

**Application
for Certificate of Environmental Compatibility**

Cactus Flower Solar Gen-Tie Project

Prepared for:
State of Arizona
Power Plant and Transmission Line Siting Committee

Submitted by:
Cypress Creek Renewables, LLC

October 24, 2025



1 Albert H. Acken (021645)
2 ACKEN LAW
3 111 E. Dunlap Ave, Ste 1-172
4 Phoenix, Arizona 85020
5 602-790-6091
6 bert@ackenlaw.com
7 *Attorney for Cypress Creek Renewables, LLC*

8
9 **BEFORE THE ARIZONA POWER PLANT**
10 **AND TRANSMISSION LINE SITING COMMITTEE**
11

12 IN THE MATTER OF THE APPLICATION
13 OF CYPRESS CREEK RENEWABLES,
14 LLC, IN CONFORMANCE WITH THE
15 REQUIREMENTS OF ARIZONA REVISED
16 STATUTES § 40-360, ET SEQ., FOR A
17 CERTIFICATE OF ENVIRONMENTAL
18 COMPATIBILITY AUTHORIZING THE
19 CACTUS FLOWER SOLAR GEN-TIE
20 PROJECT, LOCATED IN PINAL
21 COUNTY, ARIZONA.

DOCKET NO.:

Case No.

22 **NOTICE OF FILING**
23 **APPLICATION FOR**
24 **CERTIFICATE OF**
25 **ENVIRONMENTAL**
26 **COMPATIBILITY**

27 Cypress Creek Renewables, LLC, a Delaware limited liability ("Applicant")
28 through undersigned counsel, provides notice of filing of the Application for a Certificate
of Environmental Compatibility for the Cactus Flower Solar Gen-Tie Project under A.R.S.
§ 40-360.03.

Communications concerning the Application should be addressed to:

Albert H. Acken
Acken Law
111 E. Dunlap Ave, Ste 1-172
Phoenix, Arizona 85020
bert@ackenlaw.com

RESPECTFULLY submitted this 24th day of October, 2025, by:

ACKEN LAW

By: /s/ Albert H Acken

Albert H. Acken
111 E. Dunlap Ave, Ste 1-172
Phoenix, Arizona 85020
(602) 790-6091
bert@ackenlaw.com
Attorney for Cypress Creek Renewables, LLC

ORIGINAL filed and eight copies hand-delivered
on October 24, 2025, with:

Docket Control
ARIZONA CORPORATION COMMISSION
1200 West Washington
Phoenix, Arizona 85007

COPY of the foregoing hand-delivered on
October 24, 2025, to:

Adam Stafford, Chairman
Arizona Power Plant and
Transmission Line Siting Committee
Assistant Attorney General
Attention: Tod Brewer
15 South 15th Avenue
Phoenix, AZ 85004

COPIES of the foregoing e-mailed on
October 24, 2025, to:

Office of General Counsel
Arizona Corporation Commission
1200 West Washington
Phoenix, Arizona 85007
ogc@azcc.gov

Utilities Division
Arizona Corporation Commission
1200 West Washington
Phoenix, Arizona 85007
utildivservicebyemail@azcc.gov

Glennie Reporting Services, LLC
1555 East Oranewood
Phoenix, Arizona 85020
admin@glennie-reporting.com

By: /s/ Natalie Senini
Natalie Senini
2020 N Central Ave, Ste 695
Phoenix, Arizona 85004
(602) 888-7304

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Prepared for:

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Submitted by:

Cypress Creek Renewables, LLC

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Case No. _____

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IN THE MATTER OF THE
APPLICATION OF CYPRESS CREEK
RENEWABLES, LLC, IN
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REVISED STATUTES 40-360, ET. SEQ.,
FOR A CERTIFICATE OF
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AUTHORIZING THE CACTUS FLOWER
SOLAR GEN-TIE PROJECT IN PINAL
COUNTY, ARIZONA

Docket No. _____

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**APPLICATION FOR
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COMPATIBILITY**

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LIST OF EXHIBITS

(Exhibits follow Application)

Exhibit A:	Location and Land Use Maps
Exhibit B:	Environmental Studies
Exhibit C:	Areas of Biological Wealth
Exhibit D:	Biological Resources
Exhibit E:	Scenic Areas, Historic Sites and Structures, and Archaeological Sites
Exhibit F:	Recreational Purposes and Aspects
Exhibit G:	Concepts of Proposed Facilities
Exhibit H:	Existing Plans and Land Use
Exhibit I:	Anticipated Noise Emissions and Potential Interference with Communication Signals
Exhibit J:	Special Factors—Public Outreach

LIST OF EXHIBIT FIGURES/ATTACHMENTS

A-1:	N/A
A-2:	N/A
A-3:	Proposed Transmission Corridor
A-4:	Land Use and Zoning
B-1:	Cactus Flower Solar, LLC Biological Resources Evaluation, October 22, 2025

- B-2: Cactus Flower Solar, LLC Aquatic Resources Delineation Report, October 15, 2025
- B-3: Arizona State Land Department Native Plant Inventory, October 15, 2025
- C-1. U.S. Fish and Wildlife Service Arizona Ecological Field Office Information for Planning and Consultation System Report, April 7, 2025
- C-2. U.S. Fish and Wildlife Service Arizona Ecological Field Office Information for Planning and Consultation System Official Species List, September 30, 2025
- C-3. Arizona Game and Fish Department Heritage Data Management System Environmental Review Tool Report, October 1, 2025
- E-1: Key Observation Points and Visual Simulations of the Project
- G-1: Cactus Flower Solar Project Typical Pole Designs
- G-2: Cactus Flower Solar Project Switchyard Design
- J-1: Project Website
- J-2: Project Facebook Page
- J-3: Tribal Engagement Letter sent to Tribes on July 25, 2025
- J-4: Pinal Central Dispatch Affidavits for Open House Invitation for Postings on August 28 and September 4, 2025
- J-5: Public Open House Letters sent to Neighbors on August 21 and August 27, 2025
- J-6: Posters Presented at the Public Open House

List of Acronyms, Abbreviations, and Definitions

A.A.C.	Arizona Administrative Code
ACC	Arizona Corporation Commission
ADEQ	Arizona Department of Environmental Quality
ADOT	Arizona Department of Transportation
ANPL	Arizona Native Plant Law
APLIC	Avian Powerline Interaction Committee
Applicant	Cactus Flower Solar, LLC
APS	Arizona Public Service
ALAN	artificial light at night
amsl	above mean sea level
A.R.S.	Arizona Revised Statutes
ARHP	Arizona Register of Historic Places
ASLD	Arizona State Land Department
ASLD Protocol	Arizona State Land Department Policy Memo No. P79-1, issued November 23, 1979, as amended August 5, 2020
AU	animal unit
AVC	Animal-vehicle collision
AZGFD	Arizona Game & Fish Department
AZPDES	Arizona Pollutant Discharge Elimination System
BCC	Birds of Conservation Concern
BGEPA	Bald and Golden Eagle Protection Act
BESS	Battery Energy Storage System
BLM	Bureau of Land Management
BRA	Biological Resources Assessment
BRE	Biological Resources Evaluation
Cactus Flower Solar Project	The proposed 270-megawatt photovoltaic solar energy generating facility with a Battery Energy Storage System that the Project connects to
CCR	Cypress Creek Renewables, LLC
CEC	Certificate of Environmental Compatibility
CFPO	Cactus ferruginous pygmy-owl
cfs	cubic feet per second
CWA	Clean Water Act
dB	decibel
dBA	A-weighted decibel
du/ac	dwelling unit per acre
EPA	Environmental Protection Agency
ESA	Endangered Species Act
FEMA	Federal Emergency Management Agency

ft	foot, feet
gen-tie	Generation transmission tie line
Gen-Tie Area	The 8.9-mile long, 150-foot right-of-way for the gen-tie.
GIS	Geographic Information System
GLO	General Land Office
GR	General Ruling Zoning District
GW	gigawatt
HDMS	Heritage Data Management System for the Arizona Game and Fish Department
HUC	Hydrology unit code
IPaC	Arizona Ecological Services Field Office Information for Planning and Consultation
KOP	Key Observation Point
kV	kilovolt
MBTA	Migratory Bird Treaty Act
MW	megawatt
NFHL	National Flood Hazard Layer
NHD	National Hydrology Dataset
NHPA	National Historic Preservation Act
NPI	Native Plant Inventory
NRHP	National Register of Historic Places
NSR	Noise Sensitive Receptors
NWI	National Wetland Inventory
PCCP	Pinal County Comprehensive Plan
Project	The proposed activities requiring the Certificate of Environmental Compatibility gen-tie and switchyard located in Pinal County.
Proposed Transmission Corridor	The 1,000-foot-wide, 8.9-mile-long corridor Applicant is requesting approval to site the 150-foot-wide gen-tie right-of-way.
ROW	Right-of-way
SDT	Sonoran desert tortoise
Sackett	The U.S. Supreme Court decision in <i>Sackett et. ux. v. Environmental Protection Agency et al.</i> , which amended the definition of WOTUS on September 8, 2023.
SGCN	Species of Greatest Conservation Need
Siting Committee	Arizona Power Plant and Transmission Line Siting Committee
Solar Array Area	The approximately 2,114-acre area where the proposed 270-megawatt photovoltaic solar energy generating facility with a Battery Energy Storage System is located.
SWAP	Arizona State Wildlife Action Plan
SWCA	SWCA Environmental Consultants
SWFL	Southwestern willow flycatcher

Switchyard Siting Area	The approximately 230-acre area the Applicant is requesting approval to site the approximately 20-acre switchyard.
SWPP	Surface Water Protection Program
SWPPP	Stormwater Pollution Prevention Plan
Tetra Tech	Tetra Tech, Inc.
TMDL	Total maximum daily load
USDA	U.S. Department of Agriculture
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
WAPA	Western Area Power Administration
WestLand	WestLand Engineering & Environmental Services
WOTUS	Waters of the U.S.
YBC	Yellow-billed cuckoo

EXECUTIVE SUMMARY

INTRODUCTION

Pursuant to Arizona Revised Statutes (A.R.S.) §§ 40-360, et seq., Cypress Creek Renewables, LLC (Applicant; CCR), is seeking a Certificate of Environmental Compatibility (CEC) for a proposed 230-kilovolt (kV) generation tie line (gen-tie) and associated switchyard in Pinal County, Arizona (the Project; **Exhibit A-3**). The Project will interconnect the proposed 270-megawatt (MW) photovoltaic solar energy generating facility with a 270-megawatt Battery Energy Storage System (BESS; the Cactus Flower Solar Project) to the regional electric power grid. The Project gen-tie will originate from the proposed, non-jurisdictional Project substation located at the Cactus Flower Solar Project, then run west and then south to the proposed switchyard that will connect the gen-tie to the existing Tat Momoli-Saguaro 230-kV transmission line operated by Arizona Public Service (APS) (**Exhibit G-1**). The Applicant is seeking approval of the gen-tie and jurisdictional switchyard.

The Applicant is a subsidiary of CCR, one of the largest solar and energy storage companies in the United States. Since its founding in 2014, CCR has developed more than 12 gigawatts (GW) of solar energy projects and 200 MW of battery storage. Of this portfolio, CCR owns and operates 2.4 GW across 217 projects in 13 states and operates and maintains a total of 4.8 GW, including both owned assets and third-party facilities. As a fully integrated development platform, the company brings development, engineering, finance, grid integration, procurement, construction management, and operations expertise in-house to ensure high-quality and timely delivery across every phase of the project lifecycle. CCR also champions workforce development and community reinvestment initiatives nationwide, forming long-term partnerships with utilities, landowners, suppliers, and local communities. The company is committed to maintaining sustainable supply chains, free of forced labor, while its project developers, subject matter experts, and construction managers actively control budgets and schedules, leveraging local expertise to successfully deliver utility-scale clean energy projects across the country.

The Applicant proposes to construct and operate the Project to deliver electricity generated by the Cactus Flower Solar Project to local Pinal County electrical districts and/or other public and private power purchasers in Arizona. Although the Cactus Flower Solar Project is briefly described in this application for the information and convenience of the Arizona Power Plant and Transmission Line Siting Committee (Siting Committee) and the Arizona Corporation Commission (ACC), the Applicant seeks the CEC only for the gen-tie and switchyard. A Pinal County Board of Supervisors Hearing is scheduled for December 3, 2025 to secure rezoning and Planned Area Development approval from Pinal County.

The Applicant received Major Comprehensive Plan Amendment Approval in 2024 to designate these parcels for Green Energy Production. The Applicant is also working with the Arizona State Land Department (ASLD) to acquire right-of-way (ROW) approval for the sections of the gen-tie and switchyard that occur on ASLD-managed lands.

The Project was included in the Applicant's Ten-Year Transmission Project Plan filed with the ACC on January 31, 2025. Project construction is anticipated to begin in October 2028, with an anticipated commercial operation date in April 2030.

PROJECT DESCRIPTION AND PROPOSED ROUTE

The proposed Project consists of an approximately 8.9-mile 230-kV gen-tie line that will interconnect the proposed Cactus Flower Solar Project to the regional electric grid. The northeastern terminus of the gen-tie will be located within the Cactus Flower Solar Project boundary and will connect to the solar and BESS via a new non-jurisdictional substation. The southwestern terminus of the gen-tie will connect to the existing Tat Momoli-Saguaro 230-kV transmission line operated by APS via a new switchyard. The gen-tie will be located within a 1,000-foot-wide corridor referred to as the Proposed Transmission Corridor and depicted in **Exhibits A-3 and A-4**. The Proposed Transmission Corridor includes approximately 6.8 linear miles of ASLD-managed lands and approximately 2.1 linear miles of private land. The Applicant is requesting approval for a total gen-tie ROW width of 150 feet, which will be located within the Proposed Transmission Corridor to be approved as part of this CEC. An approximately 230-acre Switchyard Siting Area is located at the southern end of the Proposed Transmission Line Corridor (**Exhibit A-3**). Approximately 23 acres of the Proposed Transmission Line Corridor overlap with the Switchyard Siting Area. The new switchyard will occupy approximately 20 acres of the Switchyard Siting Area. Final engineering designs will precisely locate the final 150-foot-wide ROW within the Proposed Transmission Corridor and the final switchyard location within the Proposed Switchyard Siting Area. Together, the Proposed Transmission Corridor and the Switchyard Siting Area comprise the Project Area which is the subject of this application.

Proposed Switchyard

The Project switchyard would occupy approximately 20 acres within the approximately 230-acre Switchyard Siting Area situated on ASLD lands. The Proposed Switchyard Siting Area requested under this application will be located in Sections 20, 21, 28, and 29 of Township 10 South, Range 07 East (**Exhibit A-3**). It is anticipated that the 230-kV Project switchyard will include a four (4) breaker ring bus configuration. The switchyard will be enclosed to promote safe and secure operation with consideration for both humans and animals.

Proposed Gen-Tie

The gen-tie route will be located within Sections 25, 26, 27, 32, 33, 34, 35 and 36 of Township 09 South, Range 07 East; and Sections 4, 8, 9, 16, 17, 20, and 21 of Township 10 South, Range 07 East. The final gen-tie line will occupy approximately 162 acres. Typical components of the gen-tie line include approximately 100-foot-tall steel monopoles spaced at approximately 800-foot intervals. H-frame, lattice, and 3-pole structures may also be used.

PUBLIC OUTREACH AND ENVIRONMENTAL COMPATIBILITY

The Applicant invited 17 elected officials and representatives from local, state, and federal agencies to provide input on the Project (**Exhibit J**) and invited them to a public open house. The 56 property owners within a 2-mile radius of the Project Area were also individually invited to provide comments to the Project and to attend the open house. The open house invitations included Project details, methods for obtaining additional Project information via the Project website, how to comment on the Project, and an invitation to participate in the public open house held at the Toltec Community Center and Senior Center on September 9, 2025. Three people attended the open house and learned about the Project and Project resource studies. The individuals who attended were a local private landowner, a legal representative for a local private landowner, and a Vice-Chairman of the Pinal County Board of Supervisors. Information about public outreach efforts and letters/emails sent to stakeholders are presented in **Exhibit J**.

As explained herein, studies have been conducted to evaluate the Project's potential effects on the environment and ecology of Arizona. The Applicant respectfully submits this CEC application which provides documentation that the Project will be environmentally compatible in accordance with A.R.S. § 40-360.06. The proposed location for the Project avoids sensitive environmental, cultural, and recreational areas and resources.

PROJECT NEED AND BENEFITS

The Cactus Flower Solar Project was developed in response to the growing demand for clean, reliable energy in Arizona. As the state's population and energy needs increase, utilities and businesses are seeking affordable solutions that reduce carbon emissions and strengthen the power grid. This Project will help meet those goals while supporting local economic development and ensuring long-term energy security for the region. The Project is needed to connect the proposed Cactus Flower Solar 270-MW photovoltaic facility with a BESS to an existing transmission line, which will provide electric power to the existing regional electric power grid.

CONCLUSION

The Project serves the broader public interest because it facilitates the interconnection of the Cactus Flower Solar Project to the regional transmission grid via a new switchyard with minimal environmental impacts. This application includes the environmental evaluation and documentation relevant to the Project as specified by Arizona Administrative Code (A.A.C.) R14-3-219. The Applicant is committed to avoiding and minimizing environmental impacts and submits that the Project is environmentally compatible. The Applicant therefore respectfully requests that the Committee issue a CEC for the Project, and that the Commission approve the CEC pursuant to A.R.S. § 40-360.07(C).

APPLICATION FOR A CERTIFICATE OF ENVIRONMENTAL COMPATIBILITY

1. Name and address of Applicant:

Applicant: Cypress Creek Renewables, LLC
Address: 3402 Pico Boulevard
Santa Monica, California 90405
Telephone: 1-520-288-7011
Email: cactusflower@ccrenew.com

Legal Representative

Name: Albert Acken
Address: 111 E. Dunlap Avenue
Suite 1-172
Phoenix, AZ 85020
Telephone: 1-602-790-6091
Email: bert@ackenlaw.com

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

Name: Sohini Hathiramani, Project Developer
Cypress Creek Renewables, LLC
Telephone: 1-949-637-8638
Email: sohini.hathiramani@ccrenew.com

3. Dates on which 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:

Submitted January 31, 2025 in assigned docket #E-99999A-25-0006.

4. Description of the proposed facility including:

a. Description of the electrical generating plant:

Not applicable; the proposed Project is not a thermal generating facility.

b. Description of the proposed transmission lines, switchyards or substations associated therewith; and purpose for constructing said transmission line:

i. Nominal voltage for which the lines are designated:

(1) Nominal voltage:

The nominal voltage for the Project's transmission lines is 230-kV.

(2) Description of proposed structures:

It is anticipated that the Project will use steel monopoles (**Exhibit G-1**). Spacing between poles will be approximately 800 feet. Lattice, H-frame, and three-pole designs may also be used.

(3) Description of proposed switchyards & substations:

There are two proposed interconnection facilities to be constructed in association with this Project. One will be the non-jurisdictional Project substation which will convert power generated by the solar facility to 230-kV. The substation is not included in the CEC application. The second is a new switchyard which is jurisdictional and is included in this application. The new 230-kV switchyard will include a four (4) breaker ring bus configuration. The switchyard will be enclosed to promote safe and secure operation with consideration for both humans and animals.

(4) Purpose for constructing the transmission line:

The purpose for constructing the Project is to interconnect the proposed Cactus Flower Solar Project to the regional transmission grid.

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 application is made. General Location:

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

Between the proposed Project substation (located within the boundary of the non-jurisdictional Cactus Flower Solar Project) and the Project switchyard adjacent to APS's 230-kV existing transmission line as shown in **Exhibit A-3**. All Project facilities will be located in Pinal County.

(2) Straight-line distance between such geographic points:

Approximately 6.0 miles.

(3) The length of the transmission line for each alternative route for which application is made:

The transmission line length will be approximately 8.9 miles. Due to the proximity of the Project site to the APS system, and the overall minimal community and biological impact of the proposed transmission alignment, other alternatives are not included in this application as they would result in more significant environmental impacts.

iii. Detailed Dimensions:

(1) Nominal width of ROW required: 150 feet

(2) Nominal width of corridor: 1,000 feet

(3) Nominal length of spans: 800 feet

(4) Maximum height of supporting structures: up to 199 feet

(5) Minimum height of conductor above ground: 30 feet

iv. Estimated costs of proposed transmission lines and route, stated separately:

Equipment and construction of the gen-tie is estimated to be approximately \$12 million. The switchyard will cost approximately \$32 million, with costs split between the Applicant and another project. Applicant will be responsible for approximately \$16 million of the switchyard cost, as well as an additional \$3 million for installing the 230kV line drop into the switchyard.

v. Description of proposed route and switchyard locations:

The Project will originate at the new, non-jurisdictional Project substation located at the northeastern terminus of the gen-tie within the boundary of the Cactus Flower Solar Project. The line will run west and then south, ultimately connecting to the new switchyard which will be located within Sections 20, 21, 28, and 29, of Township 10 South, Range 07 East where the gen-tie will interconnect with the existing Tat Momoli-Saguaro 230-kV transmission line.

- 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 has identified the Proposed Transmission Corridor as the viable route for the Project. Detailed location information, including surface management, is provided in **Exhibits A-3 and A-4**. There is no federal or Indian/tribal land within the Proposed Transmission Corridor. From the solar facility boundary, the Proposed Transmission Corridor is on ASLD and privately owned land occurring within portions of Sections 25, 26, 27, 32, 33, 34, 35 and 36 of Township 09 South, Range 07 East; and portions of Sections 4, 8, 9, 16, 17, 20, and 21 of Township 10 South, Range 07 East. Approximately 76 percent of the Proposed Transmission Corridor is on State Trust lands managed by ASLD, with the remaining 24 percent on privately owned lands. The actual anticipated footprint of disturbance for the gen-tie totals approximately 162 acres. An additional approximately 20 acres of disturbance is anticipated for the switchyard. The switchyard will occur entirely on ASLD lands.

5. Jurisdictions:

- a. **Areas of jurisdiction (as defined in A.R.S. § 40-360.04) affected by this route:**

The Project is located on private land and ASLD-managed lands in Pinal County; no incorporated towns or cities will be affected.

- b. **Designation of proposed sites or routes, if any, which are contrary to the zoning ordinances or master plans of affected areas of jurisdiction:**

The Project is not contrary to the zoning ordinances or general plans of any affected jurisdictions. The Project is not within an active planning area for ASLD. Based on Pinal County's Notice of Current Hearings map,¹ there are no proposed Pinal County planning changes that affect the Project Area

6. Description of the environmental studies Applicant has performed or expects to perform, including the contemplated date of completion:

Cypress Creek Renewables completed studies:

1. Class I Cultural Resources Review for the Cactus Flower Solar Project Gen-Tie Transmission Line, Pinal County, Arizona - completed December 6, 2024
2. Phase I Environmental Site Assessment for the Cactus Flower Solar Project Gen-Tie Transmission Line – completed December 23, 2024

¹ County, Pinal. n.d. "Notice of Current Hearings Map." Pinal County Website. <https://www.google.com/maps/d/viewer?mid=1Szvg8nqjLr57MAepj60xgWqKRI&femb=1&ll=32.667965028741754%2C-111.5503619166027&z=12>.

3. Key Observation Points and Visual Simulations of the Project - completed July 31, 2025
4. Arizona State Land Department Native Plant Inventory – completed October 15, 2025
5. Cactus Flower Solar, LLC Aquatic Resources Delineation Report - completed October 15, 2025
6. Cactus Flower Solar, LLC Biological Resources Evaluation - completed October 22, 2025

Cypress Creek Renewables pending studies:

1. Class III Cultural Resources Inventory, In Progress

CACTUS FLOWER SOLAR GEN-TIE PROJECT APPLICATION FOR A CERTIFICATE OF ENVIRONMENTAL COMPATIBILITY

EXHIBIT A: LOCATION AND LAND USE MAPS

Per A.A.C. R14-3-219, Exhibits to Application, Exhibit A of an application for a CEC must include the following:

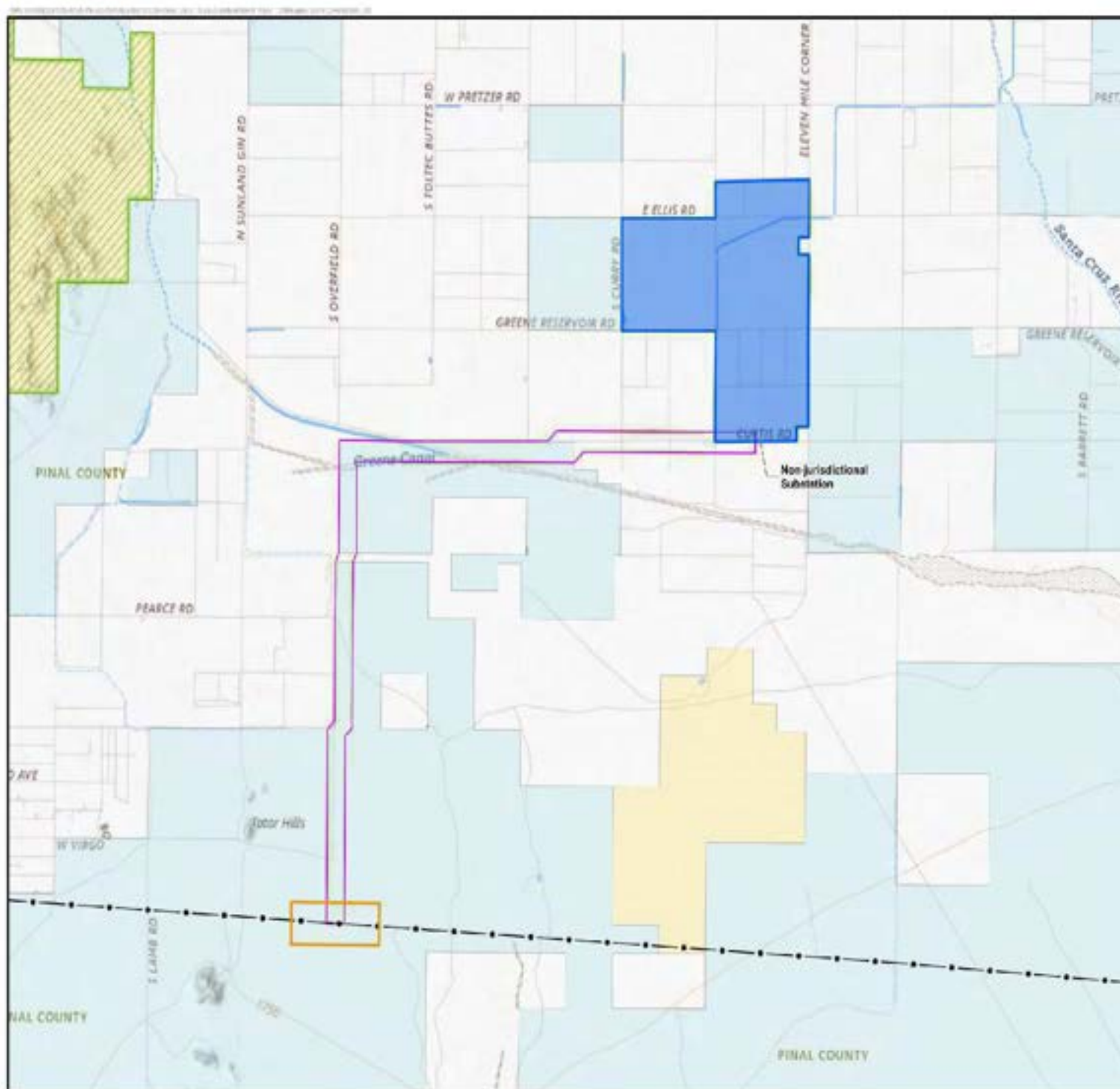
1. *"Where commercially available, ** a topographic map, 1:250,000 scale, showing the proposed plant site and the adjacent area within 20 miles thereof. If application is made for alternative plant sites, all sites may be shown on the same map, if practicable, designated by applicant's order of preference.*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

The following maps are provided pursuant to R14-3-219, Exhibits to Application, Exhibit A:

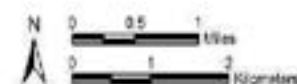
- **Exhibit A-1: N/A**
 - **Exhibit A-2: N/A**
 - **Exhibit A-3: Proposed Transmission Corridor**
 - **Exhibit A-4: Land Use and Zoning**
-

EXHIBIT A-3
Proposed Transmission Corridor



T96 RTE: Portions of Sections 13 and 23-35,
T105, RTE: Portions of Sections 4, 5, 6, 8, 9, 16, 17, 22, and 25,
Pinal County, Arizona
Projection: NAD 1983 UTM Zone 12N
Surface Management: BLM SMA ArcGIS service accessed 08/12/2023
NLCS: BLM
Image Source: ArcGIS Online, USGS TNM

- Legend**
- APS 230KV Transmission Line
 - Proposed Cactus Flower Solar Facility
 - Proposed Transmission Corridor
 - Switchyard Siting Area
 - Ironwood Forest National Monument
 - Surface Management
 - Bureau of Land Management
 - Private (No Color)
 - State



Cactus Flower Solar Generation Tie Line Project
Exhibits for the
Certificate of Environmental Compatibility
PROPOSED TRANSMISSION CORRIDOR
1:62,500 TOPOGRAPHIC MAP
Exhibit A-3

EXHIBIT A-4
Land Use and Zoning

CACTUS FLOWER SOLAR GEN-TIE PROJECT APPLICATION FOR A CERTIFICATE OF ENVIRONMENTAL COMPATIBILITY

EXHIBIT B: ENVIRONMENTAL STUDIES

Per A.A.C. R14-3-219, Exhibits to Application, Exhibit B of an application for a CEC must include the following:

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 part of this exhibit.

Exhibit B provides a summary of relevant environmental studies that include the Project Area. The Project includes the proposed gen-tie line for the Cactus Flower Solar Project and the new switchyard. The Project Area for the CEC application refers to the gen-tie line corridor originating from the non-jurisdictional Cactus Flower Solar substation and terminating at the switchyard, as well as the Switchyard Siting Area.

Note that references to "Exhibits" refer to exhibits to the CEC application.

Environmental studies conducted for the Cactus Flower Solar Project solar array and gen-tie are listed below and are included in this Exhibit. The findings of these environmental studies are discussed in further detail in **Exhibits C, D, and E**. The biological, aquatic, cultural, and visual resources reports and analyses were a key factor in determining the Project Area, and the results of these studies are summarized in the corresponding exhibits. Note that the analysis areas for the attached studies do not include the Switchyard Siting Area, though the homogeneity of habitat and other resources within the Project Area allow for ready extrapolation of observations and conclusions. These extrapolations are addressed in the relevant exhibit discussions.

The environmental reports for the Cactus Flower Solar Project and gen-tie included in this exhibit are:

- **Exhibit B-1: Cactus Flower Solar, LLC Biological Resources Evaluation, October 22, 2025.**
 - **Exhibit B-2: Cactus Flower Solar, LLC Aquatic Resources Delineation, October 15, 2025.**
 - **Exhibit B-3: Arizona State Land Department Native Plant Inventory, October 15, 2025.**
-

EXHIBIT B-1
Cactus Flower Solar, LLC Biological Resources
Evaluation, October 22, 2025

Cactus Flower Solar, LLC Biological Resources Evaluation

Prepared for:

Cypress Creek Renewables, LLC
3402 Pico Boulevard Suite 215 – Santa Monica, California 90405

Prepared by:

WestLand Engineering & Environmental Services
4001 E. Paradise Falls Drive – Tucson, Arizona 85712
+1 520-206-9585

WestLand Project Number: 12777

October 22, 2025



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1. INTRODUCTION

Cactus Flower Solar, LLC, a subsidiary of Cypress Creek Renewables, LLC (CCR), proposes to construct the Cactus Flower Solar facility, a utility-scale solar development, and its associated electric utility connection line (the Project) on approximately 2,276 acres of private land and land managed by the Arizona State Land Department (ASLD) approximately 9.5 miles southwest of the unincorporated community of Picacho, in Pinal County, Arizona (Project Area; **Figure 1**). CCR contracted WestLand Engineering & Environmental Services (WestLand) to complete a field review and biological resources evaluation (BRE) to determine the potential for special-status species and their critical habitat to occur within the Project Area. This BRE summarizes the results of WestLand's field review and desktop evaluation to determine the potential for special-status species to occur within the Project Area and be affected by the Project's activities.

For the purposes of this BRE, special-status species include:

- Species listed, proposed for listing, or candidates for listing by the U.S. Fish and Wildlife Service (USFWS) as threatened or endangered under the Endangered Species Act (ESA; **Appendix A**);
- Species protected under the Bald and Golden Eagle Protection Act (BGEPA);
- Species of Greatest Conservation Need (SGCN) as identified by the Arizona Game and Fish Department (AZGFD; **Appendix B**); and
- Species protected under the Migratory Bird Treaty Act (MBTA).

The following sections detail the Project location and description (**Section 2**), the Analysis Area and environmental setting (**Section 3**), the methods used in determining the potential for special-status species to occur in the Analysis Area and for completing the effects analysis (**Section 4**), the results of the special-status screening and effects analysis (**Section 5**), the recommended mitigation measures (**Section 6**), and the references cited (**Section 7**). A representative selection of photographs from the Project Area is provided as **Appendix C**.

2. PROJECT LOCATION AND DESCRIPTION

The Project Area covers approximately 2,276 acres in Pinal County, Arizona, 9.5 miles southwest of the unincorporated community of Picacho, Arizona, and 8 miles west of Picacho Peak State Park. The Project includes the development of a 350MWdc/270-MWac solar generation and 270-MW energy storage facility on approximately 2,114 acres (Solar Array Area) and the construction of an approximately 8.9-mile-long generation interconnect (gen-tie) with a right-of-way width of 150 feet (ft; approximately 162 acres; Gen-tie Area). The gen-tie will connect the solar facility to the new Arizona Public Service (APS) substation along the Saguaro-Tat Momoli Santa Rosa 230kV transmission line. The Project Area includes privately owned land and approximately 124 acres of ASLD-managed land located within the gen-tie (**Figure 1**). Development in the area is dominated by cultivated agriculture and undeveloped desert.

The Project Area is located within Sections 13, 23-25, and 32-36 of Township 9 South, Range 7 East; and Sections 4, 9, 16, and 21 of Township 10 South, Range 7 East.

The Project Area is located within the Basin and Range Geographic Province (Parsons 2006). This geographic province is characterized by parallel (north-south trending) mountain ranges separated by flat desert plains or basins (Wilson and Moore 1959).

3. ANALYSIS AREA

The Analysis Area is defined as all areas to be affected directly or indirectly by the Project and not merely the immediate area involved in the action (i.e., the Project Area). In this evaluation, the Analysis Area is based on the Project Area footprint and the extent of the surrounding area expected to experience environmental impacts from the Project. Project effects on the environment may result from surface disturbance, noise, dust, traffic, and light (**Section 4.2**). Of these, noise during construction has the largest spatial extent of potential effects; therefore, the Analysis Area is defined as the solar development and gen-tie line Project Area plus a 600-meter buffer (**Figure 2; Section 4.2**).¹ The Analysis Area ranges in elevation from approximately 1,570 to 1,830 ft above mean sea level (amsl).

3.1. SURFACE WATER

The Analysis Area intersects portions of five hydrologic unit code (HUC) 12 watersheds in the Lower Colorado Region (HUC 2 – 15): Greene Reservoir (150503030306), Greene Canal (150503030305), Silver Bell Wash (150503030304), Upper Greene Wash (150503030309), and Upper Santa Cruz Wash (150503030310) (U.S. Geological Survey [USGS] 2024).²

The National Hydrology Dataset (NHD) identifies numerous agricultural canals/ditches, six ephemeral features, and one artificial path (Greene Canal [labeled as both an ephemeral wash and an artificial path]) that intersect the Project Area (USGS 2024).² The agricultural canals/ditches run adjacent to and through the Solar Array Area (northern polygon) of the Project Area, while the other features Greene Wash, and Greene Canal intersect the gen-tie line portion of the Project Area (southern extent) (**Figure 3**).

WestLand's field investigations confirmed the presence of 17 surface water features in the Project Area, including four potentially non-ephemeral features (three segments of Greene Canal and an unnamed tributary to Greene Canal), eight human-made canals that form a local irrigation system, four ephemeral washes, and one ephemeral pond feature (**Figure 3; Appendix C, Photos 1-19**). The six wash features run southeast to northwest through the gen-tie (southern extent) of the Project Area and the pond lies within the Solar Array Area (northern extent) of the Project Area. During the field reconnaissance, water was

¹ ESA Section 7 consultations between WestLand and USFWS assumed no effects to roosting or nesting owls beyond 600 meters for the cactus ferruginous pygmy-owl (CFPO; *Glaucidium brasilianum cactorum*) at the time of its former listing; therefore, a 600-meter buffer was determined (**Section 4.2**), as potentially suitable CFPO habitat occurs in the Project vicinity.

² USGS accessed online April 2, 2025.

present in two segments of Greene Canal (**Figure 3; Appendix C, Photos 1-4**), in the potentially non-ephemeral unnamed tributary of Greene Canal (**Figure 3; Appendix C, Photos 9-10**), and in the local irrigation canals throughout the Project Area (**Figure 3; Appendix C, Photos 29-30**). Other ephemeral drainages occur in the Analysis Area outside the immediate Project Area.

3.2. VEGETATION

Vegetation in the Analysis Area is mapped as Lower Colorado River subdivision – Sonoran Desertscrub (Brown and Lowe 1980). This vegetation community is typically dominated by creosotebush (*Larrea tridentata*) and white bursage (*Ambrosia dumosa*), while larger trees, such as ironwood (*Olneya tesota*), palo verde (*Parkinsonia* spp.), and mesquite (*Prosopis* spp.) can be found along washes and other drainages (Turner and Brown 1994).

During the field review, WestLand biologists identified a variety of native and non-native vegetation, including alfalfa (*Medicago sativa*), Bermudagrass (*Cynodon dactylon*), Russian thistle (*Salsola tragus*), palo verde, brownplume wirelettuce (*Stephanomeria pauciflora*), shepherd's purse (*Capsella bursa pastoris*), London rocket (*Sisymbrium irio*), sow thistles (*Sonchus* sp.), tamarisk (*Tamarix* sp.), mesquite (*Prosopis* sp.), wolfberry (*Lycium* sp.), saltbush (*Atriplex* sp.), jimmyweed (*Isocoma* sp.), Fremont's thornbush (*Lycium fremontii*), fishhook barrel cactus (*Ferocactus wislizeni*), saguaro (*Carnegiea gigantea*), cholla (*Cylindropuntia* sp.), creosotebush (*Larrea tridentata*), crucifixion thorn (*Koeberlinia spinosa*), and ragweed (*Ambrosia* sp.) (**Figure 3; Appendix C, Photos 20-24**).

3.3. LAND USE

The Solar Array (northern extent) of the Project Area is primarily used for agriculture. At the time of the field visit, most of the fields in this portion of the Project Area were being used for the propagation of alfalfa. In addition to the fields, there were numerous irrigation canals and access roads that intersected the active and fallow fields. There was also an overhead electric utility line that ran along the edges of the Project Area. The northern extent of the Analysis Area includes other agricultural fields and some undisturbed lands.

The southern extent of the Project Area (the gen-tie portion) features mostly undisturbed land with some agricultural fields. There were some signs of cattle grazing, and a few scattered roads and irrigation canals that intersected the Analysis Area. Along Greene Canal, there was evidence of recent tamarisk and vegetation removal (**Figure 3; Appendix C, Photos 21-22 and 25-28**). The southern extent of the Analysis Area outside the immediate Project Area also features predominantly undisturbed lands with some agricultural fields.

4. METHODS

This section outlines the methods used to determine the potential for special-status species to occur within the Analysis Area and describes the methods used to determine potential effects to these species as a result of the Project.

4.1. POTENTIAL TO OCCUR

WestLand completed a site visit on March 19-21, 2025, to evaluate the habitats in the Analysis Area. Prior to this visit, a screening analysis was completed to assist with evaluating the potential for special-status species to occur within the Analysis Area. Special-status species were defined as those listed as threatened, endangered, candidate or proposed for listing by the USFWS under the ESA, species protected under the BGEPA, SGCN as identified by the AZGFD, and species protected under the MBTA. The USFWS Information for Planning and Consultation (IPaC) tool was used to identify USFWS listed species that could occur within the Analysis Area as well as designated or proposed critical habitat within the Analysis Area (**Appendix A**). Additionally, the AZGFD Heritage Data Management System (HDMS) was queried using the HabiMap tool to identify known occurrences of special-status species near the Analysis Area (**Appendix B**).

The determinations of potential for special-status species to occur within the Analysis Area were based on a review of:

- The natural history and known geographical and elevational ranges of the species.
- Other occurrence records in published or grey literature, including citizen science data, and unpublished data.
- Presence of suitable habitat based on WestLand's field evaluation.

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

- **Present:** The species has been observed to occur within the Analysis Area, the Analysis Area is within the known range and distribution of the species, and habitat characteristics required by the species are present.
- **Possible:** There are no known records of the species within the Analysis Area or the records that exist cannot be verified,³ but the current, known distribution of the species includes the Analysis Area, and the Analysis Area contains habitat considered suitable for all or some of the life stages of the species.

³ Given the difficulty that can be associated with species identification, the varying skill sets of citizen scientists, and errors and precision of location information from various sources such as eBird and other citizen science databases, these observations may be classified as evidence that the occupancy of the Project Area and vicinity is Possible and not Present.

- **Unlikely:** The known, current distribution of the species does not include the Analysis Area, but the distribution of the species is close enough such that the Analysis Area may be within the dispersal or foraging distance of the species, and they may show up as transients or it occurs within the range but habitat characteristics are marginal or not suitable.
- **None:** The Analysis Area is outside of the known distribution of the species, or the habitat characteristics required by the species are not present.

4.2. EFFECTS ANALYSIS

Potential effects of the Project on special-status species were evaluated by considering the results of the screening analysis alongside the Project's possible impacts related to surface disturbance, noise, dust, traffic, and light within the Analysis Area. A brief discussion of each of these factors is provided in this section.

Effects were analyzed discreetly for ESA listed species (**Table 1**), BGEPA species (**Table 2**), and SGCN species with a potential to occur within the Project Area (**Table 3**). Because there is no federal nexus associated with the Project, a take analysis was completed for ESA listed species.

ESA species (**Table 1**)

- No take.
- Not likely to result in take.
- Likely to result in take.

BGEPA species (**Table 2**)

- No take.
- Not likely to result in take.
- Likely to result in take.

SGCN Species (**Table 3**)

- No effect.
- May affect, not likely to result in a trend towards federal listing.
- May affect, likely to result in a trend towards federal listing.

Surface Disturbance

Surface disturbance results in the temporary or permanent removal of top soil and vegetation and can result in habitat fragmentation and erosion/sedimentation in nearby drainages, can provide opportunities for the introduction and spread of nonnative plant species, and may result in behavioral changes in wildlife (Armbruster 1983, Forbes 1995, Northrup and Wittemyer 2013, White and Gregovich 2017). The Project requires vegetation removal, ground disturbance, and portions of the land may require grading to allow for the construction of the Project and its associated facilities.

The majority of the Solar Array Area extent of the Project Area features previous disturbance from agricultural use/crop propagation and the gen-tie extent of the Project Area has been previously disturbed by grazing activities. As such, the Project's construction will not result in significant losses to native Sonoran Desertscrub vegetation, however, its construction may result in surface disturbance (effects to topsoil) in the southern extent of the Project Area. Surface disturbance for the Project will be temporary in nature, and following construction, additional surface disturbance is not anticipated. Additionally, all surface disturbance will occur outside of the riparian corridors identified within the Project Area.

Noise

Changes in noise levels will be short in duration and limited to Project construction and occasional periodic maintenance throughout the life of the Project. Noise from the Project is expected to be greatest during the construction of the solar facilities and their associated infrastructure. After construction, noise will be limited in both production and extent. Based on Bureau of Land Management (BLM) assessment of other solar projects, construction activities may result in a maximum noise level of 95 decibels (dB) at the Project Area boundary (BLM 2024). These noise levels would be temporary and would attenuate to less than 60 dBA within 600 meters of the Project Area.

Dust

Fugitive dust may be generated by Project activities, though dust is largely deposited closest to the source and attenuates with distance. For example, dust loads along unpaved roads decrease exponentially with distance, such that more than 70 percent of total dust is deposited within 10 meters of the road, and more than 90 percent within 30 meters (Walker and Everett 1987). Dust can affect the growth processes of vegetation and alter the structure of plant communities in an area (Farmer 1993), thus potentially affecting wildlife habitat.

Effects from dust resulting from the Project are anticipated to be immediately localized to the Project Area and a limited portion of the Analysis Area. Dust generation is anticipated in association with the construction of the solar facility and its associated infrastructure.

Traffic

Apart from noise, traffic could affect biological resources by increasing the probability of animal-vehicle collisions (AVCs), causing changes in species communication and behavior, and decreasing habitat quality and increasing its fragmentation (Ament et al. 2008, Fahrig and Rytwinski 2009, Jacobson et al. 2016). Traffic can also affect the abundance and diversity of insect species (Muñoz, Megias, and Torres 2014). Heavily trafficked roads can negatively impact wildlife populations due to increased rates of mortality (Ament et al. 2008, Jacobson et al. 2016).

Traffic for the Project will be composed of heavy equipment for the construction of the facilities and light-weight vehicles for the conveyance of employees. Most traffic will occur during the construction phase of the Project and will be reduced during the facilities' operations. Existing, rural, low-traffic roads—i.e., dirt roads used primarily by area residents for local farm access—will be used during construction.

Light

Artificial light at night (ALAN) can result in changes to activity and behavior for nocturnal species, increased predator/prey interactions, and may alter community compositions with a greater impact on specialist species (Sanders et al. 2021). It also has the potential to impact the circadian system in migratory birds, cause disorientation, reduce the quality of stopover habitat, and in some cases cause mortality (Falcón et al. 2020).

During its operations, the Project is anticipated to result in minimal projected light for its facilities. Light emissions will be localized to the immediate Project Area and will be minimized to reduce effects to the local environment. All Project lighting will be downcast, shielded motion sensor lights to reduce impacts to nocturnal species. Lighting will be installed at the substation and at the operations and maintenance building in accordance with the requirements of the National Electrical Safety Code.

5. POTENTIAL FOR SPECIAL-STATUS SPECIES TO OCCUR AND EFFECTS ANALYSIS

This section outlines the results of the potential to occur screening and describes the potential effects of the Project on species within the Analysis Area.

5.1. ESA LISTED SPECIES

The IPaC screening identified six ESA species (five listed as threatened or endangered and one proposed threatened species) that may occur within the Analysis Area (**Appendix A**). Of these six, one species has a potential to occur of None (Sonoran pronghorn [*Antilocapra americana sonoriensis*]). Yellow-billed cuckoo (YBC; *Coccyzus americanus*), southwestern willow flycatcher (SWFL; *Empidonax traillii extimus*), CFPO, and Gila topminnow (*Poeciliopsis occidentalis*), have a potential to occur of Unlikely. Monarch butterfly (*Danaus plexippus*) has a potential to occur of Possible. No species were determined to be present in the Analysis Area. There is no designated or proposed critical habitat for these species in the Analysis Area.

The Project is not anticipated to result in take of YBC, SWFL, Gila topminnow, Sonoran pronghorn, CFPO, or monarch butterfly.

Justifications for these potential to occur and take determinations are provided in **Table 1**.

5.2. BGEPA LISTED SPECIES

Golden eagle (*Aquila chrysaetos*) has a potential to occur of Possible in the Analysis Area and bald eagle (*Haliaeetus leucocephalus*) has a potential to occur of Unlikely. The Project is not anticipated to result in take of either eagle species.

Justifications for these potential to occur and take determinations are provided in **Table 2**.

5.3. SGCN SPECIES

The AZGFD HDMS report identified 13 SGCN species with occurrence records within 5 miles of the Project Area (**Appendix B**). Of these species, two have a potential to occur of Unlikely: American peregrine falcon (*Falco peregrinus anatum*) and Sonoran desert tortoise (SDT; *Gopherus morafka*). An additional nine have a potential to occur of Possible: Western burrowing owl (*Athene cunicularia hypugaea*), cactus wren (*Campylorhynchus brunneicapillus*), antelope jackrabbit (*Lepus alleni*), California leaf-nosed bat (*Macrotus californicus*), Sonoran coral snake (*Micruroides euryxanthus*), regal horned lizard (*Phrynosoma solare*), saddled leaf-nosed snake (*Phyllorhynchus browni*), banded sandsnake (*Chilomeniscus cinctus*), and Sonoran desert toad (*Incilius alvarius*). Both American kestrel (*Falco sparverius*) and Bendire's thrasher (*Toxostoma bendirei*) were determined to have a potential to occur of present, as they were observed within the Analysis Area by Westland biologists.

The Project is anticipated to have no effect on American peregrine falcon and SDT. The Project may affect but is not likely to result in a trend towards federal listing for western burrowing owl, cactus wren, American kestrel, Bendire's thrasher, antelope jackrabbit, California leaf-nosed bat, Sonoran coral snake, regal horned lizard, saddled leaf-nosed snake, banded sandsnake, and Sonoran desert toad.

Justifications for these potential to occur determinations and effects analysis are provided in **Table 3**.

5.4. MBTA SPECIES

Prior disturbance in the northern extent (Solar Array Area) of the Project Area by agricultural operations has removed most native vegetation and potential nesting habitat for MBTA species in this area. However, native desert scrub and riparian vegetation is present within the gen-tie (southern extent) portion of the Project Area, as well as in the greater Analysis Area. This vegetation and the riparian corridors could support nesting birds during the breeding season, though no nests were observed during the field survey. Additionally, ground-nesting birds, including horned lark (*Eremophila alpestris*) observed by Westland biologists during the field survey, and western burrowing owl may occur throughout the Analysis Area including the northern extent (Solar Array Area).

Table 1. ESA Listed Species Potential to Occur and Effects Analysis

Species Name	Federal Status	Known Suitable Habitat	Total Range	Distribution in Arizona	Potential to Occur	Effects Analysis
BIRDS						
<i>Coccyzus americanus</i> (western Distinct Population Segment) Yellow-billed cuckoo	Threatened (USFWS 2014); designated critical habitat (USFWS 2021).	In Arizona, most commonly found in lowland riparian woodlands where Fremont cottonwood, willow, velvet ash, Arizona walnut, mesquite, and tamarisk are dominant (USFWS 2013b). Also utilizes drier woodlands including mesquite bosques, drainages in desert scrub and desert grassland with a tree component, and Madrean evergreen woodlands in perennial, intermittent or ephemeral drainages (USFWS 2020). This species typically occurs at elevations less than 6,600 ft amsl (AZGFD 2022f). Western YBC may migrate along riparian corridors and surrounding upland vegetation (Hughes 2020). Elevation: Typically below 6,600 ft (AZGFD 2022f).	This species is a long-distance neotropical migrant (Hughes 2020). At the species level, breeds throughout temperate North America south to Mexico and the Greater Antilles (Hughes 2020). The western DPS breeds west of the Continental Divide and the watershed boundary between the Rio Grande and Pecos River and the Chihuahuan Desert. The USFWS considers the historical breeding range to include southern British Columbia, Canada and in Washington, Idaho, Nevada, Oregon, Utah, western Colorado, southwestern Wyoming, California, Arizona, western New Mexico, and Texas, U.S. Breeding range extends into the Cape Region of Baja California Sur, Sonora, Sinaloa, western Chihuahua and northwestern Durango, Mexico (USFWS 2014). Winters in South America, east of the Andes and typically south of the Amazon Basin in southern Brazil, Paraguay, Uruguay, eastern Bolivia and northern Argentina (USFWS 2014).	More common in southern, central and the extreme northeastern portion of state, but occurs throughout the state where suitable habitat exists (AZGFD 2022f).	Unlikely. While the Analysis Area includes ephemeral and potentially non-ephemeral drainages, associated vegetation is sparse and short in stature, making them unsuitable for breeding and foraging. This species has been detected in the Santa Cruz river watershed, approximately 10 miles upgradient from the Analysis Area and downgradient near Casa Grande (approximately 20 miles) (eBird 2025). ⁴ making it possible, though unlikely, that individuals could migrate through the Analysis Area towards areas with more suitable riparian habitat. There are no AZGFD records of this species within 5 miles of the Analysis Area (Appendix B).	Not likely to result in take. Noise, increased traffic, and light associated with construction and periodic maintenance will be of short duration within a limited spatial extent. The Analysis Area does not contain suitable nesting habitat with only marginal foraging habitat. Therefore, Project activities will not result in take of breeding individuals and is unlikely to result in take of migrating individuals of this species.

⁴ All eBird accounts accessed online April 2025.

Species Name	Federal Status	Known Suitable Habitat	Total Range	Distribution in Arizona	Potential to Occur	Effects Analysis
<i>Empidonax traillii extimus</i> Southwestern willow flycatcher	Endangered (USFWS 1995); designated critical habitat (USFWS 2013a).	Breeds in successional stands of dense riparian vegetation composed of trees and shrubs along rivers or lakes (AZGFD 2022d, USFWS 2013a). In Arizona, this species occurs between 75 and 9,180 ft amsl (AZGFD 2022d). Migrates along riparian habitats, including those with shorter or more sparse vegetation or smaller patches than would be suitable for nesting (USFWS 2013a). This species is a long-distance neotropical migrant and winters in habitats outside of the U.S. (Sedgwick 2020). Elevation: In Arizona, 75–9,180 ft (AZGFD 2022d).	This species is a long-distance neotropical migrant (Sedgwick 2020). Breeds in Arizona, California, Colorado, New Mexico, Nevada, Texas and Utah, U.S. Winters in southern Mexico and south to northern South America (USFWS Sedgwick 2020, 2013a).	Breeds in localized populations along the Big Sandy River, Bill Williams River, Cienega Creek, Colorado River in the Grand Canyon and south of Yuma, Empire Gulch, Salt River, Verde River, Gila River, Hassayampa River, Little Colorado River, the headwaters of the Little Colorado River near Greer and Eagar, Salt River, San Francisco River, San Pedro River, Santa Maria River, middle to lower San Pedro River, upper San Francisco River near Alpine, Tonto Creek, Verde River, and the Virgin River (AZGFD 2022d, USFWS 2013a).	Unlikely. There are no confirmed eBird records of this species occurring within 20 miles of the Analysis Area (eBird 2025). ⁴ There is no suitable nesting habitat for this species in the Analysis Area in the form of dense riparian vegetation along rivers and lakes. Though it is unlikely, individuals may migrate through the Analysis Area towards areas with more suitable riparian habitat. There are no AZGFD records of this species within 5 miles of the Analysis Area (Appendix B).	Not likely to result in take. Noise, increased traffic, and light associated with construction and periodic maintenance will be of short duration within a limited spatial extent. The Analysis Area does not contain suitable nesting habitat and only marginal foraging habitat. Therefore, Project activities will not result in take of breeding individuals and is unlikely to result in take of migrating individuals of this species.

Species Name	Federal Status	Known Suitable Habitat	Total Range	Distribution in Arizona	Potential to Occur	Effects Analysis
<i>Glaucidium brasillianum cactorum</i> Cactus ferruginous pygmy owl	Threatened with Section 4(d) Rule (USFWS 2023); critical habitat to be proposed (USFWS 2023).	Range-wide this species utilizes a broad range of arid to humid habitats from desertscrub to rainforest edges (Proudfoot and Johnson 2000). The cactorum subspecies commonly occurs in desertscrub, thornscrub, dry deciduous forests and lowland riparian habitats (USFWS 2023). In Arizona, this species occurs in cottonwood and willow riparian habitats, mesquite bosques, heavily wooded dry washes, and suburban or rural areas with native vegetation (Corman 2005b). Nests in cavities of saguaro cacti or broad leaf riparian tree species (AZGFD 2023a, Corman 2005b). This species resides in same habitat types year-round (Proudfoot and Johnson 2000). Elevation: In Arizona, historically 450–4,200 ft (Corman 2005b).	This species is non-migratory (Proudfoot and Johnson 2000). The cactorum subspecies ranges from southern Arizona and southern Texas, U.S. and south into Mexico. Occurs along the Pacific Slope in Sonora, Sinaloa, Nayarit, Jalisco, Colima and Michoacán and along Atlantic Slope in Nuevo Leon and Tamaulipas (USFWS 2023). However, there is uncertainty if the Texas and Atlantic Slope population are best described as the cactorum or <i>ridgwayi</i> subspecies (Proudfoot and Johnson 2000, USFWS 2023).	Modern records for this species primarily occur in Pima County including the Altar Valley, Avra Valley, Tohono O'odham tribal lands and Organ Pipe Cactus National Monument (Corman 2005b, USFWS 2023). There are no known recent or historic occurrences of CFPO in or near the Analysis Area and as of its listing date as threatened in 2023, it continues to be absent from Pinal County (USFWS 2023).	Unlikely. The majority of the Analysis Area is not suitable habitat, as it is comprised of agricultural fields and uplands with low stature, sparse vegetation. Heavily wooded areas this species prefers are not present in the Analysis Area. Woody species including tamarisk, mesquite, and palo verde occur along Analysis Area washes, but no trees were observed to have suitable nesting cavities. Saguaros, which this species uses for nesting, occur within the Analysis Area only occasionally and rarely. There are no AZGFD records of this species within 5 miles of the Analysis Area (Appendix B). There are no recent or historic occurrences of CFPO in or near the Analysis Area and as of its listing date as threatened in 2023, it continues to be absent from Pinal County (USFWS 2023).	Not likely to result in take. The Analysis Area contains only marginally suitable nesting habitat. Riparian corridors with potentially suitable tree cavities will be excluded from Project-related surface disturbance. The saguaro cactus is a protected species under the Arizona Native Plant Law, and Project impacts to saguaro cacti will be avoided when practicable. Noise, increased traffic, and light associated with construction and periodic maintenance will be of short duration within a limited spatial extent. Therefore, the Project is not likely to result in take of this species.

Species Name	Federal Status	Known Suitable Habitat	Total Range	Distribution in Arizona	Potential to Occur	Effects Analysis
FISH						
<i>Poeciliopsis occidentalis</i> Gila topminnow (including Yaqui)	Endangered (USFWS 1967); no critical habitat.	Occurs in springs, cienegas, permanent and intermittent streams and the margins of large rivers. Prefers warm, shallow, and slow-moving water but can occur in lentic habitats or lotic habitats with moderate current. Additionally, favors areas with algal mats or debris along stream margins (USFWS 1998). Elevation: Below 5,000 ft (AZGFD 2024).	Occurs in the Gila, Concepción and Yaqui river basins of Arizona and New Mexico, U.S. and Sonora, Mexico (USFWS 1998, Cobble 1995).	As of 2017, there are 11 to 15 natural populations and 40 reestablished wild populations of the <i>occidentalis</i> subspecies. Within the Santa Cruz River Basin this includes Monkey Spring, Cottonwood Spring, Fresno Canyon, Coalmine Canyon, Parker Canyon, the Santa Cruz River north of Nogales, Cienega Creek at Las Cienegas National Conservation Area, Cienega Creek north of I-10. Additionally, natural populations may be present in Sonoita Creek above and below Patagonia Lake and in the Santa Cruz River at Tucson. Within the Gila River Basin natural populations are found above Coolidge Dam in Bylas Spring, Middle Spring and Salt Creek. Reestablished wild populations occur in the San Pedro River Basin, Santa Cruz River Basin and the Gila River Basin above and below the Coolidge Dam (AZGFD 2018). The <i>sonoriensis</i> subspecies occurs in the extreme southeastern portion of the state in the Yaqui River Basin in the San Bernardino and Leslie Canyon Wildlife Refuges (Cobble 1995, Minckley and Marsh 2009, p. 252).	Unlikely. The Gila topminnow has been successfully reintroduced to the Santa Cruz River near Tucson (AZGFD 2018) and USGS stream gage data indicate the presence of surface water at Santa Cruz River at Trico Road, NR Marana, AZ – 09486520 (USGS 2025), ⁶ approximately 10 aerial miles upgradient from the Santa Cruz River's diversion into Greene Canal. In the Tucson area, Gila topminnow is consistently detected in the Heritage and Three Rivers reaches located upstream of Ina Road, and the species has only been detected twice in the Cortaro Narrows reach. During ten years of survey, the Marana Flats study reach has supported a non-native fishery composed of mosquitofish, common carp, black bullhead, green sunfish, and blue gill. During this sampling period there have been no detections of Gila topminnow in the Marana Flats reach (Sonoran Institute, Pima County, and City of Tucson 2024). There is not a continuous surface water connection between the Santa Cruz River near Marana and the Greene Canal in the Analysis Area. Based on this and the lack of Gila topminnow occurrence in the lower reach of the Santa Cruz River on Marana Flats, presence of this species in the Greene Canal is considered unlikely. There are no AZGFD records of this species within 5 miles of the Analysis Area (Appendix B).	Not likely to result in take. No Project activities will occur within surface water features and with appropriate erosion controls, there will be no impacts to surface water features in the Analysis Area. This species is not anticipated to occur in the Analysis Area. Therefore, the Project is not likely to result in take of this species.

Species Name	Federal Status	Known Suitable Habitat	Total Range	Distribution in Arizona	Potential to Occur	Effects Analysis
INSECTS						
<i>Danaus plexippus</i> Monarch butterfly	Proposed Threatened with a 4d rule and proposed critical habitat (USFWS 2024)	Monarch caterpillars feed exclusively on plants in the subfamily Asclepiadoideae (milkweed) and adults forage for nectar on a wide variety of flowers. This species can be found wherever milkweed occurs. Overwintering populations use the leaves, branches, and trunks of large trees within forested groves. In California, both native tree species and eucalyptus trees are utilized (Jepsen et al. 2015). Elevation: In Arizona, found at all elevations (Morris, Kline, and Morris 2015).	<i>D. plexippus</i> occurs in North America, Central America, the Caribbean south to South America, Hawaii, Australia, some Pacific Islands, parts of Asia, Africa, and southern Europe. Populations outside of the Americas may be non-native (Zhan et al. 2014). Most populations of the <i>plexippus</i> subspecies are migratory and breed in southern-most portions of all Canadian provinces except Newfoundland and Labrador, the conterminous U.S. states and the Mexican states of Baja California, Chihuahua, Coahuila, Nuevo León, Sonora, and Tamaulipas. The wintering range of migratory populations includes coastal California and southern Florida, U.S. and the Mexican states of Baja California, Mexico and Michoacán (Jepsen et al. 2015).	Breeding and migratory populations occur throughout the state. Some adults overwinter in the low deserts of Arizona in areas where food resources are abundant. These areas are generally represented by urban environments including Yuma, Phoenix and Tucson (Morris, Kline, and Morris 2015).	Possible. While WestLand biologists did not observe any milkweed species in the Analysis Area during the site visit, the agricultural fields in the northern extent of the Analysis Area are primarily used to grow alfalfa, a nectar-producing plant, and it is possible that individuals of this species may utilize these fields as food sources during migration. Both monarch and milkweed have been observed within 10 miles of the Analysis Area (The Xerces Society for Invertebrate Conservation 2025), ⁶ however, there are no AZGFD records of this species within 5 miles of the Analysis Area (Appendix B).	Not likely to result in take. The Project will result in limited removal of suitable foraging habitat but will not affect breeding habitat for this species. Noise, increased traffic, and light associated with construction and periodic maintenance will be of short duration within a limited spatial extent. Therefore, the Project is not likely to result in take of this species.

⁵ USGS accessed online April 9, 2025.⁶ Xerces Society for Invertebrate Conservation accessed online April 9, 2025.

Species Name	Federal Status	Known Suitable Habitat	Total Range	Distribution in Arizona	Potential to Occur	Effects Analysis
MAMMALS						
<i>Antilocapra americana sonoriensis</i> Sonoran pronghorn	Endangered (USFWS 1967); non-essential experimental population (USFWS 2011); no critical habitat	In the winter months, they prefer flat and open areas that facilitate detection and escape from predators. In summer months, they require denser vegetation to provide moisture forage and thermal cover to reduce heat stress. Move nomadically to access water and favorable foraging areas. Forages on a wide variety of plant species. Occurs within the Lower Colorado River Valley and Arizona upland subdivisions of Sonoran Desertscrub (USFWS 2016). Elevation: 400–1,600 ft (AZGFD 2023d).	Occurs in Arizona, U.S. and Sonora, Mexico (USFWS 2016).	There are four populations (including non-essential experimental), all of which occur in the extreme southwestern portion of the state in the Cabeza Prieta National Wildlife Refuge, Organ Pipe Cactus National Monument and Barry M. Goldwater Range (USFWS 2016). The non-essential experimental population is located "north of Interstate 8 and south of Interstate 10, bounded by the Colorado River on the west and Interstate 10 on the east; and an area south of Interstate 8, bounded by Highway 85 on the west, Interstates 10 and 19 on the east, and the United States-Mexico border on the south" (USFWS 2011). Specifically, the two non-essential experimental populations occur in the Kofa National Wildlife Refuge, U.S. Army Yuma Proving Grounds and the Barry M. Goldwater Range East (USFWS 2016).	None. While the Analysis Area contains suitable habitat in the form of Lower Colorado River Valley and Arizona upland subdivisions of Sonoran Desertscrub, it is outside of the known range of this species. The AZGFD does not have records of this species within 5 miles of the Analysis Area (Appendix B).	No take. This species is not anticipated to occur within the Analysis Area. Therefore, the Project is not anticipated to result in take of this species.

Table 2. BGEPA Species Potential to Occur and Take Analysis

Species Name	Federal Status	Known Suitable Habitat	Total Range	Distribution in Arizona	Potential to Occur	Take Analysis
<i>Aquila chrysaetos</i> Golden eagle	Bald and Golden Eagle Protection Act (16 U.S.C. 668-668c)	Range-wide, breeds in a wide variety of open habitats, with nests typically on cliffs, and avoids heavily forested areas (Katzner et al. 2020). In Arizona, prefers pinyon-juniper woodlands and Sonoran desertscrub (Driscoll 2005). Constructs large nests on cliff ledges, rock outcrops, tall trees or, rarely, transmission towers (Driscoll 2005). Golden eagles are known to forage within 4.4 miles of the nest (Tesky 1994), generally in open habitats where prey is available (Katzner et al. 2020). Primarily feeds on small mammals (greater than 80% of prey items) but also consumes birds, reptiles and fish (Katzner et al. 2020). In the western U.S. average territory size ranges from 22 to 55 square miles (AZGFD 2002). Elevation: In Arizona, typically breeds between 1,300–9,000 ft (Driscoll 2005).	This species is a short to medium-distance partial migrant with a Holarctic distribution (Katzner et al. 2020). In North America, primarily breeds in western portion of the continent from Alaska to central Mexico. Northernmost populations are typically migratory. Year-round and non-breeding populations occur from central Saskatchewan to British Columbia, Canada and south throughout its range and sparsely in the eastern U.S. (Katzner et al. 2020).	Found in suitable habitat throughout the state (Driscoll 2005) but tend to vacate low desert areas during the summer (AZGFD 2002).	Possible. The Analysis Area lacks preferred nesting habitat for this species, including cliffs and heavily forested areas. There are transmission lines in the Analysis Area which this species rarely nests on. The Analysis Area contains suitable foraging habitat (desertscrub), so golden eagles may occasionally forage in the Analysis Area. Though there are no AZGFD records of this species occurring within 5 miles of the Analysis Area (Appendix B), there are numerous eBird detection records of this species within and in the vicinity of the Analysis Area (eBird 2025).⁴	Not likely to result in take. The Analysis Area supports potential foraging habitat but lacks suitable nesting habitat. Noise, increased traffic, and light associated with construction and periodic maintenance will be of short duration within a limited spatial extent. Therefore, take of this species is not anticipated.

Species Name	Federal Status	Known Suitable Habitat	Total Range	Distribution in Arizona	Potential to Occur	Take Analysis
<i>Haliaeetus leucocephalus</i> Bald Eagle	Bald and Golden Eagle Protection Act (16 U.S.C. 668-668c)	Breeding is concentrated in coastal areas, along rivers, lakes, or reservoirs. Typically breeds in forested areas with edge habitat within 1.3 miles of aquatic habitats suitable for foraging. Prefers areas of shallow water and shorelines for fishing and hunting wide variety of waterfowl, and small aquatic and terrestrial mammals. Fish are preferred prey, but carrion is used extensively whenever encountered. Nests away from human disturbance in large trees and rarely on cliff ledges or on the ground when trees are absent. Winters primarily in coastal areas or along major river systems with adequate prey availability and large trees for perching (Buehler 2020). Elevation: In Arizona, 460–7,930 ft (AZGFD 2022b).	Migratory behavior varies among populations and age groups (Buehler 2020). Breeds south of the tundra throughout Canada and the U.S., excluding Hawaii. Additionally, small breeding populations occur in Baja California, Sonora and Chihuahua, Mexico (Buehler 2020). Winter range appears to be expanding as populations increase in size. Most populations are year-round residents with only the northern most populations in Alaska, U.S. and Canada withdrawing southward or to coastal areas (Fink et al. 2018).	A small resident population occupies the central part of the state and a wintering population occurs in central and northern Arizona. Breeding territories occur at most large lakes and reservoirs and along portions of large rivers and creeks, including the Agua Fria, Bill Williams, Colorado, Little Colorado, Gila, Salt, San Carlos, San Francisco and Verde Rivers (AZGFD 2022b, McCarty, Licence, and Jacobsen 2018).	Unlikely. The Analysis Area does not include suitable nesting habitat in forested areas along rivers, lakes, and reservoirs. Surface water present in the Analysis Area does not constitute aquatic habitat suitable for foraging. Though there are no AZGFD records of this species within 5 miles of the Analysis Area (Appendix B), there are numerous eBird detection records of this species within and in the vicinity of the Analysis Area (eBird 2025).⁴	Not likely to result in take. The Analysis Area lacks suitable foraging and nesting habitat, though this species may pass through the Analysis Area. Noise, increased traffic, and light associated with construction and periodic maintenance will be of short duration within a limited spatial extent. Therefore, take of this species is not anticipated.

Table 3. SGCN Potential to Occur and Effects Analysis

Species Name	Known Suitable Habitat	Total Range	Distribution in Arizona	Potential to Occur	Effects Analysis
BIRDS					
<i>Athene cunicularia hypugaea</i> Western burrowing owl	This species inhabits flat or gently-sloping treeless and sparsely vegetated areas in deserts and grasslands (Poulin et al. 2011). In Arizona, this species most commonly breeds in grazed grasslands and open disturbed areas such as the edges of agricultural fields, fallow fields, bladed areas, irrigation embankments, airports, and golf courses. This species additionally breeds in sparsely vegetated Sonoran or cold-temperate desertscrub (Martin 2005). Areas with burrows and unobstructed perches are favored (Martin 2005). Largely reliant on burrows dug by mammals but, on rare occasion, will dig their own holes (Klute et al. 2003, Poulin et al. 2011). Northern populations are migratory and habitat used migratory and winter period is similar to that used for breeding but with some evidence of increased reliance on agricultural areas (Klute et al. 2003, Poulin et al. 2011). Elevation: In Arizona, 650–6,140 ft (AZGFD 2022e).	This species is a partial migrant, with northern populations being primarily migratory (Poulin et al. 2011). In southwestern states, individuals appear to make yearly decisions to remain on their breeding grounds or migrate, likely based on environmental conditions (Ogonowski and Conway 2009, Poulin et al. 2011). The hypugaea subspecies breeds in Alberta, British Columbia, Manitoba and Saskatchewan, Canada and 19 U.S. states including Arizona, California, Colorado, Idaho, Iowa, Kansas, Minnesota, Montana, Nebraska, Nevada, New Mexico, North Dakota, Oklahoma, Oregon, South Dakota, Texas, Utah, Washington and Wyoming (Klute et al. 2003). The breeding range extends southward into the Mexican states of Aguascalientes, Baja California, Baja California Sur, Chihuahua, Coahuila, Durango, Nuevo Leon, San Luis Potosí, Sinaloa, Sonora, Tamaulipas and Zacatecas (Poulin et al. 2011). Winters primarily in Arizona, California, Louisiana, New Mexico and Texas U.S., and southward through Mexico, excluding the Yucatan Peninsula, to Guatemala and Honduras, with rare reports as far south as Panama (Klute et al. 2003, Poulin et al. 2011).	Found nesting throughout the state where favorable habitat is present. Areas with the densest populations include the Yuma region, Detrital Valley, Hualapai Valley, Chinle Valley, from the vicinity of Winslow and northeast to near Polacca, between Phoenix and Marana along the I-10 corridor, and in Cochise County east of the San Pedro River (Martin 2005). Southern populations are primarily resident whereas northern populations are migratory and are on their breeding grounds mid-March through as late as mid-October (Martin 2005).	Possible. The Analysis Area is within this species' range and contains suitable habitat in the form of open disturbed areas, the edges of agricultural fields, fallow fields, and irrigation embankments. Though no burrows were observed by WestLand during the site visit, the field survey does not constitute a species-specific survey and suitable burrows may be present in the Analysis Area. Additionally, locations of suitable mammal burrows for nesting change regularly and CCR has record of occupied burrowing owl burrows at the northern extend of the Project Area. The Project construction timeline is currently unknown, and by the time construction commences, there may be suitable burrows within the Analysis Area. There are AZGFD records of this species within 5 miles of the Analysis Area (Appendix B).	May affect, not likely to result in a trend towards federal listing. No suitable burrows were observed during WestLand's field survey. However, burrow locations change quickly, occupied burrows have previously existed within the Project Area, and the Project will result in the removal of areas that may support potentially suitable nesting habitat for this species. The Analysis Area represents a small portion of suitable nesting habitat within the Analysis Area vicinity. Noise, increased traffic, and light associated with construction and periodic maintenance will be of short duration within a limited spatial extent. Contingent on completion of pre-clearance surveys and relocation of any burrowing owls present, the Project is not likely to result in a trend towards federal listing of this species.

Species Name	Known Suitable Habitat	Total Range	Distribution in Arizona	Potential to Occur	Effects Analysis
<i>Campylorhynchus brunneicapillus</i> Cactus wren	The cactus wren occupies arid and semi-arid desert regions of the southwestern United States (Zoology 2020). It prefers vegetation dominated by cholla and other succulent cacti and spiny trees and shrubs, and habitat characterized by high temperatures, low humidity, and scarce water (Zoology 2020). It is typically found at elevations below 4,000 ft (Zoology 2020).	This species can be found in southern California, Nevada, Utah, Arizona, central New Mexico, Texas, and Mexico (Zoology 2020).	In Arizona, this species is common throughout the southern portion of the state and along the Colorado River (Zoology 2020).	Possible. The Analysis Area is within this species' range and contains suitable habitat in the form of vegetation dominated by cacti and spiny trees and shrubs. There are numerous eBird detections of this species in the Analysis Area (eBird 2025)⁴ and there are AZGFD records within 5 miles of the Analysis Area (Appendix B).	May affect, not likely to result in a trend towards federal listing. The Project will result in the removal of suitable nesting habitat for this species. However, this represents a small portion of suitable nesting habitat within the Analysis Area vicinity. Noise, increased traffic, and light associated with construction and periodic maintenance will be of short duration within a limited spatial extent. Therefore, the Project is not likely to result in a trend towards federal listing of this species.
<i>Falco peregrinus anatum</i> American peregrine falcon	Breeds in a wide range of open habitats (White et al. 2002). Prefer steep cliffs that overlook woodlands and riparian areas. Habitat selection is mainly driven by the abundance of prey (birds and occasionally bats). The peregrine dives from cliffs to ambush prey. Usually forages within 9 miles of the nest site, but foraging distances of 15 miles are common (Luensmann 2010). This species can be found in less optimal habitats, such as small, broken cliffs or cliffs in xeric areas, when preferred habitat is not available. Will roost on tall buildings when prey is abundant (AZGFD 2022a). In Arizona, this species is most often found in forested regions from pinyon pine-juniper and evergreen oaks to ponderosa pine and mixed conifer, to cold-temperate desertscrub and Sonoran desertscrub (AZGFD 2022a, Burger 2005). Migratory and overwintering habitats are diverse and include similar habitats to those used during breeding and areas devoid of cliffs (White et al. 2002). Elevation: In Arizona, 400–9,000 ft (AZGFD 2022a).	F. peregrinus occurs on every continent except Antarctica (White et al. 2002). The anatum subspecies is a partial migrant and breeds throughout North America south of the tundra, excluding coastal Pacific Northwest, to northern Mexico (White et al. 2002). Winter range includes portions of the breeding range where prey is abundant year-round and extends south through Central America and South America through Chile (AZGFD 2022a, White et al. 2002).	Breeds throughout the state wherever there is suitable habitat (AZGFD 2022a, Burger 2005). Breeding densities are greatest in areas with large cliff features including the Mogollon Rim, the Grand Canyon and portions of the Colorado Plateau (AZGFD 2022a). Some individuals remain near breeding territories year-round, while others move to lowlands or migrate south for the winter (AZGFD 2022a, Burger 2005).	Unlikely. While the Analysis Area is within the known range of this species, it does not contain suitable nesting habitat in the form of steep cliffs that overlook woodlands and riparian areas. Suitable nesting habitat occurs within 15 miles of the Analysis Area, and it is possible that this species could forage within the Analysis Area. There are AZGFD records of this species within 5 miles of the Analysis Area (Appendix B).	No Effect. The Analysis Area does not contain suitable nesting habitat, and it represents a small portion of suitable foraging habitat within the vicinity. Noise, increased traffic, and light associated with construction and periodic maintenance will be of short duration within a limited spatial extent. Therefore, effects to this species are not anticipated.

Species Name	Known Suitable Habitat	Total Range	Distribution in Arizona	Potential to Occur	Effects Analysis
<i>Falco sparverius</i> American kestrel	American kestrel prefer semi-open country of all kinds with available hunting perches (Townes 2014). In Arizona, this species frequently nests in cavities in saguaro cacti (Townes 2014). This species will also nest in urban and suburban palm trees, underneath untrimmed fronds (Townes 2014). This species may nest in cavities excavated by woodpeckers in wooden transmission poles.	This species can be found throughout the Americas (Townes 2014). Its range stretches from Alaska to the tip of South America (Townes 2014).	In Arizona, this species can be found in areas with open habitats like grassland and deserts (AZGFD 2019).	Present. The Analysis Area is within this species' range and contains suitable foraging habitat in the form of open country with available perches and saguaro cacti. WestLand observed this species during field surveys, there are numerous eBird detections of this species in the Analysis Area (eBird 2025),⁴ and there are AZGFD records of this species within 5 miles of the Analysis Area (Appendix B). Nesting habitat for this species is only marginally suitable in the Analysis Area. The majority of the Analysis Area is comprised of agricultural fields and uplands with low stature, sparse vegetation. Trees occur along Analysis Area washes but are not large enough to support suitable nesting cavities. Saguaros occur within the Analysis Area only occasionally and rarely. Wooden transmission poles are sparse but present in the Analysis Area and may contain suitable cavities for nesting.	May affect, not likely to result in a trend towards federal listing. The Analysis Area contains only marginally suitable nesting habitat and represents a small portion of suitable foraging habitat within the vicinity. Noise, increased traffic, and light associated with construction and periodic maintenance will be of short duration within a limited spatial extent. Therefore, the Project is not likely to result in a trend towards federal listing of this species.

Species Name	Known Suitable Habitat	Total Range	Distribution in Arizona	Potential to Occur	Effects Analysis
<i>Toxostoma bendirei</i> Bendire's thrasher	This species breeds in arid and sparsely vegetated habitats including desertscrub, semi-desert grassland, shrublands, sparse woodlands and sagebrush (England and Laundehslayer 1993). In Arizona, this species commonly nests in flat to gently rolling areas with approximately half of the breeding records occurring in Sonoran desertscrub. It is frequently encountered along dry washes with scattered trees and shrubs. It may also use rural agricultural areas, and even grasslands if enough shrubs are present. In the northern portion of the state, the species has been documented in grassy and shrubby areas with scattered junipers and sagebrush (Corman 2005a). This species avoids areas with dense vegetation such as riparian woodland or heavily vegetated desert washes. Migratory and wintering habitats are insufficiently studied but are presumed to be similar to habitat used during breeding (England and Laundehslayer 1993). Elevation: In Arizona, breeds 150–6,100 ft (Corman 2005a).	This species is a partial migrant (England and Laundehslayer 1993). Both the breeding and wintering range of this species are poorly understood, particularly in Mexico and the northern portion of its U.S. range (England and Laundehslayer 1993). Migratory breeding populations occur in northern Arizona, east-central California, extreme southwestern Colorado, southern Nevada, northwestern New Mexico. Migratory populations withdraw from the Mohave Desert, Great Basin Desert, Colorado Plateau and Arizona/New Mexico Plateau (England and Laundehslayer 1993). Resident and wintering populations occur in southern Arizona and southwestern New Mexico, U.S. and the Mexican states of Chihuahua, Sonora and Sinaloa (Corman 2005a, England and Laundehslayer 1993).	This species occurs throughout the state wherever suitable habitat is present. South-central Arizona populations are considered to be residents whereas populations elsewhere in the state are primarily migratory (Corman 2005a).	Present. The Analysis Area is within this species' range and contains suitable habitat in the form of Sonoran desertscrub and dry washes with scattered trees and shrubs in rural or agricultural areas. WestLand observed this species during field surveys, there are numerous eBird detections of this species in the Analysis Area (eBird 2025)⁴ and there are AZGFD records of this species within 5 miles of the Analysis Area (Appendix B).	May affect, not likely to result in a trend towards federal listing. The Project will result in the removal of suitable nesting and foraging habitat for this species. However, this represents a small portion of suitable habitat within the Analysis Area vicinity. Noise, increased traffic, and light associated with construction and periodic maintenance will be of short duration within a limited spatial extent. Therefore, the Project is not likely to result in a trend towards federal listing of this species.

Species Name	Known Suitable Habitat	Total Range	Distribution in Arizona	Potential to Occur	Effects Analysis
MAMMALS					
<i>Lepus alleni</i> Antelope jackrabbit	The antelope jackrabbit is native to the Sonoran Desert, preferring dry open places with sparse grasses (Arizona-Sonora Desert Museum 2025b).	This species' range is limited to southern Arizona and northwestern Mexico (Arizona-Sonora Desert Museum 2025b). It is native to the Sonoran Desert (Arizona-Sonora Desert Museum 2025b).	In Arizona, this species occurs in desert scrub, creosote bush flats, cactus plains, and mesquite grassland habitats (Arizona-Sonora Desert Museum 2025b).	Possible. The Analysis Area contains suitable habitat for this species in the form of desert scrub and creosote bush flats and there are AZGFD records of this species within 5 miles of the Analysis Area (Appendix B).	May affect, not likely to result in a trend towards federal listing. Vegetation clearing and surface disturbance for the Project will affect only a small portion of suitable habitat for this species in the Analysis Area. Noise, increased traffic, and light associated with construction and periodic maintenance will be of short duration within a limited spatial extent. Therefore, the Project is not likely to result in a trend towards federal listing of this species.
<i>Macrotus californicus</i> California leaf-nosed bat	Typically forages along washes within 6.2 miles of their roost sites (Brown 2005). Primarily consumes insects but also consumes fruits (AZGFD 2023b, Brown 2005). In Arizona, this species is a year-round resident of Sonoran Desert scrub. Consumes primarily insects taken on the wing or gleaned from vegetation, but have also been reported to feed on fruits, including those of cacti. Roost sites have large areas of ceiling and flying space, and include abandoned underground mines, caves, and rock shelters (AZGFD 2023b). Elevation: In Arizona, below 4,000 ft (AZGFD 2023b).	Occurs in Arizona, California, Nevada and Utah, U.S. and the Mexican states of Baja California, Baja California Sur, Chihuahua, Sinaloa, Sonora and Tamaulipas (AZGFD 2023b, Hammerson 2015).	Occurs below the Mogollon Rim, with occurrence records concentrated in western portion of the state (AZGFD 2023b).	Possible. The Analysis Area is within this species' range and is within 6 miles of its potential roost sites in the Sawtooth Mountains. In addition to the AZGFD records of this species within 5 miles of the Analysis Area (Appendix B), there are citizen scientist records of this species occurring within the vicinity of the Analysis Area (iNaturalist 2025). ⁷ The Analysis Area contains surface water in a couple of drainages and in irrigation canals which may be suitable foraging habitat.	May affect, not likely to result in a trend towards federal listing. Although this species may forage in the Analysis Area, surface disturbance and removal of irrigation canals and agricultural foraging habitat will affect only a small portion of suitable habitat in the Analysis Area. Noise, increased traffic, and light associated with construction and periodic maintenance will be of short duration within a limited spatial extent. Therefore, the Project is not likely to result in a trend towards federal listing of this species.

⁷ iNaturalist accessed online April 14, 2025.

Species Name	Known Suitable Habitat	Total Range	Distribution in Arizona	Potential to Occur	Effects Analysis
REPTILES					
<i>Micruroides euryxanthus</i> Sonoran coral snake	Sonoran coral snake occupies arid and semi-arid regions in many different habitats, including thornscrub, desert scrub, woodland, grassland, and farmland (Arizona-Sonora Desert Museum 2025a). It is found in the plains and lower mountain slopes from sea level to 5800 ft (Arizona-Sonora Desert Museum 2025a).	This species can be found in central and southern Arizona, the extreme southwestern New Mexico, and southward to Sinaloa in western Mexico (Arizona-Sonora Desert Museum 2025a).	Sonoran coral snake is native to the Sonoran Desert (Arizona-Sonora Desert Museum 2025a).	Possible. The Analysis Area is within this species' range and contains suitable desert scrub habitat. There are AZGFD records of this species occurring within 5 miles of the Analysis Area (Appendix B).	May affect, not likely to result in a trend towards federal listing. The Project will result in the removal of potentially suitable habitat for this species. However, this represents a small portion of suitable habitat within the Analysis Area vicinity. Therefore, the Project is not likely to result in a trend towards federal listing of this species.
<i>Phrynosoma solare</i> Regal horned lizard	Regal horned lizard occupies Arizona Sonoran desert scrub, Chihuahuan desert scrub, and semidesert grassland communities (AZGFD 2023c). It inhabits valleys, rock bajadas, and low foothills (AZGFD 2023c). It prefers areas with low shrubs and open sunny patches (AZGFD 2023c).	This species is found primarily in the Sonoran Desert region of south-central Arizona and southwestern New Mexico (AZGFD 2023c). In Mexico, it inhabits parts of Sonora and Sinaloa (AZGFD 2023c).	This species is found throughout southern and central Arizona (AZGFD 2023c).	Possible. The Analysis Area is within the northern extent of this species' known range and contains suitable Sonoran desert scrub habitat. There are AZGFD records of this species occurring within 5 miles of the Analysis Area (Appendix B).	May affect, not likely to result in a trend towards federal listing. The Project will result in the removal of potentially suitable habitat for this species. However, this represents a small portion of suitable habitat within the Analysis Area vicinity. Noise, increased traffic, and light associated with construction and periodic maintenance will be of short duration within a limited spatial extent. Therefore, the Project is not likely to result in a trend towards federal listing of this species.

Species Name	Known Suitable Habitat	Total Range	Distribution in Arizona	Potential to Occur	Effects Analysis
<i>Phyllorhynchus browni</i> Saddled leaf-nosed snake	Saddled leaf-nosed snake occupies areas with Sonoran desertscrub and will range upslope into semi-desert grassland (Tucson Herpetological Society n.d.). In Sonora and Sinaloa, it can be found in foothills and coastal thornscrub and tropical deciduous forest (Tucson Herpetological Society n.d.).	This species occurs in southern and central Arizona, south to the western portions of Sonora, and east of the Sierra Madre Occidental in Sinaloa (Tucson Herpetological Society n.d.).	In Arizona, this species can be found in bajadas and valleys from Organ Pipe Cactus National Monument east to Tucson and north to Gila Bend (Tucson Herpetological Society n.d.). It can be found north of Tucson to Florence, Superior, Stewart Mountain Dam, and near Cave Creek (Tucson Herpetological Society n.d.). It also occurs in the lower San Pedro River Valley north to mammoth to at least Aravaipa Canyon (Tucson Herpetological Society n.d.).	Possible. The Analysis Area is within the northern extent of this species' known range and contains suitable Sonoran desertscrub habitat. There are AZGFD records of this species occurring within 5 miles of the Analysis Area (Appendix B).	May affect, not likely to result in a trend towards federal listing. The Project will result in the removal of potentially suitable habitat for this species. However, this represents a small portion of suitable habitat within the Analysis Area vicinity. Noise, increased traffic, and light associated with construction and periodic maintenance will be of short duration within a limited spatial extent. Therefore, the Project is not likely to result in a trend towards federal listing of this species.
<i>Chilomeniscus cinctus</i> Banded sandsnake	Banded sandsnake inhabits sandy, sandy-gravelly, or loamy soils of flats, dunes, hummocks, arroyos, and wash borders in mesquite and creosotebush dominated vegetation, uplands with palo verde and saguaro, and thornscrub habitats (Herpedia.com n.d.). This species is a "sand-swimmer" but can also be found under rocks or vegetative debris (Herpedia.com n.d.).	This species can be found throughout the Sonoran desert and dry forests of Arizona, in western Sonora south to Sinaloa and on the northern Baja California Peninsula (Herpedia.com n.d.).	In Arizona, this species occurs in southwestern and south-central Arizona (Herpedia.com n.d.).	Possible. The Analysis Area is within this species' known range, and there are AZGFD records of this species within 5 miles of the Analysis Area (Appendix B). The Analysis Area contains suitable loose sandy loam soils in flats and washes for it to "swim."	May affect, not likely to result in a trend towards federal listing. The Project will result in the removal of potentially suitable habitat for this species. However, this represents a small portion of suitable habitat within the Analysis Area vicinity. Noise, increased traffic, and light associated with construction and periodic maintenance will be of short duration within a limited spatial extent. Therefore, the Project is not likely to result in a trend towards federal listing of this species.

Species Name	Known Suitable Habitat	Total Range	Distribution in Arizona	Potential to Occur	Effects Analysis
<i>Gopherus morafkai</i> Sonoran desert tortoise	Found on rocky slopes and bajadas in the Mohave and Sonoran desertscrub biotic communities. Burrow in loose soil, below rocks and boulders, or find shelter under vegetation and in caliche caves. Most commonly found in association with paloverde and mixed cacti. Forage on annual and perennial grasses, forbs, succulents, trees and shrubs, and woody vines (AZGFD 2022c, USFWS 2015). In the contact zone between the species (i.e., the Black Mountains), <i>G. morafkai</i> generally is found in foothills, on hillside slopes and more mountainous terrain than <i>G. agassizii</i> that is typically found on alluvial fans and valley bottoms (Edwards et al. 2015). Elevation: 510–5,300 ft (AZGFD 2022c).	Occurs in Arizona, U.S. and Sonora, Mexico (Edwards et al. 2015, Murphy et al. 2011).	Found south and east of the Colorado river in all counties except Apache, Coconino, Greenlee, and Navajo (AZGFD 2022c, USFWS 2015). The southern Black Mountains are a contact zone between the Sonoran and Mojave tortoise, although the Mojave lineage predominates in the area (Edwards et al. 2015, USFWS 2015).	Unlikely. Though the Analysis Area is within the known range of this species and there are AZGFD records of this species occurring within 5 miles of the Analysis Area (Appendix B), the Analysis Area lacks suitable habitat for this species in the form of rocky slopes and bajadas, loose soil below rocks and boulders for burrows, and shelters in the form of caliche caves. The Analysis Area ranges from approximately 1,570 to 1,670 ft amsl, which is below the elevational range reported in the Picacho Mountains (1,765–2,360 ft) and well below the general elevational range reported in Arizona (2,700–3,000 ft). The Analysis Area is unlikely to be important for dispersal by SDT due to the lack of suitable habitat and habitat fragmentation due to agricultural land uses in the vicinity. No evidence or sign of SDT was detected during field evaluations.	No effect. The Analysis Area does not contain suitable habitat and potential lighting impacts will not extend beyond the Project Area. Therefore, no effects to this species are anticipated.
<i>Incilius alvarius</i> Sonoran desert toad	This species is common to the Sonoran Desert (Arizona-Sonora Desert Museum 2025c). It occurs in creosotebush desertscrub, grasslands into pine-oak woodlands, thornscrub, and in tropical deciduous forests in Mexico (Arizona-Sonora Desert Museum 2025c).	Sonoran desert toad can be found in Central Arizona to southwestern New Mexico and Sinaloa, Mexico (Arizona-Sonora Desert Museum 2025c).	In Arizona, this species can be found in the southern portion of the state (Arizona-Sonora Desert Museum 2025c).	Possible. The Analysis Area is within this species' known range and contains suitable creosotebush desertscrub habitat. There are AZGFD records of this species occurring within 5 miles of the Analysis Area (Appendix B).	May affect, not likely to result in a trend towards federal listing. The Project will result in the removal of potentially suitable habitat for this species. However, this represents a small portion of suitable habitat within the Analysis Area vicinity. Noise, increased traffic, and light associated with construction and periodic maintenance will be of short duration within a limited spatial extent. Therefore, the Project is not likely to result in a trend towards federal listing of this species.

6. RECOMMENDED MITIGATION MEASURES

To mitigate impacts to MBTA-listed species clearing of any vegetation should occur outside the MBTA breeding season, which extends from March 1 to August 31. If vegetation clearing must occur during the MBTA breeding season, WestLand recommends a pedestrian nest survey within the limits of vegetation removal no more than 10 days prior to ground disturbance. Inactive nests (i.e., nests without eggs/nestlings/fledglings) should be removed. If an active nest (eggs/nestlings/fledglings present) is located, an avoidance buffer should be established until the nest becomes inactive. Should an active nest require removal due to planned land-clearing activities, a federally permitted wildlife rehabilitator would need to be engaged to relocate any eggs or nestlings in compliance with the MBTA. This would also require applying for and obtaining an incidental take permit from the USFWS.

Surveys conducted during the MBTA breeding season would include burrowing owls. For construction outside the MBTA breeding season, a survey for burrowing owls (which may be present year-round) should be conducted no more than 30 days prior to construction.

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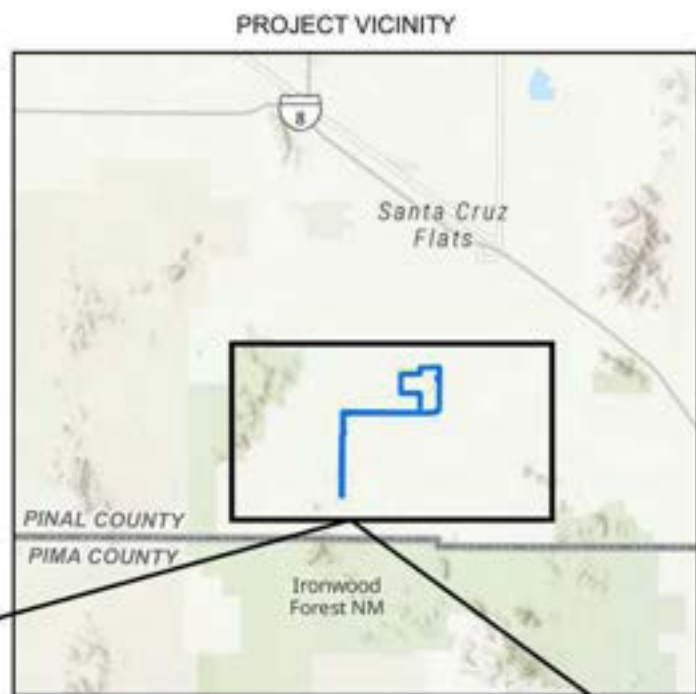
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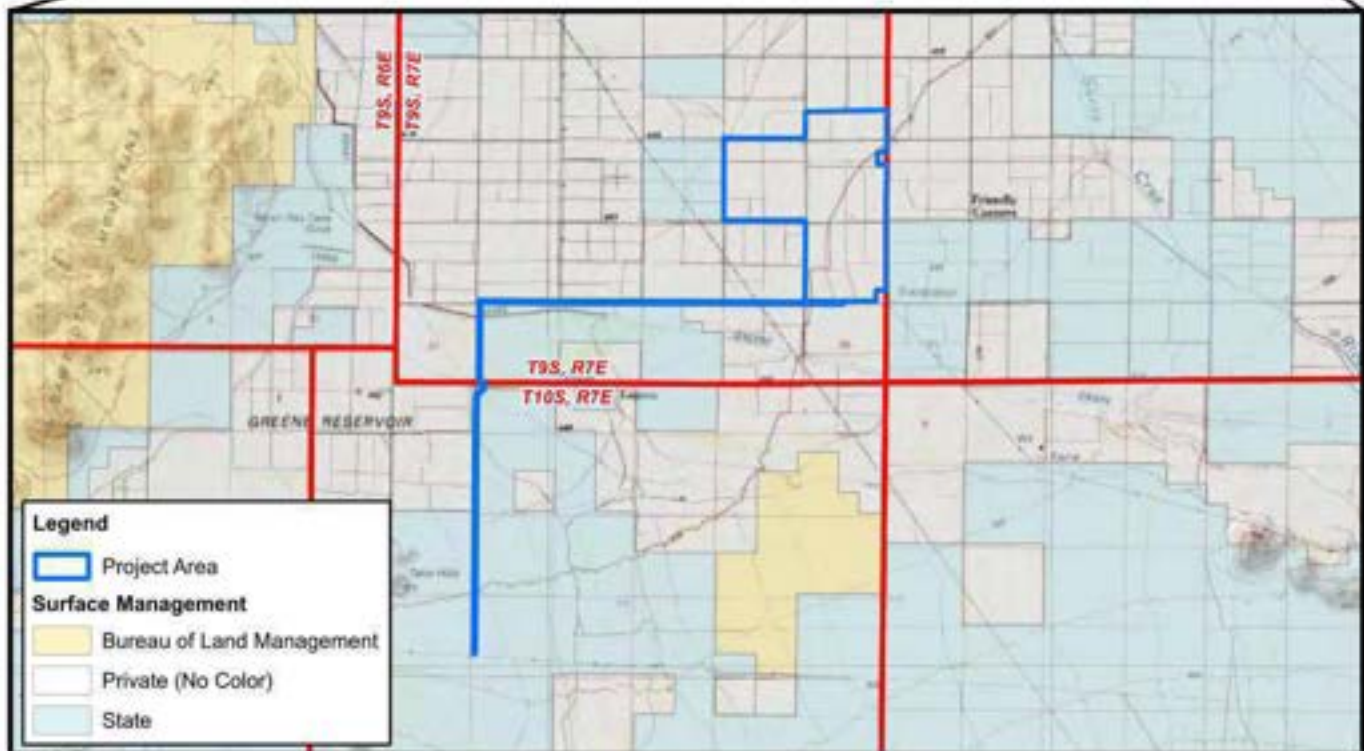
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FIGURES



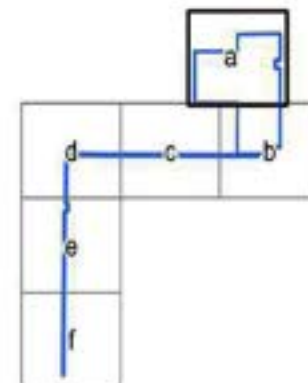
Approximate Scale 1 inch equals 10 miles



T9S, R7E, Portions of Sections 13, 23-25, and 32-36,
T10S, R7E, Portions of Sections 4, 9, 16, and 21,
Pinal County, Arizona
Tucson USGS 1:250K quadrangle
Projection: NAD 1983 UTM Zone 12N
Surface Management: BLM SMA ArcGIS service accessed 07/02/2025
Image Source: ArcGIS Online, World Topographic Map

CACTUS FLOWER SOLAR FACILITY
Biological Resources Evaluation Report

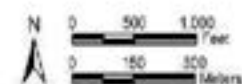
VICINITY MAP
Figure 1



T95, RTE, Portions of Sections 13, 23, and 24,
Pinal County, Arizona
Projection: NAD 1983 UTM Zone 12N
Image Source: Maxar 03/10/2022 - 10/17/2022

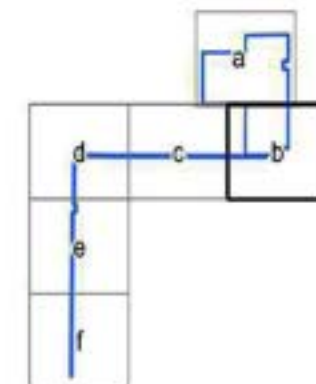
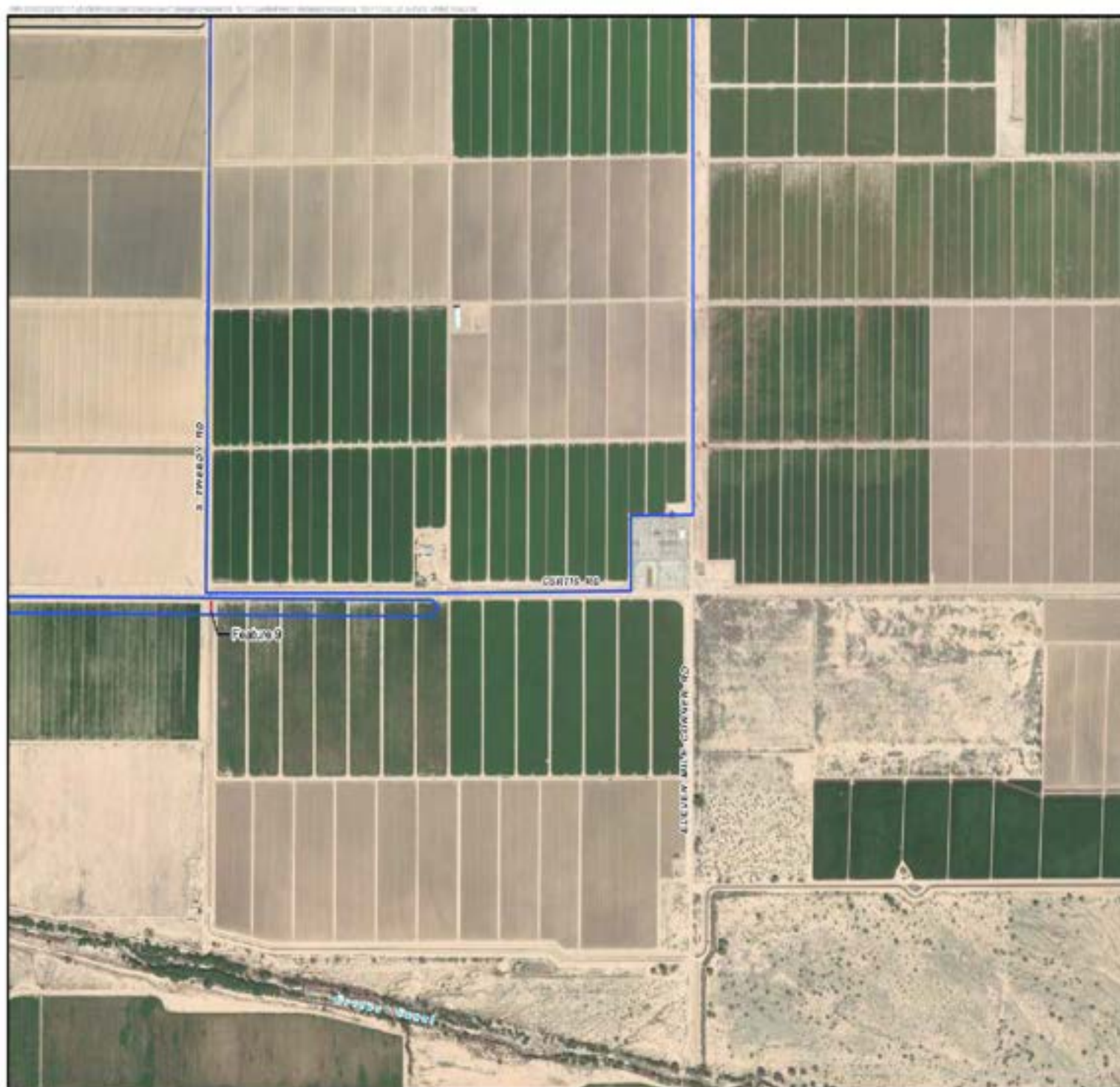
Legend

- Photo Point
- Project Area
- Surface Water Features



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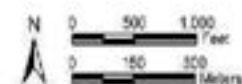
CACTUS FLOWER SOLAR FACILITY
Biological Resources Evaluation Report
SURFACE WATER FEATURES AND PHOTO LOCATIONS
Figure 3a



T9S, R7E, Portions of Sections 25, 35, and 36,
Pinal County, Arizona
Projection: NAD 1983 UTM Zone 12N
Image Source: Maxar 03/10/2022 - 10/17/2022

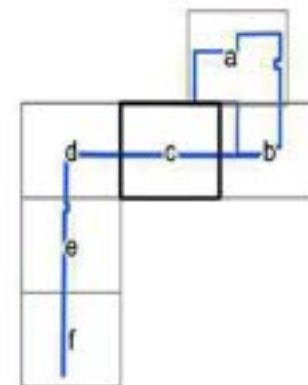
Legend

- Project Area
- Surface Water Features



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Environmental Services

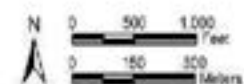
CACTUS FLOWER SOLAR FACILITY
Biological Resources Evaluation Report
SURFACE WATER FEATURES AND PHOTO LOCATIONS
Figure 3b



T9G, R7E, Portions of Sections 33-35,
Pinal County, Arizona
Projection: NAD 1983 UTM Zone 12N
Image Source: Maxar 03/19/2022-10/17/2022

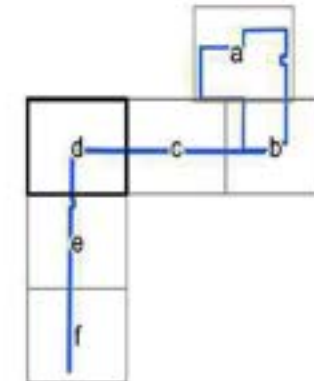
Legend

- Photo Point
- ▬ Project Area
- ▬ Surface Water Features



WestLand Engineering & Environmental Services

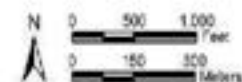
CACTUS FLOWER SOLAR FACILITY
Biological Resources Evaluation Report
SURFACE WATER FEATURES AND PHOTO LOCATIONS
Figure 3c



T9S, R7E, Portions of Sections 32 and 33,
Pinal County, Arizona
Projection: NAD 1983 UTM Zone 12N
Image Source: Maxar 03/19/2023-10/17/2023

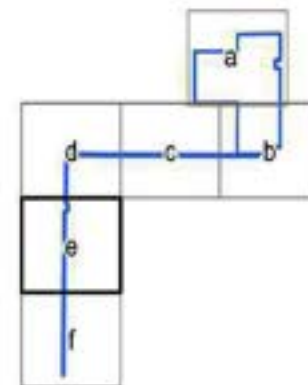
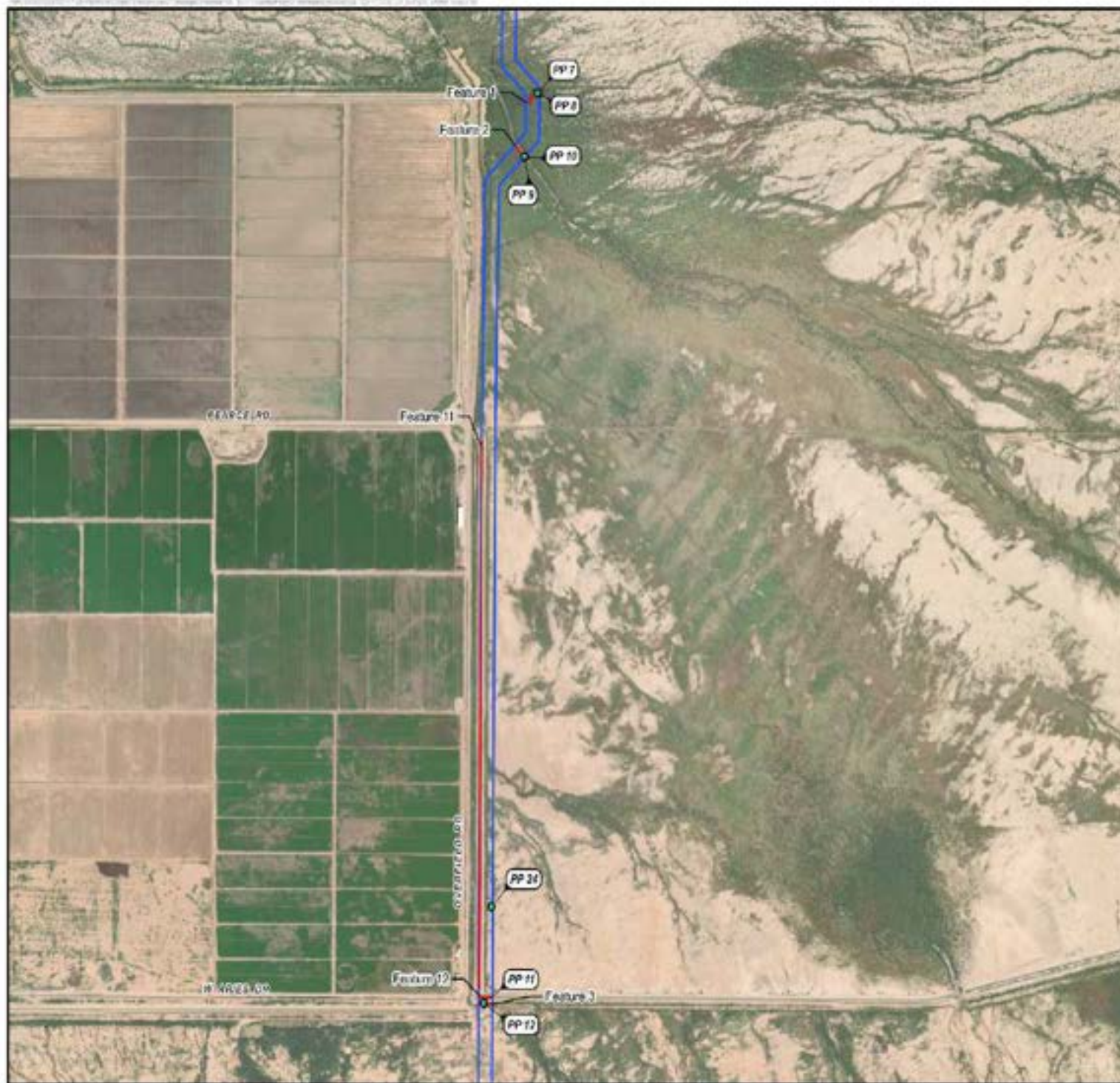
Legend

- Photo Point
- Project Area
- Surface Water Features



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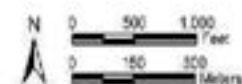
CACTUS FLOWER SOLAR FACILITY
Biological Resources Evaluation Report
SURFACE WATER FEATURES AND PHOTO LOCATIONS
Figure 3d



T8S, R7E, a Portion of Section 32,
T18S, R7E, Portions of Sections 4, 9, and 10,
Pinal County, Arizona
Projection: NAD 1983 UTM Zone 12N
Image Source: Maxar 03/10/2023-10/17/2023

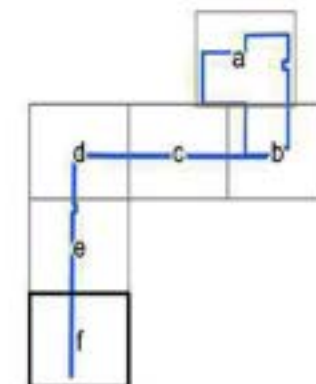
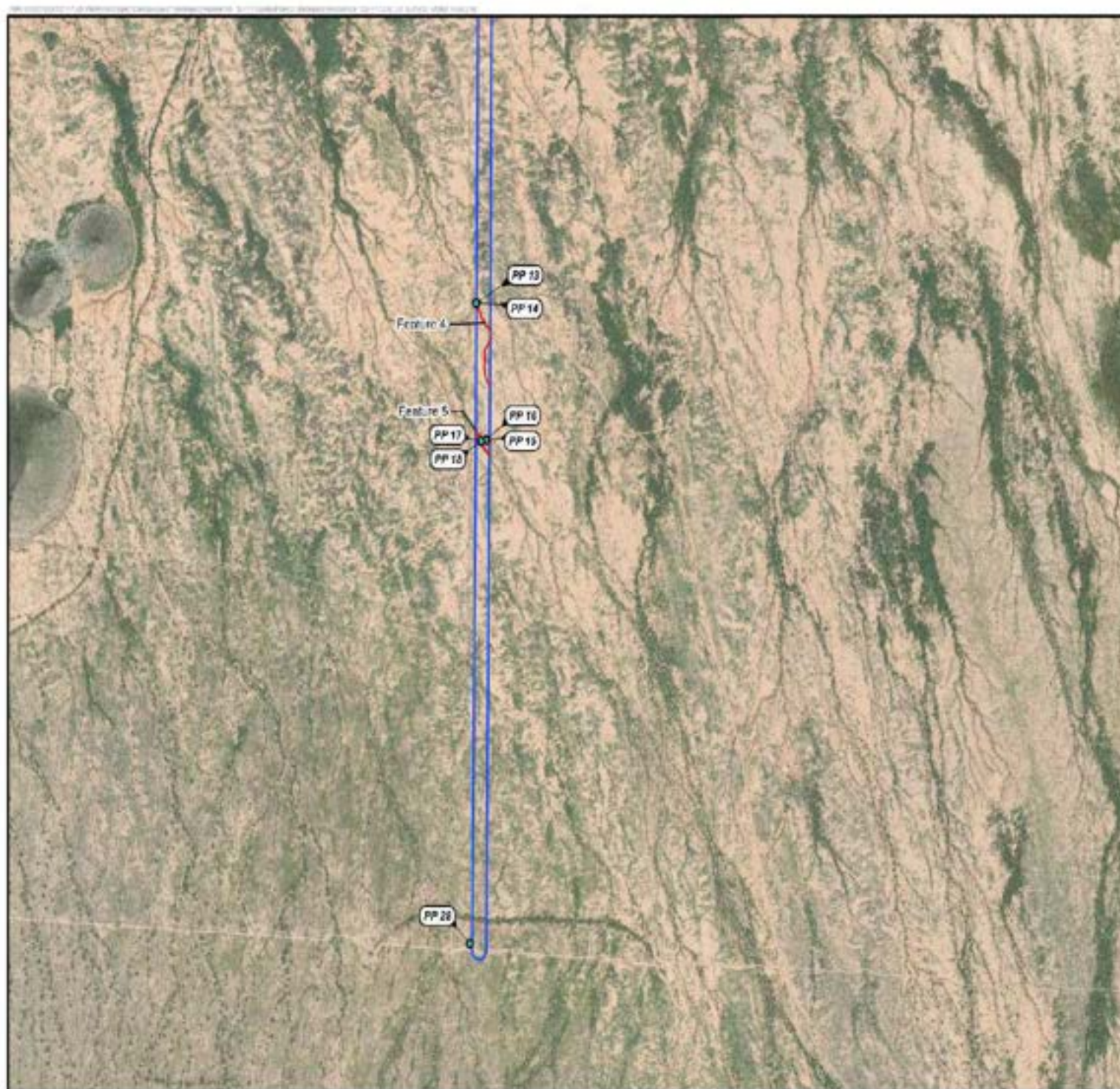
Legend

- Photo Point
- Project Area
- Surface Water Features



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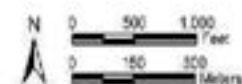
CACTUS FLOWER SOLAR FACILITY
Biological Resources Evaluation Report
SURFACE WATER FEATURES AND PHOTO LOCATIONS
Figure 3e



T195 R7E, Portions of Sections 18 and 21,
Pinal County, Arizona
Projection: NAD 1983 UTM Zone 12N
Image Source: Measur 63/13/2002-10/17/2002

Legend

- Photo Point
- Project Area
- Surface Water Features



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Environmental Services

CACTUS FLOWER SOLAR FACILITY
Biological Resources Evaluation Report
SURFACE WATER FEATURES AND PHOTO LOCATIONS
Figure 3f

APPENDIX A
USFWS IPaC Report

IPaC resource list

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Please note that the Federal Highways Programmatic Consultation for Transportation Projects affecting NLEB or Indiana Bat Determination Key is temporarily offline for updates and will be available soon. We apologize for any inconvenience this may cause.



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

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

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

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

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

Mammals

NAME	STATUS
Sonoran Pronghorn <i>Antilocapra americana sonoriensis</i> No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/4750	EXPN

Birds

NAME	STATUS
Cactus Ferruginous Pygmy-owl <i>Glaucidium brasilianum cactorum</i> Wherever found There is final critical habitat for this species. https://ecos.fws.gov/ecp/species/1225	Threatened
Southwestern Willow Flycatcher <i>Empidonax traillii extimus</i> Wherever found There is final critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/6749	Endangered
Yellow-billed Cuckoo <i>Coccyzus americanus</i> There is final critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/3911	Threatened

Fishes

NAME	STATUS
Gila Topminnow (incl. Yaqui) <i>Poeciliopsis occidentalis</i> Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/1116	Endangered

Insects

NAME	STATUS
------	--------

Monarch Butterfly *Danaus plexippus*

Proposed Threatened

Wherever found

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

<https://ecos.fws.gov/ecp/species/9743>

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 ² and the Migratory Bird Treaty Act (MBTA) ¹. Any person or organization who plans or conducts activities that may result in impacts to Bald or Golden Eagles, or their habitats, should follow appropriate regulations and consider implementing appropriate avoidance and minimization measures, as described in the various links on this page.

Additional information can be found using the following links:

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

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

Measures for Proactively Minimizing Eagle Impacts

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

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

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

Ensure Your Eagle List is Accurate and Complete

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

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

Review the FAQs

The FAQs below provide important additional information and resources.

NAME	BREEDING SEASON
Bald Eagle <i>Haliaeetus leucocephalus</i> This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.	Breeds Oct 15 to Aug 31
Golden Eagle <i>Aquila chrysaetos</i> This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1680	Breeds Dec 1 to Aug 31

Probability of Presence Summary

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

Probability of Presence (■)

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

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

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

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

Breeding Season (■)

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

Survey Effort (|)

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

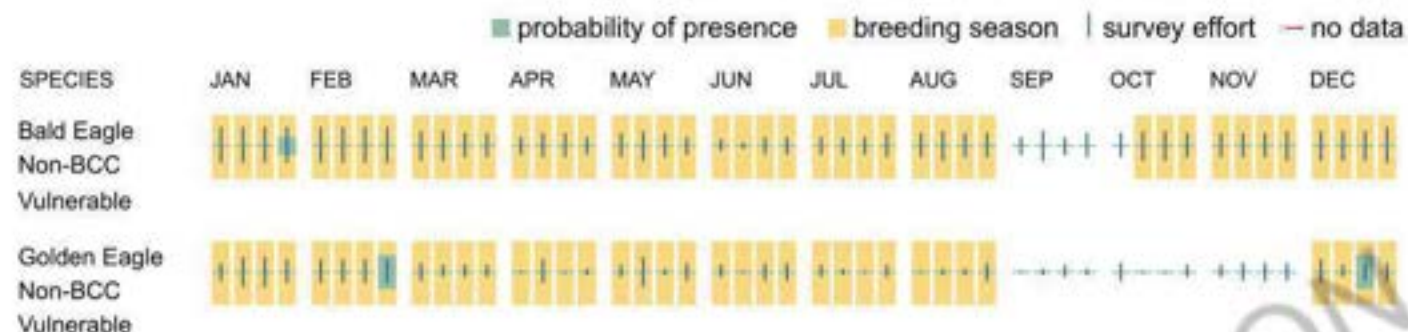
To see a bar's survey effort range, simply hover your mouse cursor over the bar.

No Data (—)

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

Survey Timeframe

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



Bald & Golden Eagles FAQs

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

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

Proper interpretation and use of your eagle report

On the graphs provided, please look carefully at the survey effort (indicated by the black vertical line) and for the existence of the "no data" indicator (a red horizontal line). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort line or no data line (red horizontal) means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list and associated information help you know what to look for to confirm presence and helps guide you in knowing when to implement avoidance and minimization measures to eliminate or reduce potential impacts from your project activities or get the appropriate permits should presence be confirmed.

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

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

Interpreting the Probability of Presence Graphs

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

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

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

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

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

Breeding Season ()

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

Survey Effort ()

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

No Data ()

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

Survey Timeframe

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

Migratory birds

The Migratory Bird Treaty Act (MBTA) ¹ prohibits the take (including killing, capturing, selling, trading, and transport) of protected migratory bird species without prior authorization by the Department of Interior U.S. Fish and Wildlife Service (Service). The incidental take of migratory birds is the injury or death of birds that results from, but is not the purpose, of an activity. The Service interprets the MBTA to prohibit incidental take.

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

Additional information can be found using the following links:

- Eagle Management <https://www.fws.gov/program/eagle-management>

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

Measures for Proactively Minimizing Migratory Bird Impacts

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

Ensure Your Migratory Bird List is Accurate and Complete

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

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

Review the FAQs

The FAQs below provide important additional information and resources.

NAME	BREEDING SEASON
American Avocet <i>Recurvirostra americana</i> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA	Breeds Apr 21 to Aug 10
Bald Eagle <i>Haliaeetus leucocephalus</i> This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.	Breeds Oct 15 to Aug 31

Bendire's Thrasher *Toxostoma bendirei*

Breeds Mar 15 to Jul 31

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

<https://ecos.fws.gov/ecp/species/9435>

Costa's Hummingbird *Calypte costae*

Breeds Jan 15 to Jun 10

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>

Gila Woodpecker *Melanerpes uropygialis*

Breeds Apr 1 to Aug 31

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>

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>

Lawrence's Goldfinch *Spinus lawrencei*

Breeds Mar 20 to Sep 20

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

<https://ecos.fws.gov/ecp/species/9464>

Marbled Godwit *Limosa fedoa*

Breeds elsewhere

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

<https://ecos.fws.gov/ecp/species/9481>

Mountain Plover *Charadrius montanus*

Breeds elsewhere

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

<https://ecos.fws.gov/ecp/species/3638>

Western Grebe *aechmophorus occidentalis*

Breeds Jun 1 to Aug 31

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

<https://ecos.fws.gov/ecp/species/6743>

Willet *Tringa semipalmata*

Breeds elsewhere

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

Probability of Presence Summary

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

Probability of Presence (■)

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

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

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

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

Breeding Season (■)

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

Survey Effort (I)

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.



Willet
BCC Rangewide
(CON)



Migratory Bird FAQs

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

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

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

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

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

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

Why are subspecies showing up on my list?

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

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

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

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

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

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

What are the levels of concern for migratory birds?

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

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

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

Details about birds that are potentially affected by offshore projects

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

Proper interpretation and use of your migratory bird report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please look carefully at the survey effort (indicated by the black vertical line) and for the existence of the "no data" indicator (a red horizontal line). A high survey effort is the key component. If the survey effort is high, then

the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list does not represent all birds present in your project area. It is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list and associated information help you know what to look for to confirm presence and helps guide implementation of avoidance and minimization measures to eliminate or reduce potential impacts from your project activities, should presence be confirmed. To learn more about avoidance and minimization measures, visit the FAQ "Tell me about avoidance and minimization measures I can implement to avoid or minimize impacts to migratory birds".

Interpreting the Probability of Presence Graphs

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

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

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

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

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

Breeding Season ()

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

Survey Effort ()

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

No Data ()

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

Survey Timeframe

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

Facilities

National Wildlife Refuge lands

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

There are no refuge lands at this location.

Fish hatcheries

There are no fish hatcheries at this location.

Wetlands in the National Wetlands Inventory (NWI)

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

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

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](#)

[R5UBFx](#)

[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.

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

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

Data exclusions

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

Data precautions

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

APPENDIX B
AZGFD HDMS Query 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.*

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

Project Name:

CactusFlower

Project Type:

Energy Production/Storage/Transfer, Energy Production (generation), photovoltaic solar facility (new/expansion)

Project ID:

HGIS-24744

Project Description:

CactusFlowerSolar

Contact Person:

Natalie Senini

Organization:

WestLand Resources Inc

On Behalf Of:

CONSULTING

Disclaimer:

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

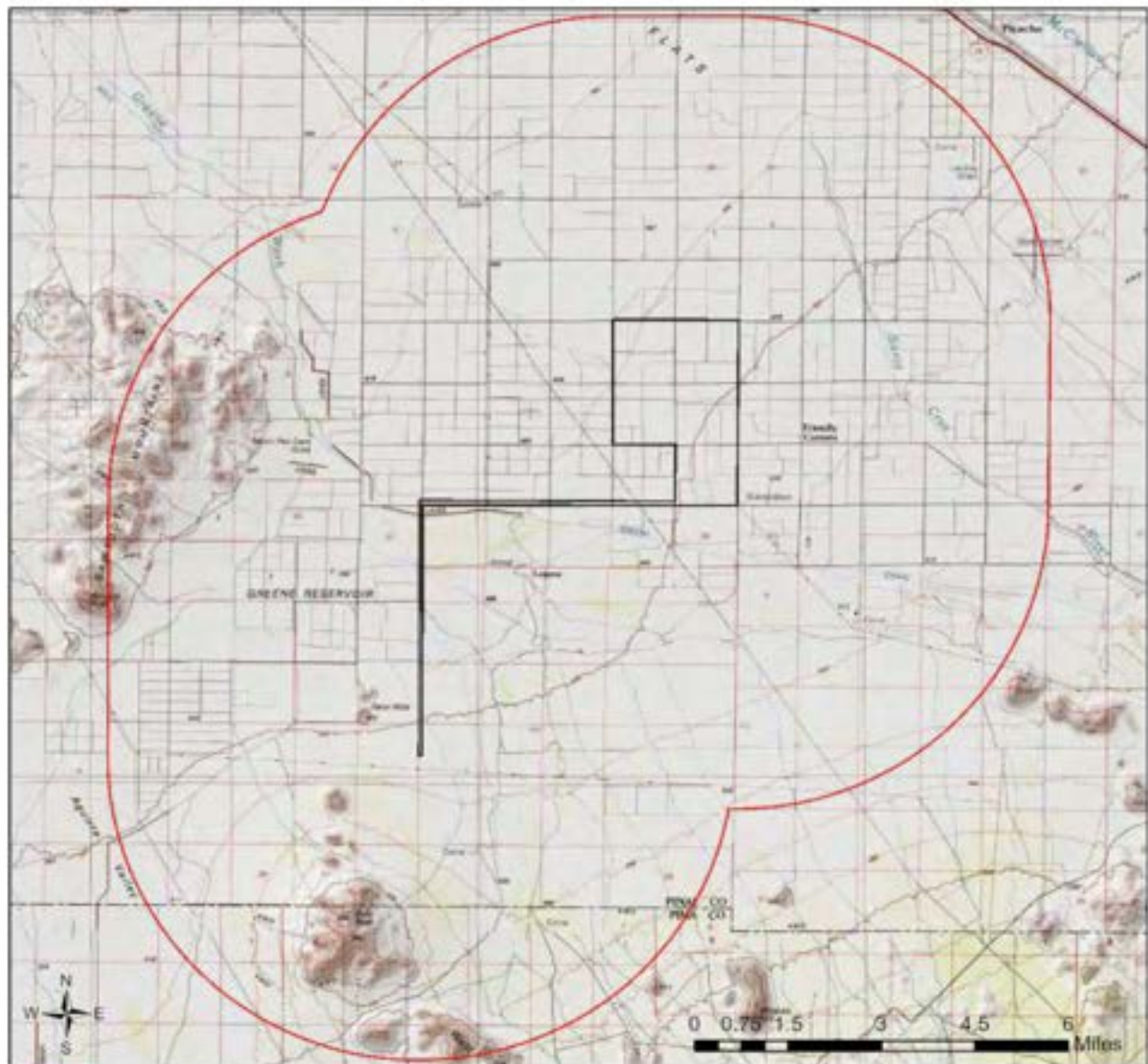
Locations Accuracy Disclaimer:

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

Recommendations Disclaimer:

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

CactusFlower USA Topo Basemap With Locator Map



- Buffered Project Boundary
- Project Boundary

Project Size (acres): 3,602.80

Lat/Long (DD): 32.6239 / -111.5886

County(s): Pinal

AGFD Region(s): Tucson

Township/Range(s): T10S, R7E; T9S, R7E; T9S, R8E

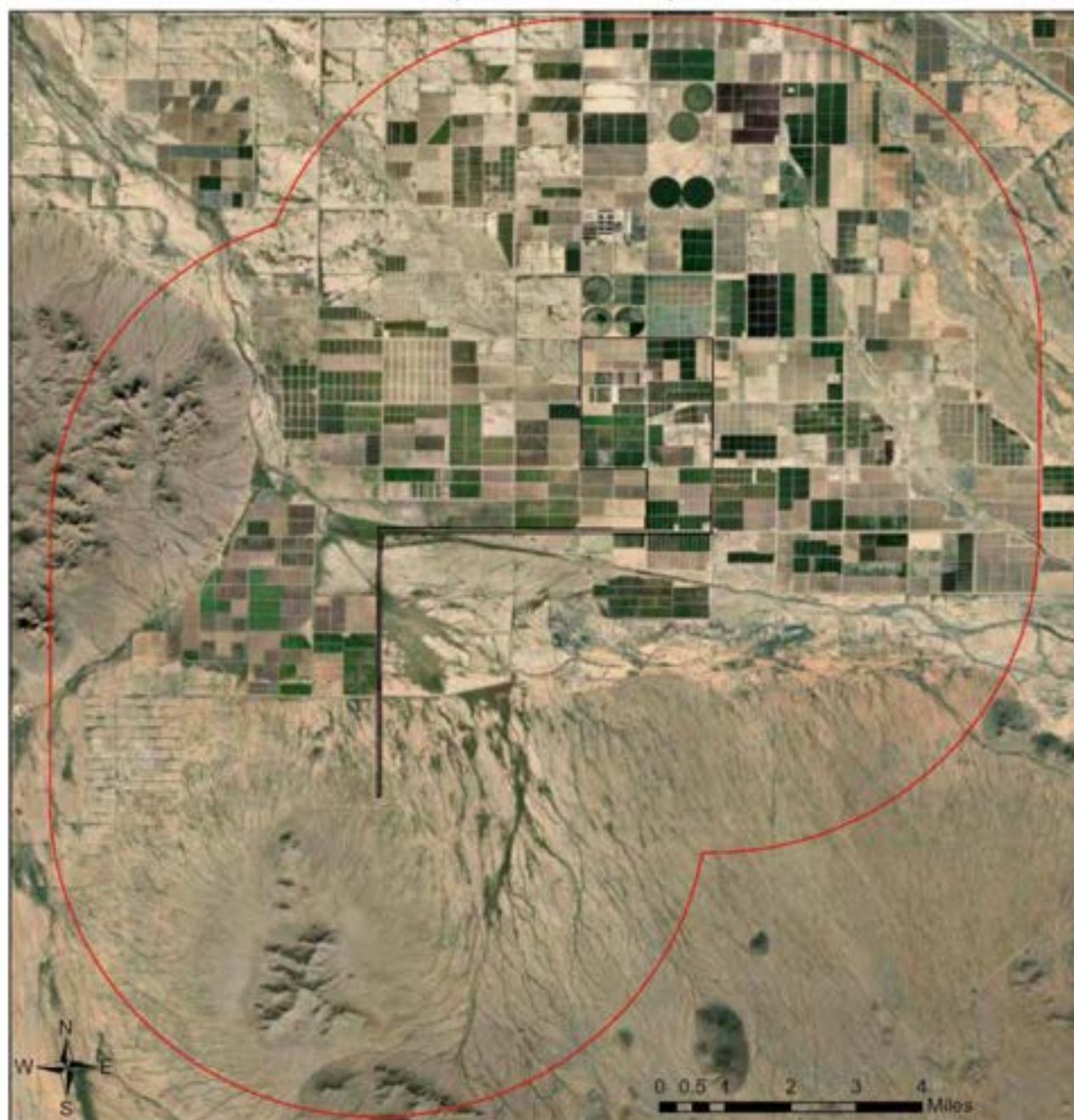
USGS Quad(s): ELOY SOUTH; FRIENDLY CORNERS +

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



CactusFlower

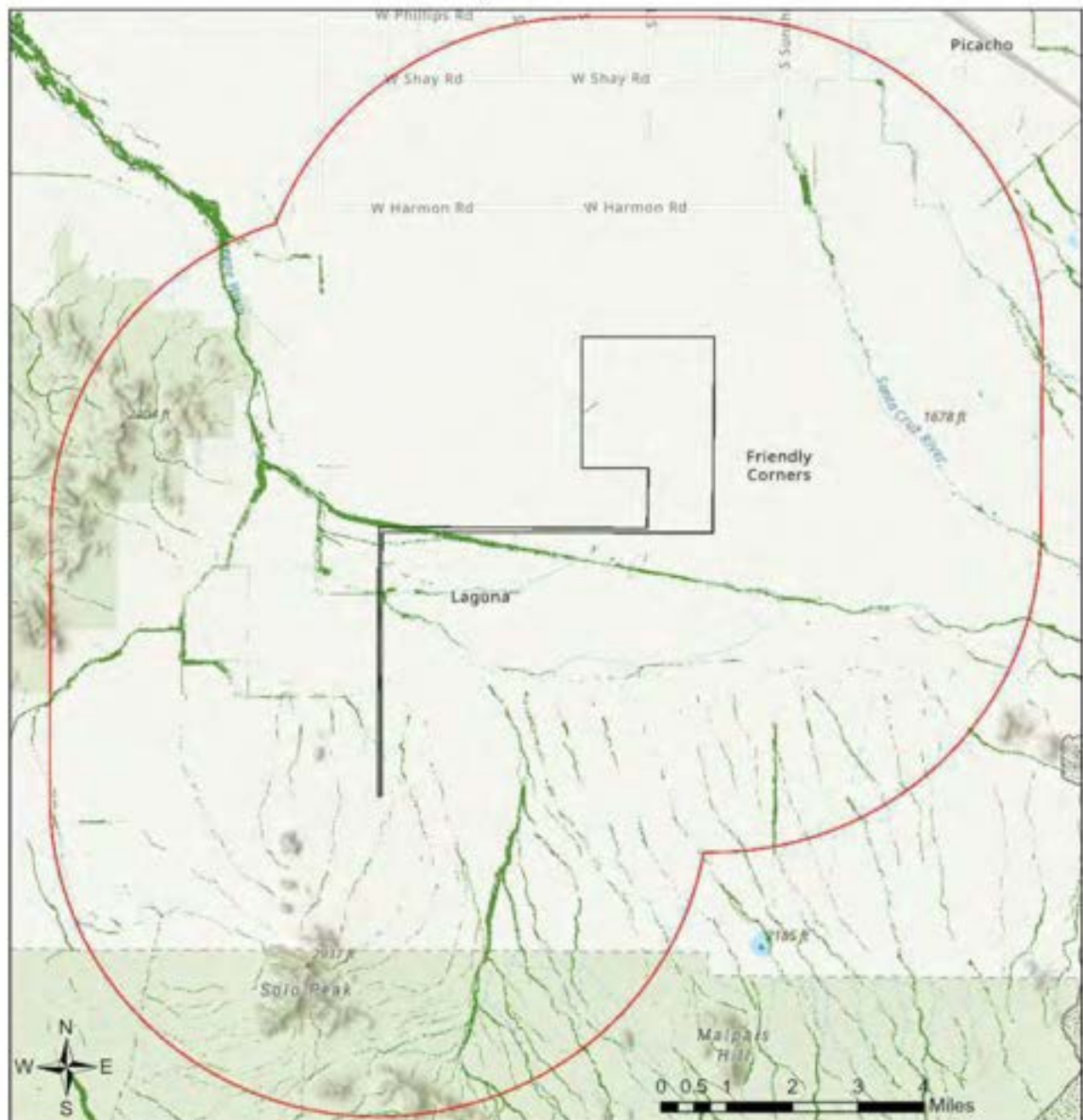
Web Map As Submitted By User



-  Buffered Project Boundary
-  Project Boundary

Project Size (acres): 3,602.80
Lat/Long (DD): 32.6239 / -111.5886
County(s): Pinal
AGFD Region(s): Tucson
Township/Range(s): T10S, R7E; T9S, R7E; T9S, R8E
USGS Quad(s): ELOY SOUTH; FRIENDLY CORNERS +
Earthstar Geographics

CactusFlower Important Areas



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

Project Size (acres): 3,602.80

Lat/Long (DD): 32.6239 / -111.5886

County(s): Pinal

AGFD Region(s): Tucson

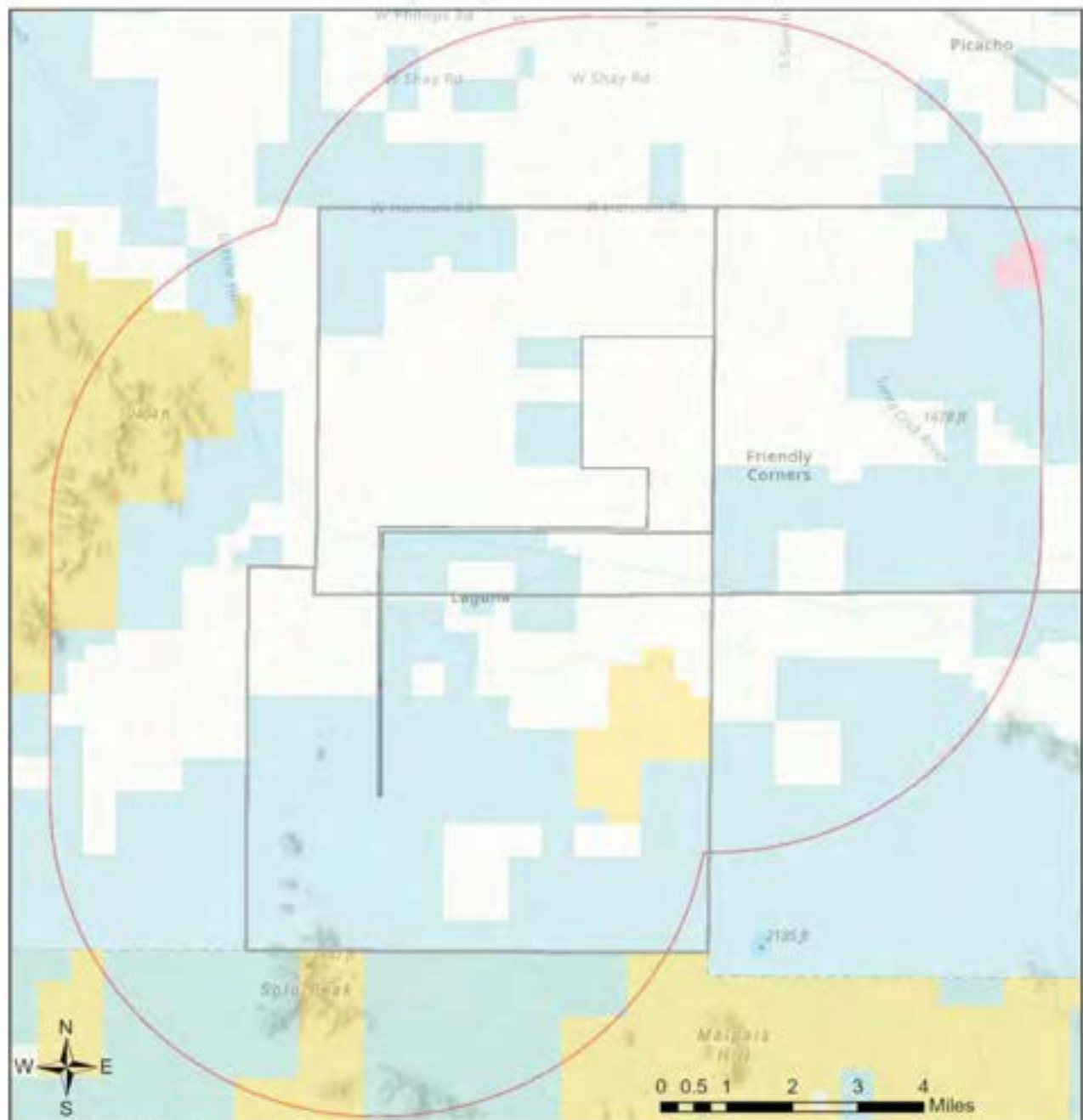
Township/Range(s): T10S, R7E; T9S, R7E; T9S, R8E

USGS Quad(s): ELOY SOUTH; FRIENDLY CORNERS +

Esri, NASA, NOAA, USGS, CORNER, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc., METI/NASA, USGS, Bureau of Land Management, EPA, RPS, USGS, USFWS

CactusFlower

Township/Ranges and Land Ownership



Buffered Project Boundary	Mixed/Other	Project Size (acres): 3,602.80
Project Boundary	National Park/Mon.	Lat/Long (DD): 32.6239 / -111.5886
AZ Game & Fish Dept.	Private	County(s): Pinal
BLM	State & Regional Parks	AGFD Region(s): Tucson
BOR	State Trust	Township/Range(s): T10S, R7E; T9S, R7E; T9S, R8E
Indian Res.	US Forest Service	USGS Quad(s): ELOY SOUTH; FRIENDLY CORNERS +
Military	Wildlife Area/Refuge	Ext NASA, NGA, USGS
Township/Ranges		CORNER, Ext, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc, MET/NASA, USGS, Bureau of Land Management, EPA, RPS, USGA, USFWS

Special Status Species Documented within 5 Miles of Project Vicinity

Scientific Name	Common Name	FWS	USFS	BLM	NPL	SGCN
Athene cunicularia hypugaea	Western Burrowing Owl	SC	S	S		2
Bat Colony						
Campylorhynchus brunneicapillus	Cactus Wren					2
Chilomeniscus cinctus	Banded Sandsnake					2
Falco peregrinus anatum	American Peregrine Falcon		S	S		1
Falco sparverius	American Kestrel					2
Gopherus morafkai	Sonoran Desert Tortoise	CCA	S	S		1
Incilius alvarius	Sonoran Desert Toad					2
Lepus alleni	Antelope Jackrabbit					2
Macrotus californicus	California Leaf-nosed Bat			S		2
Macrotus californicus	California Leaf-nosed Bat	SC		S		2
Micruroides euryxanthus	Sonoran Coralsnake					2
Phrynosoma solare	Regal Horned Lizard					2
Phyllorhynchus browni	Saddled Leaf-nosed Snake					2
Toxostoma bendirei	Bendire's Thrasher					2

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

Special Areas Documented that Intersect with Project Footprint as Drawn

Scientific Name	Common Name	FWS	USFS	BLM	NPL	SGCN
Greene Wash and Reservoir	Pinal County Wildlife Movement Area - Riparian/Wash					
Ironwood National Monument	Conservation Opportunity Area					
Picacho Peak - Silverbell Mountains - Sawtooth Mountains	Pinal County Wildlife Movement Area - Landscape					
Riparian Area	Riparian Area					

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

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

Scientific Name	Common Name	FWS	USFS	BLM	NPL	SGCN
Ammospermophilus harrisi	Harris' Antelope Squirrel					2
Anaxyrus retiformis	Sonoran Green Toad			S		2
Anthus spragueii	Sprague's Pipit					2
Aquila chrysaetos	Golden Eagle	BGA		S		2
Artemisiospiza nevadensis	Sagebrush Sparrow					3
Athene cunicularia hypugaea	Western Burrowing Owl		S	S		2
Auriparus flaviceps	Verdin					2

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

Scientific Name	Common Name	FWS	USFS	BLM	NPL	SGCN
<i>Buteo regalis</i>	Ferruginous Hawk			S		2
<i>Buteo swainsoni</i>	Swainson's Hawk					2
<i>Calcarius ornatus</i>	Chestnut-collared Longspur					2
<i>Calypte costae</i>	Costa's Hummingbird					2
<i>Campylorhynchus brunneicapillus</i>	Cactus Wren					2
<i>Catharus ustulatus</i>	Swainson's Thrush					2
<i>Chaetodipus baileyi</i>	Bailey's Pocket Mouse					2
<i>Charadrius montanus</i>	Mountain Plover					2
<i>Chilomeniscus cinctus</i>	Variable Sandsnake					2
<i>Coccyzus americanus</i>	Yellow-billed Cuckoo (Western DPS)	LT	S	S		1
<i>Colaptes chrysoides</i>	Gilded Flicker			S		2
<i>Columbina inca</i>	Inca Dove					2
<i>Corynorhinus townsendii pallescens</i>	Pale Townsend's Big-eared Bat		S	S		1
<i>Cynanthus latirostris</i>	Broad-billed Hummingbird		S			2
<i>Empidonax wrightii</i>	Gray Flycatcher					2
<i>Eumops perotis californicus</i>	Greater Western Bonneted Bat			S		2
<i>Falco mexicanus</i>	Prairie Falcon					2
<i>Falco peregrinus anatum</i>	American Peregrine Falcon		S	S		1
<i>Falco sparverius</i>	American Kestrel					2
<i>Gastrophryne mazatlanensis</i>	Sinoloan Narrow-mouthed Toad			S		2
<i>Gopherus morafkai</i>	Sonoran Desert Tortoise	CCA	S	S		1
<i>Icterus bullockii</i>	Bullock's Oriole					2
<i>Icterus cucullatus</i>	Hooded Oriole					2
<i>Incilius alvarius</i>	Sonoran Desert Toad					2
<i>Lanius ludovicianus</i>	Loggerhead Shrike					2
<i>Lasiurus cinereus</i>	Hoary Bat					2
<i>Lasiurus frantzii</i>	Desert Red Bat		S			2
<i>Lasiurus xanthinus</i>	Western Yellow Bat		S			2
<i>Lepus alleni</i>	Antelope Jackrabbit					2
<i>Macrotus californicus</i>	California Leaf-nosed Bat			S		2
<i>Megascops kennicottii</i>	Western Screech-owl					2
<i>Melanerpes uropygialis</i>	Gila Woodpecker					2
<i>Melospiza lincolni</i>	Lincoln's Sparrow					2
<i>Melospiza aberti</i>	Abert's Towhee		S			2
<i>Micrathene whitneyi</i>	Elf Owl					3
<i>Micruroides euryxanthus</i>	Sonoran Coralsnake					2
<i>Myotis velifer</i>	Cave Myotis			S		2
<i>Myotis yumanensis</i>	Yuma Myotis					2
<i>Neotamias cinereicollis</i>	Gray-collared Chipmunk					2

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

Scientific Name	Common Name	FWS	USFS	BLM	NPL	SGCN
Nyctinomops femorosaccus	Pocketed Free-tailed Bat					2
Parabuteo unicinctus	Harris's Hawk					2
Passerculus sandwichensis	Savannah Sparrow					2
Perognathus amplus	Arizona Pocket Mouse					2
Peucaea carpalis	Rufous-winged Sparrow					2
Phrynosoma solare	Regal Horned Lizard					2
Phyllorhynchus browni	Saddled Leaf-nosed Snake					2
Poocetes gramineus	Vesper Sparrow					2
Progne subis hesperia	Desert Purple Martin			S		2
Rana yavapaiensis	Lowland Leopard Frog		S	S		1
Spizella breweri	Brewer's Sparrow					2
Tadarida brasiliensis	Brazilian Free-tailed Bat					2
Toxostoma bendirei	Bendire's Thrasher					2

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 Production/Storage/Transfer, Energy Production (generation), photovoltaic solar facility (new/expansion)

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-conservation/planning-for-wildlife/planning-for-wildlife-wildlife-friendly-guidelines/>.

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. 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. The Department recommends using only the minimum amount of light needed for safety, especially in areas immediately adjacent to open space or undeveloped lands. The Department encourages the use of motion sensing lighting and narrow spectrum lighting (amber or warm tones typically 2700 Kelvin or lower) wherever possible to lower the range of species affected by lighting. Also, please consider shielding, canting, or cutting all lighting, where possible, to ensure that light reaches only areas needing illumination and to minimize impacts to nocturnal wildlife.

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

Project Location and/or Species Recommendations:

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

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

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

This review has identified **riparian areas** within the vicinity of your project. During the planning stage of your project, avoid, minimize, or mitigate any potential impacts to riparian areas identified in this report. Riparian areas play an important role in maintaining the functional integrity of the landscape, primarily by acting as natural drainages that convey water through an area, thereby reducing flood events. In addition, riparian areas provide important movement corridors and habitat for fish and wildlife. Riparian areas are channels that contain water year-round or at least part of the year. Riparian areas also include those channels which are dry most of the year, but may contain or convey water following rain events. All types of riparian areas offer vital habitats, resources, and movement corridors for wildlife. The Pinal County Comprehensive Plan (i.e. policies 6.1.2.1 and 7.1.2.4), Open Space and Trails Master Plan, Drainage Ordinance, and Drainage Design Manual all identify riparian area considerations, guidance, and policies. Guidelines to avoid, minimize, or mitigate impacts to riparian habitat can be found at <https://www.azgfd.com/wildlife-conservation/planning-for-wildlife/planning-for-wildlife-wildlife-friendly-guidelines/>. Further consultation with the Arizona Game and Fish Department and Pinal County may be warranted.

HDMS records indicate that **Sonoran Desert Tortoise** have been documented within the vicinity of your project area. Please review the Tortoise Handling Guidelines found at <https://s3.amazonaws.com/azgfd-portal-wordpress/PortalImages/files/wildlife/2014%20Tortoise%20handling%20guidelines.pdf>.

HDMS records indicate that **Western Burrowing Owls** have been documented within the vicinity of your project area. Please review the western burrowing owl resource page at <https://www.azgfd.com/wildlife-conservation/conservation-and-endangered-species-programs/burrowing-owl-management/>.



APPENDIX C

Representative Ground Photos

A photograph of a grassy field with scattered trees and shrubs under a clear blue sky. The field is covered in green grass and some dry, yellowish patches. There are several small trees and shrubs scattered throughout the landscape. The sky is a clear, bright blue.

A photograph of a dry, open landscape. The foreground is covered with sparse, low-lying green vegetation and dry, yellowish-brown grass. Several small, rounded green shrubs are scattered across the middle ground. In the background, a range of low, dark mountains or hills is visible under a clear, bright blue sky. The overall scene suggests a semi-arid or desert environment.

Photo 5. Southern Diversion of Greene Canal, facing upstream (east).



Photo 6. Southern Diversion of Greene Canal, facing downstream (west).



Photo 7. Feature 1, facing upstream (east).



Photo 8. Feature 1, facing downstream (west).



Photo 13. Feature 4, facing upstream (east).



Photo 14. Feature 4, facing downstream (west).



Photo 15. Feature 5, facing upstream (east).



Photo 16. Feature 5, facing downstream (west).



A photograph of a dirt trail winding through a desert landscape. The trail is light brown and sandy, with some small rocks scattered along its path. On either side of the trail, there is sparse vegetation, including low-lying shrubs and several bare, spindly trees. The ground is dry and uneven. In the background, the trail continues to curve through the desert under a clear, bright blue sky. The overall scene is arid and open.

A photograph of a dirt path in a desert landscape. The path is light brown and leads into the distance. On either side of the path are various desert plants, including low-lying shrubs and taller, sparser trees. A red and white striped marker is visible on the path in the foreground. The sky is clear and blue.

A photograph showing a dirt road that has been severely eroded by water. The road surface is cracked and broken into large, irregular sections. The surrounding landscape is arid, with sparse, dry vegetation and rocky terrain. In the background, a person can be seen standing near some trees, and distant mountains are visible under a clear blue sky.

Photo 21. Vegetation along Greene Canal. Vegetation had recently been removed from this area at the time of the field survey.



Photo 22. Vegetation along Greene Canal. Vegetation had recently been removed from this area at the time of the field survey.



Photo 23. Vegetation within gen-tie extent of Project Area.



Photo 24. Vegetation within gen-tie extent of Project Area.



Photo 25. Electric utility line in northern extent of the Project Area.



Photo 26. Agricultural fields in northern extent of the Project Area.



Photo 27. Gas pipeline in northern extent of the Project Area. Vegetation had recently been removed from this area at the time of the field survey.



Photo 28. Electric line towers in southern extent of the Project Area.



Photo 29. Feature 6 – representative canal within the Project Area.



Photo 30. Feature 10 – representative canal within the agricultural fields of the Project Area.



APPENDIX D

Species Observed During the Field Survey

Appendix D. Species Observed During the Field Survey

Table 1. Bird Species Observed in the Vicinity of the Project Area during Field Survey

Species Name	Common Name
<i>Falco sparverius</i>	American kestrel
<i>Toxostoma bendirei</i>	Bendire's thrasher
<i>Spizella breweri</i>	Brewer's sparrow
<i>Corvus corax</i>	Common raven
<i>Caracara plancus</i>	Crested caracara
<i>Toxostoma crissale</i>	Crissal thrasher
<i>Callipepla gambelii</i>	Gambel's quail
<i>Melanerpes uropygialis</i>	Gila woodpecker
<i>Colaptes chrysoides</i>	Gilded flicker
<i>Quiscalus mexicanus</i>	Great-tailed grackle
<i>Geococcyx californianus</i>	Greater roadrunner
<i>Eremophila alpestris</i>	Horned lark
<i>Dryobates scalaris</i>	Ladder-backed woodpecker
<i>Lanius ludovicianus</i>	Loggerhead shrike
<i>Zenaida macroura</i>	Mourning dove
<i>Circus hudsonius</i>	Northern harrier
<i>Charadrius vociferus</i>	Killdeer
<i>Buteo jamaicensis</i>	Red-tailed hawk
<i>Agelaius phoeniceus</i>	Red-winged blackbird
<i>Cathartes aura</i>	Turkey vulture
<i>Pyrocephalus obscurus</i>	Vermillion flycatcher
<i>Sturnella neglecta</i>	Western meadowlark

Table 2. Mammals Species Observed in the Vicinity of the Project Area during Field Survey

Species Name	Common Name
<i>Sylvilagus audubonii</i>	Desert cottontail
<i>Spermophilus tereticaudus</i>	Round-tailed ground squirrel

Table 3. Plant Species Observed in the Project Area or Vicinity during Biological Surveys

Species Name	Common Name	Status
<i>Medicago sativa</i>	Alfalfa	Nonnative
<i>Pluchea sericea</i>	Arrowweed	Native
<i>Cynodon dactylon</i>	Bermudagrass	Nonnative
<i>Stephanomeria pauciflora</i>	Brownplume wirelettuce	Native
<i>Cylindropuntia</i> sp.	Cholla	Native
<i>Larrea tridentata</i>	Creosote bush	Native
<i>Koeberlinia spinosa</i>	Crucifixion thorn	Native
<i>Baccharis sarothroides</i>	Desert broom	Native
<i>Lycium fremontii</i>	Fremont's thornbush	Native
<i>Ferocactus wislizeni</i>	fishhook barrel cactus	Native
<i>Isocoma</i> sp.	Jimmyweed	Native
<i>Sorghum halepense</i>	Johnson grass	Nonnative
<i>Sisymbrium irio</i>	London rocket	Nonnative
<i>Parkinsonia microphylla</i>	Foothill palo verde	Native
<i>Phalaris</i> spp.	Ribbon grass	Nonnative
<i>Salsola tragus</i>	Russian thistle	Nonnative
<i>Carnegiea gigantea</i>	Saguaro	Native
<i>Brassica tournefortii</i>	Sahara mustard	Nonnative
<i>Tamarix</i> spp.	Salt cedar	Nonnative
<i>Capsella bursa pastoris</i>	Shepherd's purse	Nonnative
<i>Sonchus</i> sp.	Sow thistles	Nonnative
<i>Nicotiana glauca</i>	Tree tobacco	Nonnative
<i>Ambrosia deltoidea</i>	Triangular bur ragweed	Native
<i>Prosopis velutina</i>	Velvet mesquite	Native
<i>Lycium</i> sp.	Wolfberry	Native

EXHIBIT B-2
Cactus Flower Solar, LLC Aquatic Resources
Delineation Report, October 15, 2025

Cactus Flower Solar, LLC Aquatic Resources Delineation Report

Prepared for:

Cypress Creek Renewables, LLC
3402 Pico Blvd Suite 215 – Santa Monica, California 90405

Prepared by:

WestLand Engineering & Environmental Services
4001 E. Paradise Falls Drive – Tucson, Arizona 85712
+1 520-206-9585

WestLand Project Number: 12777

October 15, 2025



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1. INTRODUCTION

Cactus Flower Solar, LLC, a subsidiary of Cypress Creek Renewables, LLC (CCR), proposes to construct the Cactus Flower Solar facility, a utility-scale solar development, and its associated electric utility connection line (the Project) on approximately 2,383 acres of private land and land managed by the Arizona State Land Department (ASLD) approximately 9.5 miles southwest of the unincorporated community of Picacho, in Pinal County, Arizona (Project Area; **Figure 1**). CCR contracted WestLand Engineering & Environmental Services (WestLand) to evaluate the protected status of onsite surface water features within the proposed Project Area. This aquatic resources delineation report summarizes the results of WestLand's field review and desktop evaluation of the onsite aquatic resources.

The following sections describe the current regulatory background pertaining to waters of the U.S. (WOTUS; **Section 2**), the Project Area location and environmental setting (**Section 3**), the methods used in evaluating and delineating aquatic resources in the Project Area (**Section 4**), the results and conclusions of the field and desktop evaluations (**Sections 5 and 6**), and references cited (**Section 7**). A representative selection of photographs from the Project Area is provided as **Appendix A**. Floodplains, wetlands, and hydrography are depicted in **Figure 2**, and the aquatic features identified during the field survey as well as Pinal County riparian data are shown in **Figure 3**.

2. CURRENT REGULATORY BACKGROUND

This section outlines the current state of the Clean Water Act (CWA) and relevant state regulations for surface water features in Arizona.

2.1. FEDERAL REGULATIONS

The CWA regulates impacts to navigable waters, which it defines as "waters of the United States, including the territorial seas" (33 U.S.C. § 1362(7)). The CWA does not define WOTUS, so federal jurisdiction over tributaries to navigable waters, especially ephemeral washes, has been repeatedly contested as a result. On September 8, 2023, the definition of WOTUS was amended (88 Fed. Reg. 61964 [effective September 8, 2023; the Conforming Rule]) to conform with the U.S. Supreme Court decision in *Sackett et. ux. v. Environmental Protection Agency et al.* (Sackett).

Jurisdictional features under the Conforming Rule of the CWA include the following:

- Paragraph (a)(1) Waters which are:
 - Currently used, or were used in the past, or may be susceptible to use in interstate or foreign commerce, including all waters which are subject to the ebb and flow of the tide;
 - The territorial seas; or
 - Interstate waters.

- Paragraph (a)(2) Water - Impoundments of waters otherwise defined as waters of the United States under this definition, other than impoundments of waters identified under paragraph (a)(5) of this section.
- Paragraph (a)(3) Waters - Tributaries of waters identified in paragraph (a)(1) or (2) of this section that are relatively permanent, standing or continuously flowing bodies of water.
- Paragraph (a)(4) Waters – Wetlands adjacent to the following waters:
 - Waters identified in paragraph (a)(1) of this section; or
 - Relatively permanent, standing or continuously flowing bodies of water identified in paragraph (a)(2) or (a)(3) of this section and with a continuous surface connection to those waters.
- Paragraph (a)(5) Waters - Intrastate lakes and ponds, streams, or wetlands not identified in paragraphs (a)(1) through (4) of this section that are relatively permanent, standing or continuously flowing bodies of water with a continuous surface connection to the waters identified in paragraph (a)(1) or (a)(3) of this section (EPA 2023).

As noted above, only those tributaries to traditionally navigable waters, the territorial seas, and interstate waters that are “relatively permanent, standing or continuously flowing” may be considered WOTUS. While the definition of “relatively permanent, standing or continuously flowing” is not clarified under current rule, the U.S. Army Corps of Engineers (Corps) in Arizona has recognized that ephemeral tributaries (i.e., those that only flow in direct response to precipitation events) do not meet this definition.

2.2. STATE REGULATIONS

The Arizona Department of Environmental Quality (ADEQ) is responsible for CWA programs delegated to the state from the U.S. Environmental Protection Agency (EPA). In Arizona, surface water quality management programs are required by the CWA and Arizona’s Surface Water Protection Program (SWPP; Arizona Administrative Code 2023). This regulation prescribes water quality standards for surface water features in Arizona and designates their uses, providing measures to assess surface water quality and the regulatory basis for establishing load allocations and water quality-based discharge permits on point sources. This rule is used to identify impaired waterbodies, or waterbodies that do not meet surface water quality standards, and to then develop watershed plans that set total maximum daily loads (TMDLs) for pollutants to restore surface water quality in those features.

2.3. LOCAL ORDINANCES

Per Pinal County, any development that is proposed within a floodplain requires a Floodplain Use Permit before construction can begin.

Per the Pinal County Flood Control District’s Floodplain management website, “All buildings in Pinal County must be set back from washes so that they will be protected from erosion and lateral migration of the

channel. Pinal County requires a minimum setback of 50 feet from a wash. In some cases, very large washes will require a 300 foot setback" (Pinal County n.d.).¹

Additionally, the Pinal County Floodplain Management Ordinance provides the following guidance:

- Erosion Hazard Setback – The minimum horizontal distance between a structure and the watercourse as measured from the top edge of the highest channel bank or edge of the regulatory floodplain, based upon the water-surface elevation of the base flood, whichever is closer to the channel centerline (Pinal County Flood Control Board of Directors 2019).
- All drainage channels, natural or manmade, with a peak discharge of 200 cubic feet per second (cfs) or greater, during the base flood event (1% annual chance event), shall have water surface elevations and erosion hazard setbacks calculated in accordance with standard engineering practice and shown in the design reports and on the improvement plans (Pinal County Flood Control Board of Directors 2019).

The Pinal County Riparian Guidelines state that in hydro-riparian and meso-riparian areas, setback/buffer distances should be a minimum of 250 feet; in xero-riparian areas, the minimum setback/buffer distance is 150 feet (Pinal County 2019). Pinal County regulates riparian areas through its Development Services Code, specifically focusing on grading, drainage, and the preservation of natural vegetation, particularly in washes. Pinal County Riparian data, supplied upon request by the Arizona Game and Fish Department, is shown in **Figure 3**. This data does not include information on hydro-riparian, meso-riparian, and xero-riparian classification.

3. PROJECT LOCATION AND DESCRIPTION

The Project Area covers approximately 2,383 acres in Pinal County, Arizona, 9.5 miles southwest of the unincorporated community of Picacho, Arizona, and 8 miles west of Picacho Peak State Park. The Project includes the development of a 350MWdc/270-MWac solar generation and 270-MW energy storage facility on approximately 2,114 acres (Solar Array Area) and the construction of an approximately 8.9-mile-long generation interconnect (gen-tie) with a right-of-way width of 250 feet (approximately 269 acres; Gen-tie Area). The gen-tie will connect the solar battery facility to the new switchyard. The Project Area includes privately owned land and approximately 206 acres of ASLD-managed land located within the gen-tie (**Figure 1**). Development in the area is dominated by cultivated agriculture and undeveloped desert.

Vegetation in the Project Area is mapped as Lower Colorado River subdivision – Sonoran Desertscrub (The Nature Conservancy 2012). When undisturbed, this vegetation community is dominated by creosotebush (*Larrea tridentata*) and white bursage (*Ambrosia dumosa*), while larger trees, such as ironwood (*Olneya*

¹ Pinal.gov accessed online April 3, 2025.

tesota), palo verde (*Parkinsonia* spp.), and mesquite (*Prosopis* spp.) can be found along washes and other drainages (Turner and Brown 1994).

4. METHODOLOGY

This section describes the methodology used for the field review and the subsequent desktop evaluation of aquatic resources in the Project Area.

4.1. DESKTOP EVALUATION

Prior to completing the field evaluation, WestLand reviewed the National Hydrography Dataset (NHD) and the National Wetland Inventory (NWI) to identify mapped surface water features in the Project Area. Aerial imagery and topographic data was also reviewed to determine if any additional unmapped surface water features exist within the Project Area. Several unmapped drainages crossing the gen-tie area were identified for evaluation during the field visit.

In addition to mapped hydrologic features, WestLand also analyzed mapped soils and floodplains within the Project Area. Using the Web Soil Survey (**Appendix B**), WestLand identified the soil types in the Project Area and their physical, chemical, and biological characteristics, focusing on those which informed the soils hydric properties and capabilities. The Federal Emergency Management Agency's (FEMA) Flood Map Service Center and National Flood Hazard Layer (NFHL) viewer was used to determine the location, extent, and classification of flood hazards within the Project Area. Additionally, Pinal County Floodplain ordinances and regulations were reviewed to determine legal requirements for floodplain development. ADEQ's impaired waters map was used to assess water quality status for surface water features in the Project Area.

4.2. FIELD RECONNAISSANCE

WestLand biologists visited the Project Area on March 19-21, 2025, to evaluate all NHD and NWI mapped features as well as several unmapped features within the Project Area for characteristics that would indicate their potential to be considered WOTUS under the Conforming Rule.

Breck Jacoby was the lead WestLand biologist and field director who completed the field review for potential WOTUS. Breck has over 10 years of experience completing jurisdictional delineations and wetland delineations for Corps review in the Arid West Region. He completed the Wetland Delineator Certification Program training for the Corps Wetland Delineation Manual Technical Report 1987-1 (1987 Manual) in 2016.

4.3. DATA SYNTHESIS

Following the field survey, WestLand combined the desktop evaluation results with observations, geospatial data, and representative photos collected in the field to verify potential WOTUS. Surface water feature extents were adjusted and refined based on field reconnaissance results.

5. RESULTS

This section describes the results of the desktop evaluation and field review. The soil analysis results are provided in **Section 5.1**, the results of the WOTUS determinations are provided in **Section 5.2**, the floodplain hazards and regulation review results are provided in **Section 5.3**, and the ADEQ impaired waters evaluation results are provided in **Section 5.4**.

5.1. SOILS

The Web Soil Survey identified 15 different soil types within the Project Area (**Appendix B**). Soil drainage classes refer to the frequency and duration of wet periods under conditions similar to those under which the soil formed (i.e., they describe a soils depth and duration of wetness during wet periods—precipitation, etc.). All soils identified in the Project Area are somewhat excessively drained or well drained, implying that water is removed from these soils readily if not rapidly. The frequency of ponding describes the number of times that ponding (standing water in a closed depression) occurs over a given period. Of the soil types identified in the Project Area, seven had a frequency of ponding of "none," three had a frequency of ponding of "rare," and five had a frequency of ponding of "occasional." The soils with a frequency of ponding of "occasional" were located either within or adjacent to surface water features or within the portion of the Project Area that intersects with the flood hazard zone (**Section 5.3; Appendix B; Figure 2**). Frequency of flooding refers to the probability of soils being temporarily inundated by overflowing streams, runoff, or tides. All soils identified within the Project Area had a frequency of flooding of "none," meaning that flooding is not probable and the chance of flooding is nearly zero percent in any years (flooding occurs less than once in 500 years). Hydric soils are defined as soils formed under conditions of saturation, flooding, or ponding long enough to develop anaerobic conditions, and are either saturated or inundated long enough to support the growth and reproduction of hydrophytic vegetation (i.e., wetlands). None of the soils identified in the Project Area were identified as having soil properties unique to hydric soils. A summary of these properties by soil type is provided in **Table 1**.

Table 1. Summary of Project Area Soil Properties

Soil Type	Drainage Class	Frequency of Ponding	Frequency of Flooding	Hydric Soil Rating
Contine Clay Loam	Well Drained	None	None	No
Contine Clay	Well Drained	None	None	No
Dateland Fine Sandy Loam	Well Drained	Rare	None	No
Denure Sandy Loam, 1 to 3% slopes	Somewhat Excessively Drained	None	None	No
Denure Fine Sandy Loam, 0 to 1% slopes	Somewhat Excessively Drained	None	None	No
Denure Clay Loam, 0 to 1% slopes	Well Drained	None	None	No
Gadsden Clay	Well Drained	Occasional	None	No
Gilman Fine Sandy Loam, 0 to 2% slopes	Well Drained	Occasional	None	No
Gilman Clay Loam	Well Drained	Occasional	None	No
Ginland Clay	Well Drained	Occasional	None	No
Glenbar Clay Loam, 0 to 2% slopes	Well Drained	Occasional	None	No
Marana Silty Clay Loam	Well Drained	Rare	None	No
Mohall Loam MLRA 40	Well Drained	None	None	No
Rositas Loamy Fine Sand	Somewhat Excessively Drained	None	None	No
Saco Silt Loam	Well Drained	Rare	None	No

5.2. SURFACE WATER AND HYDROLOGY

The Project Area intersects portions of five hydrologic unit code (HUC) 12 watersheds in the Lower Colorado Region (HUC 2 – 15): Greene Reservoir (150503030306), Greene Canal (150503030305), Silver Bell Wash (150503030304), Upper Greene Wash (150503030309), and Upper Santa Cruz Wash (150503030310) (U.S. Geological Survey [USGS] 2024).²

The NHD identifies numerous agricultural canals/ditches, six ephemeral features, and one artificial path (Greene Canal; labeled as both an ephemeral wash and an artificial path) that intersect the Project Area (USGS 2024; **Figure 2**).² The agricultural canals/ditches run adjacent to and through the Solar Array Area and the northern Gen-tie Area, while the ephemeral features, Greene Wash, and Greene Canal intersect the gen-tie line portion of the Project Area (southern extent; **Figure 2**). These results are corroborated with the NWI, which identified several riverine features in the Project Area (**Figure 2**).

WestLand's field investigations reviewing these features and other unmapped features in the Project Area resulted in the identification of 16 surface water features. Four were evaluated to be potentially jurisdictional WOTUS, while 12 were assessed as likely non-jurisdictional features (**Figure 2**). Three of the potentially

² USGS accessed online April 2, 2025.

jurisdictional features are part of the Greene Canal. A summary of these features is provided in **Table 2** and justifications for these determinations are described in **Sections 5.2.1 and 5.2.2**.

Table 2. Summary of Surface Water Features in the Project Area

Feature ID	Acreage	Anticipated USACE Jurisdictional Status	Anticipated Pinal County Buffer Requirements ¹
Feature 1	0.04	None	150 ft
Feature 2	0.02	Potentially Jurisdictional	250 ft
Feature 3	0.05	None	150 ft
Feature 4	0.09	None	150 ft
Feature 5	0.08	None	150 ft
Feature 6	4.43	None	0 ft
Feature 7	0.80	None	0 ft
Feature 8	2.61	None	0 ft
Feature 9	0.03	None	0 ft
Feature 10	1.24	None	0 ft
Feature 11	0.96	None	0 ft
Feature 12	0.09	None	0 ft
Greene Canal – northern extent A	0.46	Potentially Jurisdictional	250 ft
Greene Canal – northern extent B	0.49	Potentially Jurisdictional	250 ft
Greene Canal – southern extent	0.04	Potentially Jurisdictional	250 ft
Pond 1	2.37	None	150 ft
Total Potentially Jurisdictional	1.01		
Total Potentially Non-Jurisdictional	12.79		

¹ These setback/buffer guidelines have been established in the Pinal County Riparian Area Guidelines (Pinal County 2019). A detailed description of these buffer guidelines is provided in **Section 4.3**. No setbacks are anticipated for the non-jurisdictional constructed irrigation canals.

5.2.1. Potentially Jurisdictional Features

Potentially jurisdictional features are those that may be considered WOTUS under the current regulatory regime. Four potentially jurisdictional features were identified within the Project Area—the three segments of Greene Canal and Feature 2. The combined acreage of these potentially jurisdictional features is 1.01 acres. All potentially jurisdictional features are located in the Gen-tie Area.

Greene Canal is an artificial channel constructed to collect and convey flows in the Santa Cruz River, consisting of effluent, irrigation tail water, and occasional storm flows. Prior to intersecting the Project Area, Greene Canal is split into two segments that run adjacent to each other, before merging downgradient of the Project Area and discharging into Greene Wash (**Figure 3**). While the NHD has classified this feature as ephemeral or an artificial path, and ADEQ has classified this features as having an “undetermined” flow regime, the NWI has classified this feature as an intermittent riverine feature (i.e., contains flowing water only part of the year; when water is not flowing, it may remain in isolated pools or surface water may be absent; (**Figure 2**). The NWI’s classification is supported by the presence of water in both segments at the

time of the field visit as well as the presence of small patches of tamarisk (*Tamarix* sp.), which has a wetland indicator status of facultative in the Arid West Region (**Appendix A, Photos 16-22**). Further review may be required to determine this feature's flow regime, though the presence of surface water and tamarisk suggests the persistence of flows beyond what would be considered an ephemeral flow regime.

Feature 2 is identified as an unnamed ephemeral feature by the NHD. It intersects the gen-tie portion of the Project Area, running southeast to northwest, before discharging into an unnamed ditch which conveys water downgradient before discharging into Greene Canal (**Figure 3**). Downgradient from this nexus, Greene Canal follows the same flowpath as described above. Despite the NHD classifying this feature as ephemeral, during the field visit, WestLand biologists observed standing water within the channel (**Appendix A, Photos 31 and 32**). The presence of standing water during the field visit may have been the result of the previous week's precipitation events (The Weather Channel 2025);³ however, this flow could also be irrigation water which, if discharged regularly, could be considered non-ephemeral. The absence of surface water in other, similar drainage features within the Project Area suggests that Feature 2 may exhibit a flow regime beyond what is considered ephemeral.

The evidence described above, including the presence of tamarisk and surface water, suggests that these two features may qualify as WOTUS under (a)(3) definition.

5.2.2. Anticipated Non-Jurisdictional Features

Anticipated non-jurisdictional features are those that are not likely to be considered WOTUS under the current regulatory interpretation. A total of 12 non-jurisdictional surface water features were evaluated totaling 12.79 acres. This includes seven canal features (Features 6-13), three of which are in the Solar Array Area. Although many of the canals held surface water at the time of the field survey, these canals are part of a larger irrigation system, do not replace a natural feature (unlike the Greene Canal), and do not convey flows from upgradient WOTUS to downgradient WOTUS. These canals would therefore not be considered WOTUS.

Five additional surface water features exhibiting an OHWM were identified within the Project Area, excluding the irrigation canals that intersected and surrounded the agricultural fields within and adjacent to the Project Area: Features 1 and 3-5, and Pond 1 (**Figure 3**). None of these features exhibited surface water or riparian vegetation at the time of the field reconnaissance. Feature 1 is a 5-foot wide ephemeral feature that intersects the gen-tie (southern extent) of the Project Area before discharging into Feature 3 (**Figure 3; Appendix A, Photos 29-30**). Feature 3 is a 7-foot wide ephemeral feature that similarly intersects the gen-tie portion of the Project Area before conveying flows north, adjacent to an agricultural canal, eventually discharging into Greene Canal (**Figure 3; Appendix A, Photos 36-37**).

³ The Weather Channel accessed online April 3, 2025.

Feature 4 is a 4-foot wide ephemeral feature that intersects the gen-tie portion of the Project Area before discharging into Feature 5, downgradient of the Project Area (**Figure 3; Appendix A, Photos 39-40**). Feature 5 is a braided ephemeral feature, with each segment measuring approximately 5-ft in width where they cross the gen-tie portion of the Project Area (**Figure 3; Appendix A, Photos 41-44**). This feature is classified as ephemeral by the NHD. Downgradient of the Project Area, Feature 5 discharges into a series of canals/ditches that convey water through agricultural fields before discharging into Greene Wash.

The observed dry nature of Features 1, 3, 4 and 5, coupled with the lack of meso- or hydriparian vegetation, indicates that all these drainage features likely support an ephemeral flow regime and do not qualify as WOTUS under the "relatively permanent standard."

Pond 1, in the western portion of the Solar Array Area, is classified as a canal/ditch by the NHD (**Figure 2**). WestLand delineated the boundary of this feature during the field survey and determined it to be approximately 2.36 acres. During the field visit, WestLand biologists did not observe any surface water within Pond 1 (**Appendix A, Photo 52**). This feature is isolated and may be used to store and recycle tailwater from irrigation. As an ephemeral feature, Pond 1 does not qualify as WOTUS under the "relatively permanent standard."

5.3. FLOODPLAIN HAZARDS AND REGULATIONS

Approximately 33 percent of the Project Area has a 1% annual chance of flooding, as determined by the four FEMA Flood Insurance Rate Map (FIRM) panels that intersect the Project Area (**Figure 2**).

The field survey revealed discrepancies between the ground conditions and the Pinal County riparian data layer (**Figure 3**). The Pinal County riparian layer has a coarse resolution and is not representative of site conditions; it identifies several aquatic features that were not present at the time of the site visit. Furthermore, the Pinal County riparian data layer does not provide hydro-riparian, meso-riparian, and xero-riparian classifications. Thus, to determine setbacks, WestLand used the results of the field survey, including ground-identification of drainage features and associated vegetation to determine setbacks per the Pinal County Riparian Guidelines.

In total, WestLand identified five surface water features (Feature 1 and 3-5 and Pond 1) as xero-riparian. These features may require a minimum setback/buffer distance of 150 feet. The four potentially jurisdictional surface water features (the three Greene Canal segments and Feature 2) may be defined as meso-riparian areas and may require a minimum setback/buffer distance of 250 feet. The remaining eight features (Features 6-13) are human-made canals within a local irrigation system. They do not replace natural drainage features, are not riparian, are not washes, and thus are not likely to be covered under the Pinal County Riparian Guidelines and do not require a setback or buffer.

5.4. IMPAIRED WATERS

The ADEQ has not mapped or identified any impaired waters in the Project Area (ADEQ 2025).⁴

6. CONCLUSIONS

After completing a desktop evaluation and field review, WestLand determined that there are 16 surface water features in the Project Area, four of which have the potential to be considered WOTUS. These potentially jurisdictional features are the three segments of Greene Canal and Feature 2. Should development of the Project result in the discharge of dredge or fill material to these potentially jurisdictional features, a CWA Section 404 permit may be required.

For the five xero-riparian and four meso-riparian areas within the Project Area (**Figure 3**), Pinal County's Riparian Guidance may require a minimum buffer/setback of 150 feet and 250 feet, respectively, for development in the Project Area (Pinal County 2019). Discrepancies exist between the field survey and the Pinal County riparian data layer, which is coarse resolution and not representative of site conditions. WestLand recommends addressing set-back requirements based on ground conditions rather than the Pinal County riparian data layer.

The project overlaps with Zone A floodplains (1% annual chance of flooding) covering portions of the Solar Array Area as well as the Gen-tie Area (**Figure 2**).

No impaired waters were identified within the Project Area. However, a Stormwater Pollution Prevention Plan (SWPPP) is required under the Arizona Pollutant Discharge Elimination System (AZPDES) through ADEQ based on anticipated ground disturbance greater than 1 acre.

⁴ eMaps accessed online April 3, 2025

7. REFERENCES

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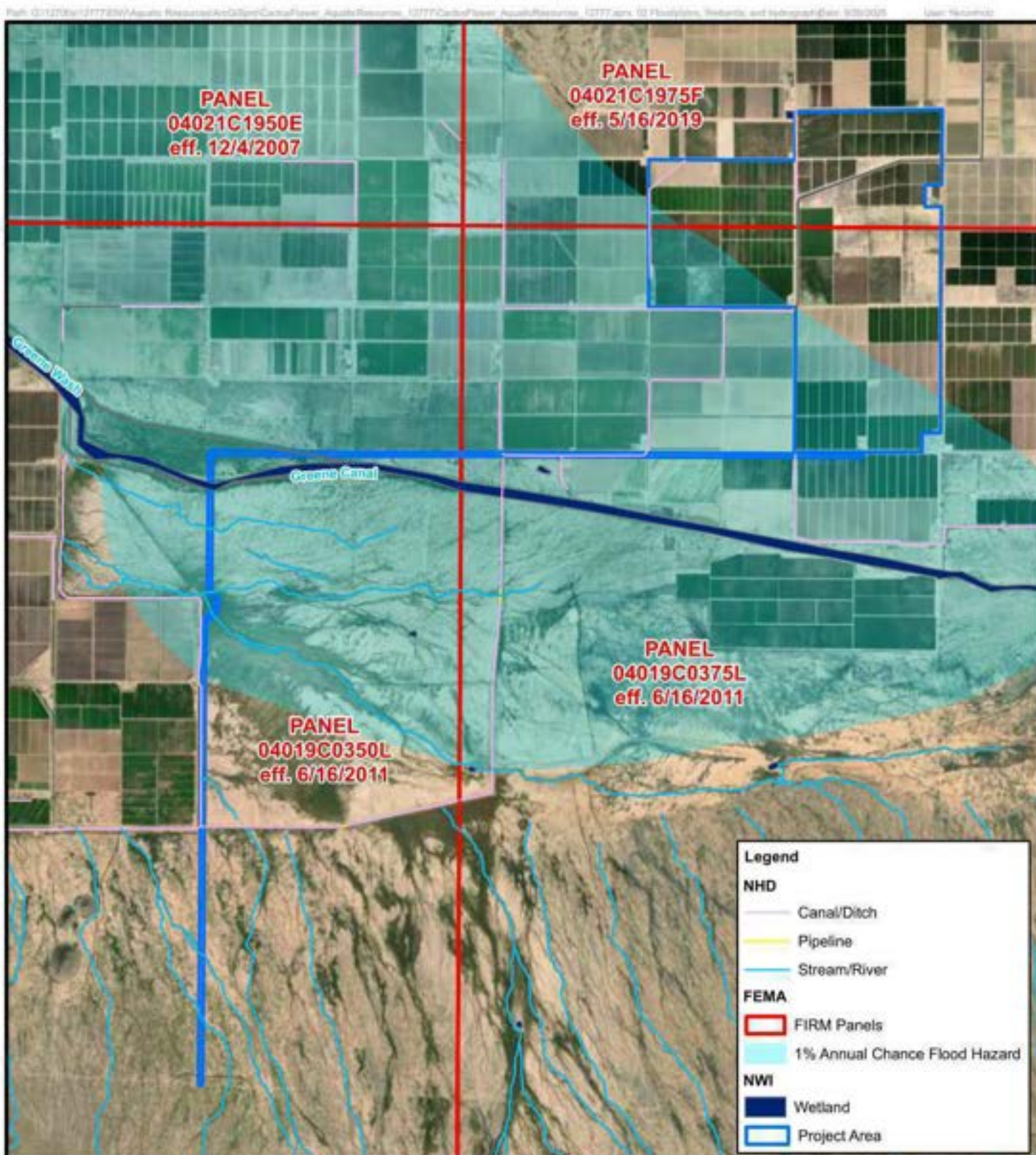
<https://weather.com/weather/monthly/l/Eloy+AZ?canonicalCityId=b58fe96e856c3e65acaed9ee4db623db0237279f3c9b10432d639272c44ff3f9>.

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https://mapbox.com/help/14457170850390PDevised_TP_BOX_2%0F0xent_304294671132059403_12771_Cactus_Solar_Aquatic_Report.docx

FIGURES



T9S, R7E, Portions of Sections 13, 23-25, and 32-36,
T10S, R7E, Portions of Sections 4, 9, 16, and 21,
Pinal County, Arizona
Projection: NAD 1983 UTM Zone 12N
Data Source: NWI and FEMA GIS Services accessed 04/11/2025
Image Source: Maxar 03/10/2022- 10/17/2022

CACTUS FLOWER SOLAR FACILITY Aquatic Resources Report

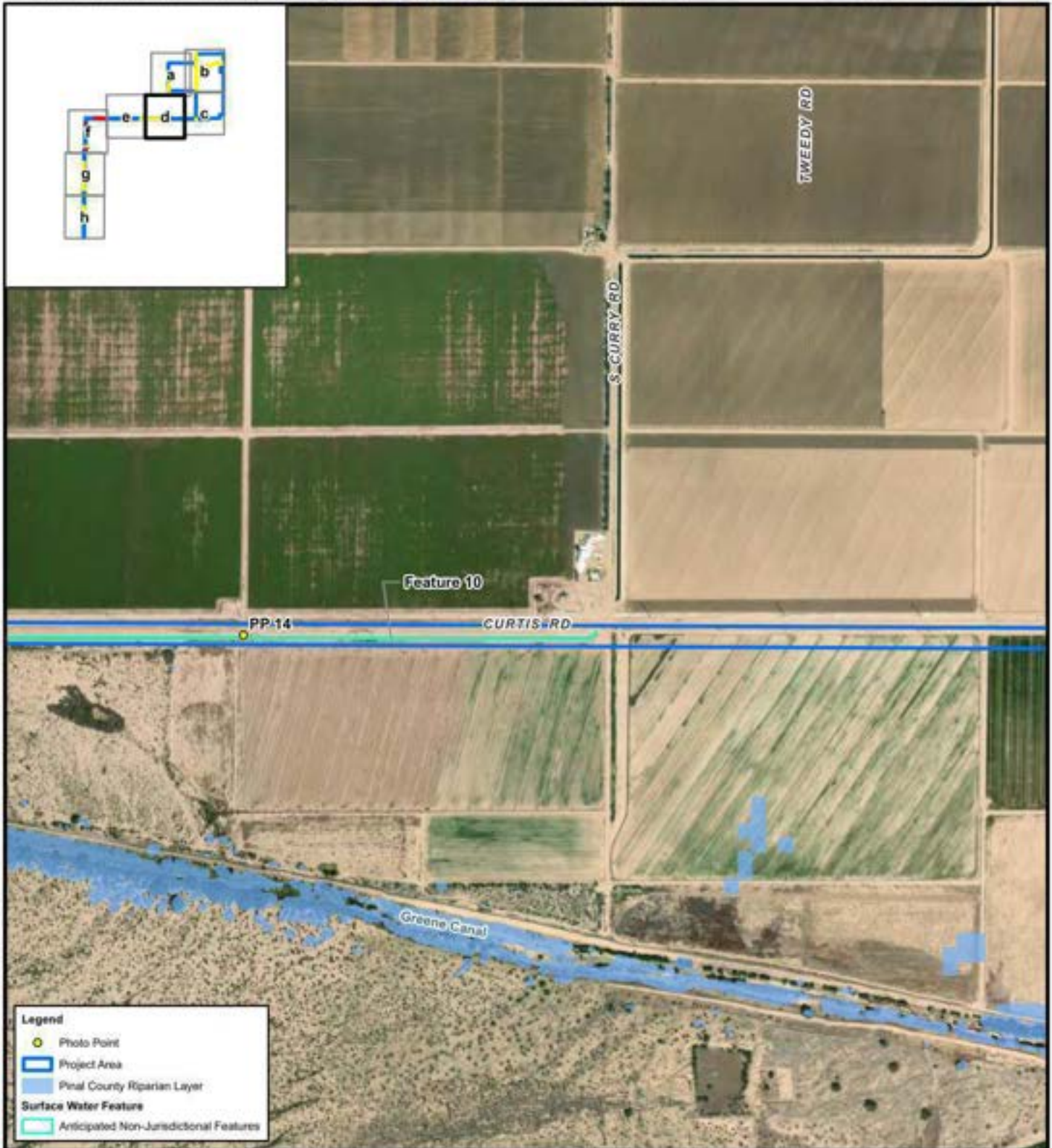
FLOODPLAINS, WETLANDS, AND HYDROGRAPHY
Figure 2



T9S, R7E, a Portion of Section 23,
Pinal County, Arizona
Projection: NAD 1983 UTM Zone 12N
Image Source: Maxar 03/10/2022- 10/17/2022

CACTUS FLOWER SOLAR FACILITY Aquatic Resources Report

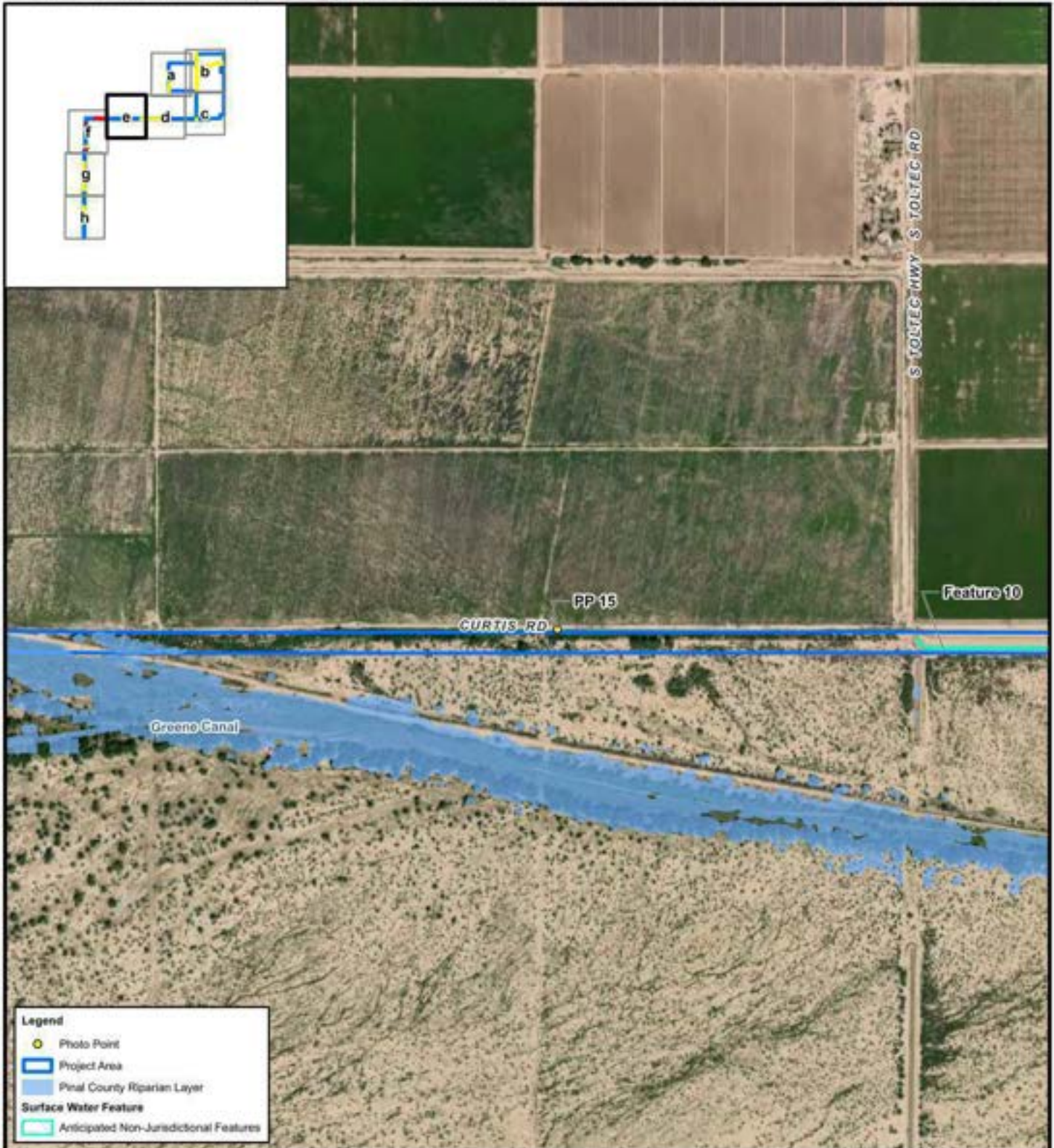
AQUATIC RESOURCES DELINEATION
map not verified by USACE
Figure 3a



T9S, R7E, Portions of Sections 34 and 35,
Pinal County, Arizona
Projection: NAD 1983 UTM Zone 12N
Image Source: Maxar 03/10/2022- 10/17/2022

CACTUS FLOWER SOLAR FACILITY Aquatic Resources Report

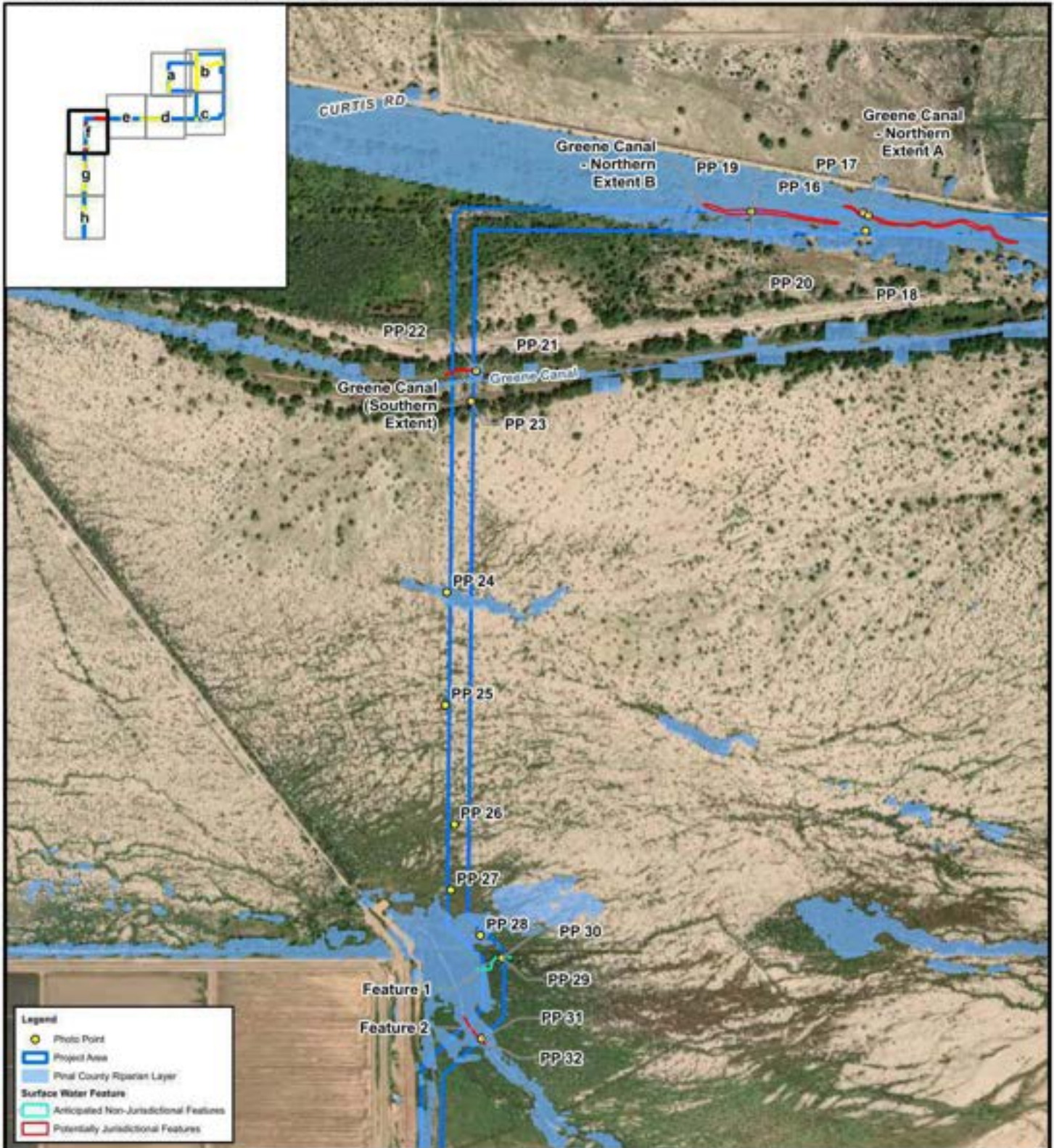
AQUATIC RESOURCES DELINEATION
map not verified by USACE
Figure 3d



T9S, R7E, Portions of Sections 32-34,
Pinal County, Arizona
Projection: NAD 1983 UTM Zone 12N
Image Source: Maxar 03/10/2022- 10/17/2022

CACTUS FLOWER SOLAR FACILITY Aquatic Resources Report

AQUATIC RESOURCES DELINEATION
map not verified by USACE
Figure 3e



T9S, R7E, a Portion of Section 32,
T10S, R7E, a Portion of Section 4,
Pinal County, Arizona
Projection: NAD 1983 UTM Zone 12N
Image Source: Maxar 03/10/2022- 10/17/2022

CACTUS FLOWER SOLAR FACILITY Aquatic Resources Report

AQUATIC RESOURCES DELINEATION

map not verified by USACE

Figure 3f

WestLand

Engineering &
Environmental
Services



0 600 1,200
Feet

0 200 400
Meters

APPENDIX A

Representative Ground Photographs

Photo 1.1 Feature 7 – irrigation canal in the northern portion of the Analysis Area. Photo taken March 20, 2025. Looking south at Photo Point (PP) 1.



Photo 1.2 Feature 7 – irrigation canal in the northern portion of the Analysis Area. Photo taken March 20, 2025. Looking north at PP 1.



Photo 2.1 Roadside drainage area, running north to south. Photo taken March 20, 2025. Looking north at PP 2.



Photo 2.1 Roadside drainage area, running north to south. Photo taken March 20, 2025. Looking south at PP 2.



Photo 3.1 Feature 6 – irrigation canal, running approximately northeast to southwest. Photo taken March 20, 2025. Looking east at PP 3.



Photo 3.2 Feature 6 – irrigation canal, running approximately northeast to southwest. Photo taken March 20, 2025. Looking southwest at PP 3.



Photo 3.2 Feature 7 – irrigation canal, running approximately north south. Photo taken March 20, 2025. Looking northwest at PP3.



Photo 4.1 Irrigation canal, running north to south. Photo taken March 20, 2025. Looking north at PP 4.



Photo 4.2 Irrigation canal, running north to south. Photo taken March 20, 2025. Looking south at PP 4.



Photo 5.1 Irrigation Canal, running east to west. Photo taken March 20, 2025. Looking east at PP 5.



Photo 5.2 Irrigation canal, running east to west. Photo taken March 20, 2025. Looking west at PP 5.



Photo 6. Feature 11 – irrigation canal, running north to south. Photo taken March 21, 2025. Looking south at PP 6.



Photo 7. Roadside drainage with dense vegetation. Photo taken March 20, 2025. Looking south at PP 7.



Photo 8. Roadside drainage area running east to west. Photo taken March 20, 2025. Looking east at PP 8.



Photo 9.1 Feature 6 – irrigation canal, running approximately northeast to southwest. Photo taken March 20, 2025. Looking north at PP 9.



Photo 9.2 Features 6 and 8 – irrigation canal, running north to south. Photo taken March 20, 2025. Looking south at PP 9.



Photo 10. Roadside drainage area running north to south. Photo taken March 20, 2025. Looking west at PP 10.



Photo 11. Small irrigation canal, running east to west. Photo taken March 20, 2025. Looking east at PP 11.



Photo 12. Roadside right-of-way under utility line. Photo taken March 20, 2025. Looking west at PP 12.



Photo 13. Roadside right-of-way under utility line. Photo taken March 20, 2025. Looking east at PP 13.



Photo 14.1 Feature 10 – irrigation canal running east to west, south of Solar Array Area. Photo taken March 21, 2025. Looking west at PP 14.



Photo 14.2 Feature 10 – irrigation canal running east to west, south of Solar Array Area. Photo taken March 21, 2025. Looking east at PP 14.



Photo 15. Dense vegetation along the side of Curtis Road near Greene Canal. Photo taken March 21, 2025. Looking west at PP 15.



Photo 16. Greene Canal – Northern Extent A. Photo taken March 19, 2025. Looking east (upstream) at PP 16.



Photo 17. Greene Canal – Northern Extent A. Photo taken March 19, 2025. Looking west (downstream) at PP 17.



Photo 18. Braided portion of Greene Canal, upgradient of OHWM. Photo taken March 19, 2025. Looking east at PP 18.



Photo 19. Braided portion of Greene Canal – Northern Extent B. Photo taken March 19, 2025. Looking east (upstream) at PP 19.



Photo 20. Braided portion of Greene Canal – Northern Extent B. Photo taken March 19, 2025. Looking west (downstream) at PP 20.



Photo 21. Southern Diversion of Greene Canal – Southern Extent. Photo taken March 19, 2025. Looking west (downstream) at PP 21.



Photo 22. Southern Diversion of Greene Canal – Southern Extent. Photo taken March 19, 2025. Looking east (upstream) at PP 22.



Photo 23. Overflow area of Greene Canal, no OHWM. Photo taken March 19, 2025. Looking west (downstream) at PP 23.



Photo 24. Relic feature, no OHWM. Photo taken March 21, 2025. Looking east at PP 24.



Photo 25. Relic feature, no OHWM. Photo taken March 21, 2025. Looking west at PP 25.



Photo 26. Relic Feature, no OHWM. Photo taken March 21, 2025. Looking west at PP 26.



Photo 27. Relic feature, no OHWM. Photo taken March 21, 2025. Looking east at PP 27.



Photo 28. Relic feature, no OHWM. Photo taken March 21, 2025. Looking east at PP 28.



Photo 29. Feature 1 – ephemeral wash. Photo taken March 21, 2025. Looking east (upstream) at PP 29.



Photo 30. Feature 1 – ephemeral wash. Photo taken March 21, 2025. Looking west (downstream) at PP 30.



Photo 31. Feature 2 – potentially jurisdictional wash. Photo taken March 21, 2025. Looking east (upstream) at PP 31.



Photo 32. Feature 2 – potentially jurisdictional wash. Photo taken March 21, 2025. Looking west (downstream) at PP 32.



Photo 33. Pocket of dense vegetation near Feature 11. Photo taken March 21, 2025. Looking north at PP 33.



Photo 34. Pocket of dense vegetation near Feature 11. Photo taken March 21, 2025. Looking west at PP 34.



Photo 35. Feature 12 – irrigation Canal, running east to west. Photo taken March 21, 2025. Looking east at PP 35.



Photo 36. Feature 3 – ephemeral wash. Photo taken March 19, 2025. Looking east (upstream) at PP 36.



Photo 37. Feature 3 – ephemeral wash. Photo taken March 19, 2025. Looking west (downstream) at PP 37.



Photo 38. Road intersecting Project Area. Photo taken March 21, 2025. Looking northwest at PP 38.



Photo 39. Feature 4 – ephemeral wash. Photo taken March 21, 2025. Looking east (upstream) at PP 39.



Photo 40. Feature 4 – ephemeral wash. Photo taken March 21, 2025. Looking west (downstream) at PP 40.



Photo 41. Feature 5 – ephemeral wash. Photo taken March 21, 2025. Looking east (upstream) at PP 41.



Photo 42. Feature 4 – ephemeral wash. Photo taken March 21, 2025. Looking west (downstream) at PP 42.



Photo 43. Braided segment of Feature 5. Photo taken March 21, 2025. Looking east (upstream) at PP 43.



Photo 44. Braided segment of Feature 5. Photo taken March 21, 2025. Looking downstream (west) at PP 44.



Photo 45. Erosional feature, no OHWM. Photo taken March 21, 2025. Looking southwest at PP 45.



Photo 46. Erosional feature, no OHWM. Photo taken March 21, 2025. Looking west at PP 46.



Photo 47. Erosional feature, no OHWM. Photo taken March 21, 2025. Looking west at PP 47.



Photo 48. Erosional or Relic feature, no OHWM. Photo taken March 21, 2025. Looking west at PP 48.



Photo 49. Erosional or Relic feature, no OHWM. Photo taken March 21, 2025. Looking west at PP 49.



Photo 50. Erosional feature, no OHWM. Photo taken March 21, 2025. Looking east at PP 50.



Photo 51. Erosional feature, no OHWM. Photo taken March 21, 2025. Looking west at PP 51.



Photo 52. Pond 1 – Ponding area identified in Tetra Tech report; not WOTUS. Photo taken March 20, 2025.



APPENDIX B
Web Soil Survey Soil Report



United States
Department of
Agriculture

NRCS

Natural
Resources
Conservation
Service

A product of the National
Cooperative Soil Survey,
a joint effort of the United
States Department of
Agriculture and other
Federal agencies, State
agencies including the
Agricultural Experiment
Stations, and local
participants

Custom Soil Resource Report for **Pinal County, Arizona, Western Part**



Preface

Soil surveys contain information that affects land use planning in survey areas. They highlight soil limitations that affect various land uses and provide information about the properties of the soils in the survey areas. Soil surveys are designed for many different users, including farmers, ranchers, foresters, agronomists, urban planners, community officials, engineers, developers, builders, and home buyers. Also, conservationists, teachers, students, and specialists in recreation, waste disposal, and pollution control can use the surveys to help them understand, protect, or enhance the environment.

Various land use regulations of Federal, State, and local governments may impose special restrictions on land use or land treatment. Soil surveys identify soil properties that are used in making various land use or land treatment decisions. The information is intended to help the land users identify and reduce the effects of soil limitations on various land uses. The landowner or user is responsible for identifying and complying with existing laws and regulations.

Although soil survey information can be used for general farm, local, and wider area planning, onsite investigation is needed to supplement this information in some cases. Examples include soil quality assessments (<http://www.nrcs.usda.gov/wps/portal/nrcs/main/soils/health/>) and certain conservation and engineering applications. For more detailed information, contact your local USDA Service Center (<https://offices.sc.egov.usda.gov/locator/app?agency=nrcs>) or your NRCS State Soil Scientist (http://www.nrcs.usda.gov/wps/portal/nrcs/detail/soils/contactus/?cid=nrcs142p2_053951).

Great differences in soil properties can occur within short distances. Some soils are seasonally wet or subject to flooding. Some are too unstable to be used as a foundation for buildings or roads. Clayey or wet soils are poorly suited to use as septic tank absorption fields. A high water table makes a soil poorly suited to basements or underground installations.

The National Cooperative Soil Survey is a joint effort of the United States Department of Agriculture and other Federal agencies, State agencies including the Agricultural Experiment Stations, and local agencies. The Natural Resources Conservation Service (NRCS) has leadership for the Federal part of the National Cooperative Soil Survey.

Information about soils is updated periodically. Updated information is available through the NRCS Web Soil Survey, the site for official soil survey information.

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How Soil Surveys Are Made

Soil surveys are made to provide information about the soils and miscellaneous areas in a specific area. They include a description of the soils and miscellaneous areas and their location on the landscape and tables that show soil properties and limitations affecting various uses. Soil scientists observed the steepness, length, and shape of the slopes; the general pattern of drainage; the kinds of crops and native plants; and the kinds of bedrock. They observed and described many soil profiles. A soil profile is the sequence of natural layers, or horizons, in a soil. The profile extends from the surface down into the unconsolidated material in which the soil formed or from the surface down to bedrock. The unconsolidated material is devoid of roots and other living organisms and has not been changed by other biological activity.

Currently, soils are mapped according to the boundaries of major land resource areas (MLRAs). MLRAs are geographically associated land resource units that share common characteristics related to physiography, geology, climate, water resources, soils, biological resources, and land uses (USDA, 2006). Soil survey areas typically consist of parts of one or more MLRA.

The soils and miscellaneous areas in a survey area occur in an orderly pattern that is related to the geology, landforms, relief, climate, and natural vegetation of the area. Each kind of soil and miscellaneous area is associated with a particular kind of landform or with a segment of the landform. By observing the soils and miscellaneous areas in the survey area and relating their position to specific segments of the landform, a soil scientist develops a concept, or model, of how they were formed. Thus, during mapping, this model enables the soil scientist to predict with a considerable degree of accuracy the kind of soil or miscellaneous area at a specific location on the landscape.

Commonly, individual soils on the landscape merge into one another as their characteristics gradually change. To construct an accurate soil map, however, soil scientists must determine the boundaries between the soils. They can observe only a limited number of soil profiles. Nevertheless, these observations, supplemented by an understanding of the soil-vegetation-landscape relationship, are sufficient to verify predictions of the kinds of soil in an area and to determine the boundaries.

Soil scientists recorded the characteristics of the soil profiles that they studied. They noted soil color, texture, size and shape of soil aggregates, kind and amount of rock fragments, distribution of plant roots, reaction, and other features that enable them to identify soils. After describing the soils in the survey area and determining their properties, the soil scientists assigned the soils to taxonomic classes (units). Taxonomic classes are concepts. Each taxonomic class has a set of soil characteristics with precisely defined limits. The classes are used as a basis for comparison to classify soils systematically. Soil taxonomy, the system of taxonomic classification used in the United States, is based mainly on the kind and character of soil properties and the arrangement of horizons within the profile. After the soil

scientists classified and named the soils in the survey area, they compared the individual soils with similar soils in the same taxonomic class in other areas so that they could confirm data and assemble additional data based on experience and research.

The objective of soil mapping is not to delineate pure map unit components; the objective is to separate the landscape into landforms or landform segments that have similar use and management requirements. Each map unit is defined by a unique combination of soil components and/or miscellaneous areas in predictable proportions. Some components may be highly contrasting to the other components of the map unit. The presence of minor components in a map unit in no way diminishes the usefulness or accuracy of the data. The delineation of such landforms and landform segments on the map provides sufficient information for the development of resource plans. If intensive use of small areas is planned, onsite investigation is needed to define and locate the soils and miscellaneous areas.

Soil scientists make many field observations in the process of producing a soil map. The frequency of observation is dependent upon several factors, including scale of mapping, intensity of mapping, design of map units, complexity of the landscape, and experience of the soil scientist. Observations are made to test and refine the soil-landscape model and predictions and to verify the classification of the soils at specific locations. Once the soil-landscape model is refined, a significantly smaller number of measurements of individual soil properties are made and recorded. These measurements may include field measurements, such as those for color, depth to bedrock, and texture, and laboratory measurements, such as those for content of sand, silt, clay, salt, and other components. Properties of each soil typically vary from one point to another across the landscape.

Observations for map unit components are aggregated to develop ranges of characteristics for the components. The aggregated values are presented. Direct measurements do not exist for every property presented for every map unit component. Values for some properties are estimated from combinations of other properties.

While a soil survey is in progress, samples of some of the soils in the area generally are collected for laboratory analyses and for engineering tests. Soil scientists interpret the data from these analyses and tests as well as the field-observed characteristics and the soil properties to determine the expected behavior of the soils under different uses. Interpretations for all of the soils are field tested through observation of the soils in different uses and under different levels of management. Some interpretations are modified to fit local conditions, and some new interpretations are developed to meet local needs. Data are assembled from other sources, such as research information, production records, and field experience of specialists. For example, data on crop yields under defined levels of management are assembled from farm records and from field or plot experiments on the same kinds of soil.

Predictions about soil behavior are based not only on soil properties but also on such variables as climate and biological activity. Soil conditions are predictable over long periods of time, but they are not predictable from year to year. For example, soil scientists can predict with a fairly high degree of accuracy that a given soil will have a high water table within certain depths in most years, but they cannot predict that a high water table will always be at a specific level in the soil on a specific date.

After soil scientists located and identified the significant natural bodies of soil in the survey area, they drew the boundaries of these bodies on aerial photographs and

Custom Soil Resource Report

identified each as a specific map unit. Aerial photographs show trees, buildings, fields, roads, and rivers, all of which help in locating boundaries accurately.

Soil Map

The soil map section includes the soil map for the defined area of interest, a list of soil map units on the map and extent of each map unit, and cartographic symbols displayed on the map. Also presented are various metadata about data used to produce the map, and a description of each soil map unit.

Custom Soil Resource Report Soil Map



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: Pinal County, Arizona, Western Part

Survey Area Data: Version 21, Aug 30, 2024

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

Date(s) aerial images were photographed: Feb 18, 2020—Mar 7, 2020

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
9	Contine clay loam	12.4	0.5%
10	Contine clay	2.6	0.1%
13	Dateland fine sandy loam	262.1	10.9%
16	Denure sandy loam, 1 to 3 percent slopes	7.5	0.3%
17	Denure fine sandy loam, 0 to 1 percent slopes	247.4	10.3%
18	Denure clay loam, 0 to 1 percent slopes	172.3	7.2%
20	Gadsden clay	7.4	0.3%
21	Gilman fine sandy loam, 0 to 2 percent slopes	80.2	3.3%
22	Gilman clay loam	9.5	0.4%
23	Ginland clay	20.6	0.9%
24	Glenbar clay loam, 0 to 2 percent slopes	66.7	2.8%
29	Marana silty clay loam	350.0	14.6%
31	Mohall loam MLRA 40	28.1	1.2%
40	Rositas loamy fine sand	55.2	2.3%
42	Sasco silt loam	1,072.0	44.8%
Totals for Area of Interest		2,394.5	100.0%

Map Unit Descriptions

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

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

Most minor soils have properties similar to those of the dominant soil or soils in the map unit, and thus they do not affect use and management. These are called

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

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

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

Soils that have profiles that are almost alike make up a *soil series*. Except for differences in texture of the surface layer, all the soils of a series have major horizons that are similar in composition, thickness, and arrangement.

Soils of one series can differ in texture of the surface layer, slope, stoniness, salinity, degree of erosion, and other characteristics that affect their use. On the basis of such differences, a soil series is divided into *soil phases*. Most of the areas shown on the detailed soil maps are phases of soil series. The name of a soil phase commonly indicates a feature that affects use or management. For example, Alpha silt loam, 0 to 2 percent slopes, is a phase of the Alpha series.

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

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

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

An *undifferentiated group* is made up of two or more soils or miscellaneous areas that could be mapped individually but are mapped as one unit because similar interpretations can be made for use and management. The pattern and proportion of the soils or miscellaneous areas in a mapped area are not uniform. An area can

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be made up of only one of the major soils or miscellaneous areas, or it can be made up of all of them. Alpha and Beta soils, 0 to 2 percent slopes, is an example.

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

Pinal County, Arizona, Western Part

9—Contine clay loam

Map Unit Setting

National map unit symbol: 1srf
Elevation: 1,130 to 1,990 feet
Mean annual precipitation: 6 to 8 inches
Mean annual air temperature: 68 to 72 degrees F
Frost-free period: 240 to 325 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition

Contine and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Contine

Setting

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

Typical profile

Ap - 0 to 12 inches: clay loam
Btk1 - 12 to 51 inches: clay
Btk2 - 51 to 60 inches: clay loam

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 30 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Sodium adsorption ratio, maximum: 13.0
Available water supply, 0 to 60 inches: High (about 10.3 inches)

Interpretive groups

Land capability classification (irrigated): 3s
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: C
Ecological site: R040XB205AZ - Clay Loam Upland 7"-10" p.z.
Hydric soil rating: No

Minor Components

Unnamed soils

Percent of map unit: 15 percent

Hydric soil rating: No

10—Contine clay

Map Unit Setting

National map unit symbol: 1spx

Elevation: 1,130 to 1,990 feet

Mean annual precipitation: 6 to 8 inches

Mean annual air temperature: 68 to 72 degrees F

Frost-free period: 240 to 325 days

Farmland classification: Prime farmland if irrigated

Map Unit Composition

Contine and similar soils: 90 percent

Minor components: 10 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Contine

Setting

Landform: Basin floors

Landform position (two-dimensional): Summit

Landform position (three-dimensional): Dip

Down-slope shape: Convex

Across-slope shape: Convex

Parent material: Fine textured mixed fan alluvium

Typical profile

Ap - 0 to 12 inches: clay

Btk - 12 to 51 inches: clay

Btk - 51 to 60 inches: clay loam

Properties and qualities

Slope: 0 to 1 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Well drained

Runoff class: Low

Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 30 percent

Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)

Sodium adsorption ratio, maximum: 13.0

Available water supply, 0 to 60 inches: High (about 9.3 inches)

Interpretive groups

Land capability classification (irrigated): 3s

Land capability classification (nonirrigated): 7s

Hydrologic Soil Group: C

Ecological site: R040XB204AZ - Clayey Upland 7"-10" p.z.

Hydric soil rating: No

Minor Components

Unnamed soils

Percent of map unit: 10 percent

Hydric soil rating: No

13—Dateland fine sandy loam

Map Unit Setting

National map unit symbol: 1sq0

Elevation: 1,130 to 1,990 feet

Mean annual precipitation: 6 to 8 inches

Mean annual air temperature: 68 to 72 degrees F

Frost-free period: 240 to 325 days

Farmland classification: Prime farmland if irrigated

Map Unit Composition

Dateland and similar soils: 90 percent

Minor components: 10 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Dateland

Setting

Landform: Fan terraces, stream terraces

Landform position (two-dimensional): Summit

Landform position (three-dimensional): Tread

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Mixed stream and fan alluvium

Typical profile

A - 0 to 2 inches: fine sandy loam

Bk - 2 to 40 inches: fine sandy loam

C - 40 to 60 inches: fine sandy loam

Properties and qualities

Slope: 0 to 1 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Well drained

Runoff class: Low

*Capacity of the most limiting layer to transmit water (Ksat): Moderately high to high
(0.57 to 1.98 in/hr)*

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Depth to water table: More than 80 inches
Frequency of flooding: Rare
Frequency of ponding: None
Calcium carbonate, maximum content: 15 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: Moderate (about 7.8 inches)

Interpretive groups

Land capability classification (irrigated): 1
Land capability classification (nonirrigated): 7c
Hydrologic Soil Group: B
Ecological site: R040XB207AZ - Limy Fan 7"-10" p.z.
Hydric soil rating: No

Minor Components

Unnamed soils

Percent of map unit: 10 percent
Hydric soil rating: No

16—Denure sandy loam, 1 to 3 percent slopes

Map Unit Setting

National map unit symbol: 1sq3
Elevation: 1,130 to 1,990 feet
Mean annual precipitation: 6 to 8 inches
Mean annual air temperature: 68 to 72 degrees F
Frost-free period: 240 to 325 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition

Denure and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Denure

Setting

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

Typical profile

A - 0 to 2 inches: sandy loam
Bk - 2 to 54 inches: sandy loam
2Btk - 54 to 60 inches: sandy clay loam

Properties and qualities

Slope: 1 to 3 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat excessively drained
Runoff class: Medium
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 30 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: Moderate (about 7.4 inches)

Interpretive groups

Land capability classification (irrigated): 2s
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: A
Ecological site: R040XB207AZ - Limy Fan 7"-10" p.z.
Hydric soil rating: No

Minor Components

Unnamed soils

Percent of map unit: 15 percent
Hydric soil rating: No

17—Denure fine sandy loam, 0 to 1 percent slopes

Map Unit Setting

National map unit symbol: 1sq4
Elevation: 1,130 to 1,990 feet
Mean annual precipitation: 6 to 8 inches
Mean annual air temperature: 68 to 72 degrees F
Frost-free period: 240 to 325 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition

Denure and similar soils: 85 percent
Minor components: 15 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Denure

Setting

Landform: Stream terraces
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Tread
Down-slope shape: Convex
Across-slope shape: Convex

Custom Soil Resource Report

Parent material: Mixed stream alluvium

Typical profile

A - 0 to 2 inches: fine sandy loam
Bk - 2 to 54 inches: sandy loam
2Btk - 54 to 60 inches: sandy clay loam

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat excessively drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 30 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: Moderate (about 7.4 inches)

Interpretive groups

Land capability classification (irrigated): 3s
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: A
Ecological site: R040XB207AZ - Limy Fan 7"-10" p.z.
Hydric soil rating: No

Minor Components

Unnamed soils

Percent of map unit: 15 percent
Hydric soil rating: No

18—Denure clay loam, 0 to 1 percent slopes

Map Unit Setting

National map unit symbol: 1sq5
Elevation: 1,130 to 1,990 feet
Mean annual precipitation: 6 to 8 inches
Mean annual air temperature: 68 to 72 degrees F
Frost-free period: 240 to 325 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition

Denure and similar soils: 95 percent
Minor components: 5 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Denure

Setting

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

Typical profile

Ap - 0 to 15 inches: clay loam
Bk - 15 to 54 inches: sandy loam
2Btk - 54 to 60 inches: sandy clay loam

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 30 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: Moderate (about 8.6 inches)

Interpretive groups

Land capability classification (irrigated): 2s
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: C
Ecological site: R040XB207AZ - Limy Fan 7"-10" p.z.
Hydric soil rating: No

Minor Components

Unnamed soils

Percent of map unit: 5 percent
Hydric soil rating: No

20—Gadsden clay

Map Unit Setting

National map unit symbol: 1sq8
Elevation: 1,130 to 1,990 feet
Mean annual precipitation: 6 to 8 inches
Mean annual air temperature: 68 to 72 degrees F
Frost-free period: 240 to 325 days

Custom Soil Resource Report

Farmland classification: Prime farmland if irrigated and either protected from flooding or not frequently flooded during the growing season

Map Unit Composition

Gadsden and similar soils: 85 percent

Minor components: 15 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Gadsden

Setting

Landform: Flood plains

Landform position (two-dimensional): Summit

Landform position (three-dimensional): Dip

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Fine textured mixed stream alluvium

Typical profile

Ap - 0 to 13 inches: clay

C1 - 13 to 42 inches: clay

C2 - 42 to 60 inches: silty clay loam

Properties and qualities

Slope: 0 to 1 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Well drained

Runoff class: Low

Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: Occasional

Frequency of ponding: None

Calcium carbonate, maximum content: 15 percent

Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)

Available water supply, 0 to 60 inches: High (about 10.3 inches)

Interpretive groups

Land capability classification (irrigated): 3w

Land capability classification (nonirrigated): 7w

Hydrologic Soil Group: C

Ecological site: R040XB203AZ - Clayey Swale 7"-10" p.z.

Hydric soil rating: No

Minor Components

Unnamed soils

Percent of map unit: 15 percent

Hydric soil rating: No

21—Gilman fine sandy loam, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 2tdtw

Elevation: 800 to 2,000 feet

Mean annual precipitation: 7 to 10 inches

Mean annual air temperature: 70 to 72 degrees F

Frost-free period: 240 to 325 days

Farmland classification: Prime farmland if irrigated and either protected from flooding or not frequently flooded during the growing season

Map Unit Composition

Gilman and similar soils: 85 percent

Minor components: 15 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Gilman

Setting

Landform: Flood plains

Landform position (three-dimensional): Talf

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Mixed fan and stream alluvium

Typical profile

Ap1 - 0 to 3 inches: fine sandy loam

Ap2 - 3 to 13 inches: loam

C1 - 13 to 26 inches: loam

C2 - 26 to 44 inches: loam

C3 - 44 to 60 inches: silt loam

Properties and qualities

Slope: 0 to 2 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Well drained

Runoff class: Very low

Capacity of the most limiting layer to transmit water (Ksat): High (1.98 to 5.95 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: Occasional

Frequency of ponding: None

Calcium carbonate, maximum content: 4 percent

Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)

Available water supply, 0 to 60 inches: High (about 9.8 inches)

Interpretive groups

Land capability classification (irrigated): 2w

Land capability classification (nonirrigated): 7c

Hydrologic Soil Group: A

Ecological site: R040XB211AZ - Loamy Swale 7"-10" p.z.

Hydric soil rating: No

Minor Components

Unnamed soils

Percent of map unit: 15 percent

Hydric soil rating: No

22—Gilman clay loam

Map Unit Setting

National map unit symbol: 1sqb

Elevation: 1,130 to 1,990 feet

Mean annual precipitation: 6 to 8 inches

Mean annual air temperature: 68 to 72 degrees F

Frost-free period: 240 to 325 days

Farmland classification: Prime farmland if irrigated and either protected from flooding or not frequently flooded during the growing season

Map Unit Composition

Gilman and similar soils: 95 percent

Minor components: 5 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Gilman

Setting

Landform: Flood plains

Landform position (two-dimensional): Summit

Landform position (three-dimensional): Dip

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Mixed stream alluvium

Typical profile

Ap - 0 to 12 inches: clay loam

C - 12 to 60 inches: stratified sandy loam to very fine sandy loam

Properties and qualities

Slope: 0 to 1 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Well drained

Runoff class: Low

Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.57 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: Occasional

Frequency of ponding: None

Calcium carbonate, maximum content: 15 percent

Maximum salinity: Nonsaline to moderately saline (0.0 to 8.0 mmhos/cm)

Custom Soil Resource Report

Sodium adsorption ratio, maximum: 13.0

Available water supply, 0 to 60 inches: High (about 10.5 inches)

Interpretive groups

Land capability classification (irrigated): 2w

Land capability classification (nonirrigated): 7w

Hydrologic Soil Group: C

Ecological site: R040XB211AZ - Loamy Swale 7"-10" p.z.

Hydric soil rating: No

Minor Components

Unnamed soils

Percent of map unit: 5 percent

Hydric soil rating: No

23—Ginland clay

Map Unit Setting

National map unit symbol: 1sqc

Elevation: 1,130 to 1,990 feet

Mean annual precipitation: 6 to 8 inches

Mean annual air temperature: 68 to 72 degrees F

Frost-free period: 240 to 325 days

Farmland classification: Prime farmland if irrigated and either protected from flooding or not frequently flooded during the growing season

Map Unit Composition

Ginland and similar soils: 95 percent

Minor components: 5 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Ginland

Setting

Landform: Flood plains

Landform position (two-dimensional): Summit

Landform position (three-dimensional): Dip

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Fine textured mixed stream alluvium over mixed older alluvium

Typical profile

Ap - 0 to 24 inches: clay

2Btkb - 24 to 60 inches: sandy clay loam

Properties and qualities

Slope: 0 to 1 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Well drained

Runoff class: Low

Custom Soil Resource Report

Capacity of the most limiting layer to transmit water (Ksat): Moderately low to moderately high (0.06 to 0.20 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: Occasional

Frequency of ponding: None

Calcium carbonate, maximum content: 25 percent

Gypsum, maximum content: 3 percent

Maximum salinity: Nonsaline to moderately saline (0.0 to 8.0 mmhos/cm)

Sodium adsorption ratio, maximum: 30.0

Available water supply, 0 to 60 inches: Moderate (about 6.4 inches)

Interpretive groups

Land capability classification (irrigated): 3w

Land capability classification (nonirrigated): 7w

Hydrologic Soil Group: C

Ecological site: R040XB203AZ - Clayey Swale 7"-10" p.z.

Hydric soil rating: No

Minor Components

Unnamed soils

Percent of map unit: 5 percent

Hydric soil rating: No

24—Glenbar clay loam, 0 to 2 percent slopes

Map Unit Setting

National map unit symbol: 2tdtq

Elevation: 980 to 2,000 feet

Mean annual precipitation: 7 to 10 inches

Mean annual air temperature: 70 to 72 degrees F

Frost-free period: 240 to 325 days

Farmland classification: Prime farmland if irrigated and either protected from flooding or not frequently flooded during the growing season

Map Unit Composition

Glenbar and similar soils: 85 percent

Minor components: 15 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Glenbar

Setting

Landform: Flood plains

Landform position (three-dimensional): Talf

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Mixed stream alluvium

Typical profile

Ap - 0 to 7 inches: clay loam

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Ck1 - 7 to 18 inches: clay loam
Ck2 - 18 to 31 inches: silty clay loam
Ck3 - 31 to 60 inches: silty clay loam

Properties and qualities

Slope: 0 to 2 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Negligible
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: Occasional
Frequency of ponding: None
Calcium carbonate, maximum content: 15 percent
Gypsum, maximum content: 2 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: High (about 11.4 inches)

Interpretive groups

Land capability classification (irrigated): 3w
Land capability classification (nonirrigated): 7c
Hydrologic Soil Group: C
Ecological site: R040XB211AZ - Loamy Swale 7"-10" p.z.
Hydric soil rating: No

Minor Components

Unnamed soils

Percent of map unit: 15 percent
Hydric soil rating: No

29—Marana silty clay loam

Map Unit Setting

National map unit symbol: 1sqk
Elevation: 1,130 to 1,990 feet
Mean annual precipitation: 6 to 8 inches
Mean annual air temperature: 68 to 72 degrees F
Frost-free period: 240 to 325 days
Farmland classification: Prime farmland if irrigated and either protected from flooding or not frequently flooded during the growing season

Map Unit Composition

Marana and similar soils: 90 percent
Minor components: 10 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Marana

Setting

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

Typical profile

A - 0 to 2 inches: silty clay loam
C - 2 to 60 inches: silty clay loam

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Well drained
Runoff class: Low
Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.57 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: Rare
Frequency of ponding: None
Calcium carbonate, maximum content: 15 percent
Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)
Available water supply, 0 to 60 inches: High (about 12.0 inches)

Interpretive groups

Land capability classification (irrigated): 1
Land capability classification (nonirrigated): 7c
Hydrologic Soil Group: C
Ecological site: R040XB213AZ - Loamy Upland 7"-10" p.z.
Hydric soil rating: No

Minor Components

Unnamed soils

Percent of map unit: 10 percent
Hydric soil rating: No

31—Mohall loam MLRA 40

Map Unit Setting

National map unit symbol: 2rft
Elevation: 1,000 to 1,990 feet
Mean annual precipitation: 6 to 10 inches
Mean annual air temperature: 68 to 74 degrees F
Frost-free period: 240 to 325 days
Farmland classification: Prime farmland if irrigated

Map Unit Composition

Mohall and similar soils: 80 percent

Minor components: 20 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Mohall

Setting

Landform: Stream terraces, basin floors, fan terraces

Landform position (two-dimensional): Summit

Landform position (three-dimensional): Tread, flat

Down-slope shape: Convex

Across-slope shape: Convex

Parent material: Mixed alluvium

Typical profile

Ap - 0 to 16 inches: loam

Bt - 16 to 24 inches: clay loam

Btk1 - 24 to 37 inches: clay loam

Btk2 - 37 to 43 inches: clay loam

Bk - 43 to 60 inches: sandy loam

Properties and qualities

Slope: 0 to 3 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Well drained

Runoff class: Low

Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.57 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: None

Frequency of ponding: None

Calcium carbonate, maximum content: 30 percent

Maximum salinity: Very slightly saline to strongly saline (2.0 to 16.0 mmhos/cm)

Sodium adsorption ratio, maximum: 13.0

Available water supply, 0 to 60 inches: High (about 9.9 inches)

Interpretive groups

Land capability classification (irrigated): 1

Land capability classification (nonirrigated): 7c

Hydrologic Soil Group: C

Ecological site: R040XB213AZ - Loamy Upland 7"-10" p.z.

Hydric soil rating: No

Minor Components

Unnamed soils

Percent of map unit: 20 percent

Hydric soil rating: No

40—Rositas loamy fine sand

Map Unit Setting

National map unit symbol: 1sqz
Elevation: 1,130 to 1,990 feet
Mean annual precipitation: 6 to 8 inches
Mean annual air temperature: 68 to 72 degrees F
Frost-free period: 240 to 325 days
Farmland classification: Farmland of unique importance

Map Unit Composition

Rositas and similar soils: 95 percent
Minor components: 5 percent
Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Rositas

Setting

Landform: Dunes
Landform position (two-dimensional): Summit
Landform position (three-dimensional): Tread
Down-slope shape: Convex
Across-slope shape: Convex
Parent material: Mixed eolian deposits

Typical profile

A1 - 0 to 2 inches: loamy fine sand
C2 - 2 to 60 inches: loamy sand

Properties and qualities

Slope: 0 to 1 percent
Depth to restrictive feature: More than 80 inches
Drainage class: Somewhat excessively drained
Runoff class: Very low
Capacity of the most limiting layer to transmit water (Ksat): High to very high (5.95 to 19.98 in/hr)
Depth to water table: More than 80 inches
Frequency of flooding: None
Frequency of ponding: None
Calcium carbonate, maximum content: 15 percent
Maximum salinity: Very slightly saline to slightly saline (2.0 to 4.0 mmhos/cm)
Sodium adsorption ratio, maximum: 13.0
Available water supply, 0 to 60 inches: Low (about 4.2 inches)

Interpretive groups

Land capability classification (irrigated): 3s
Land capability classification (nonirrigated): 7s
Hydrologic Soil Group: A
Ecological site: R040XB217AZ - Sandy Upland 7"-10" p.z.
Hydric soil rating: No

Minor Components

Unnamed soils

Percent of map unit: 5 percent

Hydric soil rating: No

42—Sasco silt loam

Map Unit Setting

National map unit symbol: 1sr1

Elevation: 1,130 to 1,990 feet

Mean annual precipitation: 6 to 8 inches

Mean annual air temperature: 68 to 72 degrees F

Frost-free period: 240 to 325 days

Farmland classification: Prime farmland if irrigated and either protected from flooding or not frequently flooded during the growing season

Map Unit Composition

Sasco and similar soils: 85 percent

Minor components: 15 percent

Estimates are based on observations, descriptions, and transects of the mapunit.

Description of Sasco

Setting

Landform: Stream terraces

Landform position (two-dimensional): Summit

Landform position (three-dimensional): Tread

Down-slope shape: Linear

Across-slope shape: Linear

Parent material: Mixed stream silty alluvium

Typical profile

A - 0 to 2 inches: silt loam

Bw - 2 to 47 inches: silt loam

2Btb - 47 to 60 inches: clay loam

Properties and qualities

Slope: 0 to 1 percent

Depth to restrictive feature: More than 80 inches

Drainage class: Well drained

Runoff class: Low

Capacity of the most limiting layer to transmit water (Ksat): Moderately high (0.20 to 0.57 in/hr)

Depth to water table: More than 80 inches

Frequency of flooding: Rare

Frequency of ponding: None

Calcium carbonate, maximum content: 15 percent

Maximum salinity: Nonsaline to very slightly saline (0.0 to 2.0 mmhos/cm)

Available water supply, 0 to 60 inches: High (about 11.1 inches)

Custom Soil Resource Report

Interpretive groups

Land capability classification (irrigated): 1

Land capability classification (nonirrigated): 7c

Hydrologic Soil Group: C

Ecological site: R040XB213AZ - Loamy Upland 7"-10" p.z.

Hydric soil rating: No

Minor Components

Unnamed soils

Percent of map unit: 15 percent

Hydric soil rating: No

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EXHIBIT B-3
Arizona State Land Department Native Plant
Inventory, October 15, 2025

Native Plant Inventory for the Cactus Flower Solar Project, Pinal County, Arizona

Prepared for:

Cypress Creek Renewables, LLC.
3402 Pico Boulevard, Suite 215 – Santa Monica, California 90405

Prepared by:

WestLand Engineering & Environmental Services
4001 E. Paradise Falls Drive – Tucson, Arizona 85712
+1 520-206-9585

WestLand Project Number: 12856

October 15, 2025



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Attachments

Attachment 1.	State Land Department Policy Memo No. P79-1
Attachment 2.	Representative Photographs of the Analysis Area
Attachment 3.	Itemized List of Inventoried Native Protected Plants

1. INTRODUCTION

WestLand Engineering & Environmental Services (WestLand) was retained by Cypress Creek Renewables, LLC (CCR) to complete a native plant inventory (NPI) for the proposed Cactus Flower Solar Project (the Project). The Project is located in Pinal County approximately 9.5 miles southwest of Picacho, Arizona (**Figure 1**) and occurs on both privately owned land and State Trust Lands managed by the Arizona State Land Department (ASLD). The Project includes construction of an approximately 8.9-mile generation interconnection line (Gen-tie) within a 100-foot right-of-way. Approximately 6.8 miles (82.6 acres) of the Gen-tie occur on ASLD lands in portions of Sections 32-34, Township 09 South, Range 07 East, (the Analysis Area; **Figure 1**). A new switchyard will also be located on ASLD land at the southern terminus of the Analysis Area. The Project is anticipated to result in new disturbance of only a portion of the 82.6 acres managed by ASLD, though this acreage has not yet been determined.

Authorized use of State Trust Land resulting in surface disturbance requires an NPI to establish the value of protected plants that will be impacted, as defined in State Land Department Policy Memo No. P79-1, issued November 23, 1979, as amended August 5, 2020 (ASLD Protocol; **Attachment 1**). The ASLD Protocol includes a list of native plant species for inventory that is a subset of the plant species protected under the Arizona Native Plant Law. Once the area of new disturbance is known and prior to the start of the Project, the ASLD value determined in this report will be applied to that area. WestLand conducted a sample survey of the Analysis Area August 11 through 14, 2025 to determine the ASLD per acre value of native plants protected under the Arizona Native Plant Law.

2. SITE DESCRIPTION

The Analysis Area is in a rural setting consisting of abandoned and actively cultivated agricultural land adjacent to open desert. The Analysis Area is in the Lower Colorado River Subdivision of the Sonoran Desertscrub biotic community (The Nature Conservancy 2012). When undisturbed, this vegetation community consists primarily of low-growing and open stands of drought-tolerant shrubs like creosote bush (*Larrea tridentata*) and white bursage (*Ambrosia dumosa*), while trees including ironwood (*Olneya tesota*), palo verde (*Parkinsonia* spp.), and mesquite (*Prosopis* spp.) may occur along drainages (Turner and Brown 1994). The vegetation observed in the field is consistent with this community, but northern portions of the Analysis Area appear to have been previously cleared for agricultural purposes. The dominant vegetation observed during the field investigation include mesquite and creosotebush, with isolated areas of tamarisk (*Tamarix* spp.) in large washes and little to no ground cover observed in the Analysis Area (**Attachment 2**). Evidence of previous vegetation clearing was observed along portions of the east-west-trending portion of the Analysis Area. Little topographic relief is present within the Analysis Area with elevations ranging from approximately 1,619 to 1,676 feet above mean sea level (amsl).

The Analysis Area consists of approximately 82.6 acres of ASLD land within a 6.8-mile-wide, 100-foot-wide corridor. Pursuant to ASLD Protocol, plant fees for use of ASLD lands will be assessed for the areas of planned new disturbance.

3. METHODS

WestLand followed the inventory protocol established in the ASLD Protocol issued November 23, 1979, as amended August 5, 2020 (**Attachment 1**). WestLand conducted a sample inventory, as the ASLD Protocol allows plant inventory sampling for areas greater than 20 acres.

Within the Analysis Area, WestLand distributed 46 rectangular sample plots, each covering a 50-foot by 100-foot sample area (0.115 acres each = 5.29 total acres sampled). The plots were distributed at approximately 800-foot intervals perpendicular to the Gen-tie corridor and provided a 6.40 percent sample coverage of the Analysis Area. Two WestLand biologists conducted the inventory between August 11 and 14 of 2025 and recorded individual plants by plant type category (species or group) and size as defined in the ASLD Protocol.

All species or plant groups identified in the ASLD Protocol were inventoried. Some species that are identified in the ASLD Protocol as trees exhibit both shrub and tree growth forms, according to the U.S. Department of Agriculture (USDA), Natural Resources Conservation Service PLANTS Database (2025), and the Southwest Environmental Information Network Portal (SEINet; 2025).¹ WestLand uses criteria previously agreed to with ASLD staff (ASLD 2013) to distinguish shrubs from trees and to identify individual plants that ASLD considers large enough to include in the inventory. The criteria for trees are:

1. Plants identified as tree species in the ASLD Protocol that are a minimum of 6 feet tall.
2. Plants identified as tree species listed in the ASLD Protocol that have either a single stem at ground level or multiple stems at ground level and have a tree-like form. The crew used discretion to consider a plant with more than one stem at ground level to be a tree if the plant had a treelike growth form.

The ASLD Protocol does not include a methodology for measurement of tree trunk caliper-inch, used to value mesquite, paloverde, ironwood, desert willow (*Chilopsis linearis*), and smoketree (*Psoralea arguta*). WestLand used the Pima County Native Plant Preservation Ordinance methods (Pima County Development Services Planning Division 1998) for tree trunk measurement. The trunk caliper-inch diameter was taken from the lower of 24 inches above the ground surface or immediately before branching. For multi-stemmed trees, the total diameter of the two largest stems was used.

¹ The PLANTS Database and SEINet Portal accessed online August 14, 2025.

The ASLD Protocol provides monetary values for the inventoried Arizona protected native plants (**Attachment 1**). The table in **Attachment 1** also provides methods for determining a fee for the grazing value of plant species not inventoried, using the Animal Units (AU) per Section for the sections of land where the Analysis Area is located, and the AU value listed in the ASLD Protocol Protected Native Plants value table. Acreage in areas assigned a "null" value are removed from AU valuation calculations because they have no grazing value. The ASLD Online Parcel Viewer² provides AU values for the specific parcels in the Analysis Area.

4. RESULTS

Mesquite was the only protected native plant species listed in the ASLD Protocol that occurred within the sample plots. A total of 59 mesquite trees occurred in the 46 sample plots with a combined value of \$14,150.00 and a per acre value of \$2,674.86 (**Table 2**).

Within the Analysis Area, 18.2 acres have AU classified as "Null" by ASLD and therefore do not have an assigned AU value. The per acre value of the 18.2 "Null" acres in the Analysis Area is \$2,674.86 (**Table 3**). The remaining 64.4 acres of the Analysis Area are categorized as 0-5 AU and have an additional per acre AU value of \$75.00, for a total per acre value of \$2,749.86 (**Table 3**). The total estimated ASLD plant value within the entire 82.6-acre Analysis Area is \$225,773.43 (**Table 3**), including \$48,682.45 for the 18.2 acres with no AU value and \$177,090.98 for the 64.4 acres with 0-5 AU value.

Project disturbance will not include the entire 82.6 acres of the Analysis Area. Total disturbance acreage and the location of all disturbance will be determined prior to start of the Project. The cost per acre calculated in this report will be applied after the amount and location of disturbance is determined (\$2,674.86 for the 18.2 acres with no AU value and \$2,749.86 for the 64.4 acres classified 0-5 AU).

Table 1. ASLD Protected Native Plant Sample Area Per-Acre Value Calculation

Plant Category	Sampled Acres	Total Sampled Area Value	Per Acre ASLD Value
Protected Native Plants	5.29	\$ 14,150.00	\$ 2,674.86

Table 2. ASLD Plant Value Per Acre Calculations for No AU and 0-5 AU Value Areas

Area	Per Acre Protected Native Plant Value	Per Acre AU Value	Total Per Acre Value	Total Area Acres	Total Area Native Plant Value
No Animal Units Value Area	\$ 2,674.86	\$ 0.00	\$ 2,674.86	18.2	\$ 48,682.45
0-5 Animal Units Value	\$ 2,674.86	\$ 75.00	\$ 2,749.86	64.4	\$ 177,090.98
Totals	N/A	N/A	N/A	82.6	\$ 225,773.43^a

a: Only a portion of the Analysis Area will be disturbed. The native plant fee will be based on actual disturbance area within each AU value area, which will be determined prior to beginning the Project.

² ASLD Online Parcel Viewer available at <http://gis.azland.gov/webapps/parcel/>

Representative photographs of the vegetation inventoried in the Analysis Area are provided in **Attachment 2**. An itemized list of the inventoried native protected plants, their estimated values, and the total ASLD plant values are provided in **Attachment 3**.

5. REFERENCES CITED

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FIGURES

ATTACHMENT 1
State Land Department Policy
Memo 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 *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 sales¹ 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 PLANT	Examples include:	Size Classification	Fair Market Value	Assessment	ASLD Value
Highly Safeguarded Protected	All Plants included on this list will be independently evaluated and assessed.				thd
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
	vaupelima (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	Assessment	ASLD Value
Salvage Assessed Protected Native Plants	desert willows and smoke trees	<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
		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 Protected Native Plants	mesquite (all species) **	<3 c.i.			\$10.00
		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 Classification	Fair Market Value	Assessment	ASLD Value
Harvest Restricted Protected Native Plants	nolina species	small ++	\$12.00	25%	\$3.00
		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, grasses (not highly safeguarded)	based on AUs/Section per ASLD GIS			per acre
		commercial / ag class			\$75.00
		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

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

** mesquite is both Salvage Assessed and Harvest Restricted

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

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

++ small = 1 gallon container

++ medium = 3-5 gallon container

++ large = 10-15 gallon container

++ x-large = 24" box

ATTACHMENT 2
Representative Photographs of the Analysis Area



Photo 1.

Overview of the existing Benson Substation.



Photo 2.

Overview of the northern portion of the Project Area. Vegetation comprises primarily mesquite (*Prosopis* spp.) in shrub and tree form. The existing substation is located at center of image.



Photo 3.

Overview of the southern portion of the Project Area. A shallow, ephemeral drainage traverses the site from the northeast to southwest. The existing substation is pictured in the background.



Photo 4.

Overview of southeastern section and the existing dual-track road. The road bisects the site from north to south. Vegetation is less dense in this portion of the Project Area.

ATTACHMENT 3
Itemized List of Inventoried Native Protected Plants

Attachment C

Itemized list of protected native plants inventoried in the disturbance area of the Cactus Flower Solar Analysis Area.

Protected Native Plant Species	ASLD Size Classification	Number of Plants	ASLD Value per Plant	Total Value
Mesquite (all species)	4-6 caliper inch	9	\$100.00	\$900.00
	6-8 caliper inch	18	\$150.00	\$2,700.00
	8-10 caliper inch	12	\$225.00	\$2,700.00
	10-12 caliper inch	9	\$300.00	\$2,700.00
	12-14 caliper inch	6	\$400.00	\$2,400.00
	14-16 caliper inch	3	\$500.00	\$1,500.00
	16-18 caliper inch	2	\$625.00	\$1,250.00
ASLD Value of Native Protected Plants in sample plots (5.29 sampled acres)		59		\$14,150.00
ASLD Value of Native Protected Plants per acre				\$2,679.92
Total ASLD Value of Native Protected Plants in the Analysis Area (82.6 acres)				\$220,943.29
ASLD Animal Units (AU) Valuation				
Resources	AU Classification	Number of Acres*	Value per Acre	Total AU Value
Animal Units of Analysis Area	0-5 AU	64.4	\$75.00	\$4,830.00
Animal Units per acre	0-5 AU	1	\$75.00	\$75.00
ASLD Native Plant and Animal Units Valuation of the Analysis Area				
			Animal Units per acre	\$75.00
			Valuation of Native Protected Plants per acre	\$2,674.86
Total ASLD Valuation of the Analysis Area (82.6 acres)				\$227,138.29
ASLD Valuation of Native Protected Plants and Animal Units per acre				\$2,749.86

*Portions of the Project Area cross AU parcels assessed as "Null." These areas were removed from Project Area acreage for calculating AU valuation.

CACTUS FLOWER SOLAR GEN-TIE PROJECT APPLICATION FOR A CERTIFICATE OF ENVIRONMENTAL COMPATIBILITY

EXHIBIT C: AREAS OF BIOLOGICAL WEALTH

Per A.A.C. R14-3-219, Exhibits to Application, Exhibit C of an application for a CEC must include the following:

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

Exhibit C provides a summary of potential Project effects to special status species and habitats within the Project Area and vicinity. In this context, special status species include species listed, proposed for listing, or candidates for listing by the U.S. Fish and Wildlife Service (USFWS) as threatened or endangered under the Endangered Species Act (ESA), species listed under the Migratory Bird Treaty Act (MBTA), species listed under the Bald and Gold Eagle Protection Act (BGEPA), species identified as Birds of Conservation Concern (BCC) by the USFWS, Species of Greatest Conservation Need (SGCN) as identified by the Arizona Game and Fish Department (AZGFD), and those listed under the Arizona Native Plant Law (ANPL). The Project includes the proposed gen-tie line for the Cactus Flower Solar Project and the proposed switchyard to interconnect the solar facility to the regional grid. The Project Area refers to the gen-tie line corridor originating from the non-jurisdictional Cactus Flower Solar substation and terminating at the switchyard, as well as the Switchyard Siting Area.

Note that references to "Exhibits" refer to exhibits to the CEC application.

Supporting biological reports for the Cactus Flower Solar Project and gen-tie in this exhibit are:

- **Exhibit C-1: U.S. Fish and Wildlife Service Arizona Ecological Field Office Information for Planning and Consultation System Report, April 7, 2025**
- **Exhibit C-2: U.S. Fish and Wildlife Service Arizona Ecological Field Office Information for Planning and Consultation System Official Species List, September 30, 2025**
- **Exhibit C-3: Arizona Game and Fish Department Heritage Data Management System Environmental Review Tool Report, October 1, 2025**

1. INTRODUCTION

To identify potential unique biological wealth located within the Project Area and vicinity, field reviews were completed and database queries of both the USFWS Arizona Ecological Services Field Office Information for Planning and Consultation (IPaC) System and the AZGFD Heritage Data Management System (HDMS) Environmental Review Tool were generated and reviewed. The IPaC was queried on April 7, 2025 to obtain a resource report that includes an unofficial list of ESA, BGEPA, and BCC species (**Exhibit C-1**). An IPaC official species list that includes ESA species was obtained on September 30, 2025 that covers both the gen-tie and the Switchyard Siting Area and lists only ESA species (**Exhibits C-2**). White and grey literature along with biological studies were also reviewed. A Wetland and Other Waters of the United States Delineation Report was prepared for the solar facility in 2023, and a Biological Resources Assessment (BRA) was prepared for the solar facility in 2024 by Tetra Tech, Inc. (Tetra Tech). These reports included a previous iteration of the gen-tie which does not overlap with the current and final alignment. Because these initial environmental reports did not include the final gen-tie location, an Aquatic Resources Delineation Report and a Biological Resources Evaluation (BRE) were completed for the Project in 2025 by WestLand Engineering and Environmental Services (WestLand) and included the solar facility and final gen-tie alignment. These two reports were used to inform this Exhibit where appropriate (**Exhibits B-1 and B-2**).

2. APPLICABLE FEDERAL OR STATE LAWS AND POLICIES

Laws and policies protecting areas of biological wealth, including special status species and habitats, on lands within the Project Area are summarized in this section. No other federal, state, or local laws or policies apply to areas of biological wealth within the Project Area.

2.1. ENDANGERED SPECIES ACT

The USFWS administers the ESA of 1973, as amended. The ESA protects species listed as threatened or endangered from "take" (generally, directly, or indirectly harming or disturbing listed species and/or their habitat). Prior to being listed as threatened or endangered, a proposed listing rule is issued. When agency priorities take precedence over certain listing actions, species may also be designated as candidates, to be evaluated and potentially listed when no longer precluded by higher-priority actions. The ESA also allows for the designation of critical habitat, although, designation of critical habitat is not always required when a species is listed. 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 actions that lack a federal nexus.

2.2. MIGRATORY BIRD TREATY ACT, BALD AND GOLDEN EAGLE PROTECTION ACT, AND BIRDS OF CONSERVATION CONCERN

The USFWS Division of Migratory Birds administers the MBTA and the Bald and Golden BGEPA. The MBTA prohibits the taking, killing, possession, transportation, and importation of migratory birds, their eggs, parts, and nests, except when authorized by the USFWS. The BGEPA prohibits anyone, without a permit, from taking (including disturbing) eagles, and their parts, nests, or eggs. Additionally, the USFWS identifies birds on the BCC list, which are bird species, subspecies, and/or populations of migratory birds that, without additional conservation actions, are likely to become candidates for listing under the ESA.

2.3. SPECIES OF GREATEST CONSERVATION NEED

The AZGFD manages and conserves wildlife in Arizona. The Arizona State Wildlife Action Plan (SWAP) provides strategies and conservation actions for managing Arizona's fish, wildlife, and wildlife habitats that are in the greatest need of conservation. The current SWAP was updated in 2022 for a 10-year period as funded through a state-federal partnership and grant program. The SWAP identifies several tiers of Species of Greatest Conservation Need (SGCN) based on vulnerability criteria. Species on the SGCN list are identified for strategic conservation by AZGFD based on their conservation tier, with Tier 1 species identified as "closed season species," with no take permitted per AZGFD Commission Orders 40, 41, 42 or 43.

2.4. ARIZONA NATIVE PLANT LAW

The Project partially occurs on State Trust lands managed by the ASLD. The Arizona Department of Agriculture administers the ANPL, which requires assessment, valuation, and permitting for protected native Arizona plants that may be destroyed, harvested, or salvaged. Plants protected by the ANPL are considered unusual or rare, have high value for landscaping, or are long-lived and not easily replaced. These include plants that are assigned to the following categories: highly safeguarded, salvage restricted, export restricted, salvage assessed, and harvest restricted. Plants listed as highly safeguarded may only be taken or salvaged for scientific or conservation purposes and include those that may become jeopardized or are in danger of extinction throughout all or a significant portion of their ranges. Plants resident to the state and listed as endangered, threatened, or Category 1 in the ESA are also included. The Applicant conducted a Native Plant Inventory (NPI) per ASLD guidelines for ASLD-managed lands within the Project Area, and is coordinating with ASLD to insure the Project is compliant with the ANPL.

3. PROJECT AREA BIOLOGICAL WEALTH

3.1. ESA SPECIES

A total of six species listed or proposed under the ESA were identified in the IPaC official species list generated for this Project on September 30, 2025 (**Exhibit C-1**). The species

included: Sonoran pronghorn (*Antilocapra americana sonoriensis*), cactus ferruginous pygmy-owl (CFPO; *Glaucidium brasilianum cactorum*), southwestern willow flycatcher (SWFL; *Empidonax traillii extimus*), yellow-billed cuckoo (YBC; *Coccyzus americanus*), Gila topminnow (*Poeciliopsis occidentalis*), and monarch butterfly (*Danaus plexippus*). In the BRE, the Sonoran pronghorn was determined to have a potential to occur of "None" in the Project Area; CFPO, YBC, SWFL, and Gila topminnow were determined to have a potential to occur of "Unlikely" within the Project Area; and the monarch butterfly was determined to have a potential to occur of "Possible" within the Project Area. All species have a take determination of "Not likely to result in take", except Sonoran Pronghorn which has a take determination of "No take" (**Exhibit B-1**, Table 1).

3.2. MBTA SPECIES

There is foraging, cover, and breeding habitat for a variety of resident and migratory birds in the Project Area. In total, 11 bird species identified as either BCC or warranting special attention due to their protection under the BGEPA were listed in the USFWS IPaC resource report for the Project obtained on April 7, 2025: American avocet (*Recurvirostra americana*), bald eagle, Bendire's thrasher (*Toxostoma bendirei*), Costa's hummingbird (*Calypte costae*), Gila woodpecker (*Melanerpes uropygialis*), golden eagle, Lawrence's goldfinch (*Spinus lawrencei*), marbled godwit (*Limosa fedoa*), mountain plover (*Charadrius montanus*), western grebe (*Aechmophorus occidentalis*), and willet (*Tringa semipalmata*). Of these, potential breeding and foraging habitat occurs for Bendire's thrasher, Costa's hummingbird, and Gila woodpecker. No suitable breeding habitat occurs for the remaining species though they may occur in the Project Area irregularly during migration or as foraging individuals. Additionally, SGCN identified by AZGFD in the Project vicinity include American peregrine falcon (*Falco peregrinus anatum*), burrowing owl (*Athene cunicularia hypugaea*), and American kestrel (*Falco sparverius*; **Section 3.4**). Only marginally suitable breeding habitat occurs for American peregrine falcon and no suitable breeding habitat occurs for American kestrel. Suitable breeding habitat may occur for burrowing owl.

Project-related powerlines would be installed in conformance with Avian Powerline Interaction Committee (APLIC) standards for electrocution-reducing techniques as outlined in *Suggested Practices for Avian Protection of Power Lines: The State of Art in 2006* (APLIC 2006), and for collision-reducing techniques as outlined in *Reducing Avian Collisions with Power Lines: The State of the Art in 2012* (APLIC 2012), or any superseding document issued by APLIC. Potential impacts to nesting birds and their eggs covered under the MBTA would be avoided and/or minimized either by limiting ground clearing/vegetation removal activities to outside the breeding season (March 1 through August 31) or through conducting MBTA clearance surveys. Clearance surveys would identify active nests and buffers would be placed around active nests until the young fledge or the nest becomes inactive, or a federally permitted wildlife rehabilitator is engaged to relocate any eggs or nestlings in compliance with the MBTA. For construction outside the MBTA breeding season, a survey for burrowing owls would be conducted 30 days prior to construction. These mitigation measures are presented in **Exhibit B-1**.

3.3. BGEPA SPECIES

Bald eagle breeding is concentrated within 1.3 miles of coastal areas, and along rivers, lakes, or reservoirs, typically in forested areas with edge habitat. This species nests away from human disturbance in large trees and rarely on cliff ledges or on the ground when trees are absent. Bald eagles prefer to fish and hunt in shallow water and shorelines for waterfowl as well as small aquatic and terrestrial mammals. Fish are preferred prey, but carrion is used extensively whenever encountered. Bald eagles winter primarily in coastal areas or along major river systems with adequate prey availability and large trees for perching (Buehler 2020). The Project Area lacks suitable breeding habitat for this species, but there are citizen science records within the vicinity, therefore, bald eagles are unlikely to occur within the Project Area or vicinity.

Golden eagles breed in a wide variety of open habitats, and typically build nests on cliffs, rock outcrops, tall trees, or, rarely, transmission towers, and avoid heavily forested areas (Driscoll 2005, Katzner et al. 2020). In Arizona, this species prefers pinyon-juniper woodlands and Sonoran desertscrub habitats (Driscoll 2005). Golden eagles are known to forage within 4.4 miles of the nest (Tesky 1994), generally in open habitats where prey

is available (Katzner et al. 2020). The Project Area and vicinity lacks suitable nesting habitat. There is suitable foraging habitat of open Sonoran desert scrub, therefore, this species has some potential to forage in the Project Area.

There would be no take of either BGEPA species considering the limited footprint of the Project Area compared to the surrounding landscape, and lack of breeding habitat in the Project Area.

3.4. SGCN SPECIES

The AZGFD HDMS report identified 10 SGCN species with occurrence records within 5 miles of the Project Area (**Exhibit C-2**). All 10 of these species were included in the HDMS report generated for the BRE, and the associated potential to occur determined in the BRE (**Exhibit B-1**) is included as follows:

- American peregrine falcon, Unlikely
- Sonoran desert tortoise (*Gopherus morafka*), Unlikely
- Western burrowing owl, Possible
- antelope jackrabbit (*Lepus alleni*), Possible
- California leaf-nosed bat (*Macrotus californicus*), Possible
- regal horned lizard (*Phrynosoma solare*), Possible
- saddled leaf-nosed snake (*Phyllorhynchus browni*), Possible
- banded sandsnake (*Chilomeniscus cinctus*), Possible
- American kestrel, Present
- Bendire's thrasher (*Toxostoma bendirei*), Present

The HDMS report was regenerated on October 1, 2025 to include the Switchyard Siting Area and the gen-tie, and to check for any added species. Three additional species were identified in the HDMS report previously generated for the BRE, due to the inclusion of the Solar Array Area in the BRE Project Area.

Given the limited nature of the proposed gen-tie and switchyard, coupled with the existing transmission lines and agriculture in the area, the proposed Project is not anticipated to represent substantial risk to any of these SGCN species.

3.5. ARIZONA PROTECTED NATIVE PLANTS

A native plant inventory has been completed for the portions of the Project that occur on State Trust lands. This inventory valued the protected native plants that will be removed or destroyed during the construction of the gen-tie on State Trust lands.

3.6. HABITAT

The Project Area is mapped within the Lower Colorado subdivision of the Sonoran Desertscrub biotic community (The Nature Conservancy 2012). This vegetation community is typically dominated by creosotebush (*Larrea tridentata*) and white bursage (*Ambrosia dumosa*), while larger trees, such as ironwood (*Olneya tesota*), palo verde (*Parkinsonia* spp.), and mesquite (*Prosopis* spp.) can be found along washes and other drainages (Turner and Brown 1994). The Project Area contains widely scattered shrubs and trees, several ephemeral and possibly intermittent washes, agricultural ditches/canals, and one artificial path (Greene Canal [labeled as both an ephemeral wash and an artificial path]) (USGS 2025).¹ No proposed or designated ESA critical habitat occurs within the Project Area.

The removal of vegetation for Project activities and structures would result in the loss of potentially suitable habitat for special status species. However, the areas to be cleared are small in proportion to the surrounding landscape and therefore, the Project is expected to have a negligible effect on special status species and their habitat.

3.7. CONCLUSION

The Project is not expected to significantly affect areas of biological wealth, including special-status species and habitats, in the Project Area. The analysis conducted in the BRE determined that the Project is not likely to result in the take of the ESA-listed YBC,

¹ USGS accessed online July 30, 2025.

SWFL, CFPO, Gila topminnow, or proposed monarch butterfly. The Project is also not likely to result in the take of either BGEPA species.

Potential Project effects to birds protected under the MBTA and listed in the BCC will be minimized through the implementation of applicable protection measures to reduce impacts to birds.

Other special-status species, including SGCN and bats, are not anticipated to be substantially at risk given the limited extent of the proposed gen-tie and switchyard. The areas to be cleared are relatively small compared to the surrounding landscape and the Project is therefore expected to have a negligible effect on species and their habitat.

Therefore, the Project is expected to be environmentally compatible.

4. REFERENCES CITED

- Avian Power Line Interaction Committee. 2006. Suggested Practices for Avian Protection on Power Lines: the State of the Art in 2006. Washington, D.C. and Sacramento, California: Edison Electric Institute, APLIC, and the California Energy Commission.
- _____. 2012. Reducing Avian Collisions with Power Lines: the State of the Art in 2012. Washington, D.C.: Edison Electric Institute and Avian Power Line Interactions Committee. October 2012.
- Buehler, David A. 2020. "Bald Eagle (*Haliaeetus leucocephalus*), version 1.0." The Cornell Lab of Ornithology. <https://doi.org/10.2173/bow.baleag.01>. Ithaca, New York
- Driscoll, James T. 2005. "Golden Eagle (*Aquila chrysaetos*).". In Arizona Breeding Bird Atlas, edited by Troy E. Corman and Cathryn Wise-Gervais. Albuquerque, New Mexico: University of New Mexico. p. 150-151.
- Katzner, T. E., M. N. Kochert, K. Steenhof, C. L. McIntyre, and E. H. Craig. 2020. "Golden Eagle (*Aquila chrysaetos*), version 2.0." In Birds of the World, edited by P. G. Rodewald and B. K. Keeney. Ithaca, New York: Cornell Lab of Ornithology.
- Tesky, Julie L. 1994. *Aquila chrysaetos*. Fire Effects Information System [online]. Rocky Mountain Research Station: U.S. Department of Agriculture, U.S. Forest Service.
- The Nature Conservancy. 2012. Brown and Lowe's Biotic Communities of the Southwest. Digital version of David E. Brown and Charles H. Lowe's 1981 Map: The Nature Conservancy of Arizona. June 27, 2012.
- Turner, R. M., and D. E. Brown. 1994. "Sonoran Desertscrub (Lower Colorado River Subdivision)." In Biotic Communities: Southwestern United States and Northwestern Mexico, edited by D. E. Brown. Salt Lake City, Utah: University of Utah Press.
- U.S. Geological Survey. 2025. "National Hydrography Dataset Plus High Resolution National Map Download Viewer." <https://apps.nationalmap.gov/viewer/>.

EXHIBIT C-1

U.S. Fish and Wildlife Service Arizona Ecological
Field Office Information for Planning and
Consultation System Report, April 7, 2025

IPaC resource list

Please note that the Federal Highways Programmatic Consultation for Transportation Projects affecting NLEB or Indiana Bat Determination Key is temporarily offline for updates and will be available soon. We apologize for any inconvenience this may cause.



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

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

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

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

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

Mammals

NAME	STATUS
Sonoran Pronghorn <i>Antilocapra americana sonoriensis</i> No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/4750	EXPN

Birds

NAME	STATUS
Cactus Ferruginous Pygmy-owl <i>Glaucidium brasilianum cactorum</i> Wherever found There is final critical habitat for this species. https://ecos.fws.gov/ecp/species/1225	Threatened
Southwestern Willow Flycatcher <i>Empidonax traillii extimus</i> Wherever found There is final critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/6749	Endangered
Yellow-billed Cuckoo <i>Coccyzus americanus</i> There is final critical habitat for this species. Your location does not overlap the critical habitat. https://ecos.fws.gov/ecp/species/3911	Threatened

Fishes

NAME	STATUS
Gila Topminnow (incl. Yaqui) <i>Poeciliopsis occidentalis</i> Wherever found No critical habitat has been designated for this species. https://ecos.fws.gov/ecp/species/1116	Endangered

Insects

NAME	STATUS
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Monarch Butterfly *Danaus plexippus*

Proposed Threatened

Wherever found

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

<https://ecos.fws.gov/ecp/species/9743>

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 ² and the Migratory Bird Treaty Act (MBTA) ¹. Any person or organization who plans or conducts activities that may result in impacts to Bald or Golden Eagles, or their habitats, should follow appropriate regulations and consider implementing appropriate avoidance and minimization measures, as described in the various links on this page.

Additional information can be found using the following links:

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

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

Measures for Proactively Minimizing Eagle Impacts

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

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

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

Ensure Your Eagle List is Accurate and Complete

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

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

Review the FAQs

The FAQs below provide important additional information and resources.

NAME	BREEDING SEASON
Bald Eagle <i>Haliaeetus leucocephalus</i> This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.	Breeds Oct 15 to Aug 31
Golden Eagle <i>Aquila chrysaetos</i> This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities. https://ecos.fws.gov/ecp/species/1680	Breeds Dec 1 to Aug 31

Probability of Presence Summary

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

Probability of Presence (■)

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

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

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

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

Breeding Season (■)

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

Survey Effort (|)

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

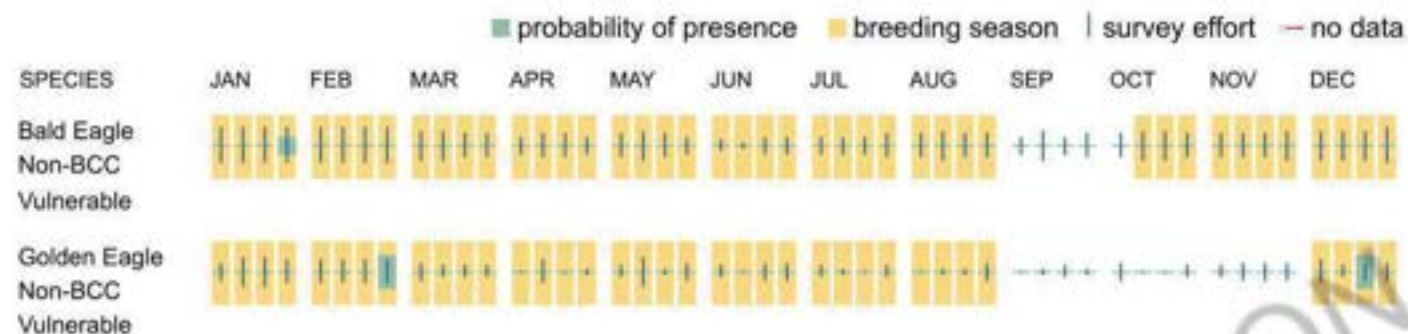
To see a bar's survey effort range, simply hover your mouse cursor over the bar.

No Data (—)

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

Survey Timeframe

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



Bald & Golden Eagles FAQs

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

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

Proper interpretation and use of your eagle report

On the graphs provided, please look carefully at the survey effort (indicated by the black vertical line) and for the existence of the "no data" indicator (a red horizontal line). A high survey effort is the key component. If the survey effort is high, then the probability of presence score can be viewed as more dependable. In contrast, a low survey effort line or no data line (red horizontal) means a lack of data and, therefore, a lack of certainty about presence of the species. This list is not perfect; it is simply a starting point for identifying what birds have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list and associated information help you know what to look for to confirm presence and helps guide you in knowing when to implement avoidance and minimization measures to eliminate or reduce potential impacts from your project activities or get the appropriate permits should presence be confirmed.

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

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

Interpreting the Probability of Presence Graphs

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

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

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

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

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

Breeding Season ()

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

Survey Effort ()

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

No Data ()

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

Survey Timeframe

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

Migratory birds

The Migratory Bird Treaty Act (MBTA) ¹ prohibits the take (including killing, capturing, selling, trading, and transport) of protected migratory bird species without prior authorization by the Department of Interior U.S. Fish and Wildlife Service (Service). The incidental take of migratory birds is the injury or death of birds that results from, but is not the purpose, of an activity. The Service interprets the MBTA to prohibit incidental take.

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

Additional information can be found using the following links:

- Eagle Management <https://www.fws.gov/program/eagle-management>

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

Measures for Proactively Minimizing Migratory Bird Impacts

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

Ensure Your Migratory Bird List is Accurate and Complete

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

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

Review the FAQs

The FAQs below provide important additional information and resources.

NAME	BREEDING SEASON
American Avocet <i>Recurvirostra americana</i> This is a Bird of Conservation Concern (BCC) only in particular Bird Conservation Regions (BCRs) in the continental USA	Breeds Apr 21 to Aug 10
Bald Eagle <i>Haliaeetus leucocephalus</i> This is not a Bird of Conservation Concern (BCC) in this area, but warrants attention because of the Eagle Act or for potential susceptibilities in offshore areas from certain types of development or activities.	Breeds Oct 15 to Aug 31

Bendire's Thrasher *Toxostoma bendirei*

Breeds Mar 15 to Jul 31

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

<https://ecos.fws.gov/ecp/species/9435>

Costa's Hummingbird *Calypte costae*

Breeds Jan 15 to Jun 10

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>

Gila Woodpecker *Melanerpes uropygialis*

Breeds Apr 1 to Aug 31

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>

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>

Lawrence's Goldfinch *Spinus lawrencei*

Breeds Mar 20 to Sep 20

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

<https://ecos.fws.gov/ecp/species/9464>

Marbled Godwit *Limosa fedoa*

Breeds elsewhere

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

<https://ecos.fws.gov/ecp/species/9481>

Mountain Plover *Charadrius montanus*

Breeds elsewhere

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

<https://ecos.fws.gov/ecp/species/3638>

Western Grebe *aechmophorus occidentalis*

Breeds Jun 1 to Aug 31

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

<https://ecos.fws.gov/ecp/species/6743>

Willet *Tringa semipalmata*

Breeds elsewhere

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

Probability of Presence Summary

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

Probability of Presence (■)

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

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

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

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

Breeding Season (■)

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

Survey Effort (I)

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.

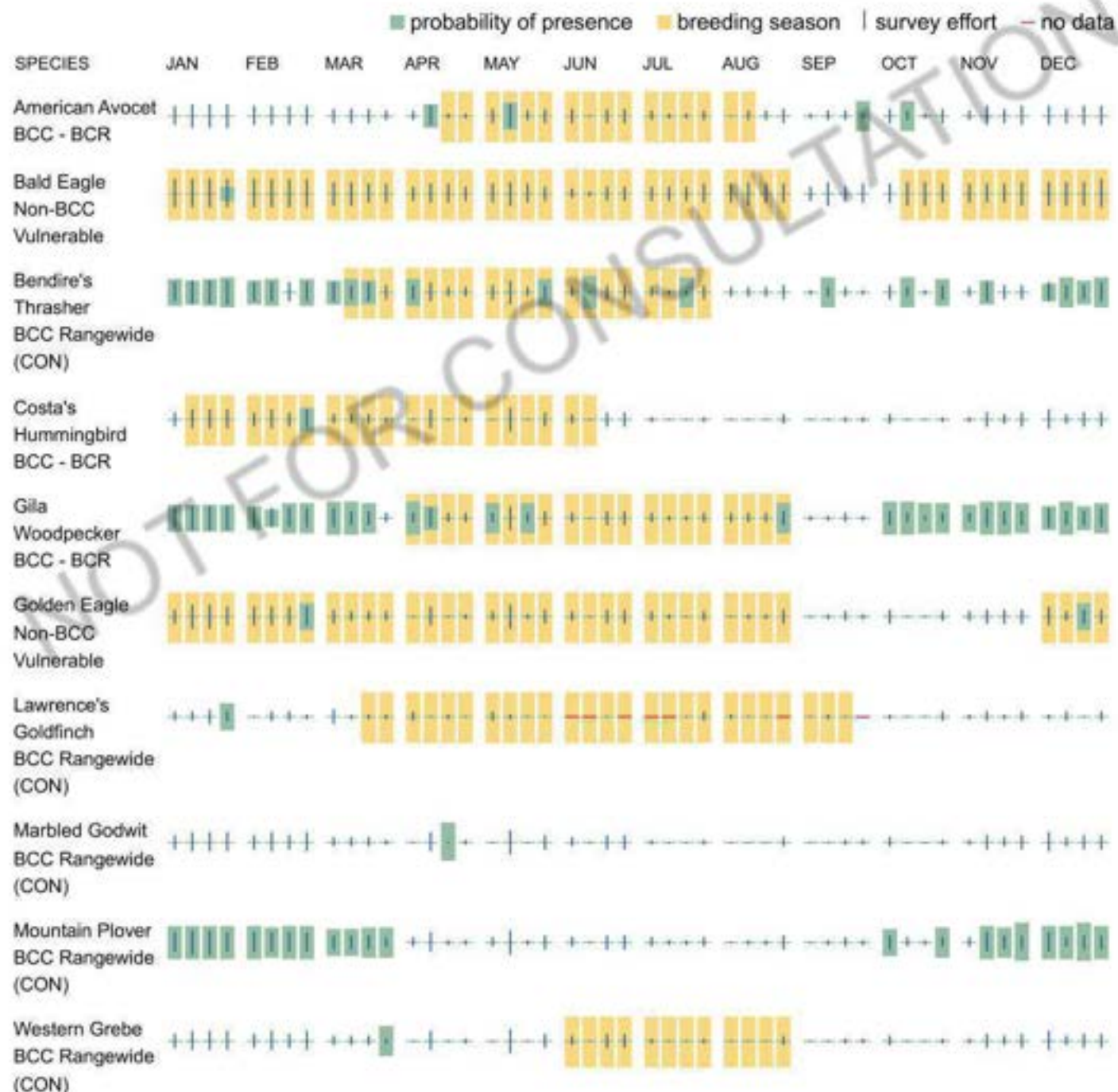
To see a bar's survey effort range, simply hover your mouse cursor over the bar.

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.



Willet
BCC Rangewide
(CON)



Migratory Bird FAQs

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

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

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

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

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

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

Why are subspecies showing up on my list?

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

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

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

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

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

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

What are the levels of concern for migratory birds?

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

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

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

Details about birds that are potentially affected by offshore projects

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

Proper interpretation and use of your migratory bird report

The migratory bird list generated is not a list of all birds in your project area, only a subset of birds of priority concern. To learn more about how your list is generated and see options for identifying what other birds may be in your project area, please see the FAQ "What does IPaC use to generate the migratory birds potentially occurring in my specified location". Please be aware this report provides the "probability of presence" of birds within the 10 km grid cell(s) that overlap your project; not your exact project footprint. On the graphs provided, please look carefully at the survey effort (indicated by the black vertical line) and for the existence of the "no data" indicator (a red horizontal line). A high survey effort is the key component. If the survey effort is high, then

the probability of presence score can be viewed as more dependable. In contrast, a low survey effort bar or no data bar means a lack of data and, therefore, a lack of certainty about presence of the species. This list does not represent all birds present in your project area. It is simply a starting point for identifying what birds of concern have the potential to be in your project area, when they might be there, and if they might be breeding (which means nests might be present). The list and associated information help you know what to look for to confirm presence and helps guide implementation of avoidance and minimization measures to eliminate or reduce potential impacts from your project activities, should presence be confirmed. To learn more about avoidance and minimization measures, visit the FAQ "Tell me about avoidance and minimization measures I can implement to avoid or minimize impacts to migratory birds".

Interpreting the Probability of Presence Graphs

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

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

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

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

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

Breeding Season ()

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

Survey Effort ()

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

No Data ()

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

Survey Timeframe

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

Facilities

National Wildlife Refuge lands

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

There are no refuge lands at this location.

Fish hatcheries

There are no fish hatcheries at this location.

Wetlands in the National Wetlands Inventory (NWI)

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

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

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](#)

[R5UBFx](#)

[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.

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

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

Data exclusions

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

Data precautions

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

EXHIBIT C-2
U.S. Fish and Wildlife Service Arizona Ecological
Field Office Information for Planning and
Consultation System Official Species List,
September 30, 2025



United States Department of the Interior



FISH AND WILDLIFE SERVICE
Arizona Ecological Services Field Office
9828 North 31st Ave
#c3
Phoenix, AZ 85051-2517
Phone: (602) 242-0210 Fax: (602) 242-2513

In Reply Refer To:

09/30/2025 23:37:16 UTC

Project Code: 2025-0157249

Project Name: Cactus Flower Solar Project

Subject: List of threatened and endangered species that may occur in your proposed project location or may be affected by your proposed project

To Whom It May Concern:

The Fish and Wildlife Service (Service) is providing this list under section 7(c) of the Endangered Species Act (Act) of 1973, as amended (16 U.S.C. 1531 *et seq.*). The list you have generated identifies threatened, endangered, proposed, and candidate species, and designated and proposed critical habitat, that *may* occur within the One-Range that has been delineated for the species (candidate, proposed, or listed) and its critical habitat (designated or proposed) with which your project polygon intersects. These range delineations are based on biological metrics, and do not necessarily represent exactly where the species is located. Please refer to the species information found on ECOS to determine if suitable habitat for the species on your list occurs in your project area.

The purpose of the Act is to provide a means whereby threatened and endangered species and the habitats upon which they depend may be conserved. Under sections 7(a)(1) and 7(a)(2) of the Act and its implementing regulations (50 CFR 402 *et seq.*), Federal agencies are required to utilize their authorities to carry out programs for the conservation of Federal trust resources and to determine whether projects may affect federally listed species and/or designated critical habitat. A Biological Assessment is required for construction projects (or other undertakings having similar physical impacts) that are major Federal actions significantly affecting the quality of the human environment as defined in the National Environmental Policy Act (42 U.S.C. 4332(2)(c)). For projects other than major construction activities, the Service suggests that a biological evaluation similar to a Biological Assessment be prepared to determine whether the project may affect listed or proposed species and/or designated or proposed critical habitat. Recommended contents of a Biological Assessment are described at 50 CFR 402.12.

If the Federal action agency determines that listed species or critical habitat *may be affected* by a federally funded, permitted or authorized activity, the agency must consult with us pursuant to 50 CFR 402. Note that a "may affect" determination includes effects that may not be adverse and that may be beneficial, insignificant, or discountable. An effect exists even if only one individual

or habitat segment may be affected. The effects analysis should include the entire action area, which often extends well outside the project boundary or "footprint." For example, projects that involve streams and river systems should consider downstream affects. If the Federal action agency determines that the action may jeopardize a *proposed* species or may adversely modify *proposed* critical habitat, the agency must enter into a section 7 conference. The agency may choose to confer with us on an action that may affect proposed species or critical habitat.

Candidate species are those for which there is sufficient information to support a proposal for listing. Although candidate species have no legal protection under the Act, we recommend that they be considered in the planning process in the event they become proposed or listed prior to project completion. More information on the regulations (50 CFR 402) and procedures for section 7 consultation, including the role of permit or license applicants, can be found in our Endangered Species Consultation Handbook at: <https://www.fws.gov/sites/default/files/documents/endangered-species-consultation-handbook.pdf>.

We also advise you to consider species protected under the Migratory Bird Treaty Act (MBTA) (16 U.S.C. 703-712) and the Bald and Golden Eagle Protection Act (Eagle Act) (16 U.S.C. 668 *et seq.*). The MBTA prohibits the taking, killing, possession, transportation, and importation of migratory birds, their eggs, parts, and nests, except when authorized by the Service. The Eagle Act prohibits anyone, without a permit, from taking (including disturbing) eagles, and their parts, nests, or eggs. Currently 1,026 species of birds are protected by the MBTA, including the western burrowing owl (*Athene cunicularia hypugaea*). Protected western burrowing owls can be found in urban areas and may use their nest/burrows year-round; destruction of the burrow may result in the unpermitted take of the owl or their eggs.

If a bald eagle or golden eagle nest occurs in or near the proposed project area, our office should be contacted for Technical Assistance. An evaluation must be performed to determine whether the project is likely to disturb or harm eagles. The National Bald Eagle Management Guidelines provide recommendations to minimize potential project impacts to bald eagles (see <https://www.fws.gov/law/bald-and-golden-eagle-protection-act> and <https://www.fws.gov/program/eagle-management>).

The Division of Migratory Birds (505/248-7882) administers and issues permits under the MBTA and Eagle Act, while our office can provide guidance and Technical Assistance. For more information regarding the MBTA, BGEPA, and permitting processes, please visit the following web site: <https://www.fws.gov/program/migratory-bird-permit>. Guidance for minimizing impacts to migratory birds for communication tower projects (e.g. cellular, digital television, radio, and emergency broadcast) can be found at <https://www.fws.gov/media/recommended-best-practices-communication-tower-design-siting-construction-operation>.

The U.S. Army Corps of Engineers (Corps) may regulate activities that involve streams (including some intermittent streams) and/or wetlands. We recommend that you contact the Corps to determine their interest in proposed projects in these areas. For activities within a National Wildlife Refuge, we recommend that you contact refuge staff for specific information about refuge resources, please visit [this link](#) or visit <https://www.fws.gov/program/national->

[wildlife-refuge-system](#) to locate the refuge you would be working in or around.

If your action is on tribal land or has implications for off-reservation tribal interests, we encourage you to contact the tribe(s) and the Bureau of Indian Affairs (BIA) to discuss potential tribal concerns, and to invite any affected tribe and the BIA to participate in the section 7 consultation. In keeping with our tribal trust responsibility, we will notify tribes that may be affected by proposed actions when section 7 consultation is initiated. For more information, please contact our Tribal Coordinator, John Nystedt, at 928/556-2160 or John.Nystedt@fws.gov.

We also recommend you seek additional information and coordinate your project with the Arizona Game and Fish Department. Information on known species detections, special status species, and Arizona species of greatest conservation need, such as the western burrowing owl and the Sonoran desert tortoise (*Gopherus morafkai*) can be found by using their Online Environmental Review Tool, administered through the Heritage Data Management System and Project Evaluation Program (<https://www.azgfd.com/wildlife-conservation/planning-for-wildlife/project-evaluation-program/>).

We appreciate your concern for threatened and endangered species. Please include the Consultation Code in the header of this letter with any request for consultation or correspondence about your project that you submit to our office. If we may be of further assistance, please contact our Flagstaff office at 928/556-2118 for projects in northern Arizona, our general Phoenix number 602/242-0210 for central Arizona, or 520/670-6144 for projects in southern Arizona.

Sincerely,
/s/

Heather Whitlaw
Field Supervisor
Attachment

Attachment(s):

- Official Species List

OFFICIAL SPECIES LIST

This list is provided pursuant to Section 7 of the Endangered Species Act, and fulfills the requirement for Federal agencies to "request of the Secretary of the Interior information whether any species which is listed or proposed to be listed may be present in the area of a proposed action".

This species list is provided by:

Arizona Ecological Services Field Office

9828 North 31st Ave

#c3

Phoenix, AZ 85051-2517

(602) 242-0210

PROJECT SUMMARY

Project Code: 2025-0157249
Project Name: Cactus Flower Solar Project
Project Type: Power Gen - Solar
Project Description: New solar project
Project Location:

The approximate location of the project can be viewed in Google Maps: <https://www.google.com/maps/@32.5820871,-111.61153605981391,14z>



Counties: Pinal County, Arizona

ENDANGERED SPECIES ACT SPECIES

There is a total of 6 threatened, endangered, or candidate species on this species list.

Species on this list should be considered in an effects analysis for your project and could include species that exist in another geographic area. For example, certain fish may appear on the species list because a project could affect downstream species.

IPaC does not display listed species or critical habitats under the sole jurisdiction of NOAA Fisheries¹, as USFWS does not have the authority to speak on behalf of NOAA and the Department of Commerce.

See the "Critical habitats" section below for those critical habitats that lie wholly or partially within your project area under this office's jurisdiction. Please contact the designated FWS office if you have questions.

-
1. [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.

MAMMALS

NAME	STATUS
Sonoran Pronghorn <i>Antilocapra americana sonoriensis</i> Population: U.S.A. (AZ), Mexico No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/4750	Experimental Population, Non-Essential

BIRDS

NAME	STATUS
Cactus Ferruginous Pygmy-owl <i>Glaucidium brasilianum cactorum</i> There is final critical habitat for this species. Species profile: https://ecos.fws.gov/ecp/species/1225	Threatened
Southwestern Willow Flycatcher <i>Empidonax traillii extimus</i> There is final critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/6749	Endangered
Yellow-billed Cuckoo <i>Coccyzus americanus</i> Population: Western U.S. DPS There is final critical habitat for this species. Your location does not overlap the critical habitat. Species profile: https://ecos.fws.gov/ecp/species/3911	Threatened

FISHES

NAME	STATUS
Gila Topminnow (incl. Yaqui) <i>Poeciliopsis occidentalis</i> No critical habitat has been designated for this species. Species profile: https://ecos.fws.gov/ecp/species/1116	Endangered

INSECTS

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

CRITICAL HABITATS

THERE ARE NO CRITICAL HABITATS WITHIN YOUR PROJECT AREA UNDER THIS OFFICE'S JURISDICTION.

YOU ARE STILL REQUIRED TO DETERMINE IF YOUR PROJECT(S) MAY HAVE EFFECTS ON ALL ABOVE LISTED SPECIES.

IPAC USER CONTACT INFORMATION

Agency: Private Entity
Name: Tess Wagner
Address: 4001 E Paradise Falls Dr
City: Tucson
State: AZ
Zip: 85712
Email: twagner@westlandresources.com
Phone: 5207833634

EXHIBIT C-3
Arizona Game and Fish Department Heritage Data
Management System Environmental Review Tool
Report, October 1, 2025

Arizona Environmental Online Review Tool Report



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

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

Project Name:

Cactus Flower Solar Project

Project Type:

Energy Production/Storage/Transfer, Energy Production (generation), photovoltaic solar facility (new/expansion)

Project ID:

HGIS-26394

User Project Number:

12856

Project Description:

New solar generation facility and gen-tie.

Contact Person:

Tess Wagner

Organization:

Westland Resources

On Behalf Of:

CONSULTING

Disclaimer:

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

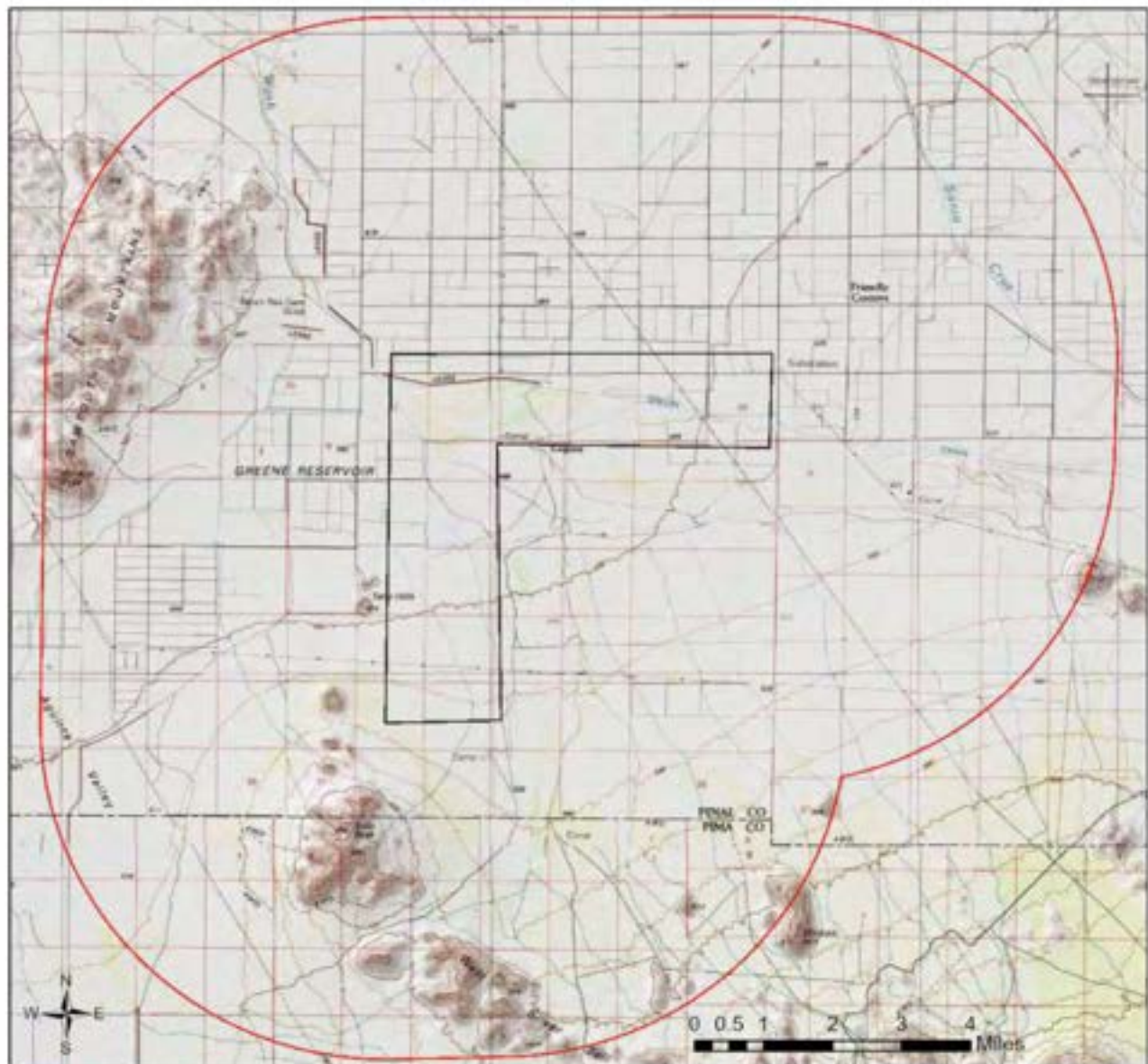
Locations Accuracy Disclaimer:

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

Recommendations Disclaimer:

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

Cactus Flower Solar Project USA Topo Basemap With Locator Map



-  Buffered Project Boundary
-  Project Boundary

Project Size (acres): 9,087.96

Lat/Long (DD): 32.5962 / -111.6177

County(s): Pinal

AGFD Region(s): Tucson

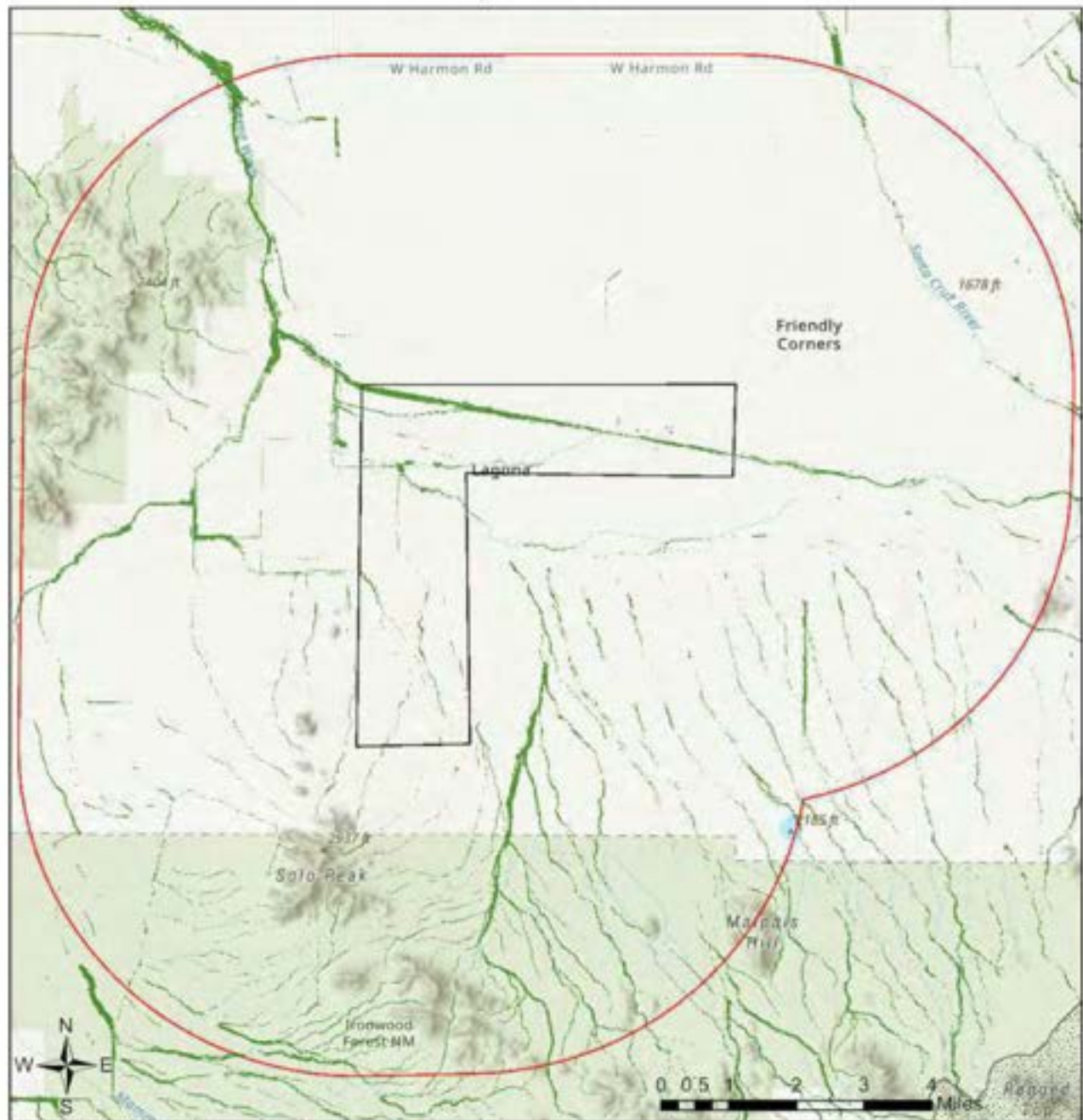
Township/Range(s): T10S, R7E; T9S, R7E

USGS Quad(s): FRIENDLY CORNERS; GREENE RESERVOIR

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



Cactus Flower Solar Project Important Areas



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

Project Size (acres): 9,087.96

Lat/Long (DD): 32.5962 / -111.6177

County(s): Pinal

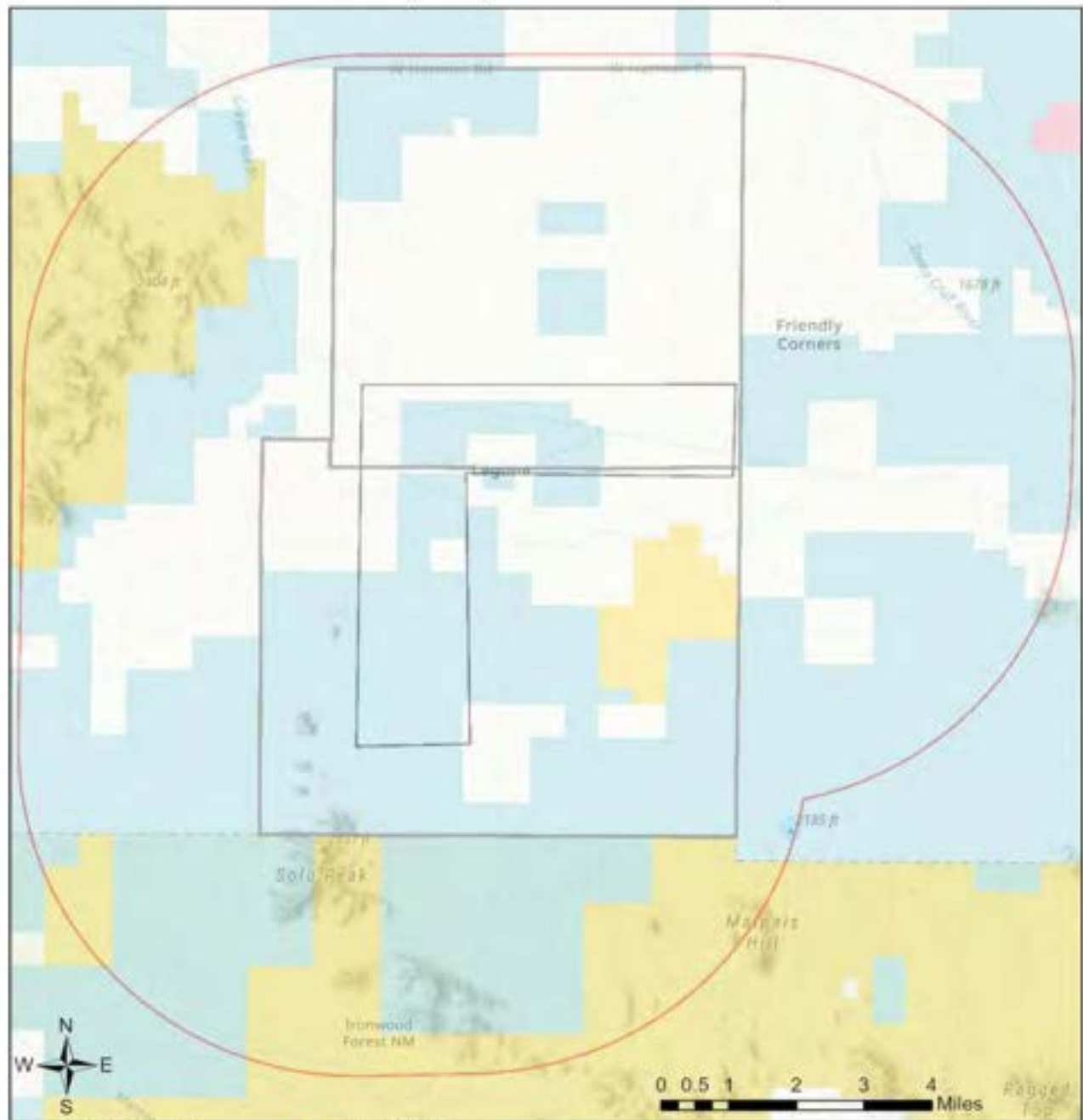
AGFD Region(s): Tucson

Township/Range(s): T10S, R7E; T9S, R7E

USGS Quad(s): FRIENDLY CORNERS; GREENE RESERVOIR

Ext NASA, NOAA, USGS
CONRAD, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc., METI/NASA, USGS,
Bureau of Land Management, EPA, RPS, USGS, USFWS

Cactus Flower Solar Project Township/Ranges and Land Ownership



 Buffered Project Boundary	 Mixed/Other	Project Size (acres): 9,087.96
 Project Boundary	 National Park/Mon.	Lat/Long (DD): 32.5962 / -111.6177
 AZ Game & Fish Dept.	 Private	County(s): Pinal
 BLM	 State & Regional Parks	AGFD Region(s): Tucson
 BOR	 State Trust	Township/Range(s): T10S, R7E; T9S, R7E
 Indian Res.	 US Forest Service	USGS Quad(s): FRIENDLY CORNERS; GREENE RESERVOIR
 Military	 Wildlife Area/Refuge	Ext NASA, NOAA, USGS CONRAD, Esri, TomTom, Garmin, SafeGraph, GeoTechnologies, Inc., METI/NASA, USGS, Bureau of Land Management, EPA, RPS, USGA, USFWS
 Township/Ranges		

Special Status Species Documented within 5 Miles of Project Vicinity

Scientific Name	Common Name	FWS	USFS	BLM	NPL	SGCN
Athene cunicularia hypugaea	Western Burrowing Owl		S	S		2
Bat Colony						
Chilomeniscus cinctus	Banded Sandsnake					2
Falco peregrinus anatum	American Peregrine Falcon		S	S		1
Falco sparverius	American Kestrel					2
Gopherus morafkai	Sonoran Desert Tortoise	CCA	S	S		1
Lepus alleni	Antelope Jackrabbit					2
Macrotus californicus	California Leaf-nosed Bat			S		2
Phrynosoma solare	Regal Horned Lizard					2
Phyllorhynchus browni	Saddled Leaf-nosed Snake					2
Toxostoma bendirei	Bendire's Thrasher					2

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

Special Areas Documented that Intersect with Project Footprint as Drawn

Scientific Name	Common Name	FWS	USFS	BLM	NPL	SGCN
Greene Wash and Reservoir	Pinal County Wildlife Movement Area - Riparian/Wash					
Ironwood National Monument	Conservation Opportunity Area					
Riparian Area	Riparian Area					

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

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

Scientific Name	Common Name	FWS	USFS	BLM	NPL	SGCN
Ammospermophilus harrisi	Harris' Antelope Squirrel					2
Anaxyrus retiformis	Sonoran Green Toad			S		2
Anthus spragueii	Sprague's Pipit					2
Aquila chrysaetos	Golden Eagle	BGA		S		2
Artemisiospiza nevadensis	Sagebrush Sparrow					3
Asio otus	Long-eared Owl					2
Athene cunicularia hypugaea	Western Burrowing Owl		S	S		2
Auriparus flaviceps	Verdin					2
Buteo regalis	Ferruginous Hawk			S		2
Buteo swainsoni	Swainson's Hawk					2
Calcarius ornatus	Chestnut-collared Longspur					2
Calypte costae	Costa's Hummingbird					2
Campylorhynchus brunneicapillus	Cactus Wren					2

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

Scientific Name	Common Name	FWS	USFS	BLM	NPL	SGCN
Catharus ustulatus	Swainson's Thrush					2
Chaetodipus baileyi	Bailey's Pocket Mouse					2
Charadrius montanus	Mountain Plover					2
Chilomeniscus cinctus	Variable Sandsnake					2
Coccyzus americanus	Yellow-billed Cuckoo (Western DPS)	LT	S	S		1
Colaptes chrysoides	Gilded Flicker			S		2
Coluber bilineatus	Sonoran Whipsnake					2
Columbina inca	Inca Dove					2
Corynorhinus townsendii pallescens	Pale Townsend's Big-eared Bat		S	S		1
Crotalus tigris	Tiger Rattlesnake					2
Crotaphytus nebrius	Sonoran Collared Lizard					2
Cynanthus latirostris	Broad-billed Hummingbird		S			2
Empidonax wrightii	Gray Flycatcher					2
Eumops perotis californicus	Greater Western Bonneted Bat			S		2
Falco mexicanus	Prairie Falcon					2
Falco peregrinus anatum	American Peregrine Falcon		S	S		1
Falco sparverius	American Kestrel					2
Gastrophryne mazatlanensis	Sinoloan Narrow-mouthed Toad			S		2
Gopherus morafkai	Sonoran Desert Tortoise	CCA	S	S		1
Icterus bullockii	Bullock's Oriole					2
Icterus cucullatus	Hooded Oriole					2
Incilius alvarius	Sonoran Desert Toad					2
Lanius ludovicianus	Loggerhead Shrike					2
Lasiurus cinereus	Hoary Bat					2
Lasiurus frantzii	Desert Red Bat		S			2
Lasiurus xanthinus	Western Yellow Bat		S			2
Leptonycteris yerbabuenae	Lesser Long-nosed Bat			S		1
Lepus alleni	Antelope Jackrabbit					2
Macrotus californicus	California Leaf-nosed Bat			S		2
Megascops kennicottii	Western Screech-owl					2
Melanerpes uropygialis	Gila Woodpecker					2
Melospiza lincolni	Lincoln's Sparrow					2
Melospiza aberti	Abert's Towhee		S			2
Micrathene whitneyi	Elf Owl					3
Micruroides euryxanthus	Sonoran Coralsnake					2
Myotis velifer	Cave Myotis			S		2
Myotis yumanensis	Yuma Myotis					2
Neotamias cinereicollis	Gray-collared Chipmunk					2
Nyctinomops femorosaccus	Pocketed Free-tailed Bat					2

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

Scientific Name	Common Name	FWS	USFS	BLM	NPL	SGCN
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
Poocetes gramineus	Vesper Sparrow					2
Progne subis hesperia	Desert Purple Martin			S		2
Rana yavapaiensis	Lowland Leopard Frog		S	S		1
Spizella breweri	Brewer's Sparrow					2
Tadarida brasiliensis	Brazilian Free-tailed Bat					2
Toxostoma bendirei	Bendire's Thrasher					2

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 Production/Storage/Transfer, Energy Production (generation), photovoltaic solar facility (new/expansion)

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 it is important to identify and conserve upland 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 species. Guidelines for many of these can be found at:

<https://www.azgfd.com/wildlife-conservation/planning-for-wildlife/planning-for-wildlife-wildlife-friendly-guidelines/>

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. 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. The AZGFD recommends using only the minimum amount of light needed for safety, especially in areas immediately adjacent to open space or undeveloped lands. The AZGFD encourages the use of motion sensing lighting and narrow spectrum lighting (amber or warm tones typically 2700 Kelvin or lower) wherever possible to lower the range of species affected by lighting. Also, please consider shielding, canting, or cutting all lighting, where possible, to ensure that light reaches only areas needing illumination and to minimize impacts to nocturnal wildlife.

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

Evaluate potential impacts to wildlife and fish species due to changes in access to water, water quality, quantity, chemistry, temperature, and alteration to flow regimes (timing, magnitude, duration, and frequency of floods). Minimize impacts to springs, in-stream flow, and consider irrigation improvements to decrease water use. If dredging is a project component, consider timing the project to minimize impacts to spawning fish and other aquatic species. Wash, drain, and dry equipment to reduce the spread of exotic invasive species. AZGFD recommends early coordination with the Project Evaluation Program (PEP@azgfd.gov) for projects that could impact water resources, wetlands, streams, springs, and/or riparian habitats.

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

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

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

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

Project Location and/or Species Recommendations:

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

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

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

This review has identified **riparian areas** within the vicinity of your project. During the planning stage of your project, avoid, minimize, or mitigate any potential impacts to riparian areas identified in this report. Riparian areas play an important role in maintaining the functional integrity of the landscape, primarily by acting as natural drainages that convey water through an area, thereby reducing flood events. In addition, riparian areas provide important movement corridors and habitat for fish and wildlife. Riparian areas are channels that contain water year-round or at least part of the year. Riparian areas also include those channels which are dry most of the year, but may contain or convey water following rain events. All types of riparian areas offer vital habitats, resources, and movement corridors for wildlife. The Pinal County Comprehensive Plan (i.e. policies 6.1.2.1 and 7.1.2.4), Open Space and Trails Master Plan, Drainage Ordinance, and Drainage Design Manual all identify riparian area considerations, guidance, and policies. Guidelines to avoid, minimize, or mitigate impacts to riparian habitat can be found

at <https://www.azgfd.com/wildlife-conservation/planning-for-wildlife/planning-for-wildlife-wildlife-friendly-guidelines/>.

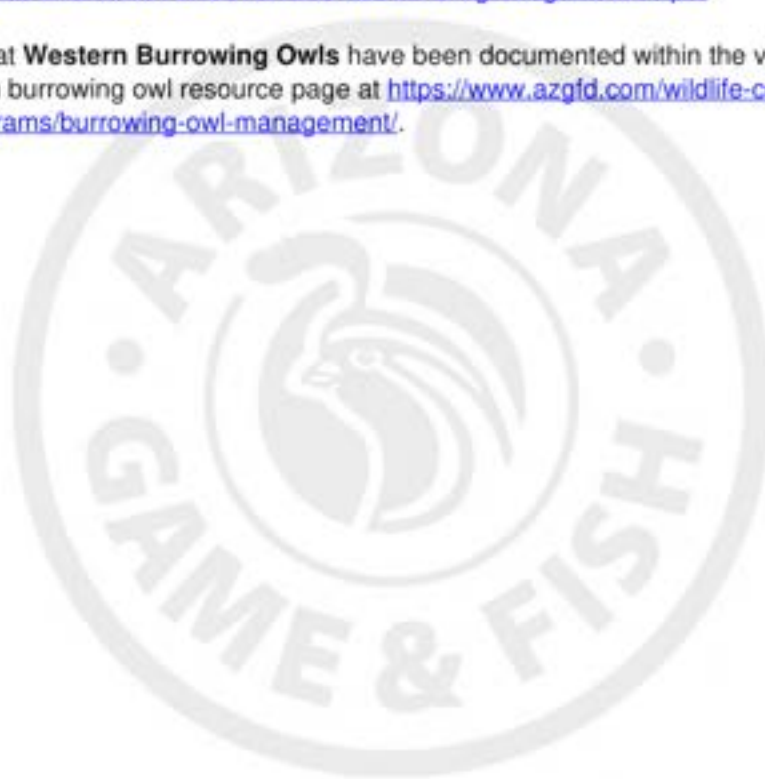
Further consultation with the Arizona Game and Fish Department and Pinal County may be warranted.

HDMS records indicate that **Sonoran Desert Tortoise** have been documented within the vicinity of your project area.

Please review the Tortoise Handling Guidelines found at <https://s3.amazonaws.com/azgfd-portal-wordpress/PortalImages/files/wildlife/2014%20Tortoise%20handling%20guidelines.pdf>.

HDMS records indicate that **Western Burrowing Owls** have been documented within the vicinity of your project area.

Please review the western burrowing owl resource page at <https://www.azgfd.com/wildlife-conservation/conservation-and-endangered-species-programs/burrowing-owl-management/>.



CACTUS FLOWER SOLAR GEN-TIE PROJECT APPLICATION FOR A CERTIFICATE OF ENVIRONMENTAL COMPATIBILITY

EXHIBIT D: BIOLOGICAL RESOURCES

Per A.A.C. R14-3-219, Exhibits to Application, Exhibit D of an application for a CEC must include the following:

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.

Exhibit D provides a summary of potential Project effects to biological resources within and in the vicinity of the Project Area. The Project includes the proposed gen-tie line for the Cactus Flower Solar Project and the proposed switchyard to interconnect the solar facility to the regional grid. The Project Area refers to the gen-tie line corridor originating from the non-jurisdictional Cactus Flower Solar substation and terminating at the switchyard, as well as the Switchyard Siting Area.

Note that references to "Exhibits" refer to exhibits to the CEC application.

1. INTRODUCTION

To record or identify biological resources with the potential to occur within the Project Area and vicinity, a field review was completed in 2025. Database queries of both the USFWS Arizona Ecological Services Field Office IPaC System and the AZGFD Heritage HDMS Environmental Review Tool were also generated and reviewed for the Project to determine the potential occurrence or presence of habitat for special status species. IPaC was queried on April 7, 2025 to obtain a resource report that includes an unofficial list of ESA species, BGEPA species, and BCC (**Exhibit C-1**). An IPaC official species list was obtained on

September 30, 2025 that covers both the gen-tie and the Switchyard Siting Area and lists only ESA species (**Exhibits C-2**). The HDMS report provided occurrence records of special status species within 5 miles of the Project Area, including those protected under the ESA, MBTA, and BGEPA, as well as species identified as BCC, SGCN, and those listed under the ANPL (**Exhibit C-3**). Additionally, white and grey literature and biological studies conducted within the Project Area were reviewed. An Aquatic Resources Delineation Report and a BRE were completed for the Project in 2025 by WestLand Engineering and Environmental Services (WestLand). Both reports evaluated resources within the Cactus Flower Solar Project area and as well as the gen-tie alignment. These two reports were used to inform this Exhibit where appropriate (**Exhibits B-1 and B-2**).

2. FISH

Surface water features within the Project Area consist of ephemeral, intermittent, and/or artificial drainages that do not support fish species; no fish species occur within the Project Area.

3. WILDLIFE

A summary of the wildlife observed within the Project Area is provided in this section. Additional discussion of special status wildlife species with the potential to occur within the Project Area is provided in **Exhibit C**. **Tables D-1 through D-4** include a list of species recorded within the Project vicinity. CCR provided records of species observed in 2024, and species observed in 2025 were observed by WestLand as detailed in **Exhibit B-1**.

3.1. AMPHIBIANS AND REPTILES

The AZGFD has records for reptiles including banded sandsnake (*Chilomeniscus cinctus*), Sonoran desert tortoise (*Gopherus morafkai*), regal horned lizard (*Phrynosoma solare*), and saddled leaf-nosed snake (*Phyllorhynchus browni*) within 5 miles of the Project Area (**Exhibit C-3**). There is no suitable aquatic habitat within the Project Area for amphibian species, though Great Plains toad (*Bufo cognatus*) was observed in the vicinity of the Project Area in 2024 (**Table D-1**). Suitable habitat for reptiles occurs within the

Project Area. (see **Exhibit C** for discussion of habitat). No ESA covered herptiles were identified in the USFWS IPaC reports (**Exhibit C-1 and C-2**).

Non-special-status (as defined in **Exhibit C**) reptiles and amphibians observed in the vicinity of the Project Area during the biological surveys are listed in **Table D-1**.

Table D-1. Amphibian and Reptile Species Observed in the Vicinity of the Project Area during Biological Surveys

Species Name	Common Name	Year Observed
<i>Uta stansburiana</i>	Common side-blotched lizard	2024
<i>Bufo cognatus</i>	Great plains toad	2024
<i>Aspidoscelis</i> spp.	Whiptail lizard	2024

3.2. BIRDS

There are HDMS records for birds including western burrowing owl (*Athene cunicularia hypugaea*), cactus wren (*Campylorhynchus brunneicapillus*), American peregrine falcon (*Falco peregrinus anatum*), American kestrel (*Falco sparverius*), and Bendire's thrasher (*Toxostoma bendirei*) within 5 miles of the Project Area (**Exhibit C-3**). Three ESA-listed bird species were identified by the IPaC report for the Project Area, including cactus ferruginous pygmy owl (*Glaucidium brasilianum cactorum*), southwestern willow flycatcher (*Empidonax traillii extimus*), and yellow-billed cuckoo (*Coccyzus americanus*; **Exhibit C-1**), however, these species are not anticipated to be affected by the Project (see **Exhibit C** for detailed discussion).

Non-special-status avian species (as defined in **Exhibit C**) were observed in the vicinity of the Project Area during the biological surveys are listed in **Table D-2**.

Table D-2. Bird Species Observed in the Vicinity of the Project Area during Biological Surveys

Species Name	Common Name	Year Observed
<i>Falco sparverius</i>	American kestrel	2025
<i>Hirundo rustica</i>	Barn swallow	2024
<i>Toxostoma bendirei</i>	Bendire's thrasher	2024, 2025
<i>Poliophtila melanura</i>	Black-tailed gnatcatcher	2024
<i>Spizella breweri</i>	Brewer's sparrow	2025
<i>Corvus corax</i>	Common raven	2024, 2025

Species Name	Common Name	Year Observed
<i>Caracara plancus</i>	Crested caracara	2025
<i>Toxostoma crissale</i>	Crissal thrasher	2025
<i>Callipepla gambelii</i>	Gambel's quail	2024, 2025
<i>Melanerpes uropygialis</i>	Gila woodpecker	2025
<i>Colaptes chrysoides</i>	Gilded flicker	2025
<i>Ardea herodias</i>	Great blue heron	2024
<i>Quiscalus mexicanus</i>	Great-tailed grackle	2025
<i>Geococcyx californianus</i>	Greater roadrunner	2024, 2025
<i>Eremophila alpestris</i>	Horned lark	2025
<i>Dryobates scalaris</i>	Ladder-backed woodpecker	2025
<i>Lanius ludovicianus</i>	Loggerhead shrike	2025
<i>Zenaida macroura</i>	Mourning dove	2024, 2025
<i>Circus hudsonius</i>	Northern harrier	2025
<i>Pandion haliaetus</i>	Osprey	2024
<i>Falco mexicanus</i>	Prairie falcon	2024
<i>Charadrius vociferus</i>	Killdeer	2025
<i>Buteo jamaicensis</i>	Red-tailed hawk	2024, 2025
<i>Agelaius phoeniceus</i>	Red-winged blackbird	2025
<i>Cathartes aura</i>	Turkey vulture	2024, 2025
<i>Pyrocephalus obscurus</i>	Vermillion flycatcher	2025
<i>Athene cunicularia hypugaea</i>	Western burrowing owl	2024
<i>Sturnella neglecta</i>	Western meadowlark	2025

3.1. MAMMALS

There are HDMS records for mammals including a bat colony, antelope jackrabbit (*Lepus alleni*), and California leaf-nosed bat (*Macrotus californicus*) within 5 miles of the Project Area (**Exhibit C-3**). One ESA-listed mammal species was identified by the IPaC report for the Project Area, Sonoran pronghorn (*Antilocapra americana sonoriensis*; **Exhibit C-1**); however, this species is not anticipated to be affected by the Project (see **Exhibit C** for detailed discussion).

Non-special-status (as defined in **Exhibit C**) mammals observed in the vicinity of the Project Area during the biological surveys are listed in **Table D-3**.

Table D-3. Mammal Species Observed in the Vicinity of the Project Area during Biological Surveys

Species Name	Common Name	Year Observed
<i>Sylvilagus audubonii</i>	Desert cottontail	2024, 2025
<i>Odocoileus hemionus</i>	Mule deer	2024
<i>Spermophilus tereticaudus</i>	Round-tailed ground squirrel	2024, 2025

4. PLANT LIFE

There are no AZGFD HDMS records within 5 miles of the Project Area and the USFWS IPaC did not identify any special-status plant species within the Project Area (**Exhibit C-1 and C-2**).

Plant species observed in the Project Area vicinity that are protected under the Arizona Native Plant Law include cholla (*Cylindropuntia* sp., Salvage Restricted), fishhook barrel cactus (*Ferocactus wislizeni*, Salvage Restricted), saguaro (*Carnegiea gigantea*, Salvage Restricted), blue palo verde (*Parkinsonia florida*, Salvage Assessed), foothill palo verde (*P. microphylla*, Salvage Assessed), and velvet mesquite (*Prosopis velutina*, Salvage Assessed/Harvest Restricted). These and non-special-status (as defined in **Exhibit C**) plants observed in the vicinity of the Project Area during the biological surveys are listed in **Table D-4**.

Table D-4. Plant Species Observed in the Project Area or Vicinity during Biological Surveys

Species Name	Common Name	Status	Year Observed
<i>Medicago sativa</i>	Alfalfa	Nonnative	2024, 2025
<i>Kallstroemia grandiflora</i>	Arizona Poppy	Native	2024
<i>Helianthus arizonensis</i>	Arizona sunflower	Native	2024
<i>Pluchea sericea</i>	Arrowweed	Native	2024, 2025
<i>Echinochloa</i> spp.	Barnyard grass	Nonnative	2024
<i>Cynodon dactylon</i>	Bermudagrass	Nonnative	2024, 2025
<i>Parkinsonia florida</i>	Blue palo verde	Native	2024
<i>Encelia farinosa</i>	Brittlebush	Native	2024
<i>Stephanomeria pauciflora</i>	Brownplume wirelettuce	Native	2025
<i>Conyza canadensis</i>	Canadian horseweed	Native	2024
<i>Ambrosia ambrosioides</i>	Canyon ragweed	Native	2024
<i>Amaranthus palmeri</i>	Carlessweed	Native	2024
<i>Cylindropuntia</i> sp.	Cholla	Native	2025

Species Name	Common Name	Status	Year Observed
<i>Portulaca oleracea</i>	Common purslane	Native	2024
<i>Larrea tridentata</i>	Creosote bush	Native	2024, 2025
<i>Koeberlinia spinosa</i>	Crucifixion thorn	Native	2025
<i>Baccharis sarothroides</i>	Desert broom	Native	2024, 2025
<i>Boerhavia erecta</i>	Erect spiderling	Native	2024
<i>Atriplex canescens</i>	Four-wing saltbush	Native	2024
<i>Lycium fremontii</i>	Fremont's thornbush	Native	2025
<i>Ferocactus wislizeni</i>	fishhook barrel cactus	Native	2024, 2025
<i>Hoffmannseggia glauca</i>	Indian rushpea	Native	2024
<i>Ipomoea hederacea</i>	Ivy leaf morning-glory	Nonnative	2024
<i>Parkinsonia aculeata</i>	Jerusalem thorn	Native	2024
<i>Isocoma</i> sp.	Jimmyweed	Native	2025
<i>Sorghum halepense</i>	Johnson grass	Nonnative	2024, 2025
<i>Sisymbrium irio</i>	London rocket	Nonnative	2025
<i>Pectis papposa</i>	Many-bristle chinchweed	Native	2024
<i>Parkinsonia microphylla</i>	Foothill palo verde	Native	2025
<i>Phalaris</i> spp.	Ribbon grass	Nonnative	2025
<i>Salsola tragus</i>	Russian thistle	Nonnative	2025
<i>Ericameria nauseosa</i>	Rubber rabbitbrush	Native	2024
<i>Datura wrightii</i>	Sacred thorn-apple	Native	2024
<i>Carnegiea gigantea</i>	Saguaro	Native	2025
<i>Brassica tournefortii</i>	Sahara mustard	Nonnative	2025
<i>Tamarix</i> spp.	Salt cedar	Nonnative	2024, 2025
<i>Physalis acutifolia</i>	Sharpleaf groundcherry	Native	2024
<i>Capsella bursa pastoris</i>	Shepherd's purse	Nonnative	2025
<i>Solanum elaeagnifolium</i>	Silverleaf nightshade	Native	2024
<i>Celtis ehrenbergiana</i>	Spiny hackberry	Native	2024
<i>Sonchus</i> sp.	Sow thistles	Nonnative	2025
<i>Nicotiana glauca</i>	Tree tobacco	Nonnative	2025
<i>Ambrosia deltoidea</i>	Triangular bur ragweed	Native	2024, 2025
<i>Prosopis velutina</i>	Velvet mesquite	Native	2024, 2025
<i>Lycium</i> sp.	Wolfberry	Native	2025
<i>Tidestromia lanuginosa</i>	Woolly tidestromia	Nonnative	2024

5. SUMMARY OF POTENTIAL EFFECTS

5.1. FISH SPECIES

There is no aquatic habitat for fish species in the Project Area or vicinity. Standard Best Management Practices, as detailed in the Project's Stormwater Pollution Prevention Plan (SWPPP), would be employed during construction to prevent contamination of stormwater runoff from the site.

5.2. AMPHIBIANS AND REPTILES

Potential impacts to herptiles during construction include a risk for direct mortality from ground disturbance and vehicle strikes. However, no ESA listed herptiles are expected to occur in the Project Area or vicinity, and it is unlikely that the Project would result in direct mortality of individuals of these species during construction.

5.3. BIRDS

Potential impacts on bird species could include changes in behavior due to Project-related noise, vibration, and the 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 would be avoided and/or minimized either by limiting ground clearing/vegetation removal activities to outside the breeding season (March 1 through August 31) or through conducting MBTA clearance surveys. Clearance surveys would identify active nests and buffers would be placed around active nests until the young fledge or the nest becomes inactive, or a federally permitted wildlife rehabilitator is engaged to relocate any eggs or nestlings in compliance with the MBTA. For construction outside the MBTA breeding season, a survey for burrowing owls would be conducted 30 days prior to construction. These mitigation measures are presented in **Exhibit B-1**.

Additionally, transmission lines can pose a collision risk to birds, including raptors (APLIC 2012).¹ However, many factors influence whether birds are likely to collide with a specific transmission line. Collision risk is relatively low when multiple transmission lines are collocated or placed near other infrastructure. The Project would be constructed in an area with existing transmission lines and would not be likely to contribute to a significant increase in bird mortality near these other lines.

Electrical 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 (such as the 230kV transmission line proposed in this Project) require spacing between those components that cannot be spanned even by very large birds, so that electrocution risk is almost entirely precluded (APLIC 2012).¹

5.4. MAMMALS

Potential impacts on terrestrial mammal 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 to be crushed or buried during ground-disturbing activities; and the loss or temporary disturbance of up to 182 acres of habitat.

The Project Area does not support any suitable roosting habitat for bat species; however, the surrounding region may include features that support roosting bats. Bats may utilize the Project Area for foraging. Due to the abundance of the habitat in the surrounding region and the minimal impact of the Project, impacts to foraging bats are expected to be minimal.

Bat species can collide with manmade structures during long-distance migration. Migrating bats often fly high above ground level and do not actively echolocate. However,

¹ Avian Power Line Interaction Committee. 2012. Reducing Avian Collisions with Power Lines: the State of the Art in 2012. Washington, D.C.: Edison Electric Institute and Avian Power Line Interactions Committee. October 2012.

during normal foraging activity, bats are actively using echolocation and are typically able to detect and avoid features such as overhead transmission lines (Arnett et al. 2015).²

5.5. PLANT LIFE

Construction of the Project would result in the long-term removal or temporary disturbance of up to 182 acres of vegetation. Native vegetation characteristic of the Lower Colorado subdivision of Sonoran desertscrub biotic community is abundant within central Arizona, and the acreage of disturbance as a percentage of the remaining habitat is small. The removal of up to 182 acres of vegetation would not result in significant impacts to this biotic community.

² Arnett, Edward B., Erin F. Baerwald, Fiona Mathews, Luisa Rodrigues, Armando Rodriguez-Durán, Jens Rydell, Rafael Villegas-Patraca, and Christian C. Voigt. 2015. "Impacts of Wind Energy Development on Bats: A Global Perspective." In *Bats in the Anthropocene: Conservation of Bats in a Changing World*, edited by Christian C. Voigt and Tigga Kingston. Springer Open. 295-323.

CACTUS FLOWER SOLAR GEN-TIE PROJECT APPLICATION FOR A CERTIFICATE OF ENVIRONMENTAL COMPATIBILITY

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

Per A.A.C. R14-3-219, Exhibits to Application, Exhibit E of an application for a CEC must include the following:

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.

Exhibit E provides a summary of potential Project effects to scenic and archaeological resources within the vicinity of the Project Area. The Project includes the proposed gen-tie line for the Cactus Flower Solar Project and the proposed switchyard to interconnect the solar facility to the regional grid. The Project Area refers to the gen-tie line corridor originating from the non-jurisdictional Cactus Flower Solar substation and terminating at the switchyard, as well as the Switchyard Siting Area.

Note that references to "Exhibits" refer to exhibits to the CEC application.

The visual resources analysis is presented in the following exhibit:

- **Exhibit E-1: Key Observation Points and Visual Simulations of the Project**

1. SCENIC AREAS AND VISUAL RESOURCES

A viewshed analysis was conducted in support of the CEC application for the Project. Within the viewshed of the Project Area, the landscape is dominated by desert vegetation, crop fields, and anthropogenic structures including existing transmission lines, substations, unpaved roads, irrigation canals, and agriculture-related infrastructure. There are no wild

and scenic rivers, backcountry byways, or national monuments in the vicinity of the Project Area. There are no designated National Historic Trails, trails with wilderness values, special-designated areas, or wilderness lands within the vicinity of the Project Area. The Ironwood Forest National Monument, administered by the Bureau of Land Management, occurs approximately 2.25 miles south of the Switchyard Siting Area and Picacho Peak State Park is approximately 8 miles east of the northeastern terminus of the gen-tie. Picacho Peak is also considered a Traditional Cultural Property by some of the Native American Tribes with ancestral connection to the area.

A viewshed analysis was used to assist in identification of key observation points (KOPs) that represent common or sensitive points from which the Project could be viewed. The viewshed of the Project Area was created using a geographic information system (GIS) approach to model the "seen area" or viewshed from which the Project would be visible based on elevation and landform. The model does not account for vegetation, structures, and other landscape elements that would obstruct views. Six KOPs were identified for the analysis and are shown and described in **Exhibit E-1**.

1.1. KEY OBSERVATION POINT 1

Key Observation Point 1 is located at the intersection of Greene Reservoir Road and South La Palma Road approximately 2.8 miles northeast of the eastern terminus of the gen-tie and looks west/southwest. KOP 1 is a representative view from the surrounding agricultural fields. In the foreground, a concrete irrigation canal, agricultural fields, and dirt roads including Greene Reservoir Road are visible. Multiple transmission and distribution lines, as well as a substation, are visible in the background, with silhouettes of the Sawtooth Mountains beyond. Other infrastructure such as metal silos, buildings, and fencing associated with agriculture and a nearby ranch are visible throughout the viewshed among the flat, heavily disturbed landscape. The linear, vertical form of the proposed gen-tie line is consistent with the existing lines and substation and does not preclude the current view of the Sawtooth Mountains. From KOP 1, the gen-tie presents a minor contrast against the existing natural and built landscape.

1.2. KEY OBSERVATION POINT 2

Key Observation Point 2 is located along South Sunland Gin Road approximately 1 mile west of the southern portion of the gen-tie line and looks east. KOP 2 is a representative view from the rural housing development west of the southern portion of the Project Area. In the foreground, a dirt road extends east between two agricultural fields, with the southern field appearing to no longer support crop cultivation. A dark, rocky hill is pictured in the middle ground. Multiple transmission lines and distribution lines are visible in the background among the flat, heavily disturbed landscape and against silhouettes of the Samaniego Hills, Picacho Peak, and the Tortolita Mountains beyond. The linear, vertical form of the proposed gen-tie line is consistent with the existing lines and does not preclude the current view of the hills and mountains. From KOP 2, the gen-tie presents a minor contrast against the existing natural and built landscape.

1.3. KEY OBSERVATION POINT 3

Key Observation Point 3 is located at the Sunset Day Use Area parking lot within Picacho Peak State Park at the northern base of Picacho Peak. KOP 3 is approximately 9.2 miles east of the eastern terminus of the gen-tie, and the direction of the viewshed for KOP 3 is west. In the foreground, Sonoran desert scrub vegetation is pictured, including an abundance of saguaros (*Carnegieia gigantea*), palo verde (*Parkinsonia* spp.) trees, and creosote bushes (*Larrea tridentata*) among rolling ground covered in dark, volcanic rock and desert pavement. In the background, various infrastructure can be seen in front of silhouettes of the Sawtooth Mountains. The linear, vertical form of the proposed gen-tie line is consistent with the existing infrastructure and does not preclude the current view of the valley, hills and mountains. From KOP 3, the gen-tie presents nearly no contrast against the existing natural and built landscape.

1.4. KEY OBSERVATION POINT 4

Key Observation Point 4 is located along South Sunshine Boulevard, approximately 3.3 miles northeast of the eastern terminus of the gen-tie and across the road from a horse ranch and looks southwest. The foreground includes a dirt road and an agricultural field that did not contain active crops at the time of the photo. Multiple transmission and

distribution lines are visible in the background, with silhouettes of the Sawtooth Mountains beyond. Other infrastructure associated with agriculture are visible throughout the viewshed among the flat, heavily disturbed landscape. The linear, vertical form of the proposed gen-tie line is consistent with the existing lines and does not preclude the current view of the mountains beyond. From KOP 4, the gen-tie presents a minor contrast against the existing natural and built landscape.

1.5. KEY OBSERVATION POINT 5

Key Observation Point 5 is located just north of the intersection of West Pretzer Road and South Toltec Buttes Road approximately 3 miles north of the central portion of the gen-tie and looks south. A distribution line and transmission line extend from the foreground to the background of KOP 5 along South Toltec Buttes Road. The visible landscape is largely flat and heavily disturbed, with agricultural fields extending on either side of the lines, as well as trees associated with local drainages and the West Silverbell Mountains visible in the distance. The linear, vertical form of the proposed gen-tie line is consistent with the existing lines and does not preclude the current view of the mountains beyond. From KOP 5, the gen-tie presents nearly no contrast against the existing natural and built landscape.

1.6. KEY OBSERVATION POINT 6

Key Observation Point 6 is located approximately 2 miles directly south of KOP 5 just south of the intersection of Greene Reservoir Road and South Toltec Buttes Road and looks south. KOP 6 is a representative view from the surrounding agricultural fields. In the foreground, an irrigated agricultural field is visible, while a line of trees associated with the Greene Wash can be seen in the distance against a backdrop of the West Silverbell Mountains. The linear, vertical form of the proposed gen-tie line is consistent with the adjacent existing transmission line and does not preclude the current view of the mountains beyond. From KOP 6, the gen-tie presents minor contrast against the existing natural and built landscape.

1.7. CONCLUSION

The viewshed analysis determined that the Project would create contrast with the existing landscape features. However, because the landscape contains transmission infrastructure, including distribution and transmission lines, as well as industrial agricultural operations, this additional visual impact is anticipated to be minor. Potential visual effects resulting from construction (dust, construction traffic, etc.) would be temporary and short in duration, and would diminish after construction has been completed. Additionally, due to the rural nature of the area and general lack of public access, there would be a limited number of viewers traveling near the Project Area.

Therefore, the Project is expected to be environmentally compatible.

2. CULTURAL RESOURCES HISTORIC SITES AND STRUCTURES AND ARCHAEOLOGICAL SITES

Cultural site identification is accomplished through records searches and field surveys. Previously unrecorded sites discovered during surveys are evaluated for their eligibility for inclusion in the Arizona Register of Historic Places (ARHP). Resources are considered eligible for both the ARHP and the National Register of Historic Places (NRHP) if they meet one or more of the following four criteria:

1. Associated with events that have made a significant contribution to the broad patterns of our history.
2. Associated with the lives of significant persons in our past.
3. Representative of a type, period, or method of construction, or the work of a master.
4. Capable of yielding important information about the past.

2.1. METHODS

Two Class I Cultural Resources Reviews were conducted to support the Cactus Flower Solar Project, one for the solar facility and one for the gen-tie alignment. The gen-tie report was referenced for this summary. SWCA Environmental Consultants (SWCA) examined information for historic sites, structures, and archaeological sites within portions

of the Project Area as well as a 0.5-mile buffer (the Study Area) that encompasses the entirety of the Project Area. This report presents a previous iteration of the gen-tie which included the entirety of the final gen-tie alignment and an additional segment extending east from the southern end of the gen-tie. Only resources and surveys occupying the final gen-tie alignment and 0.5 mile buffer were included in this review. The following sources were consulted:

- AZSITE online database
- Archaeological Records Office of the Arizona State Museum
- Historic General Land Office (GLO) Plats
- Historic U.S. Geological Survey (USGS) topographic quadrangle maps
- Historic aerial imagery
- NRHP
- ARHP

SWCA gathered information from these sources to evaluate whether the Project Area had been previously surveyed for cultural resources, to determine whether historic properties eligible for inclusion or already listed on the ARHP or NRHP are present, and to provide recommendations concerning the potential for impacts on cultural resources.

A Class III survey was also conducted for the gen-tie portion of the Project Area, and the corresponding report is in progress. The Class III survey covered a 200-foot width within the Proposed Transmission Corridor. A Class III survey and report will be completed for the final switchyard location prior to construction, and for any areas of the gen-tie that were not included in the original Class III survey.

2.2. CLASS I CULTURAL SITES

Nine cultural sites intersect the Study Area, of which, five have been determined not eligible for listing on the ARHP/NRHP, one site is unevaluated, and three sites are recommended eligible for listing on the ARHP/NRHP under Criterion D (sites that have yielded or have the potential to yield, information important in prehistory or history;

Table E-1).

Table E-1. Archaeological Sites Intersecting the Study Area

Site Number	Site Type	Age and Cultural Affiliation	ARHP/NRHP Eligibility
AZ AA:1:95(ASM)	115 kV Transmission Line	Late Historic; Euroamerican	Not Eligible
AZ AA:6:17(ASM)	Artifact Scatter	Archaic; Formative; Archaic; Hohokam	Unevaluated
AZ AA:6:71(ASM)	Artifact Scatter	Formative; Hohokam	Recommended Eligible (d)
AZ AA:6:180(ASM)	Road	Late Historic; Euroamerican	Not Eligible
AZ AA:6:181(ASM)	Road	Late Historic; Euroamerican	Not Eligible
AZ AA:6:182(ASM)	Substation	Late Historic; Euroamerican	Not Eligible
AZ AA:6:248(ASM)	Road	Historic; Euroamerican	Not Eligible
AZ AA:6:249(ASM)	Road	Historic; Euroamerican	Recommended Eligible (d)
AZ AA:6:253(ASM)	Irrigation Canal	Historic; Euroamerican	Recommended Eligible (d)

2.3. CLASS III RESULTS

The Class III survey for the gen-tie was completed in September 2025. A segment of the Greene Canal (AZ AA:6:253 [ASM]) was found in the project corridor and was re-recorded during the survey. No additional sites were identified. The Class III report is in progress.

2.4. CONCLUSION

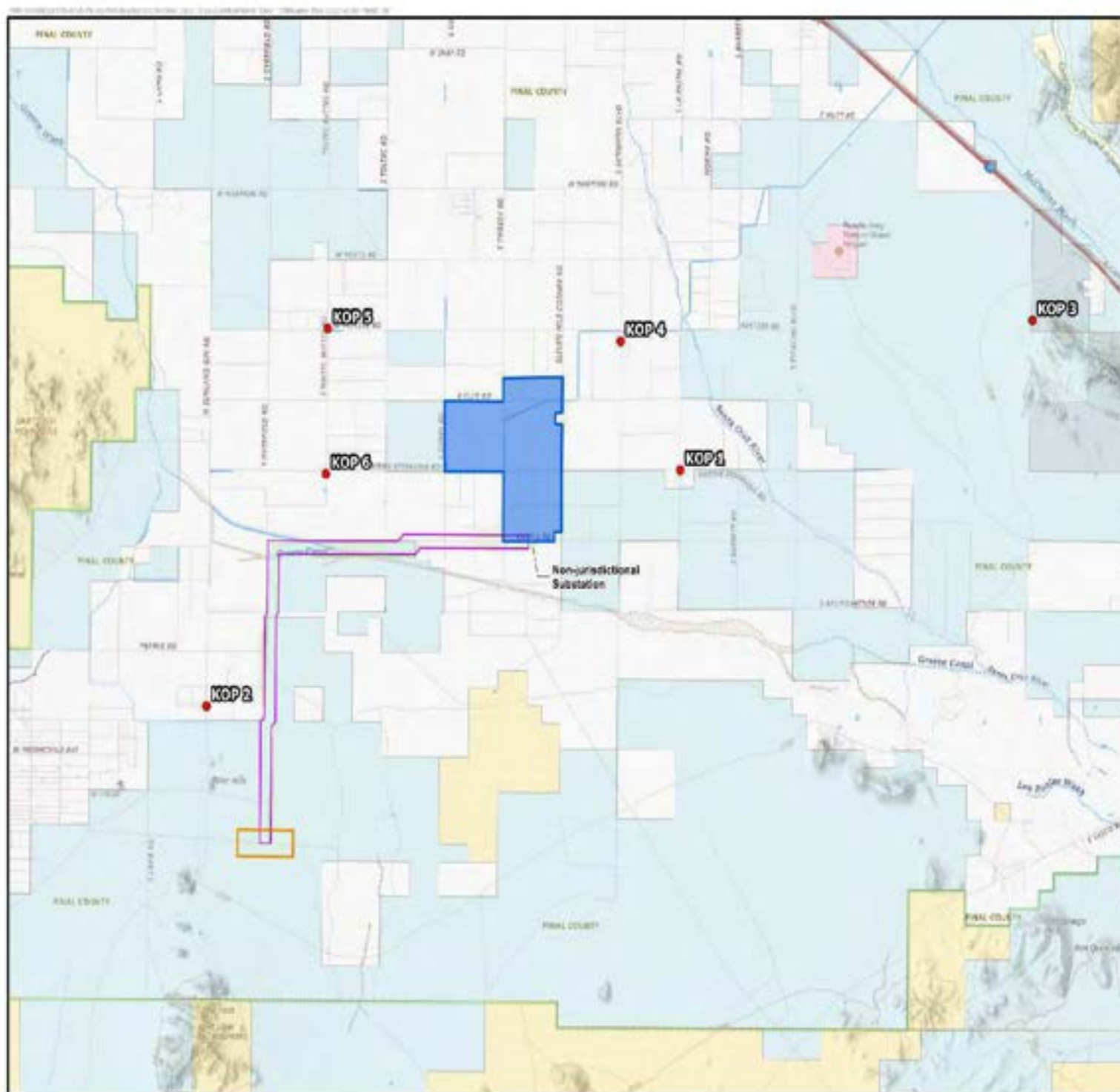
Transmission structures and associated facilities, and access roads, would be constructed to avoid Register-eligible or unevaluated sites, therefore, there would be no impact to any potential Register-eligible archaeological sites under the Project. Though Register-eligible or unevaluated sites would be avoided, resource protection measures applicable to cultural resources are as follows:

- A Class III Cultural Resources Inventory would be conducted within the final right-of-way for the Project Area in accordance with State regulations.

- The boundaries of any sites adjacent to and within the Project Area would be flagged by a qualified archaeologist prior to ground disturbing activities to prevent incidental impacts to these sites.
- Prior to the start of Project activities, all field personnel would receive worker's environmental awareness training on cultural resources that includes procedures to follow should unanticipated archaeological resources be discovered or should human remains and/or funerary objects be encountered.
- If unanticipated archaeological resources are discovered during construction, operation, or maintenance of the Project, all activities would cease in the immediate vicinity of the discovery.

Therefore, the Project is expected to be compatible with archaeological and historic resources.

EXHIBIT E-1
Key Observation Points and Visual Simulations
of the Project



T95, RTE. Portions of Sections 13 and 23-35,
T10S, RTE. Portions of Sections 4, 5, 6, 9, 16, 17, 22, and 25,
Pinal County, Arizona
Projection: NAD 1983 UTM Zone 12N
Surface Management: BLM SAA ArcGIS service accessed 08/12/2023
Image Source: ArcGIS Online, USGS TMN

Legend

- | | |
|---|-----------------------------|
| • Key Observation Point | Surface Management |
| ■ Proposed Cactus Flower Solar Facility | ■ Bureau of Land Management |
| ■ Proposed Transmission Corridor | ■ Bureau of Reclamation |
| ■ Switchyard Siting Area | ■ Local or State Parks |
| | ■ Military |
| | ■ Private (No Color) |
| | ■ State |



Cactus Flower Solar Generation Tie Line Project
Exhibits for the
Certificate of Environmental Compatibility

KEY OBSERVATION POINTS
1:82,500 TOPOGRAPHIC MAP
Exhibit A-5

Key Observation Point 1

- Representative view for local traffic from Green Reservoir Road approximately at eye level.
- Image looks southwest (240°), approximately 2.8 miles northeast of the eastern terminus of the gen-tie.
- Latitude: $32^{\circ}37'3.55''\text{N}$; Longitude: $111^{\circ}32'1.71''\text{W}$. Elevation is 1,670 feet above mean sea level (amsl).
- Image taken 11:01 am June 30, 2025.

Current Condition



Simulated Condition



Key Observation Point 2

- Representative view for residents and travelers along South Sunland Gin Road approximately at eye level.
- Image looks east (72°) across unnamed dirt agricultural road, approximately 1 mile west of the southern portion of the gen-tie.
- Latitude: $32^{\circ}34'4.11''\text{N}$; Longitude: $111^{\circ}40'21.73''\text{W}$. Elevation is 1,591 feet above mean sea level (amsl).
- Image taken 10:19 am June 30, 2025.

Current Condition



Simulated Condition



Key Observation Point 3

- Representative view for recreationists from the Sunset Day Use Area parking lot within Picacho Peak State Park approximately at eye level.
- Image looks east (251°) across Picacho Peak State Park, approximately 9.2 miles northeast of the eastern terminus of the gen-tie.
- Latitude: $32^{\circ}38'57.17''\text{N}$; Longitude: $111^{\circ}25'49.32''\text{W}$. Elevation is 1,838 feet above mean sea level (amsl).
- Image taken 8:10 am June 30, 2025.

Current Condition



Simulated Condition



Key Observation Point 4

- Representative view for residents and travelers from South Sunshine Boulevard approximately at eye level.
- Image looks southwest (216°) across an agricultural field, approximately 3.3 miles northeast of the eastern terminus of the gen-tie.
- Latitude: $32^{\circ}38'39.82''\text{N}$; Longitude: $111^{\circ}33'5.40''\text{W}$. Elevation is 1,639 feet above mean sea level (amsl).
- Image taken 10:48 am June 30, 2025.

Current Condition



Simulated Condition



Key Observation Point 5

- Representative view for residents and travelers from South Toltec Buttes Road approximately at eye level.
- Image looks south (180°) along South Toltec Buttes Road, approximately 3 miles north of the central portion of the gen-tie.
- Latitude: 32°38'47.86"N; Longitude: 111°38'15.49"W. Elevation is 1,583 feet above mean sea level (amsl).
- Image taken 9:39 am June 30, 2025.



Key Observation Point 6

- Representative view for residents and travelers along South Toltec Buttes Road approximately at eye level.
- Image looks south (190°) across an agricultural field, approximately 2 miles south of KOP 5.
- Latitude: $32^{\circ}36'58.78''\text{N}$; Longitude: $111^{\circ}38'16.63''\text{W}$. Elevation is 1,596 feet above mean sea level (amsl).
- Image taken 11:18 am June 30, 2025.

Current Condition



Simulated Condition

PROPOSED LINE



CACTUS FLOWER SOLAR GEN-TIE PROJECT APPLICATION FOR A CERTIFICATE OF ENVIRONMENTAL COMPATIBILITY

EXHIBIT F: RECREATIONAL PURPOSES AND ASPECTS

Per A.A.C. R14-3-219, Exhibits to Application, Exhibit F of an application for a CEC must include the following:

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.

Exhibit F provides a summary of potential Project effects to recreational resources within and in the vicinity of the Project Area. The Project includes the proposed gen-tie line for the Cactus Flower Solar Project and the proposed switchyard to interconnect the solar facility to the regional grid. The Project Area refers to the gen-tie line corridor originating from the non-jurisdictional Cactus Flower Solar substation and terminating at the switchyard, as well as the Switchyard Siting Area.

Note that references to "Exhibits" refer to exhibits to the CEC application.

1. RECREATION

Recreational use of the Project Area is limited to none. The Project Area is situated both on private lands and State Trust lands managed by the ASLD. There are currently no designated recreational roads, primitive roads, county roads, or trails within the Project Area, and motorized access is limited to dirt roads associated with adjacent agriculture and undesignated roads.

The gen-tie crosses a proposed multi-use trail corridor and proposed open space corridor, likely associated with the Greene Canal/Wash, according to the *Pinal County Open Space and Trails Master Plan* (the Plan; Pinal County 2007),¹ though specific details of these corridors are not included in the Plan. These proposed trail and open space corridors are also not included in the *Pinal County Open Space and Trails Master Plan Implementation Program 2007-2032* detailed in the Plan.

Nearby regional recreational resources include Picacho Peak State Park (approximately 8 miles east) and the Ironwood Forest National Monument (approximately 2.25 miles south and west). Picacho Peak State Park hosts recreational activities such as hiking and camping. The Ironwood Forest National Monument hosts recreational opportunities including hunting, hiking, biking, wildlife and bird viewing, sightseeing and camping.

Given the presence of the existing transmission lines on the northern and southern ends of the Project Area, current land use in this area is not expected to change and is not anticipated to support recreation. No formal recreation opportunities exist within the Project Area. Additionally, the Applicant has no plans to formally designate land for new public recreation purposes as a component of the Project.

If recreation activities or facilities are planned for future development near the Project Area, the Applicant will cooperate with the appropriate planning authorities and communities to accommodate the recreational uses to the extent practicable with due consideration for the Project's operational and maintenance requirements, as well as safety considerations. It is not anticipated that the Project will affect the future siting of proposed recreational facilities.

¹ Pinal County. 2007. Pinal County Open Space and Trails Master Plan. October 31, 2007.

CACTUS FLOWER SOLAR GEN-TIE PROJECT APPLICATION FOR A CERTIFICATE OF ENVIRONMENTAL COMPATIBILITY

EXHIBIT G: CONCEPTS OF PROPOSED FACILITIES

Per A.A.C. R14-3-219, Exhibits to Application, Exhibit G of an application for a CEC must include the following:

Attach any artist's or architect's conception of the proposed plant or transmission line structures and switchyards, which applicant believes may be informative to the Committee.

The Project includes the proposed gen-tie line for the Cactus Flower Solar Project and the proposed switchyard to interconnect the solar facility to the regional grid.

Note that references to "Exhibits" refer to exhibits to the CEC application.

The conceptual designs for the Cactus Flower Solar Project and gen-tie included in this exhibit are:

- **Exhibit G-1: Cactus Flower Solar Project Typical Pole Designs**
- **Exhibit G-2: Cactus Flower Solar Project Switchyard Design**

Exhibit G provides conceptual designs for the monopoles and the Switchyard for the Project. A typical steel monopole, three pole structure, and H-frame structure are shown in **Exhibit G-1**. Lattice designs may also be utilized. The switchyard design in **Exhibit G-2** is for an approximately four-ring bus 345kV switchyard. The 230kV Project Switchyard is anticipated to be similar. The new switchyard will have a four breaker ring bus 230kV sub. Overhead ground wires and conductors will also be installed.

EXHIBIT G-1
Cactus Flower Solar Project Typical Pole Designs

TYPICAL
230kV MONOPOLE
STRUCTURE

[illegible]

Cactus Flower Solar
Typical 3-Pole Structure

A	ISSUED FOR REVIEW	12/28/22	WF	DCT	*	*	
REV	REVISIONS	DATE	DRN	DSGN	CKD	APPD	

DETAIL	DESCRIPTION	QTY
510	OHGW ASSEMBLY	-
520	DPGW ASSEMBLY	2
530	CONDUCTOR ASSEMBLY	3
540	UNDERBUILD ASSEMBLY	-
550	COMMUNICATION ASSEMBLY	-
560	GUY & ANCHOR ASSEMBLY	5
570	BRACES & CROSSARM ASSEMBLY	-
580	GROUNDING ASSEMBLY	3
590	MISCELLANEOUS ASSEMBLY	-

STRUCTURE HEIGHT
SEE STRUCTURE LIST

EMBEDMENT DEPTH
SEE STRUCTURE LIST

510/520
TYP 2 PLCS

530
TYP 3 PLCS

580
SEE GUYING
ARRANGEMENT

16'-0"

2'-0"

4'-7"

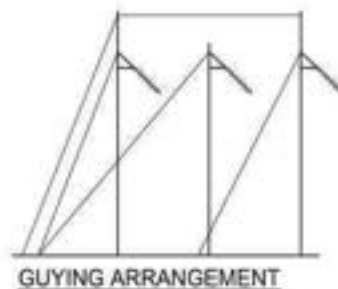
25'-0"

25'-0"

580

580

580



THIS DRAWING WAS PREPARED BY POWER ENGINEERS, INC. FOR A SPECIFIC PROJECT. TAKING INTO CONSIDERATION THE SPECIFIC AND UNIQUE REQUIREMENTS OF THE PROJECT, REUSE OF THIS DRAWING OR ANY INFORMATION CONTAINED IN THIS DRAWING FOR ANY PURPOSE IS PROHIBITED UNLESS WRITTEN PERMISSION FROM BOTH POWER AND POWER'S CLIENT IS GRANTED.

Cactus Flower Solar Typical H-Frame Structure

A	ISSUED FOR REVIEW	12/28/22	WF	DGT	*	*
REV	REVISIONS	DATE	DRN	DSGN	CKD	APPD

DETAIL	DESCRIPTION	QTY
510	OHGW ASSEMBLY	1
520	OPGW ASSEMBLY	1
530	CONDUCTOR ASSEMBLY	2
540	UNDERBUILD ASSEMBLY	-
550	COMMUNICATION ASSEMBLY	-
560	GUY & ANCHOR ASSEMBLY	-
570	BRACES & CROSSARM ASSEMBLY	1
580	GROUNDING ASSEMBLY	2
590	MISCELLANEOUS ASSEMBLY	-

* SEE STRUCTURE LIST FOR SPECIFIC ASSEMBLIES

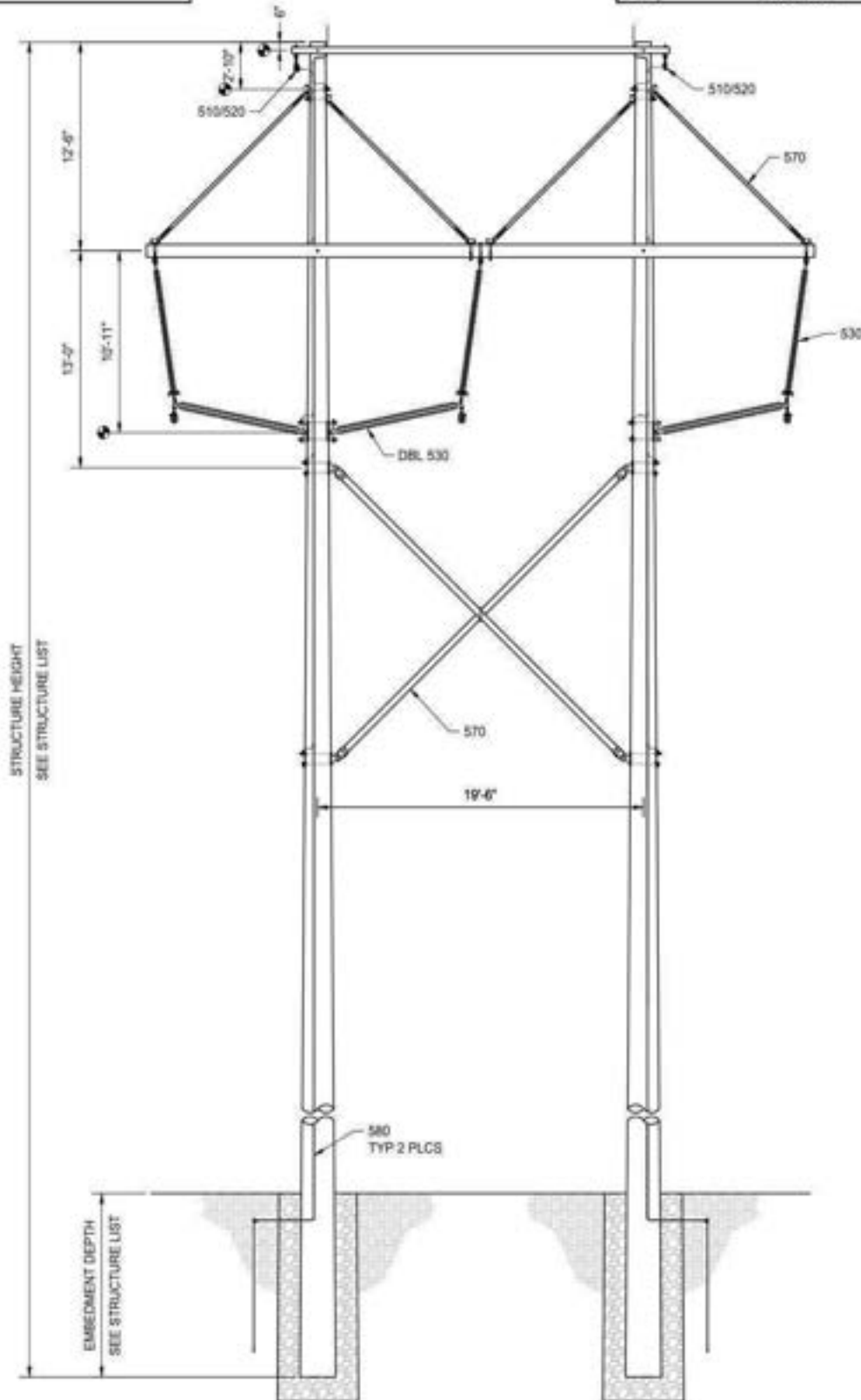
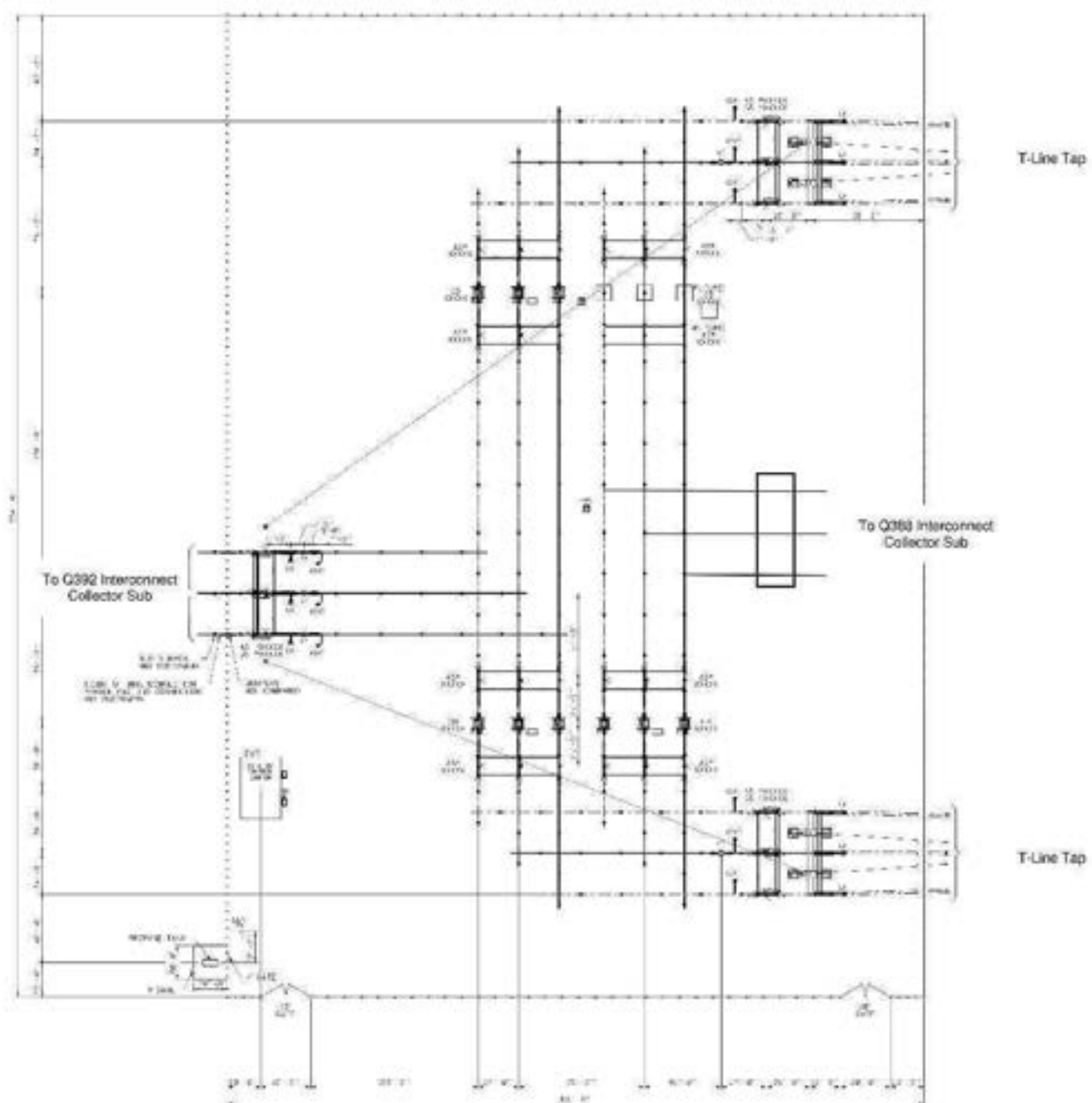


EXHIBIT G-2
Cactus Flower Solar Project Switchyard Design



CACTUS FLOWER SOLAR GEN-TIE PROJECT APPLICATION FOR A CERTIFICATE OF ENVIRONMENTAL COMPATIBILITY

EXHIBIT H: EXISTING PLANS AND LAND USE

Per A.A.C. R14-3-219, Exhibits to Application, Exhibit H of an application for a CEC must include the following:

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.

Exhibit H provides a summary of potential Project effects to plans and existing/future land use within and in the vicinity of the Project Area. The Project includes the proposed gen-tie line for the Cactus Flower Solar Project and the proposed switchyard to interconnect the solar facility to the regional grid. The Project Area refers to the gen-tie line corridor originating from the non-jurisdictional Cactus Flower Solar substation and terminating at the switchyard, as well as the Switchyard Siting Area.

Note that references to "Exhibits" refer to exhibits to the CEC application.

1. EXISTING LAND USE AND PLANS

The Project Area includes lands managed by the ASLD and private property. Existing land uses within the Project Area and a 1-mile buffer (Study Area) primarily include rural single-family low-density residential, commercial and smaller scale agricultural operations, existing transmission and distribution lines, substations, and dirt roads that serve as the main travel corridors through the area. Land uses within the Study Area are further described below.

1.1. UTILITIES

Multiple distribution and transmission electrical utility infrastructure occur within the Study Area, including:

- Multiple 12.47 kV distribution lines serving agriculture and residential uses in the area.
- The APS 230 kV Tat Momoli-Saguaro transmission line located at the southern terminus of the gen-tie, where the gen-tie will interconnect to the regional grid via the proposed switchyard.
- The Western Area Power Administration's (WAPA's) 230/115 kV Electrical District No. 5-Palo Verde Hub transmission line that exists along West Curtis Road. The gen-tie will run parallel to this line along the northern portion of the Project Area.
- The existing WAPA 230 kV and 115 kV Electrical District No. 5 substations east of the eastern terminus of the gen-tie.

The El Paso Natural Gas pipeline also crosses diagonally to the northern portion of the Study Area.

1.2. VACANT/OPEN SPACE

A majority of the land within the Study Area is composed of undeveloped desert, which occurs south of West Curtis Road, east of Overfield Road, and north of the Switchyard Siting Area.

1.3. UNINCORPORATED PINAL COUNTY

The Project Area occurs within unincorporated Pinal County and is zoned in the General Rural Zoning District (GR) by Pinal County which generally permits agricultural uses and low-density residential (Pinal County 2025c). The Project is in conformance with this zoning designation, which includes public or private utilities and facilities.

1.4. ARIZONA STATE LAND DEPARTMENT

The Project Area occurs primarily on State Trust lands. The ASLD parcels intersected by the Project Area are unleased or are leased for grazing, and coordination with the ASLD will continue throughout the duration of the Project. The Applicant has submitted an ASLD ROW easement application (#14-125198-00-100), which was accepted in September 2025 for further processing.

2. FUTURE LAND USE PLANS

The Pinal County Comprehensive Plan (PCCP; Pinal County 2025d), last revised in 2025, maps the land use for the Project Area within Very Low Residential (0-1 dwelling units per acre [du/ac]) and Moderate Low Density Residential (1-3.5 du/ac) areas. Additionally, the PCCP incorporates the *Pinal County Open Space and Trails Master Plan* which maps a proposed multi-use trail corridor and proposed open space corridor within the Project vicinity, likely associated with the Greene Canal/Wash (see **Exhibit F** for additional discussion).

State law requires Arizona counties to identify policies and practices to encourage use of renewable energy within the comprehensive planning process. Under Chapter 7 of the PCCP and embedded within *Renewable Energy Sources*, the PCCP states that Pinal County will support the development of local renewable energy sources, particularly solar developments which will be encouraged.

Based on a review of publicly available information, new development plans within the Project Area are limited. The Pinal County 2025 Major Comprehensive Plan Amendments packet (Pinal County 2025b) lists one project within the vicinity of the Project, the La Osa Project, which is a proposed data center approximately 2.75 miles to the southeast of the Project Area. The Pinal County 5-Year Capital Improvement Plan (Pinal County 2025a) includes construction to Baumgartner Road in Fiscal Year (FY) 2027–2028, located approximately 4.5 miles east of the Project Area. Additionally, there are two flood control projects underway within the vicinity of the Project Area including the Sunland Gin Road Flood Mitigation Project (approximately 1 mile west of the southern portion of the gen-tie)

and a study called the Greene Wash Watershed Master Plan Project (approximately 3 miles east of the southern terminus of the gen-tie) which are currently underway.

The Arizona Department of Transportation (ADOT) has no plans within the vicinity of the Project Area according to ADOT's Long-Range Transportation Plan (ADOT 2023) and ADOT's current 5-year program (ADOT 2025).

3. CONCLUSIONS

Land use impacts are expected to be minimal as the Project has been sited in the vicinity of and adjacent to existing utility infrastructure. Additionally, the PCCP supports the development of solar facilities. The Project would have a positive indirect impact on current and future land uses in the region by improving the availability of reliable electric service and supporting the development of renewable energy.

4. REFERENCES CITED

Arizona Department of Transportation. 2023. 2050 Arizona Long-Range Transportation Plan. September 2023.

_____. 2025. "ADOT 2026-2030 Final Five-Year Transportation Construction Facilities Program Interactive Map."
<https://experience.arcgis.com/experience/2063b57d165948d5864132bb05c3601e/page/Page?org=azgeo>.

Pinal County. 2025a. 5-Year Capital Improvement Plan: 2024-2029. February 19, 2025.

_____. 2025b. 2025 – 60 Day Review Packet Pinal County Major Comprehensive Plan Amendments. June 2, 2025.

_____. 2025c. "Pinal County Development Services Code."
https://library.municode.com/az/pinal_county/codes/development_services_code_and_floodplain_management?nodeId=PCODESECO.

_____. 2025d. We Create Our Future: Pinal County Comprehensive Plan. Adopted November 20, 2019; Updated August 1, 2025.

CACTUS FLOWER SOLAR GEN-TIE PROJECT APPLICATION FOR A CERTIFICATE OF ENVIRONMENTAL COMPATIBILITY

EXHIBIT I: NOISE, RADIO AND COMMUNICATIONS

Per A.A.C. R14-3-219, Exhibits to Application, Exhibit I of an application for a CEC must include the following:

Describe the anticipated noise emission levels and any interference with communication signals which will emanate from the proposed facilities.

Exhibit I provides a summary of potential noise emissions or communications interference resulting from the Project. The Project includes the proposed gen-tie line for the Cactus Flower Solar Project and the proposed switchyard to interconnect the solar facility to the regional grid. The Project Area refers to the gen-tie line corridor originating from the non-jurisdictional Cactus Flower Solar substation and terminating at the switchyard, as well as the Switchyard Siting Area.

Note that references to "Exhibits" refer to exhibits to the CEC application.

1. NOISE EMISSIONS

Corona discharge from electrical transmission lines generates audible noise as well as radio and television interference. Audible noise associated with transmission lines, as a result of corona discharge, is a function of line voltage. Transmission line audible noise is characterized by crackling, frying, sputtering, and low frequency tones, which are best described as humming sounds. Audible noise increases with rain or during dust storms, although it is generally masked by the background noise of rain and wind. In dry or fair-weather conditions, the conductors operate below the corona inception level and noise is typically only slightly audible at the edge of the transmission line right-of-way.

Noise from the Project would be limited to initial construction, maintenance, and decommissioning activities. Construction activities would produce a short-term increase in noise at the site boundary over the existing ambient noise levels, while the day-to-day operation of the transmission line is expected to generate only periodic low levels of noise. Successful operation of 230 kV transmission lines with similar gradients indicates that the Project would only create modest corona effects.

There are a few residences, considered Noise Sensitive Receptors (NSRs), adjacent to the proposed gen-tie along Curtis Road and Overfield Road. Construction would only be conducted during working hours of the day, and residents would be notified of any construction in the immediate vicinity prior to construction. Construction in the vicinity of the homes would be temporary, associated with the nearest poles, and would diminish as construction in the vicinity is completed.

2. COMMUNICATIONS INTERFERENCE

The nearest communications towers occur over 10 miles from the Project Area in Arizona City and along Interstate 10.¹ Overhead transmission lines do not generally interfere with normal radio reception, therefore, the level of radio/television/equipment interference for this Project would be very low to none. Additionally, multiple transmission lines are already present throughout the vicinity of the Project. The Project would operate under Federal Communications Commission regulations which require that best engineering principles be used to guard against harmful interference to authorized radio users from the transmission line.

¹ F. C. C. (n.d.). *Antenna Structure Registration Search*. Federal Communications Commission. Retrieved October 1, 2025, from <https://wireless2.fcc.gov/UlsApp/AsrSearch/asrRegistrationSearch.jsp>

CACTUS FLOWER SOLAR GEN-TIE PROJECT APPLICATION FOR A CERTIFICATE OF ENVIRONMENTAL COMPATIBILITY

EXHIBIT J: SPECIAL FACTORS—PUBLIC OUTREACH

Per A.A.C. R14-3-219, Exhibits to Application, Exhibit J of an application for a CEC must include the following:

Describe any special factors not previously covered herein, which applicant believes to be relevant to an informed decision on its application.

Exhibit J provides a summary of public outreach conducted for the Project. The Project includes the proposed gen-tie line for the Cactus Flower Solar Project and the proposed switchyard to interconnect the solar facility to the regional grid. The Project Area refers to the gen-tie line corridor originating from the non-jurisdictional Cactus Flower Solar substation and terminating at the switchyard, as well as the Switchyard Siting Area.

Note that references to "Exhibits" refer to exhibits to the CEC application.

Documentation related to public outreach conducted for the Project are:

- **Exhibit J-1: Project Website**
 - **Exhibit J-2: Project Facebook Page**
 - **Exhibit J-3: Tribal Engagement Letter sent to Tribes on July 25, 2025**
 - **Exhibit J-4: Pinal Central Dispatch Affidavits for Open House Invitation for Postings on August 28 and September 4, 2025**
 - **Exhibit J-5: Public Open House Letters sent to Neighbors on August 21 and August 27, 2025**
 - **Exhibit J-6: Posters Presented at the Public Open House**
-

1. PUBLIC OUTREACH

To encourage stakeholder engagement and enhance accessibility throughout the outreach process, Cypress Creek Renewables, LLC (CCR), developed several outreach resources including a dedicated Project phone line, website (**Exhibit J-1**), and Facebook page (**Exhibit J-2**). The website includes a description of the Project and location, purpose and need for the Project, and information on ways the public can engage with the CEC process (in-person public open house, Project phone number and online comment form). The Project website was and will continue to be updated with Project information as it is available. The Facebook page links to the Project website and phoneline; allows for direct commenting, sharing, and interaction by Facebook users; and publicized the in-person public open house.

No comments or phone calls from the public have been received at the date of preparation of this Exhibit.

2. TRIBAL ENGAGEMENT

CCR sent a letter to a total of 30 representatives from 11 Native American Tribes identified as Project stakeholders on July 25, 2025 (**Exhibit J-3**). The online Arizona State Historic Preservation Office Government to Government Consultation Toolkit (<https://sites.google.com/view/az-consultation-toolkit/home>) consultation mapper was used for determining which Tribes to contact and individual Tribal Contact and Consultation Protocol webpages were used for determining specific communication instructions for sending an engagement letter. All Tribal representatives received an email letter. The letter invited Tribal stakeholders to submit comments by email or telephone within 45 days of receipt. Tribes contacted were:

- Zuni Pueblo (2 contacts)
- Tonto Apache Tribe (2 contacts)
- Tohono O'odham Nation (3 contacts)
- Yavapai-Apache Nation (2 contacts)
- White Mountain Apache Tribe (2 contacts)

- Pascua Yaqui Tribe (2 contacts)
- Hopi Tribe (2 contacts)
- Mescalero Apache Tribe (2 contacts)
- Ak Chin Indian Community (4 contacts)
- Salt River Pima-Maricopa Indian Community (6 contacts)
- Gila River Indian Community (3 contacts)

CCR received a total of four responses from the Yavapai-Apache Nation, the White Mountain Apache Tribe, the Pascua Yaqui Tribe, and the Salt River Pima-Maricopa Indian Community. The Yavapai-Apache Nation requested to receive a copy of the Cultural Resources Report. The White Mountain Apache Tribe responded that the Project would have No Adverse Effect on the Tribe's cultural heritage resources. The Pascua Yaqui Tribe requested to be kept informed as the Project progresses since Picacho Peak, a recognized Traditional Cultural Property, is 9 miles east and within the viewshed of the Project. The Salt River Pima-Maricopa Indian Community deferred to Tohono O'Odham Nation as the lead in the consultation process for the Project. No Tribes raised opposition to the Project.

3. IN-PERSON PUBLIC OPEN HOUSE

CCR hosted a public open house on Tuesday, September 9, 2025, in support of the Project. The open house was publicized through the Project website, Facebook page, the local newspaper (**Exhibit J-4**), and through direct outreach (mailings or emails) to neighbors, agencies, and elected stakeholders (**Exhibits J-5**).

Initial publicization of the open house included mailing open house notifications to all 56 property owners within a 2-mile radius of the Project Area on August 21, 2025; emailing notifications to 17 key agency and elected representatives on August 26, 2025;¹ and posting an announcement in the Pinal Central newspaper on August 28, 2025. This initial announcement and notification incorrectly listed the open house date as Wednesday,

¹ All agency and elected representatives were contacted by email with the exception of the City of Eloy Planning Commission who received a hardcopy of the open house notification at their request, and the two Arizona State senators who were contacted through webforms on their websites.

September 9, 2025, rather than Tuesday, September 9, 2025. This mistake was identified the afternoon of August 26, 2025, and updated notifications were mailed and emailed on August 27, 2025. It was too late to change or cancel the newspaper notification, so a corrected announcement was posted in the newspaper on September 4, 2025.

Agency and elected officials who were contacted by email and personally invited to the public open house included representatives of:

- City of Eloy Planning Commission¹
- City of Eloy Chamber of Commerce²
- City of Eloy City Manager²
- ADOT (two representatives)
- AZGFD
- Arizona State Historic Preservation Office
- ASLD (three representatives)
- Bureau of Land Management
- Arizona State Parks – Picacho Peak
- Pinal County Planning and Zoning Commission
- Pinal County Board of Supervisor
- Pinal County Air Quality
- Arizona State senators Mark Kelly and Ruben Gallego

Of the notifications sent to nearby property owners, one was returned because it was undeliverable. The Applicant attempted to find an alternative address for this individual without success. Of the notifications sent to agency contacts, one sent to an ASLD representative was undeliverable. However, two additional ASLD representatives were emailed with success.

The open house was held at the Toltec Community Center and Senior Center in Eloy, Arizona, from 4:00 PM to 6:30 PM, and was facilitated by representatives from CCR and

² WestLand contacted all contacts except for the City of Eloy Planning Chamber of Commerce and the City Manager. The Applicant contacted representatives from these agencies.

WestLand. The open house format included a sign-in table with a sign-in sheet and comment forms, and poster boards with Project information set up around the room (**Exhibit J-6**). No comments were submitted during the open house. Three individuals from the community attended the open house: a local private landowner; a legal representative for a local private landowner; and Jeffrey McClure, a Pinal County Supervisor from District 4, and the Vice-Chairman of the Pinal County Board of Supervisors. The attendees were interested in obtaining information about the Project and did not provide feedback or comments on the Project.

EXHIBIT J-1
Project Website

Cactus Flower Solar

Powered by Cypress Creek
RENEWABLES

Cactus Flower Solar

Powering Pinal County's Future.

Strategically located in unincorporated Pinal County, just south of Eloy, Cactus Flower Solar is more than a solar project—it's a long-term investment in the region's prosperity. This proposed clean energy facility will deliver millions in new property tax revenue to support schools, infrastructure, and essential services – all while creating over 400 high-paying construction jobs and permanent positions for local workers.

Designed with the land and community in mind, Cactus Flower Solar will operate with zero carbon emissions, use minimal water, and preserve the natural landscape—ensuring the land remains suitable for farming well into the future. It's a smart, responsible step forward for Pinal County's energy, economy, and environment.

Contact us

Project Description

Cactus Flower Solar is a proposed 270-megawatt solar energy facility paired with a 270-megawatt battery energy storage system (BESS) located in unincorporated Pinal County, Arizona.

The project is designed to generate enough clean electricity to power approximately 46,000 homes annually. Energy produced by the solar panels will be stored in on-site batteries and delivered to the electric grid when it's most needed—day or night—helping to strengthen Arizona's energy reliability and sustainability.

Please refer to our [Cactus Flower Fact Sheet](#) for more detailed information.

Why Cactus Flower Solar?

Cactus Flower Solar was developed in response to the growing demand for clean, reliable energy in Arizona. As the state's population and energy needs increase, utilities and businesses are seeking affordable solutions that reduce carbon emissions and strengthen the power grid. This project will help meet those goals while supporting local economic development and ensuring long-term energy security for the region.

Community Benefits

Cactus Flower Solar is designed with the community in mind—bringing clean energy and economic growth to Pinal County. As both a responsible neighbor and experienced energy

partner, Cypress Creek Renewables is committed to making a meaningful difference in the places where it operates.

Located approximately 8 miles south of Eloy, the project will generate enough clean electricity to power 46,000 single-family homes annually, while supporting the region's energy independence, and generate \$70-80 million in tax revenue for Pinal County over the life of the project.

Cypress Creek Renewables actively invests in local communities through scholarships, sponsorships, and workforce development programs. In Pinal County alone, the company has already contributed tens of thousands of dollars to local nonprofits and students through their **Energizing Tomorrow's Leaders' Scholarship Program** —and plans to expand this support as the project moves forward.

Cypress Creek presenting a \$25,000 donation to the Santa Cruz Valley Historic Museum in Eloy, Arizona

Tatiana Reyes from Santa Cruz Valley High School was a recipient of the 2025 Energizing Tomorrow's Leaders scholarship program

Project Documents

Community Updates:

Invitation to Community Meeting



Letter to stakeholders inviting them to a public open house for Cactus Flower Solar on Sept. 9, 2025.

Project Applications and Documents:

Cactus Flower Solar Fact Sheet



Download Cactus Flower's Fact Sheet to get more information about the project's size, benefits, economic impact, and answers to frequently asked questions.

Transcripts and Exhibits:

Coming soon.

Project Timeline and Required Approvals

Required Remaining Approvals:

- "SUP" + Zoning from Pinal County
- Certificate of Environmental Compatibility (CEC) from the Arizona Power Plant and Transmission Line Siting Committee and Arizona Corporation Commission (ACC)

● Fall 2024

Pinal County MCPA

Cactus Flower Solar received a Major Comprehensive Plan Amendment through Pinal County in 2024 (Resolution No. 2024-PZ-PA-007-24)

● September 9, 2025

● Fall 2025

● Fall 2025

● December 2025

● October 2028

● April 2030

How to Participate in the CEC Process

Cactus Flower Solar is required to apply for and receive a Certificate of Environmental Compatibility (CEC) from the Arizona Power Plant and Transmission Line Siting Committee and Arizona Corporation Commission (ACC).

Details about this process and links will post here, once available.

FREQUENTLY ASKED QUESTIONS

Frequently Asked Questions

Here are some answers to common questions, but please reach out to our team if you have a question not addressed here.

Why solar?	+
Why was the location chosen?	+
What is the permitting process?	+
Is solar equipment safe for people and the environment?	+
Will property values be impacted?	+
Will Cactus Flower Solar benefit the community?	+
What happens at the end of the project's lifespan, and who is responsible for decommissioning?	+

Our Team

Sohini Hathiramani

Project Developer

Samuel Davis

Manager, External Affairs

CONTACT CACTUS FLOWER

Questions, Comments, or Inquiries?

Please reach out to our team for any questions about solar energy, Cactus Flower Solar, or Cypress Creek Renewables.

First Name *

Last Name *

Email *

Phone

(506) 234-5678

Message

What are you contacting us about?

- ☐ I have a comment
- ☐ I need information
- ☐ Something else



I'm not a robot

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Submit

EXHIBIT J-2
Project Facebook Page

facebook

Log In



Cactus Flower Solar

10 followers • 0 following

[Posts](#)[About](#)[Photos](#)[Videos](#)

...

Intro

Located in unincorporated Pinal County, Cactus Flower Solar is a proposed solar facility that is projected to create local benefits for the county and nearby Eloy, Arizona.

 Page · Solar Energy Company

 Eloy, AZ, United States, Arizona

 cactusflowersolar.com

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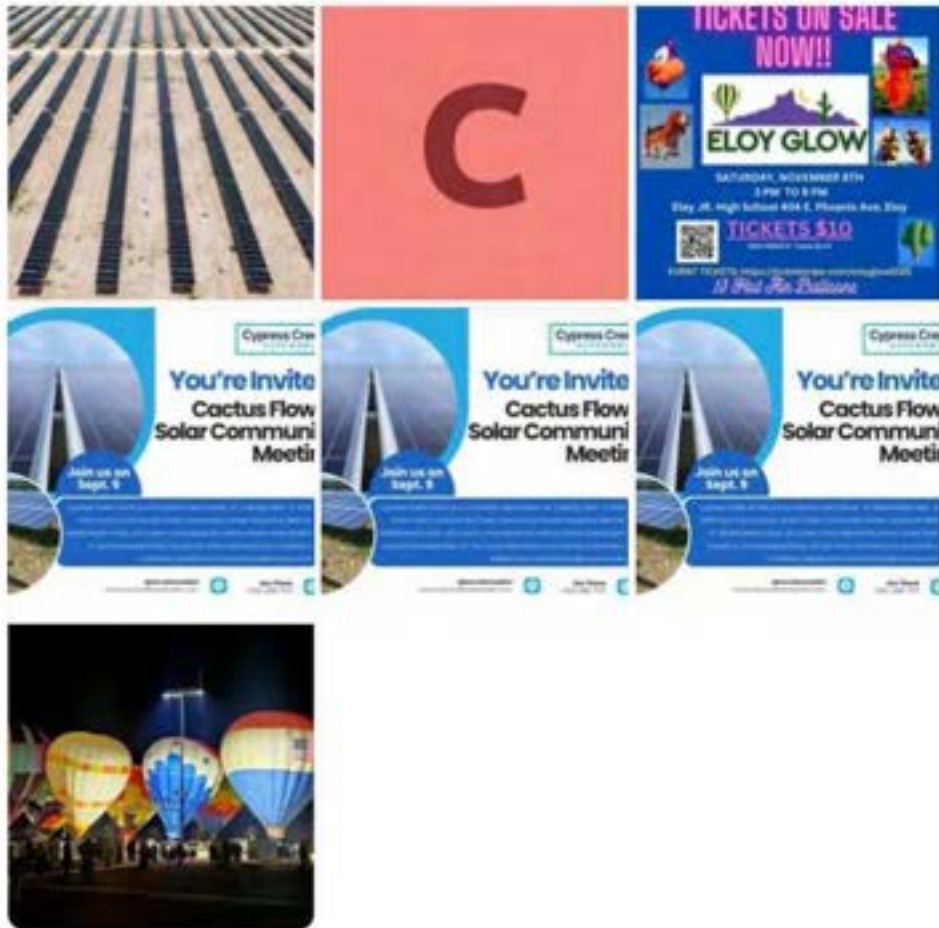
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6d · 🌐

We hope to see you at Eloy Glow!

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TICKETS ON SALE NOW!!



ELOY GLOW

SATURDAY, NOVEMBER 8TH
3 PM TO 9 PM
Eloy JR. High School 404 E. Phoenix Ave, Eloy



TICKETS \$10
KIDS UNDER 12 Tickets \$2.00

EVENT TICKETS: <https://ticketstripe.com/eloyglow2025>
13 Hot Air Balloons



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EXHIBIT J-3
Tribal Engagement Letter Sent to Tribes on July 25,
2025

July 25, 2025

XXXXX
XXXX
XXXX
XXXX

Re: Proposed Cactus Flower Solar, LLC Energy Development, Pinal County, Arizona

Dear XXXX,

Cypress Creek Renewables, LLC (CCR) is proposing to develop the Cactus Flower Solar, LLC project, a hybrid solar generating and energy storage facility in Pinal County, Arizona. The proposed Project Area is located approximately 8 miles south of Interstate 10 and the town of Eloy. The proposed Project Area is on privately-owned lands bound on the south by Curtis Road and 11 Mile Corner Road runs along a portion of the eastern boundary. The Project Area would occupy portions of Sections 23–25 and 13 in Township 9 South/Range 7 East.

Project components would include a solar array comprised of PV modules, pile-driven racking equipment, power inverters and transformers mounted on concrete pads, a collection system of cables, battery storage containers, and a substation. The proposed project will also have an electric generation transmission line ("gen-tie") that connects the project facility to a new Arizona Public Service (APS) substation, which is located southwest. The gen-tie will cross private lands and two portions of Arizona state trust lands. All project components will be accessed from existing public roads.

Environmental studies, including cultural resources investigations, are being conducted for due diligence and to support applications for a Certificate of Environmental Compatibility from the Arizona Corporation Commission, a right-of-way easement across state lands, and a Rezoning/Planned Area Development with Pinal County. Given the lack of a federal nexus, National Historic Preservation Act Section 106 consultation is not anticipated at this time.

During the early planning stages, CCR adjusted the gen-tie route in cooperation with APS to avoid conflicts with known archaeology sites. There is one previously recorded archeological site (AZAA:6:17 [ASM]) in proximity to the proposed gen-tie alignment. It is eligible for NRHP listing. CCR is conducting detailed engineering to ensure its avoidance. This site will be re-recorded as part of the archeological survey in 2025. No cultural resources were found on the private parcel.

As part of the ongoing planning process, CCR is coordinating with local and state agencies, tribal nations, the public, and other stakeholders, and seeks input from your office regarding tribal resources of religious or cultural significance that may occur near the proposed Project Area. Your Tribe has been identified as a Tribe with traditional interests in the project vicinity. We also recognize your interest in protecting, preserving, and enhancing cultural resources for your Tribe's current and future generations.

We invite you to submit comments as part of our data gathering process. Any information, concerns, and data you provide will be taken into consideration as we further develop an engineering design and ensure the project does not impact any archaeological, religious, or cultural sites. Comments may be sent via email to me at jennifer.hyre@ccrenew.com. I may also be reached via telephone at 505-205-3168.

We respectfully request your contribution of any information, concerns, or requests for further consultation within 45 days of your receipt of this request. Thank you for your consideration.

Sincerely,

Jennifer K. Hyre
Director, Environmental Affairs
Cypress Creek Renewables

Encl: Project Area Map

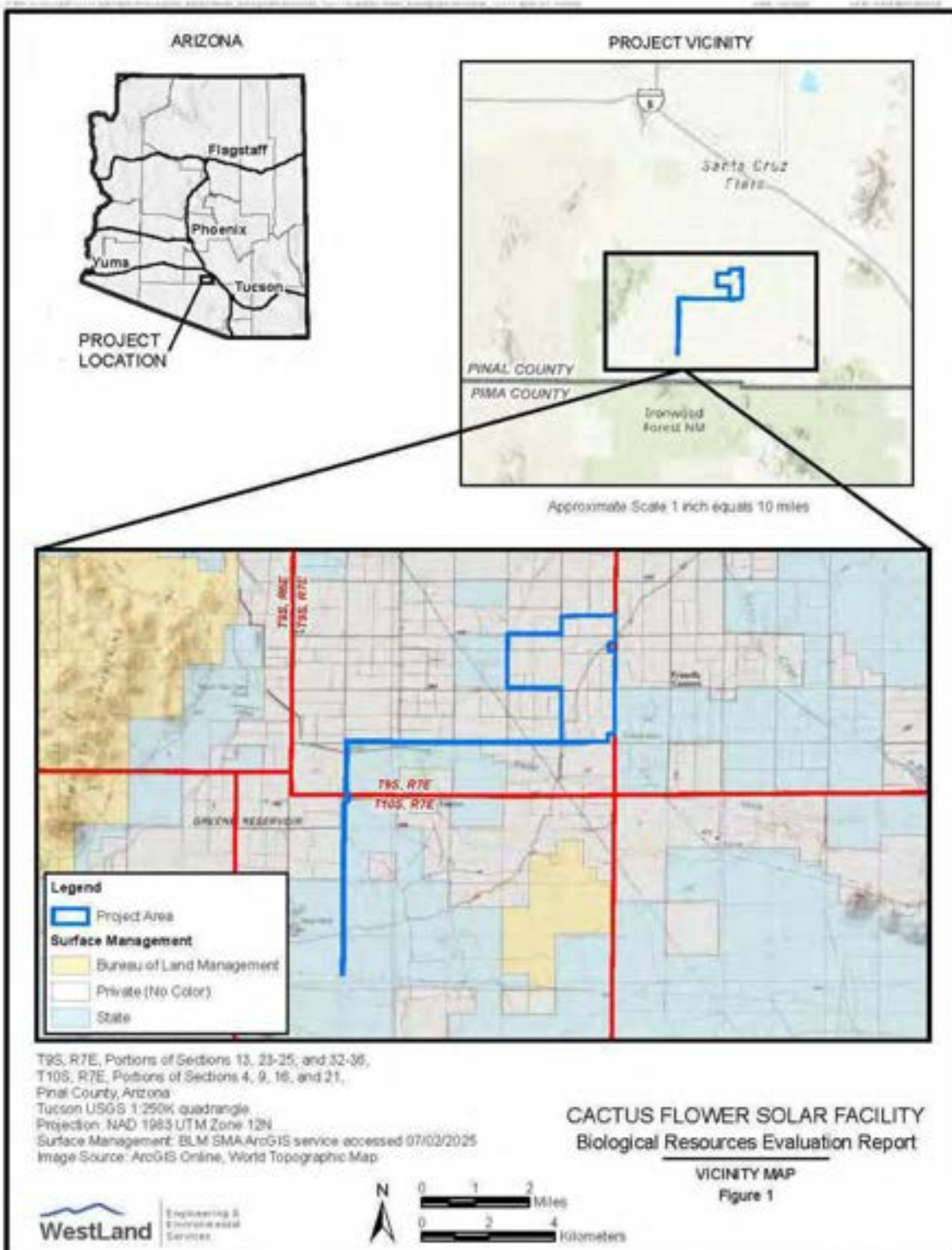


EXHIBIT J-4
Pinal Central Dispatch Affidavits for Open House
Invitation for Postings
on August 28 and September 4, 2025

AFFIDAVIT OF PUBLICATION

State of Florida, County of Orange, ss:

Ankit Sachdeva, being first duly sworn, deposes and says: That (s)he is a duly authorized signatory of Column Software, PBC, duly authorized agent of Pinal Central Dispatch, a newspaper published at Casa Grande, Pinal County, Arizona, Thursday of each week; that a notice, a full, true and complete printed copy of which is hereunto attached, was printed in the regular edition of said newspaper, and not in a supplement thereto, for 1 issues. The publications thereof having been on the following dates:

PUBLICATION DATES:

Sep. 4, 2025

NOTICE ID: N3h6LIPy0YC1ZcCfpWLC

NOTICE NAME: Cactus Flower Gen-Tie Open House

Ankit Sachdeva

(Signed) _____



VERIFICATION

State of Florida
County of Orange

Subscribed in my presence and sworn to before me on this: 09/04/2025

A handwritten signature in blue ink, appearing to be "J. Thompson", written over a horizontal line.

Notary Public

Notarized remotely online using communication technology via Proof.

PUBLIC NOTICE

Notice of Public Open House for Preparation of a Certificate of Environmental Compatibility (CEC) from the Arizona Corporation Commission (ACC) for Cypress Creek Renewables, LLC's Cactus Flower Solar Gen-Tie Project in Pinal County, Arizona.

Project:

Cypress Creek Renewables, LLC (CCR) is proposing the development of the Cactus Flower Solar Facility (the Project) located approximately 8 miles south of the City of Eloy, Arizona, along Curtis Road and 11 Mile Corner in Pinal County. The Project includes a proposed 270-megawatt solar energy facility paired with a 270-megawatt battery energy storage system (BESS), sited on 2,150 acres of privately owned land. An approximately 9-mile, 230-kilovolt (kV) generation interconnection line (gen-tie) will be located southwest of the solar facility and will interconnect with Arizona Public Services' (APS) existing Tat Momoli-Saguaro 230-kV transmission line via a new APS switchyard.

Public Open House:

CCR would like to invite the public to an open house on Tuesday, September 9, 2025, from 4 to 6 p.m. at the Toltec Community Center. The Toltec Community Center is located at 3655 West Shedd Road in Eloy, Arizona. Please note that a previous version of this notice listed the event as occurring on Wednesday, which is incorrect.

Project Information:

For additional information regarding the Project or to submit a comment, please visit <https://cactusflowersolar.com> or call us at 520-288-7011.

No. of publications: 1; date of publication: Sep 04, 2025

EXHIBIT J-5
Public Open House Letters sent to Neighbors
on August 21 and August 27, 2025



ABOUT CYPRESS CREEK

Cypress Creek Renewables is a leading independent power producer and renewable energy developer dedicated to powering a sustainable future. We've built a team of experts with deep experience across all energy sectors, bringing the knowledge and skills needed to deliver impactful energy solutions.

Guided by an owner's mindset and a commitment to innovation, we design and build projects that provide lasting value to communities and drive America's energy expansion forward. Our mission is simple: to create forward-thinking energy solutions that support a stronger, more reliable future—one project at a time.



CCRENEW.COM



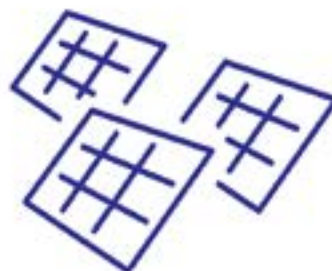
Cypress Creek
RENEWABLES

ABOUT CACTUS FLOWER



Technology

Solar + BESS
(Battery Energy Storage System)



Capacity

270MW Solar +
270MW BESS



Acreage

2,115 acres



* This is an estimated date

Cypress Creek
RENEWABLES

BENEFITING COMMUNITIES



County Tax Revenue

- Early tax estimates indicate a potential lifetime revenue of over \$70 million (subject to final project size and construction cost)*.



Creates Jobs

- Estimated to create approximately 400 construction jobs and additional permanent jobs.



Clean Reliable Energy

- Can provide energy for 46,000 homes annually.
- Supports grid and can provide clean energy to companies such as Lucid, Kohler, TSMC, LG, etc.



Low / Non-Water User

- Especially important after loss of CAP water allocation.
- Significantly less water used as compared to current agricultural use.

* This estimate is based on an analysis by Ernst & Young LLP assuming current CAPEX and tax regulations in 2025 and could be subject to change.

THE CEC PROCESS

The Certificate of Environmental Compatibility (CEC) Process

Cactus Flower Solar must secure approval of a Certificate of Environmental Compatibility (CEC) from the Arizona Corporation Committee (ACC) for the gen-tie line connecting the proposed solar generation and battery energy storage facility to the existing Arizona Public Services (APS) transmission line.

The CEC Process includes:

- 1** Identifying the Project Area
- 2** Conducting Resource Studies
- 3** Hosting the Public Open House in September 2025 — **We are here**
- 4** Preparing the Certificate of Environmental Compatibility
- 5** Conducting the Line Siting Committee Hearing
- 6** Requesting Arizona Corporation Commission Approval
- 7** Developing and Constructing the Project

VISUAL SIMULATIONS

These are simulated photos of projected visual impacts

Current



Proposed



VISUAL SIMULATIONS

These are simulated photos of projected visual impacts

Current



Proposed



VISUAL SIMULATIONS

These are simulated photos of projected visual impacts

Current



Proposed



VISUAL SIMULATIONS

These are simulated photos of projected visual impacts

Current



Proposed



VISUAL SIMULATIONS

These are simulated photos of projected visual impacts



VISUAL SIMULATIONS

These are simulated photos of projected visual impacts

Current



Proposed



ENVIRONMENTAL DILIGENCE PROCESS AND FINDINGS

As part of the development process CCR has conducted environmental studies and due diligence, including a Critical Issues Analysis, Biological Evaluation, Cultural Resources Investigation, Aquatic Resources Delineation, and Phase I Environmental Site Assessment

- No habitat for federal threatened or endangered species
- Migratory birds and raptors could forage and nest in the project area
- Burrowing owls found nesting in the project area
- Two archaeological sites in the project area and project will be designed to avoid these resources
- FEMA flood designation of 1% annual chance of hazard
- No wetlands
- No hazardous materials on site



WAYS TO GET IN TOUCH



CactusFlowerSolar.com



info@cactusflowersolar.com



520.288.7011



[@CactusFlowerSolar](https://www.facebook.com/CactusFlowerSolar)



Cypress Creek
RENEWABLES

EXHIBIT J-6
Posters Presented at the Public Open House

August 21, 2025

[Address Block]

Cypress Creek Renewables, LLC (CCR) is proposing the development of the Cactus Flower Solar Facility (the Project) located approximately 8 miles south of the City of Eloy, Arizona, along Curtis Road and 11 Mile Corner in Pinal County (see attached figure). The Project includes a proposed 270-megawatt solar energy facility paired with a 270-megawatt battery energy storage system (BESS), sited on 2,150 acres of privately owned land. An approximately 9-mile, 230-kilovolt (kV) generation interconnection line (gen-tie) will be located southwest of the solar facility and will interconnect with Arizona Public Services' (APS) existing Tat Momoli-Saguaro 230-kV transmission line via a new APS switchyard.

The gen-tie portion of the proposed Project requires a Certificate of Environmental Compatibility from the Arizona Corporation Commission, which considers public comments in the decision-making process.

CCR invites you to attend a public open house for the proposed Project on:

Wednesday, September 9, 2025

4:00 PM to 6:00 PM

Toltec Community Center

3650 W Shedd Rd, Eloy, AZ 85131

The in-person open house is for the community and local stakeholders to learn more about the Project, submit comments, and discuss questions or concerns with CCR representatives.

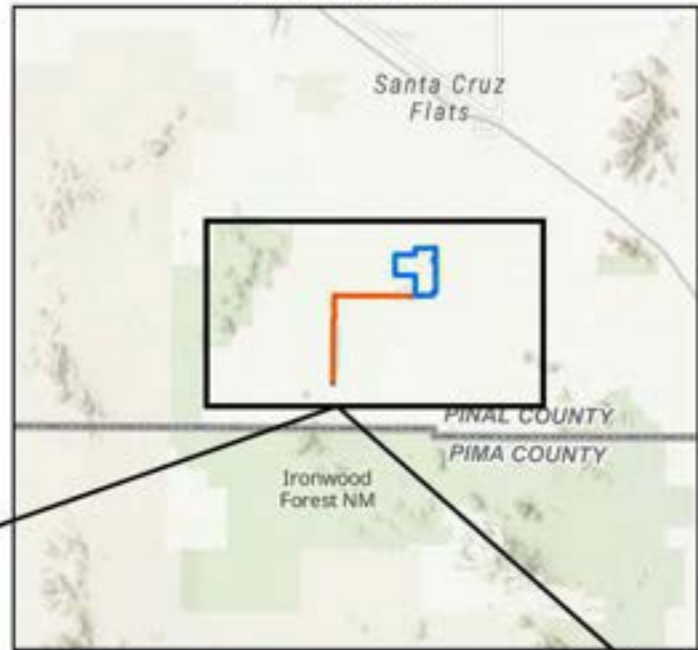
For additional information regarding the Project or to submit a comment, please visit <https://cactusflowersolar.com/> or call us at 520-288-7011.

ARIZONA

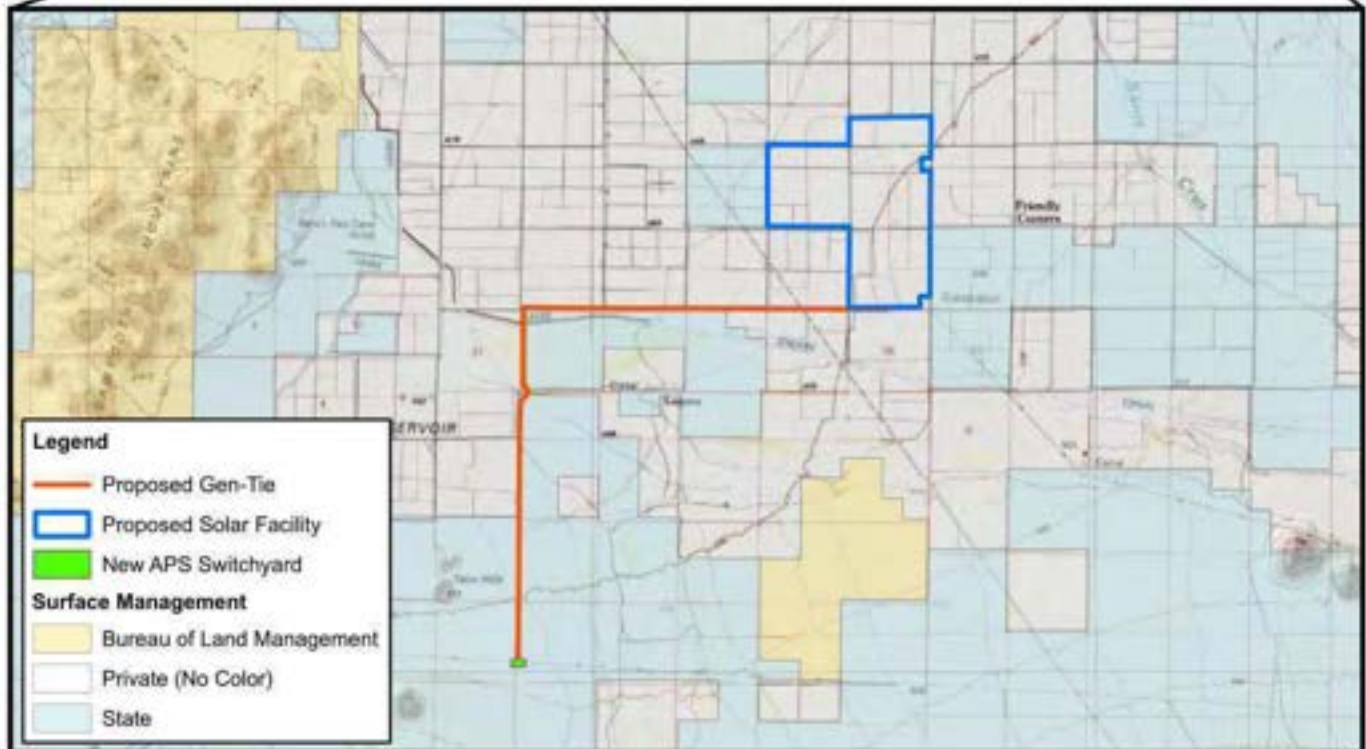


PROJECT LOCATION

PROJECT VICINITY



Approximate Scale 1 inch equals 10 miles



T9S, R7E, Portions of Sections 13, 23-25, and 32-36,
T10S, R7E, Portions of Sections 4, 9, 16, and 21,
Pinal County, Arizona

Projection: NAD 1983 UTM Zone 12N

Surface Management: BLM SMA ArcGIS service accessed 08/19/2025

Image Source: ArcGIS Online, World Topographic Map

CACTUS FLOWER SOLAR GEN-TIE PROJECT Certificate of Environmental Compatibility Open House Newsletter

PROJECT LOCATION

Figure 1



0 1 2 Miles

0 2 4 Kilometers

August 27, 2025

[Address Block]

This is an update to a letter sent to you on August 21, 2025. The original letter stated that the open house would be held on a Wednesday. This is incorrect. The open house will be held on **Tuesday, September 9, 2025**. All other details remain the same and are included below. Apologies for this miscommunication.

Cypress Creek Renewables, LLC (CCR) is proposing the development of the Cactus Flower Solar Facility (the Project) located approximately 8 miles south of the City of Eloy, Arizona, along Curtis Road and 11 Mile Corner in Pinal County (see attached figure). The Project includes a proposed 270-megawatt solar energy facility paired with a 270-megawatt battery energy storage system (BESS), sited on 2,150 acres of privately owned land. An approximately 9-mile, 230-kilovolt (kV) generation interconnection line (gen-tie) will be located southwest of the solar facility and will interconnect with Arizona Public Services' (APS) existing Tat Momoli-Saguaro 230-kV transmission line via a new APS switchyard.

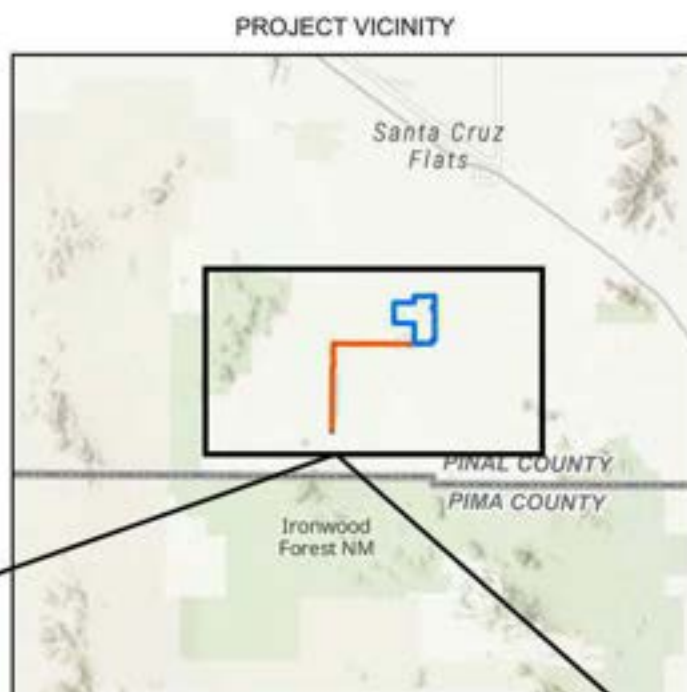
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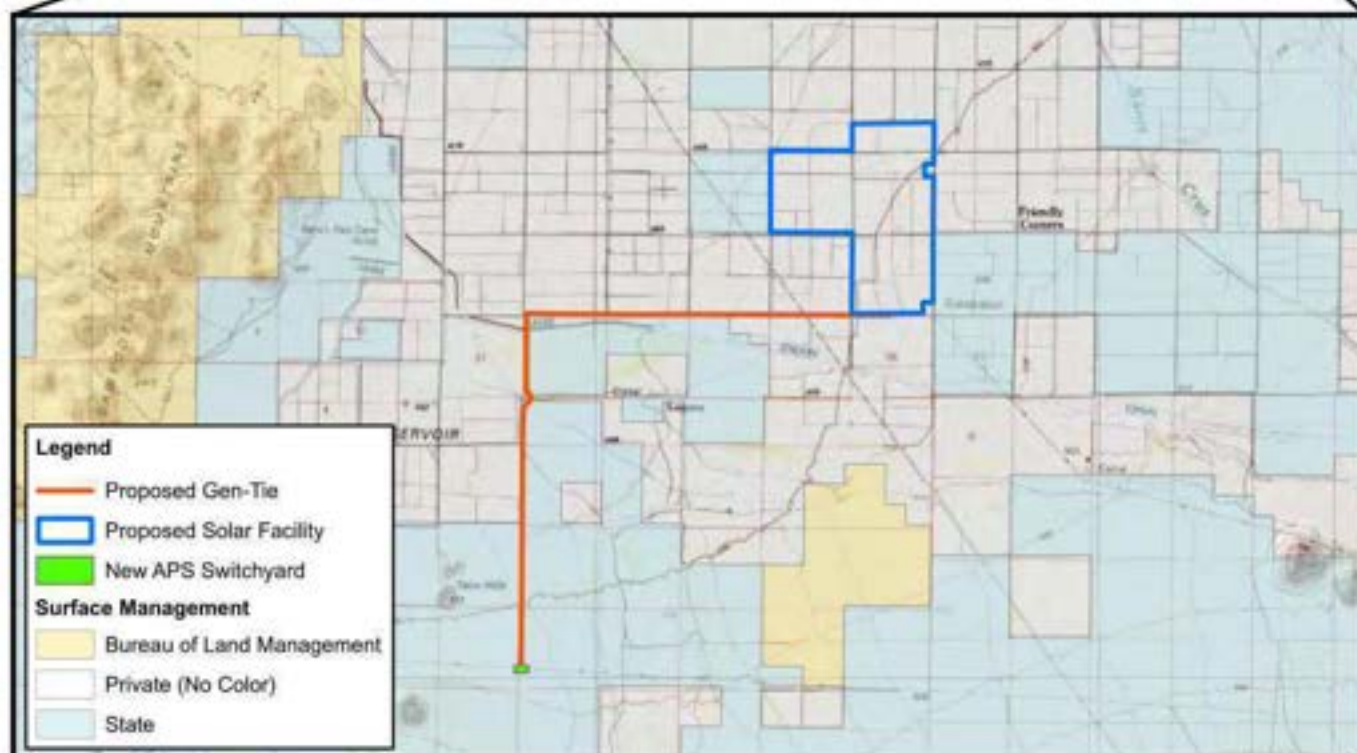
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4:00 PM to 6:00 PM
Toltec Community Center
3650 W Shedd Rd, Eloy, AZ 85131

The in-person open house is for the community and local stakeholders to learn more about the Project, submit comments, and discuss questions or concerns with CCR representatives.

For additional information regarding the Project or to submit a comment, please visit <https://cactusflowersolar.com/> or call us at 520-288-7011.



Approximate Scale 1 inch equals 10 miles



T9S, R7E, Portions of Sections 13, 23-25, and 32-36,
T10S, R7E, Portions of Sections 4, 9, 16, and 21,
Pinal County, Arizona
Projection: NAD 1983 UTM Zone 12N
Surface Management: BLM SMA ArcGIS service accessed 08/19/2025
Image Source: ArcGIS Online, World Topographic Map

Projection: NAD 1983 UTM Zone 12N

Surface Management: BLM SMA ArcGIS service accessed 08/19/2025

Image Source: ArcGIS Online, World Topographic Map

CACTUS FLOWER SOLAR GEN-TIE PROJECT

Certificate of Environmental Compatibility
Open House Newsletter

PROJECT LOCATION

Figure 1

