Flicker Colaptes chrysoides This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/2960	Breeds May 1 to Aug 10
Golden Eagle Aquila chrysaetos 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
Lawrence's Goldfinch Carduelis lawrencei 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
Rufous-winged Sparrow Aimophila carpalis This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska.	Breeds Jun 15 to Sep 30

NOT FOR CONSULTATION

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 and

understand the FAQ "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.

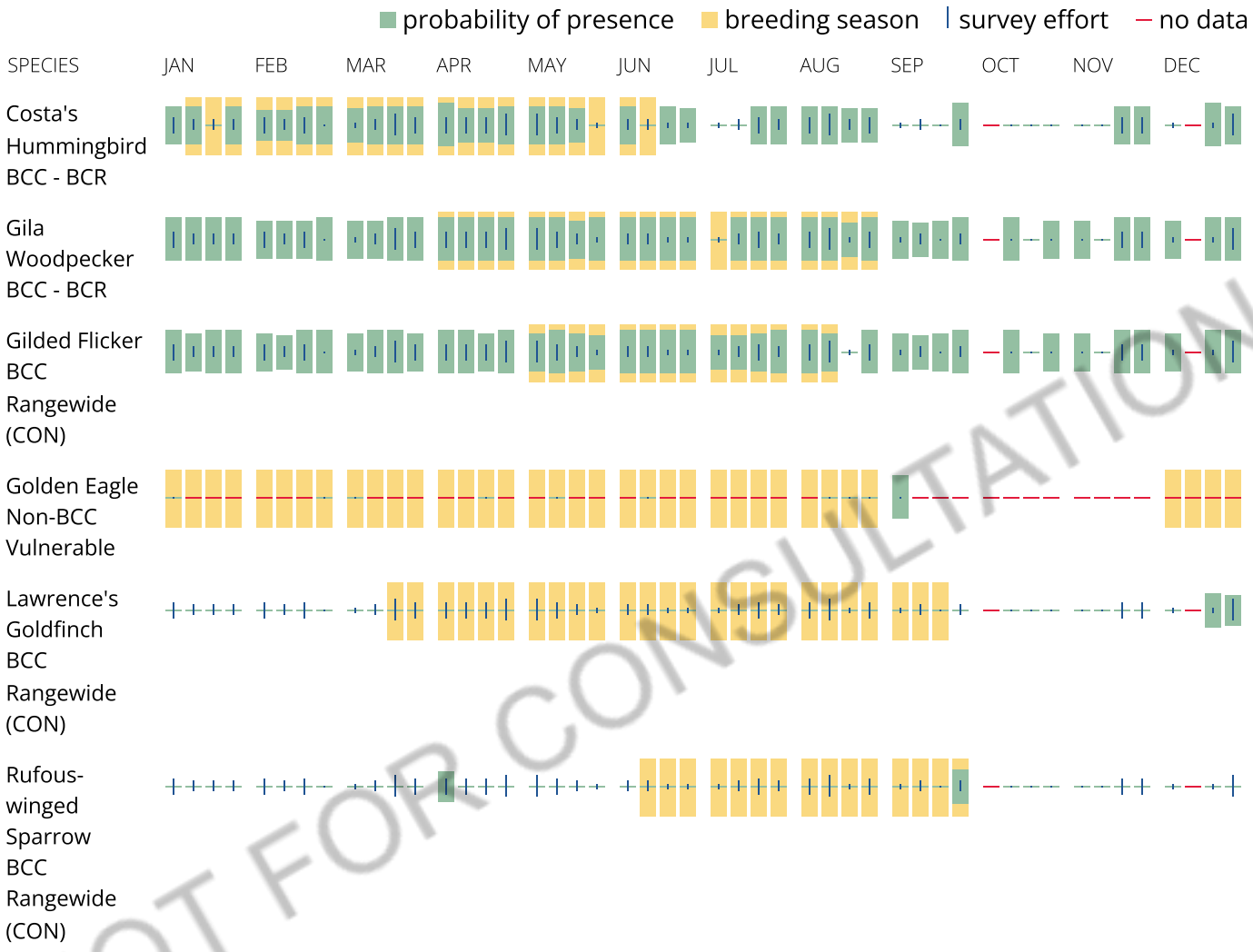
To see a bar's survey effort range, simply hover your mouse cursor over the bar.

No Data (–)
A week is marked as having no data if there were no survey events for that week.

Survey Timeframe

NOT FOR CONSULTATION

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.



NOT FOR CONSULTATION

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

Nationwide Conservation Measures describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding 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 USFWS Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location.

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) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle 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, please visit the Rapid Avian Information Locator (RAIL) Tool.

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 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 year-round), you may query your location using the RAIL Tool and look at 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 migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, 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 Eagle 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 try 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 eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

Details about birds that are potentially affected by offshore projects

NOT FOR CONSULTATION

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.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the Diving Bird Study and the nanotag studies or contact Caleb Spiegel or Pam Loring.

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the Eagle Act should such impacts occur.

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 also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). 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 is not perfect; 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 helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

NOT FOR CONSULTATION

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.

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

This location overlaps the following wetlands:

RIVERINE

- R4SBC
- R5UBH

A full description for each wetland code can be found at the National Wetlands Inventory website

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.

NOT FOR CONSULTATION

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 tuberficid 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.

NOT FOR CONSULTATION

APPENDIX C

AZHGIS Online Environmental Review Tool Report

Arizona Environmental Online Review Tool Report

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

Project Name:
Wilmot Solar II

Project Description:
New Solar and Gen tie

Project Type:
Energy Storage/Production/Transfer, Energy Production (generation), photovoltaic solar facility (new)

Contact Person:
Stacy Campbell

Organization:
SWCA

On Behalf Of:
PRIVATE

Project ID:
HGIS-19476

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

Disclaimer:

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

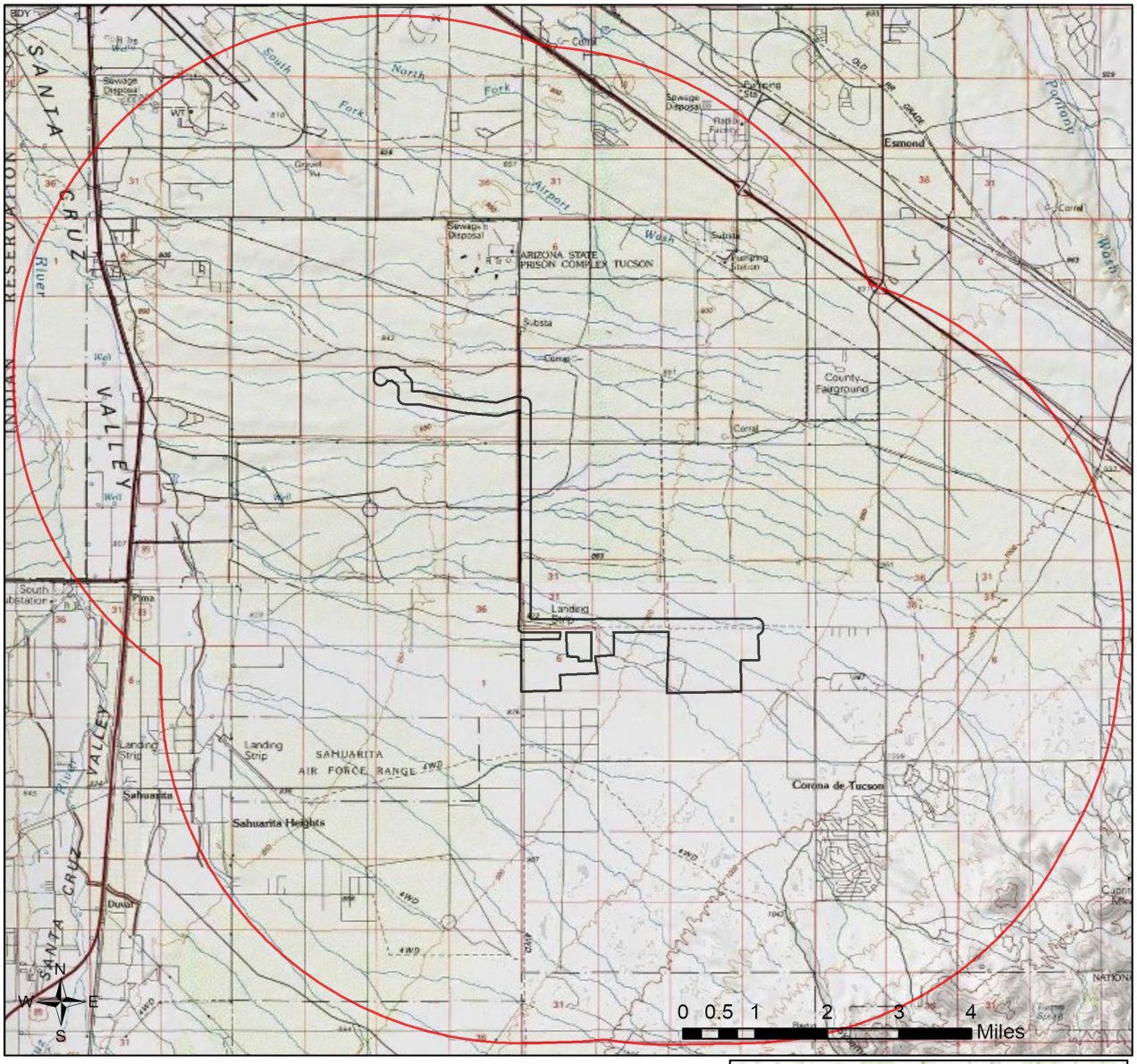
Locations Accuracy Disclaimer:
Project locations are assumed to be both precise and accurate for the purposes of environmental review. The creator/owner of the Project Review Report is solely responsible for the project location and thus the correctness of the Project Review Report content.

Recommendations Disclaimer:

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

Wilmot Solar II

USA Topo Basemap With Locator Map



Buffered Project Boundary

Project Boundary



Project Size (acres): 2,036.00

Lat/Long (DD): 31.9830 / -110.8472

County(s): Pima

AGFD Region(s): Tucson

Township/Range(s): T16S, R14E; T16S, R15E; T17S, R15E

USGS Quad(s): CORONA DE TUCSON; TUCSON SE +

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

Wilmot Solar II

Web Map As Submitted By User



Buffered Project Boundary

Project Boundary

Project Size (acres): 2,036.00

Lat/Long (DD): 31.9830 / -110.8472

County(s): Pima

AGFD Region(s): Tucson

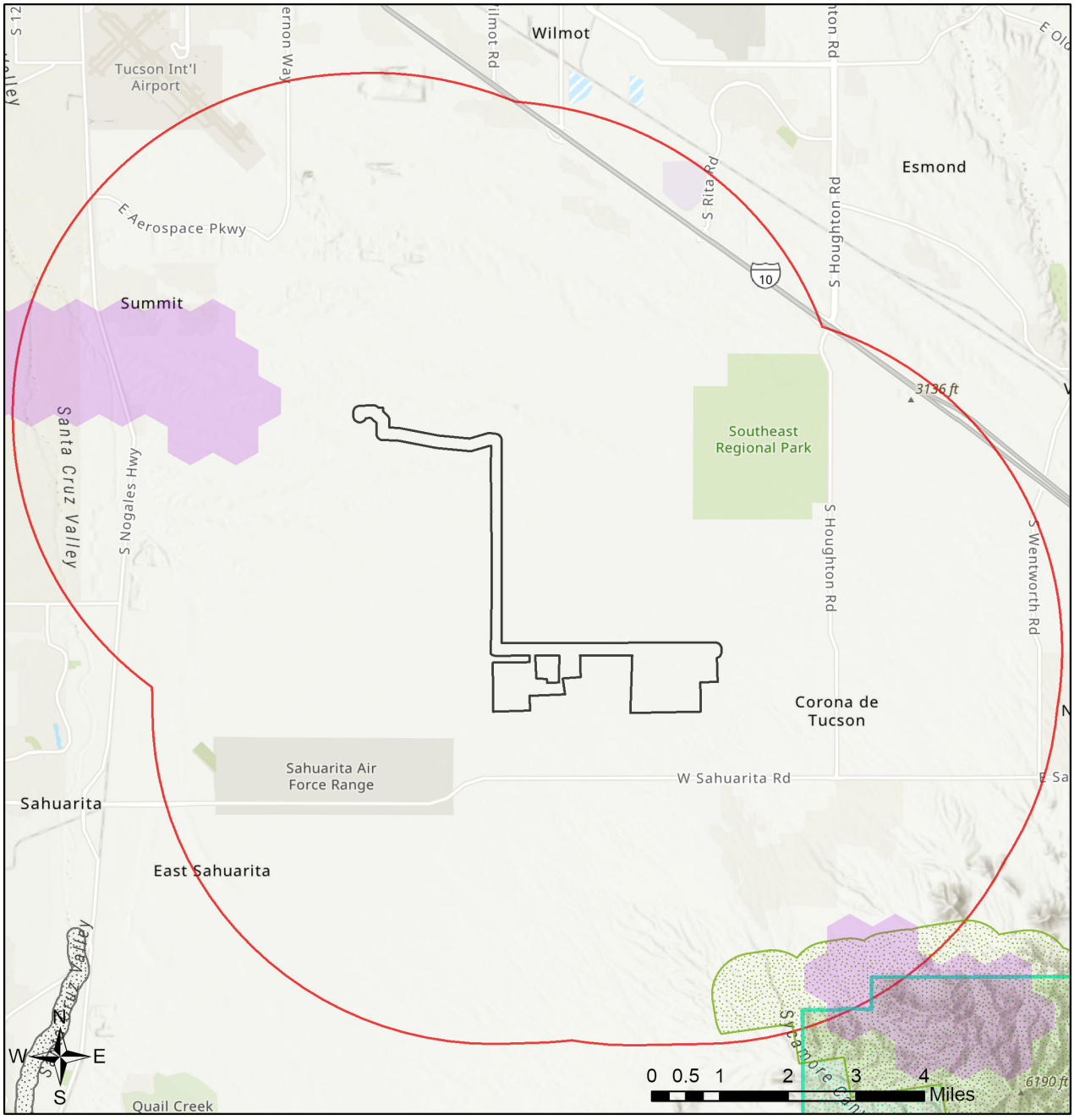
Township/Range(s): T16S, R14E; T16S, R15E; T17S, R15E

USGS Quad(s): CORONA DE TUCSON; TUCSON SE +

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

Wilmot Solar II

Important Areas



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

Project Size (acres): 2,036.00

Lat/Long (DD): 31.9830 / -110.8472

County(s): Pima

AGFD Region(s): Tucson

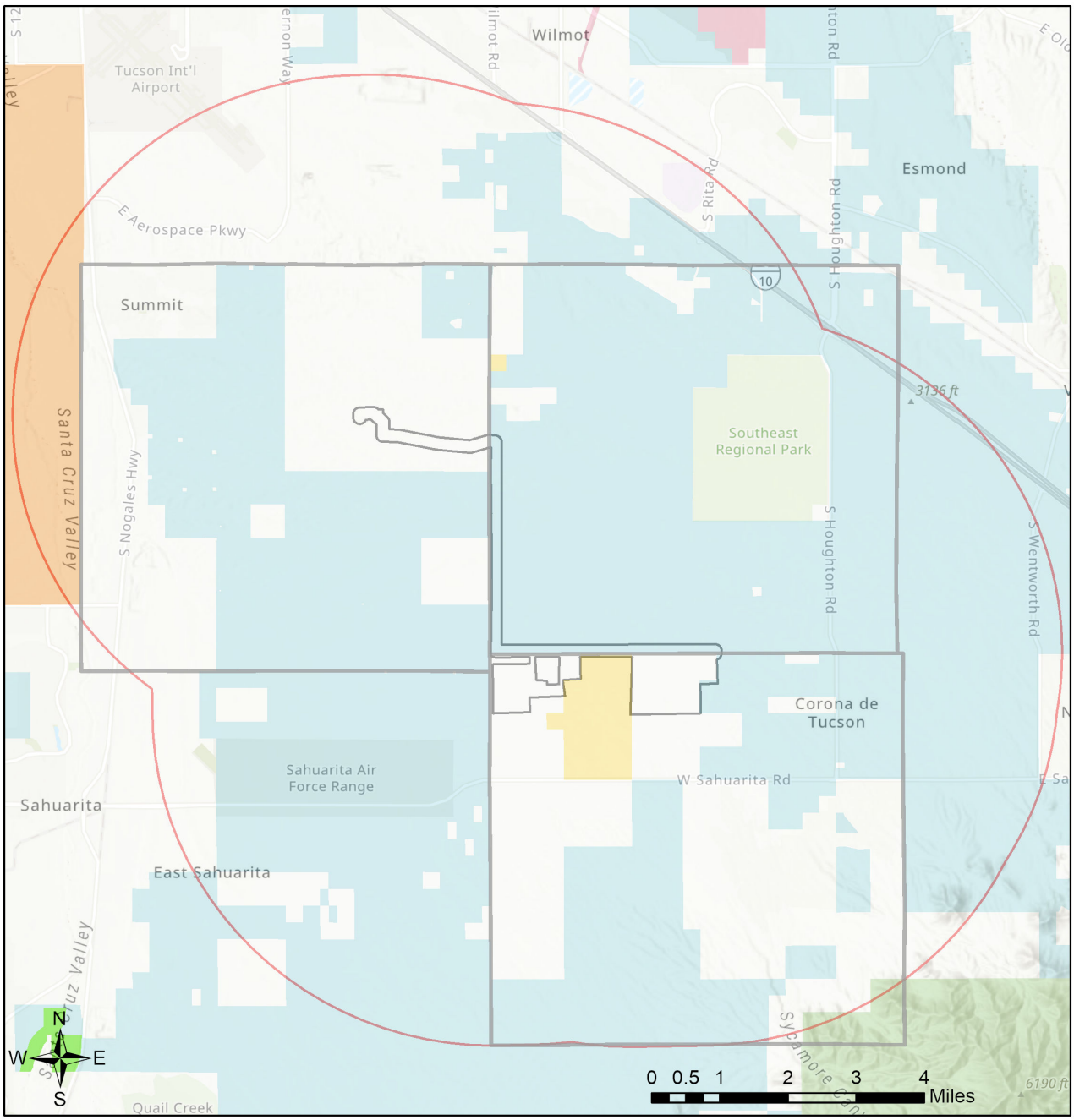
Township/Range(s): T16S, R14E; T16S, R15E; T17S, R15E

USGS Quad(s): CORONA DE TUCSON; TUCSON SE +

Sources: Esri, Airbus DS, USGS, NGA, NASA, CGIAR, N Robinson, NCEAS, NLS, OS, NMA, Geodatastyrelsen, Rijkswaterstaat, GSA, Geoland, FEMA, Intermap and the GIS user community
Sources: Esri, HERE, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community

Wilmot Solar II

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): 2,036.00

Lat/Long (DD): 31.9830 / -110.8472

County(s): Pima

AGFD Region(s): Tucson

Township/Range(s): T16S, R14E; T16S, R15E; T17S, R15E

USGS Quad(s): CORONA DE TUCSON; TUCSON SE +

Sources: Esri, Airbus DS, USGS, NGA, NASA, CGIAR, N Robinson, NCEAS, NLS, OS, NMA, Geodatastyrelsen, Rijkswaterstaat, GSA, Geoland, FEMA, Intermap and the GIS user community
Sources: Esri, HERE, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community

Special Status Species Documented within 5 Miles of Project Vicinity

Scientific Name	Common Name	FWS	USFS	BLM	NPL	SGCN
Ammospermophilus harrisii	Harris' Antelope Squirrel					2
Amphispiza bilineata	Black-throated Sparrow					2
Auriparus flaviceps	Verdin					2
Bat Colony						
Buteo swainsoni	Swainson's Hawk					2
Calypte costae	Costa's Hummingbird					2
Campylorhynchus brunneicapillus	Cactus Wren					2
Cardinalis sinuatus	Pyrrhuloxia					2
Chaetodipus baileyi	Bailey's Pocket Mouse					2
Coccyzus americanus	Yellow-billed Cuckoo (Western DPS)	LT	S	S		1
Colaptes chrysoides	Gilded Flicker			S		2
Coryphantha scheeri var. robustispina	Pima Pineapple Cactus	LE			HS	
Coryphantha scheeri var. robustispina	Pima Pineapple Cactus	LE		S	HS	
Cynanthus latirostris	Broad-billed Hummingbird		S			2
Echinocactus horizonthalonius var. nicholii	Nichol Turk's Head Cactus	LE			HS	
Echinocereus fasciculatus	Magenta-flower Hedgehog-cactus				SR	
Echinomastus erectocentrus var. erectocentrus	Needle-spined Pineapple Cactus	SC			SR	
Eugenes fulgens	Rivoli's Hummingbird					2
Falco sparverius	American Kestrel					2
Gastrophryne mazatlanensis	Sinoloan Narrow-mouthed Toad			S		2
Gopherus morafkai	Sonoran Desert Tortoise	CCA	S	S		1
Heloderma suspectum	Gila Monster					1
Icterus bullockii	Bullock's Oriole					2
Incilius alvarius	Sonoran Desert Toad					2
Lasiurus xanthinus	Western Yellow Bat		S			2
Leptonycteris yerbabuenae	Lesser Long-nosed Bat	SC		S		1
Melanerpes uropygialis	Gila Woodpecker					2
Melozone aberti	Abert's Towhee		S			2
Melozone fusca	Canyon Towhee					2
Myotis velifer	Cave Myotis	SC		S		2
Parabuteo unicinctus	Harris's Hawk					2
Peucaea carpalis	Rufous-winged Sparrow					2
Phrynosoma solare	Regal Horned Lizard					2
Tadarida brasiliensis	Brazilian Free-tailed Bat					2
Tumamoca macdougalii	Tumamoc Globeberry	SC	S	S	SR	

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

Special Areas Documented that Intersect with Project Footprint as Drawn

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

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

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
Antrozous pallidus	Pallid Bat					
Bat Colony						
Buteo lineatus	Red-shouldered Hawk					
Choeronycteris mexicana	Mexican Long-tongued Bat		S	S		2
Coryphantha scheeri var. robustispina	Pima Pineapple Cactus				HS	
Didelphis virginiana californica	Mexican Opossum					2
Echinocereus fasciculatus	Magenta-flower Hedgehog-cactus				SR	
Eptesicus fuscus	Big Brown Bat					
Gastrophryne mazatlanensis	Sinoloan Narrow-mouthed Toad			S		2
Gopherus morafkai	Sonoran Desert Tortoise		S	S		1
Myotis velifer	Cave Myotis			S		2
Reithrodontomys fulvescens	Fulvous Harvest Mouse					
Tadarida brasiliensis	Brazilian Free-tailed Bat					2
Terrapene ornata luteola	Desert Box Turtle			S		
Tumamoca macdougalii	Tumamoc Globeberry		S	S	SR	
Ziziphus obtusifolia	Lotebush					

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					
Odocoileus hemionus	Mule Deer					
Pecari tajacu	Javelina					
Puma concolor	Mountain Lion					
Zenaida asiatica	White-winged Dove					
Zenaida macroura	Mourning Dove					

Project Type: Energy Storage/Production/Transfer, Energy Production (generation), photovoltaic solar facility (new)

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

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

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/unitedstates/az.shtml and the Arizona Native Plant Society https://aznps.com/invas for recommendations on how to control. 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.

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

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

For any powerlines built, proper design and construction of the transmission line is necessary to prevent or minimize risk of electrocution of raptors, owls, vultures, and golden or bald eagles, which are protected under state and federal laws. Limit project activities during the breeding season for birds, generally March through late August, depending on species in the local area (raptors breed in early February through May). Conduct avian surveys to determine bird species that may be utilizing the area and develop a plan to avoid disturbance during the nesting season. For underground powerlines, trenches should be covered or back-filled as soon as possible. Incorporate escape ramps in ditches or fencing along the perimeter to deter small mammals and herpetofauna (snakes, lizards, tortoise) from entering ditches. In addition, indirect affects to wildlife due to construction (timing of activity, clearing of rights-of-way, associated bridges and culverts, affects to wetlands, fences) should also be considered and mitigated.

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

Based on the project type entered, coordination with U.S. Fish and Wildlife Service (Migratory Bird Treaty Act) may be required (https://www.fws.gov/office/arizona-ecological-services).

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

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

Project Location and/or Species Recommendations:
HDMS records indicate that one or more native plants listed on the **Arizona Native Plant Law and Antiquities Act** have been documented within the vicinity of your project area. Please contact:
Arizona Department of Agriculture
1688 W Adams St.
Phoenix, AZ 85007
Phone: 602.542.4373
https://agriculture.az.gov/sites/default/files/Native%20Plant%20Rules%20-%20AZ%20Dept%20of%20Ag.pdf starts on page 44

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

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

Phoenix Main Office
9828 North 31st Avenue #C3
Phoenix, AZ 85051-2517
Phone: 602-242-0210
Fax: 602-242-2513

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

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

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

APPENDIX D

Notice of Intent to Clear Land Form

Arizona Department of Agriculture (AZDA)
Central Licensing
Physical Location: 1010 W Washington St., Phoenix, AZ 85007
Mailing Address: 1802 W Jackson St., #78 Phoenix, AZ 85007
Phone: (602) 542-6408 Fax: (602)542-0466
Website: https://agriculture.az.gov Email: licensing@azda.gov

Notice of Intent to Clear Land — ARS § 3-904

Pursuant to A.R.S. § 3-904 the undersigned, as Owner of the Property described herein, gives this Notice of Intent to Clear Land of protected native plants.

1. **Owner/landowner's agent.** The owner or landowner's agent of the Property upon which protected native plants will be affected:

   Owner's Name _____ Phone _____

   Address _____

   Agent's Name _____ Phone _____

   Address _____

2. **Property.** The description and location of the Property upon which protected native plants will be affected:

   County _____

   Name of Property/Project _____

   Address _____

   Physical Location (attach map) _____

   (Note: Map must also show surrounding land for 1/2 mile in each direction)

   Tax Parcel ID Nos. _____

   Legal Description (or attach copy) _____

   Number of Acres to be Cleared _____

3. **Owner's Intent.** Landowner's intentions when clearing private land of protected native plants.

   ☐ Owner intends to allow salvage of the plants, and agrees to be contacted by native plant salvagers.

   ☐ Owner intends to transplant the plants onto the same property, or to another property he also owns.

   ☐ Owner has already arranged for salvage of the plants.

   ☐ Owner does not intend to allow salvage of the plants.

   ☐ Other _____

4. **Approximate starting date.** _____
   (See notice period listed on reverse side)

   The information contained in this application is true and accurate to the best of my knowledge. I understand that providing false information is a felony in Arizona

Signature _____ **Date** _____

Notice to salvagers: Consent of the landowner is required before entering any lands described in this notice.

Explanation Of This Form

1. **Notice of Intent to Clear Land.**
   The majority of the desert plants fall into one of four groups specially protected from theft, vandalism or unnecessary destruction. They include all of the cacti, the unique plants like Ocotillo, and trees like Ironwood, Palo Verde and Mesquite. In most cases the destruction of these protected plants may be avoided if the private landowner gives prior notice to the Arizona Department of Agriculture.

2. **Notice Period.**
   When properly completed, this form is to be sent to the Department within the time periods described below. Landowners/ developers are encouraged to salvage protected native plants whenever possible.

3. **Information to Interested Parties.**
   The information in this notice will be posted in the applicable state office of the Department and mailed to those parties (salvage operators, revegetation experts) who have an interest in these plants and may approach the landowner with the possibility of saving the plant(s) from unnecessary destruction.

Notice to Landowner:

1. The owner may not begin destruction of protected native plants until he receives confirmation from the Arizona Department of Agriculture and the time prescribed below has elapsed. The "Confirmed" stamp only verifies that the Notice has been filed.

Size of area over which the Destruction of Plants will occur	**Length of Notice Period**
Less than one acre	20 days, oral or written
One acre or more, but less than 40 acres	30 days, written
40 acres or more	60 days, written

2. If you are clearing land over an area of less than one acre, oral notice may be given by calling the applicable state office at the telephone number given below.
3. If the land clearing or plant salvage does not occur within one year, a new Notice is required.

This Notice must be sent to the applicable state office of the Department of Agriculture at the address given below:

Central Licensing
Physical Location: 1010 W Washington St., Phoenix, AZ 85007
Mailing Address: 1802 W Jackson St., #78 Phoenix, AZ 85007
Email: licensing@azda.gov

Notice to salvagers: Consent of the landowner is required before entering any lands described in this notice.

Literature Cited

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EXHIBIT C. AREAS OF BIOLOGICAL WEALTH

As stated in the Arizona Corporation Commission Rules of Practice and Procedure R14-3-219, Exhibit 1:

> *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 effects, if any, the proposed facilities will have thereon.*

Introduction

SWCA Environmental Consultants (SWCA) conducted a biotic resource review to identify areas of biological wealth and the rare and endangered species that may occur at or in the vicinity of the Project. SWCA consulted data sources including:

- Topographical and aerial maps and land use, land cover, and elevation data.
- The U.S. Fish and Wildlife Service (USFWS) species list for the proposed Project obtained from the USFWS online Information for Planning and Consultation (IPaC) system (Exhibit C-1).
- Species information obtained from the USFWS Environmental Conservation Online System, the Arizona Game and Fish Department (AGFD) Online Environmental Review Tool (Exhibit C-2), and other relevant online sources.
- Areas of biological wealth information obtained from the AGFD Online Environmental Review Tool (Exhibit C-2) and other relevant online sources such as federal, state, local government, or nongovernmental organization websites.

SWCA conducted a desktop analysis supplemented with field surveys to identify areas of biological wealth and rare and endangered species habitat and likelihood of occurrence within the limits of the Interconnection Project and its 1-mile Study Areas. Areas of biological wealth can be defined as any habitat, feature, or location that might serve to provide important, unique, or concentrated resources for wildlife or plants in a landscape context, and where adverse impacts to these areas might have higher magnitude of impacts on wildlife or plants as compared to impacts occurring in the surrounding areas. Areas of biological wealth can include unique habitat features (e.g., riparian corridors, wetlands, or rock outcrops); conceptual, unprotected areas that have been delineated by an agency or nongovernmental organization (e.g., wildlife corridors, Important Bird Areas [IBAs], and Conservation Opportunity Ares [COAs]); and features or areas that are protected by federal agency (e.g., National Parks, National Wildlife Refuges, Wilderness Areas, or National Forests), a state agency (e.g., Arizona State Parks), or a local government (e.g, Parks or other areas protected by local ordinance).

The AGFD Online Environmental Review Tool database query establishes a buffer beyond the 1-mile Study Area to search for occurrence records and the presence of modeled habitat. The size of the buffer depends on the type of project being considered. For this review, the buffer is 3 miles beyond the Interconnection Project. This buffer fully encompasses the 1-mile radius Study Area.

In addition, SWCA biologists with expertise in the biology of flora and fauna of the region completed field surveys for the Interconnection Project. All plant and wildlife species observed in the Interconnection Project and Study Area during site visits occurring on February 13–14, 23–24, and 27–28, March 1–3, 6–10, and 13–15, June 5–7 and 9, July 31, August 3, and October 31, 2023, were recorded (see Exhibit D for a complete list). The site visits occurred during general biological pedestrian surveys and species-specific surveys for saguaro (*Carnegia gigantea*) and Pima pineapple cactus (*Coryphantha scheeri* var.

robustispina) that occurred within portions of the proposed new solar array area (i.e., portions of the Study Area), portions of the Project Area, and on the portion of the Interconnection Project in privately-owned lands west of Wilmot Road.

Laws and Policies

Applicable laws and policies regarding special-status species in Arizona include the following:

- The USFWS administers the **Endangered Species Act of 1973 (ESA), as amended,** which protects wildlife species listed as threatened or endangered from "take" (generally, directly, or indirectly harming or disturbing listed species). However, the ESA does not provide the same take protections for listed plant species, except on federal land. The ESA also allows for the designation of critical habitat for listed species, although designation of critical habitat is not required in some circumstances. Critical habitat is an administrative designation of a defined area with specific characteristics important to the survival and recovery of a listed species. Designation of critical habitat can affect federal actions but not state or private actions without a federal nexus.
- The **Migratory Bird Treaty Act (MBTA)** provides for the protection of migratory birds and prohibits their unlawful take or possession. The act bans "taking" any native birds; "taking" can mean killing a wild bird or possessing parts of a wild bird, including feathers, nests, or eggs. Exceptions are allowed for hunting game birds and for research purposes, both of which require permits.
- The **Bald and Golden Eagle Protection Act (BGEPA)** prohibits any form of possession or taking of bald eagles (*Haliaeetus leucocephalus*) or golden eagles (*Aquila chrysaetos*). A 1962 amendment to the MBTA created a specific exemption for possession of an eagle or eagle parts (e.g., feathers) for religious purposes of Native American tribes. The amendment provided for not only the preservation of the golden eagle but also the preservation of Native American cultural practices.
- The AGFD manages and conserves wildlife in Arizona. Arizona does not have a counterpart to the federal ESA, but nearly all takes of wildlife are regulated in some manner through the **AGFD's hunting and fishing license system**. A list of rare species **(Wildlife Species of Concern [WSC])** was created in 1996 without creating any specific statutory protections for those species (AGFD 1996). However, hunting regulations are used to provide some protection. While WSC is no longer a valid category, AGFD continues to track these species due to an existing Memorandum of Understanding between the USFWS and AGFD. Generally, no hunting or capture of WSC is allowed, with some exceptions for managed recreational fisheries of native fish (AGFD 2017) and recreational capture of certain reptiles (AGFD 2015).
- Arizona prepared a Comprehensive Wildlife Conservation Strategy in 2006 (AGFD 2006), later renamed the **Arizona Wildlife Conservation Strategy** (**AWCS**) (2022–2032), through a state–federal partnership and grant program. The AWCS was updated in 2022 (AGFD 2022). The State Wildlife Action Plan (SWAP) identifies **Species of Greatest Conservation Need (SGCN)** in several tiers. Tier 1 species are those that the AGFD has deemed vulnerable and fall into a categorization of either federally listed as endangered or threatened under the ESA; those that have been recently removed from the ESA and require post-delisting monitoring; those specifically covered under a signed agreement such as a Candidate Conservation Agreement (CCA), Candidate Conservation Agreement with Assurances (CCAA), Conservation Strategy and Assessment, or Strategic Conservation Plan; or those for which the AGFD has determined the protection of a closed season is warranted. Tier 2 represents the remainder of the species meeting the AGFD's vulnerability criteria, including species that are not listed but are regionally rare or declining, species with a U.S. range primarily in Arizona that are dependent on conservation efforts within

the state, and other species with identified conservation issues that may warrant management action and do not meet the criteria for Tier 1 listing. Tier 3 species are those for which existing data were insufficient to meet one or more vulnerability criteria due to substantial data gaps and unknown conservation status, but where conservation concern may be warranted. Species identified as WSC in 1996 are included as SGCNs in the SWAP and are addressed as SGCNs in Table C-l and the discussion in this exhibit.

- The **AWCS** also denotes **COAs** as of December 2022 (AGFD 2022). The COAs were created to help implement the AWCS and should be considered voluntary guidance for specific areas where conservation efforts would be most effective, based on species and habitat expertise, as well as wildlife and spatial data. These COAs are representative of specific areas that show strong potential for substantial improvements for wildlife and associated habitats. COAs are divided into categories of terrestrial and aquatic. Terrestrial COAs focus on geographic areas determined to have high conservation value and strong potential for successful conservation efforts. Aquatic COAs are strictly focused on conservation of aquatic resources, particularly native fish species (AGFD 2023a). COAs reflect the best areas for conservation and were determined without regard to jurisdiction or landownership. In addition, COAs will not be subject to any new regulations, nor do they have any regulatory effect (AGFD 2022).
- Native plants in Arizona are managed by the Arizona Department of Agriculture (ADA) under the **Arizona Native Plant Law** (ANPL; Arizona Revised Statutes 3-903; Arizona Administrative Code R3-3-208), which regulates harvest, salvage, and transport of plants. Harvest or salvage of most plant species may be permitted or required, and fees may be assessed on State land. Plants listed in the Highly Safeguarded category may be taken or salvaged only for scientific or conservation purposes. The ANPL identifies a lengthy list of plant species—largely cacti, agaves, yuccas, and desert trees—that are susceptible to removal for collection, landscaping, sale, or other commercial uses. The ANPL states that these plants shall not be taken, transported, or possessed from any land without permission and a permit from the ADA; it also requires notification prior to land clearing even if the plants will be destroyed.
- The ADA administers the **state noxious weed law** under Arizona Administrative Code R3-4-245. Arizona maintains a list of noxious weeds in three categories: Class A, Class B, and Class C (ADA 2023). Class A species are those that are not known to occur in Arizona and that are of limited distribution and are of high priority for quarantine, control, or mitigation. Class B noxious weeds are species known to occur but that are of limited distribution in Arizona and may be high-priority pests for quarantine, control, or mitigation if a significant threat to crop, commodity, or habitat exists. Class C noxious weeds are plant species that are widespread but may be recommended for active control based on risk assessment.

Inventory

SWCA biologists with expertise in the biology of flora and fauna of the region surveyed the Interconnection Project and portions of the Study Area on February 13–14, 23–24, and 27–28, March 1–3, 6–10, and 13–15, and June 5–7 and 9, 2023. All plants and wildlife observed were recorded during the survey efforts.

In addition, the biologists documented existing conditions and noted any habitat features that may be important to special-status species or related to areas of biological wealth in the Interconnection Area and Study Area.

On September 25, 2023, SWCA queried the USFWS IPaC database to generate an unofficial list of ESA-listed species that have the potential to occur in the Study Area (see Exhibit C-1) (USFWS 2023a). In addition, the AGFD Online Environmental Review Tool was also queried on September 25, 2023, to generate a list of special-status species with records within 3 miles of the Interconnection Project and a list

of SGCNs with modeled suitable habitat intersecting the Interconnection Project (see Exhibit C-2) (AGFD 2023b).

Resource Identification

The USFWS and AGFD identified several endangered, threatened, candidate, and other special-status species that are known to occur or could occur in the region (i.e., within the Study Area for USFWS and within the Interconnection Project plus a 3-mile buffer for AGFD) (AGFD 2023b; USFWS 2023a). These special-status species and the likelihood of their being present in the vicinity of the proposed Interconnection Project are addressed below in six sections: 1) Areas of Biological Wealth, 2) Federally Listed Threatened and Endangered Species, 3) Bald and Golden Eagles 4) Other Special-Status Species, 5) State-Protected Native Plants, and 6) Noxious Weeds.

Areas of Biological Wealth

No critical habitat has been designated or proposed within the Interconnection Project or its 1-mile Study Area (USFWS 2023a).

No Important Bird Areas (IBAs) have been identified within the Interconnection Project or Study Area. The closest IBA, Santa Rita Mountains IBA, is approximately 6.7 miles southeast of the Study Area encompassing portions of the Santa Rita Mountains (Audubon 2023). An important connectivity zone (ICZ) (see Exhibit C-1) occurs in the vicinity of the Interconnection Project but outside of the 1-mile Study Area. ICZs are general areas throughout the landscape that contribute the most to permeability of the whole landscape (Perkl 2013).

Two areas of biological wealth are mapped within the Project and Study Areas, a wildlife corridor and Pima County Regulated Riparian Habitat (RRH). The mapped wildlife corridor is a riparian movement area known as the "R22 Lee More Wash Flow Corridors;" the Lee More Wash Flow Corridors intersect the Interconnection Project and its 1-mile Study Area (see Exhibit C-2; AGFD 2023b). The Lee Wash Flow Corridors are mapped within multiple ephemeral washes throughout the Interconnection Project and its 1-mile Study Area (AGFD 2023b). The Lee Moore Wash Flow Corridors is a wildlife linkage identified in the *Pima County Wildlife Connectivity Assessment: Report on Stakeholder Input* (AGFD 2012). Riparian movement areas are wildlife linkages areas that are associated with bodies of water or are dependent on perennial or ephemeral surface or subsurface water drainage (AGFD 2012). Riparian movement areas can include xeroriparian habitats associated with ephemeral drainages. The Lee Moore Wash Flow Corridors connect the Santa Rita Experimental Range/Coronado National Forest Wildland Block to the Santa Cruz River Riparian Area. The *Pima County Wildlife Connectivity Assessment: Report on Stakeholder Input* did not identify any species of interest for this wildlife linkage (AGFD 2012). Threats identified for this wildlife linkage include high- and low-density residential development, paved road (Interstate 10 bypass), powerlines, and solar energy development (AGFD 2012).

The Interconnection Project and Study Area contain areas delineated as Pima County RRH. RRH is protected by Chapter 16.30 of Ordinance No. 2010 FC5, Watercourse and Riparian Habitat Protection and Mitigation Requirements, also known as the Riparian Habitat Protection Ordinance. These areas are protected, in part, to preserve or enhance riparian vegetation and habitat for wildlife (Pima County Flood Control District 2011).

Federally Protected Species

Federally Listed Threatened and Endangered Species

Eight species listed as endangered, two species listed as threatened, and one candidate species were identified in the USFWS species list for the Study Area (USFWS 2023a). The ESA-listed threatened and

endangered species are jaguar (*Panthera onca*), ocelot (*Leopardus pardalis*), California least tern (*Sterna antillarum brow*ni), yellow-billed cuckoo (C*occyzus americanus*), Sonoyta mud turtle (*Kinosternon sonoriense longifemorale*), Chiricahua leopard frog (*Rana chiricahuensis*), Gila chub (*Gila intermedia*), Arizona eryngo (*Eryngium sparganophyllum*), Huachuca water umbel (*Lilaeopsis schaffneriana* var. *recurva*), and Pima pineapple cactus. The candidate species identified in the USFWS species list is monarch butterfly (*Danaus plexippus*). An additional species, cactus ferruginous pygmy-owl (*Glaucidium brasilianum cactorum*), was identified as having modeled habitat in the 1-mile Study Area (AGFD 2023a). The species' federal status and potential for occurrence in the vicinity of the Project are presented in Table C-1.

Table C-1. Evaluation of Federally Listed and BGEPA Species within the Study Area

Common Name (Scientific Name)	Status*	Range or Habitat Requirements	Occurrence Status
Mammals			
Jaguar (*Panthera onca*)	E	In the U.S. most jaguar detections occurred in "extremely rugged" terrain (USFWS 2018). The majority of jaguar detections in a 2016 study occurred in areas within semidesert grasslands (28%) and Madrean evergreen forests (72%). The detections occurred at an average of 5,582 feet above mean sea level (amsl), 5.13 miles from major roads, within 4,557 feet of a water source, and in areas with a low Human Influence Index (USFWS 2018). Between 1996 and 2017, seven or eight individual male jaguars were documented in the U.S. in the following mountain ranges: the Peloncillo Mountains, the Baboqivari Mountains, the San Luis Mountains, the Wetstone Mountains, the Santa Rita Mountains, the Huachuca Mountains, the Dos Cabeza Mountains, and the Chiricahua Mountains (USFWS 2018). Individuals were observed to have moved between mountain ranges and between the U.S. and Mexico on several occasions. An individual was observed in the Huachuca Mountains in 2023, but it is unknown if this is a new individual or the same individual previously observed in the Chiricahua Mountains.	Unlikely to occur. Although the Interconnection Project is within the geographic range of this species, jaguars are unlikely to occur because of the proximity to human populations and the lack of suitable habitat in the Interconnection Project. The nearest known occurrence record was in the Santa Rita Mountains, as recently as 2015 (Wildlife Conservation Society 2023).
Ocelot (*Leopardus pardalis*)	E	In Arizona, typically observed in dense, brushy thickets at elevations below 8,000 feet amsl and often found in riparian bottomlands. Dense cover near the ground is an important habitat component, and ocelots completely avoid open country. In Arizona, there are seven recent confirmed sightings: one from Gila County (2010), five from Cochise County (2009, 2011, and 2012), and one from Pima County (2014), along with unconfirmed sightings in the Huachuca, Chiricahua, and Peloncillo Mountains.	Unlikely to occur. Ocelots are extremely rare; there are only a few ocelots currently known to occur in southern Arizona. The nearest known ocelot sighting is in the Santa Rita Mountains, approximately 10 miles south of the Study Area. The Interconnection Project and Study Area are close to development and do not contain any suitable riparian bottomland habitat. This makes the Interconnection Project and Study Area unlikely to be used by this species.
Birds			
Bald eagle (*Haliaeetus leucocephalu*s)	BGEPA	Occurs in aquatic habitats with open water or southwest arid regions with available food and roost sites. Nonbreeding eagles range throughout Arizona except for the south-central portion of the state; breeding eagles occur in limited, fragmented locations of central, east-central, and west-central portions of the state.	May occur. The Interconnection Project and Study Area do not contain preferred breeding or roosting habitats but are within non-breeding range, and eagles may move through the area.

Common Name (Scientific Name)	Status*	Range or Habitat Requirements	Occurrence Status
Cactus ferruginous pygmy-owl (*Glaucidium brasilianum cactorum*)	T	Found in heavily wooded xeroriparian washes with large saguaros (*Carnegiea gigantea*) or trees with suitable cavities in Sonoran desertscrub or semidesert grassland. This species' distribution is currently limited to portions of Pima County in Arizona. In addition, "pygmy-owls continue to be absent from Pinal County and around Tucson where they were found as recently as the early 2000s" (USFWS 2023b: 46912). This species still occupies historical locations in the Altar Valley, Avra Valley, and Organ Pipe Cactus National Monument, and it is known to occur on the Tohono O'odham Nation (USFWS 2022). Its population appears stable in the Altar Valley, but it is extirpated or declining in areas outside of the Altar Valley (USFWS 2022).	Unlikely to occur. The project area contains heavily wooded washes and suitable saguaro or tree habitat, and the project area is within the published range of this species (USFWS 2023c). However, this species is unlikely to occur. It is outside of the current distribution of this species (i.e., 1990–current distribution as digitized from Figure 4.6 in USFWS 2022). In addition, the project area is separated from the Altar Valley by more than 20 miles, with the Pima Mine, the Mission Mine, and associated pit mines, dumps, and tailings ponds and Interstate 19 acting as likely barriers to dispersal from a known population to the Interconnection Project. No sites surveyed west of Interstate 10 or Interstate 19 had evidence of pygmy-owl occupancy in spring 2020 (USFWS 2022).
California least tern (*Sterna antillarum browni*)	E	Forms nesting colonies on barren to sparsely vegetated areas. Nests in shallow depressions on open sandy beaches, sandbars, gravel pits, or exposed flats along shorelines of inland rivers, lakes, reservoirs, and drainage systems at elevations below 2,000 feet amsl. Found in Maricopa, Mohave, and Pima Counties.	Unlikely to occur. Neither the Interconnection Project nor the Study Area contain habitats similar to those used by this species; there are no open sandy beaches, sand bars, gravel pits, or exposed shorelines of inland rivers, lakes, reservoirs, or drainage systems.
Golden eagle (*Aquila chrysaetos*)	BGEPA	Found in mountainous canyon land, rimrock terrain of open desert, grassland, and forested areas. Year-round range includes all of Arizona.	May occur. Although suitable nesting habitat is not present in the Interconnection Project or Study Area, eagles may forage or move through the area.
Yellow-billed cuckoo (*Coccyzus americanus*)	T	Typically found in riparian woodland vegetation (cottonwood [*Populus* sp.], willow [*Salix* sp.], or saltcedar [*Tamarix ramosissima*]) at elevations below 6,600 feet amsl. Dense understory foliage appears to be an important factor in nest site selection. The highest concentrations in Arizona are along the Agua Fria, San Pedro, upper Santa Cruz, and Verde River drainages and Cienega and Sonoita Creeks.	Unlikely to occur. They have been recorded at Sahuarita Lake once, which is within 5 miles of the Interconnection Project (eBird 2023), but the lake provides suitable habitat, and that individual was most likely a migrant. The Interconnection Project lacks the suitable habitat the species favors.
Insects			
Monarch butterfly (*Danaus plexippus*)	C	Habitat is complex. Generally, breeding areas are virtually all patches of milkweed (Family Asclepiadaceae). The species occurs throughout Arizona during the summer and migrates to winter in Mexico and California, though small numbers do overwinter in the low deserts of southwestern Arizona.	May occur. This species may be present in the Interconnection Project and Study Area seasonally. No milkweed species were observed in the Interconnection Project or Study Area for larval use, but nectar sources are available for foraging and migration.
Reptiles			
Sonoyta mud turtle (*Kinosternon sonoriense longifemorale*)	E	In Arizona, found only in pond and stream habitat at Quitobaquito Springs in Organ Pipe Cactus National Monument. This subspecies of the more common Sonora mud turtle (*Kinosternon sonoriense sonoriense*) also occurs in Rio Sonoyta, Mexico.	Unlikely to occur. In Arizona, this species is found only in Quitobaquito Springs, more than 100 miles southwest of the Interconnection Project and Study Area.

Common Name (Scientific Name)	Status*	Range or Habitat Requirements	Occurrence Status
Amphibians			
Chiricahua leopard frog (*Rana chiricahuensis*)	T	Restricted to springs, livestock tanks, and streams in the upper portions of watersheds at elevations between 3,281 and 8,890 feet amsl in central, east-central, and southeastern Arizona. Populations in central and east-central Arizona are disjunct from those in southeastern Arizona and may be a distinct species.	Unlikely to occur. No suitable habitat for this species is within or adjacent to the Interconnection Project. This project is well below the elevational range of this species, and no known populations are within dispersal distance of the Interconnection Project or Study Area (e.g., 1 mile overland; 3 miles along ephemeral or intermittent drainage; -5 miles along perennial water courses) (USFWS 2012).
Fish			
Gila chub (*Gila intermedia*)	E	Normally found in smaller headwater streams, ciénegas, and springs or marshes of the Gila River Basin at elevations between 2,720 and 5,420 feet amsl.	Unlikely to occur. No aquatic habitats are in or adjacent to the Interconnection Project or the Study Area.
Plants			
Arizona eryngo (*Eryngium sparganophyllum*)	E	This perennial forb occurs in spring-fed ciénega wetlands in moist to saturated organic alkali soils (USFWS 2020a). Plants thrive in full sun in areas without nonnative plant species or excessive woody vegetation. In Arizona, occurs in three disjunct populations in Pima and Cochise Counties at elevations from 2,707 to 4,000 feet amsl: Agua Caliente Ranch, where it is extirpated but reintroduced; La Cebadilla Cienega, near Tanque Verde Wash east of Tucson; and in Lewis Springs Cienega within the San Pedro Riparian National Conservation Area.	Unlikely to occur. The Interconnection Project and Study Area are outside of the current range of this species and do not contain ciénega wetland habitat.
Huachuca water umbel (*Lilaeopsis schaffneriana* var. *recurva*)	E	Semiaquatic to aquatic perennial found in shallow water or saturated soil of ciénegas or marshy wetlands at elevations between 2,001 to 7,060 feet amsl. Known to occur in the Huachuca Mountains, Canelo Hills, headwaters of the Santa Cruz River downstream to Black Draw, and the San Pedro River.	Unlikely to occur. No aquatic habitats are in or adjacent to the Interconnection Project or Study Area.
Pima pineapple cactus (*Coryphantha scheeri* var. *robustispina*)	E	Found on alluvial bajadas in sand or rocky loam soils that are on slopes with less than 10% grade within desert grassland and Sonoran desertscrub at elevations between 2,800 and 3,500 feet amsl. In Arizona, found in the Santa Cruz and Altar Valleys and Patagonia Mountains.	Known to occur in the Project Area and the 1-mile Study Area. May occur in the Interconnection Project as the Interconnection Project is within the range of the species and contains suitable habitat.

Note: This table lists the species named in the USFWS official species list (USFWS 2023a) and the Arizona Online Environmental Review Tool (AGFD 2023b).

Sources: AGFD (2023c); eBird (2023); USFWS (2023c). Notes regarding documentation within 3 miles of the evaluation area are from AGFD (2023b).

C = candidate; E = endangered; T = threatened, EXPN = experimental non-essential population; BGEPA = Bald and Golden Eagle Protection Act.

Bald and Golden Eagles

Bald eagle and golden eagle are protected under both the MBTA and the BGEPA Act of 1940, as amended (16 United States Code 668–668d or 50 Code of Federal Regulations 22).

The bald eagle is protected under the MBTA and BGEPA and is a SGCN Tier 1 species. Nests are generally placed in large deciduous or coniferous trees or cliffs, with a commanding view of the area, less than 1 mile from appropriate aquatic foraging conditions (e.g., perennial rivers or lakes containing fish) (Buehler 2000). The species communally roosts in the winter in large (15–60 meters in height) deciduous or coniferous trees, which tend to be located near aquatic foraging sites (<50 meters) but may be located more than 6

miles from aquatic foraging sites, particularly in areas sheltered from adverse weather conditions with unusually high prey or carcass availability (Buehler 2000; USFWS 2007, 2013). Wintering/non-breeding individuals and juveniles are typically associated with breeding habitats; however, they may range widely in search of food, shelter, and reduced human presence (Buehler 2000).

The Interconnection Project and Study Area are within the non-breeding range of the species, but do not contain characteristic nesting or roosting habitats. The nearest documented nesting areas are over 60 miles away, in the Granite Basin along the Gila River (Southwestern Bald Eagle Management Committee 2022).

Golden eagles are protected under the MBTA and BGEPA and are also identified as an SGCN Tier 2 species. They require large, open hunting grounds adjacent to mountainous canyonland and rimrock terrain of open desert, grassland, and forested areas (Katzner et al. 2020; Marzluff et al. 1997). The presence of sizeable shrub (e.g., sagebrush [*Artemisia* spp.], rabbitbrush [*Chrysothamnus* spp.]) patches is an essential component of golden eagle home ranges (Marzluff et al. 1997). Nests are placed in rugged terrain (e.g., cliffs) and less often in tall trees and on human-made structures (e.g., transmission towers) (Katzner et al. 2020). Wintering/nonbreeding individuals and juveniles are typically associated with breeding habitats; however, they may range widely in search of food (Katzner et al. 2020). The nearest known breeding area for the golden eagle is in the Sant a Rita Mountains, approximately 8 miles southeast of the Study Area (McCarty et al. 2020). Although the Interconnection Project and Study Area do not contain suitable nesting habitat for golden eagle and are outside the species' predicted year-round range (AGFD 2002), individuals may forage or move through.

Other Special-Status Species

Other special-status species include the following:

- Birds of Conservation Concern (BCC), which are bird species, beyond those designated as federally threatened or endangered, that represent the USFWS's highest conservation priorities. The relevant BCC for this analysis are those identified by the USFWS (2021) as occurring in Bird Conservation Region (BCR) 33. IPaC queries include lists of some BCC species that may occur in the area of interest.
- SGCN in Arizona, which are species identified by the AGFD as warranting heightened attention because of low and declining populations.

The species in these categories (other than those also designated as federally threatened or endangered, candidate, experimental non-essential population (EXPN), or BGEPA, which are addressed above) have occurrence records or predicted habitat modeled within 3 miles of the Interconnection Project (AGFD 2023b). These species are discussed and listed below in Table C-2, where they are evaluated for potential occurrence based on the results of Interconnection Project surveys, familiarity with the vicinity, and freely available information sources including the following:

- AGFD's Heritage Data Management System (AGFD 2023c)
- Online field guide *Reptiles and Amphibians of Arizona* (AGFD 2023d)
- *The Breeding Bird Atlas* (Corman and Wise-Gervais 2005)
- Online field guide *All About Birds* (Cornell Lab of Ornithology 2023)
- eBird (2023)
- Google Earth (2023)
- USFWS Environmental Conservation Online System website (USFWS 2023c)

Table C-2. Other Special-Status Species with Potential to Occur in the Vicinity of the Study Area

Common Name (*Scientific Name*)	Habitat and Notes	Status*		Occurrence Status	
		Federal	State (Tier)	Interconnection Project	Study Area
Amphibians					
Lowland leopard frog (*Lithobates yavapaiensis*)	Found in rocky streams, in canyon habitats surrounded by conifer forests, or in ponds and stream pools. Usually found in areas with scrub desert biotic communities. Greatest threats to species continuation include habitat alteration, fragmentation, and introduction of non-native competitor fish, crayfish, and frogs. Species dispersal has been shown to remain within a few kilometers of aquatic breeding sites.	-	SGCN (1)	Unlikely to occur. Suitable habitat is not present within the Interconnection Project.	Unlikely to occur. Suitable habitat is not present within the Study Area.
Sinaloan narrow-mouthed toad (*Gastrophryne mazatlanensis*)	Occurs in vicinity of streams, springs, and rain pools in semidesert grassland to oak woodland. Found in moist crevices or burrows under rocks, dead wood, and other debris near water.		SGCN (2)	May occur. While suitable habitat does not occur in the Interconnection Project, individuals may occur in nearby cattle tanks and roadside puddles and disperse across the area when conditions are suitable (i.e., during or after monsoon storms). However, breeding is unlikely as no ephemeral or permanent ponds or streams occur within the Interconnection Project.	May occur. Individuals may occur in stock tanks or any roadside puddles that occur in the Study Area. Individuals may also disperse through the Study Area when conditions are suitable (i.e., during or after monsoon storms).
Sonoran Desert toad (*Incilius alvarius*)	Found in Sonoran desertscrub, semidesert grasslands, oak, and occasionally pine-oak woodland habitats up to about 5,800 feet. Associated with major rivers, and edges of agriculture; though often tied to permanent water, can be found miles from water during summer monsoon season, in some areas.	-	SGCN (2)	May occur. While suitable habitat does not occur in the Interconnection Project, individuals may occur in nearby cattle tanks and disperse across the area when conditions are suitable (i.e., during or after monsoon storms). However, breeding is unlikely as no ephemeral or permanent ponds or streams occur within the Interconnection Project.	May occur. Individuals may occur in stock tanks that occur in the Study Area. Individuals may also disperse through the Study Area when conditions are suitable (i.e., during or after monsoon storms).

Common Name (*Scientific Name*)	Habitat and Notes	Status*		Occurrence Status	
		Federal	State (Tier)	Interconnection Project	Study Area
Birds					
Abert's towhee (*Melozone aberti*)	Found often in riparian areas among dense understories containing cottonwood and mesquite bosques.	MBTA	SGCN (2)	Known to occur. This species was observed during the 2023 field visit. The Interconnection Project contains suitable habitat for foraging and nesting.	Known to occur. This species was observed during the 2023 field visit. The Study Area contains suitable habitat for foraging and nesting.
American kestrel (*Falco sparverius*)	Found in open and semi-open habitats, frequently found in prairies, deserts, wooded streams, burned forest, and agricultural areas. Known to nest in natural holes in trees, abandoned woodpecker cavities, cavities in buildings or cliffs, and similar sites.	MBTA BCC†	SGCN (2)	May occur. The Interconnection Project contains suitable habitat for foraging and nesting.	Known to occur. This species was observed during the 2023 field visit. The Study Area contains suitable habitat for foraging and nesting.
American peregrine falcon (*Falco peregrinus anatum*)	Breeds in open areas with cliffs; occurs year-round in Arizona within landscapes with cliffs and rivers; nearly any open habitat; mudflats, lake edges, and mountains.	MBTA	SGCN (1)	May occur. The Interconnection Project contains suitable habitat for foraging; neither the Interconnection Project nor the Study Area contain suitable habitat for breeding or roosting.	May occur. The Study Area contains suitable habitat for foraging.
Bendire's thrasher (*Toxostoma bendirei*)	Found in desert habitats with a mix of relatively large scrubs/cacti and open ground or open woodland with scattered shrubs and trees. Not typically found in riparian woodland areas, the species avoids continuous shrublands and grasslands. Commonly found in areas with desertscrub biotic communities. Nesting is known to occur in low trees, shrubs, and cacti including mesquite (*Prosopis* spp.), cholla (*Cylindropuntia* spp.), yucca (*Yucca* spp.), paloverde (*Parkinsonia* spp.), and saltbush (*Atriplex* spp.).	MBTA BCC	SGCN (2)	May occur. The Interconnection Project contains suitable habitat for foraging and nesting.	May occur. The Study Area contains suitable habitat for foraging and nesting.
Black-chinned sparrow (*Spizella atrogularis*)	Occurs in dry brushland and chaparral up to about 8,000 feet amsl. Typically breed on rocky hillslopes and winter downslope in desertscrub.	MBTA BCC	SGCN (2)	May occur. The Interconnection Project contains suitable wintering habitat for this species.	May occur. The Study Area contains suitable wintering habitat for this species.

Common Name (*Scientific Name*)	Habitat and Notes	Status*		Occurrence Status	
		Federal	State (Tier)	Interconnection Project	Study Area
Brewer's sparrow (*Spizella breweri*)	A shrub obligate species strongly associated with sagebrush (*Artemisia* sp.) over most of its range. Found in areas with scattered shrubs and short grasses. Known to nest in sagebrush or cacti from a few centimeters to roughly 1 meter from the ground. During its non-breeding migratory season, frequently found in low desert, arid-adapted vegetation including desertscrub, sagebrush, and creosote bush (*Larrea tridentata*).	MBTA	SGCN (2)	May occur. The Interconnection Project contains suitable wintering habitat for this species.	Known to occur. This species was observed during the 2023 field visit. The Study Area contains wintering habitat.
Broad-billed hummingbird (*Cynanthus latirostris*)	Riparian zones of arid canyons, particularly in zones with sycamore and mesquites, but wanders to higher elevations. Breeding range includes southeastern Arizona.	MBTA BCC‡	SGCN (2)	Unlikely to occur. The Interconnection Project is within this species' migratory range but does not contain suitable habitat.	Unlikely to occur. The Study Area is within this species' migratory range but does not contain suitable habitat.
Bullock's oriole (*Ictarus bullockii*)	Breed in open woodland and riparian areas in areas where trees are large and well-spaced. Use similar open woodlands during migration and for winter.	MBTA	SGCN (2)	Unlikely to occur. The Interconnection Project is within this species' migratory range but does not contain suitable habitat.	Unlikely to occur. The Study Area is within this species' migratory range but does not contain suitable habitat.
Cactus wren (*Campylorhynchus brunneicapillus*)	Non-migratory species often found in arid desert habitat with biotic communities including cholla, mesquite, and sage scrub. Nesting is known to occur in thorny trees and shrubs, though they have been observed nesting in buildings in the past.	MBTA BCC†	SGCN (2)	Known to occur. This species was observed during the 2023 field visit. The Interconnection Project contains suitable habitat for foraging and nesting.	Known to occur. This species was observed during the 2023 field visit. The Study Area contains suitable habitat for foraging and nesting.
Canyon towhee (*Melzone fusca*)	Occurs in dense brush, arid scrub, and riparian thickets.	MBTA	SGCN (2)	May occur. The Interconnection Project contains suitable habitat for foraging and nesting.	May occur. The Study Area contains suitable habitat for foraging and nesting.
Chestnut-collared longspur (*Calcarius ornatus*)	Found in the Great Plains in native prairie habitat consisting of mixed-grass and shortgrass uplands. Has also been observed in riparian areas in more arid habitats.	MBTA BCC†	SGCN (2)	Unlikely to occur. No suitable habitat is present within the Interconnection Project.	Unlikely to occur. No suitable habitat is present within the Study Area.
Chihuahuan raven (*Corvus cryptoleucus*)	Nests in grasslands and deserts with yucca and scattered small trees.	MBTA BCC†	SGCN (2)	May occur. The Interconnection Project contains suitable habitat for foraging and nesting.	May occur. The Study Area contains suitable habitat for foraging and nesting.

Common Name (*Scientific Name*)	Habitat and Notes	Status*		Occurrence Status	
		Federal	State (Tier)	Interconnection Project	Study Area
Common nighthawk (*Chordeiles minor*)	Open and semi open areas; coniferous forests to grasslands to towns and cities, prefers sandy soil.	MBTA	SGCN (2)	May occur. The Interconnection Project contains suitable habitat for foraging and nesting.	May occur. The Study Area contains suitable habitat for foraging and nesting.
Costa's hummingbird (*Calypte costae*)	Found in Sonoran and Mojave desertscrub near washes of native desert vegetation or rocky slopes of saguaros (*Carnegiea gigantea*) and creosote bush lowlands.	MBTA BCC	SGCN (2)	May occur. Suitable habitat is present within the Interconnection Project.	May occur. Suitable habitat is present within the Interconnection Project.
Curve-billed thrasher—*palmeri* group (*Toxostoma curvirostre*)	The Sonoran Desert population (the *palmeri* group) occurs in desert scrub with creosotebush (*Larrea tridentata*), paloverde (*Parkinsonia* spp.), and cholla (*Cylindropuntia* spp).	MBTA BCC	-	Known to occur. This species was observed during the 2023 field visit. The Interconnection Project contains suitable habitat for foraging and nesting.	Known to occur. This species was observed during the 2023 field visit. The Study Area contains suitable habitat for foraging and nesting.
Desert purple martin (*Progne subis hesperia*)	A summer resident to the Arizona Sonoran Desert that nests in saguaro cavities.	MBTA	SGCN (2)	May occur. Suitable breeding habitat is present within the Interconnection Project. Saguaros occur within the project area.	May occur. Suitable breeding habitat is present within the Interconnection Project and Study Area. Saguaros were observed during the site visit.
Elf owl (*Micrathene whitneyi*)	Known to occupy diverse habitats. In the Sonoran Desert, they are known to use desert ironwood (*Olneya tesota*), ocotillo (*Fouquieria splendens*), paloverde, and saguaro. Nesting most often occurs in saguaro and other columnar cacti, Fremont cottonwood (*Populus fremontii*), honey mesquite (*Prosopis glandulosa*), and Goodding's willow (*Salix gooddingii*).	MBTA	SGCN (3)	May occur. The Interconnection Project contains suitable habitat for foraging and nesting. Saguaros were observed during the site visit.	May occur. The Study Area contains suitable habitat for foraging and nesting. Saguaros were observed during the site visit.
Ferruginous hawk (*Buteo regalis*)	Favors open scrublands, woodlands, and grasslands.	MBTA BCC†	SGCN (2)	May occur. Winter foraging habitat is present in the Interconnection Project.	May occur. Winter foraging habitat is present within the Study Area.
Gila woodpecker (*Melanerpes uropygialis*)	Occurs in Sonoran desertscrub with saguaros present, or riparian woodlands with mature trees.	MBTA BCC	SGCN (2)	Known to occur. This species was observed during the 2023 field visit. Suitable habitat is present within the Interconnection Project. Saguaros were observed during the site visit.	Known to occur. This species was observed during the 2023 field visit. Suitable habitat is present within the Study Area. Saguaros were observed during the site visit.

Common Name (*Scientific Name*)	Habitat and Notes	Status*		Occurrence Status	
		Federal	State (Tier)	Interconnection Project	Study Area
Gilded flicker (*Colaptes chrysoides*)	Found in Sonoran desertscrub with saguaros present, or riparian woodlands with mature trees.	MBTA BCC	SGCN (2)	Known to occur. This species was observed during the 2023 field visit. Suitable habitat is present within the Interconnection Project. Saguaros were observed during the site visit.	Known to occur. This species was observed during the 2023 field visit. Suitable habitat is present within the Study Area. Saguaros were observed during the site visit.
Gray flycatcher (*Empidonax wrightii*)	Commonly found in pinyon-juniper woodlands, less frequently observed in open ponderosa or pine-oak woodland.	MBTA	SGCN (2)	Unlikely to occur. The Interconnection Project is within this species' migratory range but does not contain suitable habitat.	Unlikely to occur. The Study Area is within this species' migratory range but does not contain suitable habitat.
Harris's hawk (*Parabuteo unicinctus*)	Found in savannas, open woodlands, and semi-desert habitats. Frequently observed near water sources, both natural and man-made. Often uses saguaro for nesting sites.	MBTA BCC†	SGCN (2)	May occur. The Interconnection Project contains suitable habitat for foraging and potential nesting sites in saguaros.	May occur. The Study Area contains suitable habitat for foraging and potential nesting sites in saguaros.
Inca dove (*Columbina inca*)	Occurs in farmlands, parks, and residential areas.	MBTA	SGCN (2)	May occur. Species may forage within the Interconnection Project.	May occur. Suitable residential area habitat is present within the Study Area.
Lincoln's sparrow (*Melospiza lincolnii*)	Found near bogs, wet meadows, riparian areas, predominantly in northern and montane habitats. Winters in central Arizona; prefers dense, brushy areas, often near water.	MBTA	SGCN (2)	Unlikely to occur. No suitable habitat is present in the Interconnection Project.	Unlikely to occur. No suitable habitat is present in the Study Area.
Loggerhead shrike (*Lanius ludovicianus*)	Found in open areas with scattered trees and shrubs. Frequently observed in savannas and desert scrub biotic communities.	MBTA BCC†	SGCN (2)	May occur. The Interconnection Project contains suitable habitat for foraging and nesting.	May occur. The Study Area contains suitable habitat for foraging and nesting.
Long-eared owl (*Asio otus*)	Found in deciduous forests and riparian areas near permanent water ways.	MBTA BCC	SGCN (2)	Unlikely to occur. No suitable habitat is present in the Interconnection Project.	Unlikely to occur. No suitable habitat is present in the Study Area.
Mountain plover (*Charadrius montanus)*	Non-breeding visitor to Arizona; in winter prefers dry plains and agricultural fields.	MBTA BCC-nb	SGCN (2)	Unlikely to occur. No suitable wintering habitat is present in the Interconnection Project.	Unlikely to occur. No suitable wintering habitat is present in the Study Area.

Common Name (*Scientific Name*)	Habitat and Notes	Status*		Occurrence Status	
		Federal	State (Tier)	Interconnection Project	Study Area
Northern beardless tyrannulet (*Camptostoma imberbe*)	Occurs in woodlands and thickets near streams.	MBTA	SGCN (2)	Unlikely to occur. No suitable habitat is present in the Interconnection Project.	Unlikely to occur. No suitable habitat is present in the Study Area.
Northern goshawk (*Accipiter gentilis*)	Nests in mature, old-growth forests with closed canopy. Often hunts in more open wooded habitats.	MBTA	SGCN (2)	Unlikely to occur. No suitable habitat is present in the Interconnection Project.	Unlikely to occur. No suitable habitat is present in the Study Area.
Prairie falcon (*Falco mexicanus*)	Found in open areas, predominantly in mountainous areas, steppes, plains, or prairies. Non-breeding wintering individuals have been known to forage in agricultural fields.	MBTA BCC†	SGCN (2)	May occur. Wintering habitat occurs in the Interconnection Project.	May occur. Wintering habitat occurs in the Study Area.
Pyrrhuloxia (*Cardinalis sinuatus*)	Occurs in upland deserts, riparian woodlands, fields, and residential areas.	MBTA BCC	SGCN (2)	May occur. The Interconnection Project contains suitable habitat for foraging and nesting.	May occur. The Study Area contains suitable habitat for foraging and nesting.
Rufous-winged sparrow (*Peucaea carpalis*)	Prefers Sonoran desertscrub, characterized by scattered spiny trees and shrubs.	MBTA BCC	SGCN (2)	May occur. The Interconnection Project contains suitable habitat for foraging and nesting.	May occur. The Study Area contains suitable habitat for foraging and nesting.
Savannah sparrow (*Passerculus sandwichensis*)	Non-breeding winter visitor to Arizona. Utilizes fields, pastures, and golf courses.	MBTA BCC†	SGCN (2)	Unlikely to occur. No suitable wintering habitat is present in the Interconnection Project.	Unlikely to occur. No suitable wintering habitat is present in the Study Area.
Scaled quail (*Callipepla squamata*)	Prefers arid, undisturbed grasslands and shrublands.	–	SGCN (2)	Unlikely to occur. Interconnection Project is outside range of this species' range.	Unlikely to occur. Study Area is outside the range of this species.
Sprague's pipit (*Anthus spragueii*)	Nests in northern Great Plains in native mixed-grass prairie. Winters in native and nonnative grasslands with limited shrub cover, including occasionally athletic fields and pastures.	MBTA BCC†	SGCN (2)	Unlikely to occur. No suitable wintering habitat is present in the Interconnection Project.	Unlikely to occur. No suitable wintering habitat is present in the Study Area.
Swainson's hawk (*Buteo swainsoni*)	Found in grassy plains in southeastern Arizona. Nests in trees.	MBTA	SGCN (2)	May occur. The Interconnection Project contains suitable habitat for foraging and nesting.	May occur. The Study Area contains suitable habitat for foraging and nesting.
Swainson's thrush (*Catharus ustulatus*)	Breeds in coniferous forests, winters in mature forests. Arizona is in this species' migratory range. Migratory habitat is forests, woodland, swamps, and parks.	MBTA	SGCN (2)	Unlikely to occur. No suitable habitat is present within the Interconnection Project.	Unlikely to occur. No suitable habitat is present within the Study Area.

Common Name (*Scientific Name*)	Habitat and Notes	Status*		Occurrence Status	
		Federal	State (Tier)	Interconnection Project	Study Area
Townsend's solitaire (*Myadestes townsendi*)	Occurs in pine, fir, and spruce forests. Migrates to lower elevations in the winter, down to juniper forests or desert washes and shrublands.	MBTA	SGCN (2)	May occur. The Interconnection Project contains suitable habitat for wintering.	May occur. The Study Area contains suitable habitat for wintering.
Verdin (*Auriparus flaviceps*)	Found in arid, desert habitats, frequently observed in mesquite and creosote bush vegetation. Known to nest in shrubs, small trees, and cacti.	MBTA BCC	SGCN (2)	Known to occur. This species was observed during the 2023 field visit. Suitable habitat is present within the Interconnection Project.	Known to occur. This species was observed during the 2023 field visit. Suitable habitat is present within the Study Area.
Vesper sparrow (*Pooecetes gramineus*)	Found in open areas with short, sparse grass and scattered shrubs. Uncommon wintering occurrence in central and southern Arizona.	MBTA BCC†	SGCN (2)	May occur. The Interconnection Project contains suitable habitat for non-breeding individuals to occur.	May occur. The Study Area contains suitable habitat for non-breeding individuals to occur.
Western burrowing owl (*Athene cunicularia hypugaea*)	Found in open areas with low brush cover, including grasslands, agricultural margins and desertscrub. Year-round resident or migratory.	MBTA BCC	SGCN (2)	May occur. Some portions of the Interconnection Project may contain suitable open habitat for this species.	May occur. Some portions of the Study Area may contain suitable open habitat for this species.
Western grasshopper sparrow (*Ammodramus savannarum perpallidus*)	Moderately open grasslands with patchy bare ground; grasslands may contain shrub cover. Non-breeding range includes the southern extreme of Arizona; year-round range includes the southeastern extreme of the state.	MBTA	SGCN (2)	Unlikely to occur. No suitable habitat is present within the Interconnection Project.	Unlikely to occur. No suitable habitat is present within the Study Area.
Western screech-owl (*Megascops kennicottii*)	Commonly found in broadleaf and riparian woodland, particularly within deciduous forests that border canyons and other drainages.	MBTA BCC†	SGCN (2)	Unlikely to occur. No suitable habitat is present within the Interconnection Project.	Unlikely to occur. No suitable habitat is present within the Study Area.
Reptiles					
Desert mud turtle (*Kinosternon sonoriense sonoriense*)	Inhabits rivers, streams, or aquatic impoundments in desertscrub, semi-desert grasslands, or oak/pine-oak woodlands.	-	SGCN (2)	Unlikely to occur. The Interconnection Project does not contain suitable habitat.	May occur. The Study Area contains suitable aquatic impoundment habitat.
Gila monster (*Heloderma suspectum*)	Sonoran desert, desert grassland, and at times oak woodland in rocky areas.	-	SGCN (1)	May occur. The Interconnection Project contains suitable habitat.	May occur. The Study Area contains suitable habitat.
Ornate box turtle, desert box turtle (*Terrapene ornata*), (*T. o. luteola*)	Grasslands and desertscrub from 2,000–7,100 feet. In Arizona, found in the southeastern corner of the state.	-	SGCN (1)	May occur. The Interconnection Project contains suitable habitat.	May occur. The Study Area contains suitable habitat.

Common Name (*Scientific Name*)	Habitat and Notes	Status*		Occurrence Status	
		Federal	State (Tier)	Interconnection Project	Study Area
Regal horned lizard (*Phrynosoma solare*)	Found in rocky and gravelly habitats throughout arid and semi-arid plains, hills, canyons, and mountain slopes. Commonly associated with sloping terrain and scattered desert vegetation including creosote bush, mesquite, and saguaro.	-	SGCN (2)	May occur. The Interconnection Project contains suitable habitat.	May occur. The Study Area contains suitable habitat.
Saddle leaf-nosed snake (*Phyllorhynchus browni*)	Burrows through loose, rocky, sandy soils in foothills and bajadas in Sonoran desertscrub.	-	SGCN (2)	Unlikely to occur. The Interconnection Project does not contain suitable habitat.	Unlikely occur. The Study Area does not contain suitable habitat.
Sonoran coralsnake (*Micruroides euryxanthus*)	Common in rocky terrain with drainages, vegetated washes, and canyons.	-	SGCN (2)	May occur. The Interconnection Project contains suitable habitat.	May occur. The Study Area contains suitable habitat.
Sonoran desert tortoise (*Gopherus morafkai*)	Occurs on primarily rocky, and often steep, hillsides and bajadas of Mohave and Sonoran desertscrub, typically at elevations below 7,800 feet amsl. May occur, but is less likely to occur, in desert grassland, juniper woodland, and interior chaparral habitats and even pine communities.	-	SGCN (1)	May occur. The Interconnection Project does occur within the species' known range. Though no suitable habitat for breeding occurs within the Interconnection Project, the species may still move across the area.	May occur. The Study Area does occur within the species' known range. Though no suitable habitat for breeding occurs within the Study Area, the species may still move across the area.
Sonoran spotted whiptail (*Aspidoscelis sonorae*)	Occurs in oak woodland and oak grasslands, as well as desertscrub and thornscrub.	-	SGCN (2)	May occur. The Interconnection Project contains suitable habitat for species occurrence.	May occur. The Study Area contains suitable habitat for species occurrence.
Tiger rattlesnake (*Crotalus tigris*)	Rocky slopes in Sonoran desertscrub.	-	SGCN (2)	Unlikely occur. The Interconnection Project does not contain suitable habitat.	Unlikely occur. The Survey Area does not contain suitable habitat.
Variable sandsnake (*Chilomeniscus stramineus*)	Found in sandy or loamy soils of dunes, arroyos, and wash borders in areas with desertscrub vegetation including paloverde and saguaro.	-	SGCN (2)	May occur. The Interconnection Project contains suitable habitat for species occurrence.	May occur. The Study Area contains suitable habitat for species occurrence.
Mammals					
Antelope jackrabbit (*Lepus alleni*)	Found in arid grasslands with scattered shrubs, foothills, mesas, and bajadas. Less common in barren open desert.	-	SGCN (2)	May occur. Suitable habitat for species occurrence is present in the Interconnection Project.	Known to occur. This species was observed during the 2023 field visit. Suitable habitat is present within the Study Area.

Common Name (*Scientific Name*)	Habitat and Notes	Status*		Occurrence Status	
		Federal	State (Tier)	Interconnection Project	Study Area
Arizona pocket mouse (*Perognathus amplus*)	Burrowing species found in a variety of desertscrub habitats with vegetation including creosote bush, mesquite, paloverde, and cacti.	-	SGCN (2)	May occur. The Interconnection Project contains suitable habitat for species occurrence.	May occur. The Study Area contains suitable habitat for species occurrence.
Bailey's pocket mouse (*Chaetodipus baileyi*)	Low desert, sparsely vegetated flats to rocky slopes with shrubs and grasses.	-	SGCN (2)	May occur. The Interconnection Project contains suitable habitat for species occurrence.	May occur. The Study Area contains suitable habitat for species occurrence.
Big free-tailed bat (*Nyctinomops macrotis*)	Occurs in rocky, rugged areas, roosts in rock crevices, cliffs, buildings, and occasionally tree holes.	-	SGCN (2)	May occur. The Interconnection Project contains suitable foraging habitat though no suitable roosting habitat was observed in the Interconnection Project.	May occur. The Study Area contains suitable foraging habitat though no suitable roosting habitat is present in the Study Area.
Brazilian (=Mexican) free-tailed bat (*Tadarida brasiliensis*)	Found in a variety of habitats with ranges across the United States. Often found roosting in caves, mines, and cliff crevices.	-	SGCN (2)	May occur. The Interconnection Project contains suitable foraging habitat though no suitable roosting habitat was observed in the Interconnection Project.	May occur. The Study Area contains suitable foraging habitat though no suitable roosting habitat is present in the Study Area.
California leaf-nosed bat (*Macrotus californicus*)	Mostly found in Sonoran desertscrub. Primarily roosts in mines, caves, and rock shelters. Nocturnal roosts include a variety of human-made structures, rock shelters, and mines between elevations of 160 and 3,980 feet amsl.	-	SGCN (2)	May occur. The Interconnection Project contains suitable foraging habitat though no suitable roosting habitat was observed in the Interconnection Project.	May occur. The Study Area contains suitable foraging habitat and suitable roosting habitat (e.g., human-made structures) has the potential to be present in the Study Area.
Cave myotis (*Myotis velifer*)	Typically found in desertscrub with creosote bush, brittlebush (*Encelia* sp.), paloverde, and cacti, but sometimes found up to pine-oak communities, between 300 and 5,000 feet amsl. Roosts in caves, tunnels, mine shafts, and under bridges, and occasionally in buildings within a few miles of water.	-	SGCN (2)	May occur. The Interconnection Project contains suitable foraging habitat though no suitable roosting habitat was observed in the Interconnection Project.	May occur. The Study Area contains suitable foraging habitat and suitable roosting habitat (e.g., human-made structures) has the potential to be present in the Study Area.

Common Name (*Scientific Name*)	Habitat and Notes	Status*		Occurrence Status	
		Federal	State (Tier)	Interconnection Project	Study Area
Cockrum's desert shrew (*Notiosorex cockrumi*)	Known from southeastern and south-central Arizona south into central Sonora, Mexico. Habitat and extent of range are unknown. Observation records from Cienega Creek Natural Preserve and Leslie Canyon National Wildlife Refuge. Type locality described as "riparian overstory of Arizona walnut and ash. Mesquite grassland dominated by giant sacaton" (Baker et al. 2003: 2).	-	SGCN (2)	Unlikely to occur. The Interconnection Project does not contain grassland or riparian habitats similar to those this species is known to occur within.	Unlikely to occur. The Study Area does not contain grassland or riparian habitats similar to those this species is known to occur within.
Fringed myotis (*Myotis thysanodes*)	Ranges from deserts to grasslands to woodlands. Roosts in caves, mine tunnels, snags, and in buildings.	-	SGCN (2)	May occur. The Interconnection Project contains suitable foraging habitat though no suitable roosting habitat was observed in the Interconnection Project.	May occur. The Study Area contains suitable foraging habitat and suitable roosting habitat (e.g., buildings) has the potential to be present in the Study Area.
Greater western mastiff bat (*Eumops perotis californicus)*	Occurs in lower and upper Sonoran desertscrub near cliffs. Prefers rugged, rocky canyons with abundant crevices at elevations from 240 to 8,475 feet amsl. Prefers crowding into tight crevices at least 1 foot deep × at least 2 inches wide. Colonies prefer deeper crevices, to 10 or more feet. Prefers to forage over large open bodies of water.	-	SGCN (2)	Unlikely to occur. No suitable habitat for roosting or foraging occurs within the Interconnection Project.	Unlikely to occur. No suitable habitat for roosting or foraging occurs within the Study Area.
Harris's antelope squirrel (*Ammospermophilus harrisii*)	Burrowing species found in low dry, sparsely vegetated desert.	-	SGCN (2)	May occur. Habitat is present in the Interconnection Project.	May occur. Habitat is present in the Study Area.
Hoary bat (*Lasiurus cinereus*)	Found in deciduous and coniferous woodlands. Foraging occurs near open waterways and along riparian corridors.	-	SGCN (2)	Unlikely to occur. Suitable habitat for foraging or roosting is not present in the Interconnection Project.	Unlikely to occur. Suitable habitat for foraging or roosting is not present in the Study Area.
Lesser long-nosed bat (*Leptonycteris yerbabuenae*)	Sonoran desertscrub, grasslands, and forests with saguaros and agaves (*Agave* sp.). Roosts in caves and mines and forages on saguaro and agave plants.	-	SGCN (1)	May occur in the Interconnection Project. Forage plants (i.e., saguaros) occurred in the Interconnection Project. The Interconnection Project does not contain suitable roost sites for this species.	May occur in the Interconnection Project. Forage plants (i.e., saguaros) occurred in the Study Area. The Study Area does not contain suitable roost sites for this species.

Common Name (*Scientific Name*)	Habitat and Notes	Status*		Occurrence Status	
		Federal	State (Tier)	Interconnection Project	Study Area
Mexican long-tongued bat (*Choeronycteris mexicana*)	Mesic canyons with mixed oak-conifer forests. Roosts in burrows or caves.	-	SGCN (2)	Unlikely to occur. Suitable habitat for foraging or roosting is not present in the Interconnection Project.	Unlikely to occur. Suitable habitat for foraging or roosting is not present in the Study Area.
Pale Townsend's big-eared bat (*Corynorhinus townsendii pallescens*)	Found throughout Arizona in a variety of vegetation communities and prefers to use roost sites, such as caves, mines, or abandoned buildings, with open ceilings instead of cracks or crevices. They typically forage no more than 5 miles from the roost site.	-	SGCN (1)	May occur. The Interconnection Project contains suitable foraging habitat though no suitable roosting habitat was observed in the Interconnection Project.	May occur. The Study Area contains suitable foraging habitat and suitable roosting habitat (e.g., abandoned buildings) has the potential to be present in the Study Area.
Pocketed free-tailed bat (*Nyctinomops femorosaccus*)	Found in desertscrub. Roosts in rock crevices and caves and in buildings at times.	-	SGCN (2)	May occur. The Interconnection Project contains suitable foraging habitat though no suitable roosting habitat was observed in the Interconnection Project.	May occur. The Study Area contains suitable foraging habitat and suitable roosting habitat (e.g., buildings) has the potential to be present in the Study Area.
Southern pocket gopher (*Thomomys umbrinus intermedius*)	Generally found on rocky slopes in open oak woodland.	–	SGCN (2)	Unlikely to occur. The Interconnection Project does not contain suitable habitat.	Unlikely to occur. The Study Area does not contain suitable habitat.
Southwestern myotis (*Myotis auriculus*)	Occurs in ponderosa pine habitat primarily.	–	SGCN (2)	Unlikely to occur. No suitable habitat occurs within the Interconnection Project.	Unlikely to occur. No suitable habitat occurs within the Study Area.
Western red bat (*Lasiurus blossevillii*)	Riparian and wooded areas. Roosts in trees, particularly cottonwoods. May roost in saguaro cavities.	-	SGCN (2)	May occur. The Study Area contains suitable foraging habitat and suitable roosting habitat (e.g., saguaros) was observed in the Interconnection Project.	May occur. The Study Area contains suitable foraging habitat and suitable roosting habitat (e.g., saguaros) was observed in the Study Area.
Western yellow bat (*Lasiurus xanthinus*)	Found in arid habitats along riparian corridors. Known to roost in palm trees, cottonwood, and yucca. Forages over open water.	-	SGCN (2)	Unlikely to occur. No suitable habitat occurs within the Interconnection Project.	May occur. The Study Area may contain suitable roosting habitat (e.g., palm trees).

Common Name (*Scientific Name*)	Habitat and Notes	Status*		Occurrence Status	
		Federal	State (Tier)	Interconnection Project	Study Area
Yuma myotis (*Myotis yumanensis*)	Found in a variety of habitats including riparian, desertscrub, moist woodlands, and forests. Prefer cliffs and rocky walls near water. Known to roost in caves, mines, cliff crevices, and buildings. Foraging occurs along forested edges of streams, ponds, and lakes.	-	SGCN (2)	Unlikely to occur. The Interconnection Project does not provide suitable roosting or foraging habitat.	Unlikely to occur. The Study Area does not provide suitable roosting or foraging habitat

Sources: Range or habitat information is from AGFD (2023b, 2023c, 2023d); Corman and Wise-Gervais (2005); Cornell Lab of Ornithology (2023); eBird (2023); NatureServe (2023); and USFWS (2023a, 2023c).

Note: Notes regarding documented occurrences, other than observations made during SWCA's Project-specific surveys, are from AGFD (2023a, 2023b).

* Federal Status Definitions

BCC = Bird of Conservation Concern.

BCC† = Bird of Conservation Concern for regions other than BCR 33. Included in table because they are also Arizona SGCN.

BCC-nb = Bird of Conservation Concern with nonbreeding status.

BGEPA = Bald and Golden Eagle Protection Act

ESA = Endangered Species Act

MBTA = Migratory Bird Treaty Act

State Status Definitions

SGCN = Species of Greatest Conservation Need; species identified by AGFD (2012) as having conservation priority. Tier 2 species are those categorized as "vulnerable" but not fitting the Tier 1 criteria for highest priority. Tier 3 species are those for which existing data were insufficient to score one or more vulnerability criteria.

Birds of Conservation Concern

The Interconnection Project and 1-mile Study Area are within BCR 33 (USFWS 2021), for which 27 BCC species are listed. Of these 27 species, 10 have the potential to occur (see Table C-2). Of these 10 species, four species are known to occur in both the Interconnection Project and Study Area, as they were observed during the 2023 field surveys: curve-billed thrasher (*Toxostoma curvirostre*), Gila woodpecker (*Melanerpes uropygialis*), gilded flicker (*Colaptes chrysoides*), and verdin (*Auriparus flaviceps*). An additional six species may occur in the Interconnection Project but were not observed during field studies: Bendire's thrasher (*Toxostoma bendirei*), black-chinned sparrow (*Spizella atrogularis*), Costa's hummingbird (*Calypte costae*), pyrrhuloxia (*Cardinalis sinuatus*), rufous-winged sparrow (*Peucaea carpalis*), and western burrowing owl (*Athene cunicularia hypugaea*) (see Table C-2). Birds that are BCC for regions other than BCR 33 but that are classified as SGCN in Arizona are considered in the following section.

Species of Greatest Conservation Need

Fifty species categorized as SGCN Tier 1 or 2 (excluding those federally protected species that have already been addressed in the previous section) have the potential to occur within the proposed Study Area (see Table C-2). Of the 50 SGCN Tier 1 or 2 species that may occur or are known to occur within the Interconnection Project and Study Area, two are amphibians, 26 are birds, eight are reptiles, and 14 are mammals (see Table C-2). Of those 50 species, seven birds and one mammal species were observed during field surveys and are known to occur (see Table C-2).

One species listed as SGCN Tier 3 has the potential to occur within 3 miles of the Interconnection Project: the elf owl (*Micrathene whitney*i). The elf owl may occur in both the Interconnection Project and Study Area.

No SGCN fish species are likely to occur within 3 miles of the proposed Interconnection Project.

The presence of aquatic impoundments within the Study Area but outside of the Interconnection Project provides breeding habitat for amphibian species and habitat for desert mud turtle (*Kinosternon sonoriense*

sonoriense). It is unknown if any abandoned buildings suitable for bat roosts occur in the Study Area outside of the Interconnection Project, but Google Earth (2023) indicates that they could occur. While all of the bat species with the potential to occur would forage in both the Interconnection Project and Study Area, abandoned buildings, which are known to be roosts for several species of insectivorous bats, have the potential to occur in the Study Area but not the Interconnection Project. The western yellow bat (*Lasiurus xanthinus*) is a species that forages over open water and roosts in riparian trees and palm trees; therefore, it is unlikely to occur in the Interconnection Project but may occur in the Study Area, where suitable trees occur.

State-Protected Native Plants

The ANPL identifies a list of plant species—largely cacti, agaves, yuccas, and desert trees—that are susceptible to removal for collection, landscaping, sale, or other commercial uses. The ANPL states that these plants shall not be taken, transported, or possessed from any land without permission and a permit from the ADA; it also requires notification prior to land clearing even if the plants will be destroyed. Sixteen plant species covered under the ANPL were observed in the Study Area during surveys: Arizona pencil cholla (*Cylindropuntia arbuscula*), blue paloverde (*Parkinsonia florida*), cactus apple (*Opuntia engelmannii*), candy barrel cactus (*Ferocactus wislizeni*), Christmas cactus (*Cylindropuntia leptocaulis*), Graham's nipple cactus (*Mammillaria grahamii*), jumping cholla (*Cylindropuntia fulgida*), nightblooming cereus (*Peniocereus greggii*), ocotillo (*Fouquieria splendens*), Pima pineapple cactus, pinkflower hedgehog cactus (*Echinocereus fasciculatus*), saguaro, soaptree yucca (*Yucca elata*), tree cholla (*Cylindropuntia imbricata*), velvet mesquite (*Prosopis velutina*), and yellow paloverde (*Parkinsonia microphylla*).

Noxious Weeds

Arizona maintains a list of noxious weeds in three categories: Class A, Class B, and Class C (ADA 2023). Class A species are those that are not known to occur in Arizona and are of limited distribution, and that are of high priority for quarantine, control, or mitigation. Class B noxious weeds are species known to occur but of limited distribution in Arizona and may be high-priority pests for quarantine, control, or mitigation if a significant threat to crop, commodity, or habitat exists. Class C noxious weeds are species of plants that are widespread but may be recommended for active control based on risk assessment. Asian (Saharan) mustard (*Brassica tournefortii*), a Class B noxious weed, was observed in the Interconnection Project during the site visit. Buffelgrass (*Pennisetum ciliare*), a Class C noxious weed, was observed in the Interconnection Project and Study Area during the field surveys. Mitigation measures (e.g., construction best management practices) are proposed to minimize the spread of noxious weeds during construction.

Summary of Potential Effects

Areas of Biological Wealth

The Interconnection Project and its 1-mile Study Area intersect the Lee Moore Wash Flow Corridors wildlife linkage, which may be disturbed by the Interconnection Project. Potential impacts to Lee Moore Wash Flow Corridors from the Interconnection Project will be limited to temporary construction areas and any necessary permanent facilities (e.g., transmission structures). The Applicant plans to consult with Pima County Regional Flood Control District regarding potential impacts to the Lee Moore Wash or RRH. Impacts to the ability of wildlife to move through the corridors would be greater during construction, as the noise and human presence associated with construction activities may cause individuals to avoid the area. Maintenance activities in the Interconnection Project would tend to have similar impacts to individuals but would be shorter in duration and smaller in magnitude. Much of the Interconnection Project that intersects the Lee Moore Wash is parallel to existing linear features, including Andrada Road, Wilmot Road, and a 115-kV overhead transmission line. Consolidating the Interconnection Project with existing linear features

helps to minimize the potential for habitat fragmentation. Similarly, power poles or new access road placement may occur within RRH if the drainages cannot be spanned. Impacts to RRH will be limited and localized.

Interconnection Project impacts will be limited to the ROW and, if necessary, temporary construction areas – which will be restored after construction. Construction of the power poles and access roads will avoid RRH whenever possible. The surrounding areas contain abundant and similar habitat. Therefore, the comparatively small area of permanent disturbance in the ROW and temporary construction period is not anticipated to contribute meaningfully to habitat loss, habitat fragmentation, or habitat avoidance.

Federally Listed Threatened and Endangered Species

The Interconnection Project and its 1-mile Study Area are within the known range of the Pima pineapple cactus (a listed endangered species), cactus ferruginous pygmy-owl (a listed threatened species), and monarch butterfly (a candidate for listing).

The Interconnection Project contains suitable habitat for, and is within the range of, the Pima pineapple cactus. Pima pineapple cactus individuals have been observed in the Interconnection Project. The Applicant completed a species-specific survey (i.e., a "protocol survey") for Pima pineapple cactus on the Interconnection Project west of Wilmot Road and for the Solar Facility (immediately south of the Interconnection Project along Andrada Road). The Applicant also completed a protocol survey for Pima pineapple cactus in several locations within the Project Area prior to ground disturbance and vehicle use. Pima pineapple cactus surveys followed a modified Roller (1996) protocol.

Three Pima pineapple cacti were observed within the portions of the Project Area that were surveyed. The Applicant plans to complete a comprehensive species-specific survey for the remaining portion of the Interconnection Project (on ASLD land) prior to construction once the final limits of disturbance are known.

The Applicant plans to minimize impacts to the Pima pineapple cactus by avoiding or translocating known individuals to the maximum extent possible. Impacts to Pima pineapple cactus found within the Interconnection Project that cannot be avoided include death of individuals if translocation is not completed. Impacts to transplanted individuals could include harm, reduced vigor, or declining health following transplant. Pima pineapple seeds located in the seed bank have the potential to be harmed or destroyed within the Interconnection Project. Individuals outside of the Interconnection Project would not be expected to experience adverse impacts.

Under the ESA, take provisions do not apply to plants, except on federal land. There is no federal nexus for this project and thus Section 7 consultation is not required. As the landowner for the unsurveyed portion of the Interconnection Project, the ASLD would determine the mitigation requirements, if any, for any Pima pineapple cactus that are observed and cannot be avoided. ASLD would additionally determine the compensation cost for each individual Pima pineapple cactus plant removed from State Trust land. ASLD may additionally require purchase of credits in the Pima pineapple cactus mitigation bank. The Applicant intends to avoid Pima pineapple cactus if possible, or to transplant individuals that cannot be avoided to mitigate for loss or harm of individuals. Any Pima pineapple cactus relocation efforts would follow ANPL requirements.

The Interconnection Project and 1-mile Study Area are within the published range of the cactus ferruginous pygmy-owl (USFWS 2023c) and contain suitable xeroriparian wash habitat with abundant saguaros with cavities suitable for dispersal and breeding for this species. However, this species is unlikely to occur because the Interconnection Project and Study Area are outside of the current distribution of this species (i.e., 1990–current distribution as digitized from Figure 4.6 in USFWS 2022). In addition, the Interconnection Project is separated from the Altar Valley by more than 20 miles, with the Pima Mine, the Mission Mine, and associated pit mines, dumps, and tailings ponds and Interstate 19 acting as likely barriers

to dispersal from a known population to the project area. There are no occurrence records for this species within 3 miles of the Project Area (AGFD 2023b) (see Exhibit C-2).

Habitat in the Study Area may be suitable for use by monarch butterfly, a candidate species. No milkweed (Family Asclepiadaceae) was observed in the Study Area; however, monarch butterflies may utilize other plants in the Study Area for foraging but not for reproduction (USFWS 2020b). As such, any potential impacts to the monarch butterfly related to the Interconnection Project would be minor. A very small portion of suitable dispersal or foraging habitat would be lost, relative to the total amount of habitat in the vicinity. Individuals may experience injury, mortality, change of behavior, or loss of forage as a result of the Project. Individuals would be expected to largely shift activity to nearby suitable habitat.

Bald and Golden Eagles

No suitable bald eagle nesting or foraging habitat (e.g., flowing rivers or lakes containing fish) and no tall trees or cliffs suitable for eagle perching are located within the Interconnection Project or its 1-mile Study Area. However, the Interconnection Project is within the non-breeding range of the bald eagle, and this species may move through the Interconnection Project and the Study Area (see Table C-1). The Project Area does not appear to contain nesting sites for golden eagles (i.e., cliffs) (Google Earth 2023), but individuals may fly over the Interconnection Project while foraging (see Table C-1). These species were not documented by SWCA during related surveys in the Study Area during 2023 field visits. No impacts would be expected to occur to bald or golden eagles as a result of the Interconnection Project.

Due to the relatively small area of foraging habitat potentially impacted compared with an individual golden eagle's home range and the abundance of similar foraging habitat outside of the Interconnection Project, no significant impacts to golden eagles resulting from the Interconnection Project would be expected. Bald eagles may occur within the Study Area during the non-breeding season; however, there is no foraging habitat in the Interconnection Project or Study Areas and bald eagles would be expected to move to more suitable habitats. Thus, no impacts to bald eagles resulting from the Project would be expected.

Other Special-Status Species

The following sections refer to species with special status that are not federally listed or candidates for federal listing.

Special-Status Mammal Species

The Project Area is unlikely to support suitable roosting habitat for most bat species. No palm trees, large riparian trees, or suitable building structures occur in the Project Area; therefore, no bat roosts would be expected to be removed or destroyed as a result of the Project. Bats using trees or buildings as day roosts within the Study Area have the potential to be negatively impacted by noise, leading to behavior changes or loss of fitness for individuals. Impacts would be minor as no trees used for day roosts are present within the immediate vicinity of the Project Area where construction noise would be most prominent.

Bat species can collide with human-made structures during long-distance migration. Migrating bats often fly high above ground level and do not actively echolocate. However, during normal foraging activity, bats actively use echolocation and are typically able to detect and avoid features such as overhead transmission lines (Arnett et al. 2015). No information suggests that transmission lines in a setting such as the Study Area would pose a risk to bats.

Project construction could cause impacts to terrestrial mammals including behavior changes, as individuals would be expected to flee from an increase of noise, vibration, and human presence within the Interconnection Project vicinity. These behavior changes could increase depredation, decrease foraging success, reduce reproductive success, and result in loss of fitness for that individual from increased metabolic output. Project construction could result in inadvertent injury or mortality to individuals,

particularly those that may be sheltering in underground burrows instead of fleeing. Noise, vibration, and human presence would be temporary during construction and would cease with completion of construction. Additional transmission structures constructed for the Interconnection Project would increase potential perching locations for predators of the small mammals, i.e., birds such as loggerhead shrikes (*Lanius ludovicianus*), American kestrel (*Falco sparverius*), and burrowing owls (*Athene cunicularia*), all of which may or are known to occur in the Study Area. Increased perching locations for avian predators of small mammals may cause an increase of depredation, or an increased avoidance of the area. However, these impacts would be minor and not likely to impact any species on a population level.

The loss and degradation of mammal habitat from short- and long-term Interconnection Project activities will be minor as abundant habitat for small mammals occurs in the vicinity of the Interconnection Project and Study Areas. Similarly, because of the available habitat outside the Project Area, any loss of vegetation from construction activities would not contribute meaningfully to habitat fragmentation for special-status mammals or decrease connectivity between habitat patches. Construction of the Project also is expected to result in an increase of fugitive dust. The fugitive dust during construction could change mammal behavior (e.g., reducing the amount of foraging due to area disturbances). The likelihood and severity of impacts from construction would decrease with increasing distance from the Interconnection Project.

Special-Status Bird Species

Five bird species (see Table C-2) occur in the vicinity of the Interconnection Project only for wintering or migration, and there would be no potential for nesting impacts for the five wintering bird species.

Potential impacts to special-status bird species could include changes in behavior due to Interconnection Project-related noise, vibration, and presence of workers and equipment; loss of breeding and foraging habitat; and impacts to nesting species. Potential impacts to nesting birds and their eggs covered under the MBTA, including burrow nests of the western burrowing owl, would be avoided and/or minimized either by limiting ground-clearing/vegetation removal activities to outside the breeding season (generally March to September, with raptors breeding generally January to June) or through surveys to identify active nests and placement of buffers around those active nests until the young fledge or the nest fails.

Transmission lines can pose a collision risk to birds, including raptors (Avian Power Line Interaction Committee [APLIC] 2012). However, many factors influence whether birds are likely to collide with a specific transmission line. To minimize that risk, the Applicant will design the Interconnection Project to incorporate reasonable measures to minimize electrocution of and impacts to avian species. Such measures will be accomplished through incorporation of APLIC guidelines set forth in *Suggested Practices for Raptor Protection on Power Lines: The State of the Art in 2006* (APLIC 2006) and *Reducing Avian Collisions with Power Lines: the State of the Art in 2012* (APLIC 2012).

Transmission and distribution lines can also cause bird electrocution, although the risk is highest with lower-voltage lines. Electrocution occurs when a bird simultaneously contacts energized and grounded electrical components. High-voltage lines require spacing between those components that cannot be spanned even by very large birds so that electrocution risk is precluded almost entirely (APLIC 2012).

Special-Status Reptile Species

Potential Project-related impacts to special-status reptile species would include changes in behavior due to the presence of workers and equipment, including moving away from sources of noise and vibration; the potential for individuals being crushed or buried during ground-disturbing activities; the loss of habitat; and increased predation due to an increase in perches provided by the additional power poles to be installed. Special-status reptile individuals would be expected to experience impacts from increased fugitive dust during construction similar to those described for mammals.

Special-Status Amphibian Species

Two amphibians have the potential to occur within and move across the Interconnection Project when conditions are conducive (i.e., when roadside puddles occur, stock tanks are filled, or during or immediately following monsoon storms) but would not be expected to breed in the Interconnection Project because no habitat suitable for breeding occurs (i.e., ephemeral or permanent aquatic habitats where water would be expected to create pools or ponds) (see Table C-2). Amphibians may breed in the Study area where suitable habitat occurs. Potential impacts to these amphibians include death, injury, or impacts arising from behavior changes, which would be similar to those described for terrestrial mammals. Potential impacts from the loss, degradation, and fragmentation of amphibian habitat from Project activities would be the same as those described for terrestrial mammals.

Special-status amphibian individuals would be expected to experience impacts from increased fugitive dust during construction similar to those described for mammals.

Special-Status Fish Species

There are no special-status fish species known or expected to occur within the Study Area. The Interconnection Project would not impact special-status fish species because no habitat for special-status fish species is present in the Interconnection Project. Project activities would not impact perennial water outside of the Study Area.

State-Protected Native Plants

Impacts to Pima pineapple cactus are described in the previous section, Federally Listed Threatened and Endangered Species.

Plant species protected under the ANPL could be removed during the Project's vegetation-clearing activities. However, as the Interconnection Project will occupy a relatively small area compared with that of nearby disturbances (e.g., development and roads) the loss of vegetation in the Study Area is expected to result in minor impacts to protected native plants.

Noxious Weeds

Measures will be taken (e.g., equipment washing) to avoid introducing or spreading noxious weeds in the Interconnection Project; therefore, the Interconnection Project would be unlikely to contribute to an increase of noxious weeds, in extent or abundance, in the vicinity of the Interconnection Project.

Mitigation Measures

The following mitigation measures will reduce the potential for impacts to special-status species as a result of the Project:

- The Interconnection Project will be designed in accordance with relevant standards from the Avian Power Line Interaction Committee (APLIC). APLIC standards are intended to reduce the risk of avian collisions and electrocution with high voltage transmission lines, particularly for raptors. Following APLIC standards will help minimize potential impacts to migratory birds.
- If vegetation-disturbing activities are planned during the migratory bird nesting season (March–September or January–June for raptors), measures to avoid any active bird nests within the Interconnection Project, such as preconstruction surveys for migratory bird nests by a qualified biologist, will be taken to maintain compliance with the MBTA since suitable nesting habitat for migratory bird species is present in the Interconnection Project.

- Biological surveys of the Interconnection Project indicate does not contain suitable habitat for Sonoran desert tortoise; however, if a Sonoran desert tortoise is encountered within the Interconnection Project, the AGFD's *Guidelines for Handling Sonoran Desert Tortoises Encountered on Development Projects* (AGFD 2023e) will be followed.
- If western burrowing owls are identified in the Interconnection Project, measures to avoid any active burrows should be taken. Because some burrowing owls are year-round residents, surveys for this species will be conducted prior to initiation of ground disturbance and vegetation removal activities. Further, the AGFD's *Burrowing Owl Project Clearance Guidance for Landowners* (Arizona Burrowing Owl Working Group 2009) will be followed.
- If trenching is included as part of Project construction, the following will be considered to minimize injury to wildlife: when trenches cannot be backfilled immediately, the escape ramps, which can be short lateral trenches or wooden planks sloping to the surface, should be constructed at least every 90 meters; trench slopes will be less than 45 degrees (1:1); and any trenches left open overnight will be inspected to remove wildlife prior to backfilling.
- The recommendations in AGFD's *Guidelines for Solar Development in Arizona* (AGFD 2009) and the AGFD's *Wildlife Compatible Fencing Guidelines* (AGFD 2023f) will be taken into consideration in designing the Interconnection Project, as applicable and feasible.
- If native plants listed under the ANPL are present in the Interconnection Project, the ADA Notice of Intent to Clear Land will be submitted prior to ground clearing. The submittal time frame depends on the acreage of the area to be cleared, as noted on the form.
- To minimize the introduction and spread of invasive species and noxious weeds, standard best management practices will be used during construction (e.g., washing equipment prior to and following mobilization to the Interconnection Project).
- Three Pima pineapple cacti were observed in a portion of the Interconnection Project where surveys occurred. Once detailed engineering designs are known, protocol species-specific surveys for Pima pineapple cactus will be conducted. The known Pima pineapple cacti found within the Interconnection Project, and any additional individuals found in future surveys, will be avoided if possible. To reduce impacts to this species, qualified biologists will transplant any individuals that cannot be avoided into other areas within the Interconnection Project that will not be disturbed using established transplantation protocols and also adhering to the AZNPL regulations. However, as the landowner, ASLD would determine if Pima pineapple cactus would need to be transplanted or if off-site mitigations, such as contribution buying credit in a Pima pineapple cactus mitigation bank would be needed.

Conclusion

The proposed Interconnection Project has the potential to affect Pima pineapple cactus if individuals that occur within the limits of disturbance cannot be avoided. Once detailed engineering plans are available, protocol surveys can be completed on the portion of the Project Area that has not already been surveyed. The Applicant plans to relocate Pima pineapple cactus individuals that occur in the Interconnection Project (which cannot be avoided) outside of the disturbance area to reduce impacts to this species. Transplantation would follow ANPL requirements and be performed by qualified biologists using established transplantation protocols. Pima pineapple cactus individuals could be transplanted out of harm's way, but transplanted individuals could still be injured, killed, or show reduced survival, reproductive output, or vigor as a result of transplantation. The seedbank in the Interconnection Project may contain Pima pineapple cactus seeds, which could be destroyed by Project Activities. ASLD would determine the price paid to

ASLD for loss of any individuals occurring on state-land, and could require transplantation, or payment to purchase credits in the Pima pineapple cactus mitigation bank.

The proposed Interconnection Project is not likely to significantly affect any other rare, endangered, or special-status species. The Interconnection Project does intersect areas of biological wealth (i.e., wildlife movement corridors); however, as the area of disturbance required for Interconnection Project construction would be very small in relation to the overall habitat occurring within these areas of biological wealth, any potential impacts would be minimal.

The Interconnection Project has the potential to have minor impacts on non–ESA-listed special-status amphibian, bird, reptile, and mammal species.

The risk that electrical infrastructure poses to birds would be addressed by following standard guidelines as design features for the Interconnection Project, and preconstruction surveys for migratory bird nests would aid in compliance with the MBTA.

IPaC **U.S. Fish & Wildlife Service**

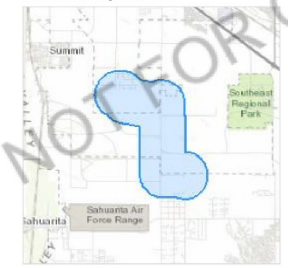
IPaC resource list

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

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Exhibit C-1a. U.S. Fish and Wildlife Service IPaC Report.



9/25/23, 9:15 AM IPaC: Explore Location resources

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:

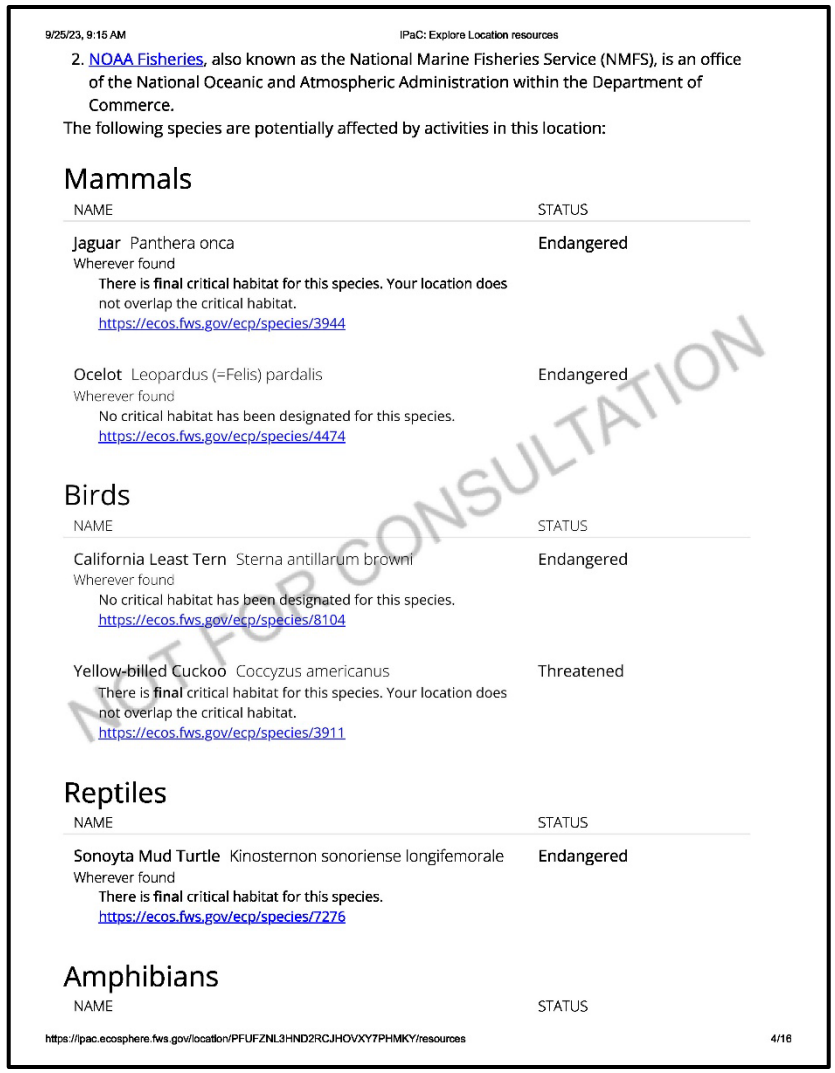
1. Draw the project location and click CONTINUE.
2. Click DEFINE PROJECT.
3. Log in (if directed to do so).
4. Provide a name and description for your project.
5. Click REQUEST SPECIES LIST.

Listed species[1] 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 Fisheries[2]).

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).

https://ipac.ecosphere.fws.gov/location/PFUFZNL3HND2RCJHOVXY7PHMKY/resources 3/16



9/25/23, 9:15 AM IPaC: Explore Location resources

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 Panthera onca 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 Leopardus (=Felis) pardalis Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/4474	Endangered

Birds

NAME	STATUS
California Least Tern Sterna antillarum browni Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/8104	Endangered
Yellow-billed Cuckoo Coccyzus americanus There is **final** critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/3911	Threatened

Reptiles

NAME	STATUS
Sonoyta Mud Turtle Kinosternon sonoriense longifemorale Wherever found There is **final** critical habitat for this species. https://ecos.fws.gov/ecp/species/7276	Endangered

Amphibians

NAME	STATUS

https://ipac.ecosphere.fws.gov/location/PFUFZNL3HND2RCJHOVXY7PHMKY/resources 4/16

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Exhibit C-1b. U.S. Fish and Wildlife Service IPaC Report.



9/25/23, 9:15 AM IPaC: Explore Location resources

Chiricahua Leopard Frog Rana chiricahuensis — 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 Gila intermedia 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	Endangered

Insects

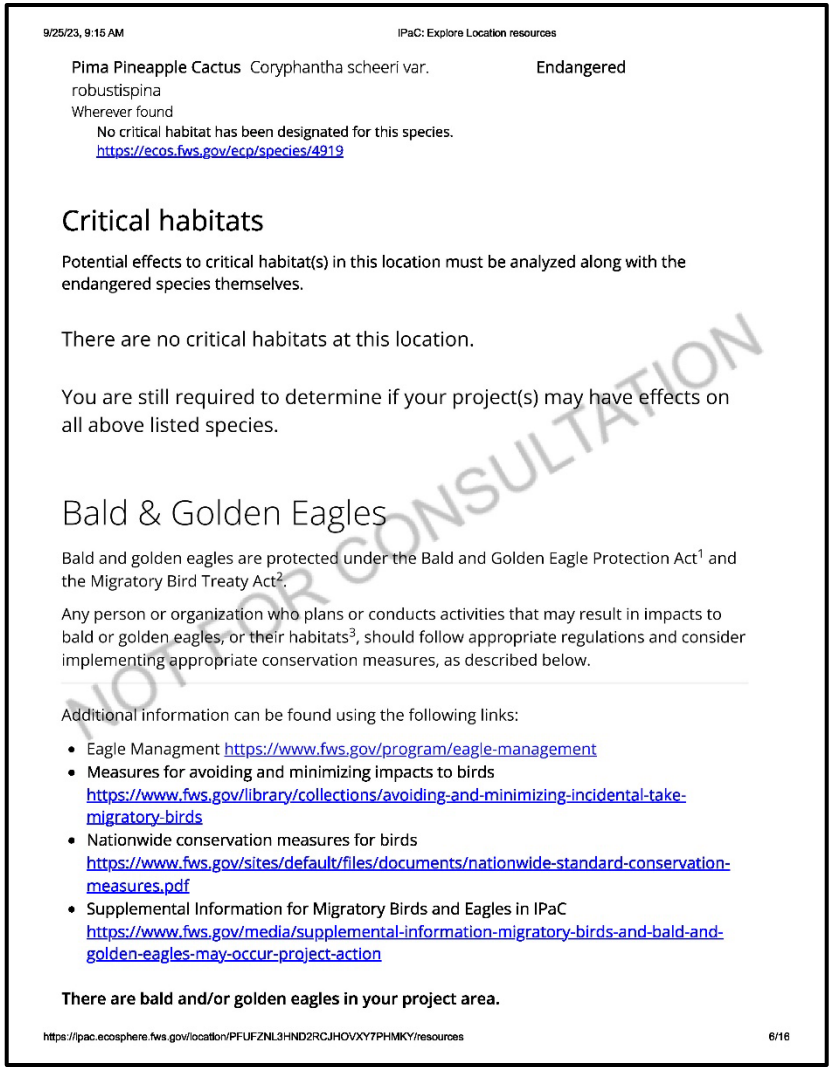
NAME	STATUS
Monarch Butterfly Danaus plexippus Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/9743	Candidate

Flowering Plants

NAME	STATUS
Arizona Eryngo Eryngium sparganophyllum There is final critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/10705	Endangered
Huachuca Water-umbel Lilaeopsis schaffneriana var. recurva 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	Endangered

NOT FOR CONSULTATION

https://ipac.ecosphere.fws.gov/location/PFUFZNL3HND2RCJHOVXY7PHMKY/resources 5/16



9/25/23, 9:15 AM IPaC: Explore Location resources

Pima Pineapple Cactus Coryphantha scheeri var. robustispina — 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 Act[1] and the Migratory Bird Treaty Act[2].

Any person or organization who plans or conducts activities that may result in impacts to bald or golden eagles, or their habitats[3], should follow appropriate regulations and consider implementing appropriate conservation measures, as described below.

Additional information can be found using the following links:

- Eagle Managment 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 conservation 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 and/or golden eagles in your project area.

NOT FOR CONSULTATION

https://ipac.ecosphere.fws.gov/location/PFUFZNL3HND2RCJHOVXY7PHMKY/resources 6/16

Exhibit C-1c. U.S. Fish and Wildlife Service IPaC Report.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
Golden Eagle Aquila chrysaetos 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

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 and understand the FAQ "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.

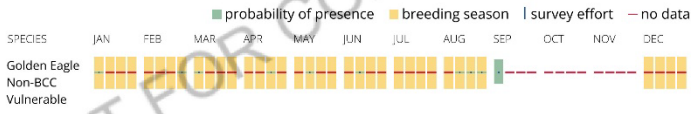
Breeding Season (■)
Yellow bars denote a very liberal estimate of the time-frame inside which the bird breeds across its entire range. If there are no yellow bars shown for a bird, it does not breed in your project area.

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.



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

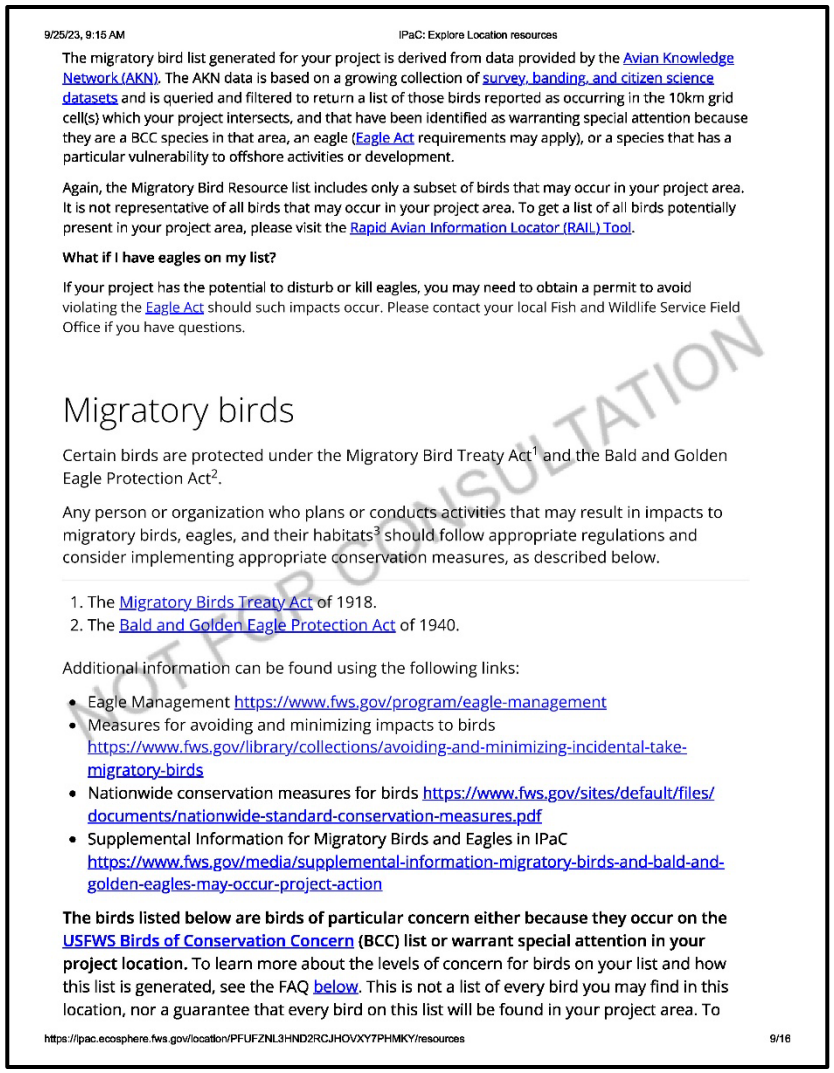
The potential for eagle presence is derived from data provided by the Avian Knowledge Network (AKN). The AKN data is based on a growing collection of survey, banding, and citizen science datasets and is queried and filtered to return a list of those birds reported as occurring in the 10km grid cell(s) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle Act requirements may apply). To see a list of all birds potentially present in your project area, please visit the Rapid Avian Information Locator (RAIL) Tool.

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

The Migratory Bird Resource List is comprised of USFWS Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location.

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Exhibit C-1d. U.S. Fish and Wildlife Service IPaC Report.



9/25/23, 9:15 AM IPaC: Explore Location resources

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) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle 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, please visit the Rapid Avian Information Locator (RAIL) Tool.

What if I have eagles on my list?

If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the Eagle Act should such impacts occur. Please contact your local Fish and Wildlife Service Field Office if you have questions.

Migratory birds

Certain birds are protected under the Migratory Bird Treaty Act[1] and the Bald and Golden Eagle Protection Act[2].

Any person or organization who plans or conducts activities that may result in impacts to migratory birds, eagles, and their habitats[3] should follow appropriate regulations and consider implementing appropriate conservation measures, as described below.

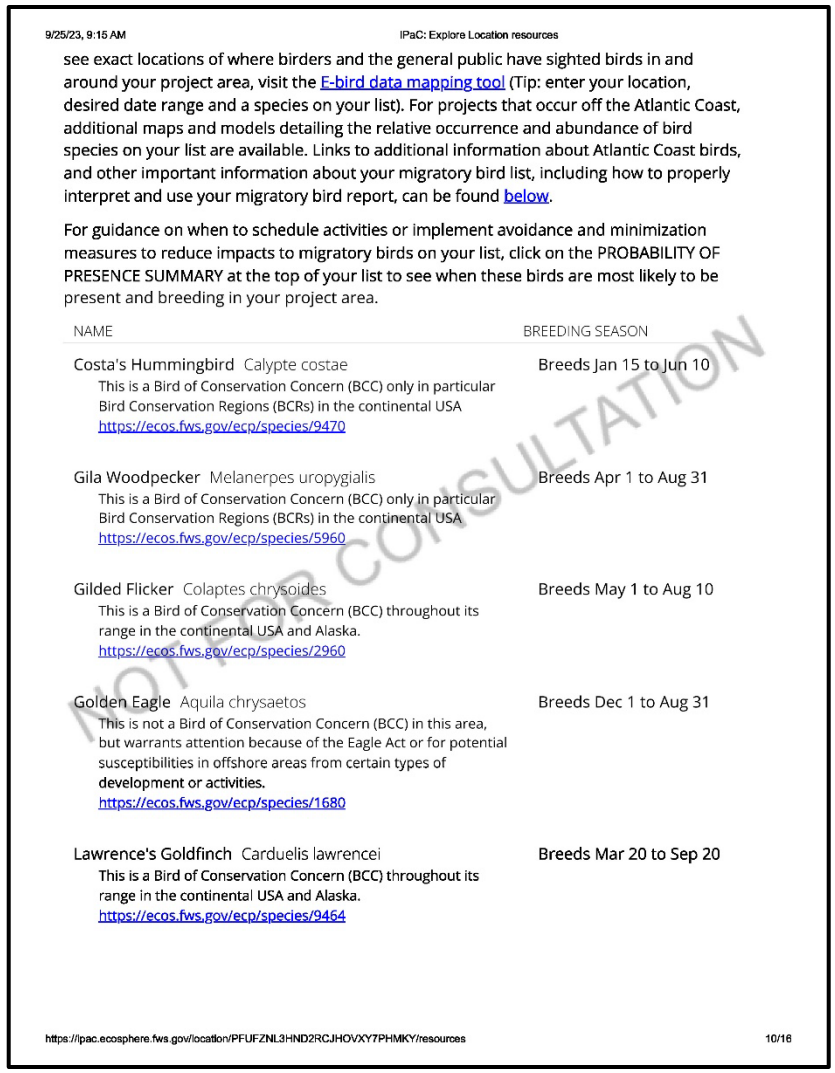
1. The Migratory Birds Treaty Act of 1918.
2. The Bald and Golden Eagle Protection Act of 1940.

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 conservation 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

The birds listed below are birds of particular concern either because they occur on the USFWS Birds of Conservation Concern (BCC) list or warrant special attention in your project location. To learn more about the levels of concern for birds on your list and how this list is generated, see the FAQ below. This is not a list of every bird you may find in this location, nor a guarantee that every bird on this list will be found in your project area. To

https://ipac.ecosphere.fws.gov/location/PFUFZNL3HND2RCJHOVXY7PHMKY/resources 9/16



9/25/23, 9:15 AM IPaC: Explore Location resources

see exact locations of where birders and the general public have sighted birds in and around your project area, visit the E-bird data mapping tool (Tip: enter your location, desired date range and a species on your list). For projects that occur off the Atlantic Coast, additional maps and models detailing the relative occurrence and abundance of bird species on your list are available. Links to additional information about Atlantic Coast birds, and other important information about your migratory bird list, including how to properly interpret and use your migratory bird report, can be found below.

For guidance on when to schedule activities or implement avoidance and minimization measures to reduce impacts to migratory birds on your list, click on the PROBABILITY OF PRESENCE SUMMARY at the top of your list to see when these birds are most likely to be present and breeding in your project area.

NAME	BREEDING SEASON
Costa's Hummingbird Calypte costae 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 Melanerpes uropygialis 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
Gilded Flicker Colaptes chrysoides This is a Bird of Conservation Concern (BCC) throughout its range in the continental USA and Alaska. https://ecos.fws.gov/ecp/species/2960	Breeds May 1 to Aug 10
Golden Eagle Aquila chrysaetos 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
Lawrence's Goldfinch Carduelis lawrencei 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

https://ipac.ecosphere.fws.gov/location/PFUFZNL3HND2RCJHOVXY7PHMKY/resources 10/16

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Exhibit C-1e. U.S. Fish and Wildlife Service IPaC Report.

Rufous-winged Sparrow Aimophila carpalis — Breeds Jun 15 to Sep 30

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 and understand the FAQ "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.

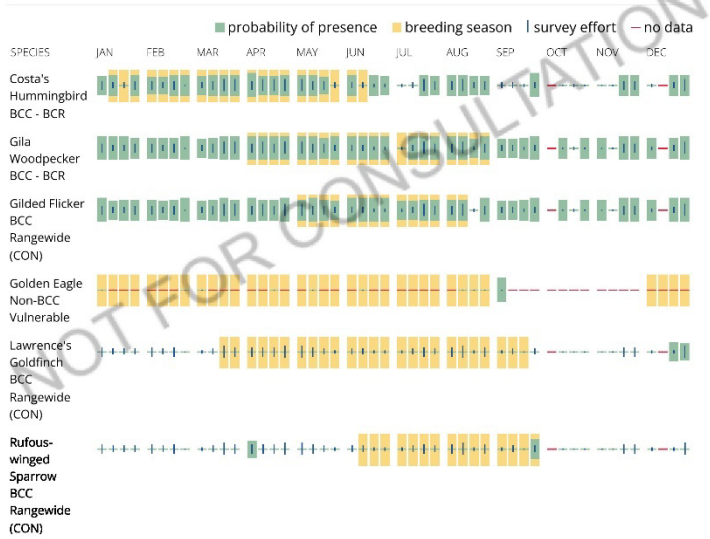
To see a bar's survey effort range, simply hover your mouse cursor over the bar.

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.



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

Nationwide Conservation Measures describes measures that can help avoid and minimize impacts to all birds at any location year round. Implementation of these measures is particularly important when birds are most likely to occur in the project area. When birds may be breeding in the area, identifying the

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Exhibit C-1f. U.S. Fish and Wildlife Service IPaC Report.

locations of any active nests and avoiding their destruction is a very helpful impact minimization measure. To see when birds are most likely to occur and be breeding 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 USFWS Birds of Conservation Concern (BCC) and other species that may warrant special attention in your project location.

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) which your project intersects, and that have been identified as warranting special attention because they are a BCC species in that area, an eagle (Eagle 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, please visit the Rapid Avian Information Locator (RAIL) Tool.

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 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 year-round), you may query your location using the RAIL Tool and look at 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 migratory bird species list has a breeding season associated with it, if that bird does occur in your project area, 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 Eagle 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 try 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 eagles and BCC species of rangewide concern. For more information on conservation measures you can implement to help avoid and minimize migratory bird impacts and requirements for eagles, please see the FAQs for these topics.

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.

Bird tracking data can also provide additional details about occurrence and habitat use throughout the year, including migration. Models relying on survey data may not include this information. For additional information on marine bird tracking data, see the Diving Bird Study and the nanotag studies or contact Caleb Spiegel or Pam Loring.

What if I have eagles on my list?

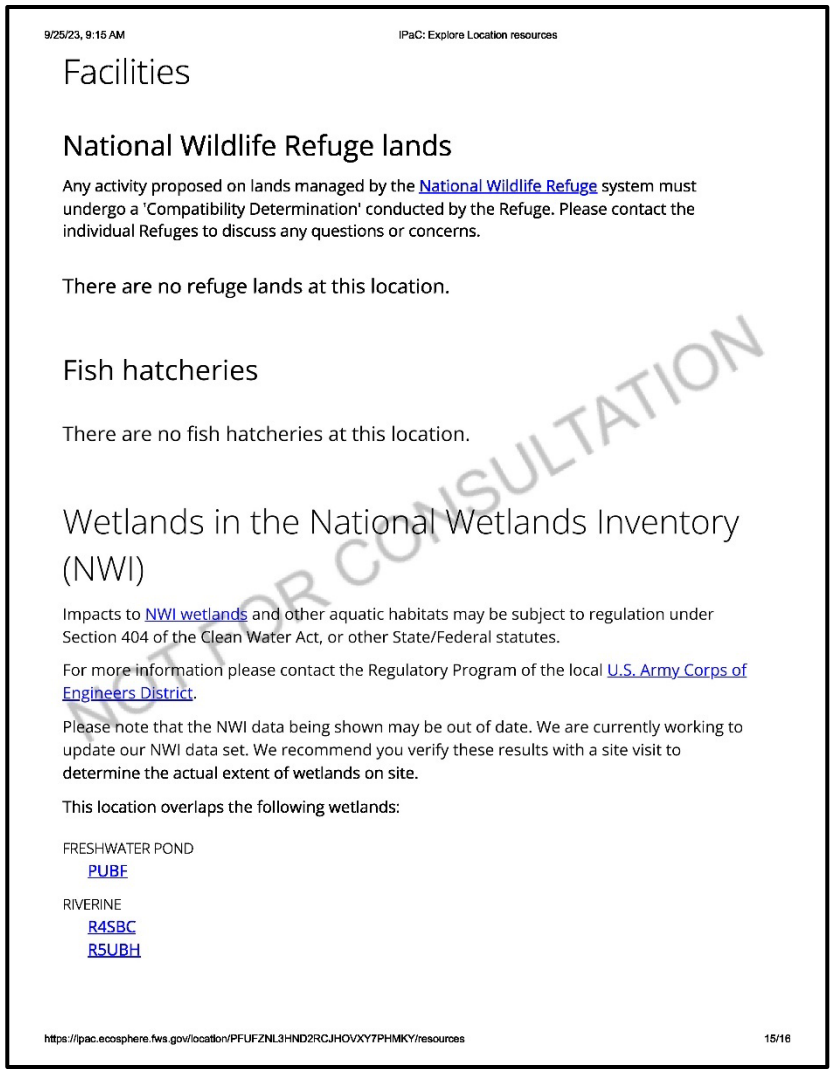
If your project has the potential to disturb or kill eagles, you may need to obtain a permit to avoid violating the Eagle Act should such impacts occur.

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 also look carefully at the survey effort (indicated by the black vertical bar) and for the existence of the "no data" indicator (a red horizontal bar). 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 is not perfect; 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 helps you know what to look for to confirm presence, and helps guide you in knowing when to implement conservation measures to avoid or minimize potential impacts from your project activities, should presence be confirmed. To learn more about conservation measures, visit the FAQ "Tell me about conservation measures I can implement to avoid or minimize impacts to migratory birds" at the bottom of your migratory bird trust resources page.

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Exhibit C-1g. U.S. Fish and Wildlife Service IPaC Report.



9/25/23, 9:15 AM IPaC: Explore Location resources

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.

Please note that the NWI data being shown may be out of date. We are currently working to update our NWI data set. We recommend you verify these results with a site visit to determine the actual extent of wetlands on site.

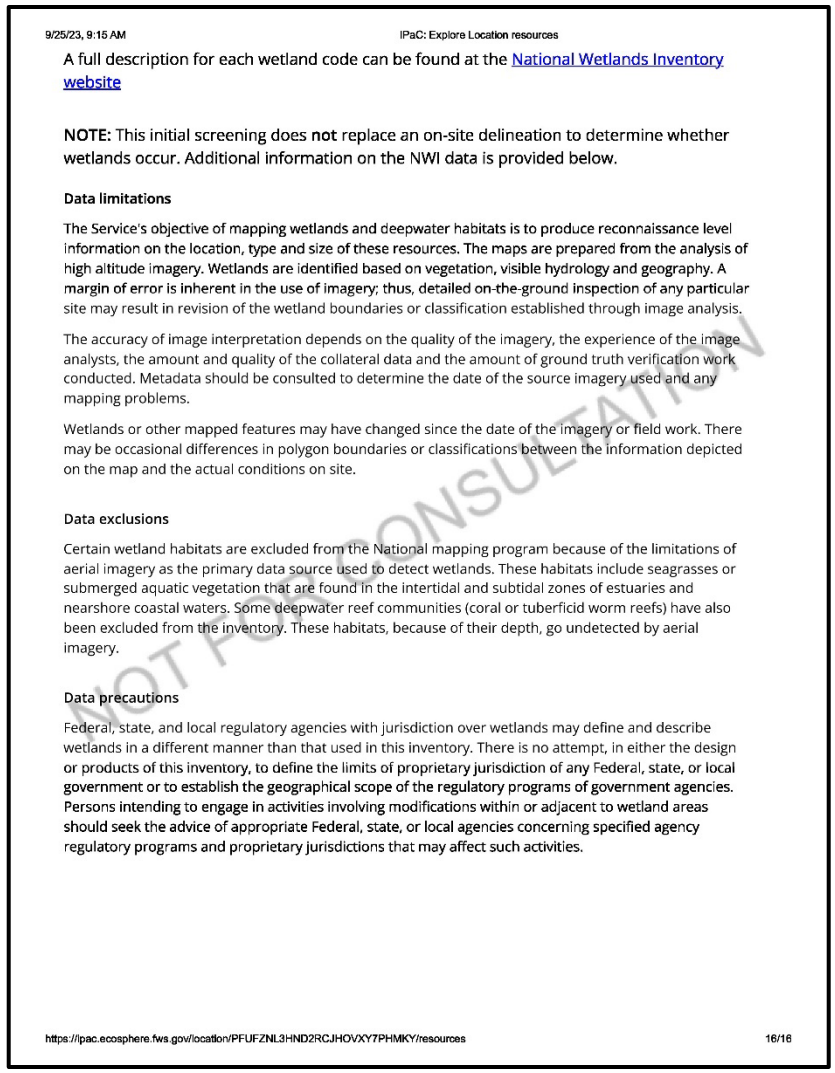
This location overlaps the following wetlands:

FRESHWATER POND
PUBF

RIVERINE
R4SBC
R5UBH

https://ipac.ecosphere.fws.gov/location/PFUFZNL3HND2RCJHOVXY7PHMKY/resources 15/16

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A full description for each wetland code can be found at the National Wetlands Inventory website

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 tuberficid 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.

https://ipac.ecosphere.fws.gov/location/PFUFZNL3HND2RCJHOVXY7PHMKY/resources 16/16

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Exhibit C-1h. U.S. Fish and Wildlife Service IPaC Report.

Arizona Environmental Online Review Tool Report

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

Project Name:
Wilmot Energy Center II, LLC

User Project Number:
78862

Project Description:
Proposed gen-tie line for the proposed new Wilmot Energy Center II, LLC solar development.

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

Contact Person:
Stacy Campbell

Organization:
SWCA

On Behalf Of:
PRIVATE

Project ID:
HGIS-20405

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

Disclaimer:

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

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

Exhibit C-2a. Arizona Environmental Online Review Tool Report.

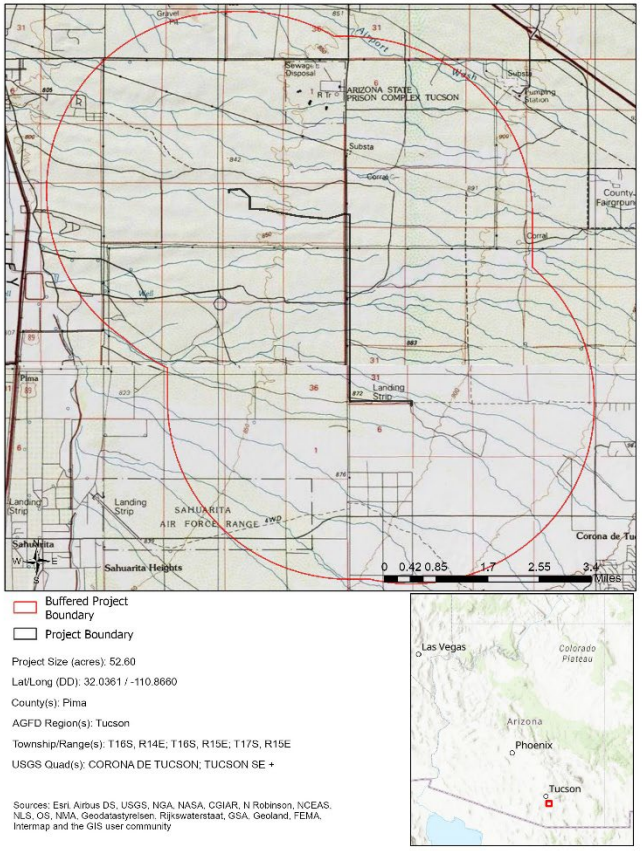
Recommendations Disclaimer:

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

Arizona Game and Fish Department
Project ID: HGIS-20405
project_report_wilmot_energy_center_ii_llc_70035_72041.pdf
Review Date: 9/25/2023 09:35:30 AM

Wilmot Energy Center II, LLC

USA Topo Basemap With Locator Map



Buffered Project Boundary

Project Boundary

Project Size (acres): 52.60

Lat/Long (DD): 32.0361 / -110.8660

County(s): Pima

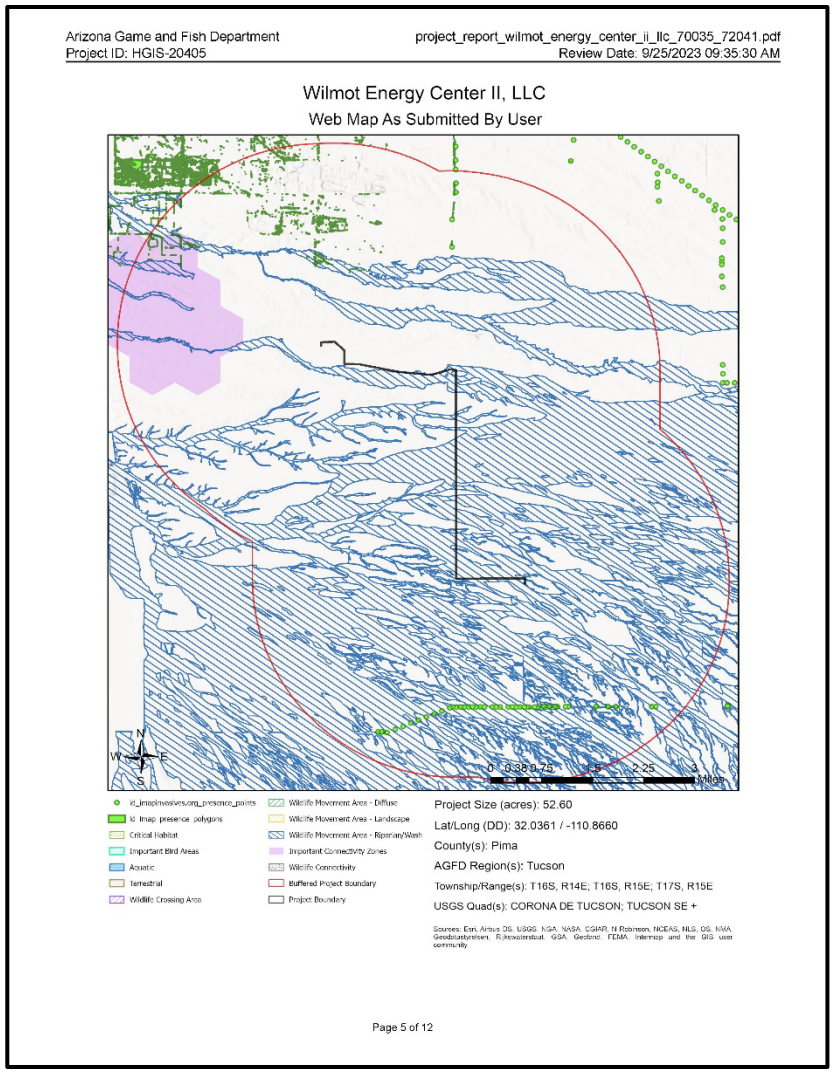
AGFD Region(s): Tucson

Township/Range(s): T16S, R14E; T16S, R15E; T17S, R15E

USGS Quad(s): CORONA DE TUCSON; TUCSON SE +

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

Exhibit C-2b. Arizona Environmental Online Review Tool Report.



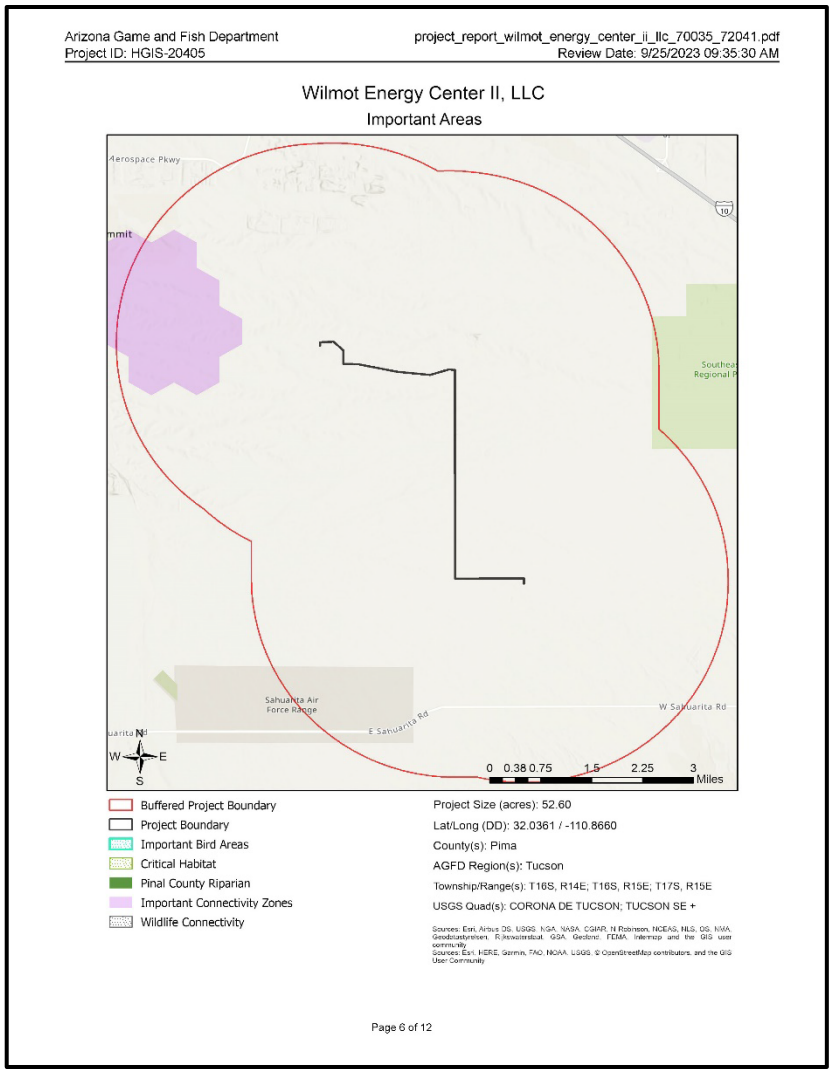
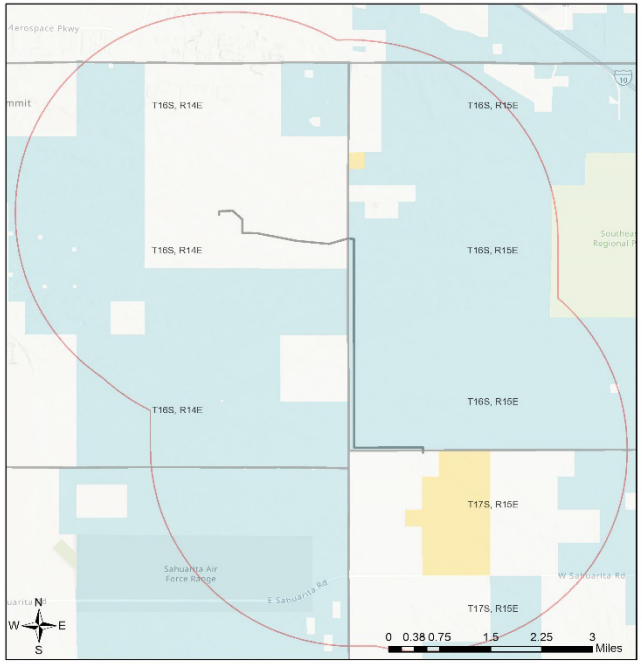


Exhibit C-2c. Arizona Environmental Online Review Tool Report.

Wilmot Energy Center II, LLC

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): 52.60
Lat/Long (DD): 32.0361 / -110.8660
County(s): Pima
AGFD Region(s): Tucson
Township/Range(s): T16S, R14E; T16S, R15E; T17S, R15E
USGS Quad(s): CORONA DE TUCSON; TUCSON SE +

Sources: Esri, Airbus DS, USGS, NGA, NASA, CGIAR, N Robinson, NCEAS, NLS, OS, NMA, Geodatastyrelsen, Rijkswaterstaat, GSA, Geoland, FEMA, Intermap and the GIS user community
Sources: Esri, HERE, Garmin, FAO, NOAA, USGS, © OpenStreetMap contributors, and the GIS User Community

Special Status Species Documented within 3 Miles of Project Vicinity

Scientific Name	Common Name	FWS	USFS	BLM	NPL	SGCN
Amphispiza bilineata	Black-throated Sparrow					2
Campylorhynchus brunneicapillus	Cactus Wren					2
Cardinalis sinuatus	Pyrrhuloxia					2
Colaptes chrysoides	Gilded Flicker			S		2
Coryphantha scheeri var. robustispina	Pima Pineapple Cactus	LE			HS	
Coryphantha scheeri var. robustispina	Pima Pineapple Cactus	LE		S	HS	
Echinocereus fasciculatus	Magenta-flower Hedgehog-cactus				SR	
Gastrophryne mazatlanensis	Sinoloan Narrow-mouthed Toad			S		2
Icterus bullockii	Bullock's Oriole					2
Incilius alvarius	Sonoran Desert Toad					2
Lasiurus xanthinus	Western Yellow Bat		S			2
Melozone aberti	Abert's Towhee		S			2
Melozone fusca	Canyon Towhee					2
Parabuteo unicinctus	Harris's Hawk					2
Peucaea carpalis	Rufous-winged Sparrow					2
Tumamoca macdougalii	Tumamoc Globeberry	SC	S	S	SR	

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

Special Areas Documented that Intersect with Project Footprint as Drawn

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

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

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
Accipiter gentilis	Northern Goshawk	SC	S	S		2
Ammodramus savannarum perpallidus	Western Grasshopper Sparrow					
Ammospermophilus harrisii	Harris' Antelope Squirrel					
Anthus spragueii	Sprague's Pipit	SC				2
Aquila chrysaetos	Golden Eagle			S		2
Asio otus	Long-eared Owl					2
Aspidoscelis sonorae	Sonoran Spotted Whiptail					2
Athene cunicularia hypugaea	Western Burrowing Owl	SC	S	S		2

Exhibit C-2d. Arizona Environmental Online Review Tool Report.



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

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

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

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

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

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

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Exhibit C-2e. Arizona Environmental Online Review Tool Report.

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

Scientific Name	Common Name	FWS	USFS	BLM	NPL	SGCN

Project Type: Energy Storage/Production/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/unitedstates/az.shtml and the Arizona Native Plant Society https://aznps.com/invas for recommendations on how to control. 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 Department recommends that wildlife surveys are conducted to determine if noise-sensitive species occur within the project area. Avoidance or minimization measures could include conducting project activities outside of breeding seasons.

For any powerlines built, proper design and construction of the transmission line is necessary to prevent or minimize risk of electrocution of raptors, owls, vultures, and golden or bald eagles, which are protected under state and federal laws. Limit project activities during the breeding season for birds, generally March through late August, depending on species in the local area (raptors breed in early February through May). Conduct avian surveys to determine bird species that may be utilizing the area and develop a plan to avoid disturbance during the nesting season. For underground powerlines, trenches should be covered or back-filled as soon as possible. Incorporate escape ramps in ditches or fencing along the perimeter to deter small mammals and herpetofauna (snakes, lizards, tortoise) from entering ditches. In addition, indirect affects to wildlife due to construction (timing of activity, clearing of rights-of-way, associated bridges and culverts, affects to wetlands, fences) should also be considered and mitigated.

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

Based on the project type entered, coordination with U.S. Fish and Wildlife Service (Migratory Bird Treaty Act) may be required (https://www.fws.gov/office/arizona-ecological-services).

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

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Project Location and/or Species Recommendations:
HDMS records indicate that one or more native plants listed on the Arizona Native Plant Law and Antiquities Act have been documented within the vicinity of your project area. Please contact:
Arizona Department of Agriculture
1688 W Adams St.
Phoenix, AZ 85007
Phone: 602.542.4373
https://agriculture.az.gov/sites/default/files/Native%20Plant%20Rules%20-%20AZ%20Dept%20of%20Ag.pdf starts on page 44

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

Exhibit C-2f. Arizona Environmental Online Review Tool Report.

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EXHIBIT D. BIOLOGICAL RESOURCES

As stated in the Arizona Corporation Commission Rules of Practice and Procedure R14-3-219, Exhibit 1:

> *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.*

Introduction

The Interconnection Project for this review comprises the planned 100-foot right-of-way. The Study Area comprises the Interconnection Project plus a 1-mile buffer. To identify the plant and wildlife species that may occur in the vicinity of the proposed Interconnection Project, SWCA Environmental Consultants (SWCA) consulted publicly available data sources, including the following:

- Topographical and aerial maps
- Arizona Game and Fish Department (AGFD) Online Environmental Review Tool (AGFD 2023a)
- *Biotic Communities: Southwestern United States and Northwestern Mexico* (Brown 1994)
- Regional checklists, reports, and publications (e.g., Brennan and Holycross 2006; eBird 2023; Hoffmeister 1986; iNaturalist 2023)

In addition, SWCA biologists with expertise in the biology of flora and fauna of the region completed site visits on February 13–14, 23–24, and 27–28, March 1–3, 6–10, and 13–15, June 5–7 and 9, August 3, and October 31, 2023, within the Interconnection Project and a portion of the Survey Area. The site visits occurred during general biological pedestrian surveys and species-specific surveys for saguaro (*Carnegia gigantea*) and Pima pineapple cactus (*Coryphantha scheeri* var. *robustispina*) that occurred within portions of the proposed new solar array area (i.e., portions of the Study Area), portions of the Project Area, and on the portion of the Interconnection Project in privately-owned lands west of Wilmot Road. All plant and wildlife species observed in the Study Area during these surveys were recorded. The site was assessed to determine whether habitat features for species protected under federal, state, or local regulations were present in the Interconnection Project and Study Area.

Results

Ecological Setting

The Interconnection Project occurs within the Arizona Upland subdivision of the Sonoran Desertscrub biotic community (Brown 1994) at elevations ranging from approximately 2,760 to 2,920 feet above mean sea level (amsl). The Santa Rita Mountains are approximately 7.5 miles southeast of the Interconnection Project, and the Santa Cruz River lies approximately 5 miles west of the Interconnection Project. The Wilmot I Energy Center occurs within the Study Area just south of the Interconnection Project. A large portion of the Interconnection Project runs parallel to and east of South Wilmot Road. Most of the Study Area consists of undisturbed native desertscrub vegetation, but solar panels and associated infrastructure, power lines, roads, and houses also occur. Land uses within the Interconnection Project and Study Area include solar generation, rural residential development, commercial development, and grazing. Most of the topography of the Interconnection Project is flat with ephemeral drainages that flow generally west to the Santa Cruz River bisecting the Interconnection Project.

Several stocktanks or impoundments occur within the Study Area, though none were observed in the Interconnection Project. Portions of the Interconnection Project are disturbed by existing dirt roads.

Vegetation

The portions of the Interconnection Project and Study Area that contained undisturbed desert were similar to each other in structure and species composition. The Project and Study Areas were dominated by creosote bush (*Larrea tridentata*), catclaw acacia (*Senegalia greggii*), jumping cholla (*Cylindropuntia fulgida*), velvet mesquite (*Prosopis velutina*), whitethorn acacia (*Vachellia constricta*), and yellow paloverde (*Parkinsonia microphylla*). Other species that commonly occurred were brittlebush (*Encelia farinosa*), burroweed (*Isocoma tenuisecta*), cactus apple (*Opuntia engelmannii*), candy barrel cactus (*Ferocactus wislizeni*), Christmas cactus (*Cylindropuntia leptocaulis*), desert wolfberry (*Lycium macrodon*), fairyduster (*Calliandra eriophylla*), fourwing saltbush (*Atriplex canescens*), lotebush (*Ziziphus obtusifolia*), ocotillo (*Fouquieria splendens*), saguaro (*Carnegiea gigantea*), spidergrass (*Aristida ternipes*), spiny hackberry (*Celtis ehrenbergiana*), tree cholla (*Cylindropuntia imbricata*), and triangle bur ragweed (*Ambrosia deltoidea*). Table D-1 shows the full list of species observed in the Interconnection Project and the portion of the Study Area that was surveyed.

Vegetation associated with ephemeral washes was dominated by velvet mesquite, catclaw acacia, or whitethorn acacia, with a similar species composition as observed in adjacent upland areas. Vegetation in the ephemeral drainages was denser and the individual plants were larger than those found in adjacent upland areas. Pima pineapple cactus (*Coryphantha scheeri* var. *robustispina*) was observed in the Study Area and Project Area. Pima pineapple cactus is a federally listed species that is discussed in Exhibit C. No milkweed (*Asclepias* spp.) plants were observed in the Interconnection Project or Study Area.

Two noxious weed species, Asian mustard (=Saharan mustard) (*Brassica tournefortii*) and buffelgrass (*Pennisetum ciliare*) are present in the Study Area. Noxious weed species listed by the Arizona Department of Agriculture are discussed in Exhibit C.

Table D-1. Plant Species Observed in the Study Area and the Interconnection Project

Common Name	Scientific Name	Observed in the Study Area	Observed in the Interconnection Project
Arizona pencil cholla	*Cylindropuntia arbuscula*	X	X
Arizona sandmat	*Chamaesyce arizonica*	X	X
Asian mustard† (=Saharan mustard)	*Brassica tournefortii*	X	
Bajada lupine	*Lupinus concinnus*	X	
Bermudagrass†	*Cynodon dactylon*	X	X
Blue paloverde	*Parkinsonia florida*	X	X
Brittlebush	*Encelia farinosa*	X	
Buffelgrass†	*Pennisetum ciliare*	X	X
Burroweed	*Isocoma tenuisecta*	X	X
Cactus apple	*Opuntia engelmannii*	X	X
Candy barrel cactus	*Ferocactus wislizeni*	X	X
Catclaw acacia	*Senegalia greggii*	X	X
Christmas cactus	*Cylindropuntia leptocaulis*	X	X
Creosote bush	*Larrea tridentata*	X	X
Desert evening primrose	*Oenothera primiveris*	X	
Desert globemallow	*Sphaeralcea ambigua*	X	X
Desert marigold	*Baileya multiradiata*	X	

Common Name	Scientific Name	Observed in the Study Area	Observed in the Interconnection Project
Desert tobacco	*Nicotiana obtusifolia*	X	X
Desert wolfberry	*Lycium macrodon*	X	
Desert zinnia	*Zinnia acerosa*	X	
Desertbroom	*Baccharis sarothroides*	X	X
Devil's spineflower	*Chorizanthe rigida*	X	X
Doubleclaw	*Proboscidea parviflora*	X	X
Downy prairie clover	*Dalea neomexicana*	X	
Dwarf desertpeony	*Acourtia nana*	X	
Dwarf white milkvetch	*Astragalus didymocarpus*	X	
Fairyduster	*Calliandra eriophylla*	X	
Fourwing saltbush	*Atriplex canescens*	X	X
Graham's nipple cactus	*Mammillaria grahamii*	X	X
Jumping cholla	*Cylindropuntia fulgida*	X	X
Lotebush	*Ziziphus obtusifolia*	X	
Menzies' fiddleneck	*Amsinckia menziesii*	X	
Mule-fat	*Baccharis salicifolia*	X	
New Mexico plumeseed	*Rafinesquia neomexicana*	X	
Nightblooming cereus	*Peniocereus greggii*	X	
Ocotillo	*Fouquieria splendens*	X	X
Pima pineapple cactus	*Coryphantha scheeri* var. *robustispina*	X	X
Pinkflower hedgehog cactus	*Echinocereus fasciculatus*	X	
Prickly Russian thistle†	*Salsola tragus*	X	X
Saguaro	*Carnegiea gigantea*	X	X
Soaptree yucca	*Yucca elata*	X	X
Spidergrass	*Aristida ternipes*	X	X
Spiny hackberry	*Celtis ehrenbergiana*	X	X
Tree cholla	*Cylindropuntia imbricata*	X	X
Triangle bur ragweed	*Ambrosia deltoidea*	X	
Velvet mesquite	*Prosopis velutina*	X	X
Whitethorn acacia	*Vachellia constricta*	X	X
Yellow paloverde	*Parkinsonia microphylla*	X	X

No broadleaf deciduous riparian vegetation communities (i.e., communities containing willow [*Salix* sp.], cottonwood [*Populus* sp.], or ash [*Fraxinus* sp.], etc.), were observed during surveys of the Interconnection Project or in the surveyed portion of the Study Area.

Wildlife Species

The bird species observed in the Study Area and Interconnection Project are listed in Table D-2.

Table D-2. Bird Species Observed in the Study Area and Interconnection Project

Common Name	Scientific Name	Observed in the Study Area	Observed the Interconnection Project
Abert's towhee	*Melozone aberti*	X	X
American kestrel	*Falco sparverius*	X	

Common Name	Scientific Name	Observed in the Study Area	Observed the Interconnection Project
Ash-throated flycatcher	*Myiarchus cinerascens*	X	X
Black-tailed gnatcatcher	*Polioptila melanura*	X	X
Black-throated sparrow	*Amphispiza bilineata*	X	X
Brewer's sparrow	*Spizella breweri*	X	
Cactus wren	*Campylorhynchus brunneicapillus*	X	X
Common raven	*Corvus corax*	X	X
Cooper's hawk	*Accipiter cooperii*	X	
Crested caracara	*Caracara cheriway*	X	
Curve-billed thrasher	*Toxostoma curvirostre*	X	X
Gambel's quail	*Callipepla gambelii*	X	X
Gila woodpecker	*Melanerpes uropygialis*	X	X
Gilded flicker	*Colaptes chrysoides*	X	X
Great horned owl	*Bubo virginianus*	X	
Greater roadrunner	*Geococcyx californianus*	X	X
House finch	*Haemorhous mexicanus*	X	X
Ladder-backed woodpecker	*Picoides scalaris*	X	
Lesser goldfinch	*Spinus psaltria*	X	
Lucy's warbler	*Oreothlypis luciae*	X	X
Mallard	*Anas platyrhynchos*	X	
Mourning dove	*Zenaida macroura*	X	X
Phainopepla	*Phainopepla nitens*	X	
Red-tailed hawk	*Buteo jamaicensis*	X	X
Turkey vulture	*Cathartes aura*	X	X
Verdin	*Auriparus flaviceps*	X	X
White-crowned sparrow	*Zonotrichia leucophrys*	X	
White-winged dove	*Zenaida asiatica*	X	X
Zone-tailed hawk	*Buteo albonotatus*	X	

Abert's towhee (*Melozone aberti*), American kestrel (*Falco sparverius*), Brewer's sparrow (*Spizella breweri*), cactus wren (*Campylorhynchus brunneicapillus*), curve-billed thrasher (*Toxostoma curvirostre*), Gila woodpecker (*Melanerpes uropygialis*), gilded flicker (*Colaptes chrysoides*), and verdin (*Auriparus flaviceps*) are addressed in Exhibit C.

In addition, the following wildlife species were also observed in the Study Area during field surveys: antelope jackrabbit (*Lepus alleni*), black-tailed jackrabbit (*Lepus californicus*), coyote (*Canis latrans*), desert cottontail (*Sylvilagus audubonii*), and round-tailed ground-squirrel (*Xerospermophilus tereticaudus*). The antelope jackrabbit is addressed in Exhibit C.

Species that may occur in the Study Area are listed in Table D-3 (mammals), Table D-4 (birds), Table D-5 (reptiles), and Table D-6 (amphibians). Species were considered for their potential to occur as follows. A list of mammal species typical of Arizona Upland subdivision of the Sonoran Desertscrub biotic community evaluated for this report included mammals found in Table 4.1 of *Mammals of Arizona* (Hoffmeister 1986). Bird species evaluated in this report include those listed for Sonoran Desertscrub in

Appendix II of *Biotic Communities Southwestern United States and Northwestern Mexico* (Brown 1994) and a list of Sonoran Desert Birds in iNaturalist (2023). Reptiles and amphibians evaluated in this report were taken from a list of commonly occurring species in the Arizona Upland subdivision of the Sonoran Desertscrub biotic community in *Amphibians and Reptiles in Arizona* (Brennan and Holycross 2006), as well as those listed for Sonoran Desertscrub in Appendix II of *Biotic Communities Southwestern United States and Northwestern Mexico* (Brown 1994). Finally, no fish species were evaluated for this report because no native fish habitat occurs within the Project and Study Areas; therefore, no impacts to native fish species would be expected to occur.

Some species from these lists of typical species overlap special-status species evaluated in Exhibit C, and these species have been removed from consideration in Exhibit D because they have already been addressed. Occurrence records were obtained from the AGFD Online Environmental Review Tool (AGFD 2023a), *Mammals of Arizona* (Hoffmeister 1986), eBird (2023), and the *Arizona Breeding Bird Atlas* (Corman and Wise-Gervais 2005).

Mammals

Small, medium, and large-sized terrestrial mammal species may occur in the Interconnection Project and Study Area. Bat species have the potential to disperse or migrate through or forage within the Interconnection Project and Study Area. While palm trees and abandoned buildings were not observed in the Interconnection Project or Study Area during surveys, these types of potential bat roosts have the potential to occur in the Study Area (Google Earth 2023). Table D-3 lists the common mammal species that may occur in the Study Area. The special-status species from *Mammals of Arizona* (Hoffmiester 1986) that have the potential to occur but that are addressed in Exhibit C include antelope jackrabbit (*Lepus alleni*), Arizona pocket mouse (*Perognathus amplus*), Bailey's pocket mouse (*Chaetodipus baileyi*), Brazilian free-tailed bat (*Tadarida brasiliensis*), California leaf-nosed bat (*Macrotus californicus*), cave myotis (*Myotis velifer*), fringed myotis (*Myotis thysanodes*), Harris's antelope squirrel (*Ammospermophilus harrisii*), lesser long-nosed bat (*Leptonycteris yerbabuenae*), pale Townsend's big-eared bat (*Corynorhinus townsendii pallescens*), pocketed free-tailed bat (*Nyctinomops femorosaccus*), western red bat (*Lasiurus blossevillii*), and western yellow bat (*Lasiurus xanthinus*).

Table D-3. Mammal Species That May Occur in the Study Area

Common Name (*Scientific Name*)	**Habitat**
Badger (*Taxidea taxus*)	Found in grassland and desertscrub.
Banner-tailed kangaroo rat (*Dipodomys spectabilis*)	Prefers dry, gravelly soil in arid or semiarid grasslands and foothill slopes with scattered mesquite (*Prosopis* spp.) or juniper (*Juniperus* spp.).
Black-tailed jackrabbit* (*Lepus californicus*)	Occurs in open habitat with scattered patches of shrubs, including plains, fields, and deserts.
Bobcat (*Lynx rufus*)	Found in various habitats including woodlands, river bottomlands, deserts, mountains.
Botta's pocket gopher (*Thomomys bottae*)	Found in extremely xeric locations below 11,000 feet amsl with variable soils and ground cover ranging from open to grasslands. Occurs in roadsides, valleys, and mountain meadows.
Cactus mouse (*Peromyscus eremicus*)	Found in deserts and pinyon-juniper (*Pinus* spp.–*Juniperus* spp.) woodland. Occurs in rocky, sandy, or loamy soils. Found in rock heaps, stone walls, burrows, woodrat houses, and brush fences.
Coyote (*Canis latrans*)*	Occurs in all habitat types, including agricultural, urban, and suburban areas.
Crawford's desert shrew (*Notiosorex crawfordi*)	Found in arid areas having adequate cover including deserts, grasslands with scattered succulents, chaparral slopes, riparian areas.

Common Name (*Scientific Name*)	Habitat
Deer mouse (*Peromyscus maniculatus*)	Upland and riparian habitats, including open areas, brushlands, and coniferous and deciduous forests.
Desert cottontail (*Sylvilagus audubonii*)*	Found in grasslands, brushlands, edges of foothill woodlands, willow thickets, and occasionally in cultivated fields or under buildings.
Desert pocket mouse (*Chaetodipus penicillatus*)	Occurs in sparsely vegetated sandy desert floors.
Desert woodrat (*Neotoma lepida*)	Occurs in sagebrush scrub, chaparral, deserts, and rocky slopes with scattered vegetation.
Grasshopper mouse (*Onychromys torridus*)	Occurs In hot arid valleys and scrub deserts with sparse vegetation.
Gray fox (*Urocyon cinereoargenteus*)	Typically occurs in shrubland and avoids open areas. Dens in caves, hollow logs, or debris piles.
Javelina (=collared peccary) (*Dicotyles tajacu*)	Found in deserts, shrublands, cities, and agricultural areas.
Kit fox (*Vulpes macrotis*)	The species prefers open, flat desert terrain that features soft or sandy soils for ease to excavate burrows.
Merriam's kangaroo rat (*Dipodomys merriami*)	Occurs in low deserts in sparsely vegetated areas.
Merriam's mouse (*Peromyscus merriami*)	Occurs in dense brush or mesquite bosque in riparian or low desert habitats.
Mule deer (*Odocoileus hemionus*)	Occurs in mountains and lowlands, often associated with successional vegetation.
Ord's kangaroo rat (*Dipodomys ordii*)	Occurs in sparse vegetation grassland and shrublands up to woodlands. Prefers sandy soil.
Round-tailed ground squirrel (*Xerospermophilus tereticaudus*)*	Found in Sonoran desertscrub, alkali sink, and creosote bush communities in low, flat areas and avoids rocky hills.
Silky pocket mouse (*Perognathus flavus*)	Occurs in sandy or sometimes rocky soils in arid grasslands, shrublands, and pinyon-juniper woodland.
Western harvest mouse (*Reithrodontomys megalotis*)	Occurs in a wide variety of habitats in places with adequate cover.
White-throated woodrat (*Neotoma albigula*)	Found in brushlands, rocky cliffs, creosote bush scrub, mesquite-yucca (*Prosopis* spp.–*Yucca* spp.), and pinyon-juniper woodland.
Bat Species	
Big brown bat (*Eptesicus fuscus*)	Occurs in variable habitat, from ponderosa pine (*Pinus ponderosa*) forests, pinyon-juniper woodlands, the lower edge of spruce-fir (*Picea* spp.–*Abies* spp.) forests, and Lower Sonoran zones. Migratory; found throughout the state in summer and in southern Arizona in the winter. Roosts in buildings, bridge joints, mines, hollow trees, and caves.
California myotis (*Myotis californicus*)	Found in desert ranges and flatlands; desertshrub-oak (*Quercus* spp.) to ponderosa pine zones. Migratory; winter distribution in southern Arizona, south of the Gila River. Roosts in crevices and cracks in canyon walls, caves, and mine shafts, and under bark in trees or snags.
Canyon bat (*Parastrellus hesperus*)	Occurs in deserts, woodlands, and shrublands. Roosts in boulders, cracks, and crevices.
Pallid bat (*Antrozous pallidus*)	Found in many habitat types, including forests, canyons, open farmland, and deserts. Migratory; occurs throughout Arizona and in the southern part of the state in winter. Roosts in rock crevices, buildings, caves, and mines.
Spotted bat (*Euderma maculatum*)	Roosts in high cliffs and canyons; prefers to forage high above water and is common in lower desert valleys.

Source: Range or habitat information is from AGFD (2023a; 2023b); Hoffmeister (1986); and NatureServe (2023).

*Observed during field surveys.

Birds

The Arizona Upland subdivision of the Sonoran Desertscrub biotic community supports a wide variety of bird life (Brown 1994). Birds have potential to use the Study Area and Interconnection Project for their life-history needs (i.e., foraging, nesting, or perching). Waterfowl would be expected to be rare in the Study Area, occurring only where and when water is found in the stock tanks and impoundments or associated with backyard pools or ponds. Waterfowl could use these areas as loafing ponds—midday stops where birds rest before feeding or heading back to the roost. Birds that are likely only to be attracted to the water in ephemeral stock tanks or backyard ponds, as well as those that are just dispersing or migrating through the Study Area, are addressed categorically in the following table. Table D-4 lists the common bird species that may occur in the Study Area. The special-status species from *Biotic Communities Southwestern United States and Northwestern Mexico* (Brown 1994) and iNaturalist (2023) that have the potential to occur but that are addressed in Exhibit C include American kestrel (*Falco sparverius*), Bendire's thrasher (*Toxostoma bendirei*), cactus wren (*Campylorhynchus brunneicapillus*), Costa's hummingbird, desert purple martin (*Progne subis hesperia*), elf owl (*Micrathene whitney*i), Gila woodpecker (*Melanerpes uropygialis*), gilded flicker (*Colaptes chrysoides*), Harris's hawk (*Parabuteo unicinctus*), Inca dove (*Columbina inca*), pyrrhuloxia (*Cardinalis sinuatus*), western burrowing owl (*Athene cunicularia hypugaea*), and verdin (*Auriparus flaviceps*).

Table D-4. Bird Species That May Occur in the Study Area

Common Name (*Scientific Name*)	**Habitat**
Anna's hummingbird (*Calypte anna*)	Occurs in chaparral, coastal scrub, oak savannas, and open woodland. Also common in urban and suburban settings.
Ash-throated flycatcher* (*Myiarchus cinerascens*)	Occurs in dry scrub, open woodlands, and deserts. Cavity nester that breeds in this part of Arizona.
Black-tailed gnatcatcher* (*Polioptila melanura*)	Lives in desert thorn scrub. Often lives away from streams or bodies of water.
Black-throated sparrow* (*Amphispiza bilineata*)	Occurs in semi-open areas and nests in shrubs.
Brown-crested flycatcher (*Myiarchus tyrannulus*)	Nests in stands of saguaro, mature woodlands, desert thorn forest, pine-oak woodlands, and suburban areas.
Common raven* (*Corvus corax*)	Found in most habitat types in select open areas. Regularly encountered in rural, agricultural, and urban settings. Year-round resident.
Cooper's hawk (*Accipiter cooperii*)	Occurs in woodlands, parks, neighborhoods, and fields, associated with trees.
European starling† (*Sturnus vulgaris*)	Occurs predominantly near human settlements, in rural, urban, and agricultural fields. Year-round resident.
Gambel's quail* (*Callipepla gambelii*)	Typically associated with brushy Sonoran Desert uplands and desert washes. Can also occur in residential areas and along the margins of cultivated lands. Year-round resident.
Great horned owl* (*Bubo virginianus*)	Occurs in a wide variety of habitats including agricultural and residential areas, as well as woodlands and orchards.
Great-tailed grackle (*Quiscalus mexicanus*)	Occurs in partly open areas with scattered trees around human habitation. Year-round resident.
Greater roadrunner* (*Geococcyx californianus*)	Occurs in open, arid country with scattered shrubs, trees, or cacti. Also common in agricultural areas and urban and suburban settings. Year-round resident.
House finch* (*Carpodacus mexicanus*)	Occurs in arid scrub and brush, open woodland, oak-juniper, and pine-oak habitats, and towns and cultivated lands. Year-round resident.
House sparrow† (*Passer domesticus*)	Introduced species that occurs abundantly in cities and towns. Occurs in feedlots, agricultural areas, and urban and rural communities. Year-round resident.

Common Name (*Scientific Name*)	Habitat
Ladder-backed woodpecker* (*Dryobates scalaris*)	Found in thorn forests, deserts, and desertscrub.
Lesser goldfinch* (*Spinus psaltria*)	Occurs in patch open habitats, including thickets, weedy fields, woodland, scrubland, and farmlands.
Lesser nighthawk (*Chordeiles acutipennis*)	Found in arid lowlands, deserts, and agricultural areas. Nests on the ground, usually beneath a shrub but sometimes out in the open. Migratory, present in Arizona spring–fall.
Mourning dove* (*Zenaida macroura*)	Occurs in a wide variety of habitats, most regularly in desertscrub, shrubby grasslands, and open woodlands. Also found in rural and urban habitats.
Northern cardinal (*Cardinalis cardinalis*)	Occurs in dense shrubby areas including overgrown fields, backyards, mesquite (*Prosopis* spp.), thickets, and ornamental landscaping.
Northern mockingbird (*Mimus polyglottos*)	Prefers open and partly open situations. Occurs in areas of scattered brush or trees to semidesert, and around towns and cultivated areas.
Phainopepla* (*Phainopepla nitens*)	Occurs in Arizona during the breeding season. Found in desert washes, where they feed heavily on desert mistletoe berries.
Red-tailed hawk* (*Buteo jamaicensis*)	Occurs in a wide variety of open habitats. Elevated perches are important. Year-round resident.
Rock pigeon† (*Columba livia*)	Introduced. Closely associated with human settlement, such as towns, parks, and agricultural areas. Year-round resident.
Turkey vulture* (*Cathartes aura*)	Widespread, and uses a variety of habitats. Commonly perches on rocky outcrops, cliffs, canyon walls, transmission towers, telephone poles, and tall trees. Migratory.
Waterfowl and occasional-use birds	Waterfowl and other birds may use the cattle tanks within the Study Area as loafing ponds—midday stops where birds rest before feeding or heading back to the roost. Other birds may be attracted to the water in the evaporation ponds, but not use the area for nesting, roosting, foraging, or reproduction.
Western kingbird (*Tyrannus verticalis*)	Prefers open areas in many habitat types including desert, rural, and agricultural areas. Migratory.
White-winged dove* (*Zenaida asiatica*)	Habitat generalist, including desertscrub, riparian, urban, and agricultural areas. Year-round resident.

Source: Range or habitat information is from Corman and Wise-Gervais (2005), eBird (2023), and NatureServe (2023).

*Observed in Interconnection Project during field reconnaissance

†Non-native species

Reptiles

The Arizona Upland subdivision of the Sonoran Desert biotic community is home to many reptile species (Brown 1994). Species of this biotic community may occur in the portions of the Interconnection Project and Study Area containing native vegetation. Table D-5 lists the common reptile species that may occur in the Study Area. The special-status species from *A Field Guide to Amphibians and Reptiles in Arizona* (Brennan and Holycross 2006) that have the potential to occur but that are addressed in Exhibit C include Gila monster (*Heloderma suspectum*), Sonoran coralsnake (*Micruroides euryxanthus*), and Sonoran desert tortoise (*Gopherus morafkai*).

Table D-5. Reptile Species That May Occur in the Study Area

Common Name (*Scientific Name*)	Habitat
Coachwhip (*Coluber flagellum*)	Typically occurs in desertscrub and semidesert grasslands. Uses a wide range of habitats including desert, prairie, scrubland, woodland, farmland, and creek valleys, generally in dry, open terrain.
Common kingsnake (*Lampropeltis getula*)	Ranges from desertscrub to grasslands to lower reaches of Madrean evergreen woodland. Typically avoids open, dry desert and is more common near water or drainages.

Common Name (*Scientific Name*)	Habitat
Desert nightsnake (*Hypsiglena chlorophaea*)	Ranges from flat, open sandy deserts to steep, rocky, and wooded slopes.
Gophersnake (*Pituophis catenifer*)	Found in biotic communities up to Alpine Tundra. Occurs in deserts, forests, and coastal grasslands.
Ornate tree lizard (*Urosaurus ornatus*)	Occurs in most biotic communities from desertscrub to subalpine.
Western banded gecko (*Coleonyx variegatus*)	Ranges from dry creosote bush flats to rugged, rocky slopes to barren high desert plateaus.
Western diamondback rattlesnake (*Crotalus atrox*)	Widespread; found in desert, grassland, woodland, shrubland, chaparral, and talus.
Western patch-nosed snake (*Salvadora hexalepsis*)	Found in flatlands and low valleys from desertscrub to woodlands.
Western threadsnake (*Rena humilis*)	Ranges from desert to grasslands to brush-covered mountain slopes. Also occurs in rocky hillsides, canyon bottoms, riparian zones, or farmland.

Range or habitat information is from AGFD (2023a, 2023b, 2023c) and NatureServe (2023).

Amphibians

There are no perennial water sources within the Interconnection Project or Study Area. Amphibian species have the potential to occur within the Interconnection Project or Study Area in any location that accumulates water, including roadside puddles or depressions following monsoon rains or within cattle tanks. Amphibians could also occur in mud cracks, mammal burrows, or structures within the Study Area to avoid desiccation. Table D-6 lists the amphibian species that may occur in the Study Area.

Table D-6. Amphibian Species That May Occur in the Study Area

Common Name (*Scientific Name*)	Habitat
Amphibians	
American bullfrog* (*Lithobates catesbeianus*)	Introduced in Arizona. Occurs in a wide variety of aquatic habitats from cattle tanks and canals to ponds, reservoirs, and marshes.
Couch's spadefoot (*Scaphiopus couchii*)	In the United States, found in arid and semi-arid shrublands, shortgrass plains, mesquite savanna, creosote bush desert, thorn forest, and cultivated areas. Individuals are typically buried underground except during, and for a short time following, monsoon rains.
Sonoran green toad (*Anaxyrus retiformis*)	Occurs in ephemeral pools, wash bottoms, and areas near water in arid grassland and desertscrub.

Range or habitat information is from AGFD (2023a, 2023b, 2023c) and NatureServe (2023).

*Non-native species

Fish Species

There is no perennial aquatic habitat in the Interconnection Project. Cattle tanks occur within the Interconnection Project and Study Area, but do not connect to any larger body of water and would not be expected to contain fish. As such, there is no potential for fish to occur in the Interconnection Project or Study Area.

Summary of Potential Effects

Vegetation

The Interconnection Project involves work in mostly undisturbed areas. Vegetation will be removed during Interconnection Project construction activities. Permanent disturbance would be limited to transmission pole structure locations and an access road. Although the area contains largely undisturbed vegetation, the loss of vegetation caused by the Interconnection Project would result in relatively minor impacts to the Sonoran Desertscrub biotic community at the landscape level because of the relatively small amount of this biotic community that is being removed as compared to the total amount of this biotic community in Arizona.

Vegetation that could be removed during Interconnection Project construction includes grasses, forbs, shrubs, succulents, and trees in localized areas where new power poles and access roads would be placed. Given the minimal vegetation to be impacted and the abundance of similar vegetation in the Study Area, the Interconnection Project would not significantly impact the vegetation community.

Mammal Species

Construction activities could cause death or injury to terrestrial mammals that may not be able to flee from heavy equipment or vehicular traffic, with a higher likelihood of these impacts for individuals of species that are small, nocturnal, or fossorial. Project construction could cause behavior changes, as individuals would be expected to flee from an increase of noise, vibration, and human presence within the Project vicinity. Individuals would be expected to flee or hide, depending on the species' life history, which could increase depredation, decrease foraging success, reduce reproductive success, and result in loss of fitness for that individual from increased metabolic output. Some mammals may experience increased depredation from birds, as the addition of infrastructure would provide perching space for hunting birds. However, this impact would be generally minor as much of the Interconnection Project and Study Area already contain transmission lines.

Project construction activities would be temporary. The loss and degradation of mammal habitat from short- and long-term Project activities would be minor as the planned disturbance within the Interconnection Project is relatively small and the Study Area contains undisturbed desert habitat outside of the Interconnection Project. The Interconnection Project and Study Area intersect with one wildlife movement corridor (Lee Moore Wash Flow Corridors, as discussed in Exhibit C). However, the small disturbance footprint and relatively short time frame of construction would limit the migratory habitat loss for those species and would limit the avoidance of the area by migratory species. As such, any loss of vegetation from construction activities would not contribute meaningfully to habitat fragmentation for mammals or decrease connectivity between habitats.

Bat activity patterns and foraging would be unlikely to be substantially impacted. Temporary impacts could occur, if construction work occurs during dawn, dusk, or nighttime hours, or if nighttime lighting is used. The small loss of foraging habitat is unlikely to negatively impact any bat species at a landscape level. Some roosting habitats may occur in the Study Area, but none are present in the Interconnection Project. The loss of potential foraging habitat in the Interconnection Project is unlikely to have individual or population-level impacts to any bat species because the area of disturbance is relatively small compared with the available foraging habitat in the Study Area.

Construction of the Project is expected to result in an increase of fugitive dust. The fugitive dust during construction could change mammal behavior (e.g., reducing the amount of foraging). The likelihood and severity of impacts from construction would decrease with increasing distance from the Interconnection Project. These impacts would cease with completion of construction activities. The Applicant plans to

minimize fugitive dust impacts during construction by reducing the driving speed of construction vehicles and using water trucks to wet exposed dirt in active construction areas.

Bird Species

Birds, including raptors, can collide with power lines, resulting in injury or death (Avian Power Line Interaction Committee [APLIC] 2012). Birds that are large-bodied, are fast flyers, have large wing spans, or have low maneuverability (e.g., many wading birds or waterfowl) or birds that show certain behaviors (e.g., flocking, flying at altitudes at or below power line height, or nesting or foraging in close proximity to power lines) have a higher risk of impacts from power line collisions (APLIC 2012). Birds generally avoid collision with power lines when the lines are perceived by the bird; therefore, collision risk is lower in areas where multiple transmission lines are co-located or transmission lines are placed near other infrastructure (APLIC 2012).

Power lines can also cause electrocution when a bird is able to touch both energized and grounded electrical components at the same time, which is generally more common in birds with large wing spans, birds that use power poles (e.g., perching, foraging, roosting, or nesting), or situations where electrical configuration includes closely spaced energized and grounded components that are easily spanned by birds (APLIC 2006). High-voltage lines require spacing between those components that cannot be spanned even by very large birds so that electrocution risk is precluded almost entirely (APLIC 2012).

The stock tanks may support higher bird diversity and use than the remainder of the Study Area, including native and nonnative songbirds, raptors, and waterfowl. However, waterfowl would use the cattle tanks in the Project and Study Areas as loafing ponds (i.e., midday stops where birds rest before feeding or heading back to the roost). Because these cattle tanks are ephemeral and are not associated with emergent vegetation, they provide limited foraging opportunities for waterfowl, and waterfowl are unlikely to nest in the Interconnection Project.

Resident, migrating, or dispersing birds would be at risk of collision or electrocution with new power poles or power lines. The proximity of powerlines to bird take-off and landing areas can affect waterfowl collision risk. Studies have shown that waterfowl mortality from collisions decreased dramatically when powerlines were situated at distances of 197 (60 meters) feet from the water (APLIC 2012), so the risk of collision may increase for any waterfowl using the cattle tanks in the Study Area. The nearest cattle tank is approximately 400 feet from the proposed centerline. New infrastructure associated with the Project may increase the risk of collision. There is potential for impacts to nests including death or injury of eggs or nestlings or nest failure from construction disturbance.

Potential impacts from increased noise, vibration, or human presence in the Interconnection Project and from loss, degradation, and fragmentation would be the same as those described for terrestrial mammals. The increase in potential perches for hunting from the additional power poles could improve hunting habitat for some species.

Reptile Species

Potential impacts to reptiles including death, injury, or impacts arising from behavior changes and from the loss, degradation, and fragmentation of habitat would be similar to those described for terrestrial mammals. Fossorial reptiles, reptiles that are inactive due to heat or cold, and small reptiles would have a higher chance of injury or death compared with those individuals that are more mobile. Reptile species near the additional power poles could experience predation due to the increase in available perches for reptile predators.

Amphibian Species

Potential impacts to amphibians including death, injury, or impacts arising from behavior changes and from the loss, degradation, and fragmentation of amphibian habitat would be similar to those described for terrestrial mammals.

Fish Species

As no habitat for fish species occurs in the Interconnection Project or the Study Area, there would be no impacts to fish species.

Mitigation Measures

The following mitigation measures are designed to reduce the risk of animal injury or spread of invasive species. For mitigation measures specific to special-status species, please see Exhibit C.

- The Applicant plans to minimize fugitive dust impacts during construction by reducing the driving speed of construction vehicles and using water trucks to wet exposed dirt in active construction areas.
- The Interconnection Project will be designed in accordance with relevant standards from the Avian Power Line Interaction Committee (APLIC). APLIC standards are intended to reduce the risk of avian collisions and electrocution with high voltage transmission lines, particularly for raptors. Following APLIC standards will help minimize potential impacts to migratory birds.
- Biological surveys of the Interconnection Project indicate does not contain suitable habitat for Sonoran desert tortoise; however, if a Sonoran desert tortoise is encountered within the Interconnection Project, the AGFD's *Guidelines for Handling Sonoran Desert Tortoises Encountered on Development Projects* (AGFD 2023e) will be followed.
- To minimize the introduction and spread of invasive species and noxious weeds, standard best management practices will be used during construction (e.g., washing equipment prior to and following mobilization to the Interconnection Project).
- If vegetation-disturbing activities are planned during the migratory bird nesting season (March–September or January–June for raptors), measures to avoid any active bird nests within the Interconnection Project, such as preconstruction surveys for migratory bird nests by a qualified biologist, will be taken to maintain compliance with the MBTA since suitable nesting habitat for migratory bird species is present in the Interconnection Project.
- The recommendations in AGFD's *Guidelines for Solar Development in Arizona* (AGFD 2009) and the AGFD's *Wildlife Compatible Fencing Guidelines* (AGFD 2023f) will be taken into consideration in designing the Interconnection Project, as applicable and feasible.
- If trenching is included as part of Project construction, the following will be considered to minimize injury to wildlife: when trenches cannot be backfilled immediately, the escape ramps, which can be short lateral trenches or wooden planks sloping to the surface, will be constructed at least every 90 meters; trench slopes should be less than 45 degrees (1:1); and any trenches left open overnight will be inspected to remove wildlife prior to backfilling.

Conclusion

The Interconnection Project and Study Area occur within largely undisturbed areas with some existing roads, overhead transmission and distribution lines, residences, commercial areas, and solar generation

facilities. Because the Interconnection Project will disturb minimal vegetation and there is abundant habitat in the Study Area and vicinity, impacts to general plants and wildlife are expected to be minimal and restricted to individuals. The linear Interconnection Project could increase habitat fragmentation and reduce wildlife permeability within the Interconnection Project vicinity for some species. However, because construction will occur over a relatively short period of time, and the Interconnection Project will not clear the entire limits of the right-of-way, these wildlife connectivity impacts are expected to be minor. At a landscape level, the Interconnection Project would have minor impacts on the amount of vegetation available for wildlife use, and minor impacts on wildlife dispersal or migration corridors, and would not increase habitat fragmentation. Therefore, the proposed Interconnection Project may impact individuals (both wildlife and plant) but is unlikely to have impacts at the population level for any species.

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EXHIBIT E. SCENIC AREAS, HISTORIC SITES AND STRUCTURES, AND ARCHAEOLOGICAL SITES

As stated in the Arizona Corporation Commission Rules of Practice and Procedure R14-3-219, Exhibit 1:

> *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.*

Scenic Areas and Visual Resources

Overview

This section of Exhibit E includes a visual resources assessment (VRA) for the Interconnection Project that includes an inventory of scenic resources and addresses potential impacts related to the Interconnection Project. The methodology for this VRA is identified below and includes separate discussions about scenery (i.e., scenic quality) and sensitive viewers. The methodology is followed by the results of the inventory and the impact assessment, both of which include separate discussions for scenery and sensitive viewers within the context of the Study Area. The Interconnection Project does not occur on land managed by the Bureau of Land Management (BLM), U.S. Forest Service, or any other agency that requires conformance with visual resource management objectives or guidelines. However, the visual Study Area includes pockets of BLM-controlled areas.

Methodology

The purpose of the VRA is to identify and characterize the level of visual modification in the landscape that would result from the construction and operation of the Interconnection Project. Landscape modification is typically described in the degree of visual contrast, which can potentially affect both scenic quality and sensitive viewers. While scenic quality refers to the general characteristics and inherent aesthetic value of the landscape as a resource regardless of specific viewers, the term "sensitive viewer" refers to specific viewers and/or groups of viewers whose views could be affected by potential changes to the landscape. This assessment employed the following steps to assess the potential impacts to the visual environment:

- Perform a desktop review to find designated scenic areas, identify existing land uses and future land use plans, and assess aerial imagery.
- Describe the affected environment by evaluating the existing landscape character within the Interconnection Project's 1-mile Study Area to identify impacts from the introduction of the Interconnection Project components within the landscape.
- Identify Key Observation Points (KOPs) from where the Interconnection Project may be visible, and develop photosimulations.
- Perform a field survey by visiting each KOP, collecting site photographs, and noting existing conditions.
- Prepare visual simulations of the Interconnection Project using the KOP photographs.
- Assess the potential visual impacts of the Interconnection Project development based on the existing conditions observed during the field survey in concert with the visual simulations.

The Study Area for the VRA is defined as a 1-mile-wide buffer around the Interconnection Project (i.e., areas from which viewers could potentially see the Interconnection Project) and is consistent with other resources evaluated. Visual resource information and data for this assessment were developed based on research, available geographic information system (GIS) data, aerial photography, and on-site field verification and photographic documentation. The data was collected for all land, regardless of jurisdiction, and used to develop a comprehensive understanding of the existing landscape and associated visual resources. The Study Area consists of a patchwork of privately owned, Arizona State Trust, and BLM lands. Private land in the analysis area is either residential or vacant and represents the majority of the Study Area, with an industrial and existing solar property and a few commercial properties included. The remainder of the Study Area consists of undeveloped Arizona State Trust and public land (BLM-managed). Private land in the Study Area is generally not open to dispersed recreation (e.g., hunting, hiking, bird watching) but may be used for such activities through agreements with the landowner.

Impacts to both scenic quality and sensitive viewers are determined, in part, by evaluating the visual contrast the proposed facilities would have with the existing landscape. Visual contrast refers to the degree that the Interconnection Project features would either match/repeat existing features in the landscape or contrast with existing landscape features. The degree of visual contrast considers the existing landforms, vegetation, and built features present in the landscape and is described in terms or the degree of perceptible change in the basic design elements of form, line, color, and texture that would be evident by the introduction of the Interconnection Project in the landscape.

The impact thresholds for this assessment are categorized as follows:

- **High:** Interconnection Project features would result in a strong degree of contrast and would appear as dominant features within the existing landscape.
- **Moderate:** Interconnection Project features would result in a moderate degree of contrast and would appear as co-dominant features within the existing landscape.
- **Low:** Interconnection Project features would result in a weak degree of contrast and would be subordinate to the features of the existing landscape.

Scenery

Scenery is a measure, or the inherent aesthetic value of, the landscape based on the appearance of existing landscape features. This includes unique landforms, variable vegetation, and built features. In general terms, the scenic quality is based on the premise that landscapes with greater diversity and visual variety in landforms and vegetation are more aesthetically pleasing and therefore hold greater value. For this analysis, impacts to scenic quality were based on comparing the inventoried quality of the scenery to the anticipated quality considering any contrast introduced because of the construction and operation of the Interconnection Project.

Sensitive Viewers

The concept of sensitive viewers refers to members of the public who have potential views of the Project and may be sensitive to changes to the surrounding scenery. Regarding sensitive viewers, the Interconnection Project contrast is dependent on several factors, including viewing distance, duration of view, viewing condition, and degree of visibility. When combined, these factors indicate the overall visual dominance of the Interconnection Project within the landscape.

Sensitive viewing locations around the Study Area are limited and primarily of short duration (recreation or vehicular travelers). Static viewing locations where viewers would experience the site for long durations, such as scenic overlooks or residences, are not present within the Study Area. Sensitive viewers or viewing locations that would be potentially affected by this Interconnection Project include the following:

- Recreational areas – Equestrian use, walking, or cycling on public streets or privately owned property.
- Vehicular travelers – The primary travel routes include South Wilmot Road, Sahuarita Road, and South Houghton Road. Collector routes support access to local residences.
- Residences – Low-density rural residential, located north of the Interconnection Project located on E Mouse Trail, north of the Cisne Switchyard, and along Andrada Road, east of Wilmot Road.

The term “viewing distance" refers to the viewer’s physical distance from the Interconnection Project components and is predicated on the fact that one's ability to discern details dissipates over distance. Distance zones are used to separate the Study Area into distinct classifications based on the various levels of landscape detail available to the viewer and type of project infrastructure. SWCA Environmental Consultants (SWCA) reviewed established agency protocols, including those published by the U.S. Forest Service, BLM, and U.S. Department of Transportation, to determine an appropriate area for each distance zone within the Study Area. The standard BLM distance zones of foreground–middle ground (0–5 miles), background (5–15 miles), and seldom seen (15 plus miles) were used as a starting point.

Due to the characteristics of the specific landscape and equipment being evaluated, SWCA used the following distance zones, as measured from the boundary of the Interconnection Project to represent available views from within the Study Area (Table E-1). Note that because of the identified Study Area (1-mile), middle ground and background distance zones are not included.

Table E-1. Distance Zones

Name	Distance	Explanation
Foreground	0 to 1.0 mile	At this distance, a viewer can perceive details of an object with clarity. Surface textures, small features, and the full intensity and value of color can be seen on foreground objects. Large-scale landscape features remain recognizable and distinguishable as landscape patterns, colors, and textures.

The duration of view refers to the length of time and associated angle of view that the Interconnection Project would be visible and is based on the idea that viewer attention is attracted to a higher degree as the duration of view increases. Viewing angle refers to whether the viewer is looking down at the Interconnection Project from a superior position, looking up at the Interconnection Project from an inferior position, or viewing the Interconnection Project from an elevation that is similar to that of the Interconnection Project (i.e., a neutral view). The term “degree of visibility” refers to whether views of the Project would be either open and unobstructed or partially to fully obstructed by other features in the existing landscape (i.e., topography, vegetation, or built features). The degree of visibility also refers to whether the Interconnection Project would be viewed against the sky (i.e., skylined) or a backdrop of landforms, vegetation, and/or built features.

Anticipated viewer sensitivities to visual changes are also discussed within the analysis, including brief discussions regarding the potential sensitivities of different types of identified viewer groups within the vicinity of the Interconnection Project. Residential and recreational viewer groups are typically considered to have high sensitivities to visual changes in the landscape, while viewers moving along travel routes are considered to have low to moderate sensitivities to visual changes (unless traveling along a designated scenic travel route or more natural appearing areas).

Inventory Results

Scenery

The Interconnection Project is in a rural setting within the Sonoran Basin and Range Level III ecoregion and, more specifically, within the Gila/Salt Intermediate Basins Level IV ecoregion (U.S. Geological Survey 2014). The Sonoran Basin and Range Level III ecoregion consists of generally broad, open landscapes with scattered mountains and vegetation comprising paloverde (*Parkinsonia* sp.), saguaro (*Carnegiea* sp.), and other various Sonoran Desert plants. A small number of low-density urban and rural residences are dispersed in the developed portion of the Study Area. Undeveloped land represents the majority of the Study Area, aside from several transmission line corridors within the vacant areas. South Wilmot Road, a busy travel corridor, passes through the Study Area from the north to the south for approximately 5.3 miles.

Outside of the Study Area, primary travel routes include Sahuarita Road and South Houghton Road. Scenic views from the Study Area are mostly open and panoramic and include those of the Santa Rita Mountains to the southeast, the Rincon Mountains to the northeast, the Santa Catalina Mountains to the north, Tucson Mountain Park to the northwest, the Coyote Mountains Wilderness Area to the west, existing transmission infrastructure, and vacant land. Human development within the Study Area and throughout the ecoregion is characterized as residential, industrial, commercial, and supporting infrastructure development.

The scenic quality within the Study Area is considered low based on the general lack of visually interesting landforms and vegetation, the lack of visually sensitive resources, or the prominence of existing built features and development that contrasts with the appearance of the natural landscape.

KOPs were chosen to represent potential views of the Interconnection Project from major and minor roadways and residential areas. Five KOPs representing typical viewing angles of prominent Interconnection Project views were selected and are described in Table E-2, below. SWCA conducted in-field assessments in August 2023 at each of the KOPs and collected associated photography, notes on the site's visual aspects, and pertinent location information. Below is a table of the identified KOPs and associated viewer type and reason for inclusion in the VRA.

Table E-2. Selected KOP Locations and Sensitive Viewer Type

KOP	Location (lat/long)	Sensitive Viewer Group / Distance to Interconnection Project	Reason for Inclusion
1	View facing southeast from Swan Road. 32.04499 °, -110.89335	Residences Distance: 0.17 mile	Representative of views from residences located within and adjacent to the Study Area.
2	View facing south from South Wilmot Road near landfill. 32.04473 °, -110.85883 °	Vehicular travelers Distance: 0.55 mile	Representative of views while traveling along South Wilmot Road.
3	View facing northeast from intersection of South Wilmot Road and East Andrada Road. 31.99043 °, -110.85909 °	Vehicular travelers, Residences Distance: 0.1 mile	Representative of views while traveling along South Wilmot Road, near the intersection of South Wilmot Road and East Andrada local road.
4	View facing northwest from residence at East Andrada Road. 31.99058 °, -110.8469 °	Residences Distance: 0.15 mile	Representative of views from residences located within and adjacent to the Study Area.
5	View facing northeast from the intersection of Sahuarita Road and South Houghton Road. 31.96289°, 110.77342°	Vehicular travelers Distance: 4.4 miles	Representative of views from outside the Study Area while traveling west from the intersection of Sahuarita Road and South Houghton Road from an elevated position.

Sensitive Viewers

A number of rural residences are located within the Study Area. The nearest residential viewers are approximately 400 feet from the Interconnection Project oriented in the southern portion of the Study Area. Existing transmission line infrastructure traversing the Study Area is also visible from the identified residences, including lower-voltage overhead distribution lines along Andrada Road. The height of these existing features, along with the repetitive pattern of structure and conductor, make them highly visible and dominant features in many portions of the landscape as they bisect the landscape. Views from residences are mostly open and include foreground views of desert shrubs, trees, and existing transmission infrastructure continuing through vacant land to distant views of the Santa Rita Mountains to the southeast, the Rincon Mountains to the northeast, the Santa Catalina Mountains to the north, Tucson Mountain Park to the northwest, and the Coyote Mountains Wilderness Area to the west. Residential viewers are assumed to have a relatively long duration of view and relatively high sensitivities to visual changes within the Study Area.

Recreation Areas

The Study Area does not include any established recreational uses. The nearest recreation area to the Interconnection Project is Southeast Regional Park, approximately 3 miles east of the Interconnection Project. Other recreational uses within the Study Area include activities such as equestrian use, walking, or bicycling on public streets or privately owned property.

Travel Routes

South Wilmot Road is the primary travel corridor crossing the Study Area. Additionally, Sahuarita Road and South Houghton Road are main travel corridors outside of the Study Area and may have potential views of the Interconnection Project based on elevation and location. Collector routes that support access to local residential areas and existing development and infrastructure are within 245 feet of the Interconnection Project and include East Whispering Sage Road, South Swan Road, East Mouse Trail, East Andrada Road, and additional numbered road corridors.

Views from travel routes within the Study Area typically include residential developments and desert trees and shrubs in the foreground interspersed in vacant land leading to the dominant background mountain ranges. Existing transmission infrastructure within the Study Area is also visible to travelers, particularly South Wilmot Road as the infrastructure bisects or parallels this route due to its proximity to the roadway, dominating height into the pale blue sky, and highly visible features within the foreground. Views from travel routes are mostly open and panoramic in nature and include distant views of vacant land and the Santa Rita Mountains to the southeast, the Rincon Mountains to the northeast, the Santa Catalina Mountains to the north, Tucson Mountain Park to the northwest, the Coyote Mountains Wilderness Area to the west, and existing transmission infrastructure. Viewers moving along travel routes are assumed to have relatively short durations of view based on moderate travel speeds and low sensitivities to visual changes as a result of the existing visible development and infrastructure.

The Pima County Scenic Routes Plan designates Sahuarita Road, including the segment between South Wilmot Road and South Houghton Road, as a “Scenic, Major Route” (Pima County 2015). Pima County Zoning Ordinance, Chapter 18.77.040, includes roadway frontage standards for scenic routes. Specifically, Section 18.77.040(D)(1) stipulates that where a scenic route is designated as a major route (i.e., the segment of Sahuarita Road south of the Interconnection Project), the development standards contained in 18.77.040(E) apply to land within 200 feet of the scenic route’s right-of-way (Pima County 2018). At its nearest point, the Interconnection Project is approximately 2 miles from Sahuarita Road.

Impact Assessment Results

Below is a general description of the potential impacts to scenic quality and sensitive viewers based on the construction and operation of the Interconnection Project. Overall, impacts associated with the Interconnection Project would be low because the Interconnection Project components would appear similar to the existing transmission lines and electrical infrastructure that are adjacent to the Interconnection Project and the visually dominant features in the foreground landscape.

Scenery

The Interconnection Project will introduce an approximately 6.6-mile-long transmission line corridor (structures and conductors). Transmission structures for the Project will range from 45 to 199 feet tall and will primarily be weathered steel monopoles. The lines, forms, colors, textures, and scale of the Interconnection Project facilities will be similar in appearance to other transmission line infrastructure within the landscape. The Interconnection Project is expected to create minor impacts to the existing, relatively low scenic quality within the Study Area. Interconnection Project components will be visible but are not expected to attract attention and would be similar to other built features within the landscape, resulting in a weak degree of contrast.

Sensitive Viewers

The following is a summary of anticipated impacts to sensitive viewers resulting from the construction and operation of the Interconnection Project.

Residences

Views from residences within or adjacent to the Study Area will vary based on location from unobstructed to partially obstructed, depending on intervening vegetation and existing structures within the landscape. Based on the predominantly flat and horizontal nature of the landscape, views from residential properties will generally be from a neutral position and will include skylined views of the Interconnection Project, where visible.

The nearest group of residences, approximately 400 feet south of the Interconnection Project along East Andrada Road, will have partially obstructed views of the Interconnection Project, as illustrated by KOP 4 (see Exhibit G-8). From this vantage point, Interconnection Project structures are parallel with existing overhead distribution lines and blend into the overall view. The structures protrude into the light pale sky and are partially backdropped by distant landforms. The lines, forms, colors, textures, and scale of the Interconnection Project components are similar to those found within the existing visual setting. Despite the relatively close proximity of these residences and the anticipated long duration of view, the Interconnection Project could be seen but would not attract attention and would be similar to other features within the landscape, resulting in a weak degree of contrast and low impacts.

KOP 3 (see Exhibit G-7) represents an additional view from residences located approximately 0.1 mile southwest of the Interconnection Project at the intersection of South Wilmot Road and East Andrada Road and would have partially obstructed views of the Interconnection Project. From this vantage point, Interconnection Project structures are parallel with existing equipment and blend into the overall view. The structures protrude into the light pale sky and are partially backdropped by distant landforms. The lines, forms, colors, textures, and scale of the Interconnection Project components are similar to those found within the existing visual setting. Despite the relatively close proximity of these residences and the anticipated long duration of view, the Interconnection Project will be visible but are not expected to attract attention and will be subordinate to other features within the landscape, resulting in a weak degree of contrast and low impacts.

KOP 1 (see Exhibit G-5) represents the visibility of the Interconnection Project from residences located approximately 0.17 mile northwest of the Interconnection Project. KOP 1 is immediately north of the existing TEP 138kV Cisne Switchyard, located at the south end of South Swan Road. From KOP 1, the Interconnection Project will be partially obstructed. From this vantage point, electrical infrastructure associated with the Wilmot I Energy Center and the TEP 138-kilovolt (kV) Cisne Switchyard is already visible. The Interconnection Project will be closer to KOP 1 compared to the existing facilities; however, it will appear similar to the existing equipment and blend into the overall view. The structures protrude into the light pale sky and are partially backdropped by distant landforms. The lines, forms, colors, textures, and scale of the Interconnection Project facilities will be similar in appearance to existing overhead electric facilities in the Study Area. Despite the relatively close proximity of these residences and the anticipated long duration of view, the Interconnection Project will be visible but is not expected to attract attention and will be subordinate to other features within the landscape, resulting in a weak degree of contrast and low impacts.

Recreation Areas

As there are no established recreational areas or amenities within the Study Area, visual impacts related to recreation would be negligible.

Travel Routes

Views from travel routes within the Study Area will vary based on location and travel direction, but typically include unobstructed to obstructed views of the existing landscape and Interconnection Project. Most views from travel routes will be from a neutral position and will include skylined views of the transmission lines and electrical infrastructure, where visible.

South Wilmot Road is a north-south–orientated primary travel route, represented by KOP 2 (see Exhibit G-6) and intersects the Study Area; KOP 2 is approximately 0.55 mile north of the Interconnection Project. Based on the orientation of travelers along South Wilmot Road in the northbound and southbound directions, the Interconnection Project will be directly visible where it makes a perpendicular crossing of South Wilmot Road and peripherally where the Interconnection Project parallels South Wilmot Road. In either case, the viewing duration will be short based on the travel speeds on South Wilmot Road. Additionally, foreground vegetation, existing transmission lines similar to the Interconnection Project, and linear roadway infrastructure draw the attention to distant mountain views in the background and will further influence the viewers' ability to focus attention on the Interconnection Project. The lines, forms, colors, textures, and scale of the Interconnection Project features will be similar to those of the existing transmission line infrastructure in the area. Despite the relatively close proximity of this road, the Interconnection Project will be visible but is not expected to attract attention and will be subordinate to other features within the landscape, resulting in a weak degree of contrast and low impacts.

Views from the intersection of South Wilmot Road (a primary travel route) and East Andrada Road (a collector route) are represented by KOP 3 (see Exhibits G-7) and intersects the Study Area, located approximately 0.1 mile to the southwest of the Interconnection Project. Based on the orientation of travelers at the intersection of South Wilmot Road and East Andrada Road, the Interconnection Project will be viewed peripherally to the north and west paralleling the existing transmission line. Travelers along South Wilmot Road will have views for a short duration of time based on moderate travel speeds. Additionally, foreground vegetation and existing transmission line infrastructure similar to the Interconnection Project will further influence viewers' ability to focus attention on the Interconnection Project. The lines, forms, colors, textures, and scale of the Interconnection Project features will be similar to those of the existing transmission line infrastructure in the area. Despite the relative proximity of this road, the Project will be visible but is not expected to attract attention and will be similar to other features within the landscape, resulting in a weak degree of contrast and low impacts.

Regarding Sahuarita Road – as noted above – the Interconnection Project is well outside of the area in which the scenic route development standards are applicable. Nevertheless, KOP 5 represents the perspective of travel route viewers on Sahuarita Road, facing west. Specifically, KOP 5 is located near the intersection of Sahuarita Road and South Houghton Road, approximately 4.3 miles from the Interconnection Project, and has a superior viewing position to the Interconnection Project. Sahuarita Road generally slopes down to the west, making the Interconnection Project progressively less visible as travelers proceed west on Sahuarita Road. The photosimulation from KOP 5 (see Exhibit G-9) indicates that the Interconnection Project will appear as a feature below the horizon, making it difficult to discern against the background of existing vegetation. The lines, forms, colors, textures, and scale of the Interconnection Project features will be similar to those of the existing transmission line infrastructure in the area. Overall, the Interconnection Project will introduce a minor feature in the distant landscape, resulting in a weak degree of contrast and low visual impacts.

Conclusion

Overall, the Interconnection Project will be similar in form, line, color, and texture as compared with other transmission infrastructure in the Study Area, which will result in overall low impacts to scenery. Similarly, impacts to sensitive viewers overall will be low as a result of perceived contrast due to intervening visual elements, existing infrastructure, composition of views of the Interconnection Project, and low number of resources located within the Study Area.

Historic Sites and Structures, and Archaeological Sites

As required by the Arizona Corporation Commission *Rules of Practice and Procedure* R14-3-219, the potential effects of the proposed Project on historic sites and structures and archaeological sites were assessed. The assessment also was prepared to support Arizona Corporation Commission compliance with the State Historic Preservation Act (Arizona Revised Statutes 41-861 through 41-864), which requires state agencies to consider impacts of their programs on historic properties listed in or eligible for listing in the Arizona Register of Historic Places (ARHP) and to provide the State Historic Preservation Office an opportunity to review and comment on the actions that affect such historic properties.

To be eligible for the ARHP, a property must be at least 50 years old (less if it has special significance) and have national, state, or local significance in American history, architecture, archaeology, engineering, or culture. It should also possess integrity of location, design, setting, materials, workmanship, feeling, and association, and meet at least one of the four following criteria:

- Criterion (a): be associated with significant historical events or trends
- Criterion (b): be associated with historically significant persons
- Criterion (c): have distinctive characteristics of a style or a type, or have artistic value, or represent a significant entity whose components may lack individual distinction
- Criterion (d): have yielded or have the potential to yield important information concerning history or prehistory

Methodology

The Study Area for the purpose of assessing potential impacts to historic sites and structures, as well as archaeological sites, is defined as a 1-mile-radius buffer around the Interconnection Project. SWCA reviewed archival records to identify such properties within the Study Area. Data sources searched include AZSITE, Arizona's statewide cultural resources database, which includes records from the Arizona State Museum (ASM), Arizona State University, the Arizona State Historic Preservation Office (SHPO), and the BLM; the National Register of Historic Places database; General Land Office (GLO) plat maps; and historic-era topographic maps.

Previous Cultural Resources Projects

The records review identified 26 prior cultural resources surveys that have taken place within the 1-mile Study Area and Interconnection Project. The earliest identified projects were completed in the mid-1980s, and periodic work has continued since that time. Additional surveys, not shown on AZSITE, are known to have occurred on private land in the area where no agency registration was required. Surveys have been completed in support of housing development, roads, a landfill site, prison development, a water treatment plant, and several electrical transmission lines. Recent work has been undertaken in support of solar utilities. Eleven of these projects intersect the current Interconnection Project (Table E-3). Table E-3 also lists a program of data recovery undertaken by Old Pueblo Archaeology Center (OPAC) 1999–2000 (Jones 2002) conducted under a Project Specific Permit, which does not appear as an AZSITE survey project.

All the current Interconnection Project has been surveyed. SWCA recently surveyed all the Interconnection Project east of Wilmot Road on State land to support the Interconnection Project's ASLD right-of-way (Petersen and Hesse 2023). The south end of the Interconnection Project, on private land at the location of the proposed Project Substation, was previously surveyed for cultural resources in 2004 by WestLand Resources for proposed residential land development (Harrison 2005). The Interconnection Project west of Wilmot Road on private land has been included in several previous projects associated with proposed land development. These have included a planned expansion of the prison complex north of the Interconnection

Project, proposed housing, and recent solar development. Survey west of Wilmot Road began with two phases of work during 1998 and 1999 when the Arizona State Land Department (ASLD) owned the land and planned to sell it to the Arizona Department of Corrections for the prison expansion (Dosh and Stull 1998, 1999). The ASLD made eligibility determinations for the sites in the prison expansion area and consulted with SHPO about appropriate archaeological treatment before the land was sold for construction. All sites determined eligible for listing in the ARHP or National Register of Historic Places (NRHP) were then subjected to data recovery, which included surface collection of artifacts, manual excavation of features, and mechanical trench excavation at some sites (Jones 2002:26). The data recovery was explicitly intended to mitigate any adverse effects to the historic properties within the parcel that would be caused when the land was used for future construction. The proposed prison expansion was ultimately superseded by sale of the land to private developers.

Table E-3. Previous Cultural Resources Projects Intersecting the Interconnection Project

Agency Number	Project Name	Organization	Year
1988-215.ASM	Santa Cruz 115kV Transmission Line Upgrade	Dames & Moore	1988
1997-257.ASM	Pantano to Bicknell/Vail to Bicknell	SWCA	1998
1999-284.ASM 12-108.BLM	Tucson Prison Expansion II	Kinlani Archaeology	1998
1999-285.ASM 11-42-8G.BLM	Tucson Prison Expansion I	Kinlani Archaeology	1999
1999-297.ASM	Wilmot Road Utilities Survey	Kinlani Archaeology	1999
1999-456.ASM	Andrada Right-of-way (ASLD #18-105071)	PAST	1999
ASM ACC 2002-172	Wilmot Prison Expansion Project	OPAC	2002
2003-197.ASM	TRICO Corona de Tucson Tie Line Survey	SWCA	2002
2008-75.ASM	The Hook M Ranch Survey	WestLand Resources	2005
2009-578.ASM	SWTC PPC Pantano and Sahuarita	SWCA	2009
2014-117.ASM	Wilmot Road North of Sahuarita	EcoPlan Associates	2015
2014-405.ASM	SWTC Bicknell to Vail	WestLand Resources	2014
2023-114.ASM	Wilmot II Gen-Tie Line	SWCA	2023

Historic-Era Sites

The records review identified five historic-era sites in the file search radius (Table E-4). Note that the results include one site (PAST 1) that was recorded on private land for a project that did not require agency registration or assignment of an ASM site number. None of the historic-era sites are in the proposed Interconnection Project. The sites are varied, including artifact/refuse scatters and abandoned road alignments. One site (AZ BB:13:428[ASM]) was described as the poorly preserved remains of an aerial survey marker, and it is questionable if this would have constituted a historic-era site at the time it was recorded. The results include two segments of an abandoned road—possibly from Tucson to the former mining town of Helvetia—which were determined eligible for the ARHP/NRHP. These were included in the OPAC mitigation project discussed above (Jones 2002). No in-use historic-era buildings or structures have been assigned ASM site numbers within the file search radius.

Table E-4. Previously Recorded Historic-Era Sites within 1 Mile of the Interconnection Project

Site Number	Cultural/Temporal Affiliation	Site Type	ARHP Eligibility Status	Associated Reference(s)	Distance from Interconnection Project (miles)
AZ BB:13:414(ASM)	Euro-American / 1900–1950s	Refuse scatter	Not evaluated	Slaughter and Roberts 1992	0.68
AZ BB:13:428(ASM)	Euro-American / possibly modern	Aerial survey marker	Recommended not eligible	Roberts 1993	0.16
AZ BB:13:613(ASM)	Euro-American / ca. 1880–1920s	Abandoned dirt road	Determined eligible (Criterion D)	Dosh and Stull 1999 Jones 2002	0.08
AZ BB:13:614(ASM)	Euro-American / ca. 1880–1920s	Abandoned dirt road	Determined eligible (Criterion D)	Dosh and Stull 1999 Jones 2002	0.26
PAST 1	Euro-American / ca.1900–1930s	Artifact scatter	Recommended not eligible	Hesse et al. 2023 Stephen 2013	0.25

Note: Shading indicates site intersects the proposed Interconnection Project.

Archaeological Sites

There are 73 previously recorded archaeological sites within the buffered Study Area, excluding the five historic sites listed in Table E-4 (Table E-5). Once again, these include sites on private land which have not been assigned ASM site numbers. The inventory is rather repetitive, with sites consistently composed of a combination of features—almost always rock features, although there are structures and charcoal stains reported—and artifacts. The rock features have generally been interpreted as thermal features (roasting pits), although agricultural rock piles may also be present. Where a specific cultural affiliation has been identified, it has usually been Hohokam, based upon ceramic assemblages. The affiliation of aceramic sites in the inventory is often not specifically determined. A few sites are attributed to the Archaic/Early Agricultural period based upon diagnostic ground stone tools and/or projectile points. Others, lacking diagnostic artifacts, have generally been assumed to be prehistoric, possibly including Hohokam sites with no ceramic component. Sites with diagnostic Archaic points have been excavated and found to also contain Hohokam ceramics, and previous research has generally suggested a long span of occasional use of the landscape. Sites were likely the focus of repeated short-duration resource procurement and processing activities. In previous reports, OPAC (Jones 2002) and SWCA (Hesse et al. 2023, Rawson 2017) have not precluded the possibility that Native use of the landscape persisted into the proto-historic or early historic periods.

Six sites have been recorded within the Interconnection Project. Four of the sites within the Interconnect Project are in the portion of the Project west of Wilmot Road that was the subject of cultural resources studies in anticipation of the above-described proposed Arizona Department of Corrections prison expansion. Three of these sites were subjected to mitigative data recovery: AZ BB:13:600(ASM) consisted of seven thermal rock features, one ceramic sherd, and 30 flaked stone artifacts; AZ BB:13:606(ASM) consisted of five thermal rock features, three ceramic sherds, three flaked stone artifacts, and one ground stone artifact; and AZ BB:13:643(ASM) consisted of three surface scatters of fire-cracked rock, one possible thermal rock feature, four flaked stone artifacts, and three ground stone artifacts (Jones 2002). AZ BB:13:607(ASM), which was recorded as three thermal rock features with no associated artifacts, was determined to be ineligible for the ARHP/NRHP and required no mitigative treatment.

Two sites, AZ EE:1:371(ASM) and AZ EE:1:372(ASM), were recorded by WestLand Resources in 2004 (Harrison 2005) and are mapped as being within the private land portion of the Interconnect Project at the location of the Project Substation. AZ EE:1:371(ASM) was described as an artifact scatter containing 12

ceramic pottery sherds and 12 flaked stone artifacts in an 18 × 18–m area, and recommended the site eligible for the NRHP. In 2023, SWCA archaeologists attempted to locate the site, but could not find it in or near its mapped location (Hesse et al. 2023). The site map in WestLand Resources report (Harrison 2005:Figure 7) shows the site to be south of an east-west fence line, which, assuming the fence line is a property boundary, suggests that the site may be just south of and outside the Interconnect Project, possibly on BLM-administered land. AZ EE:1:372(ASM) was described by WestLand Resources as 20 ceramic pottery sherds and eight flaked stone artifacts in a 32 × 28–m area, and recommended the site eligible for the NRHP (Harrison 2005). In 2023, SWCA archaeologists were able to locate this site, documenting eight ceramic pottery sherds, five flaked stone artifacts, and one ground stone artifact fragment (Hesse et al. 2023). SWCA archaeologists noted that the artifact scatter does not meet the current artifact and density threshold for ASM site designation and recommended AZ EE:1:372(ASM) ineligible for the NRHP (Hesse et al. 2023).

Table E-5. Previously Recorded Archaeological Sites within 1 Mile of the Project

Site Number	Cultural/Temporal Affiliation	Site Type	ARHP Eligibility Status	Associated Reference(s)	Distance from Interconnection Project (miles)
AZ BB:13:413(ASM)	Native Archaeological Culture/Prehistoric	Rock feature	Not evaluated	Slaughter and Roberts 1992	0.62
AZ BB:13:415(ASM)	Hohokam/Ceramic period	Artifact scatter with rock features	Not evaluated	Slaughter and Roberts 1992	0.70
AZ BB:13:416(ASM)	Native Archaeological Culture/Prehistoric	Rock features	Not evaluated	Slaughter and Roberts 1992	0.67
AZ BB:13:417(ASM)	Hohokam/Ceramic period	Artifact scatter with rock features	Not evaluated	Slaughter and Roberts 1992	0.61
AZ BB:13:429(ASM)	Native Archaeological Culture/Prehistoric	Artifact scatter with rock feature	Not evaluated	Roberts 1993	0.21
AZ BB:13:430(ASM)	Native Archaeological Culture/Prehistoric	Rock features	Not evaluated	Roberts 1993	0.33
AZ BB:13:431(ASM)	Native Archaeological Culture/Prehistoric	Artifact scatter with rock feature	Not evaluated	Roberts 1993	0.96
AZ BB:13:434(ASM)	Native Archaeological Culture/Prehistoric	Rock features	Not evaluated	Roberts 1993	0.74
AZ BB:13:436(ASM)	Native Archaeological Culture/Prehistoric	Artifact scatter with rock features	Not evaluated	Roberts 1993	0.89
AZ BB:13:437(ASM)	Native Archaeological Culture/Prehistoric	Artifact scatter with rock features	Not evaluated	Roberts 1993	0.93
AZ BB:13:438(ASM)	Native Archaeological Culture/Prehistoric	Artifact scatter	Not evaluated	Roberts 1993	0.72
AZ BB:13:439(ASM)	Native Archaeological Culture/Prehistoric	Artifact scatter	Not evaluated	Roberts 1993	0.60
AZ BB:13:440(ASM)	Hohokam/Ceramic period	Artifact scatter with rock features	Not evaluated	Roberts 1993	0.86
AZ BB:13:441(ASM)	Hohokam/Ceramic period	Artifact scatter with rock features	Not evaluated	Roberts 1993	0.70
AZ BB:13:442(ASM)	Hohokam/Ceramic period	Artifact scatter with rock features	Determined eligible (Criterion D)	Jones 2002; Roberts 1993	0.27
AZ BB:13:463(ASM)	Native Archaeological Culture/Prehistoric	Artifact scatter with rock features	Recommended eligible	Roberts et al. 1994	0.58
AZ BB:13:464(ASM)	Native Archaeological Culture/Prehistoric	Artifact scatter with rock features	Recommended eligible	Roberts et al. 1994	0.53

Site Number	Cultural/Temporal Affiliation	Site Type	ARHP Eligibility Status	Associated Reference(s)	Distance from Interconnection Project (miles)
AZ BB:13:465(ASM)	Native Archaeological Culture/Prehistoric	Rock features	Recommended eligible	Roberts et al. 1994	0.14
AZ BB:13:466(ASM)	Native Archaeological Culture/Prehistoric	Artifact scatter with structure	Recommended eligible	Roberts et al. 1994	0.26
AZ BB:13:467(ASM)	Native Archaeological Culture/Prehistoric	Artifact scatter with rock features	Recommended eligible	Roberts et al. 1994	0.52
AZ BB:13:566(ASM)	Hohokam/Ceramic period	Artifact scatter with rock features	Determined eligible (Criterion D)	Dosh and Stull 1998; Jones 2002	0.91
AZ BB:13:567(ASM)	Hohokam/Ceramic period	Artifact scatter with rock features	Recommended eligible	Dosh and Stull 1998	0.55
AZ BB:13:568(ASM)	Hohokam/Ceramic period	Artifact scatter with rock features	Determined eligible (Criterion D)	Dosh and Stull 1998; Jones 2002	0.38
AZ BB:13:569(ASM)	Hohokam/Ceramic period	Rock feature	Recommended eligible	Dosh and Stull 1998	0.37
AZ BB:13:570(ASM)	Hohokam/Ceramic period	Artifact scatter with rock features	Determined eligible (Criterion D)	Dosh and Stull 1998; Jones 2002	0.18
AZ BB:13:571(ASM)	Hohokam/Ceramic period	Artifact scatter with rock features	Recommended eligible	Dosh and Stull 1998	0.09
AZ BB:13:572(ASM)	Hohokam/Ceramic period	Artifact scatter with rock features	Recommended eligible	Dosh and Stull 1998	0.07
AZ BB:13:573(ASM)	Hohokam/Ceramic period	Artifact scatter with rock feature	Recommended eligible	Dosh and Stull 1998	0.18
AZ BB:13:574(ASM)	Hohokam/Ceramic period	Artifact scatter with rock feature	Recommended eligible	Dosh and Stull 1998	0.21
AZ BB:13:598(ASM)	Hohokam/Ceramic period	Artifact scatter with rock features	Determined eligible (Criterion D)	Dosh and Stull 1999; Jones 2002	0.19
AZ BB:13:599(ASM)	Hohokam/Ceramic period	Artifact scatter with rock features, possible pit house	Determined eligible (Criterion D)	Dosh and Stull 1999; Jones 2002	0.09
AZ BB:13:600(ASM)	Hohokam/Ceramic period	Artifact scatter with rock features	Determined eligible (Criterion D)	Dosh and Stull 1999; Jones 2002	In Interconnection Project
AZ BB:13:601(ASM)	Hohokam/Ceramic period	Artifact scatter with rock feature	Recommended eligible	Dosh and Stull 1999	0.08
AZ BB:13:602(ASM)	Hohokam/Ceramic period	Artifact scatter with rock feature	Recommended eligible	Dosh and Stull 1999	0.18
AZ BB:13:603(ASM)	Hohokam/Ceramic period	Artifact scatter with rock features and charcoal stain	Determined eligible (Criterion D)	Dosh and Stull 1999; Jones 2002	0.16
AZ BB:13:604(ASM)	Hohokam/Ceramic period	Artifact scatter with rock features	Determined eligible (Criterion D)	Dosh and Stull 1999; Jones 2002	0.24
AZ BB:13:605(ASM)	Hohokam/Ceramic period (and minor historic-age component)	Artifact scatter with rock feature	Recommended eligible	Dosh and Stull 1998	0.12
AZ BB:13:606(ASM)	Hohokam/Ceramic period	Artifact scatter with rock features and charcoal stain	Determined eligible (Criterion D)	Dosh and Stull 1999; Jones 2002	In Interconnection Project

Site Number	Cultural/Temporal Affiliation	Site Type	ARHP Eligibility Status	Associated Reference(s)	Distance from Interconnection Project (miles)
AZ BB:13:607(ASM)	Hohokam/Ceramic period	Rock features	Recommended eligible	Dosh and Stull 1998	In Interconnection Project
AZ BB:13:608(ASM)	Hohokam/Ceramic period	Artifact scatter with rock features	Determined eligible (Criterion D)	Dosh and Stull 1999; Jones 2002	0.08
AZ BB:13:609(ASM)	Hohokam/Ceramic period	Artifact scatter with rock features	Recommended eligible	Dosh and Stull 1998	0.26
AZ BB:13:610(ASM)	Hohokam/Ceramic period	Artifact scatter with rock features	Determined eligible (Criterion D)	Dosh and Stull 1999; Jones 2002	0.16
AZ BB:13:611(ASM)	Hohokam/Ceramic period (and minor historic-age component)	Artifact scatter with rock features	Determined eligible (Criterion D)	Dosh and Stull 1999; Jones 2002	0.20
AZ BB:13:612(ASM)	Hohokam/Ceramic period (and minor historic-age component)	Artifact scatter with rock features	Determined eligible (Criterion D)	Dosh and Stull 1999; Jones 2002	0.22
AZ BB:13:643(ASM)	Native Archaeological Culture/Prehistoric	Artifact scatter with rock features	Determined eligible (Criterion D)	Bruder and Vaughn 2015; Jones 2002	In Interconnection Project
AZ EE:1:150(ASM)	Native Archaeological Culture/Unknown	Artifact scatter with rock features	Not evaluated	Huckell et al. 1987	0.69
AZ EE:1:151(ASM)	Native Archaeological Culture/Unknown	Artifact scatter with rock features	Recommended eligible	Huckell et al. 1987; Hesse et al. 2023	0.74
AZ EE:1:152(ASM)	Hohokam/Ceramic period	Artifact scatter with rock feature	Not evaluated	Huckell et al. 1987	0.76
AZ EE:1:153(ASM)	Hohokam/Ceramic period	Artifact scatter with rock features	Not evaluated	Huckell et al. 1987	0.45
AZ EE:1:154(ASM)	Hohokam/Ceramic period	Habitation site	Not evaluated	Huckell et al. 1987	0.76
AZ EE:1:157(ASM)	Hohokam/Ceramic period	Habitation site	Not evaluated	Huckell et al. 1987	0.81
AZ EE:1:158(ASM)	Hohokam/Ceramic period	Artifact scatter with rock features	Not evaluated	Huckell et al. 1987	0.13
AZ EE:1:159(ASM)	Hohokam/Ceramic period	Artifact scatter with rock features	Not evaluated	Huckell et al. 1987	0.54
AZ EE:1:160(ASM)	Hohokam/Ceramic period	Artifact scatter with rock features	Not evaluated	Huckell et al. 1987	0.52
AZ EE:1:162(ASM)	Hohokam/Ceramic period	Artifact scatter with rock features	Not evaluated	Huckell et al. 1987	0.75
AZ EE:1:307(ASM)	Hohokam/Ceramic period	Artifact scatter with rock features	Recommended eligible	Hesse 2001	0.34
AZ EE:1:308(ASM)	Hohokam/Ceramic period	Artifact scatter with rock features	Recommended eligible	Hesse 2001	0.37
AZ EE:1:371(ASM)	Hohokam/Ceramic period	Artifact scatter	Recommended eligible	Harrison 2005	Unknown; not found during recent inspection
AZ EE:1:372(ASM)	Hohokam/Ceramic period	Artifact scatter	Recommended ineligible	Harrison 2005 Hesse et al. 2023	In Interconnection Project

Site Number	Cultural/Temporal Affiliation	Site Type	ARHP Eligibility Status	Associated Reference(s)	Distance from Interconnection Project (miles)
AZ EE:1:376(ASM)	Hohokam/Ceramic period	Artifact scatter with rock features	Recommended eligible	Harrison 2005	0.71
AZ EE:1:377(ASM)	Native Archaeological Culture/Archaic?	Rock feature and metate	Recommended ineligible	Harrison 2005 Hesse et al. 2023	0.78
AZ EE:1:379(ASM)	Native Archaeological Culture/Unknown	Rock features	Recommended ineligible	Harrison 2005 Hesse et al. 2023	0.84
SWCA-01	Hohokam/Ceramic period	Rock features with an artifact	Recommended ineligible	Hesse et al. 2023	0.25
SWCA-02	Hohokam/Ceramic period	Artifact scatter with rock features	Recommended eligible (Criterion D)	Hesse et al. 2023	0.23
SWCA-03	Native Archaeological Culture/Unknown	Rock features	Recommended ineligible	Hesse et al. 2023	0.33
SWCA-04	Native Archaeological Culture/Unknown	Rock feature with an artifact	Recommended ineligible	Hesse et al. 2023	0.61
SWCA-05/SRI-1	Native Archaeological Culture/Unknown	Artifact scatter with rock features	Recommended eligible (Criterion D)	Hesse et al. 2023; Klucas 2015	0.56
SWCA-06	Native Archaeological Culture/Unknown	Rock feature with an artifact	Recommended ineligible	Hesse et al. 2023	0.56
SWCA-07	Hohokam/Ceramic period	Artifact scatter with rock features	Recommended eligible (Criterion D)	Hesse et al. 2023	0.14
SWCA-08	Hohokam/Ceramic period	Artifact scatter with rock feature	Recommended eligible (Criterion D)	Hesse et al. 2023	0.20
SWCA-09	Hohokam/Ceramic period	Artifact scatter with rock feature	Recommended eligible (Criterion D)	Hesse et al. 2023	0.24
SWCA-10	Native Archaeological Culture/Unknown	Rock feature with an artifact	Recommended ineligible	Hesse et al. 2023	0.17
SWCA-12	Hohokam/Ceramic period	Artifact scatter with rock features	Recommended eligible (Criterion D)	Hesse et al. 2023	0.22

Note: Shading indicates site has been recorded within the proposed Interconnection Project.

Historical Map and Land Patent Research

The GLO plat of Township 16 South, Range 14 East was filed in 1873. There was no development around the Interconnection Project at that time. The GLO plat map for Township 16 South, Range 15 East, filed in 1897, depicts an unnamed road in Section 30 and a second one in Section 31, both crossing the Interconnection Project. No historic buildings, ranches, or other landscape modifications were shown within or near the Interconnection Project. The 1905 U.S. Geological Survey (USGS) Tucson 30-minute quadrangle depicts an unimproved road passing east-west through the Interconnection Project in Section 19, connecting Garcia's Ranch, located about 4.5 miles west of the Interconnection Project, to Vail, located about 9 miles to the east of the Interconnection Project. The 1905 Tucson and Patagonia 30-minute quadrangles show that the primary travel routes to the mines in the northern Santa Rita Mountains from Tucson and Vail were west and east of the survey area, respectively. The 1948 USGS 15-minute Tucson topographic map depicts nothing in the immediate area of the Interconnection Project, although there was a network of unnamed dirt roads in the general area. However, by 1957, the Tucson map depicts a dirt road (approximate alignment of current Wilmot Road) and overhead utility line running north-south just west of

the road. The 1958 USGS 15-minute Sahuarita topographic map depicts the same road and utility line, as well as an unnamed east-west–trending road crossing the southwest edge of the Interconnection Project in Section 31 and a northwest-southeast–trending unimproved road/trail traversing the Interconnection Project from the northeast corner of Section 6, across Section 5, and through the southeast corner of Section 4. SWCA recently reviewed aerial photographs of the Interconnection Project east of Wilmot Road, using historicaerials.com (Petersen and Hesse 2023). Wilmot Road was the only road depicted in a 1966 aerial photograph within or adjacent to the Interconnection Project. By 1985, development of neighborhoods near the Interconnection Project had begun. By the early 2000s, the neighborhoods along Andrada Road, Cactus Patch Way, Noyes Street, Sunny Skies Road, and Water Valley Way were fully constructed.

Assessment of Effects

A project can have direct and/or indirect effects on historic sites and structures and archaeological sites when it alters the characteristics that qualify it for listing in the ARHP. Effects are adverse when they diminish the integrity of the property's location, design, setting, materials, workmanship, feeling, or association. Adverse effects on historic properties include, but are not limited to, the following:

- Physical destruction of or damage to all or part of the property
- Removal of the property from its historic location
- Change of the character of the property's use of physical features within the property's setting that contribute to its historic significance
- Introduction of visual, atmospheric, or audible elements that diminish the integrity of the property's significant historic characteristics
- Neglect of a property that causes its deterioration, except where such neglect and deterioration are recognized qualities of a property of religious and cultural significance to an Indian tribe
- Transfer, lease, or sale of a property out of government ownership or control without adequate and legally enforceable restrictions or conditions to ensure long-term preservation of the property's historic significance

Direct Effects

The records review identified six archaeological sites in the Interconnection Project that could be subject to direct effects arising from ground disturbance during construction. However, three of the sites (AZ BB:13:600[ASM], AZ BB:13:607[ASM], and AZ BB:13:643[ASM]) were previously included in a data recovery program during which they were depleted or destroyed. This work was explicitly intended to exhaust the research potential of the sites and therefore mitigate any adverse effects that would be caused when the land was used for future construction (Jones 2002). A fourth site (AZ BB:13:606[ASM]) was determined ineligible for the ARHP/NRHP and required no mitigative treatment. Correspondence between Jo Anne Medley Miller (State Historic Preservation Office) and Virginia Pierce (Arizona Department of Administration) in the form of a letter dated April 9, 2002, and referenced as SHPO-2000-1218 (10017), includes the SHPO's acceptance of the data recovery report (i.e., Jones 2002) and acknowledgement that the data recovery mitigated the adverse effects of the future development of the project area consistent with the approved plan of work. A fifth site (AZ EE:1:371[ASM]) could not be found during a recent attempt to update its site record (Hesse et al. 2023); the original site map depicts the site south of a fence line (Harrison 2005:Figure 7), which suggests that the site may lie just south of the Interconnect Project. The sixth site (AZ EE:1:372[ASM]) is a light artifact scatter, which when recently inspected, consisted of only 13 artifacts (Hesse et al. 2023). AZ EE:1:372(ASM) is recommended ineligible for the ARHP/NRHP.

As a result, no ARHP/NRHP-eligible sites that require preservation or additional archaeological study would be subject to direct effects from the Interconnect Project.

Indirect Effects

The ARHP-eligible historic properties identified in the records review are archaeological sites. Where an eligibility criterion was listed on AZSITE, from a recorder recommendation or more frequently in a SHPO determination, it was invariably Criterion D (information potential). This is generally the criterion applicable to archaeological sites. Where the identified significant sites survive (some having been subject to data recovery), the principal adverse effect would arise from direct effects (i.e., ground disturbance). Indirect effects (e.g., visual effects) are not anticipated to diminish the integrity of the characteristics of historic properties for which they are eligible for the ARHP.

Conclusion

The Interconnect Project has been adequately surveyed for cultural resources. The private lands portion of the Interconnection Project west of Wilmot Road was the subject of previous survey and agency-reviewed mitigative data recovery work (SHPO-2000-1218; Dosh and Stull 1998, 1999; Jones 2002); the private lands portion of the Project Area where it will tie into the proposed Project Substation was surveyed with two sites found (Harrison 2005), one which could not be found in the Interconnect Project during recent inspection and one which is recommended ineligible for the ARHP/NRHP (Hesse et al. 2023); and the portion of the Interconnect Project consisting of ASLD-administered land was surveyed by SWCA with no findings, other than isolated occurrences, within the Project Area (Petersen and Hesse 2023). There are no known historic-era buildings or structures in the Study Area that are eligible for the ARHP/NRHP. The construction of the Interconnection Project would have no effect on cultural properties listed in or eligible for listing in the ARHP/NRHP.

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2013 *Preliminary Report for Cultural Resources Survey of Wilmot Rd./Andrada Rd. SEC Project Near Tucson, Pima County, Arizona*. Report No. 132014. Professional Archaeological Services and Technologies, Tucson, Arizona.

U.S. Geological Survey. 2014. Sonoran Basin and Range Ecoregion: Chapter 30 in Status and trends of land change in the Western United States--1973 to 2000. Available at https://pubs.usgs.gov/publication/pp1794A30#:~:text=The%20Sonoran%20Basin%20and%20Range,Environmental%20Protection%20Agency%2C%201997). Accessed October 2023.

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EXHIBIT F. RECREATION

As stated in the Arizona Corporation Commission Rules of Practice and Procedure R14-3-219, Exhibit 1, the intent of this exhibit is to:

> *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.*

Recreation information for the Study Area and vicinity was obtained from Pima County, the City of Tucson, the Arizona State Land Department, and the Bureau of Land Management (BLM). Currently, there are no dedicated open spaces or community parks located within the Interconnection Project. The nearest recreation area to the Interconnection Project is the Southeast Regional Park (Pima County 2023; Tucson 2013:3.94), 3 miles east of the Interconnection Project. Neither the Pima County Comprehensive Plan nor the City of Tucson General Plan identified any proposed dedicated recreation or open space areas within the Study Area (Pima County 2015; City of Tucson 2013:3.94).

Most of the land the Interconnection Project crosses is vacant Arizona State Trust Land, which is used primarily for grazing and limited recreational opportunities. Recreation such as geocaching, hiking, horseback riding, picnics, bicycling, photography, sightseeing and bird watching, overnight camping, drone usage, and off-highway vehicle riding may occur on Arizona State Trust Land with appropriate permits (Arizona State Land Department 2023). BLM land south of the Interconnection Project is on the disposal list, and there are no existing recreation areas within this parcel (Pima County 2023; BLM 2023). However, the public may access BLM land for recreational activities similar to those on Arizona State Trust Land without a permit.

The Solar Facility, Project Substation, and TEP 138 kV Cisne Switchyard, will be fenced and will not be open to the public. The majority of the Interconnection Project will not be fenced, and those facilities will be parallel to and cross public roadways. The Interconnection Project will have minimal impact to existing recreational use because there is currently limited use of the area (primarily travel along public roadways), and such access will continue to be available following construction of the Interconnection Project. Similarly, the Interconnection Project will have minimal to no impact to recreation in the Study Area or surrounding region because project implementation will not block access to recreation areas.

Literature Cited

Arizona State Land Department. 2023. Frequently Asked Questions. Available at: https://land.az.gov/faqs. Accessed September 2023.

Bureau of Land Management (BLM). 2023. National Data Viewer. Available at: https://blm-egis.maps.arcgis.com/apps/webappviewer/index.html?id=6f0da4c7931440a8a80bfe20eddd7550. Accessed September 2023.

City of Tucson. 2013. *Plan Tucson*. Available at: https://www.tucsonaz.gov/files/sharedassets/public/v/1/city-services/planning-development-services/documents/plan_tucson_complete_doc_11-13-13.pdf. Accessed September 2023.

Pima County. 2015. Southeast Planning Area: Planned Land Use. Available at: https://content.civicplus.com/api/assets/ccfbfc7c-0a5c-4f92-99c2-61bf27333353?cache=1800. Accessed September 2023.

———. 2023. PimaMaps – Main. Available at: https://pimamaps.pima.gov/HtmlPubViewer/index.html?configBase=https://pimamaps.pima.gov/Geocortex/Essentials/PublicPM/REST/sites/mainsite/viewers/mainmap/virtualdirectory/Resources/Config/Default. Accessed September 2023.

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EXHIBIT G. CONCEPTUAL DRAWINGS OF TRANSMISSION FACILITIES

As stated in the Arizona Corporation Commission Rules of Practice and Procedure R14-3-219, Exhibit 1:

> *Attach any artist's or architect's conception of the proposed plan or transmission line structures and switchyards, which applicant believes may be informative to the committee.*

Exhibit G-1 – Typical 138-kV deadend, self-supporting steel monopole

Exhibit G-2 – Typical 138-kV deadend, self-supporting steel three-pole

Exhibit G-3 – Typical 138-kV tangent, self-supporting steel monopole

Exhibit G-4 – Typical 138-kV overhead-to-underground transition structure

Exhibit G-5 – Typical H-frame structure

Exhibit G-6 – Photosimulation of Interconnection Project from KOP 1

Exhibit G-7 – Photosimulation of Interconnection Project from KOP 2

Exhibit G-8 – Photosimulation of Interconnection Project from KOP 3

Exhibit G-9 – Photosimulation of Interconnection Project from KOP 4

Exhibit G-10 – Photosimulation of Interconnection Project from KOP 5

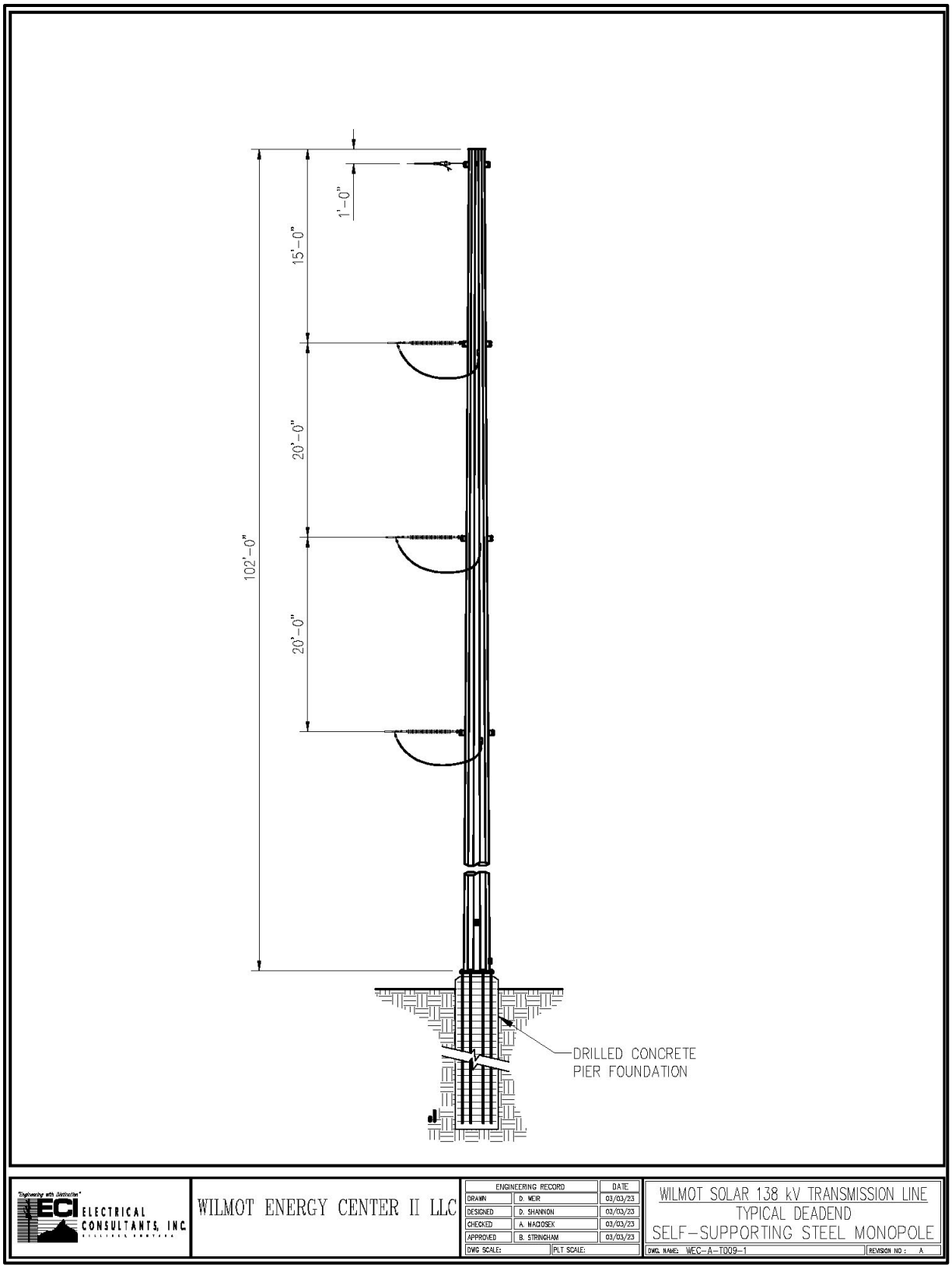


Exhibit G-1. Typical 138-kV deadend, self-supporting steel monopole.

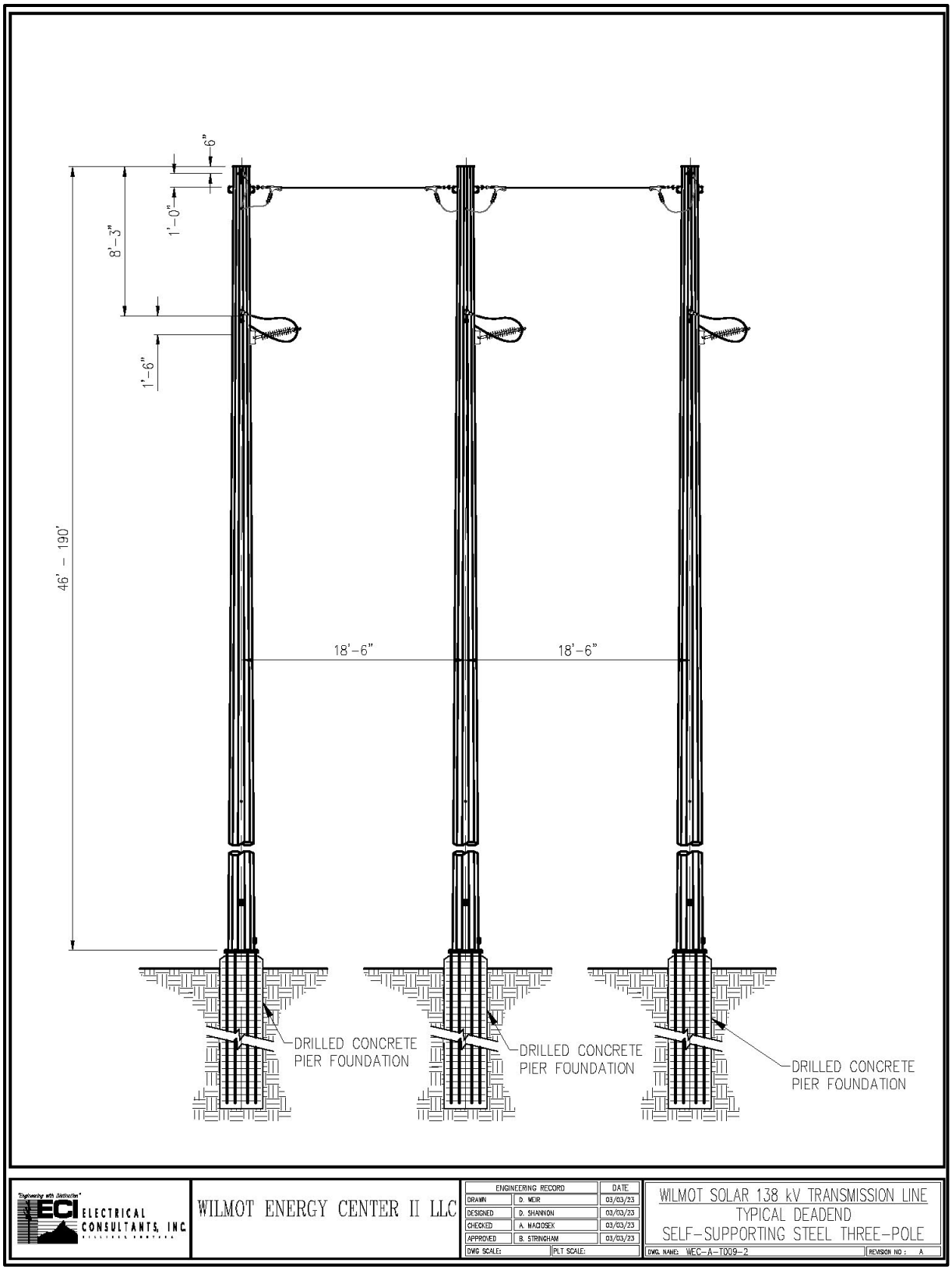


Exhibit G-2. Typical 138-kV deadend, self-supporting steel three-pole.

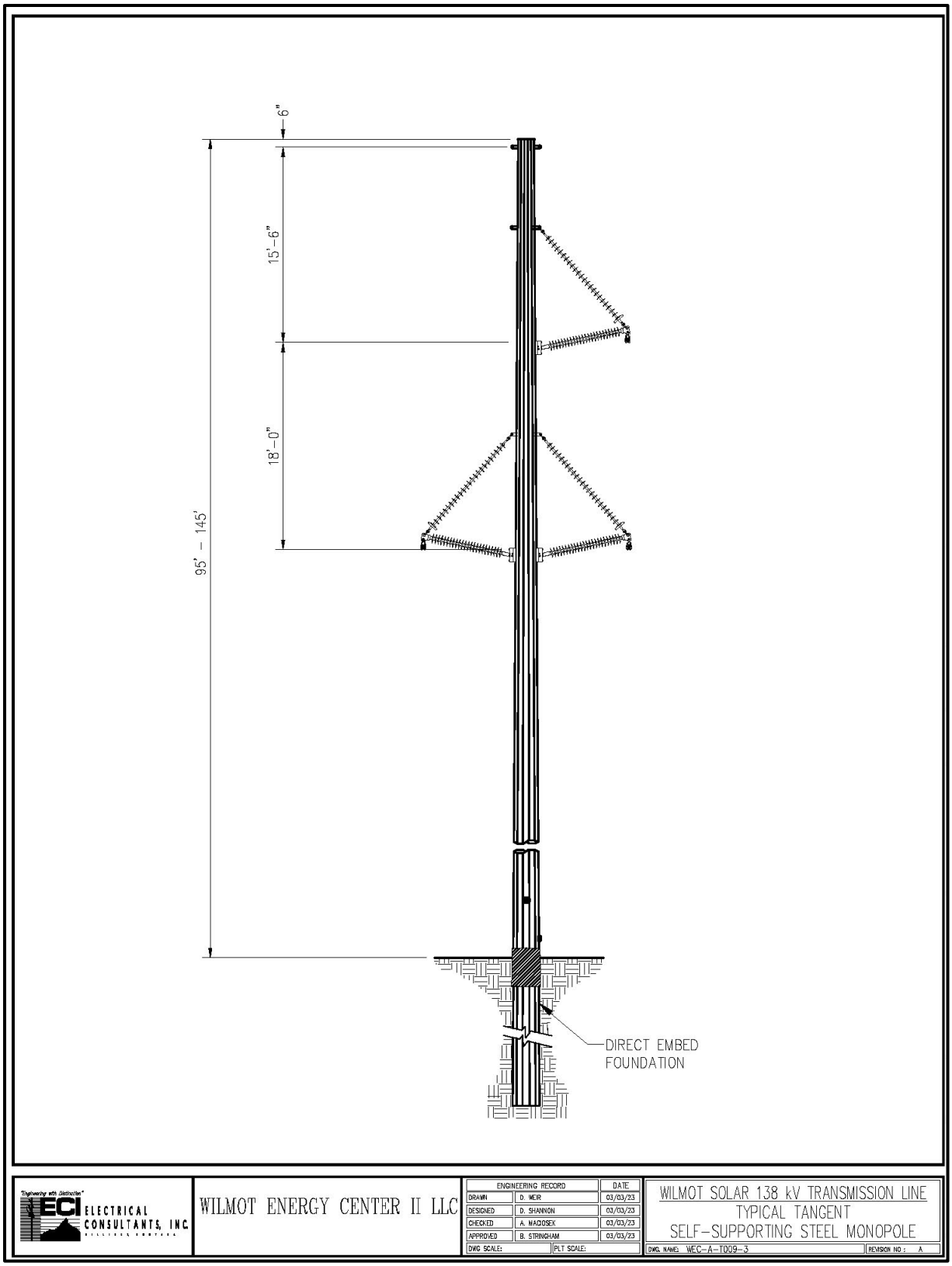


Exhibit G-3. Typical 138-kV tangent, self-supporting steel monopole.

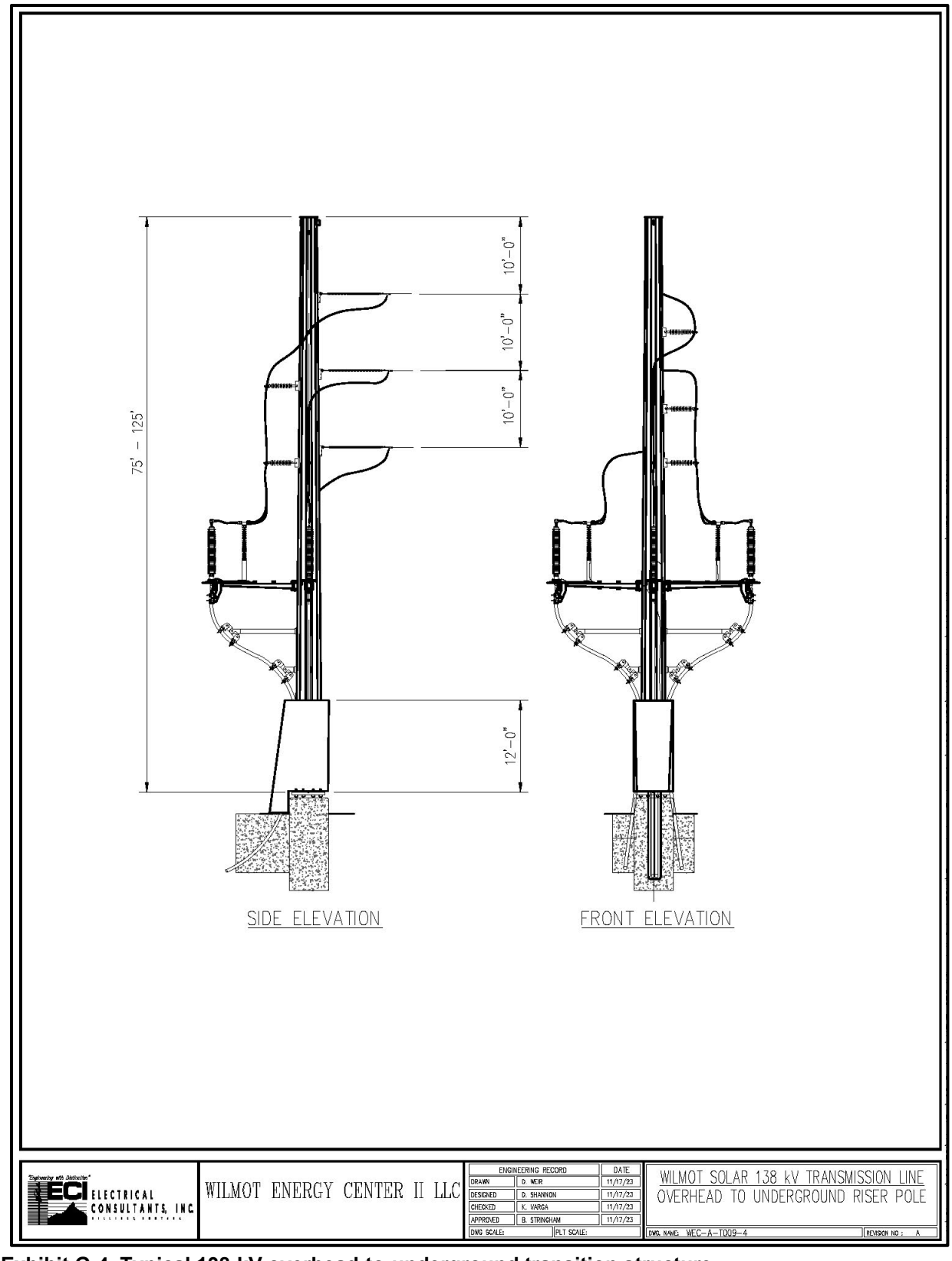


Exhibit G-4. Typical 138-kV overhead-to-underground transition structure.

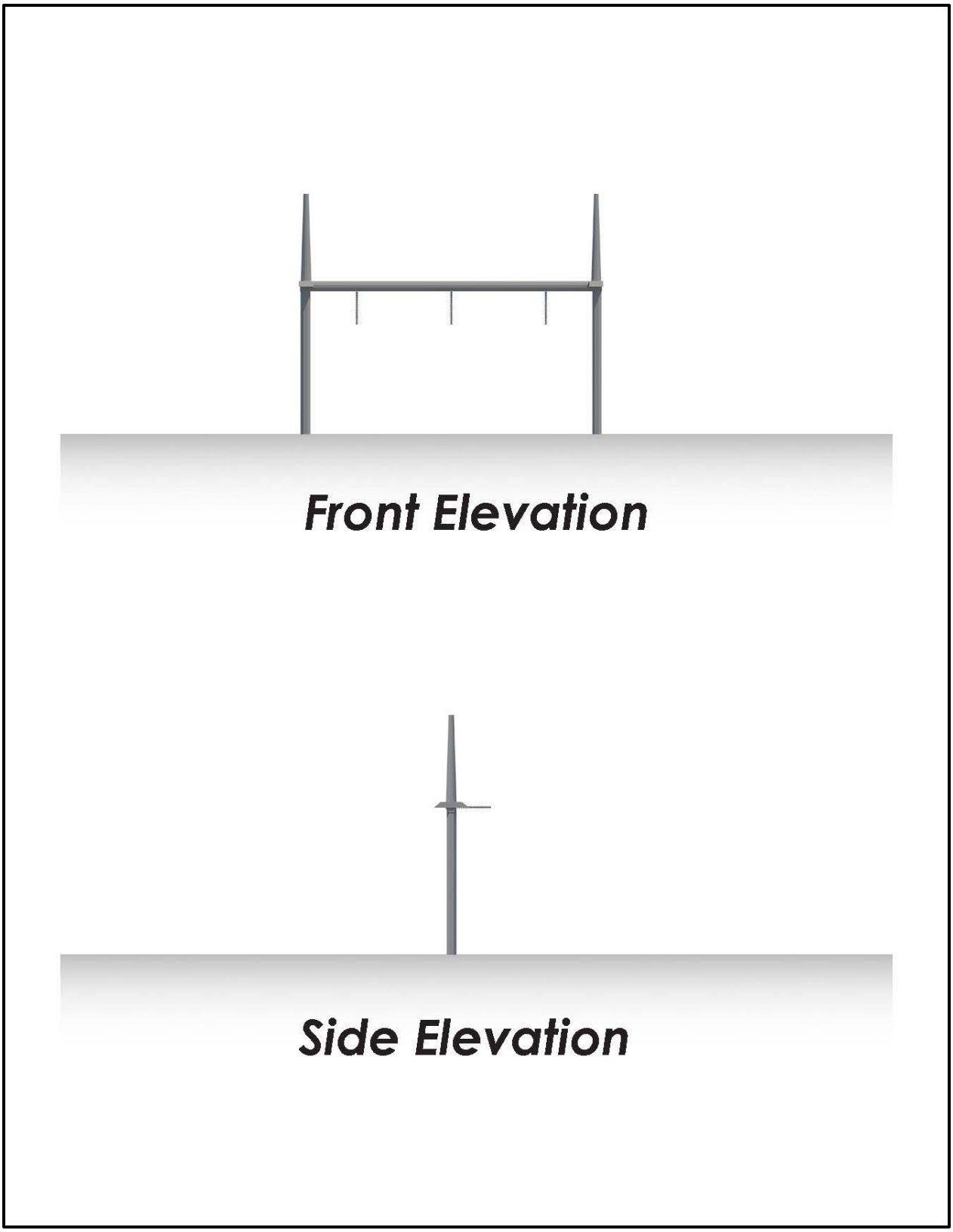


Exhibit G-5. Typical H-frame structure.

Sun and Weather

Sunny

Date: **8-29-23**

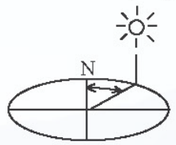
Photo Time: **9:08 am**

Visibility:

Good — Poor

Air Quality: Good

Sun Azimuth (degrees): **95.95**



Sun Angle (degrees): **27.14**

Lighting Angle on Project: **Side Lit**

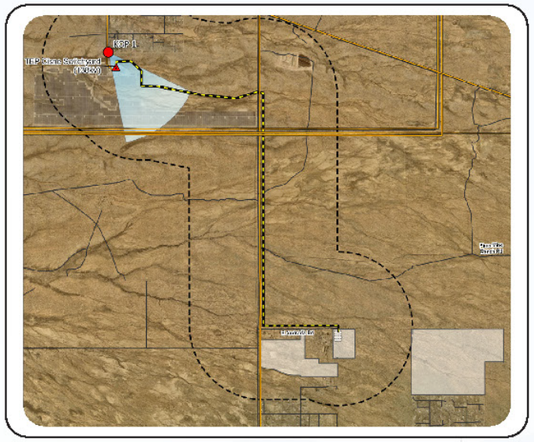
Wind: **7 mph**

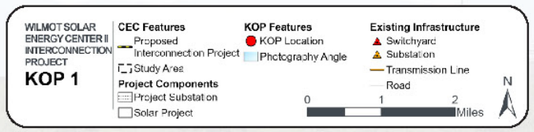
Cloud Cover: **0 %**

Temperature (°F): **89°F**

Simulation was prepared using information provided by client. Locations, colors, and heights may vary based on final engineering and design.

Wilmot Energy Center II Interconnection Project

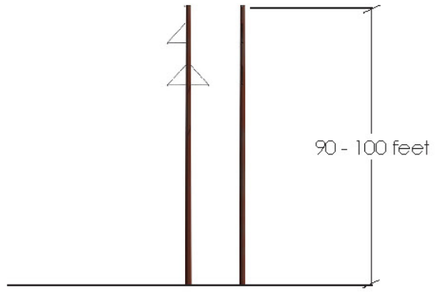




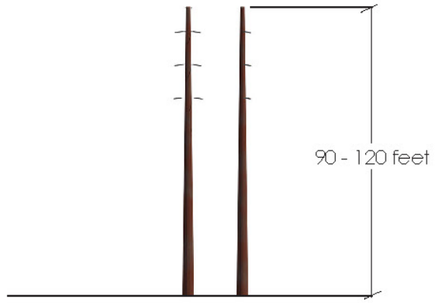
Approximate Distance to Nearest Transmission Structure: **0.17 mile**

Project Location

Tangent Structure



Turning Structure



Structure Diagram



KOP 1 - South Swan Road

Base Photographic Documentation

Latitude, Longitude (degrees): **32.04499, -110.89335**

Viewpoint Elevation (feet): **2751**

Camera Height (meters): **1.5**

Camera Heading (degrees): **145**

Camera Make & Model: **Canon EOS 5D Mark IV**

Camera Sensor Size (mm): **36 x 24 Full Frame**

Crop Factor: **1x**

Lens Make & Model: **AF-P Nikkor**

Lens Focal Length (mm): **50**

Image Size (pixels): **6720 x 4480**

Single frame simulation approximates 50mm full frame equivalent.

Viewing Instructions: Printed at 100% the resulting simulation is 16 inches wide by 10 inches high. At this size and focal length, the simulation should be viewed at arms length (24 inches). If viewed on a computer monitor, scale should be 100%.

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Exhibit G-6a. Photosimulation of Interconnection Project from KOP 1 (page 1).



Exhibit G-6b. Photosimulation of Interconnection Project from KOP 1 (page 2).



Exhibit G-6c. Photosimulation of Interconnection Project from KOP 1 (page 3).

Sun and Weather

Sunny

Date: **8-29-23**

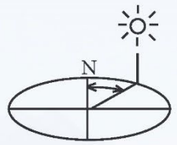
Photo Time: **10:14 am**

Visibility:

Good — Poor

Air Quality: Good

Sun Azimuth (degrees): **106.84**



Sun Angle (degrees): **41.01**

Lighting Angle on Project: **Side Lit**

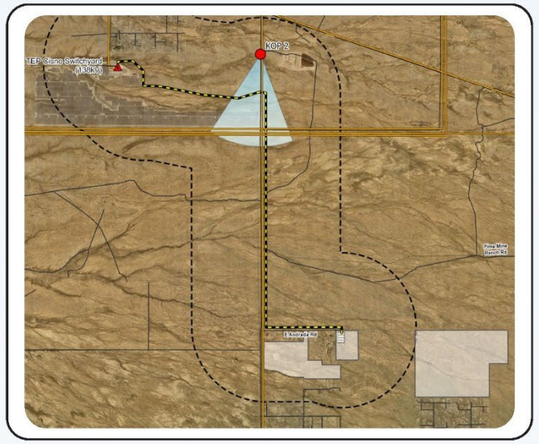
Wind: **4 mph**

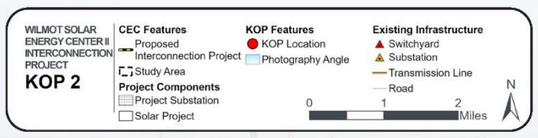
Cloud Cover: **0 %**

Temperature (°F): **94°F**

Simulation was prepared using information provided by client. Locations, colors, and heights may vary based on final engineering and design.

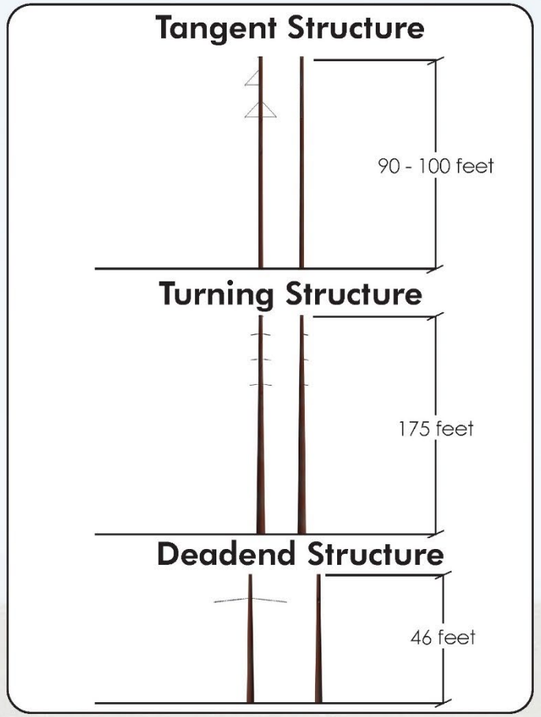
Wilmot Energy Center II Interconnection Project





Approximate Distance to Nearest Transmission Structure: **0.55 mile**

Project Location



Structure Diagram



KOP 2 - South Wilmot Road near landfill

Base Photographic Documentation

Latitude, Longitude (degrees): **32.04473, -110.85883**

Viewpoint Elevation (feet): **2840**

Camera Height (meters): **1.5**

Camera Heading (degrees): **200**

Camera Make & Model: **Canon EOS 5D Mark IV**

Camera Sensor Size (mm): **36 x 24 Full Frame**

Crop Factor: **1x**

Lens Make & Model: **AF-P Nikkor**

Lens Focal Length (mm): **50**

Image Size (pixels): **6720 x 4480**

Single frame simulation approximates 50mm full frame equivalent.

Viewing Instructions: Printed at 100% the resulting simulation is 16 inches wide by 10 inches high. At this size and focal length, the simulation should be viewed at arms length (24 inches). If viewed on a computer monitor, scale should be 100%.

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Exhibit G-7a. Photosimulation of Interconnection Project from KOP 2 (page 1).



Exhibit G-7b. Photosimulation of Interconnection Project from KOP 2 (page 2).



Exhibit G-7c. Photosimulation of Interconnection Project from KOP 2 (page 3).

Sun and Weather

Sunny

Date: **8-29-23**

Photo Time: **10:31 am**

Visibility:

Good — Poor

Air Quality: Good

Sun Azimuth (degrees): **109.96**

Sun Angle (degrees): **44.22**

Lighting Angle on Project: **Side Lit**

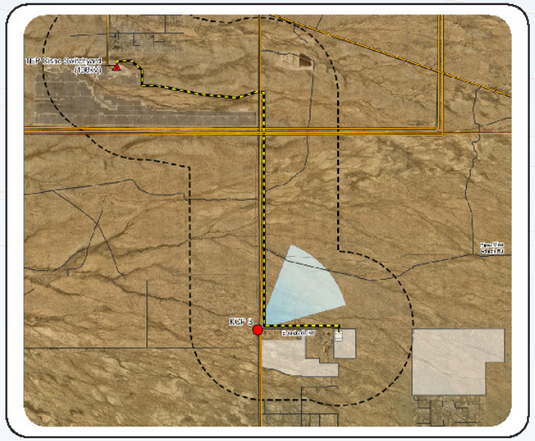
Wind: **0 mph**

Cloud Cover: **0 %**

Temperature (°F): **100°F**

Simulation was prepared using information provided by client. Locations, colors, and heights may vary based on final engineering and design.

Wilmot Energy Center II Interconnection Project



WILMOT SOLAR ENERGY CENTER II INTERCONNECTION PROJECT
KOP 3

CEC Features
Proposed Interconnect on Project
Study Area
Project Components
Project Substation
Solar Project

KOP Features
KOP Location
Photography Angle

Existing Infrastructure
Switchyard
Substation
Transmission Line
Road

0 1 2 Miles

N

Approximate Distance to Nearest Transmission Structure: **0.1 mile**

Project Location

Turning Structure



Structure Diagram



KOP 3 - Intersection of South Wilmot Road and East Andrada Road

Base Photographic Documentation

Latitude, Longitude (degrees): **31.99043, -110.85909**

Viewpoint Elevation (feet): **2858**

Camera Height (meters): **1.5**

Camera Heading (degrees): **55**

Camera Make & Model: **Canon EOS 5D Mark IV**

Camera Sensor Size (mm): **36 x 24 Full Frame**

Crop Factor: **1x**

Lens Make & Model: **AF-P Nikkor**

Lens Focal Length (mm): **50**

Image Size (pixels): **6720 x 4480**

Single frame simulation approximates 50mm full frame equivalent.

Viewing Instructions: Printed at 100% the resulting simulation is 16 inches wide by 10 inches high. At this size and focal length, the simulation should be viewed at arms length (24 inches). If viewed on a computer monitor, scale should be 100%.

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Exhibit G-8a. Photosimulation of Interconnection Project from KOP 3 (page 1).



Exhibit G-8b. Photosimulation of Interconnection Project from KOP 3 (page 2).



Exhibit G-8c. Photosimulation of Interconnection Project from KOP 3 (page 3).

Sun and Weather

Partly Cloudy

Date: **8-29-23**

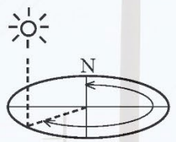
Photo Time: **2:10 pm**

Visibility:

Good — Poor

Air Quality: Good

Sun Azimuth (degrees): **208.52**



Sun Angle (degrees): **64.67**

Lighting Angle on Project: **Side Lit**

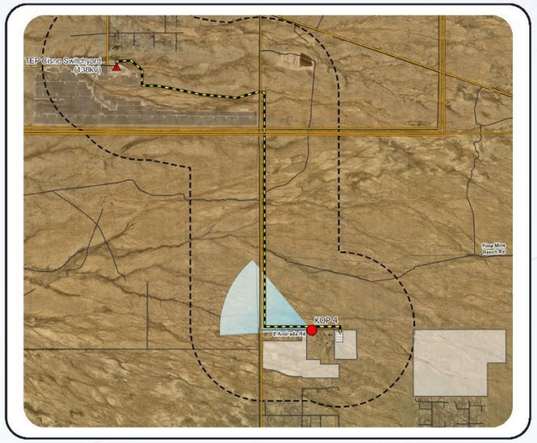
Wind: **6 mph**

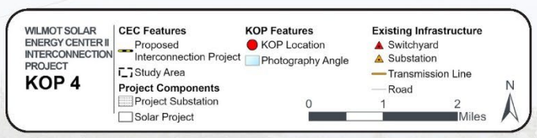
Cloud Cover: **15 %**

Temperature (°F): **109°F**

Simulation was prepared using information provided by client. Locations, colors, and heights may vary based on final engineering and design.

Wilmot Energy Center II Interconnection Project

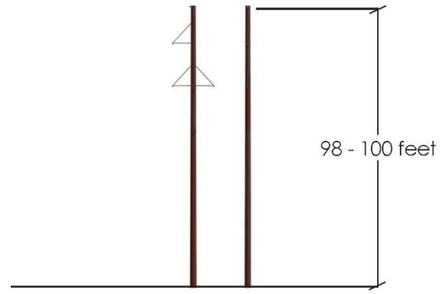




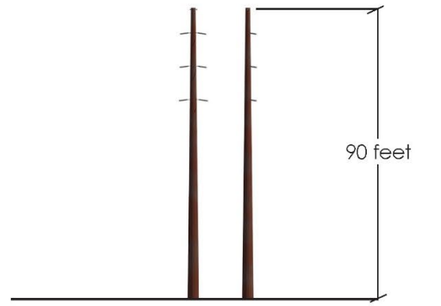
Approximate Distance to Nearest Transmission Structure: **0.15 mile**

Project Location

Tangent Structure



Turning Structure



Structure Diagram



KOP 4 - East Andrada Road Residence

Base Photographic Documentation

Latitude, Longitude (degrees): **31.99058, -110.8469**

Viewpoint Elevation (feet): **2899**

Camera Height (meters): **1.5**

Camera Heading (degrees): **290**

Camera Make & Model: **Canon EOS 5D Mark IV**

Camera Sensor Size (mm): **36 x 24 Full Frame**

Crop Factor: **1x**

Lens Make & Model: **AF-P Nikkor**

Lens Focal Length (mm): **50**

Image Size (pixels): **6720 x 4480**

Single frame simulation approximates 50mm full frame equivalent.

Viewing Instructions: Printed at 100% the resulting simulation is 16 inches wide by 10 inches high. At this size and focal length, the simulation should be viewed at arms length (24 inches). If viewed on a computer monitor, scale should be 100%.

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Exhibit G-9a. Photosimulation of Interconnection Project from KOP 4 (page 1).



Exhibit G-9b. Photosimulation of Interconnection Project from KOP 4 (page 2).



Exhibit G-9c. Photosimulation of Interconnection Project from KOP 4 (page 3).

Sun and Weather

Sunny

Date: **8-29-23**

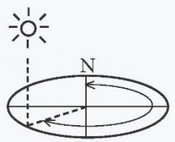
Photo Time: **1:28 pm**

Visibility:

Good — Poor

Air Quality: Good

Sun Azimuth (degrees): **173.51**



Sun Angle (degrees): **67.11**

Lighting Angle on Project: **Side Lit**

Wind: **0 mph**

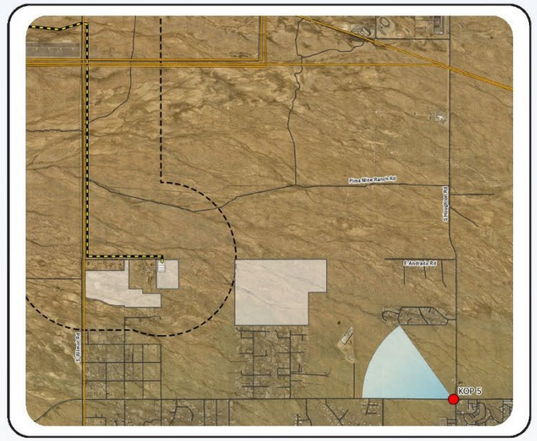
Cloud Cover: **0 %**

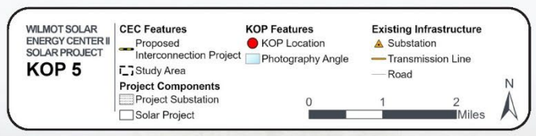
Temperature (°F): **105°F**

Solar panels are represented at full tilt (60 degrees) facing west to reflect PM conditions.

Simulation was prepared using information provided by client. Locations, colors, and heights may vary based on final engineering and design.

Wilmot Energy Center II Interconnection Project

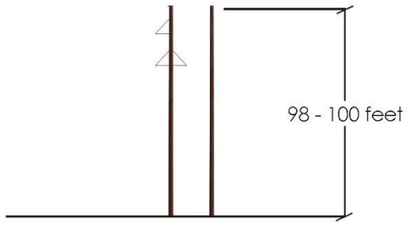




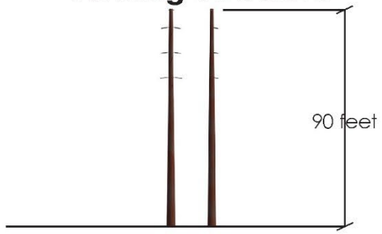
Approximate Distance to Nearest Transmission Structure: **2.6 miles**

Project Location

Tangent Structure



Turning Structure



Solar Panel

Structure Diagram



KOP 5 - Intersection of Sahuarita Road and South Houghton Road

Base Photographic Documentation

Latitude, Longitude (degrees): **31.96289, -110.77342**

Viewpoint Elevation (feet): **3310**

Camera Height (meters): **1.5**

Camera Heading (degrees): **290**

Camera Make & Model: **Canon EOS 5D Mark IV**

Camera Sensor Size (mm): **36 x 24 Full Frame**

Crop Factor: **1x**

Lens Make & Model: **AF-P Nikkor**

Lens Focal Length (mm): **50**

Image Size (pixels): **6720 x 4480**

Single frame simulation approximates 50mm full frame equivalent.

Viewing Instructions: Printed at 100% the resulting simulation is 16 inches wide by 10 inches high. At this size and focal length, the simulation should be viewed at arms length (24 inches). If viewed on a computer monitor, scale should be 100%.

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Exhibit G-10a. Photosimulation of Interconnection Project from KOP 5 (page 1).



Exhibit G-10b. Photosimulation of Interconnection Project from KOP 5 (page 2).



Exhibit G-10c. Photosimulation of Interconnection Project from KOP 5 (page 3).

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EXHIBIT H. EXISTING PLANS

As stated in the Arizona Corporation Commission Rules of Practice and Procedure R14-3-219, Exhibit 1:

> *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.*

Overview

Existing and future land uses are discussed in Exhibit B and mapped in Exhibits A-2 and A-3. To identify the existing plans of state and local governments, as well as private entities, the Applicant mailed a letter requesting information on planned developments within the vicinity of the Interconnection Project to key contacts for relevant jurisdictional entities and agency contacts. In addition, the Applicant reviewed publicly available information regarding existing plans of private entities for developments in the vicinity of the Interconnection Project. Overall, no existing plans for planned developments were identified that would be incompatible with the proposed Interconnection Project.

Outreach Letters

On September 29, 2023, the Applicant mailed letters to a broad group of stakeholders (listed in Table H-1) to provide information about the Interconnection Project and request new or additional information on planned developments within the Study Area. Exhibit H-1 includes a copy of the "Exhibit H letter."

Table H-1. Entities That Received Letters with Project Information

Contact Name	Title	Agency/Organization
Roderick (Rod) Lane	District Engineer, Southcentral District	Arizona Department of Transportation
Jeremy Moore	Assistant District Engineer	Arizona Department of Transportation
Douglas Moseke	Assistant District Engineer	Arizona Department of Transportation
Ginger Ritter	Project Evaluation Supervisor	Arizona Game and Fish Department
Tiffany Sprague	Project Evaluation Program Specialist	Arizona Game and Fish Department
Ruben Ojeda	Section Manager, Rights-of-Way Section	Arizona State Land Department
Lisa Atkins	Commissioner	Arizona State Land Department
Thomas Buschatzke	Director, Arizona Department of Water Resources	Arizona Department of Water Resources
Carla Blackwell	Director	Pima County Development Services
Jan Lesher	Pima County Administrator	Pima County
Suzanne Shields	Director and Chief Engineer	Pima County Regional Flood Control District
Rex Scott	Vice Chair	Pima County Board of Supervisors, District 1
Dr. Matt Heinz	Supervisor	Pima County Board of Supervisors, District 2
Sharon Bronson	Supervisor	Maricopa County Board of Supervisors, District 3
Steve Christy	Supervisor	Pima County Board of Supervisors, District 4
Adelita Grijalva	Board Chair	Pima County Board of Supervisors, District 5
Kathryn Skinner, P.E.	Transportation Director, County Engineer	Pima County
Michael Ortega	City Manager	City of Tucson
Kristina Swallow	Planning and Development Services Director	City of Tucson
Samuel Credio, P.E.	Director of Transportation and Mobility	City of Tucson
Jason Spitzkoff	Manager, Transmission Engineering	Arizona Public Service
Eduardo Uribe	Electrical Engineer	Western Area Power Administration, Desert Southwest Region
Sean Berry	Environmental Manager	Western Area Power Administration, Desert Southwest Region
Josh Robertson	Director of Regulatory Policy	Salt River Project
Anna M. Garcia	Project Manager	Tucson Electric Power
Brian Pugh	TEP Supervisor of Environmental & Land Use Planning	Tucson Electric Power
		TRICO Energy Cooperative
Raymond Suazo	State Director, Arizona State Office	Bureau of Land Management
Colleen Dingman	Field Manager, Tucson Field Office	Bureau of Land Management

In response to the September 29, 2023, "Exhibit H letter," the Arizona State Land Department (ASLD) provided a general reply via email; the ASLD reply did not identify any other known plans for development (see Exhibit H2). In its reply, ASLD noted that it does not have any issue with the Interconnection Project so long as it follows existing infrastructure and does not create a severance (i.e., the term severance is

understood to mean adding infrastructure where it would bisect a section of State Trust land, making it less developable or useable for other purposes). The ASLD reply also included basic information about its right-of-way application process.

The Arizona Game and Fish Department (AGFD) provided a comment letter containing recommendations for minimizing and mitigating potential environmental impacts – predominantly related to the Solar Facility; the AGFD letter does not identify any other known plans for development (see Exhibit H-3).

Pima County provided a comment letter containing input from the Regional Flood Control District and the Transportation Department (see Exhibit H-4). The Regional Flood Control District did not identify known plans for development. Comments from the Regional Flood Control District focused on Pima County requirements related to project infrastructure encroaching on regulated floodplains and regulated riparian habitat and the potential need for a floodplain use permit (the Applicant will obtain a floodplain use permit if the Interconnection Project encroaches into a regulated floodplain).

Pima County Transportation Department identified the following transportation projects in the general area of the Interconnection Project. As noted below, none of the transportation projects that Pima County identified have started design work or have planned construction dates.

- Wilmot Road: Planned future widening from 2 lanes to 4 lanes from Sahuarita Road to I-10. No design or construction date yet identified.
- Sonoran Corridor: Planned limited access roadway between I-19 and I-10, generally following the Alvernon Way alignment from Sahuarita Road north to the Old Vail Connection Road alignment. ADOT project. No design or construction date yet identified.
- Andrada Road: Planned extension from Houghton Road to the west approximately 1 mile. No design or construction date yet identified.
- Swan Road: Planned improvements to South Swan Road from Los Reales south to the roadway terminus. No design or construction date yet identified.

Existing Plans for Other Developments

Only one existing plan for other developments was identified within 1 mile of the gen-tie corridor.

Phantom Space Rezone

Phantom Space Corporation applied for a rezone from the City of Tucson for a proposed spacecraft vehicle testing and launching facility on a 640-acre property located at the northwest corner of Wilmot Road and Pima Mine Road, on the west side of Wilmot Road.

The Tucson Zoning Examiner held a public hearing for the project on February 9, 2023 (TP-ENT-1222-00006) and approved the rezone on a 160-acre area within the property to construct two buildings (a work tent and control center) and a hot-fire test pad with a 1,250-square-foot-radius safety zone. Static hot-fire tests for rockets are planned to occur Monday–Friday, 8 a.m. to 7 p.m. During this hearing, representatives from Phantom Space Corporation indicated they were in the process of leasing this land from the City of Tucson, although the lease had not been executed at the time of the hearing.

September 29, 2023

Carla Blackwell
Director, Development Services
Pima County
201 N Stone Avenue
Tucson, AZ 85701

Re: Wilmot Energy Center II Interconnection Project

Dear Carla Blackwell:

Wilmot Energy Center II, LLC, a wholly owned subsidiary of NextEra Energy Resources, plans to file an application for a Certificate of Environmental Compatibility (CEC) for the Wilmot Energy Center II Interconnection Project (Interconnection Project) with the Arizona Power Plant and Transmission Line Siting Committee (Line Siting Committee) in December 2023. The Interconnection Project involves a new approximately 6.6-mile-long, 138kV electrical generation-tie transmission line. The Interconnection Project would connect the planned Wilmot II Solar Project, an approximately 100 MW photovoltaic solar generating facility, to the regional electric grid through Tucson Electric Power's existing 138kV Cisne Switchyard. Further information about the project is available at: https://www.nexteraenergyresources.com/wilmot-energy-center.html

Wilmot Energy Center II, LLC is working with SWCA Environmental Consultants (SWCA) to prepare environmental studies for the Interconnection Project's CEC application. A map of the proposed route for the Interconnection Project is enclosed on the following page. The Line Siting Committee will evaluate the CEC application at a public hearing in early 2024.

Arizona Administrative Code Rule R14-3-219 requires that CEC applications include an exhibit that identifies "*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.*"

This letter is an opportunity for your organization to provide any information or comments regarding development plans for inclusion in the CEC application. We respectfully request your response in writing; specifically, please advise us of any relevant existing or future development plans that you can identify at this time.

For Wilmot Energy Center II, LLC to include your information in the CEC application, please forward your written comments to SWCA by October 20, 2023, via email at Dean.Hazle@swca.com, or by physical mail: Attn: Dean Hazle, SWCA Environmental Consultants, 1645 South Plaza Way, Flagstaff, AZ 86001.

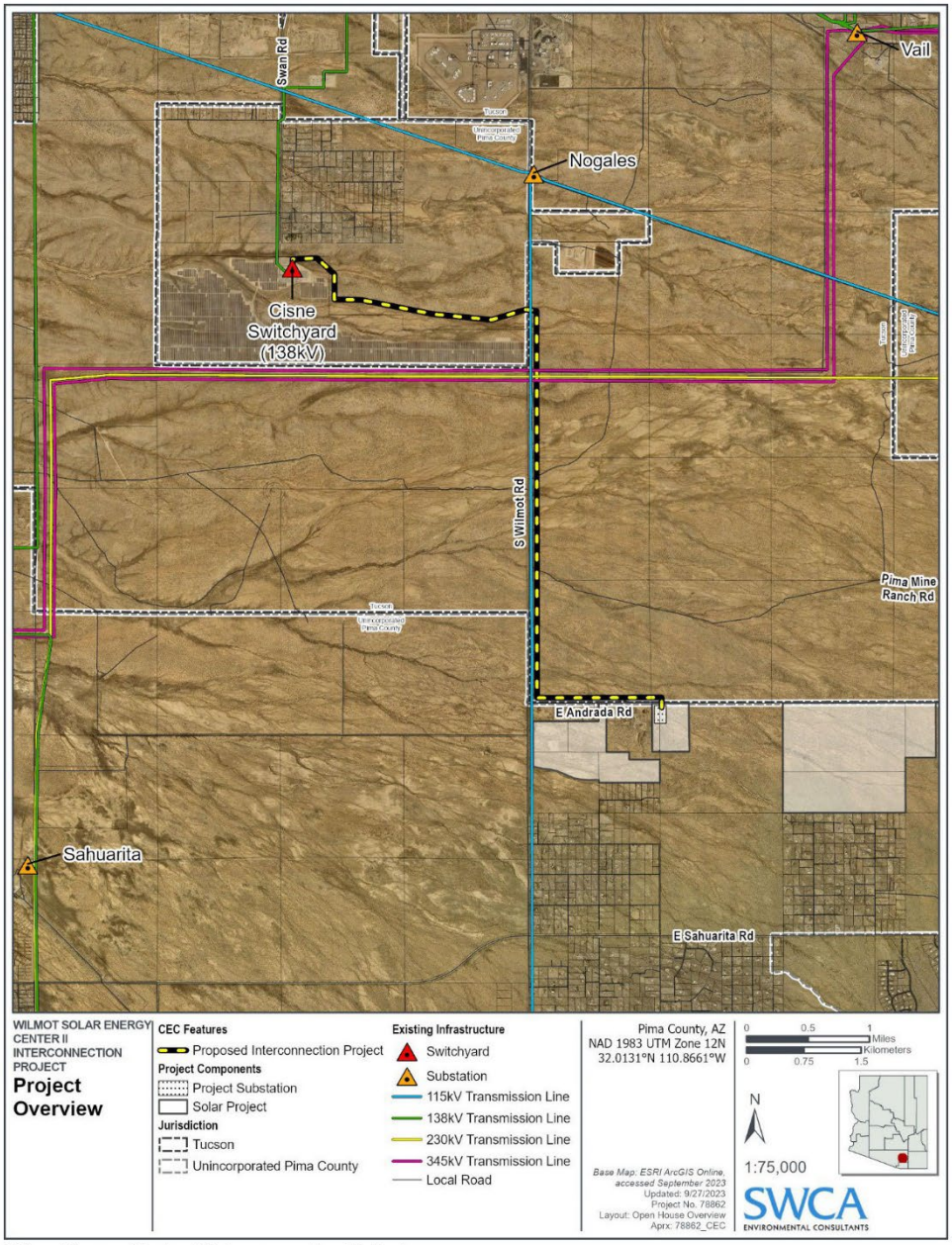
Thank you for your cooperation.

Respectfully,

Dean G. Hazle

Dean Hazle, Environmental Project Manager
SWCA Environmental Consultants
C: Alex Simons and Stephanie Rush, Wilmot Energy Center II, LLC

Exhibit H-1a. Example September 2023 Exhibit H Letter.



Wilmot Energy Center II Interconnection Project

Exhibit H-1b. Example February 2023 Exhibit H letter (continued).

From: Taylor Suiter
To: Dean Hazle
Subject: ASLD Comments / Wilmot Energy Center II Interconnection Project
Date: Wednesday, October 4, 2023 4:25:23 PM
Attachments: 20231003153155941.pdf

Hi Dean,

We received the attached correspondence regarding a future project for a gen-tie line on State Trust Land.

The only comments that ASLD will make, is to make sure you follow the existing infrastructure and power line corridor that is currently in the area. As long as existing infrastructure is followed and a severance isnt created, we see no issues with the proposed line. Feel free to submit your application when ready and we will work with you.

The ROW application filing process is done via our website: here. Please be advised that a non-refundable application fee of $500.00 will be required when filing the application.

After the application is received, it will be reviewed on its merits and if accepted for processing, may require the following due diligence studies: cultural resource survey, native plant survey, and appraisal report. Please do not engage to have any of these due diligence activities performed without direction or approval from the Land Department. Additionally, if accepted, a registered legal survey and exhibit will be required. We will advise when the survey and exhibit are needed. The costs of the surveys listed above are to be borne by the applicant.

Based on the agency's current resources of staff and workload, I would expect this application to take 6-9 months to process. I hope this answers some of your questions and helps you get started with the application process. Please let me know if you have any additional questions.

Thank you,
Taylor

Taylor Suiter | Administrative Assistant III
Rights of Way Section
Arizona State Land Department
1110 W. Washington Street, Phoenix, AZ 85007
O: 602-542-4454 | tsuiter@azland.gov

Exhibit H-2. October 2023 ASLD comment.

October 20, 2023

Ms. Stephanie Rush
NextEra Energy Resources, LLC
% SWCA Environmental Consultants
1645 South Plaza Way
Flagstaff, Arizona 86001

Electronically submitted to WilmotEnergyCenter@nexteraenergy.com, Dean.Hazle@swca.com

RE: Wilmot Energy Center II Solar and Interconnection Project

Dear Ms. Rush:

The Arizona Game and Fish Department (Department) appreciates the opportunity to review the proposed Wilmot Energy Center II Solar and Interconnection Project and the information provided during the meeting on July 19, 2023. The Department understands that NextEra Energy Resources, LLC (NextEra) proposes to construct a 100 MW photovoltaic (PV) solar facility with a battery energy storage system (BESS) and associated infrastructure on approximately 1,000 acres of private land south of Tucson in Pima County, Arizona. A 138kV generation intertie (gen-tie) transmission line would traverse Arizona State Land Department lands to connect the facility to the Cisne Switchyard. The facility will be located in primarily undeveloped desertscrub habitat.

Under Title 17 of the Arizona Revised Statutes, the Department, by and through the Arizona Game and Fish Commission, has jurisdictional authority and public trust responsibilities to conserve and protect the state fish and wildlife resources. In addition, the Department manages threatened and endangered species through authorities of Section 6 of the Endangered Species Act and the Department's Section 10(a)(1)(A) permit. It is the mission of the Department to conserve and protect Arizona's diverse fish and wildlife resources and manage for safe, compatible outdoor recreation opportunities for current and future generations.

The Department recognizes the importance of planning efforts to develop renewable energy locations that contribute to regional and state economic growth needs and would like to work closely with NextEra and SWCA Environmental Consultants (SWCA) during the planning and development of this facility. The Department recognizes that appropriate coordination, proper planning, and voluntary implementation of best management practices allow projects to be developed that avoid, minimize, or offset potential impacts to wildlife and recreational access during development and operation of the facilities. For your consideration, the Department

azgfd.gov | 602.942.3000
5000 W. CAREFREE HIGHWAY, PHOENIX AZ 85086
GOVERNOR: KATIE HOBBS COMMISSIONERS: CHAIRMAN TODD G. GEILER, PRESCOTT | CLAY HERNANDEZ, TUCSON | MARSHA PETRIE SUE, SCOTTSDALE
JEFF BUCHANAN, PATAGONIA | JAMES E. GOUGHNOUR, PAYSON DIRECTOR: TY E. GRAY DEPUTY DIRECTOR: TOM P. FINLEY

Exhibit H-3a. October 2023 AGFD comment.

provides the following comments based on the agency's statutory authorities, public trust responsibilities, and special expertise related to wildlife resources and recreation.

Arizona has recently seen an increase in the number of proposed and in-development renewable energy generation projects and associated infrastructure. A number of solar projects have been built or proposed within the vicinity of this project. Although each of these projects individually may have a minimal impact on the broader landscape, these projects cumulatively could result in loss of habitat, impact wildlife movements, and affect wildlife-related recreation. Additionally, long-term effects to wildlife can extend several kilometers beyond the footprint of a solar project area (Sawyer et al. 2022[1]). It is important to consider all potential cumulative effects and to evaluate this project in association with other projects in the area. Department staff are available to assist in identifying potential cumulative impacts to wildlife and associated voluntary conservation measures that can be implemented for the project.

The Department appreciates that incidental species observations have been documented during native plant surveys conducted in the project area. As discussed during the July 2023 meeting, the Department recommends also conducting wildlife surveys of sufficient duration and intensity to adequately assess all habitat types and potential wildlife species occurrence in and adjacent to the project area. Department staff are available to assist NextEra and SWCA in determining appropriate surveys to conduct and design features and best management practices that can help minimize potential impacts. Based on the information provided, the Department offers the following recommendations to reduce potential impacts to wildlife and habitat; additional information can be found in *Guidelines for Solar Development in Arizona*[2]:

- The Sonoran desert tortoise, which is a federal and state species of special concern, has the potential to occur in the project area. As discussed, the Department recommends conducting surveys, in accordance with the *Desert Tortoise Survey Guidelines for Environmental Consultants*[3], to determine the presence of this species or its habitat. If tortoises are identified, please refer to and implement the *Recommended Standard Mitigation Measures for Projects in Sonoran Desert Tortoise Habitat*[4] and *Guidelines for Handling Sonoran Desert Tortoises Encountered on Development Projects*[5].
- The western burrowing owl, a special status species that is regulated under the Migratory Bird Treaty Act (MBTA), has the potential to occur in the project area. The Department recommends conducting occupancy surveys for this species in advance of the design phase to understand distribution of burrowing owls in the project site; avoidance of a large burrowing owl population may be advisable over removal or other conservation measures. Guidelines for conducting this survey are found in *Burrowing Owl Project Clearance Guidance for Landowners*[6]. Please note that the survey should be conducted

[1] https://esajournals.onlinelibrary.wiley.com/doi/10.1002/fee.2498
[2] https://s3.amazonaws.com/azgfd-portal-wordpress/PortalImages/files/wildlife/planningFor/wildlifeFriendlyGuidelines/FinalSolarGuidelines03122010.pdf
[3] https://s3.amazonaws.com/azgfd-portal-wordpress/PortalImages/files/wildlife/2010SurveyguidelinesForConsultants.pdf
[4] https://s3.amazonaws.com/azgfd-portal-wordpress/PortalImages/files/wildlife/MitigationMeasures.pdf
[5] https://s3.amazonaws.com/azgfd-portal-wordpress/PortalImages/files/wildlife/2014%20Tortoise%20handling%20guidelines.pdf
[6] https://s3.amazonaws.com/azgfd-portal-wordpress/PortalImages/files/wildlife/nongame/eagles/BurrowingOwlClearanceProtocol_2009.pdf

Exhibit H-3b. October 2023 AGFD comment.

by a surveyor who is certified by the Department or has similar training and qualifications. If an active burrowing owl burrow is detected, please contact the Department and the U.S. Fish and Wildlife Service[7] (USFWS) for direction, in accordance with the guidelines.

- Large-scale solar PV facilities can result in bird mortality due to habitat loss, collision with panels, attraction due to an optical illusion of water, and unknown causes (Kosciuch et al. 2020[8]). The Department recommends conducting avian surveys during the planning stage in order to better understand species presence and to inform potential conservation measures. Point counts are the preferred method for breeding bird surveys. These surveys are conducted twice a year during the peak breeding season, which is mid-January through June in this area; McLaren et al. (2019)[9] outline protocols.
- The Department appreciates that pre-construction surveys will occur for avian species that are regulated under the MBTA. If it is anticipated the project will not be in compliance with MBTA, the Department recommends contacting the USFWS for technical assistance.
- Burrowing mammals could occur within the project area and could be influenced by construction activities and by loss of habitat. Surveys for these species are recommended to determine their presence and to inform pre-construction activities. Department staff are available to assist in identifying suitable conservation measures, such as one-way exclosures on burrows that allow wildlife to exit the burrows and disperse to adjacent lands in advance of construction.
- A variety of other Arizona Species of Greatest Conservation Need (SGCN) have the potential to occur within the project area. If wildlife are encountered during project activities, the Department recommends moving them out of harm's way, no more than 0.25 mile outside the project boundary within similar habitat. Please note that the Arizona State Wildlife Action Plan was recently updated, and the Department has an interactive website, Arizona Wildlife Conservation Strategy[10], that includes the most recent list of SGCN to help navigate and identify conservation opportunities.

Maintaining habitat connectivity is a priority for the Department, and wildlife movement corridors are important for wildlife to respond to changing environmental conditions. The landscape in which this project is proposed provides important movement pathways for wildlife. As discussed, the Department would like to work with NextEra and SWCA on opportunities to incorporate wildlife connectivity into the project design, including the following:

- The project area includes a number of ephemeral washes, which have been identified through a county stakeholder process as important for wildlife movement. The Department recommends maintaining these ephemeral washes in their natural state without fencing or other barriers to wildlife movement. These washes serve multiple functions in the ecosystem, including being landscape-level conveyance corridors for wildlife movement.

[7] https://www.fws.gov/office/arizona-ecological-services/contact-us
[8] https://journals.plos.org/plosone/article?id=10.1371/journal.pone.0232034
[9] https://www.birdconservancy.org/wp-content/uploads/2021/03/2020-Field-Protocol-for-Spatially-Balanced-Sampling.pdf
[10] https://awcs.azgfd.com

Exhibit H-3c. October 2023 AGFD comment.

- The Department recommends conducting minimal grading in the project area and, to the extent possible, retaining habitat features underneath the panels, including vegetation and soils. The topography in the majority of the site is flat and would require minimal trimming of shrubs and existing vegetation to install the panels. Keeping the existing soil and root structures intact would serve to minimize erosional run-off and help reduce biodiversity loss within the site (Grodsky and Hernandez 2020[11]).
- The Department's *Wildlife Compatible Fencing Guidelines*[12] provide information on how fencing impacts wildlife, ways to design fencing to prevent wildlife entanglement and impalement, and to ensure wildlife movement is not restricted. Department personnel are available as resources to help determine appropriate fencing design and layout that will achieve its objective while reducing impact on wildlife, such as leaving a 6–8-inch gap between the ground surface and bottom of the fence to allow for smaller wildlife species to move freely through the area and make use of any habitat within the project boundary.
- The Department appreciates that riparian habitats in the project area will be excluded from development and will remain unfenced. The Department recognizes riparian habitats as areas of environmental importance to wildlife and encourages management practices that maintain current riparian areas to provide for no net loss of habitat. The Department recommends buffering these areas from development infrastructure to maintain wildlife access and connectivity and is available to assist in determining appropriate setbacks and other measures to protect these areas.

Finally, the Department offers the following general recommendations to reduce potential impacts to wildlife and habitat during construction and operation of the facility:

- To minimize the potential introduction or spread of exotic invasive species, including aquatic and terrestrial plants, animals, insects, and pathogens, the Department encourages taking precautions to wash and/or decontaminate equipment before entering and leaving the site. See the Arizona Department of Agriculture website[13] for a list of prohibited and restricted noxious weeds and the Arizona Native Plant Society[14] for recommendations on how to control them. To view a list of documented invasive species or to report invasive species in or near the project area, visit iMapInvasives[15], which is a national cloud-based application for tracking and managing invasive species.
- If trenching or digging of large holes is necessary, the Department recommends trenching/digging and backfilling crews be close together to minimize the amount of open holes at any given time. Where trenches or holes cannot be back-filled immediately, the Department recommends escape ramps be constructed in each hole and at least every 90 meters in trenches. Escape ramps can be short lateral trenches or wooden planks sloping to the surface. The Department recommends that slopes be less than 45 degrees (1:1) and trenches and holes that have been left open be inspected to remove animals prior to backfilling.

[11] https://www.nature.com/articles/s41893-020-0574-x
[12] https://s3.amazonaws.com/azgfd-portal-wordpress/PortalImages/files/wildlife/planningFor/wildlifeFriendlyGuidelines/110125_AGFD_fencing_guidelines.pdf
[13] https://agriculture.az.gov/pestspest-control/agriculture-pests/noxious-weeds
[14] https://aznps.com/invas
[15] https://imap.natureserve.org/imap/services/page/map.html

Exhibit H-3d. October 2023 AGFD comment.

- The Department encourages the use of non-reflective coatings on the solar panels, which can reduce the appearance of the array as a body of water and reduce the attraction of birds to the site.
- The Department recommends following standards established by the Avian Power Line Interaction Committee (APLIC) for new powerlines, which can be found in *Suggested Practices for Avian Protection on Power Lines: The State of the Art in 2006*[16] and *Reduced Avian Collisions with Power Lines: The State of the Art in 2012*[17]. Birds of prey, such as raptors, owls, vultures, and eagles, are vulnerable to powerline strikes and electrocution during construction and operation of transmission lines; power poles can also serve as perches for birds of prey. Tuk Jacobson, the Department's Raptor Coordinator, can provide further information on specific design features and best management practices; he can be contacted at raptors@azgfd.gov or 623-236-7575.
- The Department 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.
- Artificial lighting could impair the ability of nocturnal animals to navigate (e.g., owls, migratory birds, bats, and other nocturnal mammals) and may affect wildlife behavior and populations (Davies et. al. 2013[18]). The Department recommends using only the minimum amount of light needed for safety. If feasible, narrow spectrum lighting is wildlife-friendly and should be used as often as possible to minimize the number of species affected by lighting. It is also beneficial that all lighting is shielded, canted, or cut to minimize the amount of upward shining light.

Thank you for the opportunity to provide input on the Wilmot Energy Center II Solar and Interconnection Project. For further coordination, please contact Tiffany Sprague at tsprague@azgfd.gov or 623-236-7222.

Sincerely,

Luke Thompson
Habitat, Evaluation, and Lands Branch Chief

cc: Ginger Ritter – Project Evaluation Program Supervisor
Raul Vega – Regional Supervisor, Region V
Laura Paulson – Habitat, Evaluation, and Lands Program Manager, Region V

AZGFD #M23-10105436

[16] https://www.aplic.org/uploads/files/2643/SuggestedPractices2006(LR-2).pdf
[17] https://www.aplic.org/uploads/files/15518/Reducing_Avian_Collisions_2012watermarkLR.pdf
[18] https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3657119

Exhibit H-3e. October 2023 AGFD comment.

PIMA COUNTY
TRANSPORTATION

October 20, 2023

Wilmot Energy Center II Interconnection Project
c/o Dean Hazle, Environmental Project Manager
SWCA Environmental Consultants
1645 S. Plaza Way
Flagstaff, AZ 86001
Dean.Hazle@swca.com

Subject: CEC Application

RE: Wilmot Energy Center II Interconnection Project

Dear Mr. Hazle,

On behalf of Pima County, thank you for the opportunity to provide comments on the proposed scope Wilmot Energy Center II Interconnection Project. Enclosed within this letter are detailed comments and suggestions for your consideration.

Regional Flood Control District

1. The transmission line travels approximately from Andrada Road along Wilmot Road to the Cisne Switchyard where a local floodplain intersects a significant portion of the project area. The local floodplain was determined by Lee Moore West Local Floodplain Study (#10) effective February 28, 2019. Within the local floodplain there are regulatory washes with an associated erosion hazard setback of 25', 50' and 100' and flow corridors. The delineation and preservation of flow corridors throughout the Lee Moore West is the preferred approach when the development of utility infrastructure occurs. While transmission lines are exempt from the Floodplain Ordinance the District recommends supporting infrastructure (roads, construction staging areas) should be located out of the flow corridors to the maximum extent possible or with the least amount of impact. A Floodplain Use Permit may be required for supporting infrastructure that encroaches in the regulatory floodplain.
2. Regulated Riparian Habitat (RRH) is mapped throughout the project boundaries. The applicable RRH Classifications within the project boundaries are Important Riparian Area (IRA) with an Underlying Classification of Xeroriparian Class C Habitat and Non-IRA Xeroriparian Class C and D. As stated in the previous comment, transmission lines are exempt from the Floodplain Ordinance. However, any supporting infrastructure such as roads or construction staging areas that create new disturbance will need to comply with the Floodplain Ordinance and if there is new disturbance of 1/3 acre or more, mitigation is required. A Floodplain Use Permit will be required for supporting infrastructure if more than 1/3 of regulated riparian habitat is disturbed.
3. Recently, the District reviewed a Conditional Use Permit (P23CU00012) on September 25th for Wilmot II Solar and had requested revisions to the plan set submittal. The Renewable Energy Incentive District requirements found in Section 14.03.020.D of the Pima County Code, which emphasizes avoidance of natural drainage and regulated riparian habitat. The proposed solar field had not met the requirements. The District recommended to the applicant that, prior to resubmittal of the plan set, a meeting be scheduled to discuss the project impacts, development footprint and acceptable mitigation measures to the local floodplain, flow corridors and RRH. The results of that discussion could affect the layout and size of the solar field.

Kathryn Skinner, P.E., Director

201 N. Stone Ave., 4th Floor • Tucson, AZ 85701-1207 • Office: 520-724-6410 • Fax: 520-724-6439
www.pima.gov/transportation

Exhibit H-4a. Pima County comment letter.

4. The District encourages dialogue with appropriate District staff to discuss the impact of this project to the local floodplain, flow corridors, regulatory washes and RRH.

Transportation

1. Future transportation plans within the general study area include:
   a. Wilmot Road: Planned future widening from 2 lanes to 4 lanes from Sahuarita Road to I-10. No design or construction date yet identified.
   b. Sonoran Corridor: Planned limited access roadway between I-19 and I-10, generally following the Alvernon Way alignment from Sahuarita Road north to the Old Vail Connection Road alignment. ADOT project. No design or construction date yet identified.
   c. Andrada Road: Planned extension from Houghton Road to the west approximately 1 mile. No design or construction date yet identified.
   d. Swan Road: Planned improvements to South Swan Road from Los Reales south to the roadway terminus. No design or construction date yet identified.

2. A portion of the proposed interconnection appears to be located within the Swan Southlands Specific Plan as well as the Hook M development. The connection leaves the Swan Southlands Specific Plan, travels south along Wilmot Road within the City of Tucson, extends east along Andrada Road and ends in what appears to be within a portion of the Hook M rezoning development within Pima County.

Natural Resources, Parks and Recreation, Regional Wastewater Reclamation, Development Services, Office of Sustainability and Conservation, Environmental Quality, and Project Design and Construction

1. No Comment.

Once again, thank you for inviting the County to review the proposed scope for the Wilmot Energy Center II Interconnection Project. If you have any questions or need additional information regarding our comments, please contact me at Kathryn.Skinner@pima.gov.

Sincerely,

Kathryn Skinner, P.E.
Director

c: The Honorable Sharon Bronson, Board of Supervisors, District 3
Carmine DeBonis, Jr., Deputy County Administrator
Eric Shepp, Director, Regional Flood Control District
Victor Pereira, Director, Natural Resources, Parks and Recreation
Jackson Jenkins, Director, Regional Wastewater Reclamation
Carla Blackwell, Director, Development Services
Linda Mayro, Director, Office of Sustainability and Conservation
Scott DiBiase, Director, Environmental Quality
Sheila Holben, Director, Project Design and Construction

Exhibit H-4b. Pima County comment letter.

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EXHIBIT I. NOISE

As stated in the Arizona Corporation Commission Rules of Practice and Procedure R14-3-219, Exhibit 1:

> *Describe the anticipated noise emission levels and any interference with communication signals which will emanate from the proposed facilities.*

Exhibit I describes typical audible noise emissions and radio noise levels during construction and operation of the Project, and generally acceptable thresholds for emissions and radio noise levels. Typical television broadcast level (in megahertz [MHz]) compatibility is also evaluated.

Existing Sound Levels

Ambient noise in the vicinity of the Interconnection Project (i.e., the 1-mile Study Area) is typical of rural areas with low-density residential developments, ranchland, and other undeveloped land. Additional land uses in the vicinity of the Interconnection Project include renewable energy generation, overhead high-voltage transmission lines, and occasional commercial and industrial facilities.

Typical sound levels in rural areas range from 30 to 50 decibels (dB) (daytime averages) (Arizona Department of Transportation 2008). Noise-producing activities in the Study Area include traffic along Wilmot Road, airport activity associated with Tucson International Airport and the David-Monthan Air Force Base (approximately 4.3 miles north-northwest and 7.5 miles north-northeast, respectively, of the Interconnection Project), and noise emissions from the existing high-voltage transmission lines. Existing high voltage transmission lines in the 1-mile Study Area include a 115-kV overhead line paralleling Wilmot Road and an east-west oriented right-of-way containing two 345-kV overhead lines and one 230-kV overhead line (see Exhibit A-2). A solid waste facility (Tank's Wilmot Recycling and Landfill Facility) is located in the northeast portion of the Study Area, approximately 0.40 mile north-northeast of the Interconnection Project and likely generates noise from operating heavy machinery during business hours.

Table I-1 contains definitions of acoustic terms used in this report, and Table I-2 provides example sound levels that a human may encounter.

Table I-1. Definitions of Acoustical Terms

Term	Definitions
Sound	Wave-like variations in air pressure that occur at frequencies that can stimulate receptors in the inner ear and, if sufficiently powerful, be appreciated at a conscious level.
Noise	Implies the presence of sound but also a response to sound; noise is often defined as unwanted sound.
Ambient noise level	The composite of noise from all sources near and far. The normal or existing level of environmental noise at a given location.
Decibel (dB)	A unit describing the amplitude of sound, equal to 20 times the logarithm to the base 10 of the ratio of the measured pressure to the reference pressure, which is 20 micropascals (μPa).
A-weighted sound pressure level (dBA)	The sound pressure level in decibels as measured on a sound level meter using the A-weighted filter network. The A-weighted filter de-emphasizes the very low- and the very high-frequency components of the sound in a manner similar to the frequency response of the human ear and correlates well with subjective reactions to noise.
Hertz (Hz)	A unit of measure of frequency; the number of cycles per second of a periodic waveform.
Infrasound	Acoustic oscillations whose frequency is below the low-frequency limit of audible sound (about 16 Hz). This definition is incomplete as infrasound at high enough levels is audible at frequencies below 16 Hz (International Electrotechnical Commission 1994).

Term	Definitions
Low-frequency sound	Sound in the frequency range that overlaps the higher infrasound frequencies and the lower audible frequencies; it is typically considered as 10 Hz to 200 Hz, but is not precisely defined.

Table I-2. Typical Sound Pressure Levels Measured in the Environment and Industry

Noise Source At a Given Distance	A-Weighted Sound Level in Decibels	Qualitative Description
Carrier deck jet operation	140	
	130	Pain threshold
Jet takeoff (200 feet)	120	
Auto horn (3 feet)	110	Maximum vocal effort
Jet takeoff (1,000 feet) Shout (0.5 foot)	100	
N.Y. subway station Heavy truck (50 feet)	90	Very annoying Hearing damage (8-hour, continuous exposure)
Pneumatic drill (50 feet)	80	Annoying
Freight train (50 feet) Freeway traffic (50 feet)	70 to 80	
	70	Intrusive (Telephone use difficult)
Air conditioning unit (20 feet)	60	
Light auto traffic (50 feet)	50	Quiet
Living room Bedroom	40	
Library Soft whisper (5 feet)	30	Very quiet
Broadcasting/Recording studio	20	
	10	Just audible

Source: Adapted from New York State Department of Environmental Conservation (2001:Table E).

Anticipated Noise during Construction and Operation

During construction, equipment used for the assembly and erection of structures, as well as wire pulling and splicing, would generate noise. Noise from construction activities will be audible to nearby users; however, because the Interconnection Project is predominantly surrounded by Arizona State Trust land, and private property, receptors are generally limited to property south of Andrada Road, near the Wilmot II Solar Facility, and properties north of South Swan Road, near the existing Wilmot I Solar Facility and the TEP 138-kV Cisne Switchyard.

Construction equipment for the Interconnection Project will include heavy-duty earth-moving machinery, cranes, air compressors, generators, and a multitude of transport trucks. Due to the nature and operational scale of these machines, they inherently generate considerable noise. Noise levels for typical construction equipment that would likely be used at the project are in the approximately 70 to 90 dBA range at 50 feet. To minimize construction noise impacts, the Applicant plans to complete the majority of construction activities during daylight house. Because construction will primarily occur during daytime hours when tolerance to noise is higher, construction noise from the Interconnection Project is unlikely to result in

substantial impact. Noise from construction would be temporary, lasting only a few months between the start of construction and operation.

Furthermore, the Applicant will comply with noise-related requirements in Pima County and the City of Tucson. The Pima County Code of Ordinances, Chapter 9.30, regulates excessive, unnecessary, and annoying noises. Section 9.30.070 pertains to construction noise and includes time-of-day and weekend and holiday restrictions for construction. The time-of-day restrictions vary depending on the time of year, type of construction work (e.g., general construction or concrete work), and whether construction will occur within 500 feet of a residential property (Pima County 2023). The City of Tucson Code of Ordinances, Section 16-31, prohibits construction noise from 8:00 PM to sunrise Monday through Saturday, and entirely prohibits construction noise on Sundays and legal holidays (City of Tucson 2023).

Certain electromagnetic effects are inherently associated with overhead transmission facilities. The primary effect of electric and magnetic fields is corona discharge. Corona effects manifest as audible noise, radio interference, and television interference. These particular effects are minimized by line location, line design, and construction practices. A significant aspect of noise, especially that generated during heavy construction, is its rapid reduction in intensity moving farther from its source. As a receptor moves away from the noise's origin, the sound level decreases significantly.

Corona

Under certain conditions, the localized electric field near an energized conductor can be sufficiently concentrated to produce a tiny electric discharge that can ionize air close to the conductors (Electric Power Research Institute [EPRI] 1982). This partial discharge of electrical energy is called corona discharge, or corona. This physical manifestation can transform and discharge energy into very small amounts of sound, radio noise, heat, and chemical reactions of the air components. Several factors, including conductor voltage, shape, diameter, and surface irregularities such as scratches, nicks, and dust, can affect a conductor's electrical surface gradient and its corona performance (EPRI 1982).

Audible Noise

Audible noise would be created by corona discharge along the Interconnection Project. As a result, the amount of audible noise is directly related to the amount of corona, which is in turn affected by meteorological conditions (most notably precipitation). Transmission line audible noise is categorized into broadband high-frequency sounds, which can be described as hissing or sputtering, and low-frequency tones, which are best described as humming sounds.

Because power loss is uneconomical and noise is undesirable, corona on transmission lines has been studied by engineers since the early part of the twentieth century. Historical measurements along transmission corridors of similar makeup (open desert) have shown typical ambient audible noise levels in the range of 43 to 52 A-weighted decibels (dBA) with an average value of 50 dBA. References exist on the subject of transmission line corona (e.g., EPRI 1982). Consequently, corona is well understood by engineers, and steps to minimize it are one of the major factors in transmission line design for extra high–voltage transmission lines (345–765 kilovolts [kV]) (Pacific Gas and Electric Company [PG&E] 2005; Parmar 2014).

Radio Interference

Overhead transmission lines do not, as a general rule, interfere with normal radio or television reception. There are two potential sources for interference: corona and gap discharges. Gap discharges cause short pulses of voltage and current to be propagated along the transmission line, resulting in radio frequency noise in the vicinity of the line. Gap discharges are different from corona and can occur on low-voltage

distribution lines. Gap discharges are most commonly caused by loose hardware. Gap discharges comprise a large percentage of all interference problems and are easily remedied with routine maintenance.

Corona-caused radio interference is dependent on various factors, including distance from the line to the receiver, radio signal strength, ambient radio noise level, receiving antenna orientation, and weather conditions. Even though radio reception quality is reduced near transmission lines during periods of rainy weather, the impact is expected to be minimal based on the low frequency of inclement weather in the Study Area.

Television Interference

Traditional television broadcasts occur in three ranges: 54 to 88 MHz (Channels 2–6); 174 to 216 MHz (Channels 7–13); and 470 to 890 MHz (Channels 14–83). Transmission line interference reduces with increasing frequency above 100 MHz. Consequently, television interference affects only the lower very high frequency (VHF) band (Channels 2–6), and no interference would be experienced in the upper VHF (Channels 7–13) and ultra-high frequency (UHF) bands (Channels 14–83), even during foul weather. Where transmission line–generated television interference has been found to be a problem, it is generally the result of induced voltage on fences, conductors, and hardware that are adjacent to the right-of-way. In these situations, the interference can be easily corrected by grounding the objects, or by realigning, relocating, or providing higher-gain television antennas. There are several existing high voltage transmission lines already in the vicinity of the proposed route for the Interconnection Project; therefore, the Interconnection Project will not be a unique or new source of potential interference, however unlikely.

Electric and Magnetic Fields

Electric fields can be found occurring naturally in the world and typically occur in the range of 12 to 150 kilovolt/meter (kV/m). For example, electric fields created by televisions and other video display units typically occur in the range of 20 kV/m. Electric fields directly under the commonly used voltage class of 115-kV transmission lines are typically in the range of 1 kV/m. Magnetic fields naturally occur and are typically in the range of 0.01 nanotesla (nT). Magnetic fields that occur under a transmission line typically occur in the range of 3 to 9 microtesla (μT), or 30 to 90 milligauss (mG). These electromagnetic fields reduce quickly the further removed from the source. Figure I-1 shows typical electromagnetic field (EMF) levels and dissipation of this energy the further removed from a transmission facility.

Potential Effects

Construction

Table I-3 presents typical noise levels of construction equipment at a distance of 45 feet (15 meters) (Crocker and Kessler 1982). These values assume that the equipment is operating at full power.

Table I-3. Typical Noise Levels of Construction Equipment

Equipment Category	Noise Level at 45 feet/15 meters (dBA)
Dump truck	88
Portable rock drill	88
Concrete mixer truck	85
Pneumatic tool	85
Grader	85
Backhoe	81
Dozer	78

Source: Crocker and Kessler (1982)

The data in Table I-3 indicate a temporary increase in ambient noise within 45 feet of construction activities occurring within the Interconnection Project footprint. The nearest residences to the proposed facilities are located approximately 400 feet from the Interconnection Project (south of Andrada Road). Many environmental factors must be considered when determining the distance that noise travels, such as terrain, density of vegetation, temperature, and the amount of moisture in the air. Based on the distance to residences and the intervening vegetation, construction noise at 400 feet would likely result in a noticeable increase to sound levels outside or within the nearest residence. These impacts would be limited to daytime hours and cease after construction.

Operation

Exhibit I-1 presents EMF levels associated with transmission lines at typical voltage levels. The Interconnection Project would be a 138-kV transmission line and, based on typical ranges presented in Exhibit I-1, would likely have edge-of-right-of-way-electric field levels between 0.5 and 1.5 kilovolt/meter (kV/m) and edge-of-right-of-way magnetic field levels between 6.5 and 19.5 milligauss (mG). EMF levels for power lines, both in fair weather and in rain, dissipate quickly and are typically non-detectible at the right-of-way edge (PG&E 2005).

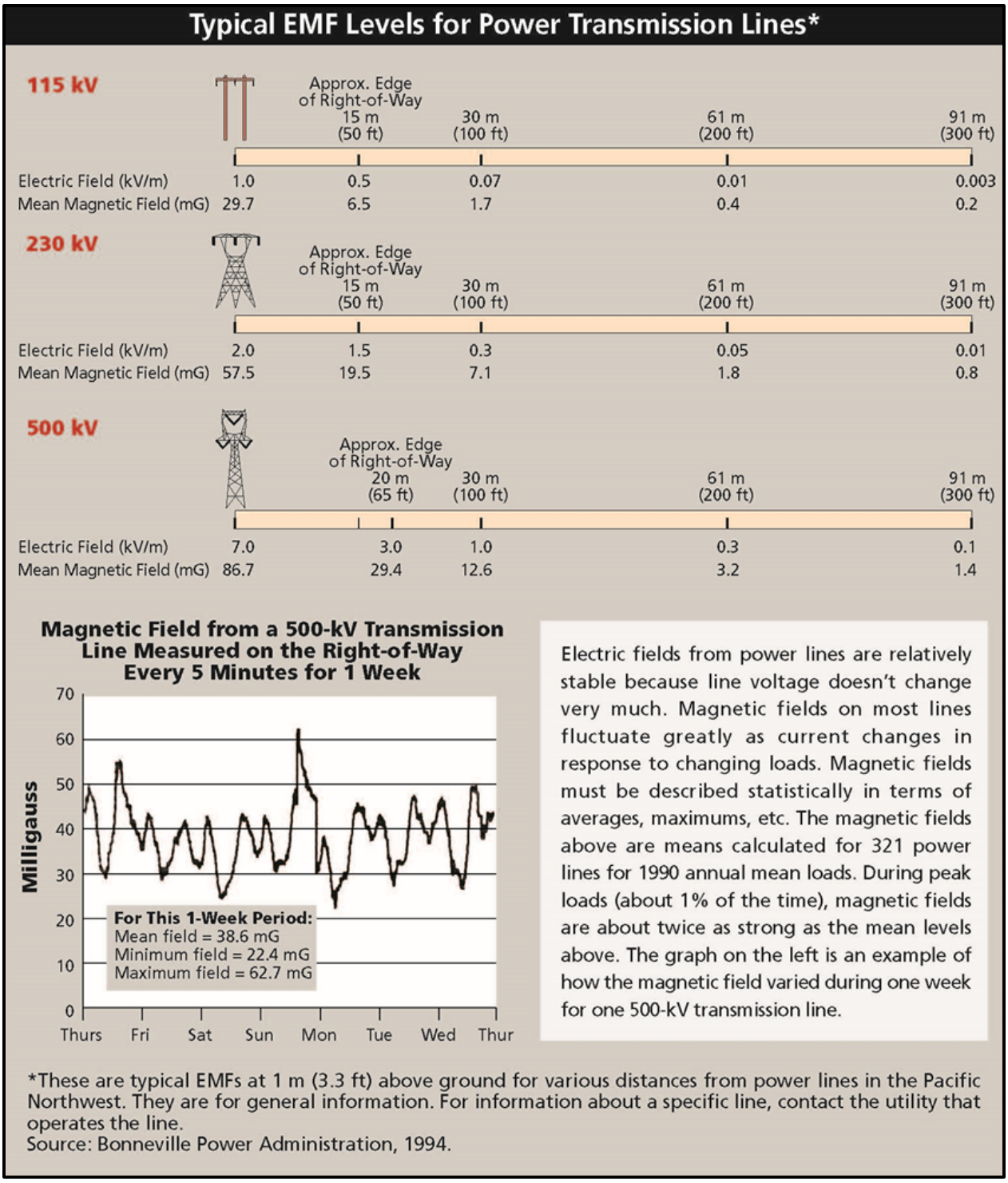


Exhibit I-1. Typical EMF levels for power transmission lines.

Audible noise levels associated with corona discharge of transmission lines are approximately 50 dBA or less and dissipate rapidly as the receptor moves farther from the conductors. Because of the low dBA range associated with corona discharge, it would be hard for individuals to hear audible noise unless within feet of the proposed Interconnection Project. As previously mentioned, the nearest residences to is approximately 400 feet from the Interconnection Project. Using a standard formula for noise dissipation,

sound pressure levels would be expected to dissipate from approximately 50 dBA near the ROW to approximately 32 dBA at 400 feet. Noise from operation of the Interconnection would negligibly increase noise levels and is not likely to noticeably increase ambient noise levels at adjacent residences.

Corona-generated radio interference is most likely to affect the amplitude modulation (AM) broadcast band (535–1,605 kilohertz); frequency modulation (FM) radio is rarely affected. Only AM receivers located very near transmission lines have the potential to be affected by radio interference. There are several existing high voltage transmission lines already in the vicinity of the proposed route for the Interconnection Project; therefore, the Interconnection Project will not be a unique or new source of potential interference, however unlikely.

Satellite television signals are of much higher frequency than transmission line frequencies and are not affected by transmission line operation or corona. Cable television service is likewise unaffected. Specific instances of broadcast television reception interference are typically related to spark-gap discharges due to loose, worn, or defective hardware. No significant impacts to radio or television reception are anticipated as a result of constructing and operating the Interconnection Project. Cellular phone antennas and microwave receivers are commonly mounted on transmission structures to take advantage of the added height afforded by the structures, which demonstrates that transmission lines do not interfere with cellular phone tower operations or microwave communication paths.

For the aforementioned reasons, noise and communication signal interference associated with operation of the Interconnection Project is not anticipated.

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EXHIBIT J. SPECIAL FACTORS

As stated in the Arizona Corporation Commission Rules of Practice and Procedure R14-3-219, Exhibit 1:

> *Describe any special factors not previously covered herein, which applicant believes to be relevant to an informed decision on its application.*

Introduction

This exhibit describes the public involvement program that was conducted for the Wilmot Energy Center II Interconnection Project. These outreach efforts provided information about the Interconnection Project (and related Solar Facility) to agencies and community members, and solicited feedback, comments, and information.

Public Involvement Program Summary

The Applicant initiated the public involvement program to provide community members and relevant jurisdictions and agencies with the opportunity to provide comments and relay information or potential concerns. The public involvement program followed a comprehensive communication strategy designed to reach stakeholders near the Interconnection Project. The public involvement program included print and digital media outreach activities, each described in more detail below.

Interconnection Project Contact Information

The Applicant established dedicated points of contact, including a project email address, phone number, and mailing address, to include with public-facing communications for the Interconnection Project. The following mailing address and email address were included in all public-facing communications:

Mail: Stephanie Rush
Lead Project Manager, NextEra Energy Resources, LLC
c/o SWCA Environmental Consultants
1645 South Plaza Way
Flagstaff, AZ 86001

Email: WilmotEnergyCenter@nexteraenergy.com

Voicemail: 1 (520) 504-1962

Additionally, the Interconnection Project website included a "contact us" page noting the project email address.

Contact List for Project Information

The Applicant developed a contact list for the Interconnection Project (and related Solar Facility) for disseminating project information and updates. The contact list included property owners and key stakeholders including public and elected officials, agency representatives, and utility providers. In general, the mailing list included property owners within 1 mile of the Interconnection Project; however, south and southeast of the Interconnection Project, the Applicant expanded the mailing list to include property owners north of Sahuarita Road and West of S. Houghton Road. The Applicant did so to include complete

neighborhoods nearest to the Solar Facility. In total, the contact list included 491 property owner mailing addresses and 28 stakeholder contacts.

Project Website

A Project website hosted at www.WilmotEnergyCenter.com served as a central location to provide information about the Interconnection Project and opportunities for public comment. The website includes a link to a Facebook page for the project, where members of the public are able to engage directly with NEER staff. The website was launched in July 2023 and includes information regarding the Wilmot Energy Center II development, including both the Interconnection Project and the Solar Facility. The website link was included in public-facing communications, including the informational letter, the newspaper advertisement, the telephone information line voicemail recording, the virtual open house, and the public in-person open house. Screenshots of the Project website are in Exhibits J-2a – J-2e.

Virtual Open House

An online virtual open house was hosted at http://WilmotIISolarOpenHouse.com to provide information about the Solar Facility and Interconnection Project. The virtual open house was announced in the informational letter and paid newspaper advertisements.

The virtual open house is an interactive website with information about the Applicant and the Solar and Interconnection Projects displayed on "poster stands." The virtual open house website includes a sign-in page and comment form. The virtual open house format allows interested parties to visit and review the materials at their convenience, and to ask questions, request information, or provide comment. Poster stands included large maps and text displays with highlighted details of the Solar Facility and Interconnection Projects, including photosimulations from key observation points.

Screenshots of the virtual open house website and informational display boards are included in Exhibit J-2a – J-2e.

Facebook Page

The Applicant created and maintained a Facebook page for the Solar and Interconnection Project to provide information and updates about the project, as well as opportunities for public engagement through social media. The Facebook page was launched in July 2023. The project's Facebook page is linked directly from the main website; the URL for the Facebook page is https://www.facebook.com/WilmotEnergyCenter/. Leading up to the in-person open house, the Applicant ran paid promotions or "boosts" for the page, which – like running an advertisement – helped the page reach Facebook accounts in the vicinity of the Interconnection Project. A screenshot of the social media page is included in Exhibit J3a and J-3b.

Informational Letter

The Applicant mailed an informational letter to the above-described contact list on September 29, 2023. In general, the purpose of the public notice letter was to provide information on the Interconnection Project, request comments, and announce the in-person open house. The informational letter included contact information for the Applicant, a link to the project website, a link to the project's virtual open house, and a map of the Interconnection Project and Solar Facility. A copy of the informational letter is included as Exhibit J-4a and J-4b.

Newspaper Advertisements for the In-Person Open House

The Applicant placed paid display advertisements in the *Arizona Daily Star* on October 12 and 17, 2023 (Exhibit J-5a and J-5b). These advertisements provided general information regarding the Interconnection and Solar Facility, invited attendance at the open house, provided URLs to the project website and virtual open house, and provided contact information for the project team.

In-Person Open House Meeting

The Applicant held an in-person public open house meeting for the Interconnection Project and Solar Facility on October 18, 2023, from 5:30 p.m. to 7:30 p.m. at Andrada Polytechnic High School, 12960 South Houghton Road, Tucson, AZ 85747. The Andrada Polytechnic High School is one of the closest public facilities to the Interconnection Project. Three representatives for the Applicant, including the lead developer, and two representatives for SWCA Environmental Consultants were present to interact with the public and answer questions.

The format of the meeting was an informal open house, with 17 poster boards and several "roll up" displays with information about the Application displayed around the room. Community members were encouraged to attend at their convenience, review informational displays, and communicate with members of the Project team. Attendees were asked to sign in; comment cards were prominently displayed for attendees. Copies of the poster boards are included as Exhibits J-6a – J-6s. The sign-in sheet is included as Exhibit J-7and J-7b; an example comment form from the meeting is included as Exhibit J-8.

Ten people signed-in at the open house; no written comments were received during the open house.

Public Comment

Table J-1, below, summarizes public comments related to the Interconnection Project.

Table J-1. Comments Received

#	Comment	Response
1	October 30, 2023. Voicemail: Hello. My name is [redacted]. My property is at [redacted], you would. I have a couple of questions about some stuff? That's going on with the solar installation. IE. Setbacks, easements. Affecting my property value would please give me a call back [redacted], normally available until about 2 30 pm. Thank you. Bye.	November 1, 2023: SWCA spoke with the commentor. In general, the conversation focused on the Solar Facility. SWCA provided information about the County permitting process, setback distances, and landscaping requirements.
2	November 2, 2023. Email. My name is [redacted] and I am the owner of Tank's Recycling and Landfill facility located directly across Wilmot from your project. Currently we are off the grid and I would like to discuss buying power or working with your company to install a small array on our property. We create compost on the site as well as sand and gravel and are permitted to recycling construction, demolition, and landscaping waste. I think a collaboration would be a great synergy for both our companies. Please contact me if you would be interested in such a collaboration. Regards,	The Applicant thanked the commentor for contacting the project team and added their information to the project contact list.

#	Comment	Response
3	November 10, 2023. Email. Good afternoon, My name is [redacted] I work with Tanks Green Solution & Outlaw Trucking & Materials and I see that you have a solar field project coming up in the future and I would like to get some more info or project updates if possible. Thank you for your time and I look forward to hearing from you. Thank you,	The Applicant thanked the commentor for contacting the project team and added their information to the project contact list.

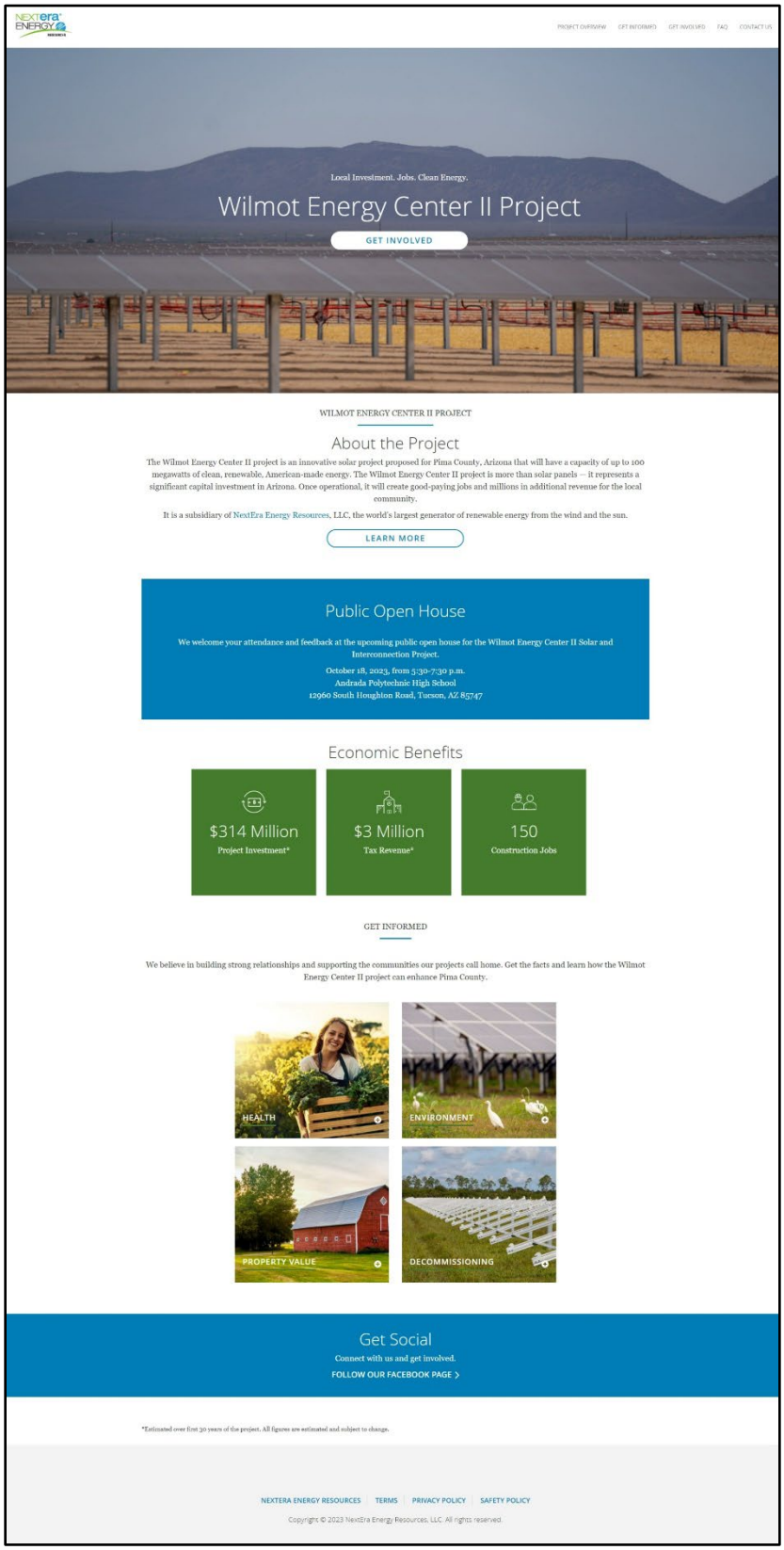


Exhibit J-1a. Project website.

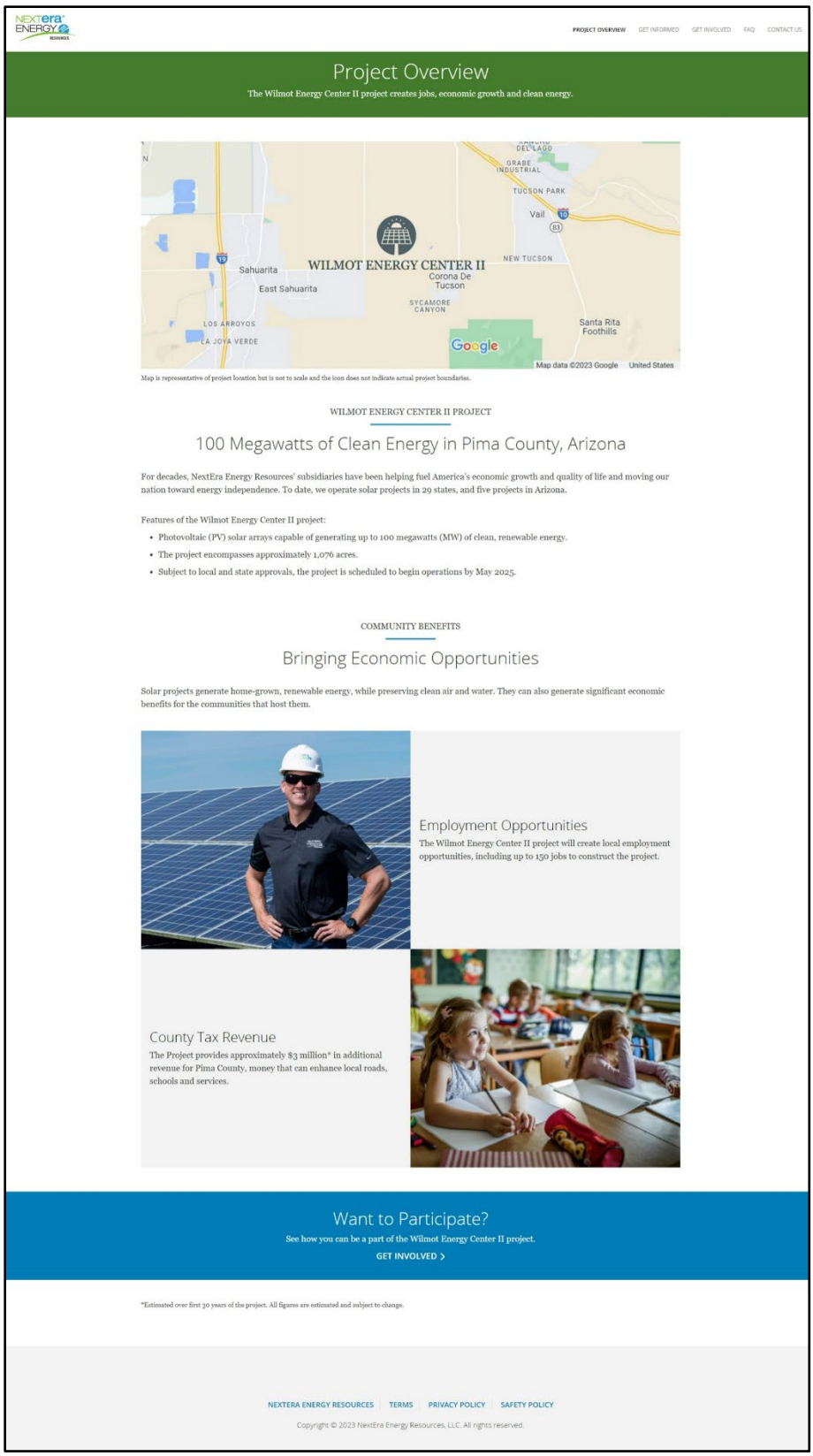


Exhibit J-1b. Project website (continued).



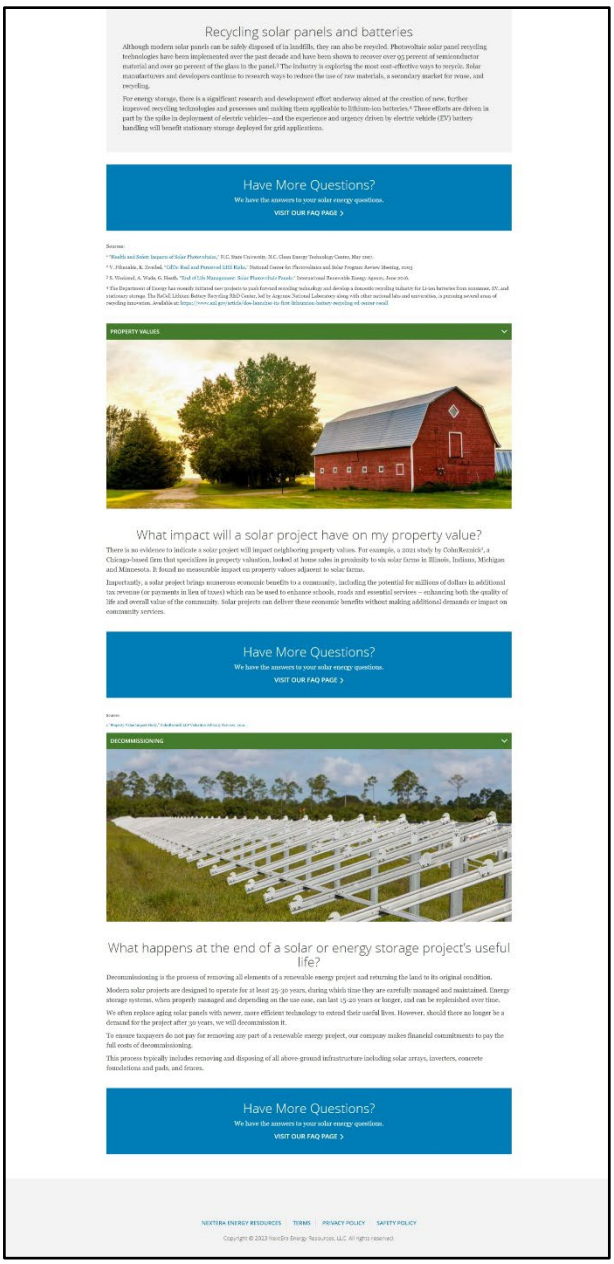


Exhibit J-1c. Project website (continued).

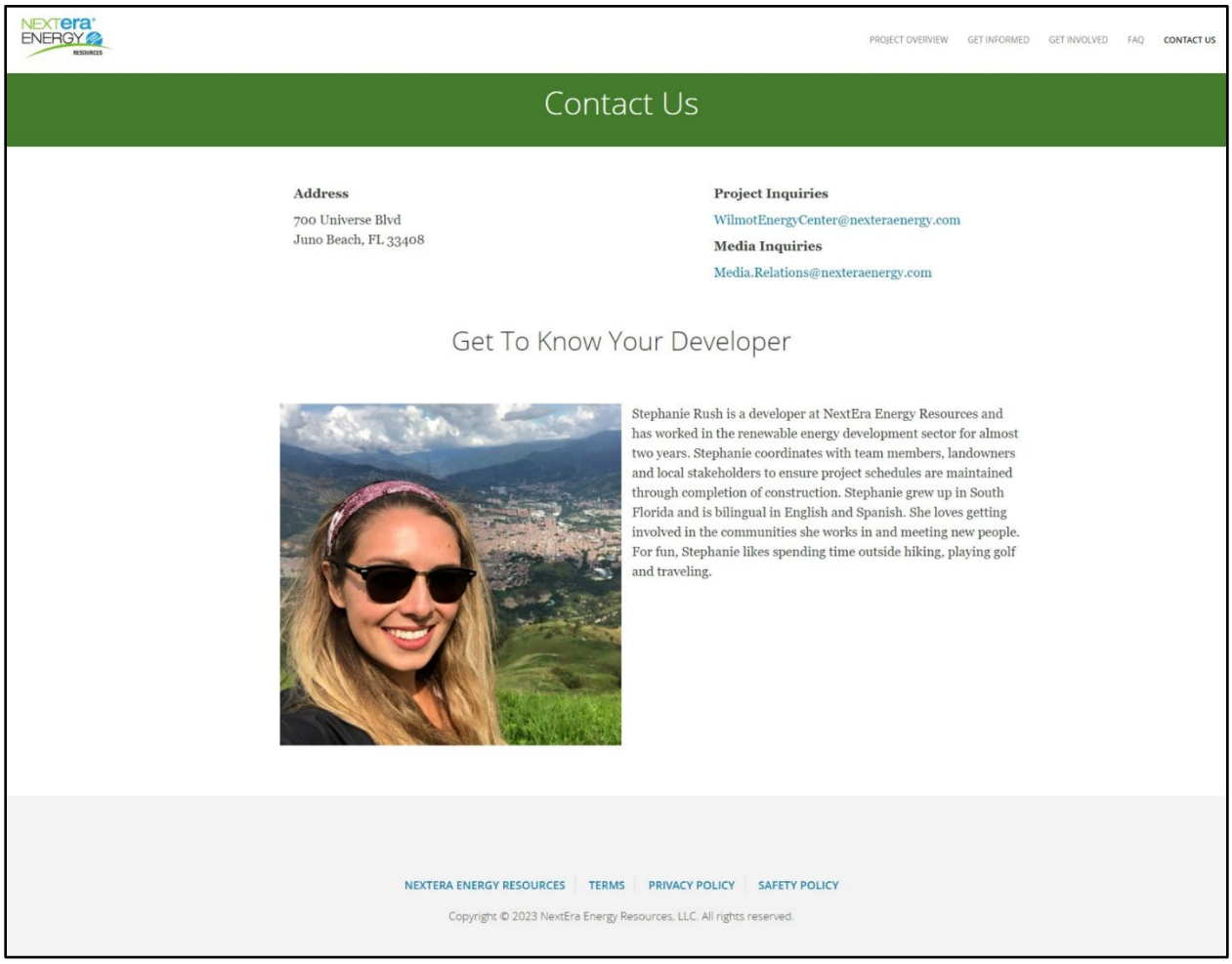


Exhibit J-1d. Project website (continued).

Frequently Asked Questions

Find answers to your questions about this renewable source of energy.

What are some advantages of solar energy?

After the initial investment in solar-energy equipment, the costs are minimal since the sun provides free "fuel." These facilities are not affected by the supply and demand of fuel or subject to price volatility, and solar energy can help reduce America's dependence on foreign sources of energy. Solar energy is also clean and renewable, which helps protect our environment.

How does solar energy work?



1. As light hits the solar panels, the solar energy is converted into direct current (DC) electricity.
2. The direct current flows from the panels into power inverters and is converted into altering current (AC) electricity, which is suitable for use by homes and businesses.
3. The AC electricity from the power inverters is collected using cables and delivered to a central electrical substation, where it passes through a power transformer.
4. The electricity travels through transformers, and the voltage is boosted for delivery onto the transmission lines.
5. Clean, renewable, American-made solar electricity is delivered to homes and businesses.

How many solar facilities does your company have and where are they located?

Through its subsidiaries, NextEra Energy Resources is the world's largest generator of renewable energy from the wind and the sun. We currently have ownership interests in approximately 3,400 MW of operating solar projects (as of Dec. 31, 2021), representing universal-scale solar facilities in 29 states, as well as multiple small-scale (distributed generation) solar projects.

Are solar facilities good for the environment?

Solar energy emits no pollutants and the overall impact of solar on human health is overwhelmingly positive. To learn more, view our solar environment page.

What percentage of generation does solar energy represent in the NextEra Energy Resources' portfolio?

Solar energy represents about 13 percent of NextEra Energy Resources' generation.

What do you look for in a site when building a renewable energy project?

We look for a location with good wind or solar resources, landowners who are interested in hosting our equipment and proximity to transmission lines.

If I have land and want you to assess its suitability for a renewable energy project, how do I get you to come out to look at it?

We cannot guarantee that we will assess every parcel of land presented to us. However, you can contact us for more information.

How much land does a solar project require?

Typically, a project will require 5 to 8 acres of land for each megawatt of solar energy capacity.

Is there construction traffic?

Yes. During construction there will be additional traffic. Although the construction period is only a matter of months, it will require heavy equipment, including bulldozers, graders, trenching machines, concrete trucks, flatbed trucks and large cranes.

How long will it take to complete construction?

It depends on the size of the project. However, 12 to 18 months is a reasonable time frame to build most solar projects.

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Exhibit J-1e. Project website (continued).

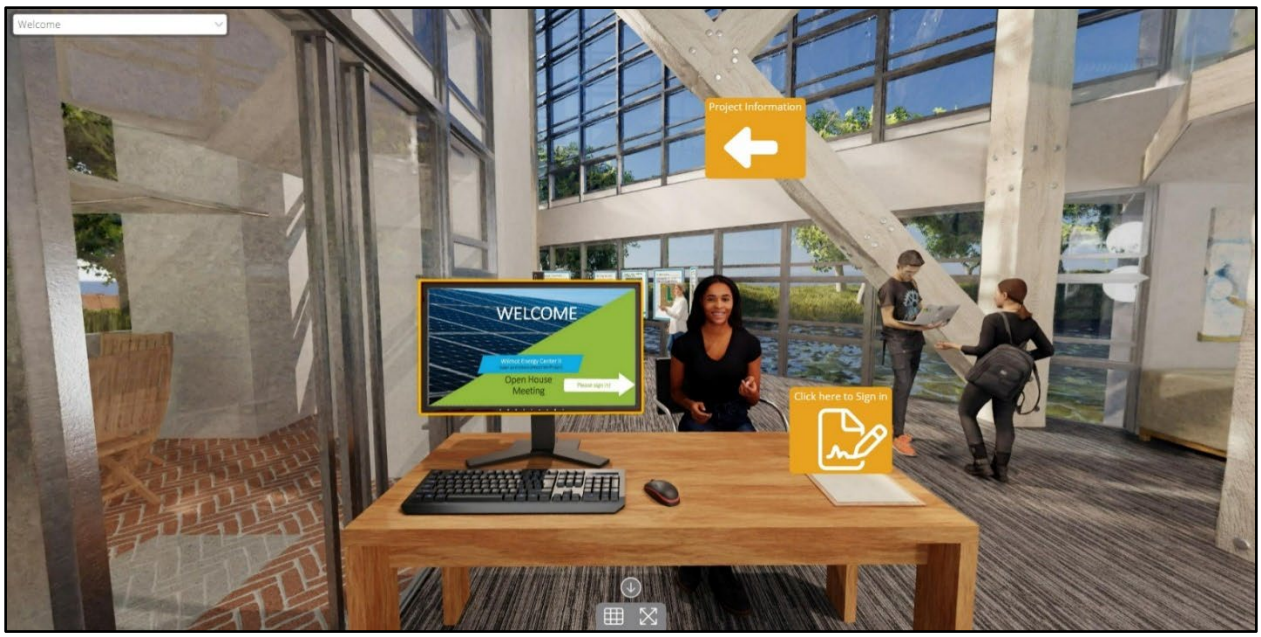


Exhibit J-2a. Project virtual open house.



Exhibit J-2b. Project virtual open house (continued).

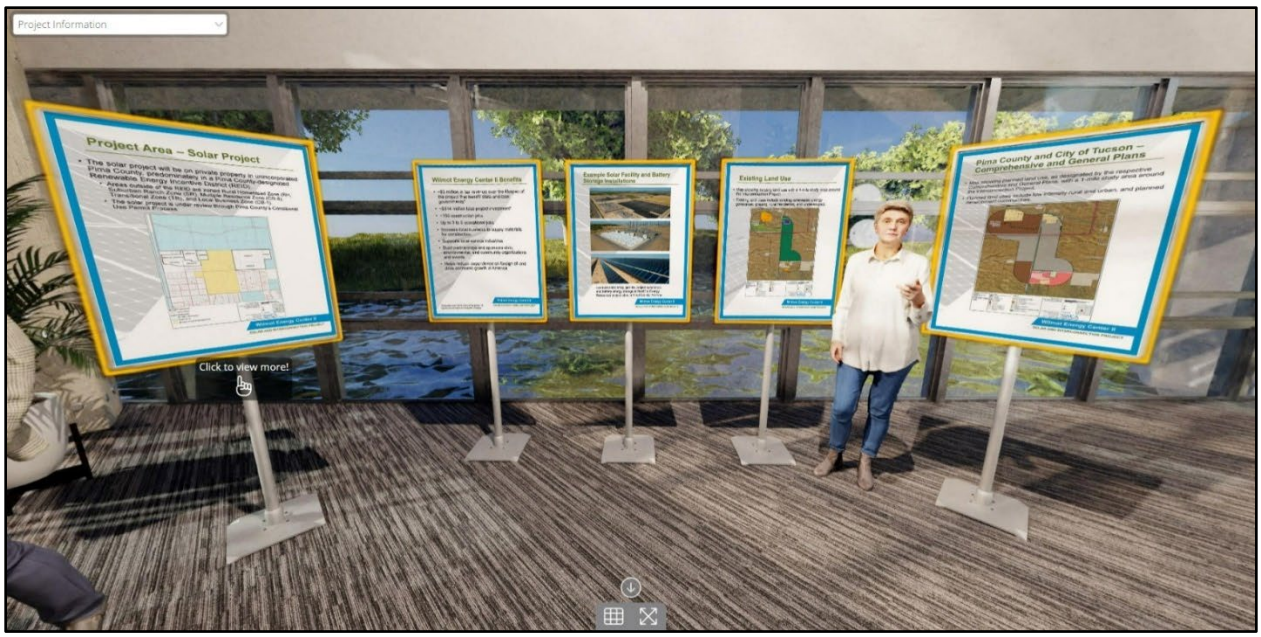


Exhibit J-2c. Project virtual open house (continued).

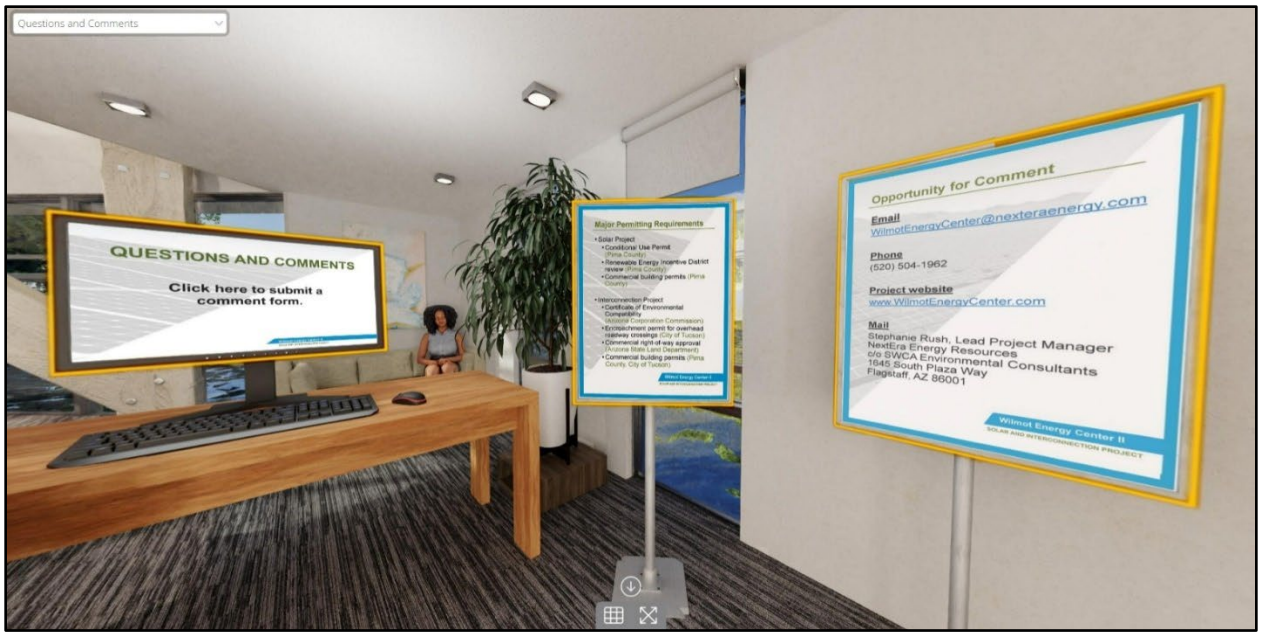


Exhibit J-2d. Project virtual open house (continued).

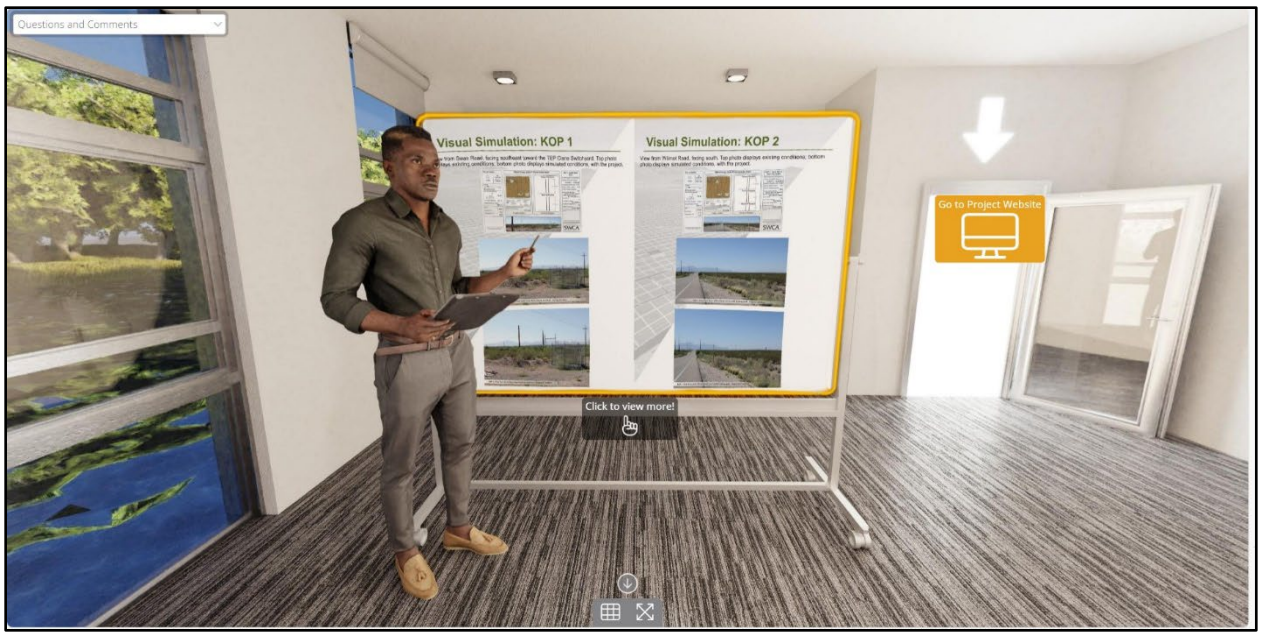


Exhibit J-2e. Project virtual open house (continued).

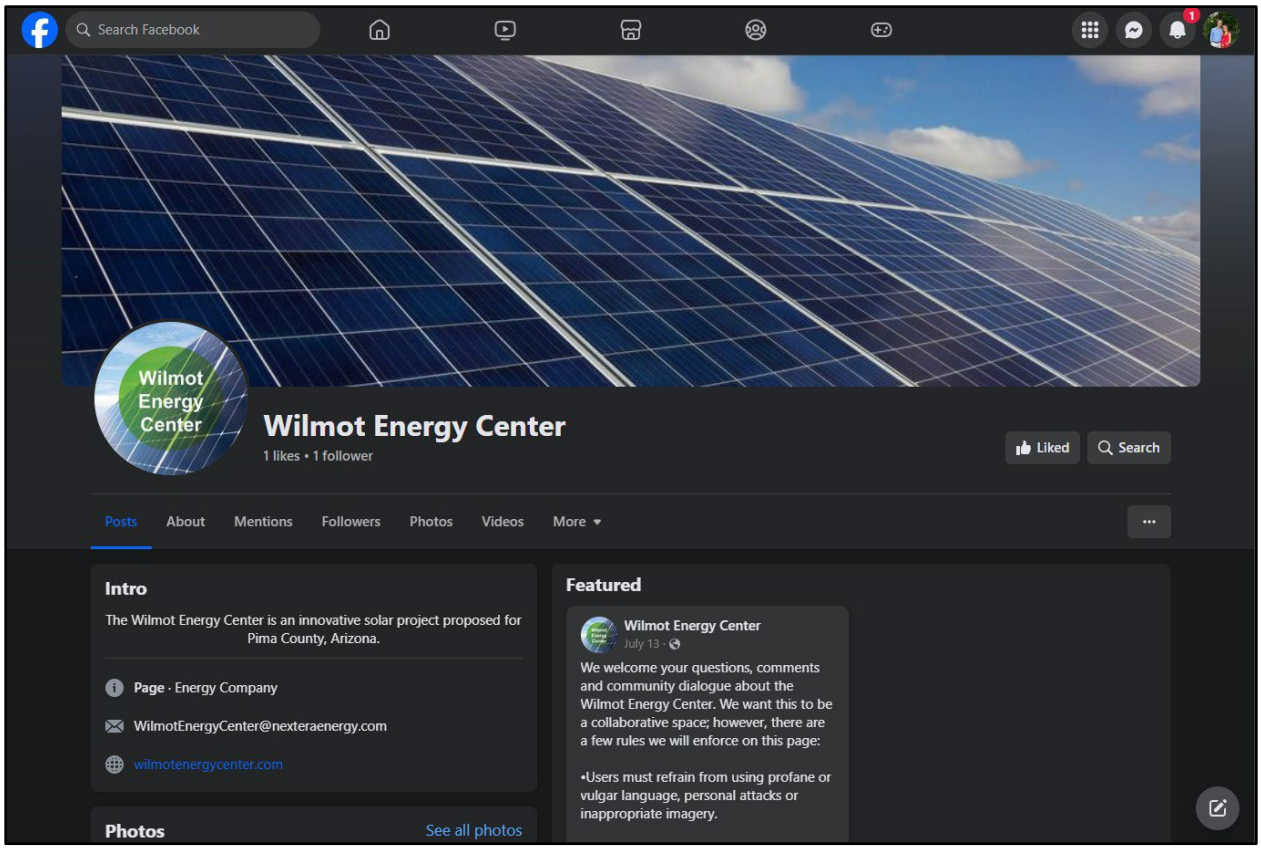


Exhibit J-3a. Project Facebook page.

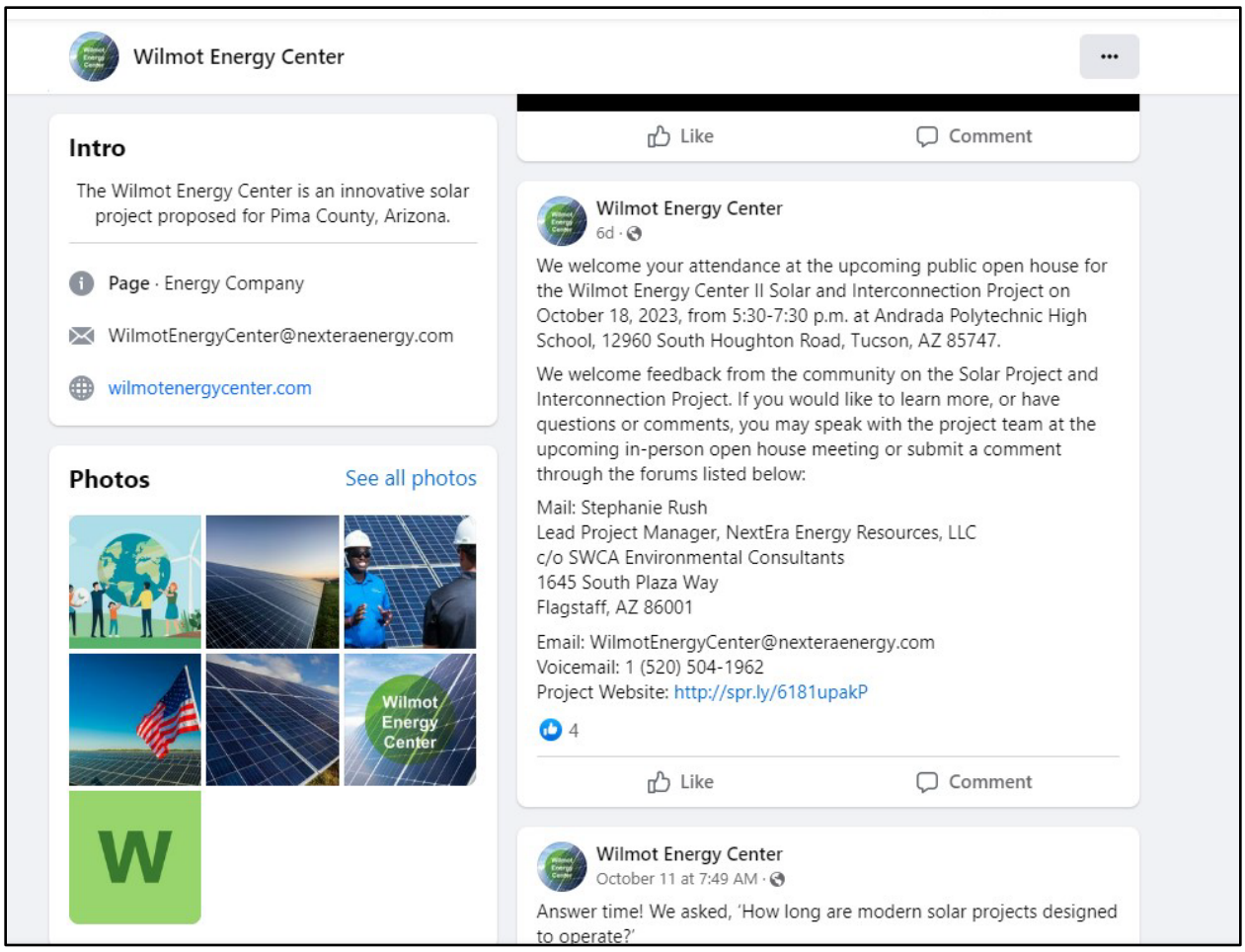


Exhibit J-3b. Project Facebook page.

Wilmot Energy Center II, LLC

Sept. 29, 2023

Invitation to learn about proposed Wilmot Energy Center II Solar and Interconnection Project

Dear Interested Party,

This letter provides notice of the Wilmot Energy Center II Solar and Interconnection Project public open house meeting on October 18, 2023, from 5:30-7:30 p.m. at Andrada Polytechnic High School, 12960 South Houghton Road, Tucson, AZ 85747.

Wilmot Energy Center II, LLC, a wholly owned subsidiary of NextEra Energy Resources, LLC, plans to build an approximately 100-megawatt solar energy generating facility (Solar Project) and a 138-kilovolt (kV) electrical generation-tie transmission line (Interconnection Project). The Interconnection Project will connect the planned Solar Project to the regional electric grid through Tucson Electric Power's existing 138kV Cisne Switchyard. The Solar Project is planned on private property in unincorporated Pima County, predominately in a Pima County-designated Renewable Energy Incentive District (REID). The Interconnection Project will traverse Arizona State Trust Land, private property in the City of Tucson and private property in unincorporated Pima County (Figure 1).

The Solar Project will be reviewed by Pima County through the County's REID program and Conditional Use Permit (CUP) process. The Interconnection Project will be reviewed by the Arizona Corporation Commission (ACC) and Arizona Power Plant and Transmission Line Siting Committee through the ACC's Certificate of Compatibility (CEC) hearing process. Wilmot Energy Center II, LLC submitted a CUP application in September 2023 and plans to apply for a CEC in the coming months.

Wilmot Energy Center II, LLC welcomes feedback from the community on the Solar Project and Interconnection Project. If you would like to learn more, or have questions or comments, you may speak with the project team at the upcoming in-person open house meeting or submit a comment through the forums listed below:

Mail: Stephanie Rush
Lead Project Manager, NextEra Energy Resources, LLC
c/o SWCA Environmental Consultants
1645 South Plaza Way
Flagstaff, AZ 86001
Email: WilmotEnergyCenter@nexteraenergy.com
Voicemail: 1 (520) 504-1962
Project Website: www.WilmotEnergyCenter.com

In addition to an in-person open house, we are hosting an online virtual open house, linked below. Comments received before Nov. 10, 2023, will be included in the CEC application. We look forward to receiving your input.

Project Virtual Open House: http://WilmotIISolarOpenHouse.com

Sincerely,

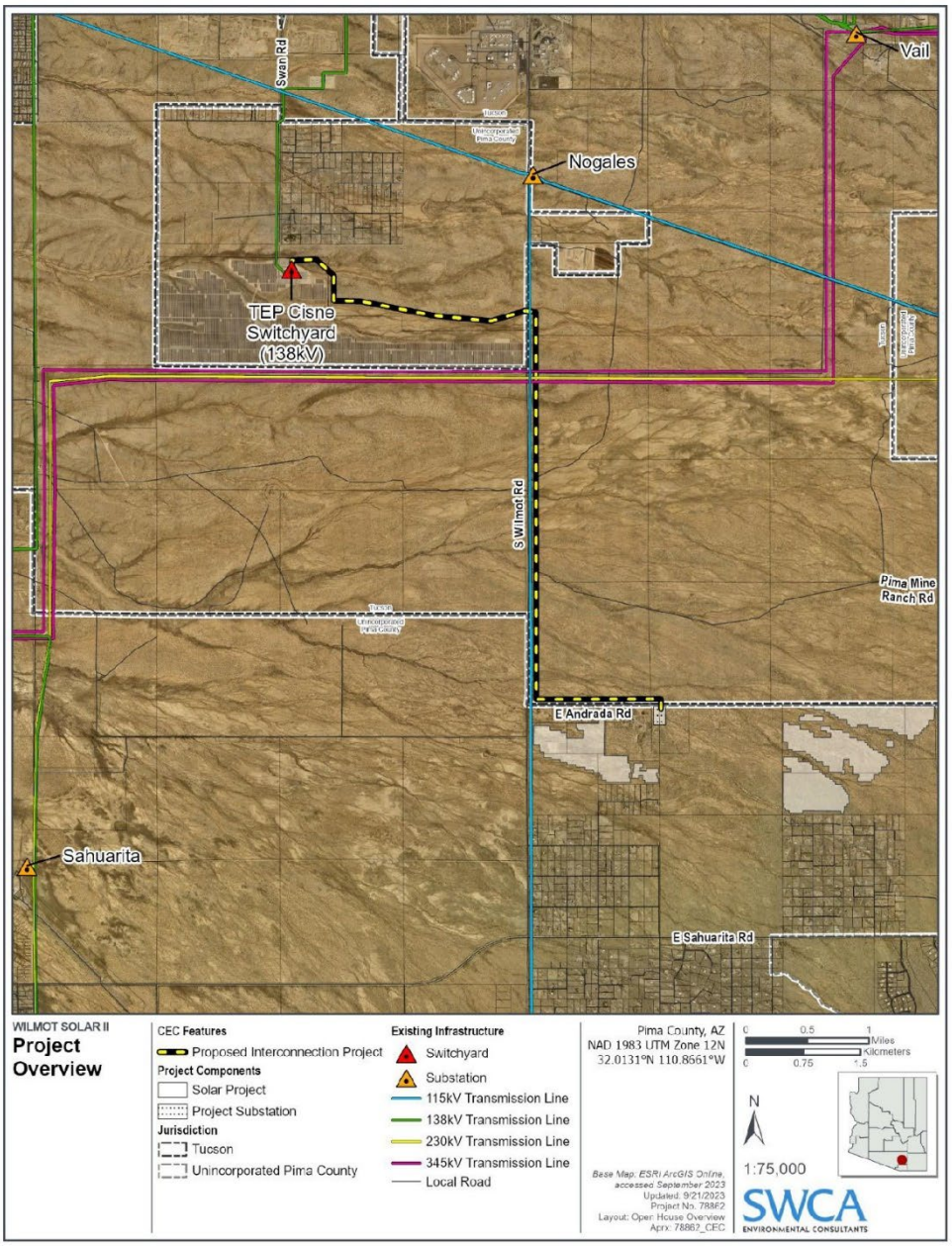
Stephanie Rush, Lead Project Manager
Wilmot Energy Center II, LLC

a NextEra Energy, Inc. company

700 Universe Boulevard, Juno Beach, FL 33408

Exhibit J-4a. Informational letter and open house invitation.

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Exhibit J-4b. Informational letter and open house invitation (continued).



Exhibit J-5. Newspaper display advertisement (October 12, 2023).



ARIZONA DAILY STAR NATION/WORLD TUESDAY, OCTOBER 17, 2023 | A3

Israeli trauma over Holocaust resurfaces

TIA GOLDENBERG
Associated Press

TEL AVIV, Israel — Women, children and older adults hiding in safe rooms gunned down mercilessly. Homes set ablaze with terrified residents still inside them. Children, some bound, forced into a room and slaughtered. Jews, helpless.

For many Israelis and Jews around the world, the horrors committed by Hamas militants during their stunning onslaught on southern Israeli communities istriggering painful memories of a calamity of a far greater scale: the Holocaust.

Long seen as a catastrophe so horrific nothing else should be compared to it, Israelis are now drawing direct parallels between the murder of 6 million Jews in Europe eight decades ago and their most recent tragedy, underscoring how traumatic the attack has been for a country that rose from the ashes of World War II and was created as a safe haven for Jews.

"I have been strict about not using the word 'Shoah' in any context other than the Holocaust," political commentator Ben Caspit wrote in the daily Maariv, referring to the Holocaust by its Hebrew name. "When Jewish children hide in a protected room and their anguished parents pray that they won't cry, so that the marauders won't come in and set the house on fire, it's a Shoah."

Israel's retaliation against Hamas in Gaza has also drawn comparisons to the Palestinians' greatest national tragedy, the Nakba, when hundreds of thousands fled or were forced to flee following the 1948 war that led to Israel's creation. Many Palestinians fear a repeat of that mass exodus after Israel ordered the evacuation of northern Gaza.

Just a few years ago, comparisons to the Holocaust would have been promptly denounced as cheapening its memory and diminishing the horror of the Nazi crimes.

That has begun to erode in recent years — with Prime Minister Benjamin Netanyahu alluding to the Nazis when talking about Iran and its nuclear program and protesters on rival sides of the political aisle calling each other "Nazis." Still, such incidents remain rare and often draw criticism.

But the horrors of the Oct. 7 Hamas assault, which killed at least 1,300 Israelis, have tapped into Israel's deepest fears and revived memories of the Jews' greatest trauma.

Hundreds of militants stormed across the border, catching the country and its vaunted military off guard on a major Jewish holiday. They attacked sleepy farming villages, slaughtering terrified residents.

The militants killed at least 260 revelers at a music festival, with survivors telling harrowing stories of methodical massacres.

Dozens were dragged away as hostages on motorcycles and golf carts. Some of the dead and captured were Holocaust survivors.

"This is a massacre. This is a pogrom," said Maj. Gen. Itai Veruv, leader of forces that cleared one of the besieged villages, referring to historic massacres of European Jews.

In the Holocaust, Nazis led a campaign of genocide, rounding up and murdering many of Europe's Jews, while sending others on trains to death or labor camps.

Israel made protecting Jews from similar atrocities part of its raison d'etre. Many Israelis see their country as a refuge, a nation with a strong army that could protect Jews despite regional threats. Many Jews in the diaspora share that feeling, seeing Israel as a safe haven should Jews be persecuted again.

While the Hamas attack did not nearly approach the Holocaust's scale, it marked the deadliest day for Jews since then and its well-planned slaughter reopened a wound that remains fresh for many in Israel.

Netanyahu compared the festival killings to the Babi Yar massacre, one of the most infamous mass slaughters of World War II in which more than 33,000 Jews were killed. He has declared that Israel will "never forget," a clear reflection of Israel's vow to never let the Holocaust disappear from the world's collective memory. Dany Cushmaro, an Israeli newscaster, began referring to the Hamas militants as "those Nazis."

Israel's allies abroad also have made the connection.

U.S. Secretary of State Antony Blinken referred to his late father-in-law, a Holocaust survivor, during a visit to Israel and said the attacks had "harrowing echoes" of Nazi massacres. Arsel posted to Instagram by the pro-Israel group Stand With Us shows a candle and the number 6 million slowly ticking up to include the 1,300 slain Israelis.

The memory of the mass murder of Jews looms large over Israel. It holds a memorial day, where Israelis stand still during a one-minute siren to remember the dead. The Holocaust is taught in depth in schools. Youth groups and soldiers visit the death camps in Europe. And visiting dignitaries are taken to the country's Holocaust memorial.

Israeli historian Tom Segev said it was natural for Israelis to make the connection between the Hamas attack and the nation's deeply embedded trauma. "This is the ultimate evil that the person in Israel recognizes," he said.

But he said Israeli leaders across the political spectrum have for decades tried to exploit the memory of the Holocaust for political gain.

Israelis have, in some cases, become furious when comparisons are made.

In a 2016 speech marking Israel's Holocaust memorial day, Yair Golan, then deputy military chief, said he was witnessing "nauseating processes" in Israeli society that reminded him of the fascism of Nazi-era Germany. The speech drew angry reactions from Israeli leaders and is widely believed to be the reason Golan was passed over for the army's top job.

Prominent activists on rival sides of Israel's recent judicial overhaul controversy sparked uproars over Holocaust-related comments.

Jordan's rise cheered by far right

BRIAN SLODYSKO, FARNOUSH AMIRI AND ERIC TUCKER
Associated Press

WASHINGTON — Rep. Jim Jordan has such a reputation as a political brawler that former House Speaker John Boehner once said he had never met someone "who spent more time tearing things apart."

Almost a decade after Boehner stepped down in the face of a conservative revolt, it is Jordan who is trying to bring the Republican Party together to win the speaker's gavel.

He is a favorite of former President Donald Trump and a darling of the party's hard-right base. But his path to the U.S. government's third-highest office is by no means certain in a House Republican conference riven by conflict after the ouster two weeks ago of former Speaker Kevin McCarthy, R-Calif.

To win, Jordan, R-Ohio, will need support from almost every House Republican. There are few votes to spare in a chamber they only narrowly control.

Should Jordan succeed, it would help cement the far right's takeover of the Republican Party and trigger fresh conflict with Democrats over the role of government. But a Jordan speakership would also come with baggage that could present a challenge to Republicans as they labor to hold their House majority in next year's election, an effort that will likely hinge on drawing support from moderate voters in swing districts.

Some members of Congress, including some in his own party, label Jordan an extremist unworthy of the speakership. They point to his active role in Trump's bid to stop the certification of the 2020 presidential election, as well as his refusal to honor a congressional subpoena about the Jan. 6, 2021, attack at the Capitol.

Further in his past, Jordan continues to be questioned over his alleged knowledge of sexual abuse in the wrestling program at Ohio State University — accusations he denies.

Jordan, a 59-year-old father of four, was born near Dayton in western Ohio. He was a four-time state wrestling champion in high school and a two-time NCAA champion at the University of Wisconsin in the 1980s. That helped him land a coaching job at Ohio State before his election to the Ohio legislature in the mid-1990s.

When he decided to pursue a state Senate seat in 1999, he faced opposition from the GOP establishment and from Boehner, then a four-term congressman from Ohio, who supported a rival. Jordan easily won. He was elected to Congress in 2006.

After the tea party wave swept Republicans to power in 2011, Jordan was among the conservatives who were frequently Boehner's tormentors.

Jordan was the founding chairman in 2015 of the House Freedom Caucus, a group of conservative hard-liners who eventually pressured Boehner to step aside. This year, members of the group were instrumental in McCarthy's removal.

But it is Jordan's past as a wrestling coach — a sport he described as "good for a society" — that has posed one of his biggest political liabilities.

In 2018, several former athletes he coached at Ohio State came forward to describe a hard atmosphere surrounding the school's wrestling program when

Please see JORDAN, Page A8

PROTECT
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Whether you are home or away, protect what matters most from unexpected power outages with a Generac Home Standby Generator.
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*To qualify, consumers must request a quote, purchase, install and activate the generator with a participating dealer. Call for a full list of terms and conditions.
GENERAC

Public Open House for the Wilmot Energy Center II Solar and Interconnection Project

Wilmot Energy Center II, LLC, a wholly owned subsidiary of NextEra Energy Resources, LLC, is hosting a public open house for Wilmot Energy Center II on Oct. 18, 2023, from 5:30-7:30 p.m. at Andrada Polytechnic High School, 12960 South Houghton Road, Tucson, AZ 85747.

The proposed project involves an approximately 100-megawatt solar energy generating facility (solar project) and a 138-kilovolt (kV) electrical generation-tie transmission line (interconnection project). The interconnection project will connect the solar project to the regional electric grid through Tucson Electric Power's existing 138kV Cisne Switchyard.

The solar project is planned on private property in unincorporated Pima County, predominately in a Pima County-designated Renewable Energy Incentive District (REID). The interconnection project will traverse Arizona State Trust Land and private property in the City of Tucson and unincorporated Pima County.

The solar project will be reviewed by Pima County through the County's REID program and Conditional Use Permit process. The interconnection project will be reviewed by the Arizona Corporation Commission through the Certificate of Environmental Compatibility hearing process.

Wilmot Energy Center II, LLC welcomes feedback from the community on the solar and interconnection project. If you would like to learn more, or have questions or comments, you may speak with the project team at the upcoming in-person open house or submit a comment:

Mail: Stephanie Rush
lead project manager, NextEra Energy Resources, LLC
c/o SWCA Environmental Consultants
1645 South Plaza Way
Flagstaff, AZ 86001

Email: WilmotEnergyCenter@nexteraenergy.com

Voicemail: 1 (520) 504-1962

Project website: www.WilmotEnergyCenter.com

In addition to the in-person open house, we are hosting an online virtual open house, linked below. Comments received before Nov. 10, 2023, will be included in the CEC application. We look forward to receiving your input.

Project virtual open house:
http://WilmotIISolarOpenHouse.com

Exhibit J-5. Newspaper display advertisement (October 17, 2023).



Exhibit J-6a. Open house display.

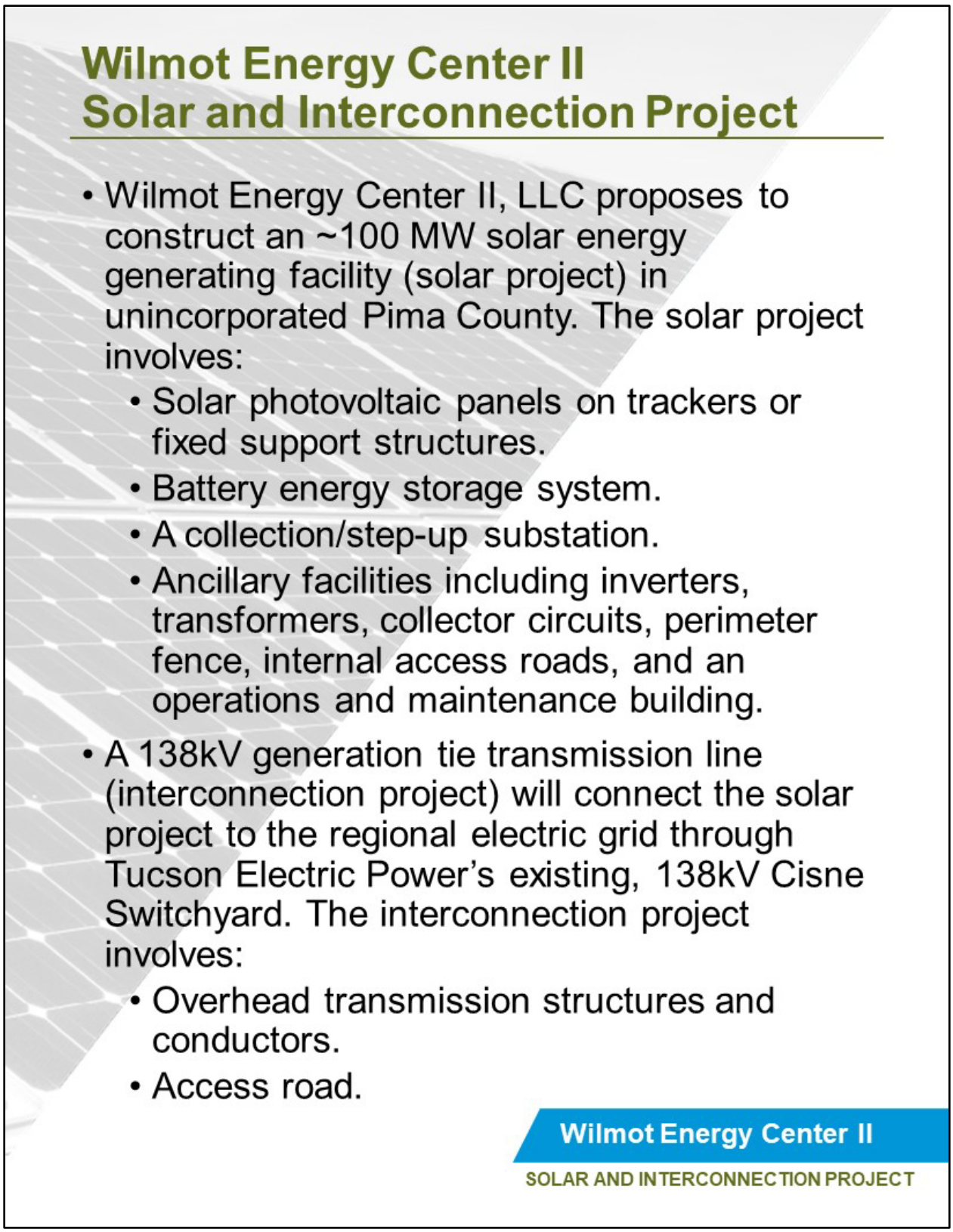


Exhibit J-6b. Open house display (continued).

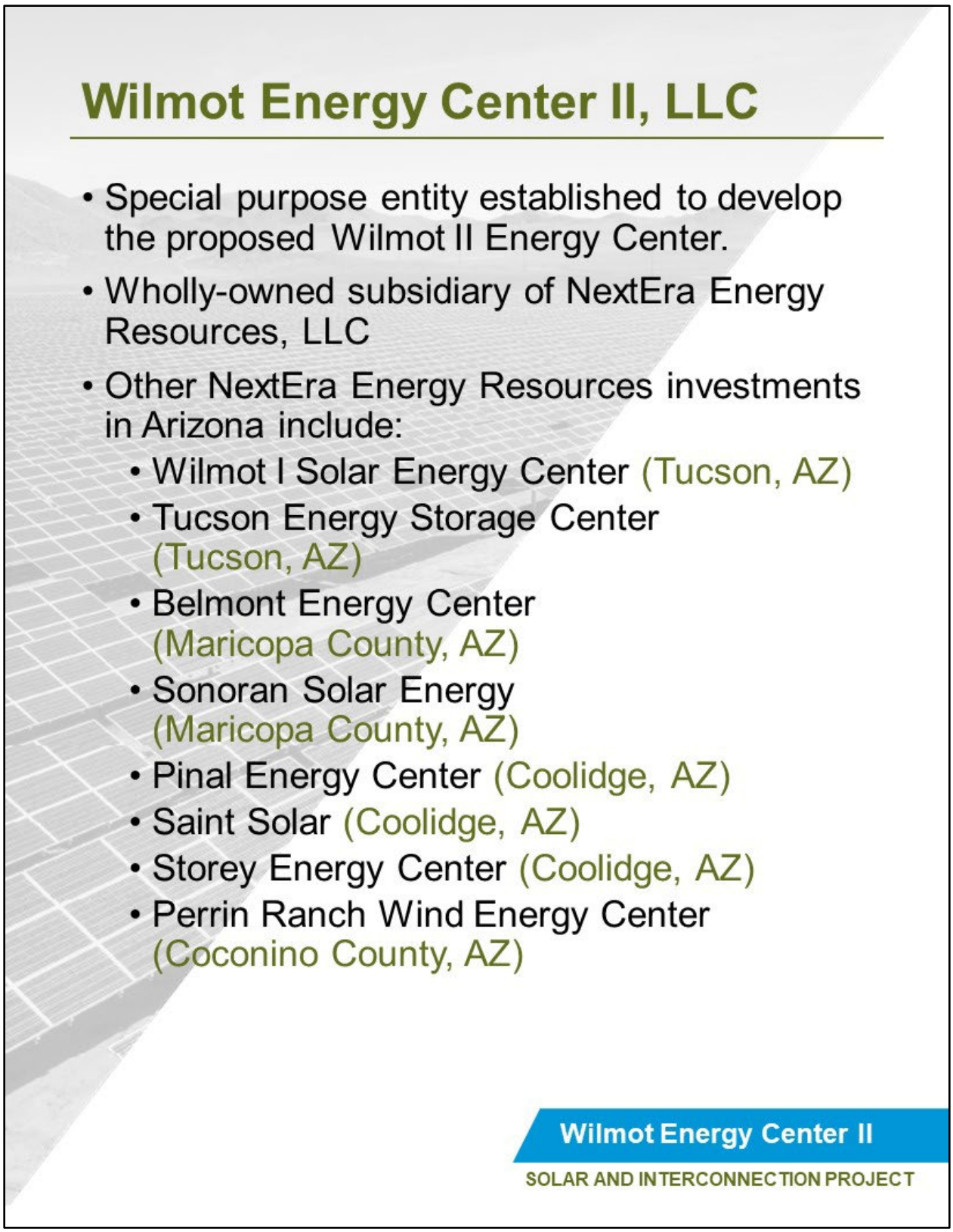


Exhibit J-6c. Open house display (continued).

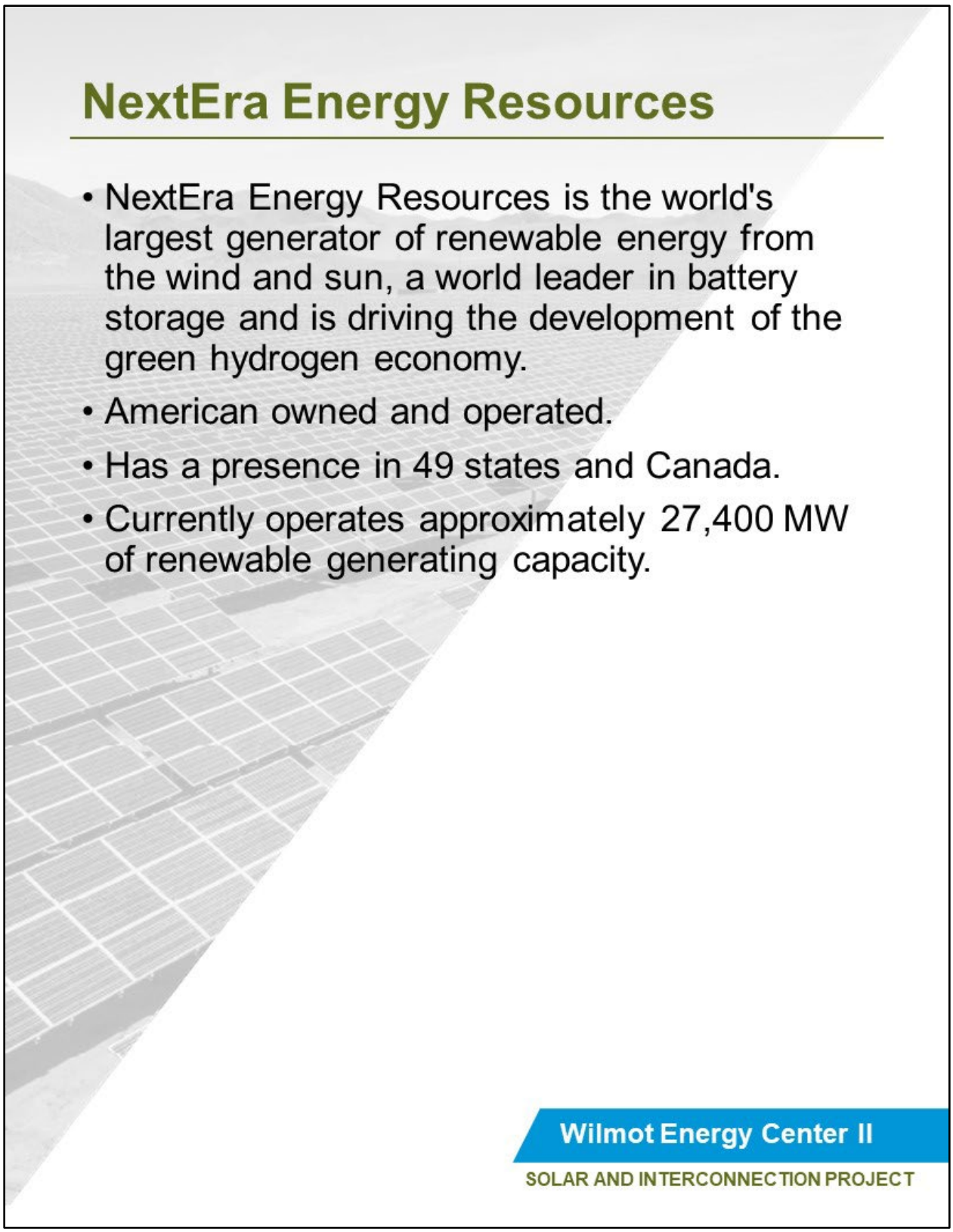
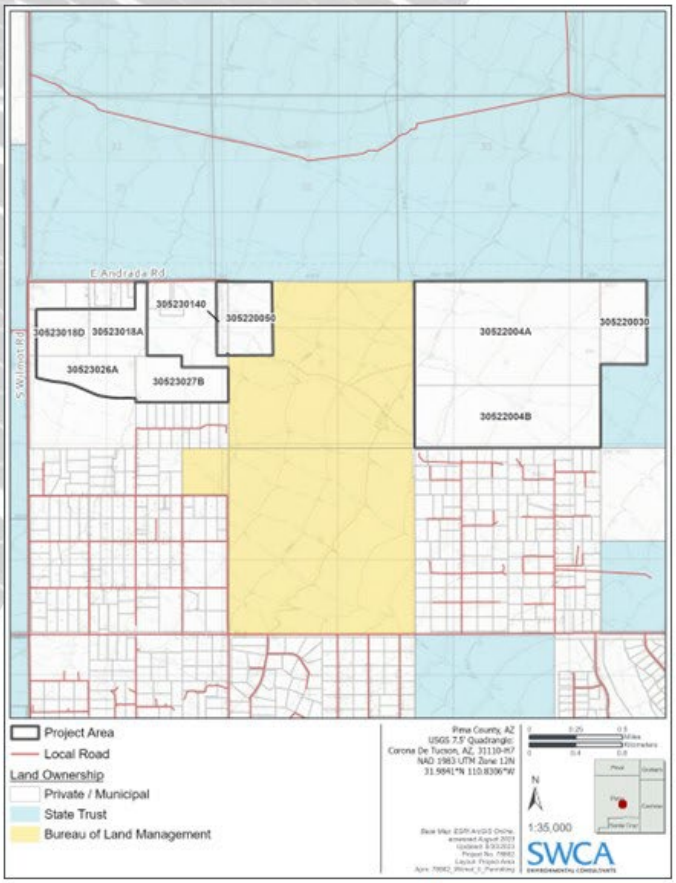


Exhibit J-6d. Open house display (continued).

Project Area – Solar Project

- The solar project will be on private property in unincorporated Pima County, predominately in a Pima County-designated Renewable Energy Incentive District (REID).
  - Areas outside of the REID are zoned Rural Homestead Zone (RH, Suburban Ranch Zone (SR), Multiple Residence Zone (CR-5), Transitional Zone (TR), and Local Business Zone (CB-1).
  - The solar project is under review through Pima County's Conditional Use Permit Process.



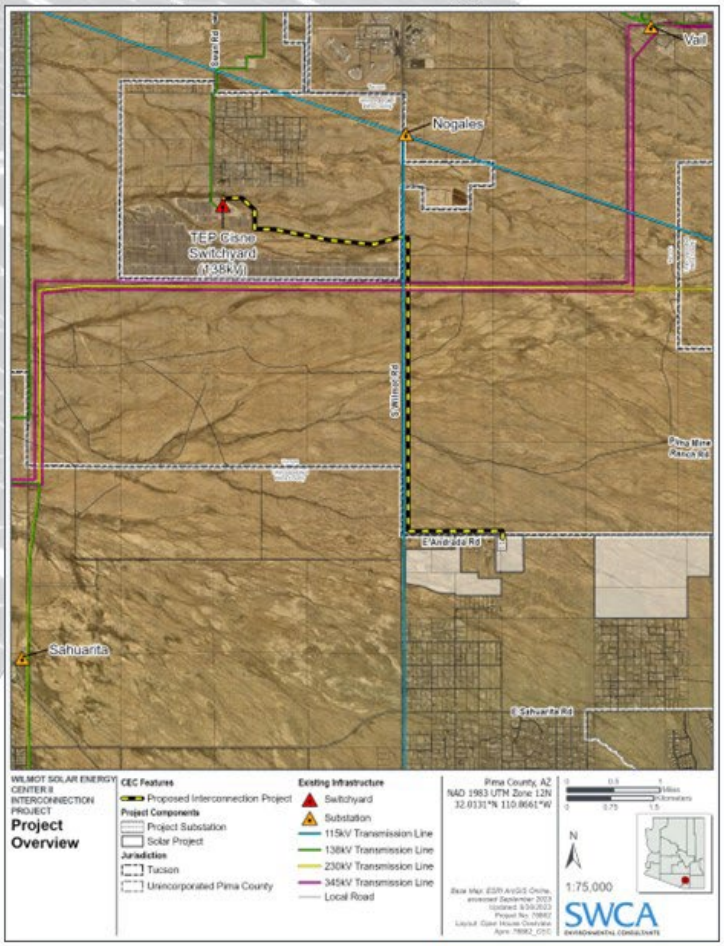
Wilmot Energy Center II

SOLAR AND INTERCONNECTION PROJECT

Exhibit J-6e. Open house display (continued).

Project Area – Interconnection Project

- The Interconnection Project will cross Arizona State Trust land in the City of Tucson and private property in unincorporated Pima County.
- The Interconnection Project will be reviewed by the Arizona Corporation Commission through its Certificate of Environmental Compatibility hearing process.



Wilmot Energy Center II

SOLAR AND INTERCONNECTION PROJECT

Exhibit J-6f. Open house display (continued).



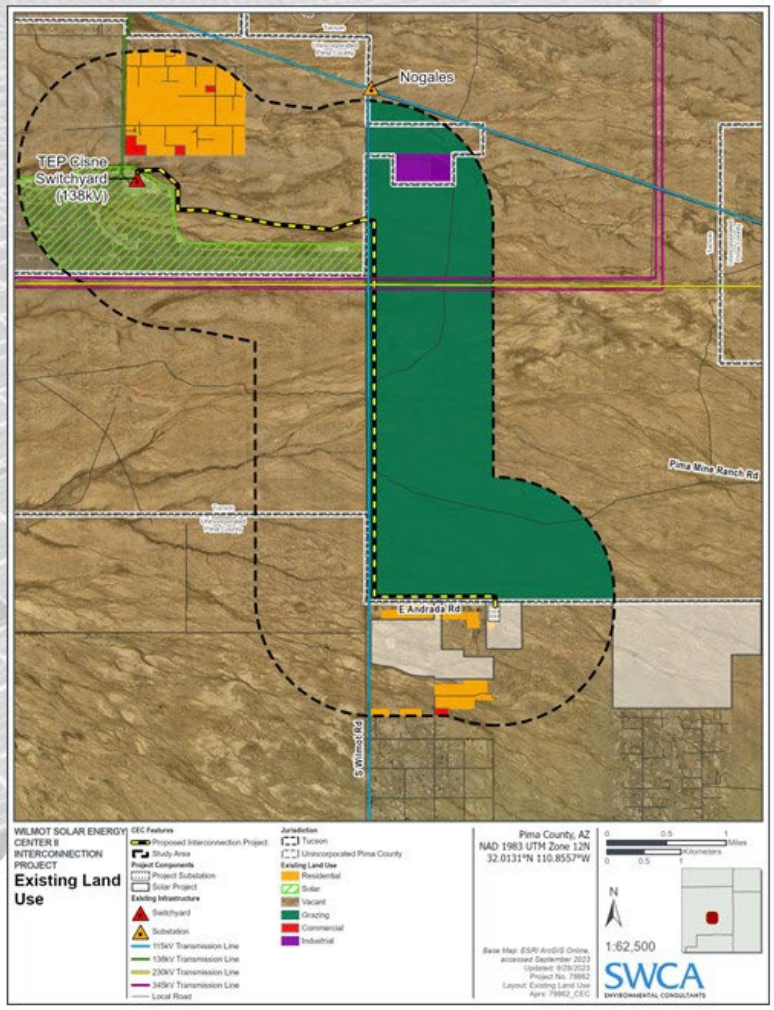
Exhibit J-6g. Open house display (continued).



Exhibit J-6h. Open house display (continued).

Existing Land Use

- Map showing existing land use with a 1-mile study area around the Interconnection Project.
- Existing land uses include existing renewable energy generation, grazing, rural residential, and undeveloped.



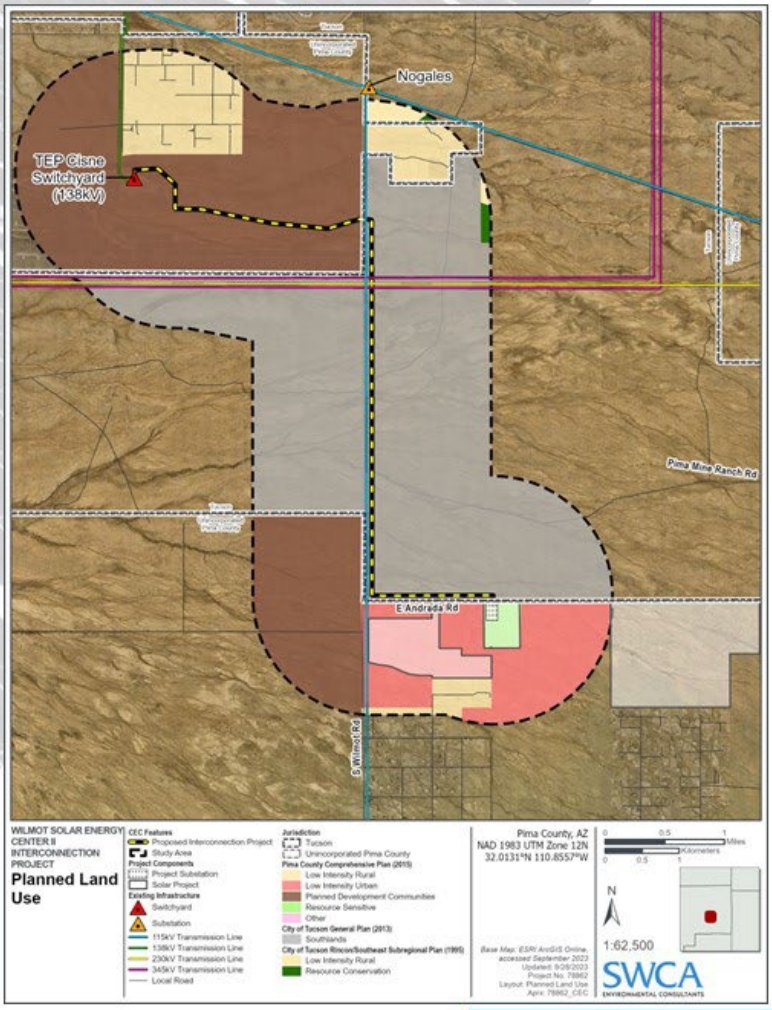
Wilmot Energy Center II

SOLAR AND INTERCONNECTION PROJECT

Exhibit J-6i. Open house display (continued).

Pima County and City of Tucson – Comprehensive and General Plans

- Map showing planned land use, as designated by the respective Comprehensive and General Plans, with a 1-mile study area around the Interconnection Project.
- Planned land uses include low intensity rural and urban, and planned development communities.



Wilmot Energy Center II

SOLAR AND INTERCONNECTION PROJECT

Exhibit J-6j. Open House Display (continued).

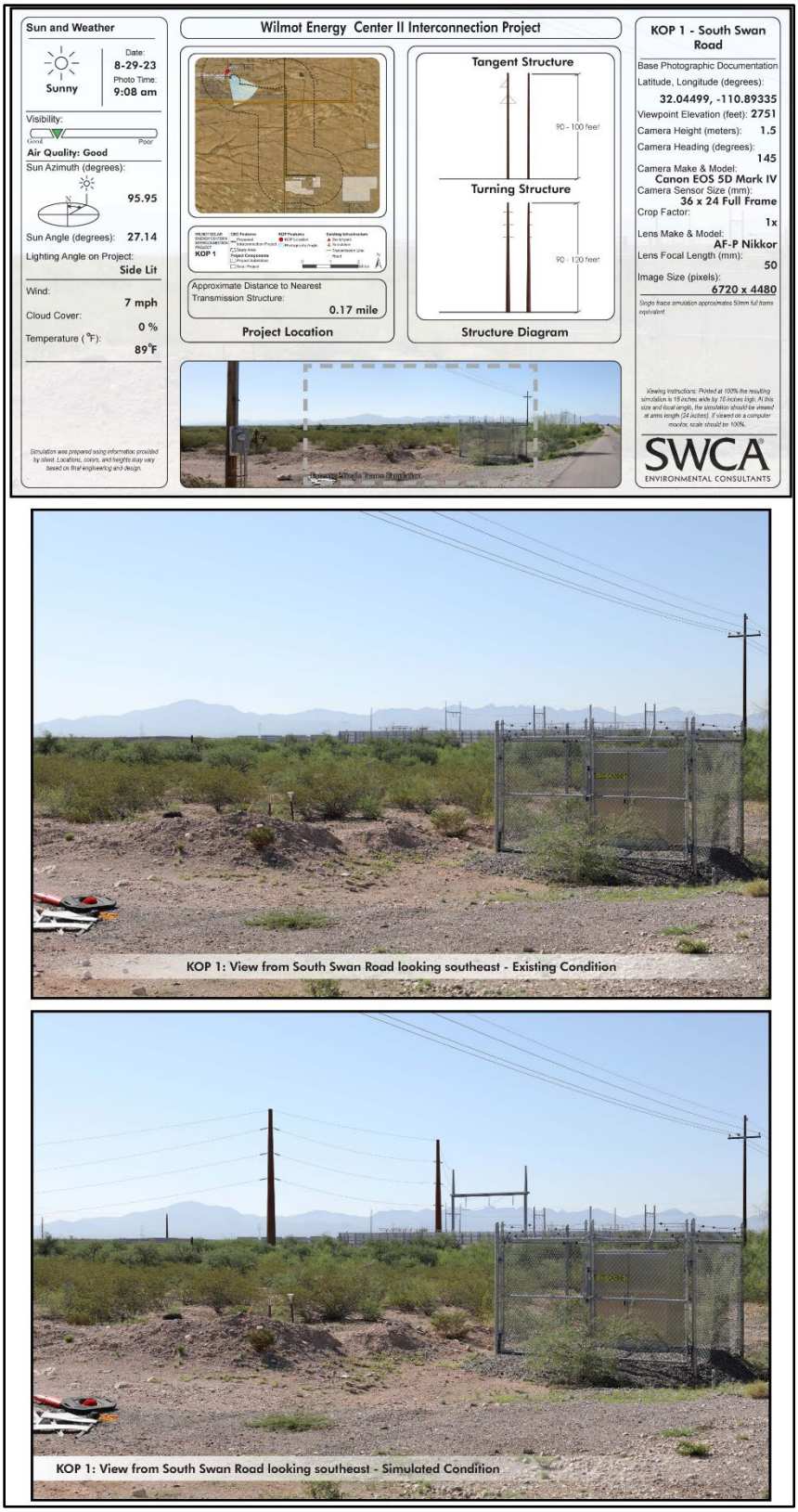


Exhibit J-6k. Open house display (continued).



Exhibit J-6l. Open house display (continued).

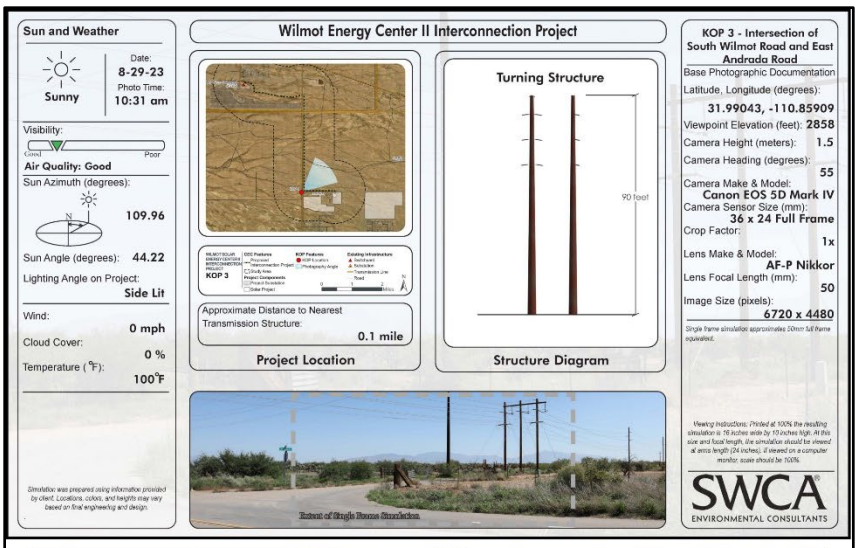






Exhibit J-6m. Open house display (continued).

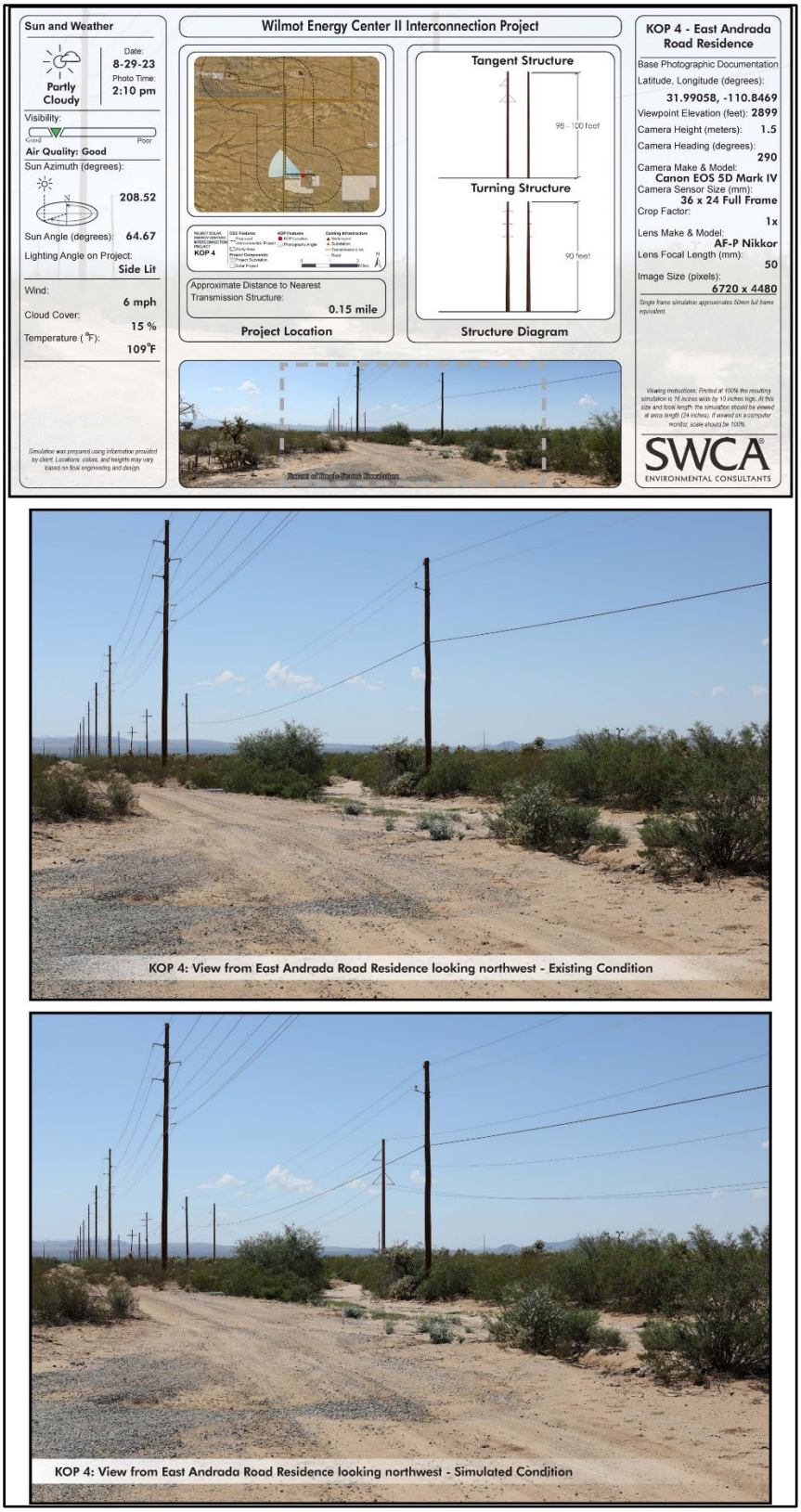


Exhibit J-6n. Open house display (continued).



Exhibit J-6o. Open house display (continued).

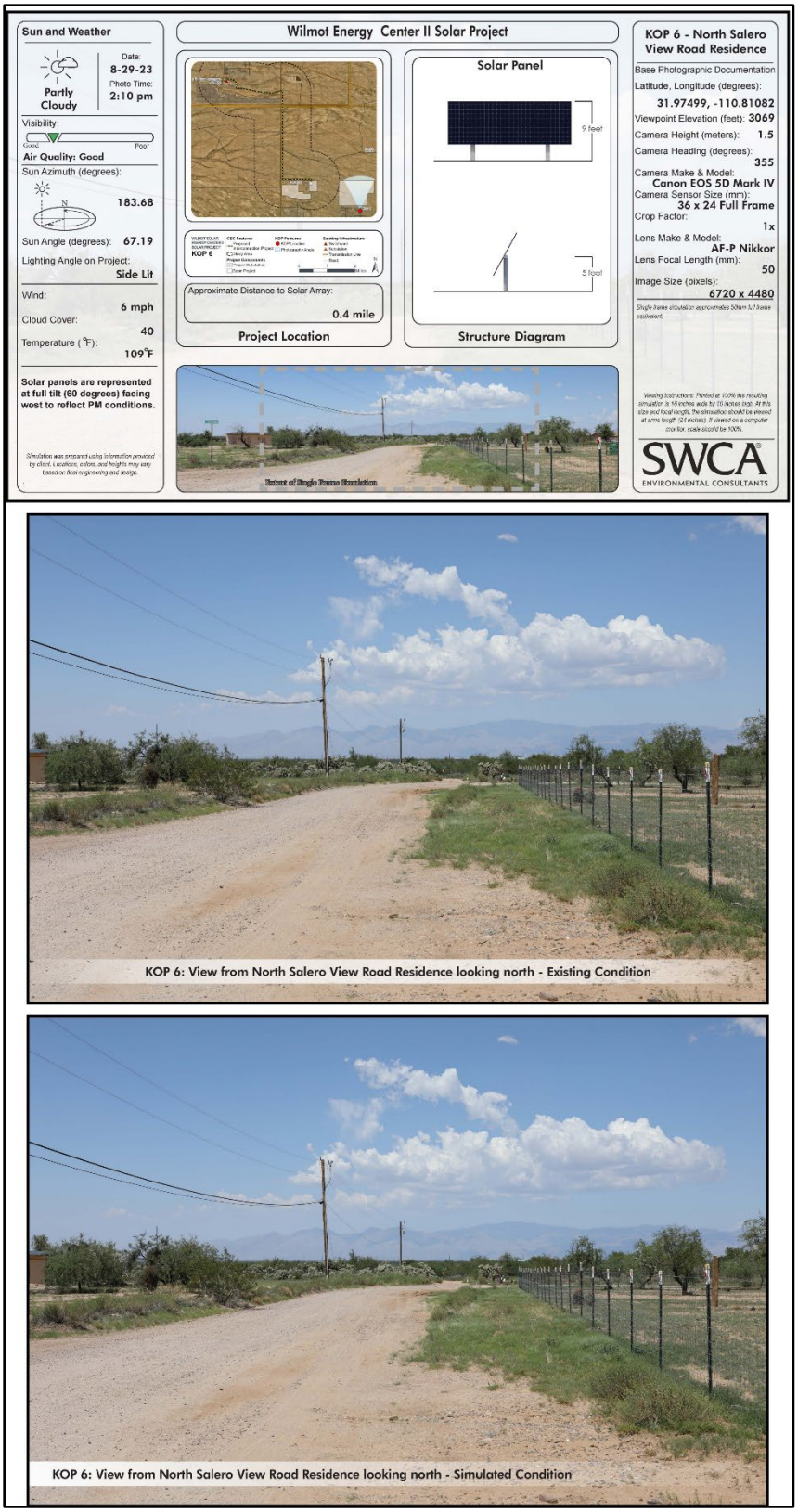


Exhibit J-6p. Open house display (continued).

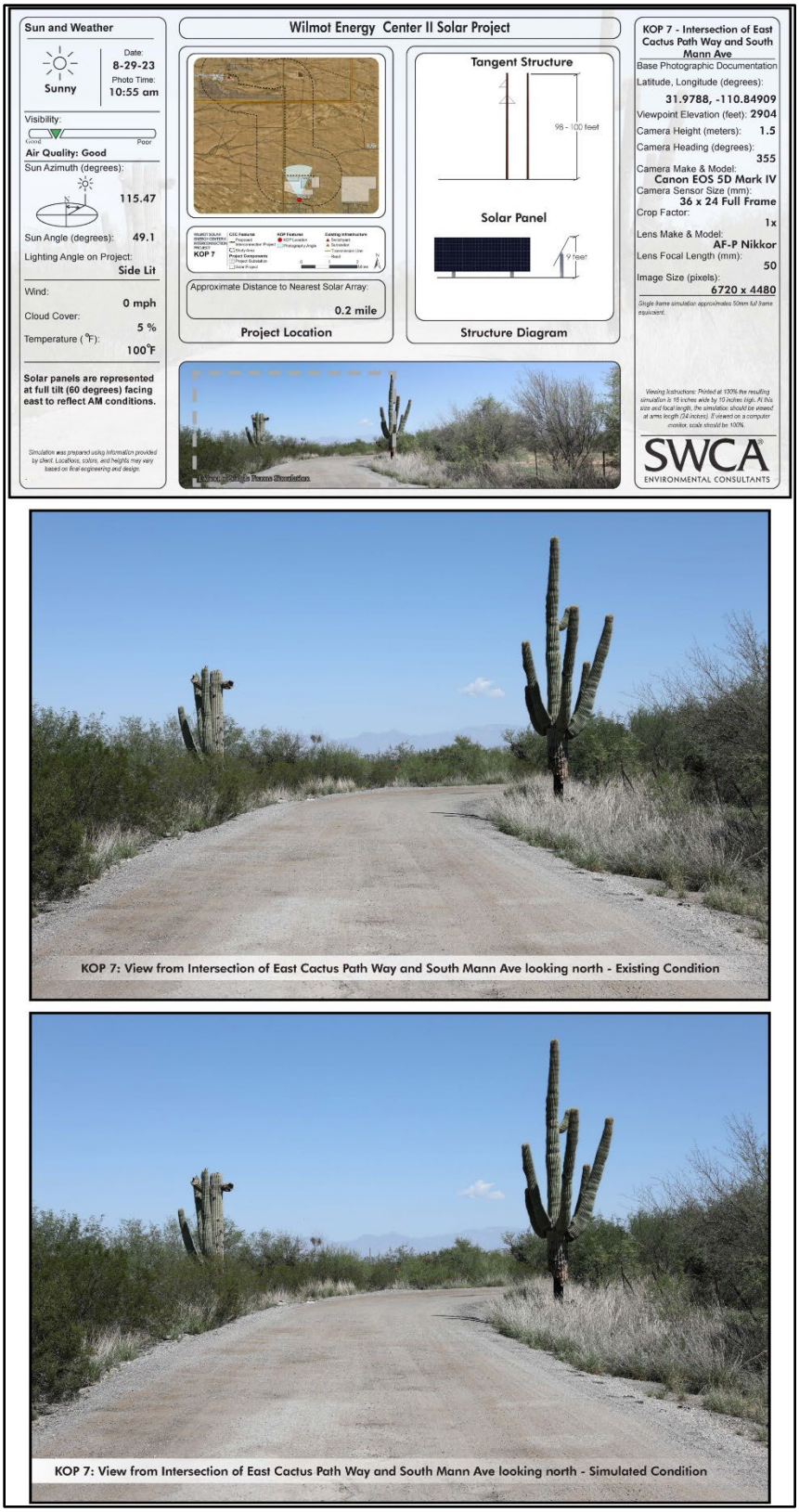


Exhibit J-6q. Open house display (continued).

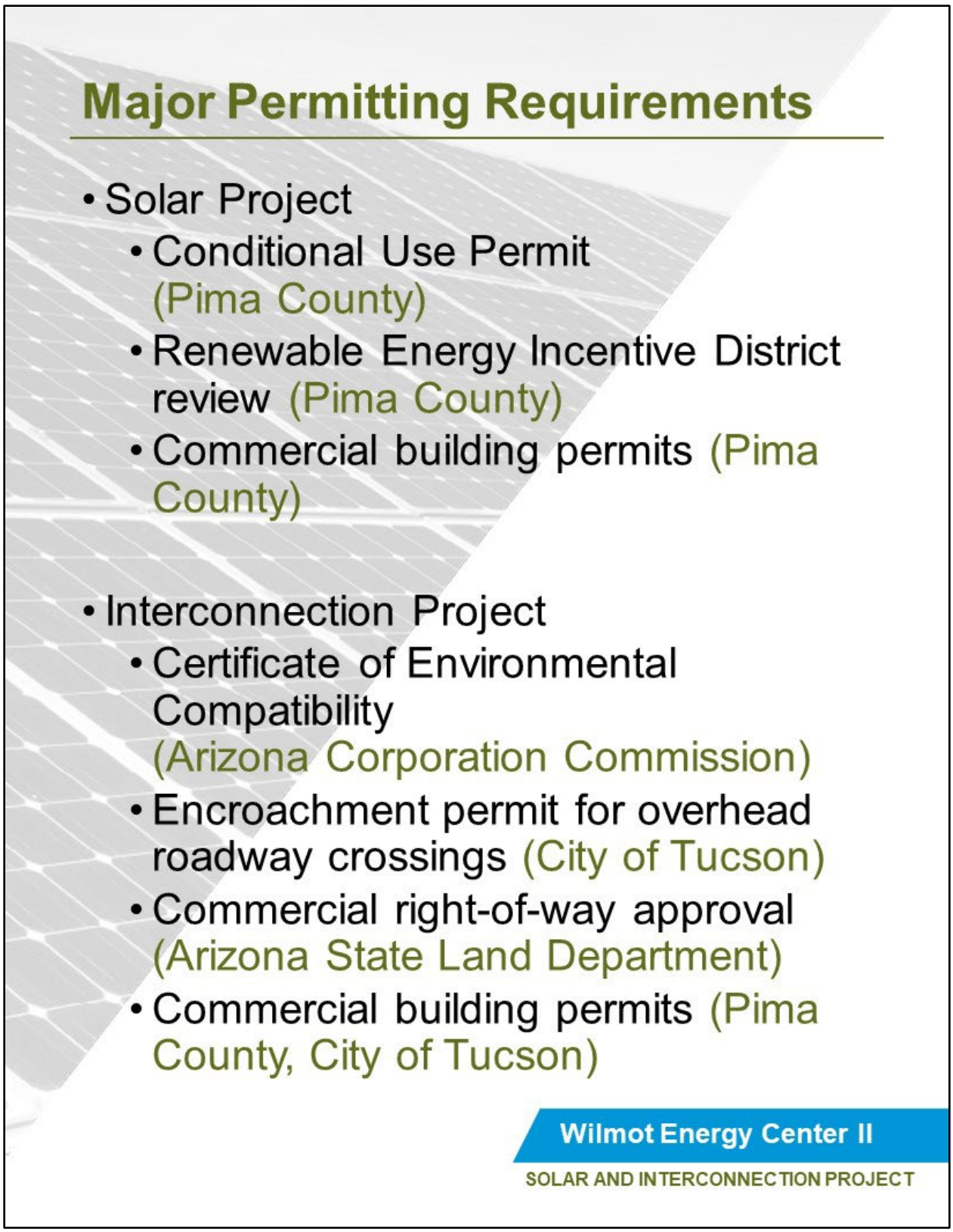


Exhibit J-6r. Open house display (continued).



Exhibit J-6s. Open house display (continued).

Wilmot Energy Center II, LLC

Wilmot Energy Center II – Solar and Interconnection Project

Open House Sign-In Sheet

October 18, 2023

Name	Email Address	Telephone	Do you wish to receive future communications about the project?
Terry & Shay Lane	~~terrt~~ terrylane@MSN.Com	520-450-7016	Yes
Peniel Macias	Penielmacias@Gmail.com	520 954 4862	Yes
Bart Dover	bdover6@icloud.com	520-780-8184	No
Carolyn Trejo	BCTrejo6@gmail.com	(520) 678-9195	Yes
Becky Ruth	beckyruth2018@gmail	520 982 5138	yes

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Exhibit J-7a. Open house sign-in sheet (October 18, 2023).

Wilmot Energy Center II, LLC

Wilmot Energy Center II – Solar and Interconnection Project

Open House Sign-In Sheet

October 18, 2023

Name	Email Address	Telephone	Do you wish to receive future communications about the project?
ROBERT TUCKER	RTUCKER@DIAMONDVEN.COM	520-577-0200	YES.
Marcus White	mgwcortes@gmail.com		Yes
Christy Lane	cclane2324@gmail.com	520-991-8903	yes
ANDREA CHRISTENSEN	wilsojam1014@Live.com	465-1768 (C) 520-762-8374 (H)	YES
Dick Daggett		520-275-1162	Yes

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Exhibit J-7b. Open house sign-in sheet (October 18, 2023).

Wilmot Energy Center II, LLC

Comment Form

Wilmot Energy Center II – Solar and Interconnection Project
Open House
October 18, 2023

Name: _____

Affiliation: _____

Email: _____

Phone: _____

Address: _____

City _____ State _____ Zip _____

Comment: _____

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Exhibit J-8. Sample open house comment form (October 18, 2023).

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