DOCKETED	
Docket Number:	24-OPT-01
Project Title:	Perkins Renewable Energy Project
TN #:	269550
Document Title:	Perkins Response to 2nd Round Data Requests Attachments B, C, and D
Description:	Attachment B, Biological Supporting Documentation, Attachment C, Revised Figures of Section 4.10 Socioeconomics, and Attachment D, Revised Project Description
Filer:	Emily Capello
Organization:	Panorama Environmental, Inc.
Submitter Role:	Applicant Consultant
Submission Date:	4/21/2026 5:31:16 PM
Docketed Date:	4/22/2026

Attachment B Biological Resources Supporting Data

Attachment B.1 Updated LSAA (supersedes the LSAA included in Docket 262219), WDR (supersedes the WDR included in Docket 262219), and ITP Applications (supersedes the ITP Applications included in Docket 262218)

FOR DEPARTMENT USE ONLY				
Date Received	*Amount Received*	*Amount Due*	*Date Complete*	*Notification No.*
	$	$		
Assigned to:				

NOTIFICATION OF LAKE OR STREAMBED ALTERATION

Complete EACH field, unless otherwise indicated, following the instructions and submit ALL required enclosures, attachments, and fee(s) to the CDFW regional office that serves the area where the project will occur. Attach additional pages to notification, if necessary.

1. APPLICANT PROPOSING PROJECT

Name	Todd Johansen
Business/Agency	IP Perkins, LLC
Mailing Address	9450 Southwest Gemini Drive, PMB #68743
City, State, Zip	Beaverton, Oregon 97008
Phone Number	(510) 398-2547
Email	tjohansen@ipxpower.com

2. CONTACT PERSON (*Complete only if different from applicant.*)

Name	Charity Wagner
Business/Agency	IP Perkins, LLC
Mailing Address	9450 Southwest Gemini Drive, PMB #68743
City, State, Zip	Beaverton, Oregon 97008
Phone Number	415-730-6718
Email	cwagner@ipxpower.com

While an applicant is legally responsible for complying with Fish and Game Code section 1602 et seq., an applicant may designate and authorize an agent (e.g., lawyer, consultant, or other individual) to act as a Designated Representative. The Designated Representative is authorized to sign the notification and any agreement on behalf of the Applicant.

Do you authorize the Contact Person above to represent you as your Authorized Designated Representative?

☐ Yes, I authorize.	☑ No, I do not authorize.

3. PROPERTY OWNER (*Complete only if different from applicant*)

Name	USA (Bureau of Land Management, El Centro Field Office
Mailing Address	1661 S. 4th Street
City, State, Zip	El Centro, CA 92243
Phone Number	760-337-4400
Email	BLM_CA_Web_EC@blm.gov

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4. PROJECT NAME AND AGREEMENT TERM

A. Project Name	Perkins Renewable Energy Project			
B. Agreement Term Requested	☑ Regular (*5 years or less*) ☐ Long-term (*greater than 5 years)*			
C. Project Term	Beginning (*year*)	2028	Ending (*year*)	2031

D. Seasonal Work Period

Season(s)*	Start Date (*month/day*)	End Date (*month/day*)	E. Number of Work Days
1	01/01	12/31	800
2			
3			
4			
5			

** Continue on additional page(s) if necessary*

5. AGREEMENT TYPE

Check the applicable box. If boxes B – F are checked, complete the specified attachment.

A.	☑ Standard *(Most construction projects, excluding the categories listed below)*	
B.	☐ Gravel/Sand/Rock Extraction (*Attachment A*)	*Mine I.D. Number:* _____
C.	☐ Timber Harvesting (*Attachment B*)	*THP Number:* _____
D.	☐ Water Diversion/Extraction/Impoundment (*Attachment C*)	*SWRCB Number:* _____
E.	☐ Routine Maintenance (*Attachment D*)	
F.	☐ Cannabis Cultivation (*Attachment E*)	
G.	☐ CDFW Grant Programs	*Agreement Number:* _____
H.	☐ Master	
I.	☐ Master Timber Operations	

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6. FEES

See the current fee schedule to determine the appropriate notification fee. Itemize each project's estimated cost and corresponding fee. ***Note: CDFW may not process this notification until the correct fee has been received.***

	A. Project Name	B. Project Cost	C. Project Fee
1	Perkins Renewable Energy Project	429025	6580.50
2			
3			
4			
5			
6			
7			
8			
9			
10			
		D. Base Fee *(if applicable)*	
		E. TOTAL FEE*	6580.50

** Check, money order, and Visa or MasterCard (select Environmental Fees from Menu) payments are accepted.*

7. PRIOR NOTIFICATION AND ORDERS

A. Has a notification previously been submitted to, or a Lake or Streambed Alteration Agreement previously been issued by, CDFW for the project described in this notification?

☐ Yes (*Provide the information below*) ☑ No

Applicant	Notification Number	Date

B. Is this notification being submitted in response to a court or administrative order or notice, or a notice of violation (NOV) issued by CDFW?

☐ Yes ☑ No (*Enclose a copy of the order, notice, or NOV. If the applicant was directed to notify CDFW verbally rather than in writing, identify the person who directed the applicant to submit this notification, the agency he or she represents, and describe the circumstances relating to the order.*)

Name of person who directed notification	Agency

Describe circumstances relating to order

☐ *Continued on additional page(s)*

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8. PROJECT LOCATION

A. Address or description of project location.
(*Include a map that marks the location of the project with a reference to the nearest city or town, and provide driving directions from a major road or highway.*)

The Project Application Area is in Imperial County, approximately 37 miles southeast of the Salton Sea. Imperial County is located in southern California, in the southwestern portion of the Colorado Desert. The Project Application Area is located approximately 1.2 miles north of the U.S.–Mexico border, in a region characterized by undeveloped desert and agricultural uses. The Imperial Valley, which is dominated by agricultural land, is located an estimated 2.5 miles west of the Project Application Area. The Imperial Sand Dunes, the largest mass of sand dunes in California, is located approximately 9 miles east of the Project Application Area.

☑ *Continued on additional page(s)*

B. River, stream, or lake affected by the project.	Ephemeral drainages and vegetated swales. See attachme
C. What water body is the river, stream, or lake tributary to?	Salton Sea
D. Is the river or stream segment affected by the project listed in the state or federal Wild and Scenic Rivers Acts?	☐ Yes ☑ No ☐ Unknown
E. County	Imperial County

F. USGS 7.5 Minute Quad Map Name	G. Township	H. Range	I. Section	J. ¼ Section
Glamis SW, Midway Well NW, and Midway Well	See attache			

☐ *Continued on additional page(s)*

K. Meridian (check one) ☐ Humboldt ☐ Mt. Diablo ☑ San Bernardino

L. Assessor's Parcel Number(s)

056-170-014	056-170-025
056-170-015	056-170-022

☑ *Continued on additional page(s)*

M. Geographic coordinates (*Provide the latitude and longitude coordinates for the property where the project(s) will take place. CDFW utilizes decimal degrees and WGS 84 datum. Access Google Maps Help if you need assistance in finding your coordinates.)*

Latitude/Longitude	*Latitude:* see attached pages	*Longitude:* -###.#####
	Latitude: ##.#####	*Longitude:* -###.#####
	Latitude: ##.#####	*Longitude:* -###.#####
	Latitude: ##.#####	*Longitude:* -###.#####
	Latitude: ##.#####	*Longitude:* -###.#####

9. PROJECT CATEGORY

WORK TYPE	NEW CONSTRUCTION	REPLACE EXISTING STRUCTURE	REPAIR-MAINTAIN-OPERATE EXISTING STRUCTURE
Bank stabilization – bioengineering/recontouring	☐	☐	☐
Bank stabilization – rip-rap/retaining wall/gabion	☐	☐	☐
Boat dock/pier	☐	☐	☐
Boat ramp	☐	☐	☐
Bridge	☐	☐	☐
Channel clearing/vegetation management	☐	☐	☐
Culvert	☐	☐	☐
Debris basin	☐	☐	☐
Dam	☐	☐	☐
Filling of wetland, river, stream, or lake	☑	☐	☐
Geotechnical survey	☐	☐	☐
Habitat enhancement – revegetation/mitigation	☐	☐	☐
Levee	☐	☐	☐
Low water crossing	☐	☐	☐
Road/trail	☑	☐	☐
Sediment removal: pond, stream, or marina	☐	☐	☐
flood control	☐	☐	☐
Storm drain outfall structure	☐	☐	☐
Temporary stream crossing	☐	☐	☐
Utility crossing: horizontal directional drilling	☐	☐	☐
jack/bore	☐	☐	☐
open trench	☑	☐	☐
Water diversion without facility	☐	☐	☐
Water diversion with facility	☐	☐	☐
Other *(specify)*: solar facility	☑	☐	☐

10. PROJECT DESCRIPTION

A. Describe the project in detail. Include photographs of the project location and immediate surrounding area.

- Written description of all project activities with detailed step-by-step description of project implementation.
- Include any structures (e.g., rip-rap, culverts) that will be placed or modified in or near the stream, river, or lake, and any channel clearing.
- Specify volume, and dimensions of all materials and features (e.g., rip rap fields) that will be used or installed.
- If water will be diverted or drafted, specify the purpose or use and include Attachment C.
- Enclose diagrams, drawings, design plans, construction specifications, and maps that provide all of the following: site specific construction details; dimensions of each structure and/or extent of each activity in the bed, channel, bank or floodplain; overview of the entire project area (i.e., "bird's-eye view") showing the location of each structure and/or activity, significant area features, stockpile areas, areas of temporary disturbance, and where the equipment/machinery will access the project area.
  - A helpful resource to assist in the development of quality PDF maps in Google Earth. See Using Google Earth to Map your Property (PDF).

IP Perkins, LLC (Applicant), proposes to construct, operate, maintain, and decommission a 1,150 megawatt (MW) solar photovoltaic (PV) facility and battery energy storage system (BESS) on public lands administered by the U.S. Bureau of Land Management (BLM) and Bureau of Reclamation (BOR), as well as private lands located southeast of El Centro in Imperial County, California.

Please see attached project description.

☑ *Continued on additional page(s)*

B. Specify the equipment and machinery that will be used to complete the project.

See attachment for a list of construction equipment that would be used to complete the project.

☑ *Continued on additional page(s)*

C. Will water be present during the proposed work period (specified in box 4.D) in the stream, river, or lake (specified in box 8.B).	☐ Yes ☑ No (*Skip to box 11*)
D. Will the project require work in the wetted portion of the channel?	☐ Yes (*Enclose a plan to divert water around work site*) ☑ No

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11. PROJECT IMPACTS

A. Describe impacts to the bed, channel, and bank of the river, stream, or lake, and the associated riparian habitat. Specify the dimensions of the modifications in length (linear feet) and area (square feet or acres) and the type and volume of material (cubic yards) that will be moved, displaced, or otherwise disturbed, if applicable.

See attached summary of impacts.

☑ *Continued on additional page(s)*

B. Will the project affect any vegetation? ☑ Yes (*Complete the tables below*) ☐ No (*Include aerial photo with date supporting this determination)*

Vegetation Type	Temporary Impact	Permanent Impact
Alkali goldenbrush desert scrub	Linear feet: _____ Total area: _____	Linear feet: _____ Total area: 81.4
see additional pages	Linear feet: _____ Total area: _____	Linear feet: _____ Total area: _____

Tree Species	Number of Trees to be Removed	Trunk Diameter (range)
Not applicable.		

☑ *Continued on additional page(s)*

C. Are any special status animal or plant species, or habitat that could support such species, known to be present on or near the project site?

☑ Yes (*List each species and/or describe the habitat below)* ☐ No ☐ Unknown

See Biological Resources Technical Report and AFC Biological Resources section for a list of special status species that have potential to occur.

☑ *Continued on additional page(s)*

D. Identify the source(s) of information that supports a "yes" or "no" answer above in Box 11.C.

See attached Biological Resources Technical Report (Appendix J.1 of Opt-in Application and updated BRTR in Response Batch 3)

☑ *Continued on additional page(s)*

E. Has a biological study been completed for the project site?

☑ Yes (*Enclose the biological study*) ☐ No

Note: A biological assessment or study may be required to evaluate potential project impacts on biological resources.

F. Has one or more technical studies (e.g., engineering, hydrologic, geological, or geomorphological) been completed for the project or project site?

☑ Yes *(Enclose the study(ies))* ☐ No

Note: One or more technical studies may be required to evaluate potential project impacts to a lake or streambed.

G. Have fish or wildlife resources or waters of the state been mapped or delineated on the project site?

☑ Yes (*Enclose the mapped results*) ☐ No

Note: Check "yes" if fish and wildlife resources or waters of the state on the project site have been mapped or delineated. "'Wildlife' means and includes all wild animals, birds, plants, fish, amphibians, reptiles and related ecological communities, including the habitat upon which the wildlife depends." (Fish & G. Code, § 89.5.) If "yes" is checked, submit the mapping or delineation. If the mapping or delineation is in digital format (e.g., GIS shape files or KMZ), you must submit the information in this format for CDFW to deem your notification complete. If "no" is checked, or the resolution of the mapping or delineation is insufficient, CDFW may request mapping or delineation (in digital or non-digital format), or higher resolution mapping or delineation for CDFW to deem the notification complete.

12. MEASURES TO PROTECT FISH, WILDIFE, AND PLANT RESOURCES

A. Describe the techniques that will be used to prevent sediment, hazardous, or other deleterious materials from entering watercourses during and after construction.

Refer to Attachment A.

☑ *Continued on additional page(s)*

B. Describe project avoidance and/or minimization measures to protect fish, wildlife, and plant resources.

Refer to Attachment A.

☑ *Continued on additional page(s)*

C. Describe any project mitigation and/or compensation measures to protect fish, wildlife, and plant resources.

The applicant proposed compensation and mitigation plan for impacts on waters and other biological resources is provided in Attachment B.

☑ *Continued on additional page(s)*

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13. PERMITS

List any local, State, and federal permits required for the project and check the corresponding box(es). Enclose a copy of each permit that has been issued.

A. RWQCB Waste Discharge Requirements ☑ Applied ☐ Issued

B. _____ ☐ Applied ☐ Issued

C. _____ ☐ Applied ☐ Issued

D. Unknown whether ☐ local, ☐ State, or ☐ federal permit is needed for the project. (*Check each box that applies*)

☑ *Continued on additional page(s)*

14. ENVIRONMENTAL REVIEW

A. Has a CEQA lead agency been determined?	☑ Yes (*Complete boxes B, C, D, E, and F*) ☐ No (*Skip to box 14.G*)		
B. CEQA Lead Agency	California Energy Commission		
C. Contact Person	CEC to provide	D. Phone Number	CEC to provide

E. Has a draft or final document been prepared for the project pursuant to CEQA and/or NEPA?

☐ Yes (*Check the box below for each CEQA or NEPA document that has been prepared and enclose a copy of each.*)

☑ No (*Check the box below for each CEQA or NEPA document listed below that will be or is being prepared.*)

☐ Notice of Exemption	☐ Mitigated Negative Declaration	☑ NEPA document (*type*):
☐ Initial Study	☑ Environmental Impact Report	Environmental Assessment
☐ Negative Declaration	☐ Notice of Determination *(Enclose)*	
☐ THP/ NTMP	☑ Mitigation, Monitoring, & Reporting Plan	

F. State Clearinghouse Number (*if applicable*)	CEC to provide once available

G. If the project described in this notification is not the "whole project" or action pursuant to CEQA, briefly describe the entire project (Cal. Code Regs., tit. 14 § 15378).

The whole project is described in the Project Description enclosed in the Opt-in Application.

☑ *Continued on additional page(s)*

H. Has a CEQA filing fee been paid pursuant to Fish and Game Code section 711.4?

☐ Yes (*Enclose proof of payment*) ☑ No (*Briefly explain below the reason a CEQA filing fee has not been paid)*

Note: The CEQA filing fee is in addition to the notification fee. If a CEQA filing fee is required, the Lake or Streambed Alteration Agreement may not be finalized until paid.

This application is provided with the Opt-in Application. The California Energy Commission will start the CEQA process upon deeming the application complete. No CEQA filing fee is due at this time as CEQA has not been completed.

15. SITE INSPECTION

Check one box only.

☐ In the event CDFW determines that a site inspection is necessary, I hereby authorize a CDFW representative to enter the property where the project described in this notification will take place at any reasonable time, and hereby certify that I am authorized to grant CDFW such entry.

☑ I request CDFW to first contact (*insert name*) to be provided at a later date at (*insert phone number or email address*) to be provided at a later date to schedule a date and time to enter the property where the project described in this notification will take place. I understand that this may delay CDFW's determination as to whether a Lake or Streambed Alteration Agreement is required and/or CDFW's issuance of a draft agreement pursuant to this notification.

16. DIGITAL FORMAT

Is any of the information included as part of the notification available in digital format (i.e., CD, DVD, etc.)?

☑ Yes (Please enclose the information via digital media with the completed notification form.)

☐ No

17. SIGNATURE

I hereby certify that to the best of my knowledge the information in this notification is true and correct and that I am authorized to sign this notification as, or on behalf of, the applicant. I understand that if any information in this notification is found to be untrue or incorrect, CDFW may suspend processing this notification or suspend or revoke any draft or final Lake or Streambed Alteration Agreement issued pursuant to this notification. I understand also that if any information in this notification is found to be untrue or incorrect and the project described in this notification has already begun, I and/or the applicant may be subject to civil or criminal prosecution. I understand that this notification applies only to the project(s) described herein and that I and/or the applicant may be subject to civil or criminal prosecution for undertaking any project not described herein unless CDFW has been separately notified of that project in accordance with Fish and Game Code section 1602 or 1611.

Signed by:
Todd Johansen
DocuSign Id: C87A999C752A4DE...
Signature of Applicant or Applicant's Authorized Representative

4/9/2026
Date

Todd Johansen, Chief Commercial Officer
Print Name

8. Project Location

8A. Project Location

The Project is located in Imperial County, approximately 37 miles southeast of the Salton Sea. Imperial County is in southern California, in the southwestern portion of the Colorado Desert. The Project Application Area is located approximately 1.2 miles north of the U.S.–Mexico border, in a region characterized by undeveloped desert and agricultural uses. The Imperial Valley, which is dominated by agricultural land, is located an estimated 2.5 miles west of the Project Application Area. The Imperial Sand Dunes, the largest mass of sand dunes in California, is located approximately 9 miles east of the Project Application Area. A regional location map is provided in Figure 1 and vicinity map is provided in Figure 2.

Figure 1 Regional Setting

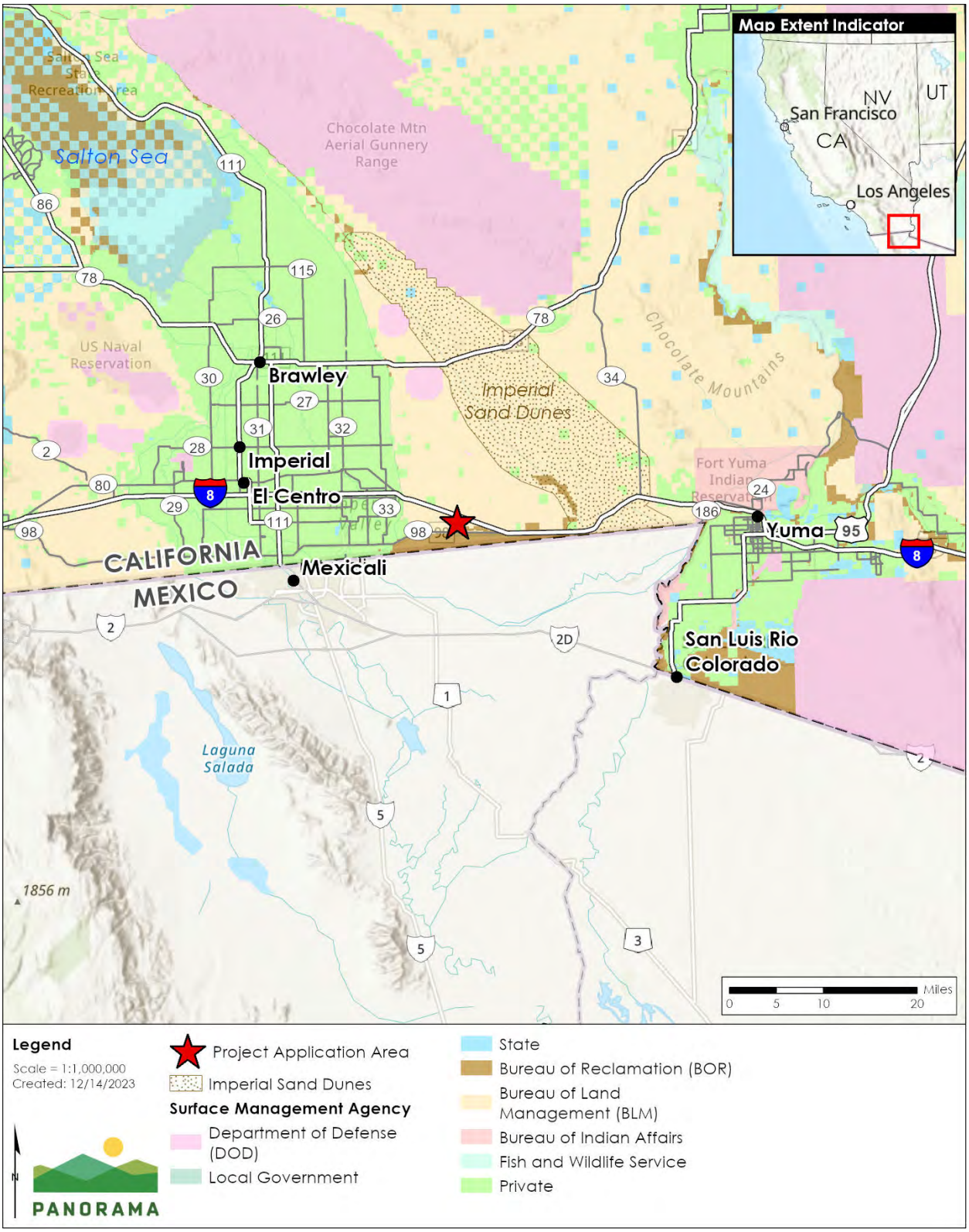
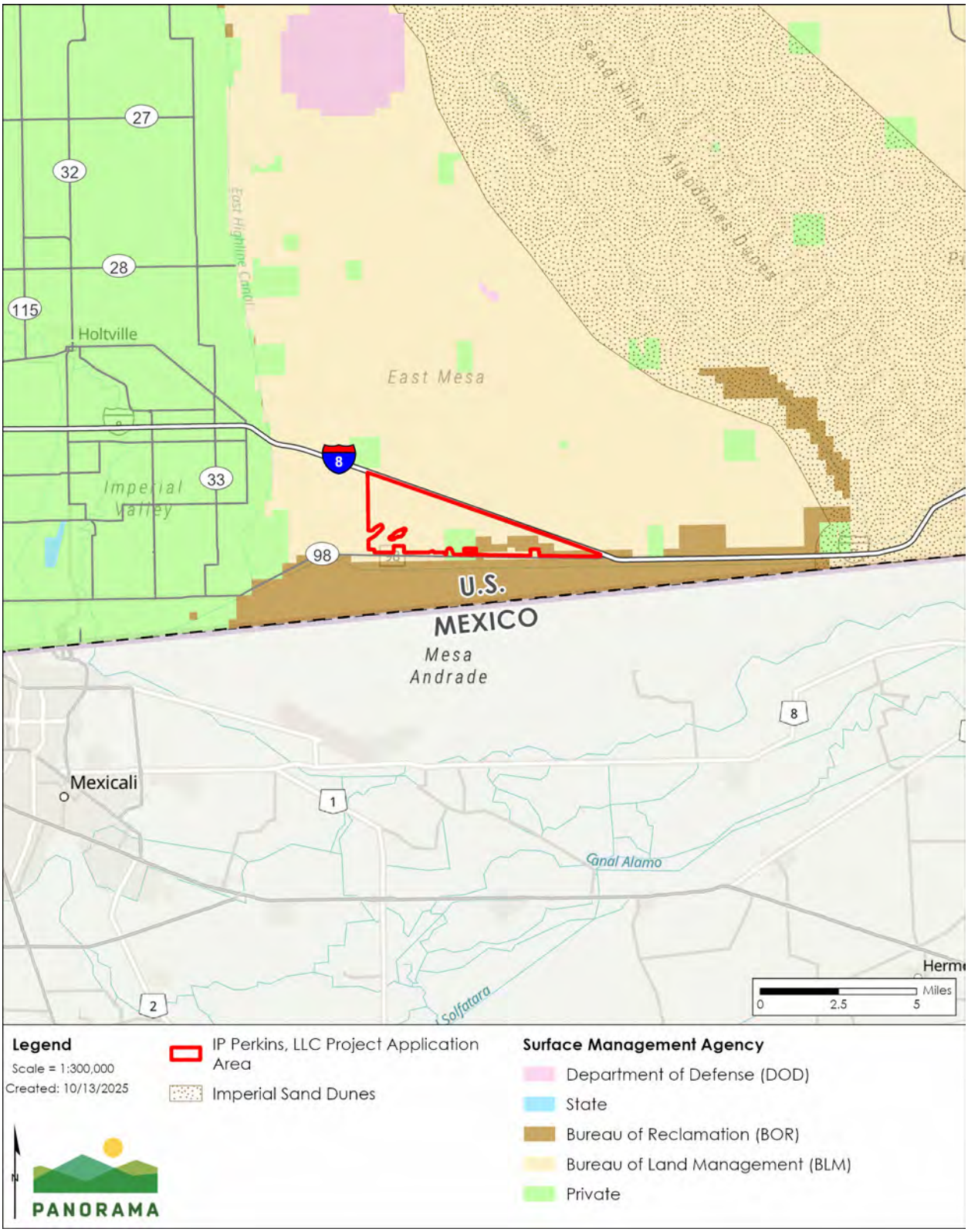


Figure 2 Project Vicinity



8M. Geographic Coordinates

The latitude and longitude for each water resource and jurisdictional vegetation feature are provided below. These jurisdictional water and vegetation resources are shown on maps in

Figure 7 and Figure 8. The geographic coordinates for water resources impacted by the Project are listed in Table 1.

Table 1 Geographic Coordinates for Water Resources and Jurisdictional Vegetation Features

Water Number/Vegetation Type	Latitude	Longitude
1	32.723639°	-115.219161°
2	32.724273°	-115.219085°
3	32.723575°	-115.21858°
4	32.719173°	-115.213937°
5	32.718912°	-115.213913°
6	32.718589°	-115.213859°
7	32.719879°	-115.212891°
8	32.718522°	-115.212542°
9	32.719746°	-115.201149°
10	32.719949°	-115.200161°
11	32.720722°	-115.200478°
12	32.72111°	-115.199159°
Alkali goldenbrush desert scrub/Vegetated swale	32.723799	-115.206508
Vegetated swale	32.718733	-115.219226

10. Project Description

10A. Project Description

IP Perkins, LLC, and any related affiliates (collectively, "Applicant"), subsidiary of IPX Power USA, LLC, proposes to construct, operate, maintain, and decommission a 1,150 megawatt (MW) solar photovoltaic (PV) facility and battery energy storage system (BESS) on public lands administered by the U.S. Bureau of Land Management (BLM) and Bureau of Reclamation (BOR), as well as private lands located southeast of El Centro in Imperial County, California.

A fenced area referred to in this notification as the "Project Application Area" would contain the solar plant, BESS, Project interconnection generation tie (gen-tie) line, Project substation, and operations and maintenance (O&M) yard and facility (refer to Figure 3). The Project would interconnect to the existing San Diego Gas and Electric (SDG&E) Southwest Power Link (SWPL) 500 kV transmission line that traverses east–west to the south of the Project Application Area via a proposed high-voltage breaker-and-a-half switchyard (BAAH switchyard) and two 500 kilovolt (kV) loop-in transmission lines that would be located south of the Project, which would be operated by SDG&E and are addressed in a separate LSAA Application. While the entire Project is 1,150 MW, a portion of the overall Project would be constructed within waters of the State subject to CDFW jurisdiction under Section 1600. The specific structures that could be located within waters of the State are described below.

Solar Arrays Panel Supports

Structures supporting the PV panels would consist of steel piles (e.g., cylindrical pipes, H-beams, helical screws, or similar). The piles would typically be spaced 18 feet apart. The height of the piles above the ground would vary based on the racking configuration specified in the final design. For a single-axis tracking system, piles typically would be installed to a reveal height of approximately 4 to 6 feet above grade (minimum 1 foot clearance between bottom edge of panel and ground but could be higher to compensate for terrain variations and clearance for overland flow during stormwater events). For a fixed-tilt system, the reveal height would vary based on the racking configuration specified in the final design. Fixed-tilt arrays would be oriented along an east–west axis, with panels facing generally south. Tracking arrays would be oriented along a north–south axis, with panels tracking east to west to follow the movement of the sun. For fixed-tilt systems, the panels would be fixed at an approximate 20- to 60-degree angle or as otherwise determined necessary during final Project design. Refer to Figure 4 for a cross section showing the support depth. Refer to Figure 5 for a visual representation of an example solar PV panel support.

Figure 3 Project Layout

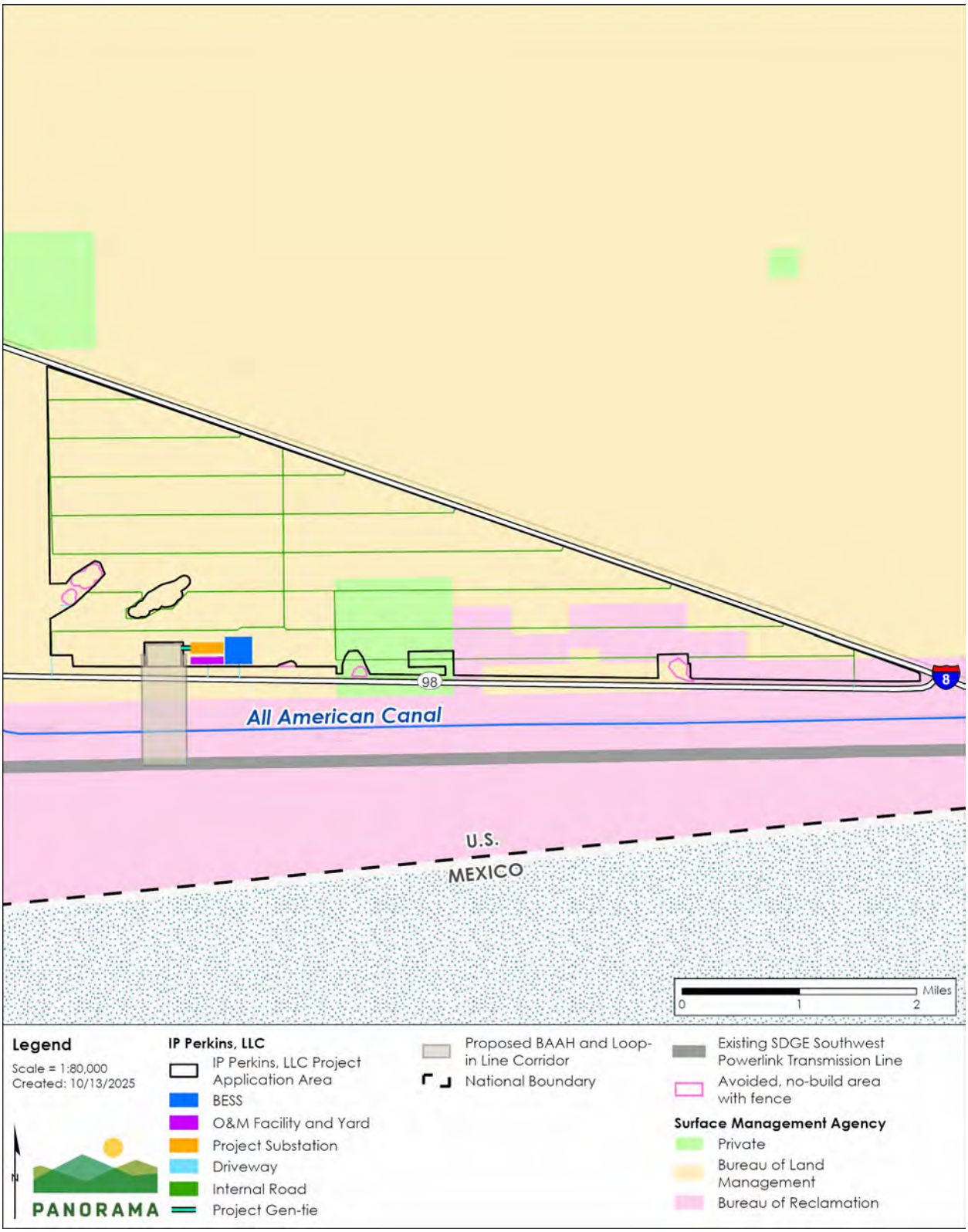


Figure 4 Solar PV Example Technology

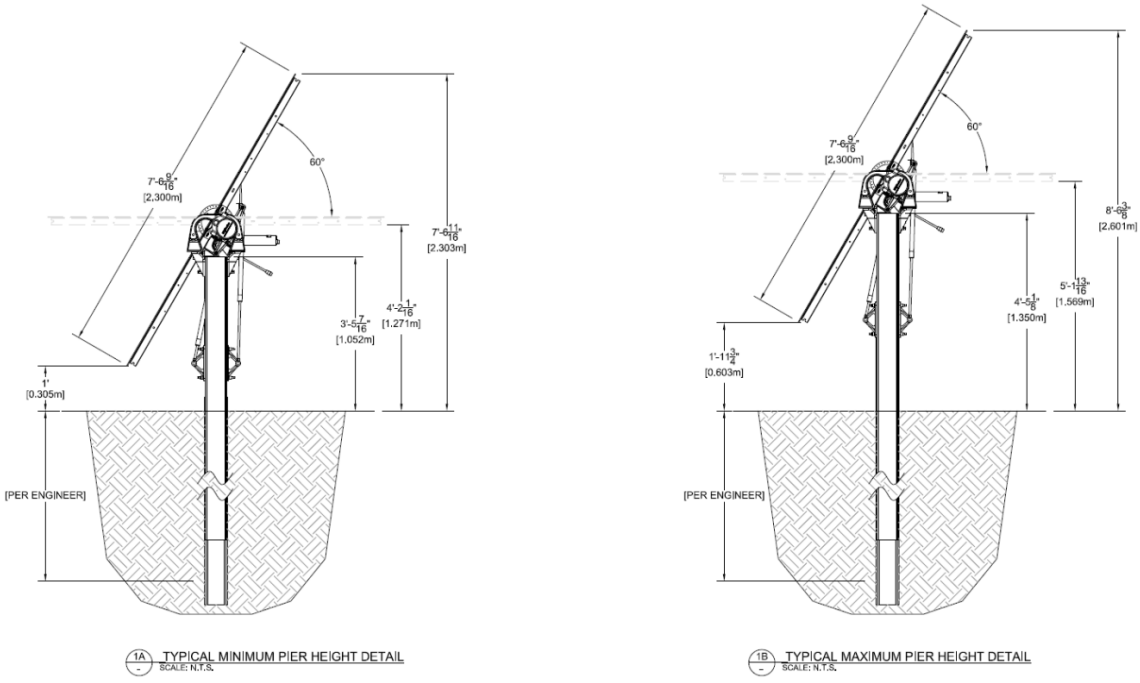
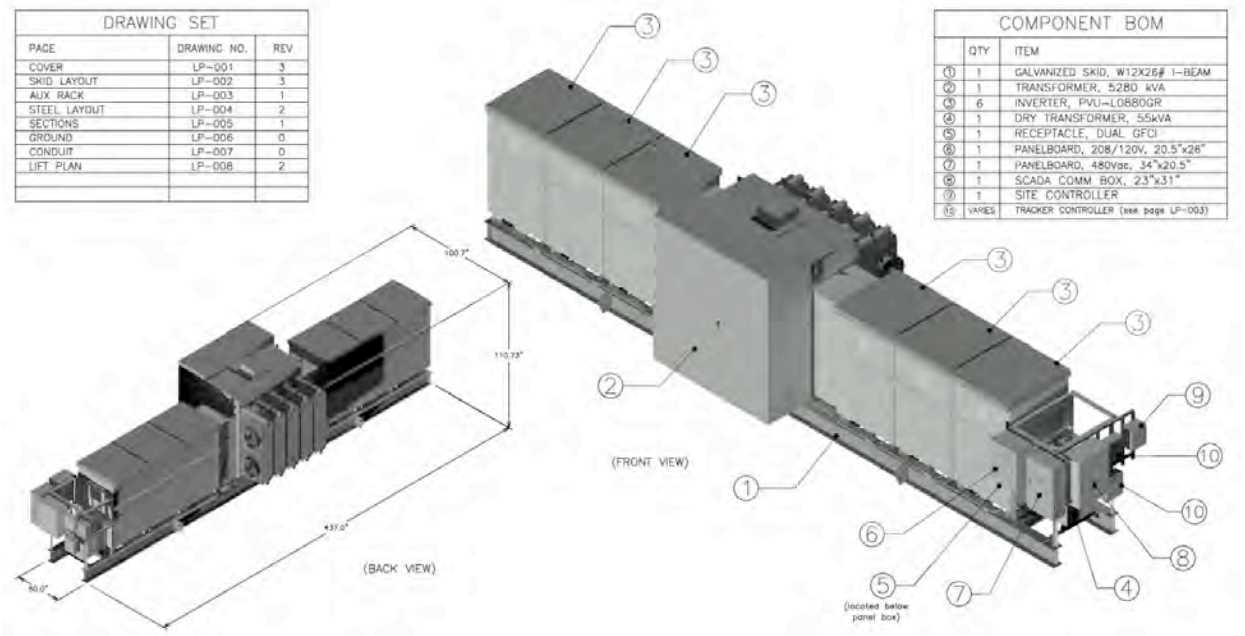


Figure 5 Visual Representation of Solar PV Example Technology

Inverters, Transformers, and Electrical Collection System

An inverter-transformer station measuring 40 feet by 25 feet and approximately 10 feet tall, constructed on a concrete pad or steel skid would be centrally located within the PV arrays (refer to Figure 6 for an example of a typical inverter). Up to ten inverter/transformer stations could be located within jurisdictional vegetation communities.

Figure 6 Inverters, Transformers and Electrical Collection System



Each inverter-transformer station would contain up to six inverters, a transformer, a battery enclosure, and a switchboard 8 to 11 feet high. The battery would provide an uninterruptible power supply as emergency back-up power for the inverter-transformer station. Each pad would have a security camera at the top of an approximately 20-foot-tall wood or metal pole. If required based on site meteorological conditions, an inverter shade structure would be installed at each pad. The shade structures, if needed, would consist of wood or metal supports and a durable outdoor material shade structure (metal, vinyl, or similar). The shade structure would extend up to 10 feet above the ground surface.

PV panels would be electrically connected into panel strings using wiring secured to the panel racking system. Cables would be installed to convey the DC electricity from the panels via combiner boxes or combiner harnesses with a trunk bus system located throughout the solar arrays to inverters to convert the DC to AC electricity. The output voltage of the inverters would be stepped up to the collection system voltage via transformers located near the inverters. The 34.5 kV collection cables would be either buried underground or installed overhead on wood poles. An underground 34.5 kV line would be buried in a trench 4 feet below grade but could go as deep as 6 feet and include horizontal drilling if needed to avoid utility constraints. Thermal specifications require 10 feet of spacing between the medium voltage lines.

In locations where the collection system crosses a road or pipeline overhead, wood poles spaced at intervals between 150 to 250 feet would be installed across the Project Application Area. The typical height of the poles would be approximately 60 to 100 feet, with an embedment depth of 10 to 15 feet depending on the type of crossing, and diameters varying from 12 to 20 inches. Due to potential for operations and maintenance challenges, as well as for security purposes, the intent is to install the 34.5 kV collection lines underground; however, overhead installation could be used in the event sensitive cultural resources need to be avoided.

Solar Facility Roads

A 20-foot-wide perimeter road (16 feet wide with 2-foot-wide shoulder on either side) would be built on the inside of the fence. A network of regularly spaced 20-foot-wide internal roads would be installed connecting to the perimeter road. Roads would be surfaced with compacted soil or another commercially available surface acceptable to regulatory agencies and would provide a fire buffer, accommodate Project operation and maintenance activities such as cleaning of solar panels, and facilitate on-site circulation for emergency vehicles. The roadway system would be designed to allow small wildlife passage across the site. If aggregate or gravel is used for road surfaces, such as to reduce dust or for low water crossings, portions of road lengths may remain free of gravel in strategic locations in order to facilitate wildlife movement. In addition, wildlife passage culverts may be placed at key locations along Project roads to allow wildlife to avoid the road.

Site Security, Fencing, and Lighting

Fencing

The Project Application Area would be enclosed with fencing that meets National Electric and Safety Code (NESC) requirements for protective arrangements in electric supply stations. The boundary of the Project Application Area would be secured by up to 6-foot-high chain-link perimeter fences topped with 1 foot of three-strand barbed wire or other fencing as dictated by BLM and/or North American Electric Reliability Corporation (NERC) specifications. The fence would typically be installed approximately 100 feet from the edge of the solar arrays.

Solar Facility Construction

Site Preparation and Grading

The majority of the Project Application Area would be mowed rather than cleared of vegetation. Mass grading of the Project Application Area would not be needed for site preparation due to the relatively flat terrain. Spot grading would be employed for select solar array and storage facility components. Best management practices (BMPs) identified in the Fugitive Dust Control Plan would be implemented during all grading, vegetation removal, and construction activities.

The roads would require vegetation clearing, grading, and compaction. Inverter-transformer station locations would require light grubbing. Due to undulations within the Project Application Area, some areas of grading would be needed within the solar arrays. Where solar site grading is necessary for discrete facilities or within the solar arrays, cut and fill would be balanced to the

extent feasible. Some import and export of material would be necessary (refer to Table 2). Trenching for the collector lines would extend up to 6 feet in depth.

Table 2 Solar Facility Disturbance Details

Project component	Cut/fill quantity	Type of disturbance
Fenced solar facility with arrays and access roads	Balanced	Solar array areas to be mowed and grubbed to provide for construction access and installation
Electrical collection system	Balanced	Graded and backfilled to an elevation above surrounding grade to avoid flooding for inverter-transformer stations

Note:

[a] Estimated base for the areas requiring import of material is assumed to require a 12-inch depth.

Access Roads

The existing surface area of the access roads would be cleared and compacted using on-site, native materials and may be covered in aggregate for dust or erosion control. The design standard for the access roads within the solar arrays would be consistent with the amount and type of use they will receive.

Solar Array Installation

The steel piles (i.e., cylindrical pipes, H-beams, or similar) supporting the PV panels would be driven into the soil using pneumatic techniques, similar to a hydraulic rock hammer attachment on the boom of a rubber-tired backhoe excavator. The piles typically are spaced 10 feet apart and would be driven into the ground to a depth of 9 to 15 feet.

Inverters, and Electrical Collection System

The Project electrical collection system would involve installation of inverter-transformer stations from which the medium voltage cabling collection system would lead to the Project substation(s). Electrical inverter-transformer stations would be delivered to locations around the Project Application Area and placed on concrete pads or steel skids, which would be elevated as necessary with steel piles to allow for stormwater flow beneath the inverter structures. Concrete for foundations of the inverter-transformer stations and other electrical collection facilities would be brought on site from a regional batching plant or would be batched on site as necessary.

Medium-voltage cabling would be installed either underground or, for the low-impact design portion of the Project, overhead along panel strings in a cable management system to avoid the need for underground cabling and trenching. Cables, if underground, would be installed using direct bury equipment and/or typical trenching techniques, which involves use of a rubber-tired backhoe excavator or trencher. Shields or trench shoring would be temporarily installed for safety to brace the walls of the trench if required based on the trench depth. After the excavation, cable rated for direct burial would be installed in the trench, and the excavated soil would be used to

fill the trench and compressed to 90- to 95-percent maximum dry density or in accordance with final engineering.

10B. Equipment and Machinery

The following equipment would be used to construct the Project:

- Forklift
- Grader
- Pile drivers
- Roller
- Rubber tired loaders
- Rubber tired dozer
- Skid steer loaders
- Tractor/loader/backhoe
- Trencher
- Welders
- One-pass

11. Project Impacts

11A. Project Impacts

Impacts to waters of the State would occur from vegetation removal, trenching of buried collector cables, pile driving of solar pile supports, concrete pads for inverters/transformers, wood poles for overhead collector cables, access road grading, vehicle travel during solar array installation, and fence post installation along the solar facility fence line. The exact impacts and quantity of each type of impact is dependent on the final design. For the purpose of quantifying impacts on waters of the State, it was conservatively assumed that the entirety of water resources and jurisdictional vegetation communities that area not fenced for avoidance would be permanently impacted and up to ten inverters/transformers would be located in jurisdictional vegetation communities. Impacts to waters of the State are summarized in Table 3 and Table 4 below and shown on

Figure 7.

Table 3 Permanent Impact to Waters of the State – Bank to Bank

No.	Length of Impact (Feet)	Area of Impact (Acres)	Type of Impact/Facility	Material	Volume of Material (cy)
1	185	0.019	PV Array	Native Fill, Steel, Aggregate	182
2	421	0.039	PV Array	Native Fill, Steel, Aggregate	379
3	13	0.004	Fence	Fence and Native Fill, Aggregate	13
4	253	0.023	PV Array	Native Fill, Steel, Aggregate	223
5	283	0.040	PV Array	Native Fill, Steel, Aggregate	387
6	198	0.037	PV Array	Native Fill, Steel, Aggregate	358
7	1,444	0.227	PV Array	Native Fill, Steel, Aggregate	2,197
8	124	0.012	PV Array	Native Fill, Steel, Aggregate	116
9	243	0.034	PV Array	Native Fill, Steel, Aggregate	329
10	3479	0.716	PV Array	Native Fill, Steel, Aggregate	6,931
11	150	0.021	PV Array	Native Fill, Steel, Aggregate	203
12	741	0.171	PV Array	Native Fill, Steel, Aggregate	1,655
Total	**7,534.8**	**1.343**	**N/A**	**N/A**	**12,974**

Table 4 Permanent Impact to Waters of the State – CDFW Jurisdictional Vegetation

Vegetation Type	Area of Impact (Acres)	Type of Impact/Facility	Material	Volume of Material
Alkali goldenbrush desert scrub/ Vegetated swale	81.4	PV Array, fence, road, transmission pole	Native Fill, Steel, Concrete, Aggregate, Wood	133,584
Total	**81.4**	**N/A**	**N/A**	**133,584**

ATTACHMENT A – SUPPLEMENTAL PAGES

Figure 7 Impacts to CDFW Jurisdictional Waters – Perkins Solar Facility

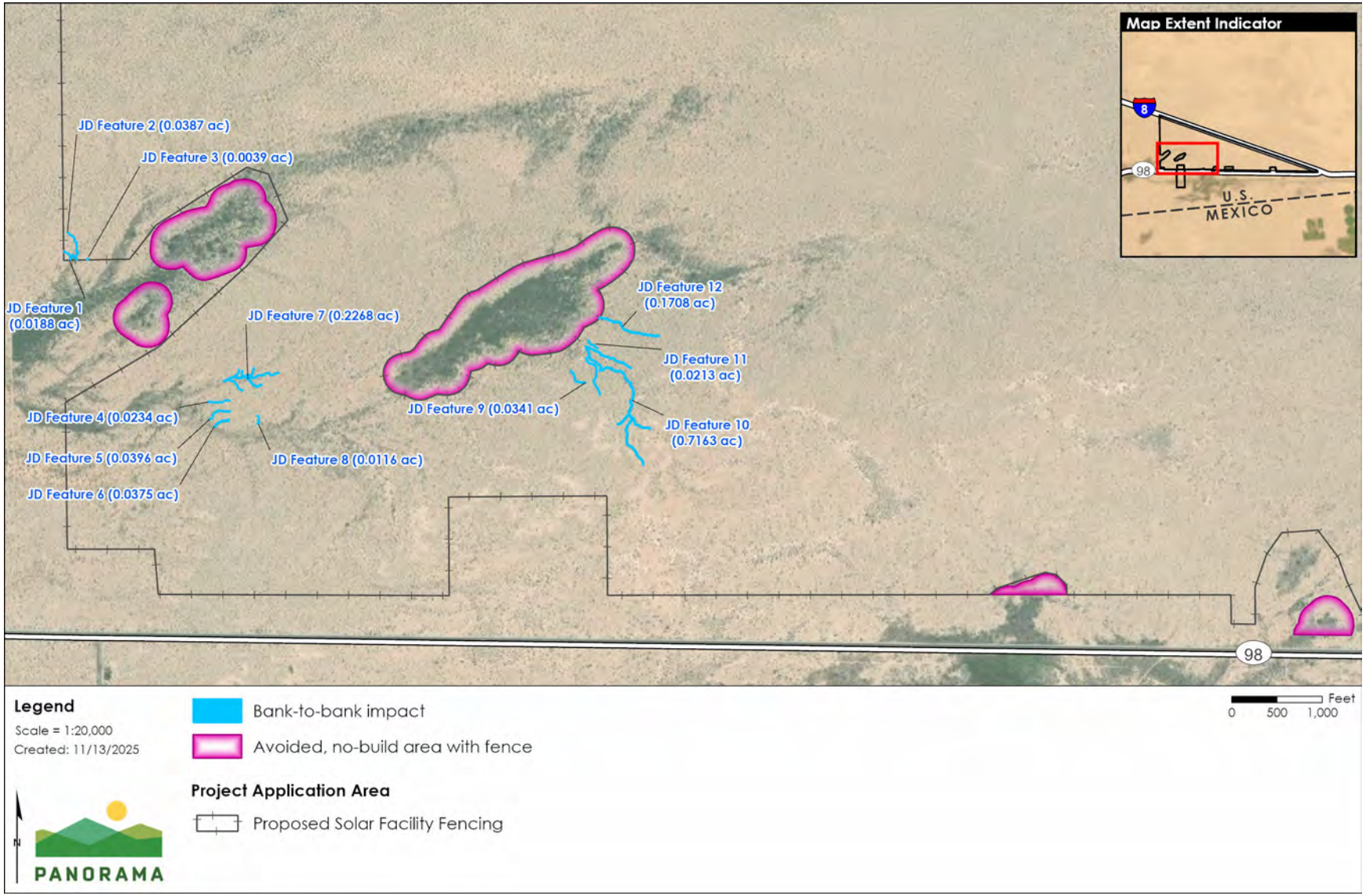
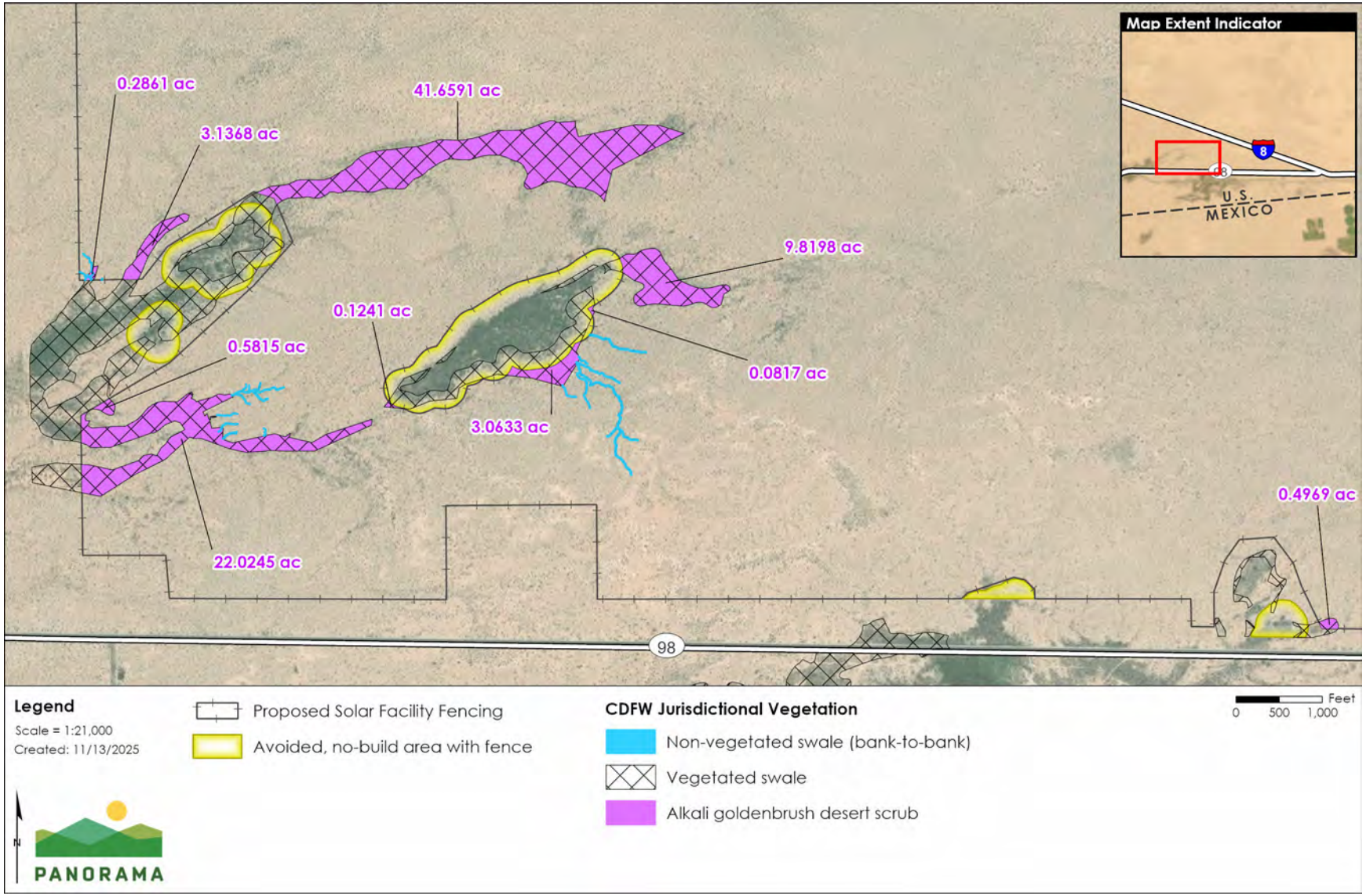


Figure 8 Impacts to CDFW Jurisdictional Vegetation – Perkins Solar Facility



12. Measures to Protect Fish, Wildlife, and Plant Resources

12A. Pollution Prevention, Erosion and Sediment Control

A Stormwater Pollution Prevention Plan (SWPPP) would be prepared by a qualified engineer or erosion control specialist and, once approved by the State Water Resources Control Board and a BLM hydrologist, would be implemented before and during construction. The SWPPP would reduce potential impacts related to erosion and surface water quality during construction activities and throughout the lifespan of the Project. The SWPPP would include Project information and erosion and sediment control BMPs. The BMPs would include stormwater runoff quality control measures, management for concrete waste, fugitive dust control, and construction of perimeter silt fences, as needed. The Erosion and Sediment Control Plan would include types and locations of erosion control BMPs to be implemented.

Construction Site Stabilization, Restoration, and Wildlife Monitoring

Following the completion of major construction, temporarily stockpiled topsoils would be spread within disturbed areas to be revegetated with native plant species for the operations phase pursuant to an approved Restoration and Integrated Weed Management Plan (refer to Appendix M.5). This plan would describe the Applicant's strategy to minimize adverse effects on native vegetation, soils, and habitat. Where necessary, native re-seeding or vertical mulching techniques would be used; however, it is anticipated that many species would regenerate post-construction due to preservation of desert vegetation during the construction phase. The Project Restoration and Integrated Weed Management Plan would be implemented during construction to ensure the control of non-native plant species under an approved Pesticide Use Proposal.

At the conclusion of restoration activities, and if determined beneficial by the U.S. Fish and Wildlife Service (USFWS), the California Department of Fish and Wildlife (CDFW), and the BLM biologists, previously relocated plants and wildlife would be reintroduced to the Project and monitored for safety and health.

Applicable Best Management Practices, Project Design Features, and Conservation Management Actions

As part of the Project, the Applicant is committed to implementing BMPs, Project Design Features, and Conservation Management Actions (refer to Opt-in Application Appendix D). The Applicant has also prepared mitigation plans as required by the BLM.

Best Management Practices and Project Design Features

The Project would implement the following BMPs and PDFs related to soils:

- BMP 79, Construction: Construction shall be conducted in stages to limit the areas of exposed soil at any given time. The project will comply with LUPA-BIO-9.

- BMP 80, Construction: Ground-disturbing activities shall be minimized, especially during the rainy season. The project will comply with LUPA-BIO-9.
- BMP 81, Construction: Foundations and trenches shall be backfilled with originally excavated material as much as possible. Excess excavation materials shall be disposed of only in approved areas or, if suitable, stockpiled for use in reclamation activities. The project will comply with LUPA-BIO-7.
- BMP 82, Construction: Water or other stabilizing agents shall be used to wet roads in active construction areas and laydown areas to minimize the windblown erosion of soil. The project will comply with LUPA-BIO-9.
- BMP 83, Disturbance area: The footprint of disturbed areas, including the number and size/length of roads, fences, borrow areas, and laydown and staging areas, shall be minimized. The project will comply with LUPA-BIO-9.
- BMP 84, Disturbance area: Electrical lines from solar collectors shall be buried along existing features (e.g., roads or other paths of disturbance) to minimize the overall area of surface disturbance whenever possible. The project will comply with LUPA-BIO-16.
- BMP 85, Disturbance area: Temporary stabilization of disturbed areas that are not actively under construction shall occur. The project will comply with LUPA-BIO-9.
- BMP 86, Disturbance area: Permanent stabilization of disturbed areas shall occur during final grading and landscaping of the site. The project will comply with LUPA-BIO-9.
- BMP 87, Drainages: Drainage crossings shall be stabilized as quickly as possible, and channel erosion shall be prevented from runoff caused by the project. The project will comply with LUPA-BIO-9.
- BMP 88, Stockpiles: Originally excavated materials shall be stockpiled and used for backfill. The project will comply with LUPA-BIO-7.
- BMP 89, Fill: Borrow materials shall be obtained only from authorized and permitted sites; existing sites shall be used in preference to new sites. The project will comply with LUPA-BIO-7.
- BMP 90, Erosion control: Potential soil erosion shall be controlled at culvert outlets with appropriate structures. The project will comply with LUPA-BIO-9.
- BMP 91, Erosion control: Catch basins, roadway ditches, and culverts shall be cleaned and maintained regularly. The project will comply with LUPA-BIO-9.
- BMP 92, Erosion control: Sediment-laden waters from disturbed, active areas within the project site shall be retained through the use of barriers and sedimentation devices (e.g., berms, straw bales, sandbags, jute netting, or silt fences). The project will comply with LUPA-BIO-9.
- BMP 93, Erosion control: Routine site inspections shall be conducted to assess the effectiveness and maintenance requirements for erosion and sediment control systems. The project will comply with LUPA-BIO-9.
- BMP 94, Operation: All appropriate mitigation measures developed for the construction phase shall be applied to similar activities during the operations phase. The project will comply with LUPA-BIO-5.

- BMP 95, Revegetation: Project areas are to be replanted with vegetation at spaced intervals to the extent possible to break up areas of exposed soil and reduce soil loss by wind erosion. The project will comply with LUPA-BIO-9.
- BMP 96, Reclamation: All areas of disturbed soil shall be reclaimed using weed-free native grasses, forbs, and shrubs. Reclamation activities shall be undertaken as early as possible on disturbed areas. The project will comply with LUPA-BIO-9.
- BMP 97, Reclamation: All mitigation measures developed for the construction phase shall be applied to similar activities during the decommissioning/reclamation phase. The project will comply with LUPA-BIO-5.
- BMP 121, Revegetation: A combination of seeding, planting of nursery stock, and transplanting of local vegetation within the proposed disturbance areas. Where feasible, native vegetation shall be used for revegetating, establishing a composition consistent with the form, line, color, and texture of the surrounding undisturbed landscape. The project will comply with LUPA-BIO-7.
- BMP 122, Mitigation: The full range of visual best management practices shall be considered, and plans shall incorporate all pertinent BMPs. Visual resource monitoring and compliance strategies shall be included as a part of the project mitigation plans to cover the construction, operation and decommissioning phases. The project will comply with LUPA-VPL-VRM-3.
- BMP 123, Reclamation: All areas of disturbed soil shall be reclaimed by using weed-free native grasses, forbs, and shrubs representative of the surrounding and intact native vegetation composition and/or use non-native species, if necessary to ensure successful revegetation. The project will comply with LUPA-BIO-7.
- BMP 124 , Reclamation: Rock and brush debris shall be restored whenever possible to approximate pre-existing visual conditions. The project will comply with LUPA-BIO-7.
- PDF HWQ-1. Drainage Erosion and Sedimentation Control Plan (DESCP).

Conservation Management Actions

The Project would implement the following DRECP CMAs relevant to soils:

- LUPA BIO-7: Where DRECP vegetation types or Focus or BLM Special Status Species habitats may be affected by ground- disturbance and/or vegetation removal during pre-construction, construction, operations, and decommissioning related activities but are not converted by long-term (i.e., more than two years of disturbance, see Glossary of Terms) ground disturbance, restore these areas following the standards, approved by BLM authorized officer, following the most recent BLM policies and procedures for the vegetation community or species habitat disturbance/impacts as appropriate, summarized below:
  - Implement site-specific habitat restoration actions for the areas affected including specifying and using:
    - The appropriate seed (e.g., certified weed- free, native, and locally and genetically appropriate seed)

  - Appropriate soils (e.g., topsoil of the same original type on site or that was previously stored by soil type after being salvaged during excavation and construction activities)
  - Equipment
  - Timing (e.g., appropriate season, sufficient rainfall)
  - Location
  - Success criteria
  - Monitoring measures
  - Contingency measures, relevant for restoration, which includes seeding that follows BLM policy when on BLM administered lands.
- Salvage and relocate cactus, nolina, and yucca from the site prior to disturbance using BLM protocols. To the maximum extent practicable for short-term disturbed areas (see Glossary of Terms), the cactus and yucca will be re-planted back to the original site.
- Restore and reclaim short-term (i.e. 2 years or less, see Glossary of Terms) disturbed areas, including pipelines, transmission projects, staging areas, and short-term construction-related roads immediately or during the most biologically appropriate season as determined in the activity/project specific environmental analysis and decision, following completion of construction activities to reduce the amount of habitat converted at any one time and promote recovery to natural habitats and vegetation as well as climate refugia and ecosystem services such carbon storage.

- LUPA BIO-9: Implement the following general LUPA CMA for water and wetland dependent resources:
  - Implement construction site standard practices to prevent toxic chemicals, hazardous materials, and other fluids from entering vegetation type streams, washes, and tributary networks through water runoff, erosion, and sediment transport by, at a minimum, implementing the following:
    - On project sites, vehicles and other equipment will be maintained in proper working condition and only stored in designated containment areas where runoff is collected or controlled and that are located outside of streams, washes, and distributary networks to minimize accidental fluids and hazardous materials spills.
    - Hazardous material leaks, spills, or releases will be immediately cleaned and equipment will be repaired upon identification. Removal and disposal of spill and related clean-up materials will occur at an approved off-site landfill.
    - Maintenance and operations vehicles will carry the appropriate equipment and materials to isolate, clean up, and repair any hazardous material leaks, spills, or releases.
  - Activity-specific drainage, erosion, and sedimentation control actions, which meet the approval of BLM and the applicable regulatory agencies, will be carried out during all appropriate phases of the approved project. These actions, as

needed, will address measures to ensure the proper protection of water quality, site-specific stormwater and sediment retention, and design of the project to minimize site disturbance, including the following:

- Identify site-specific surface water runoff patterns and implement measures to prevent excessive and unnatural soil deposition and erosion.
- Implement measures to maintain natural drainages and to maintain hydrologic function in the event drainages are disturbed.
- Reduce the amount of area covered by impervious surfaces through use of permeable pavement or other pervious surfaces. Direct runoff from impervious surfaces into retention basins.
- Stabilize disturbed areas following grading in the manner appropriate to the soil type so that wind or water erosion is minimized.
- Minimize irrigation runoff by using low or no irrigation native vegetation landscaping for landscaped retention basins.
- Conduct regular inspections and maintenance of long-term erosion control measures to ensure long-term effectiveness.
- Project applicants for sites that may affect intermittent and perennial streams, springs, swales, ephemeral washes, wetland vegetation, other DRECP water land covers, or sites occupied by aquatic or riparian Focus and BLM Special Status Species due to groundwater or surface water extraction will conduct hydrologic studies during project planning to determine the potential effect of groundwater and surface water extraction on the hydrologic unit. These studies will include both watershed effects as well as effects on perched, alluvial, and regional aquifers. Projects that are likely to affect ground-water resources in a manner that would result in substantial loss of riparian or wetland communities or habitat for riparian or aquatic Focus and BLM Special Status Species are prohibited.
- The use of evaporation ponds for water management will be avoided when the water could harm birds or other terrestrial wildlife due to constituents of concern present in the wastewater (e.g., selenium, hypersalinity, etc.). Evaporation ponds will be configured to minimize attractiveness to shorebirds (e.g., maintain water depths over two feet; maintain steep slopes along edge; enclose evaporation ponds in long-term structures; or obscure evaporation ponds from view using materials that blend in with the natural surroundings).

– Ramps that allow the egress of wildlife from ponds or other water management infrastructure will be installed.

- LUPA BIO-16: For activities that may impact Focus and BLM sensitive birds, protected by the ESA and/or Migratory Bird Treaty Act of 1918, and bat species, implement appropriate measures as per the most up-to-date BLM state and national policy and guidance, and data on birds and bats, including but not limited to activity specific plans and actions. The goal of the activity -specific bird and bat actions is to avoid and minimize direct mortality of birds and bats from the construction,

operation, maintenance, and decommissioning of the specific activities. Activity-specific measures to avoid and minimize impacts may include, but are not limited to:

- Siting and designing activities will avoid high bird and bat movement areas that separate birds and bats from their common nesting and roosting sites, feeding areas, or lakes and rivers.
- For activities that impact bird and bat Focus and BLM Special Status Species, during project siting and design, conducting monitoring of bird and bat presence as well as bird and bat use of the project site using the most current survey methods and best procedures available at the time.
- Reusing or co-locating new transmission facilities and other ancillary facilities with existing facilities and disturbed areas to reduce habitat destruction and avoid additional collision risks.
- Reducing bird and bat collision hazards by utilizing techniques such as unguyed monopole towers or tubular towers. Where the use of guywires is unavoidable, demarcate guywires using the best available methods to minimize avian species strikes.
- When fencing is necessary, use bird and bat compatible design standards.
- Using lighting that does not attract birds and bats or their prey to project sites including using non-steady burning lights (red, dual red and white strobe, strobe-like flashing lights) to meet Federal Aviation Administration requirements, using motion or heat sensors and switches to reduce the time when lights are illuminated, using appropriate shielding to reduce horizontal or skyward illumination, and avoiding the use of high-intensity lights (e.g., sodium vapor, quartz, and halogen).
- Implementing a robust monitoring program to regularly check for wildlife carcasses, document the cause of mortality, and promptly remove the carcasses.
- Incorporating a bird and bat use and mortality monitoring program during operations using current protocols and best procedures available at time of monitoring

Mitigation Plans

The Project would implement the following mitigation plans relevant to soils:

- Fugitive Dust Control Plan (Opt-in Application Appendix I.1)
- Restoration and Integrated Weed Management Plan (Opt-in Application Appendix M.5)

12B. Avoidance and Minimization Measures for Plants and Wildlife

As part of the Project, the Applicant is committed to implementing BMPs, PDFs, and CMAs. The Applicant has also prepared mitigation plans as required by the BLM.

Best Management Practices and Project Design Features

The Project would implement the following BMPs and PDFs related to biological resources:

- **BMP-17**
  - **Staging Areas.** As practical, staging and parking areas shall be located within the Project site to minimize habitat disturbance in areas adjacent to the site.
- **BMP-18**
  - **Construction Activities.** Before beginning construction, delineate the boundaries of areas to be disturbed including roads, borings, soil testing sites, and pull and tensioning areas prior to any ground disturbance, and confine disturbances, project vehicles, and equipment to the delineated project areas.
- **BMP-19**
  - **Construction.** To the extent practicable, work personnel shall stay within the ROW and/or easements.
- **BMP-20**
  - **Fugitive Dust.** If the application of water is needed to abate dust in construction areas and on dirt roads, use the least amount needed to meet safety and air quality standards and prevent the formation of puddles, which could attract wildlife to construction sites.
- **BMP-21**
  - **Traffic.** Existing access roads, utility corridors, and other infrastructure shall be used to the maximum extent feasible.
- **BMP-22**
  - **Noise.** Noise reduction devices (e.g., mufflers) shall be employed to minimize the impacts on wildlife and special status species populations. Operators shall ensure that all equipment is adequately muffled and maintained in order to minimize disturbance to wildlife.
- **BMP-23**
  - **Power lines.** Place low and medium voltage connecting power lines underground whenever possible. In certain circumstances, burial of the lines may be prohibitively expensive (for example in shallow bedrock areas) or may cause unacceptable impacts to wetland habitats and dependent species. Overhead lines may be acceptable:
    - if sited away from high bird crossing locations, such as between roosting and feeding areas or between lakes, rivers, and nesting areas; and/or
    - when the structures parallel tree lines or are otherwise screened so that collision risk is reduced.
- **BMP-24**
  - **Habitat.** To reduce the extent of habitat disturbance during construction and operation, existing access roads, utility corridors, and other infrastructure shall

be used to the maximum extent feasible and foot and vehicle traffic through undisturbed areas shall be minimized.

- **BMP-26**
  - **Habitat.** Areas left in a natural condition during construction (e.g., wildlife crossings) shall be maintained in as natural a condition as possible within safety and operational constraints.
- **BMP-27**
  - **Habitat.** All pits and trenches shall contain wildlife escape ramps. All uncovered pipes shall be capped and/or covered at the end of each workday to prevent animals from entering the pipes. If a special status species is discovered inside a component, that component must not be moved or, if necessary, moved only to remove the animal from the path of activity, until the animal has escaped.
- **BMP-28**
  - **Birds.** The Project should establish buffer zones and protection, mitigation, and monitoring plans for active nests detected during surveys.
- **BMP-29**
  - **Special Status Species.** In consultation with permitting agencies, avoid special status species or unique plant assemblages when installing and maintaining transmission line towers/ poles, access roads, pulling sites, and storage and parking areas adjacent to linear facilities.
- **BMP-30**
  - **General Wildlife Protection.** Implement general standards practices to protect federal and state special-status species.
- **BMP-31**
  - **General Wildlife Protection.** Prior to any ground-disturbing activity, seasonally appropriate surveys shall be conducted by qualified biologists to ensure that impor¬tant or sensitive species or habitats are not present in or near project areas. Habitats or locations to be avoided (with appropriately sized buffers) shall be clearly marked.
- **BMP-32**
  - **Vegetation.** Project-specific vegetation management plans shall investigate possibilities of revegetating parts of the Project Area.
- **BMP-33**
  - **Noxious Weeds.** The establishment and spread of invasive species and noxious weeds within the Project Area and loop-in transmission line corridors shall be prevented. The areas shall be monitored regularly, and invasive species should be eradicated immediately.
- **BMP-34**
  - **Herbicide Use.** Only herbicides with low toxicity to wildlife and nontarget native plant species shall be used, as determined in consultation with the BLM,

BOR, CEC, and USFWS. The typical herbicide application rate shall be used rather than the maximum application rate, where effective. All herbicides shall be applied in a manner consistent with their label requirements and in accordance with guidance provided in the Final PEIS on vegetation treatments using herbicides (BLM 2007c).

- **BMP-35**
  - **Waste.** Construction debris, especially treated wood, shall not be stored or disposed of in areas where it could come in contact with aquatic habitats.
- **BMP-36**
  - **Reclamation.** Access roads shall be reclaimed when they are no longer needed.
- **BMP-37**
  - **Reclamation.** All holes and ruts created by removal of structures and access roads shall be filled or graded.
- **BMP-38**
  - **Reclamation.** While structures are being dismantled, care shall be taken to avoid leaving debris on the ground in areas in which wildlife regularly move.
- **BMP-39**
  - **Reclamation.** The facility fence shall remain in place for several years following decommissioning to help reclamation (e.g., would preclude large mammals and vehicles from disturbing revegetation efforts).
- **PDF BIO-1**
  - **Biological monitoring.** Monitoring to ensure conformance with conditions of approval, including effective protection and avoidance of biological resources, shall be implemented by the Applicant as follows:
  - **Biological Monitoring Team.** During construction and decommissioning, the Applicant shall employ a biological monitoring team to oversee Project activities. Any activity that may impact vegetation, wildlife, and sensitive resources shall be monitored to ensure compliance with all mitigation measures for biological resources. The biological monitoring team shall consist of:
    - Lead Biologist: The Applicant shall assign a Lead Biologist, approved by BLM, BOR, CEC, CDFW, and USFWS as the primary point of contact for the federal, state, and resource agencies regarding biological resources mitigation and compliance.
    - Biological monitors: Biological monitors shall be overseen by the Lead Biologist and shall perform any required surveys, ground disturbance and construction monitoring, wildlife monitoring, inspections, marking sensitive resource buffers, and revegetation monitoring during Project activities. Biological monitors shall include trained flat-tailed horned lizard and nest monitors (PDF BIO-5).

- The Applicant shall provide the resumes of the proposed Biological Monitoring Team to the BLM, BOR, CEC, CDFW, and USFWS for approval prior to onset of ground-disturbing activities. The Biological Monitoring Team shall have demonstrated expertise with the biological resources within the Project region. The Biological Monitoring Team shall have authority to halt any activities in any area if it is determined that the activity, if continued, would cause an unauthorized adverse impact to biological resources. The duties of the Biological Monitoring Team shall vary during the construction, operation and maintenance, and decommissioning phases, based on the biological monitoring tasks needed for compliance during each phase. An Applicant staff member serving as a compliance manager may perform the duties of the Lead Biologist to ensure compliance with biological mitigation measures, such as performing inspections for entrapped wildlife and fence condition, reporting dead or injured wildlife, and avoiding nesting birds. In general, the duties of the Lead Biologist shall include, but shall not be limited to, the following:
  - Regular, direct communication with representatives of the federal, state, and resource agencies, as appropriate. The Lead Biologist or, during operation and maintenance, the Applicant's compliance manager shall immediately notify the federal, State, and applicable resource agencies in writing of dead or injured special status species or of any non-compliance with biological mitigation measures or permit conditions.
  - Train and supervise biological monitors, including flat-tailed horned lizard monitors, nest monitors, and construction monitors.
  - Conduct or oversee Worker Environmental Awareness Program (WEAP) training.
  - During construction and decommissioning, clearly mark and inspect sensitive biological resource areas in compliance with regulatory terms and conditions.
  - Oversee wildlife clearance surveys, ground disturbance and grading, and biological monitoring and ensure that all biological monitoring is completed properly and on schedule.
  - Conduct or oversee bi-weekly compliance inspections during ground-disturbing activities and communicate any remedial actions needed (e.g., trash, fence, weed maintenance; wildlife mortality) to maintain compliance with mitigation measures.
- **Reporting.** The Lead Biologist or, during operation and maintenance, the Applicant's compliance manager shall report regularly to the BLM, BOR, CEC, CDFW, and USFWS to document the status of compliance with biological mitigation measures.
- **During construction and decommissioning:**
  - Provide weekly verbal or written updates to the BLM, BOR, CEC, CDFW, and USFWS.

  - Prepare and submit monthly and annual compliance reports to include a summary of Project activities that occurred, biological resources surveys and monitoring that were performed, any sensitive or noteworthy species observed, weed infestations removed, and non-compliance issues and remedial actions that were implemented.
- **During operation and maintenance:**
  - Conduct quarterly compliance inspections and reporting to be submitted to the BLM, BOR, CEC, CDFW, and USFWS to document the condition of fencing, wildlife mortality, and any biological resource issues of note.

- **PDF BIO-2**
  - **Worker Environmental Awareness Program.** The Lead Biologist shall prepare and implement a Worker Environmental Awareness Program (WEAP). The Applicant shall be responsible for ensuring that all workers at the site receive WEAP training prior to beginning work on the Project and throughout construction and operations. The WEAP shall be available in English and Spanish. The Applicant shall submit the WEAP to the lead agency and resource agencies for approval prior to implementation. The WEAP will:
    - Be developed by or in consultation with the Lead Biologist and consist of an on-site or training center presentation with supporting written material and electronic media, including photographs of protected species, available to all participants;
    - Provide an explanation of the function of flagging that designates authorized work areas; specify the prohibition of soil disturbance or vehicle travel outside designated areas;
    - Discuss general safety protocols such as vehicle speed limits, hazardous substance spill prevention and containment measures, and fire prevention and protection measures;
    - Review mitigation and biological permit requirements;
    - Explain the sensitivity of the vegetation and habitat within and adjacent work areas, and proper identification of these resources;
    - Discuss the federal and State Endangered Species Act, Bald and Golden Eagle Protection Act, and the Migratory Bird Treaty Act and the consequences of non-compliance with these acts;
    - Discuss the locations and types of sensitive biological resources on the Project site and adjacent areas and explain the reasons for protecting these resources;
    - Inform participants that no snakes or other reptiles, birds, bats, or any other wildlife shall be harmed or harassed;
    - Place special emphasis on species that may occur on the Project site and/or loop-in transmission lines, including special status plants, flat-tailed horned lizard, Colorado desert fringe-toed lizard, desert kit fox, and western burrowing owl;

  - Specify guidelines for avoiding rattlesnakes and reporting rattlesnake observations to ensure worker safety and avoid killing or injuring rattlesnakes. Rattlesnakes should be safely removed from the work area using appropriate snake handling equipment, including a secure storage container for transport, or by calling local animal control;
  - Describe workers' responsibilities for avoiding the introduction of invasive weeds onto the Project site and surrounding areas and describe the Integrated Weed Management Plan;
  - Provide contact information for the Lead Biologist and instructions for notification of any vehicle-wildlife collisions or dead or injured wildlife species encountered during Project-related activities;
  - Include a training acknowledgment form to be signed by each worker indicating that they received training and shall abide by the guidelines.

- **PDF BIO-3**
  - **Minimization of Vegetation and Habitat Impacts.** Prior to construction, operation and maintenance, or decommissioning activities, authorized work areas shall be clearly delineated by the contractor. These areas shall include, but not be limited to, staging areas, access roads, and sites for temporary placement of construction materials and spoils. Delineation may be implemented with "fencing" or staking to clearly identify the limits of work and will be verified by the Lead Biologist. No paint or permanent discoloring agents shall be applied to rocks or vegetation (to indicate surveyor construction activity limits or for any other purpose). Fencing/staking shall remain in place for the duration of work activities. Spoils shall be stockpiled in disturbed areas. All disturbances, vehicles, and equipment shall be confined to the fenced/flagged areas.

    Construction activities shall minimize soil and vegetation disturbance to minimize impacts to soil and root systems. Upon completion of construction activities in any given area, all unused materials, equipment, staking and flagging, and refuse shall be removed and properly disposed of, including wrapping material, cables, cords, wire, boxes, rope, broken equipment parts, twine, strapping, buckets, and metal or plastic containers. Any unused or leftover hazardous products shall be properly disposed of off site.

    Hazardous materials shall be handled and spills or leaks promptly corrected and cleaned up according to applicable requirements. Vehicles shall be properly maintained to prevent spills or leaks. Hazardous materials, including motor oil, fuel, antifreeze, hydraulic fluid, grease, shall not be allowed to enter drainage channels.
  - **Low-impact site preparation.** Native vegetation shall be allowed to recover from rootstocks and seed bank wherever facilities do not require permanent vegetation removal (e.g., access roads, foundations, paved areas, fire clearance requirements) within the perimeter fenceline of the Project solar site and under solar arrays. Vegetation height and density shall be managed as needed for

operation and maintenance and fire safety, but vegetation management shall otherwise focus on maintaining habitat and soil conditions.

- **PDF BIO-4**
  - **Integrated Weed Management Plan.** The Applicant shall prepare and implement an Integrated Weed Management Plan (IWMP) to minimize or prevent invasive weeds from infesting the site or spreading into surrounding habitat. The IWMP must comply with existing BLM plans and permits, including the Vegetation Treatments Using Herbicides and Vegetation Treatment Using Aminopyralid, Fluroxypyr, and Rimsulfuron PEISs (BLM 2007; 2016a), including requiring a Pesticide Use Permit approved by the BLM and BOR. The IWMP shall identify weed species occurring or potentially occurring in the Project area, means to prevent their introduction or spread (e.g., vehicle cleaning and inspections), monitoring methods to identify infestations, and timely implementation of manual or chemical (as appropriate) suppression and containment measures to control or eradicate invasive weeds. The IWMP shall identify herbicides that may be used for control or eradication, and avoid herbicide use in or around any environmentally sensitive areas. The IWMP shall also include a reporting schedule, to be implemented by the Lead Biologist.
- **PDF BIO-5**
  - **Wildlife protection.** The Applicant shall undertake the following measures during construction, operation and maintenance, and decommissioning to avoid or minimize impacts to wildlife. Implementation of all measures shall be subject to review and approval by BLM, BOR, CEC, CDFW, and USFWS.
    - Wildlife avoidance. Project activities shall minimize interference with wildlife (including ground-dwelling species, birds, bats) by allowing animals to escape from a work site prior to disturbance; conducting pre-construction surveys and exclusion measures for certain species as specified in other measures; checking existing structures (e.g., homes, trailers) for animals such as bats, barn owls, skunks, or snakes that may be present, and safely excluding them prior to removing the structures.
    - Minimize traffic impacts. The Applicant shall specify and enforce maximum vehicle speed limits as specified in the Traffic Control Plan to minimize risk of wildlife collisions and fugitive dust.
    - Minimize lighting impacts. Night lighting, when in use, shall be designed, installed, and maintained to prevent side casting of light towards surrounding fish or wildlife habitat.
    - Avoid use of toxic substances. Soil bonding and weighting agents used for dust suppression on unpaved surfaces shall be non-toxic to wildlife and plants.
    - Minimize noise and vibration impacts. The Applicant shall conform to noise requirements specified in the noise analysis of the NEPA and CEQA reviews to minimize noise to off-site habitat.

- Water. Potable and non-potable water sources such as tanks, ponds, and pipes shall be covered or otherwise secured to prevent animals (including birds) from entering. Prevention methods may include storing water within closed tanks or covering open tanks with 2-centimeter netting. Dust abatement shall use the minimum amount of water on dirt roads and construction areas to meet safety and air quality standards. Water sources (e.g., hydrants, tanks) shall be checked periodically by biological monitors to ensure they do not create puddles.
- Trash. All trash and food-related waste shall be contained in vehicles or covered trash containers inaccessible to ravens, coyotes, or other wildlife and removed from the site regularly.
- Workers. Workers shall not feed wildlife or bring pets to the Project site. Except for law enforcement personnel, no workers or visitors to the site shall bring firearms or weapons.
- Wildlife netting or exclusion fencing. The Applicant may install temporary or permanent netting or fencing around equipment, work areas, or Project facilities to prevent wildlife exposure to hazards such as toxic materials or vehicle strikes or prevent birds from nesting on equipment or facilities. Bird deterrent netting shall be maintained free of holes and shall be deployed and secured on the equipment in a manner that, insofar as possible, prevents wildlife from becoming trapped inside the netted area or within the excess netting. The biological monitor shall inspect netting (if installed) twice daily, at the beginning and close of each workday. The biological monitor will inspect exclusion fence (if installed) weekly.
- Wildlife entrapment. Project-related excavations and water tanks shall be secured or covered to prevent wildlife entry, entrapment, and drowning. Holes and trenches shall be backfilled, securely covered, or fenced. Open water tanks shall be covered or shall have other means of exit provided to prevent wildlife from drowning. Excavations that cannot be fully secured shall incorporate wildlife ramp or other means to allow trapped animals to escape. At the end of each workday, a biological monitor shall ensure that excavations and water tanks have been secured or provided with appropriate means for wildlife escape.
- All pipes or other construction materials or supplies shall be covered or capped in storage or laydown areas. Netting shall be installed over porta-potty vents. No pipes or tubing shall be left open either temporarily or permanently except during active use or installation. Any construction pipe, culvert, or other hollow materials shall be inspected for wildlife before it is moved, buried, or capped.
- Dead or injured wildlife shall be reported to USFWS (for federally listed species and migratory birds) and CDFW (for all wildlife) and/or the local animal control agency, as appropriate, by the Lead Biologist (or the Applicant's compliance manager during operation and maintenance). A

biological monitor shall safely move the carcass out of the road or work area if needed and dispose of the animal as directed by the agency. If an animal is entrapped, a biological monitor shall free the animal if feasible, work with construction crews to free it in compliance with safety requirements, or work with animal control or CDFW to resolve the situation.

- Pest control. No anticoagulant rodenticides, such as Warfarin and related compounds (indandiones and hydroxycoumarins), may be used within the Project site, on off-site Project components, or in support of any other Project activities.

- **PDF BIO-6**
  - **Bird and Bat Conservation Strategy (BBCS).** The Applicant will implement the final BBCS, developed in accordance with guidelines recommended by the USFWS, to avoid or minimize take of migratory birds that may nest on the site or may be vulnerable to collision with Project components. The BCS describes the proposed Project components, summarizes baseline data regarding birds and bats in the Project vicinity, assesses potential risks to those species that could result from Project construction, operation and maintenance and decommissioning, and describes conservation measures to be implemented in order to minimize those risks.

    Over the course of construction and operation and maintenance, fatality thresholds and future conservation measures may be subject to revision in coordination with USFWS and CDFW as new information is obtained. The BBCS outlines an adaptive management process to address such revisions to monitoring.

    Construction. As an Appendix to the BBCS, the Applicant will prepare and implement a Nesting Bird Management Plan (NBMP), to include nest surveys, avoidance, and protection. The Project will either avoid vegetation clearing during the nesting season or conduct pre-construction nest surveys of potential habitat and implement no-disturbance buffer areas around active nests. Pre-construction surveys for active nests will be conducted by one or more biological monitors at the direction of the Lead Biologist. The biologists' qualifications will be subject to review and approval by USFWS, CDFW, BLM, BOR, and CEC. Nest surveys will be conducted for all Project activities throughout the nesting season, identified here as beginning January 1 for raptors and hummingbirds and February 1 for other species and continuing through August 15. Nest surveys will be completed at each work site no more than 7 days prior to initiation of site preparation or construction activities. Nest surveys will cover all work sites, including the Project solar site and loop-in transmission lines, and surrounding buffer areas of 1,200 feet for raptors and 250 feet for other species. If adjacent properties are not accessible to the biological monitors, the off-site nest surveys may be conducted with binoculars.

At each active nest, the biological monitor will establish and mark a buffer area surrounding the nest where construction activities that could disrupt nesting behavior will be excluded. The BBCS may identify species-specific buffer distances or variable distances, depending on activity levels (e.g., driving past the nest to access work sites may be less disruptive than foundation construction). Alternately, buffer distances will be 1,200 feet for raptor nests and 250 feet for other species. The extent of nest protection will be based on proposed construction activities, species, human activities already underway when the nest is initiated (e.g., a house finch nest built in the eaves of an occupied structure would warrant less avoidance or protection than a loggerhead shrike nest build in native shrubland), topography, vegetation cover, and other factors. The avoidance and protection measures will remain in effect until the nest is no longer active.

If for any reason a bird nest must be removed during the nesting season, the Applicant or its agent will notify the CDFW and USFWS and retain written documentation of the correspondence. Nests will be removed only if they are inactive or if an active nest presents a hazard.

Operation and maintenance. The BBCS specifies monitoring and conservation measures to be implemented by the Applicant to document bird mortality or injury that may result from the operation of the Project, such as downed exhausted birds on the site that are unable to take flight or collision with Project components including loop-in transmission and gen-tie line collisions. The BBCS includes conservation measures and an adaptive management framework to be implemented through design and operations to minimize bird and bat fatalities at the Project solar site and loop-in transmission and gen-tie lines. Provisions for a potential O&M monitoring and reporting program for bird and bat fatalities are included based on monitoring at other active projects in the vicinity.

- **PDF BIO-8**
  - **Streambed and watershed protection.** Prior to construction activities in jurisdictional waters of the State, the Applicant will obtain a Lake and Streambed Alteration Agreement (LSAA) from the CDFW. A Stormwater Pollution Prevention Plan (SWPPP) or SWPPP-equivalent document may also be required and shall be prepared by a qualified engineer or qualified individual and shall be implemented before and during construction. The SWPPP shall include BMPs for stormwater runoff quality control measures, management for concrete waste, stormwater detention, watering for dust control, and construction of perimeter sediment controls, as needed.

    The Applicant will implement BMPs identified below to minimize adverse impacts to streambeds and watersheds.

    - Vehicles and equipment will not be operated in ponded or flowing water except as specified by resource agencies.

- The Applicant will minimize road building, construction activities, and vegetation clearing within ephemeral drainages.
- The Applicant will prevent water containing mud, silt, or other pollutants from grading or other activities from entering ephemeral drainages or being placed in locations that may be subjected to high storm flows.
- Spoil sites will not be located within 30 feet from the boundaries of drainages or in locations that may be subjected to high storm flows, where spoils might be washed back into drainages.
- Raw cement/concrete or washings thereof, asphalt, paint or other coating material, oil or other petroleum products, unapproved herbicides, or any other substances that could be hazardous to vegetation or wildlife resources resulting from Project-related activities will be prevented from contaminating the soil and/or entering ephemeral drainages. The Applicant shall ensure that safety precautions specified by this measure, as well as all other safety requirements of other measures and permit conditions, are followed during all phases of the Project.
- When operations are completed, any excess materials or debris will be removed from the work area. No rubbish will be deposited within 150 feet of the high-water mark of any drainage during construction, operation and maintenance, and decommissioning the Project.
- No equipment maintenance will occur within 150 feet of any qualifying jurisdictional waterway (waterway to be avoided during construction). No petroleum products or other pollutants from the equipment will be allowed to enter these areas or enter any off-site state jurisdictional waters under any flow.
- With the exception of the drainage control system installed for the Project, the installation of bridges, culverts, or other structures will be such that water flow (velocity and low flow channel width) is not impaired. Bottoms of temporary culverts will be placed at or below stream channel grade.
- No broken concrete, debris, soil, silt, sand, bark, slash, sawdust, rubbish, or other organic or earthen material from any construction or associated activity of whatever nature will be allowed to enter into, or be placed where it may be washed by rainfall or runoff into, off-site State jurisdictional waters.
- Stationary equipment such as motors, pumps, generators, and welders located within or adjacent to a drainage will be positioned over drip pans. Stationary heavy equipment will have suitable containment to handle a catastrophic spill/leak. Clean up equipment such as brooms, absorbent pads, and skimmers will be on site prior to the start of construction.
- The cleanup of all spills will begin immediately. BLM, BOR, CEC, and CDFW will be notified immediately by the Applicant of any spills and will be consulted regarding clean-up procedures if these spills occurred in a qualifying jurisdictional waterway.

CMAs

The Desert Renewable Energy Conservation Plan (DRECP) requires Conservation Management Actions (CMAs) for renewable energy projects. The following CMAs apply to biological resources:

- LUPA-BIO-PLANT-1: Conduct properly timed protocol surveys in accordance with the BLM's most current (at time of activity) survey protocols for plant Focus and BLM Special Status Species.
- LUPA-BIO-PLANT-2: Implement an avoidance setback of 0.25 mile for all Focus and BLM Special Status Species occurrences. Setbacks will be placed strategically adjacent to occurrences to protect ecological processes necessary to support the plant Species.
- LUPA-BIO-SVF-1: For activity-specific NEPA analysis, a map delineating potential sites and habitat assessment of the following special vegetation features is required: Yucca clones, creosote rings, Saguaro cactus, Joshua tree woodland, microphyll woodland, Crucifixion thorn stands. BLM guidelines for mapping/surveying cactus, yuccas, and succulents shall be followed.
- LUPA-BIO-SVF-6: Microphyll woodland: impacts to microphyll woodland will be avoided, except for minor incursions.
- LUPA-BIO-VEG-1: Promote appropriate levels of dead and downed wood on the ground, outside of campground areas, to provide wildlife habitat, seed beds for vegetation establishment, and reduce soil erosion, as determined appropriate on an activity-specific basis.
- LUPA-BIO-VEG-2: Allow for the collection of plant material consistent with the maintenance of natural ecosystem processes.
- LUPA-BIO-IFS-10: Comply with the conservation goals and objectives, criteria, and management planning actions identified in the most recent revision of the Flat-tailed Horned Lizard Rangewide Management Strategy (RMS). Activities will include appropriate design features using the most current information from the RMS and RMS Interagency Coordinating Committee to minimize adverse impacts during siting, design, pre-construction, construction, operation, and decommissioning; ensure that current or potential linkages and habitat quality are maintained; reduce mortality; minimize other adverse impacts during operation; and ensure that activities have a neutral or positive effect on the species.
- LUPA-BIO-IFS-12: If burrowing owls are present, a designated biologist will conduct appropriate activity-specific biological monitoring to ensure avoidance of occupied burrows and establishment of the 656 feet (200 meter) setback to sufficiently minimize disturbance during the nesting period on all activity sites, when practical.
- LUPA-BIO-IFS-13: If burrows cannot be avoided on-site, passive burrow exclusion by a designated biologist through the use of one-way doors will occur according to the specifications in Appendix D or the most up-to-date agency BLM or CDFW specifications. Before exclusion, there must be verification that burrows are empty

as specified in Appendix D or the most up-to-date BLM or CDFW protocols. Confirmation that the burrow is not currently supporting nesting or fledgling activities is required prior to any burrow exclusions or excavations.

- LUPA-BIO-IFS-14: Activity-specific active translocation of burrowing owls may be considered, in coordination with CDFW.
- LUPA-BIO-COMP-1: Impacts to biological resources, identified and analyzed in the activity specific environmental document, from activities in the LUPA Decision Area will be compensated using the standard biological resources compensation ratio, except for the biological resources and specific geographic locations listed as compensation ratio exceptions, specifics in CMAs LUPA-BIO-COMP-2 through -4, and previously listed CMAs. Compensation acreage requirements may be fulfilled through non-acquisition (i.e., restoration and enhancement), land acquisition (i.e., preserve), or a combination of these options, depending on the activity specifics and BLM approval/authorization.
- LUPA-BIO-COMP-2: Birds and Bats – The compensation for the mortality impacts to bird and bat Focus and BLM Special Status Species from activities will be determined based on monitoring of bird and bat mortality and a fee re-assessed every 5 years to fund compensatory mitigation. The initial compensation fee for bird and bat mortality impacts will be based on pre-project monitoring of bird use and estimated bird and bat species mortality from the activity. The approach to calculating the operational bird and bat compensation is based on the total replacement cost for a given resource, a Resource Equivalency Analysis. This involves measuring the relative loss to a population (debt) resulting from an activity and the productivity gain (credit) to a population from the implementation of compensatory mitigation actions. The measurement of these debts and gains (using the same "bird years" metric as described in Appendix D) is used to estimate the necessary compensation fee.
- LUPA-BIO-1: Conduct a habitat assessment of Focus and BLM Special Status Species' suitable habitat for all activities and identify and/or delineate the DRECP vegetation types, rare alliances, and special features (e.g., Aeolian sand transport resources, Joshua tree, microphyll woodlands, carbon sequestration characteristics, seeps, climate refugia) present using the most current information, data sources, and tools (e.g., DRECP land cover mapping, aerial photos, DRECP species models, and reconnaissance site visits) to identify suitable habitat for Focus and BLM Special Status Species. If required by the relevant species specific CMAs, conduct any subsequent protocol or adequate presence/absence surveys to identify species occupancy status and a more detailed mapping of suitable habitat to inform siting and design considerations. If required by relevant species specific CMAs, conduct analysis of percentage of impacts to suitable habitat and modeled suitable habitat.
- LUPA-BIO-2: Designated biologist(s), will conduct, and oversee where appropriate, activity-specific required biological monitoring during pre-construction, construction, and decommissioning to ensure that avoidance and minimization measures are appropriately implemented and are effective. The appropriate

required monitoring will be determined during the environmental analysis and BLM approval process. The designated biologist(s) will submit monitoring reports directly to BLM.

- LUPA-BIO-3: Resource setbacks have been identified to avoid and minimize the adverse effects to specific biological resources. Setbacks are not considered additive and are measured as specified in the applicable CMA.
- LUPA-BIO-4: For activities that may impact Focus and BLM Special Status Species, implement all required species-specific seasonal restrictions on pre- construction, construction, operations, and decommissioning activities.
- LUPA-BIO-5: All activities, as determined appropriate on an activity-by-activity basis, will implement a worker education program that meets the approval of the BLM. The program will be carried out during all phases of the project (site mobilization, ground disturbance, grading, construction, operation, closure/decommissioning or project abandonment, and restoration/reclamation activities). The worker education program will provide interpretation for non-English speaking workers, and provide the same instruction for new workers prior to their working on site.
- LUPA-BIO-6: Subsidized predator standards, approved by BLM, in coordination with the USFWS and CDFW, will be implemented during all appropriate phases of activities, including but not limited to renewable energy activities, to manage predator food subsidies, water subsidies, and breeding sites.
- LUPA-BIO-14: Implement general standard practices outlined in the DRECP to protect Focus and BLM Special Status Species.
- LUPA-BIO-15: Use state-of-the-art, as approved by BLM, construction and installation techniques, appropriate for the specific activity/project and site, that minimize new site disturbance, soil erosion and deposition, soil compaction, disturbance to topography, and removal of vegetation.
- LUPA-BIO-16: For activities that may impact Focus and BLM sensitive birds, protected by the ESA and/or Migratory Bird Treaty Act of 1918, and bat species, implement appropriate measures as per the most up-to-date BLM state and national policy and guidance, and data on birds and bats, including but not limited to activity specific plans and actions. The goal of the activity -specific bird and bat actions is to avoid and minimize direct mortality of birds and bats from the construction, operation, maintenance, and decommissioning of the specific activities.
- LUPA-BIO-17: For activities that may result in mortality to Focus and BLM Special–Status bird and bat species, a Bird and Bat Conservation Strategy (BBCS) will be prepared with the goal of assessing operational impacts to bird and bat species and incorporating methods to reduce documented mortality. The BBCS actions for impacts to birds and bats during these activities will be determined by the activity-specific bird and bat operational actions.
- LUPA-BIO-RIPWET-1: The riparian and wetland DRECP vegetation types and other features listed in Table 17 will be avoided to the maximum extent practicable, except for allowable minor incursions with the specified setbacks.

- LUPA-BIO-RIPWET-3: For activities that occur within 0.25 mile of a riparian or wetland DRECP vegetation type and may impact BLM Special Status riparian and wetland birds species, conduct a pre-construction/activity nesting bird survey for BLM Special Status riparian and wetland birds according to agency-approved protocols.
- LUPA-DFA-VPL-BIO-COMP-1: Impacts to biological resources from all activities in DFAs and VPLs will be compensated using the same ratios and strategies as LUPA-BIO-COMP-2 through 4, with the exception identified in DFA-BPL-BIO-COMP-2.

Mitigation Plans

The Project would implement the following mitigation plans relevant to biological resources:

- Bird and Bat Conservation Strategy (Appendix M.1)
- Nesting Bird Management Plan (Appendix M.2)
- Raven Management Plan (Appendix M.3)
- Wildlife Protection and Translocation Plan (Appendix M.4)
- Restoration and Integrated Weed Management Plan (Appendix M.5)
- Decommissioning and Revegetation Plan (Appendix M.6)

ATTACHMENT B

June 3, 2024

Intersect Power, LLC
9450 SW Gemini Drive PMB #68473
Beaverton, OR 97008-7105
Camille Wasinger
Senior Director, Environmental & Permitting

RE: Available Private Lands Mitigation for Flat-tailed Horned Lizard (*Phrynosoma mcallii*)

Ms. Wasinger,

At the request of Intersect Power, Wildlands performed an evaluation of potentially available private lands that could provide compensatory mitigation for Flat-tailed Horned Lizard (FTHL) and associated vegetation communities, including Creosote Brush Scrub (CBS), and Alkali Golden Desert Scrub (AGDS), for the approximately 6,000-acre Perkins Solar Project. The extent of the search was focused on eastern San Diego and Imperial Counties, throughout the extent of the FTHL range.

Our analysis utilized guidance from the California Department of Fish and Wildlife, Bureau of Land Management, interviews with desert species and habitat experts, as well as our internal land acquisition team. Wildlands utilized available geographic data and various geographically based filters to identify potentially suitable mitigation lands, specifically targeting high priority areas that would contribute to species connectivity, corridors, and continued and improved gene flow for the FTHL.

Wildlands utilized available data, geographically based filters, and regional conservation strategies during this analysis including but was not limited to the California Natural Diversity Database, designated FTHL Management Areas, Desert Renewable Energy Conservation Plan FTHL habitat model, FTHL historic range, and Wildlands reconnaissance and monitoring data. It should be noted that Wildlands currently manages preserves for FTHL in the region.

Wildlands identified large blocks of land with the above analysis that were dominated by CBS, eolian sand dune or partially stabilized sand dune habitat, lands contributing to FTHL habitat connectivity, FTHL corridor linkages, and with suitable or occupied FTHL habitat. Lands that lack intensive recreational use or other disturbances, properties

adjacent to already protected lands, and properties for which long-term management is feasible were prioritized.

Once large blocks of land were identified, Wildlands contact landowners to identify willing sellers. Interested landowners will enter into a purchase and sale agreement with Wildlands, giving Wildlands the legal right to purchase the property.

Upon execution of a purchase and sale agreement, Wildlands will perform thorough property history and title report investigation as well as in-depth on-site biological reconnaissance and species documentation. The duration of the purchase and sale agreement can vary widely, ranging from a few months to a few years based on negotiations with the seller. After the property is accepted by the resource agencies as appropriate to meet project habitat mitigation conditions, Wildlands will acquire and manage the property in accordance with permit conditions.

Project specific performance standards, approval schedules, and details of the habitat management plan are negotiated with the approving agencies post land selection and are largely independent from the initial land identification process. Once specific properties are selected and deemed biologically suitable, these due diligence will be available.

Based on the information above it is Wildlands' conclusion that suitable FTHL and CBS compensatory mitigation land is available to compensate for the impacts of the Perkins Solar Project, including impacts to CBS, AGDS and California jurisdictional waters of the state.

If you have any questions or concerns, please feel free to contact me.

Sincerely,

Jacob Robinson
Wildlands - Director of Conservation Biology
(916) 435-3555
jrobinson@heronpacific.com

PROPOSED MITIGATION CONSERVATION ANALYSIS

FOR

PERKINS SOLAR PROJECT

Prepared by:

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June 2024

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Preserve Information

This approximately 477-acres of Proposed Mitigation ("PM" or "Preserve") contains three sub-areas including APN's 007-010-086 ("SA-1"), 033-100-064 ("SA-2"), and 050-080-037 ("SA-3"), which are legally controlled by Wildlands and will be included as a portion of the final mitigation package. The proposed Preserve is a representation of the compensatory mitigation that will be proposed for the approximately 6,000-acre Perkins Solar Project ("Project") for loss of Flat-tailed horned lizard (*Phrynosoma mcallii*) ("FTHL") habitat and associated vegetative communities including Creosote Bush Scrub ("CBS") and Alkali Golden Desert Scrub ("AGDS"). In addition to the parcels included in this analysis, land acquisition of the remaining approximately 5,523-acres of compensatory mitigation is being developed. Ongoing negotiations with additional property owners as well as an evaluation of available private lands within the region, suggests that land acquisition for targeted mitigation values and acreage is achievable. This Conservation Analysis will demonstrate the suitability of a subset of parcels which will be included in the final overall mitigation package. This analysis represents how the PM will provide compensatory mitigation for FTHL habitat and sensitive vegetation communities. The Preserve was specifically selected for its ability to protect and preserve biologically sensitive open space habitat as compensatory lands for FTHL habitat and sensitive vegetation communities. Habitats at the Preserve, as well as its location and connectivity to other protected landscapes, make it appropriate to provide mitigation for Project impacts.

The Preserve is located in the Imperial Valley ("Valley") (**Figure 1**). The Valley was historically part of the Sonoran Desert/Colorado Desert ecosystem. Beginning in the late 1800's, the introduction of irrigated agriculture dramatically altered the natural wildlife setting. The Valley is dominated by cultivated crops including alfalfa, lettuce, carrots, melons, sugar beets, onions, citrus crops, wheat and other grains, and is dissected by a vast irrigation system. Generally, few species native to the Colorado Desert occur in the cultivated portions of the Valley. The Valley is host to a number of federal and state special status species, including the Flat-tailed horned lizard, a California Department of Fish and Wildlife species of special concern and a Bureau of Land Management ("BLM") sensitive species.

The Preserve is located in Imperial County, approximately thirteen miles northeast (SA-1) and thirteen miles southeast (SA-2) of Ocotillo Wells, and approximately two miles east of the old Holtville Airport (SA-3). SA-1 is in Township 10S, Range 09E, Section 13 of the Truckhaven (33115C8) United States Geological Survey 7.5-minute Quadrangle (**Figure 2a**). SA-2 is in Township 13S, Range 10E, Section 20 of the Harpers Well (32115A8) United States Geological Survey 7.5-minute Quadrangle (**Figure 2b**). SA-3 is in Township 15S, Range 17E, Section 16 of the Glamis SW (32115G2) United States Geological Survey 7.5-minute Quadrangle (**Figure 2c**). All three sub-areas are in the San Bernardino Meridian. Aerial photos of the Preserve can be found in **Figure 3**.

Geographic and Continuity Analysis

Wildlands used various geographically based filters to determine the potential suitability of conservation lands. In order to mitigate for impacts of the Project, Wildlands sought to find suitable open space habitat within areas identified as having ecological value and/or having occurrences of sensitive habitats and species. Wildlands also used the California Natural Diversity Database ("CNDDB") to identify areas with known species occurrences. In order to provide compensatory mitigation for impacts to the FTHL and

plant communities, Wildlands attempted to find suitable habitat within Creosote Bush Scrub habitat located in the Imperial Valley that satisfied the following mitigation criteria:

- Contain eolian sand dune or partially stabilized sand dune habitat with potential to contribute to FTHL habitat connectivity and build linkages between known populations of FTHL and preserve lands with suitable habitat;
- To the extent feasible, be connected to lands currently occupied by FTHL;
- To the extent feasible, be near larger blocks of lands that are either already protected or planned for protection, or which could feasibly be protected long-term by a public resource agency or a non-governmental organization dedicated to habitat preservation;
- Provide quality habitat for FTHL, that has the capacity to regenerate naturally when disturbances are removed;
- Contain Creosote Bush Scrub plant community;
- Contain Alkali Golden Desert Scrub plant community;
- Not be characterized by high densities of invasive species, either on or immediately adjacent to the parcels under consideration, that might jeopardize habitat recovery and restoration;
- Not contain hazardous wastes that cannot be removed to the extent the site is suitable habitat (see **Phase 1 Environmental Site Assessment** in submittal package);
- Not be subject to property constraints (i.e., mineral leases, cultural resources); and
- Be on land for which long-term management is feasible.

Wildlands utilized all available geographic data, interviews with species and habitat experts, and guidance from regulatory agencies to specifically target high priority areas for conservation and to identify areas with known species occurrences, as well as the necessary plant communities and landforms that meet all the above criteria.

Adjacency to Protected Lands

Lands having connectivity to larger blocks of lands that are already protected or planned for protection were prioritized. Lands adjacent to publicly or privately protected lands were specifically targeted. Contributing to this connectivity is essential to protect private lands in the area.

SA-1 is adjacent to State of California managed lands along its western boundary (**Figure 4a**). SA-2 is adjacent to privately conserved lands along its northern boundary and adjacent to Bureau of Land Management ("BLM") lands along its eastern boundary (**Figure 4b**). SA-3 is adjacent to privately conserved lands along its northern boundary and with BLM lands along its eastern, southern, and western boundaries (**Figure 4c**). The conservation value of the Preserve is enhanced by its connectivity to other high-quality habitats and its contributory value as a linkage corridor to similarly protected sites.

Areas of Critical Environmental Concern

Areas of Critical Environmental Concern ("ACEC") are an administrative designation made by BLM through a land use plan. This designation is unique to the BLM in that no other agency uses this designation. Private lands and lands administered by other agencies may be located within the ACEC boundaries but are not subject to the prescribed management of the ACEC. As a result, it is of significant importance to protect privately owned lands within an ACEC, as conservation of these lands contributes towards a more comprehensive, regional natural resource management regime. Congress mandated the

designation of ACEC through the Federal Land Policy and Management Act to manage areas containing unique and significant resource values. An ACEC is a designation that highlights areas where special management attention is needed to protect and prevent irreparable damage to important historic, cultural and scenic values; fish, wildlife resources, or other natural systems or processes; or to protect human life and safety from natural hazards. The designation is a record of significant values that must be accommodated when the BLM considers future management actions and land use proposals.

SA-1 is located approximately 7-miles northwest of the Salton Sea Hazardous ACEC (**Figure 5a**). SA-2 is located within the West Mesa ACEC (**Figure 5b**). SA-3 is located within the East Mesa ACEC (**Figure 5c**). The Preserve will add to conservation of private lands within these important management areas. Additional land acquisitions will prioritize private lands within ACEC's.

National Conservation Lands of the California Desert

In 2016, Phase I of the Desert Renewable Energy Conservation Plan was completed to protect the desert's natural resources while facilitating energy development. Some of the BLM lands managed for conservation purposes were designated as National Conservation Lands of the California Desert under the DRECP. These National Conservation Lands of the California Desert are closed to all energy development (BLM 2022). Similar to the ACECs, private lands within these designated areas are not subject to development restrictions. As a result, it is important to protect privately owned lands within the National Conservation Lands of the California Desert, as conservation of these lands contributes towards a more comprehensive, regional natural resource management regime.

SA-1 and SA-2 are within the Lake Cahuilla National Conservation Lands of the California Desert (**Figures 6a and b**). Establishment of the Preserve will protect potentially developable private in-holding from future development, adding to connectivity in this important conservation area. Additional land acquisitions will prioritize private lands within the National Conservation Lands of the California Desert.

FTHL Management Areas

FTHL Management Areas ("MA") are controlled by multiple agencies and may include private inholdings. MA were designed to include most FTHL habitat identified as key areas in previous studies, even though the absolute densities of FTHLs within the MA were not known. MA were proposed based upon accepted principles of good preserve design, utilizing the best information available at the time. MA included as large an area as possible, but avoided extensive, existing and predicted management conflicts (e.g., OHV open areas). Conflicts that are localized in nature (e.g., sand and gravel mines, military bombing targets) were accepted within some of the MA. The MA are the core areas for maintaining self-sustaining populations of FTHLs in perpetuity.

SA-1 is located approximately 2-miles north of the Ocotillo Wells FTHL MA (**Figure 7a**). SA-2 is located adjacent to the West Mesa FTHL MA (**Figure 7b**). SA-3 is located within the East Mesa FTHL MA (**Figure 7c**) and will increase conservation within these important MA. Additional land acquisitions will prioritize private lands within MA's.

FTHL Distribution Model

The Biogeography Lab at UC Santa Barbara has developed a FTHL species distribution model. This model is based on examination of species observation and data and consultation with biologists. Expert

opinion was used to exclude certain areas such as areas outside of the historic range. The model provides a mapping layer of predictable suitable habitat and distribution of the FTHL (Davis 2013).

A portion of SA-1 and the entirety of SA-2 and SA-3 are located within the FTHL species distribution model (**Figures 8a and b**). Numerous FTHL occurrences have been in the vicinity of the Preserve (**Figures 8a and b**).

Hydrology and Topography

SA-1 is located within the State West Salton hydrologic unit, SA-2 is located within the State Anza Borrego hydrologic unit, and SA-3 is located within the State Imperial hydrologic unit (**Figure 9**).

The Preserve receives local precipitation and SA-1 receives drainage from the Santa Rosa Mountains to the west (**Figures 2a-c**). Waterways within SA-1 are ephemeral, rainfall driven, and flow generally in a west to east direction. Elevations across the Preserve range between approximately 65 feet below mean sea level along the eastern boundary of SA-1 to 92 feet above mean sea level in the northeast corner of SA-3 (**Figures 2a-c**).

Biological Analysis

Desktop Analysis and Biological Field Reconnaissance

After identifying properties that fit the identified geographical criteria, a thorough aerial photography/ satellite imagery analysis was conducted to preliminarily identify the habitats on the Preserve and any existing or future threats to the quality and long-term sustainability of those habitats. **Figure 3** shows aerial photographs of the Preserve.

Landforms and Plant Communities

Landforms are geographic abiotic features of the earth defined by topographic relief, geology, and hydrologic connectivity. A plant community is a biotic feature of the ecosystem that is a recognizable and complex assemblage of plant species which interact with each other, as well as with the elements of their environment, and is distinct from adjacent plant communities.

The landforms identified on the Preserve can be grouped into three distinct categories: stabilized and partially stabilized dunes ("SPSD"), uplands, and 1602 resources. All landforms identified on the Preserve include vegetated areas mostly containing the plant community CBS (Holland Code 34110) (**Figures 10a-c**).

Stabilized and partially stabilized dune areas include deposits of eolian, or fine windblown sands typically associated with dunes, washes, margins of dry lakes, and sandy hummocks. Sand accumulations are shallow in depth and partially stabilized by evergreen and/or deciduous shrubs, scattered low annuals and perennial grasses. These dunes are found in areas typically higher than active dunes, and they retain water just below the sand surface allowing perennial vegetation to survive long drought periods. Total cover increases as the dunes are progressively stabilized. This habitat intergrades with Stabilized and Partially Stabilized Desert Sand Fields (Holland Code 22300) but is mostly correlated to sandier phases of CBS (Holland Codes 34110), or desert wash scrub (Holland Code 34250) (Holland 1986). This habitat type is

distributed throughout the desert in areas where sand accumulation occurs and provides quality FTHL habitat.

CBS (Holland Code 34110) is a shrub dominated habitat composed of 0.5-3 m tall, widely spaced shrubs, usually with bare ground in-between (Holland 1986). In some areas of the Preserve, the bare ground is sheets of eolian sand. CBS is very similar in appearance to Mojave Bush Scrub (Holland Code 34110), but with greater species and life form diversity including several succulents. The plants that make up the CBS on the Preserve include creosote bush, fourwing saltbush, white bursage, long-leaf ephedra, jojoba, and mesquite.

1602 Resources identified within the Preserve are relatively straight to slightly meandering ephemeral streams with well-developed bajada hydrology. As the ephemeral channels flow along the valley floors, they begin to demonstrate anastomosed morphology in the form of braided beds with regular incised compound channels and multiple relic channels that have since formed into ancillary and concomitant wash overstory. These 1602 resources are highly susceptible to widening and avulsions (i.e. rapid changes in channel position and/or channel relocation) during moderate to high discharges, reestablishing a low-flow channel during subsequent low flows. CBS is the dominant plant community within the 1602 resources.

1602 Resources

24.18-acres of 1602 Resources were mapped on SA-1 of the Preserve (**Figure 11**). 1602 Resources on SA-1 are well above the projected mitigation requirements of the Project and additional 1602 Resources will be added to the Preserve as additional lands are identified.

CNDDB

The CNDDB shows twenty-one sensitive species (9 plants and 12 animals), including FTHL occurrences within close proximity to the Preserve (**Figures 12a-c**). Establishment of the Preserve will protect a potentially developable private in-holding from future development.

Conclusion/Summary

The approximately 477-acre Preserve contains diverse intact open space habitats appropriate to provide compensation for impacts from the Perkins Solar Project. Based upon the preliminary results of the regional analyses, the Preserve provides habitats essential for protecting sensitive species in the region including FTHL, CBS, and AGDS.

The Preserve contains suitable FTHL habitat and conserves sensitive vegetation communities based on the following indicators:

- Soil type found onsite supporting CBS and eolian sand suitable for FTHL habitat,
- Adjacency to public land (**Figures 4a-c**),
- Locations within the West Mesa and East Mesa ACEC's (**Figures 5b-c**),
- Within the Lake Cahuilla National Conservation Lands of the California Desert (**Figures 6a-b**),
- Locations within the West Mesa and East Mesa FTHL Management Area (**Figures 7a-c**),
- Locations within the FTHL Habitat Distribution Model (**Figures 8a-b**),

- Contains healthy CBS habitat throughout,
- Contains a mix of active and stabilized dunes,
- Proximity to known occurrences of special status species including FTHL (**Figures 12a-c**), and
- The presence of habitats associated with FTHL occurrences.

Based upon the results of the regional analyses, the Preserve provides suitable compensatory mitigation for FTHL, CBS, and AGDS habitats. Sub-areas of the Preserve will be included in the final mitigation package and provide a clear representation of the high-quality habitat available for the remaining approximately 5,523-acres of compensatory mitigation. Ongoing negotiations with additional property owners as well as an evaluation of available private lands within the region, suggests that land acquisition for targeted mitigation values and acreage is achievable.

References

Davis, F. and Oliver Soong, 2013. Bren School of Environmental Science & Management University of California, Santa Barbara. Available at https://databasin.org/datasets/8d66ba03cecf47ff90756c0f06cb660a/

Holland, R.F. 1986. Preliminary descriptions of the terrestrial natural communities of California. State of California, The Resources Agency.

National Conservation Lands of the California Desert | Bureau of Land Management. Retrieved November 11, 2022, from https://www.blm.gov/programs/national-conservation-lands/national-conservation-lands-of-the-california-desert

Figures

Figure 1 - Location Map
Proposed Mitigation Conservation Analysis

WILDLANDS

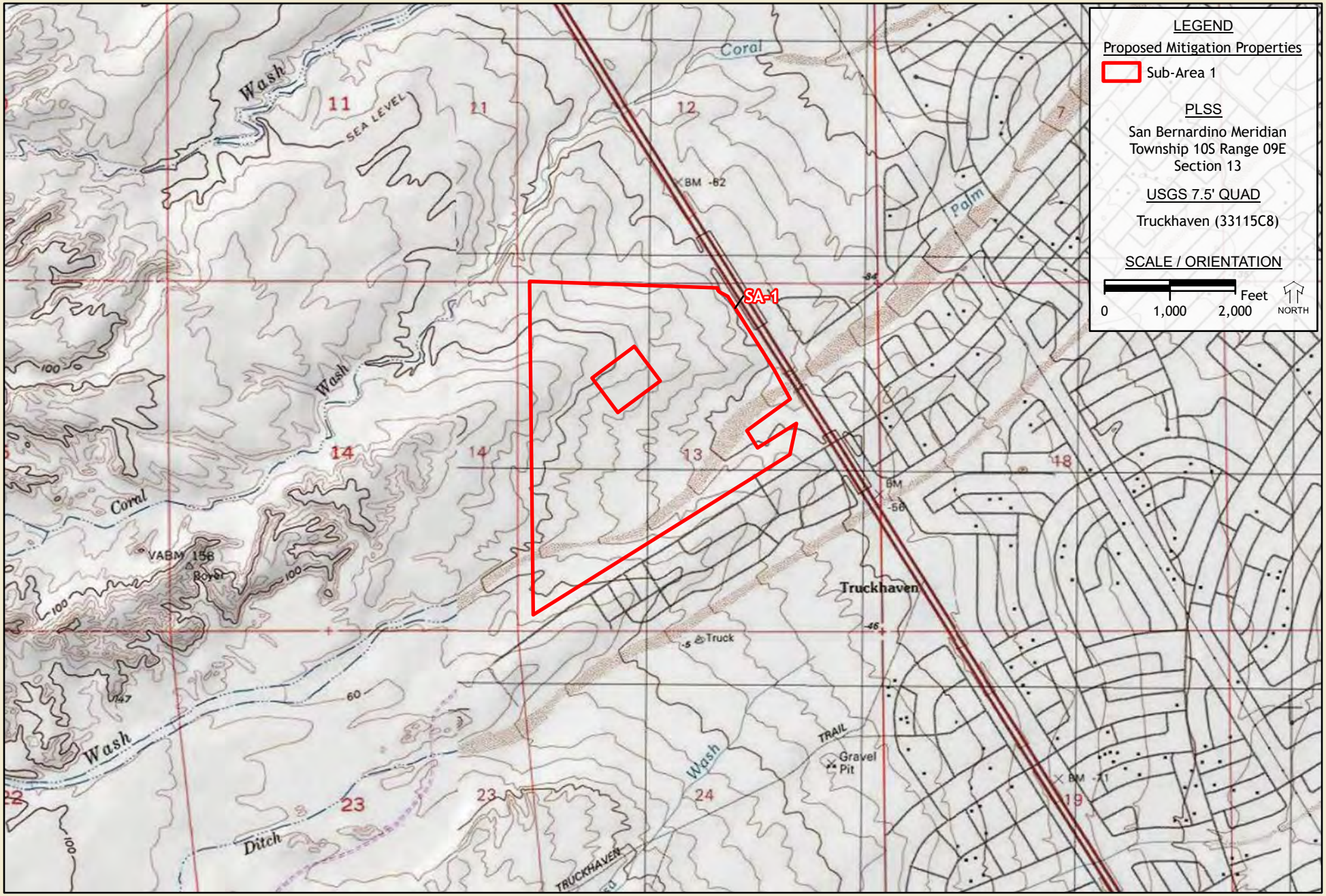

Figure 2a - USGS 7.5' Quadrangle, Sub-Area 1
Proposed Mitigation Conservation Analysis

WILDLANDS

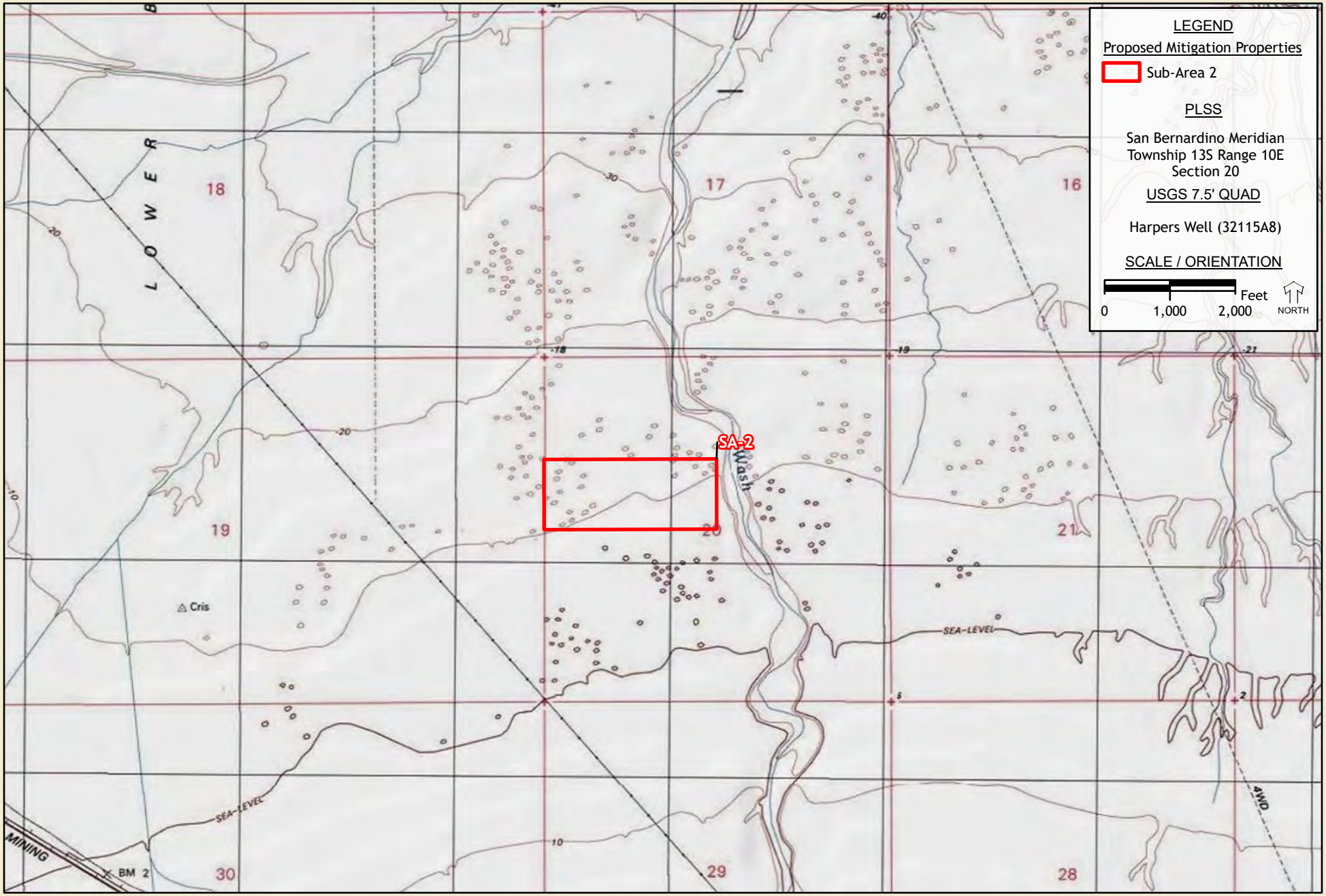

Figure 2b - USGS 7.5' Quadrangle, Sub-Area 2
Proposed Mitigation Conservation Analysis

WILDLANDS

Figure 2c - USGS 7.5' Quadrangle, Sub-Area 3
Proposed Mitigation Conservation Analysis

WILDLANDS

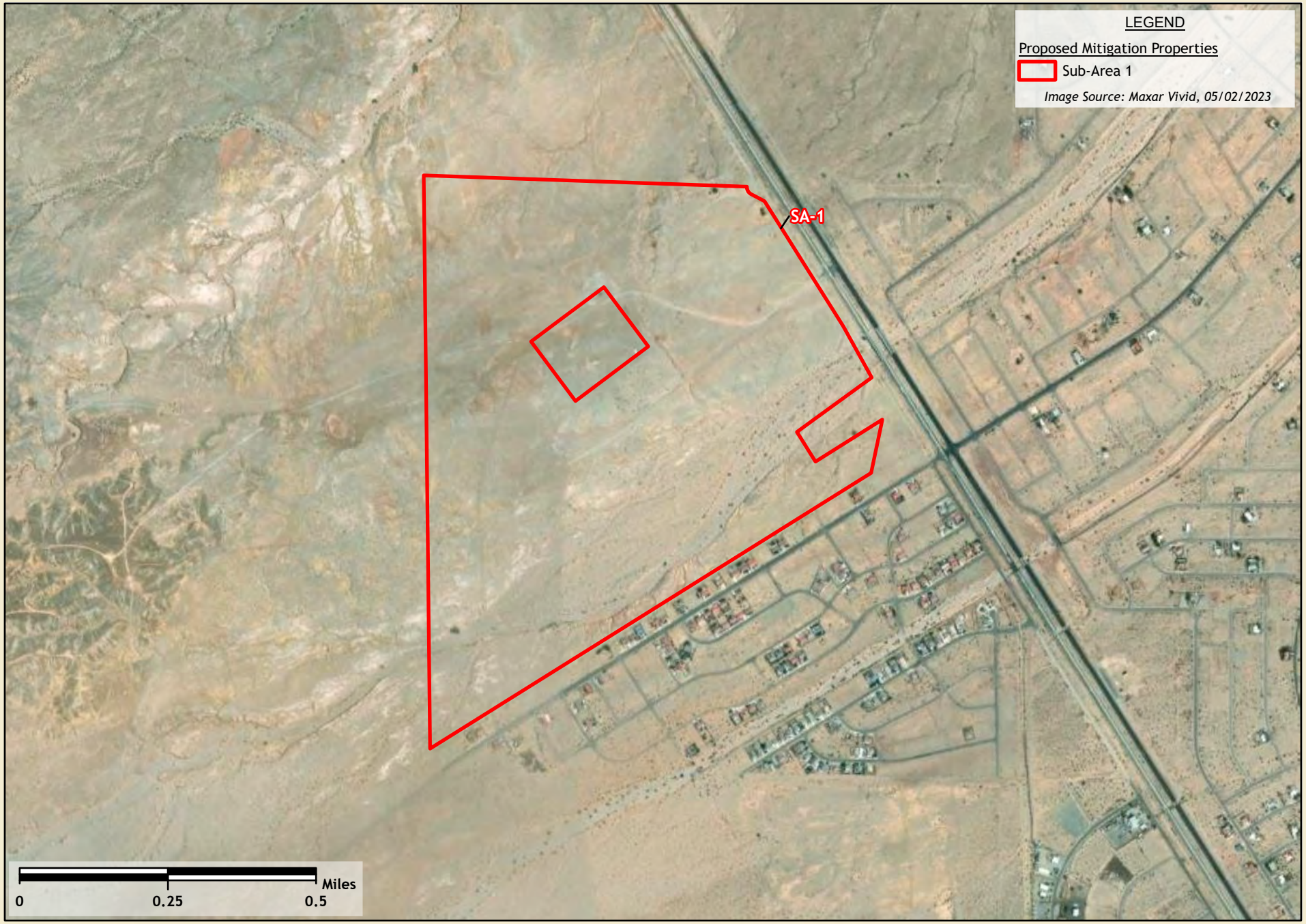

Figure 3a - Aerial Photo, Sub- Area 1
Proposed Mitigation Conservation Analysis

WILDLANDS

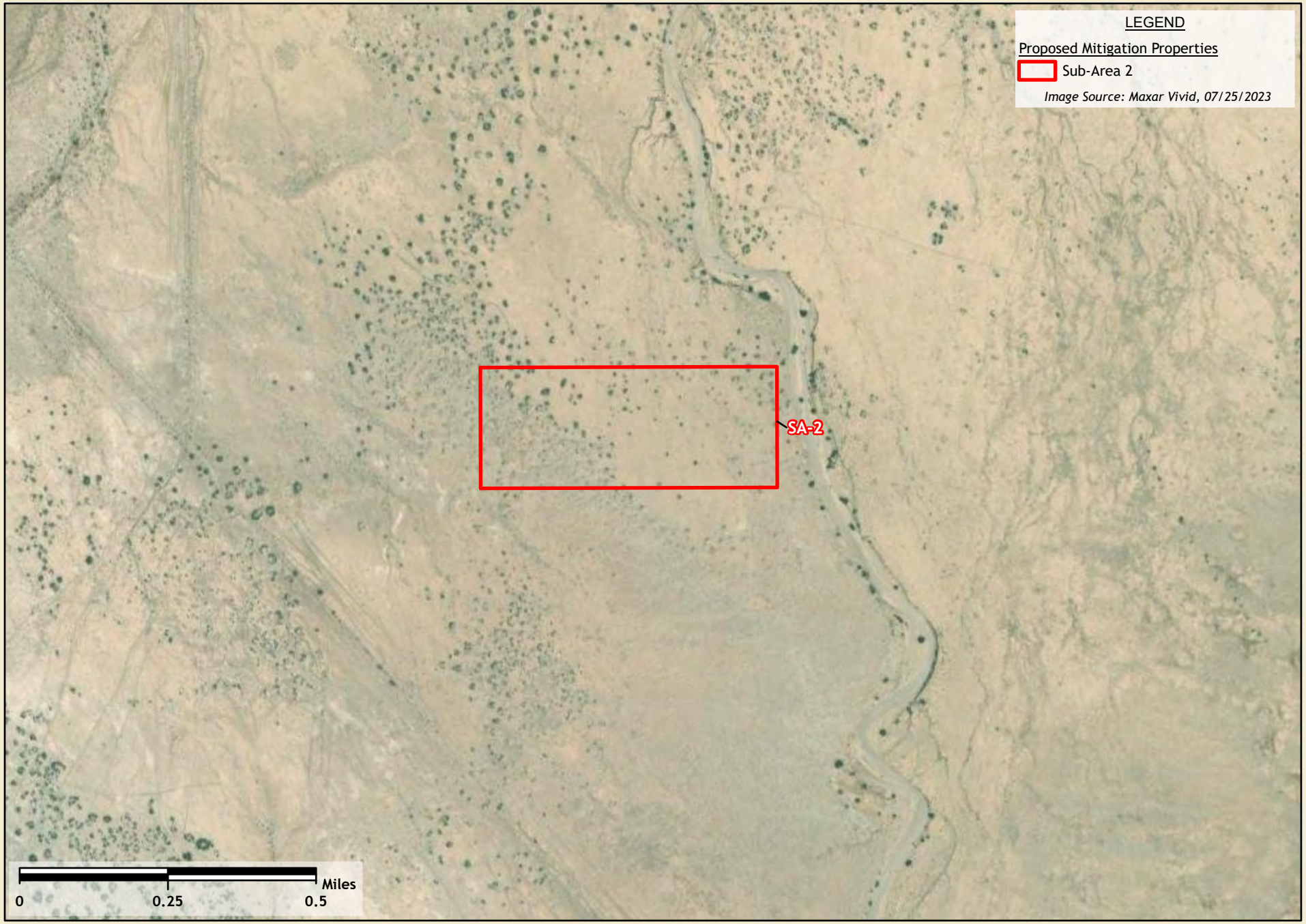

Figure 3b - Aerial Photo, Sub- Area 2
Proposed Mitigation Conservation Analysis

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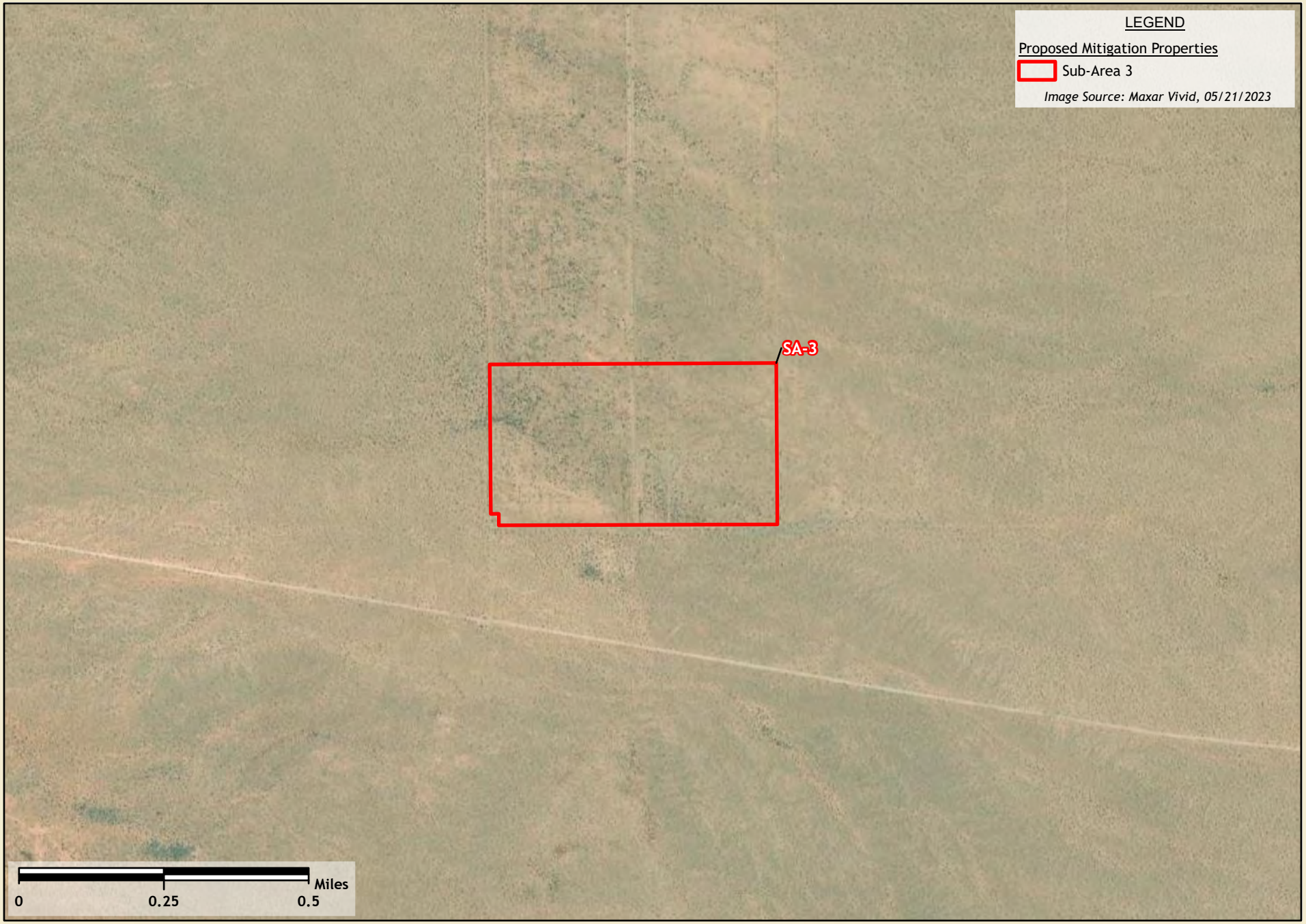

Figure 3c - Aerial Photo, Sub- Area 3
Proposed Mitigation Conservation Analysis

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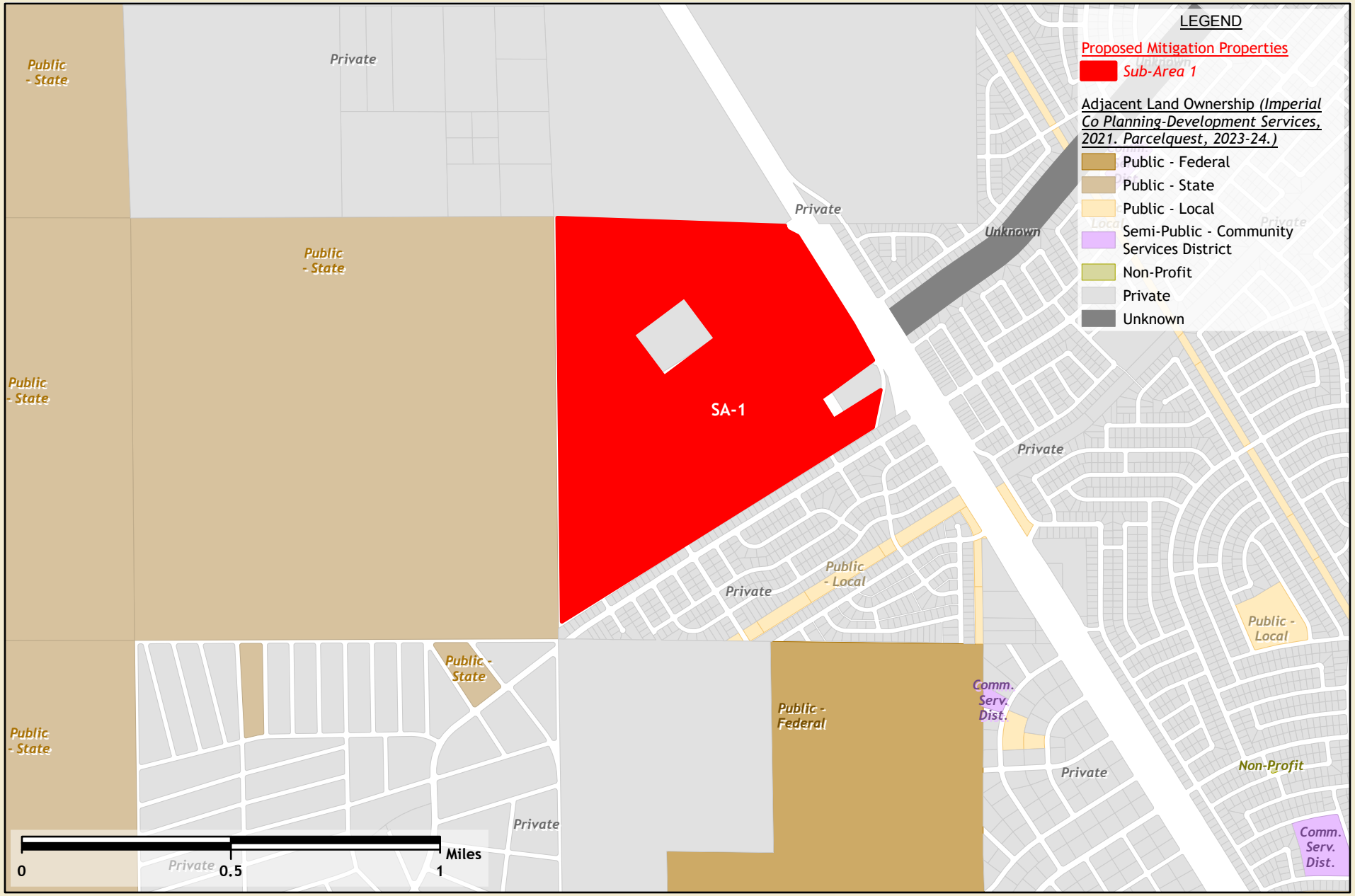

Figure 4a - Adjacent Ownership, Sub-Area 1
Proposed Mitigation Conservation Analysis

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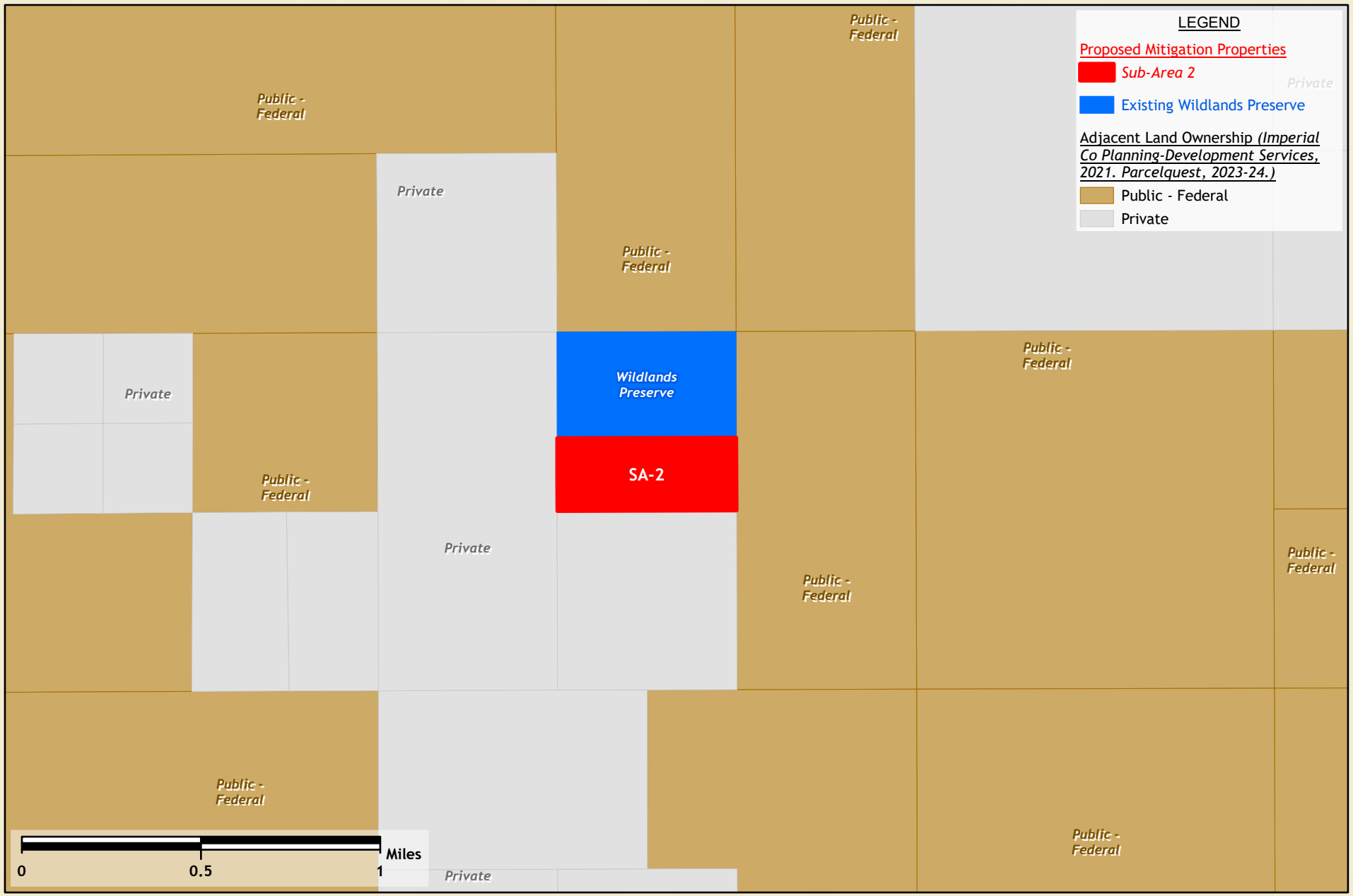

Figure 4b - Adjacent Ownership, Sub-Area 2
Proposed Mitigation Conservation Analysis

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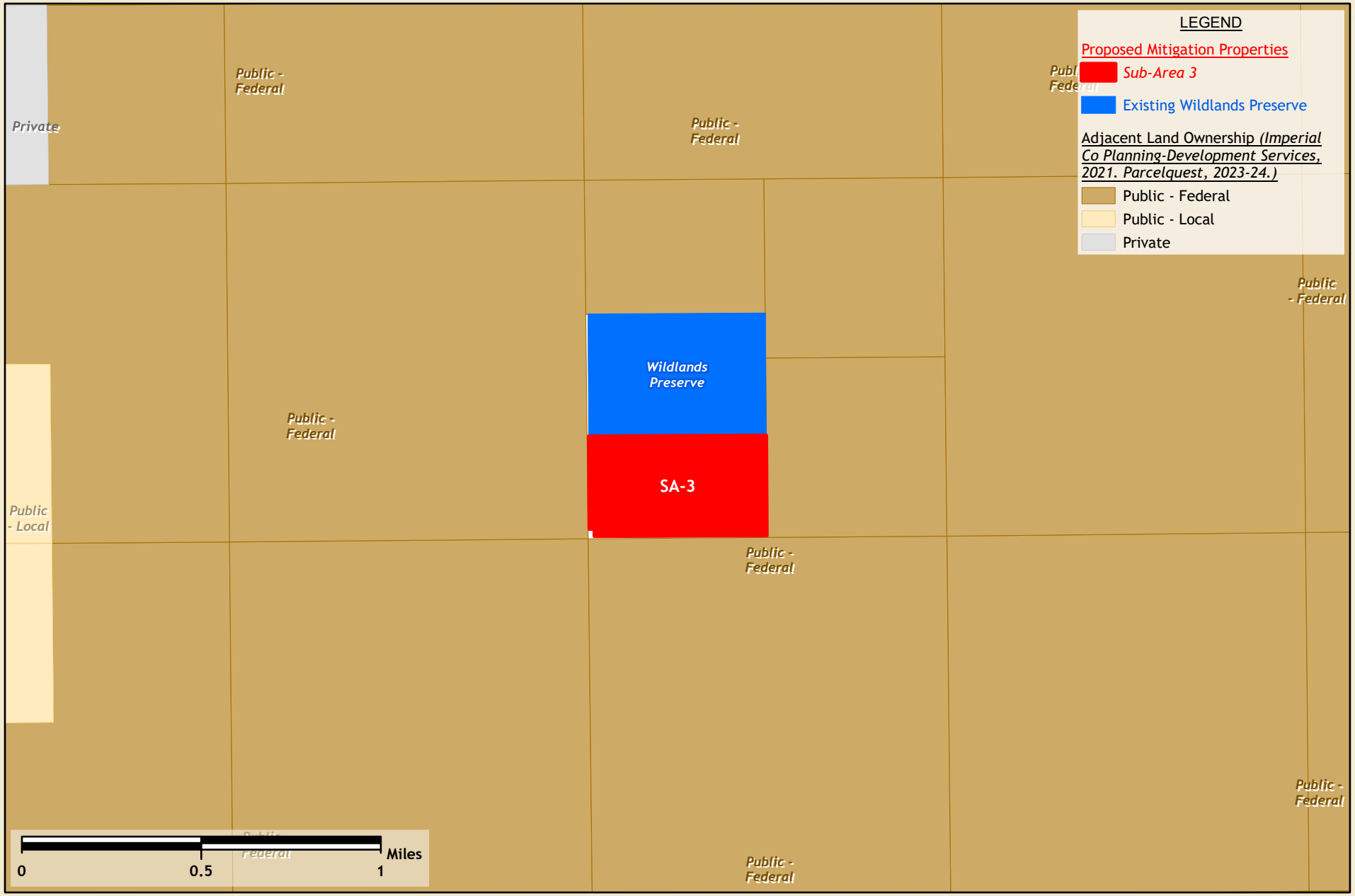

Figure 4c - Adjacent Ownership, Sub-Area 3
Proposed Mitigation Conservation Analysis

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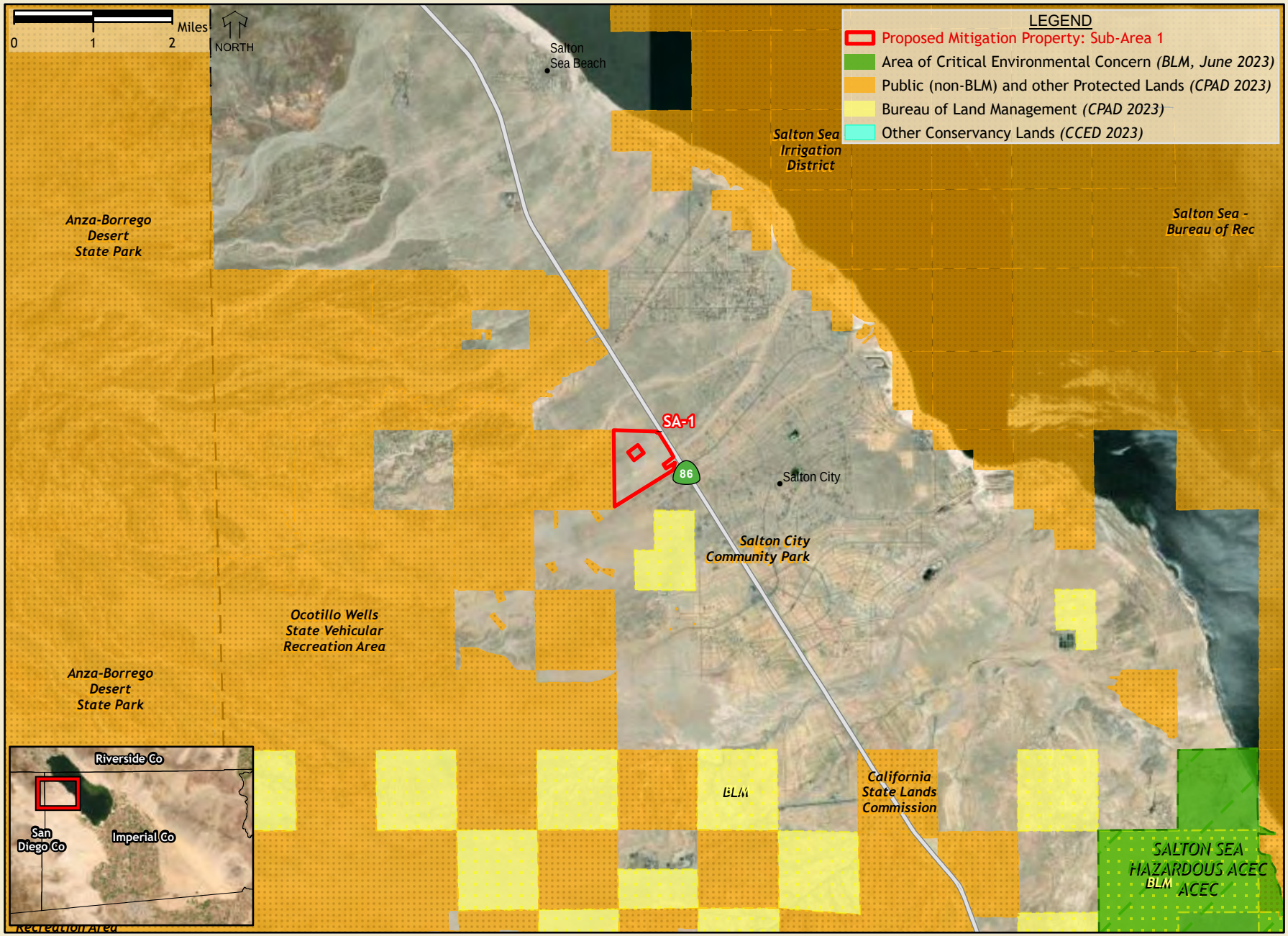

Figure 5a - Areas of Critical Environmental Concern (ACEC), Sub-Area 1
Proposed Mitigation Conservation Analysis

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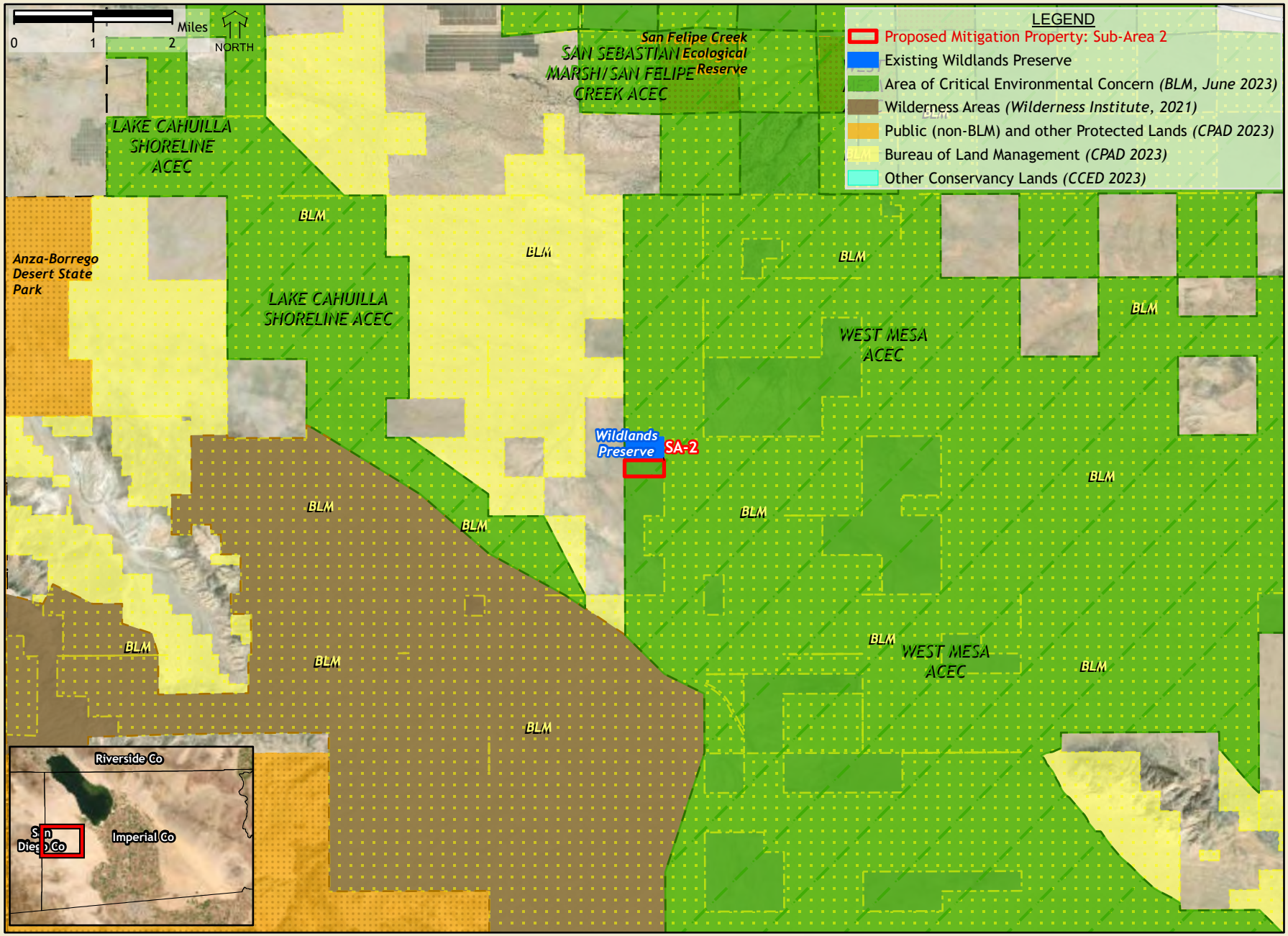

Figure 5b - Areas of Critical Environmental Concern (ACEC), Sub-Area 2
Proposed Mitigation Conservation Analysis

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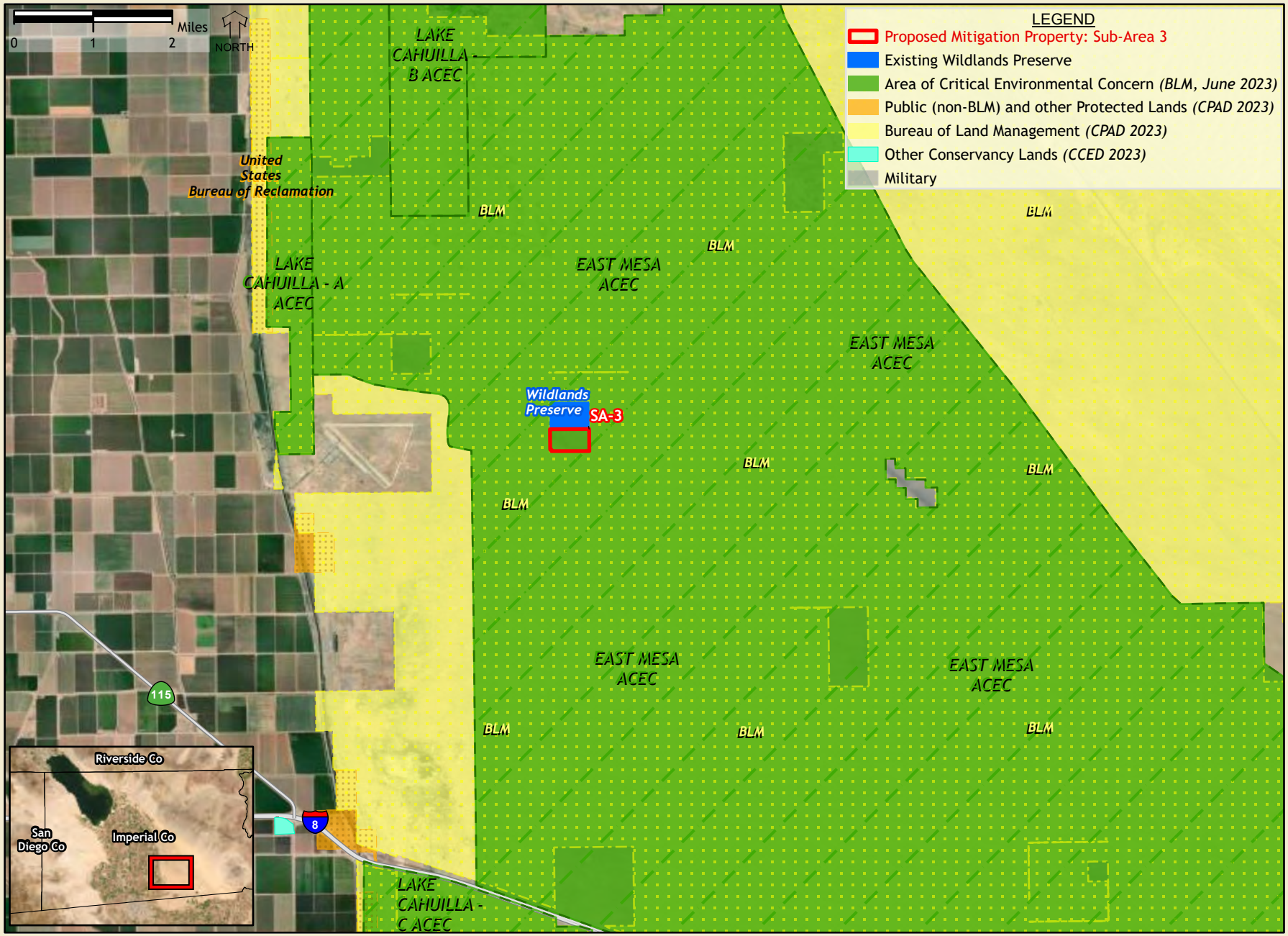

Figure 5c - Areas of Critical Environmental Concern (ACEC), Sub-Area 3
Proposed Mitigation Conservation Analysis

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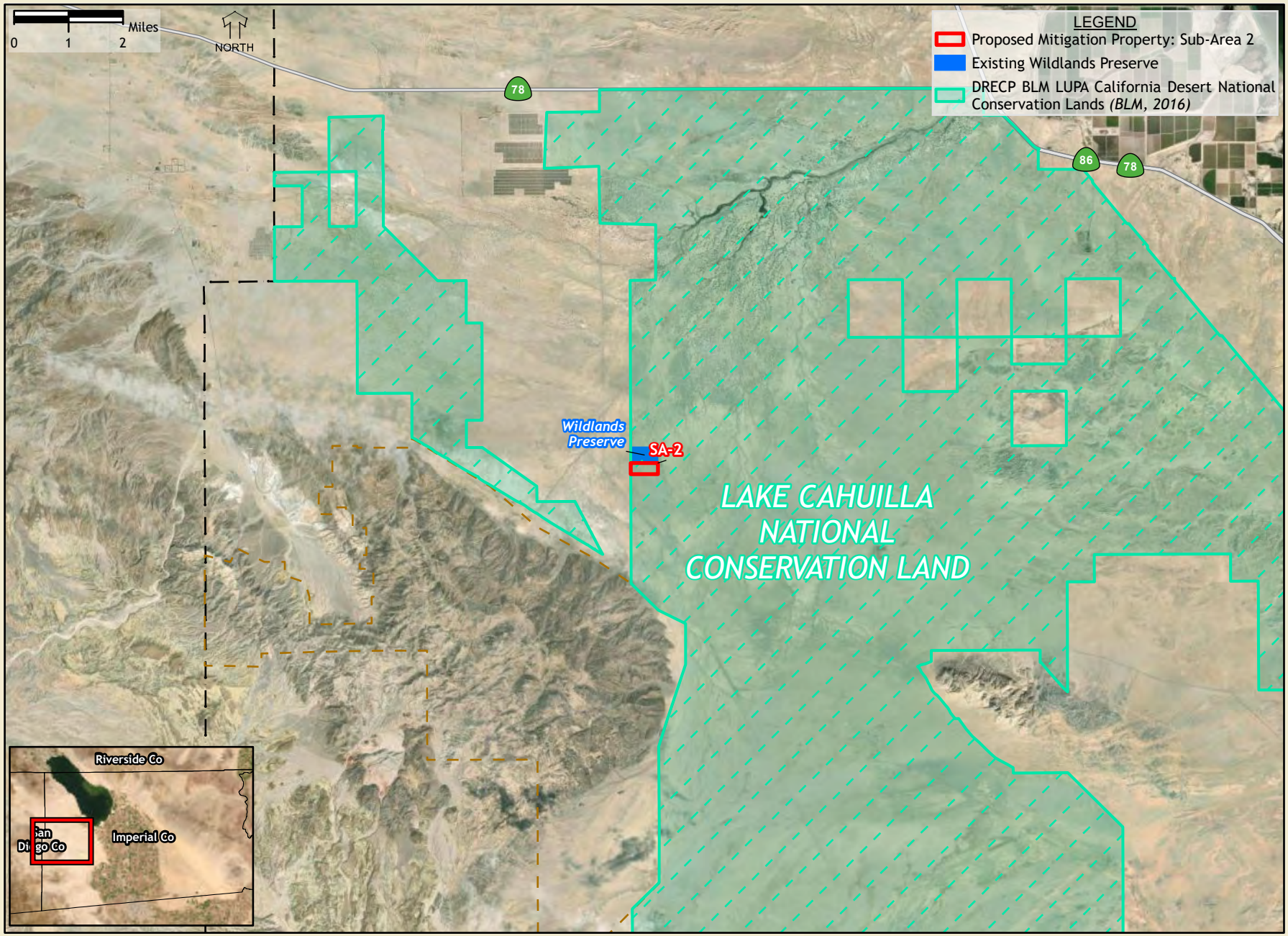

Figure 6a - California Desert National Conservation Lands, Sub-Area 2
Proposed Mitigation Conservation Analysis

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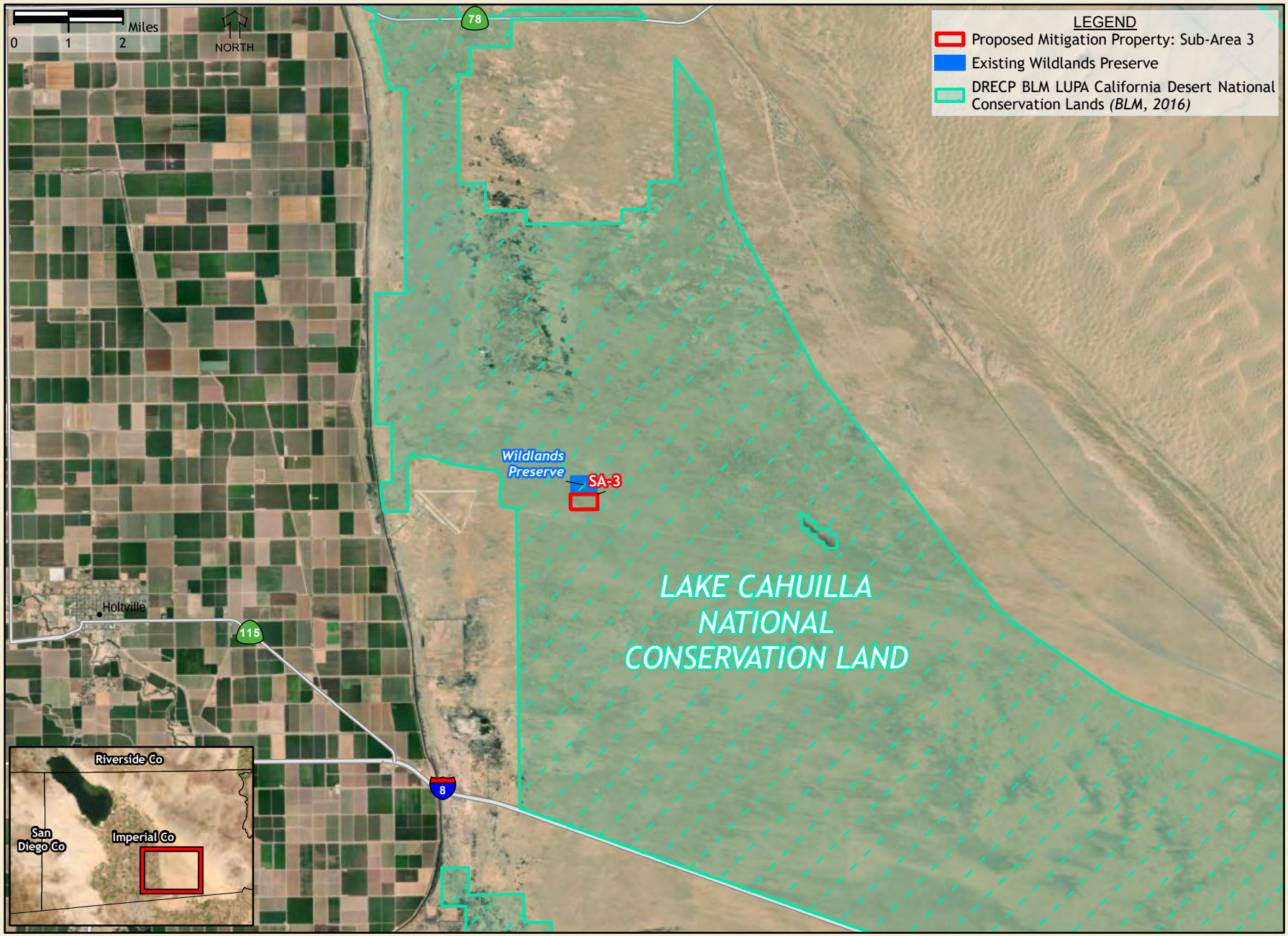

Figure 6b - California Desert National Conservation Lands, Sub-Area 3
Proposed Mitigation Conservation Analysis

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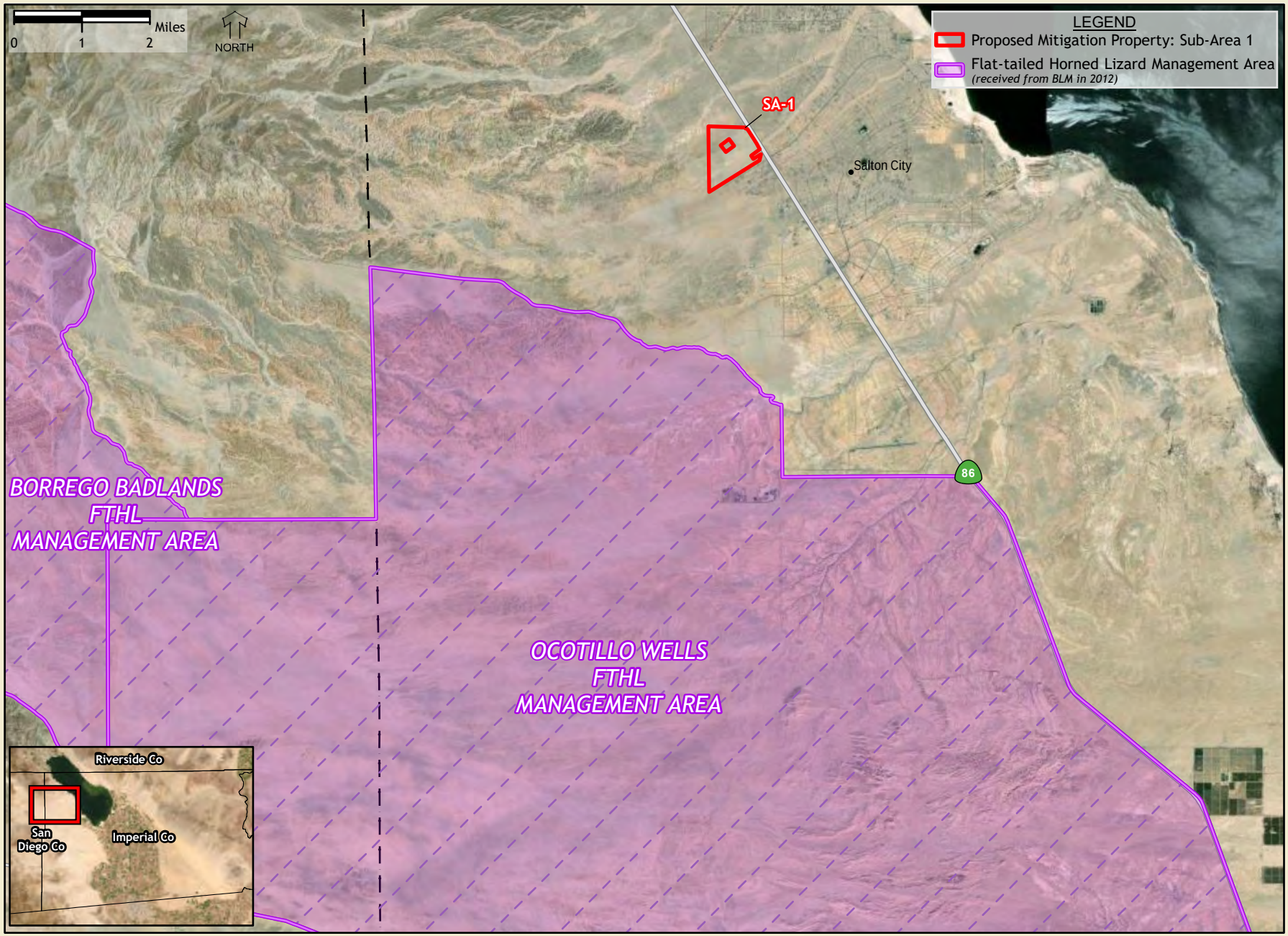

Figure 7a - Flat-tailed Horned Lizard Management Area, Sub-Area 1
Proposed Mitigation Conservation Analysis

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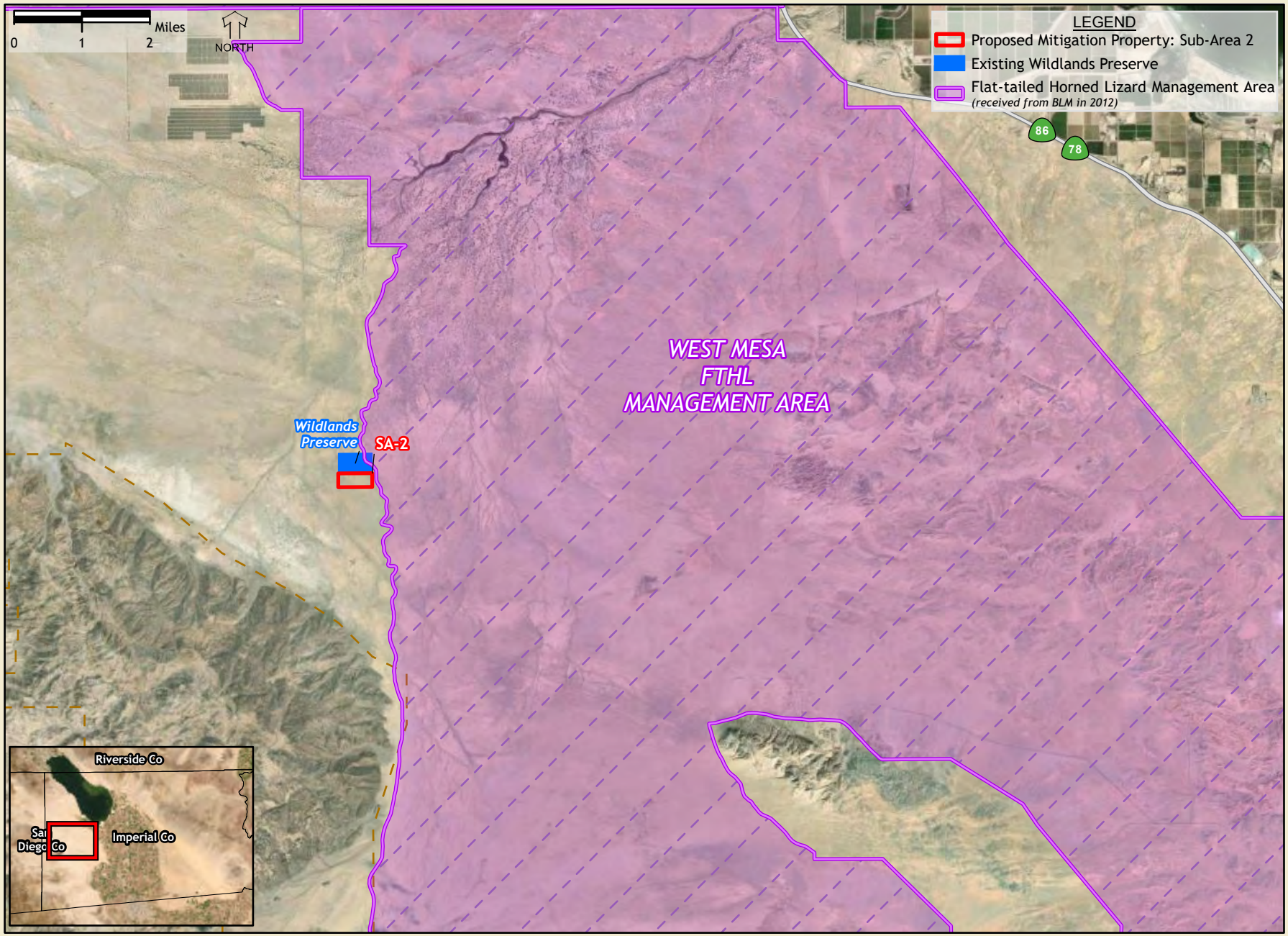

Figure 7b - Flat-tailed Horned Lizard Management Area, Sub-Area 2
Proposed Mitigation Conservation Analysis

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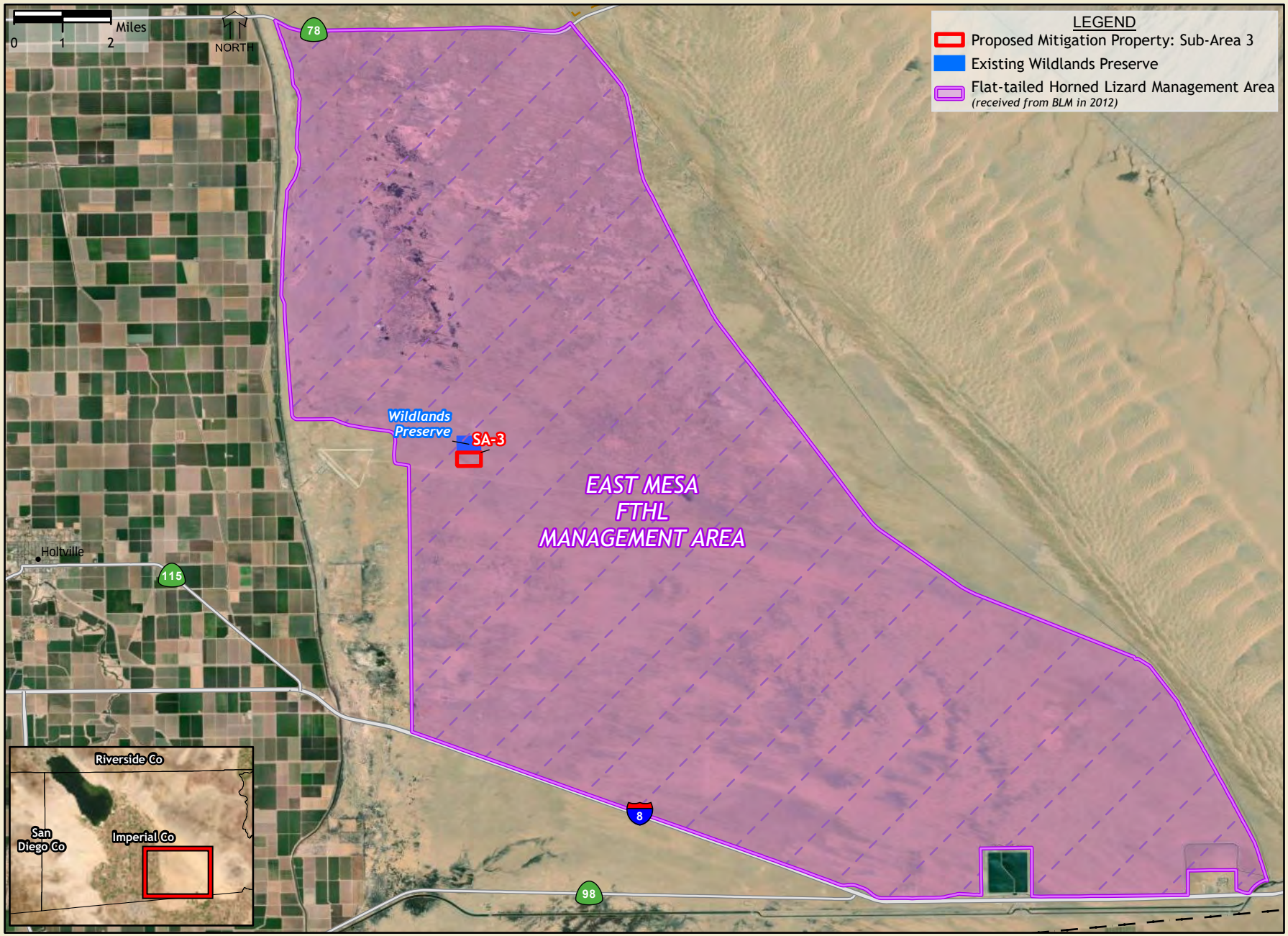

Figure 7c - Flat-tailed Horned Lizard Management Area, Sub-Area 3
Proposed Mitigation Conservation Analysis

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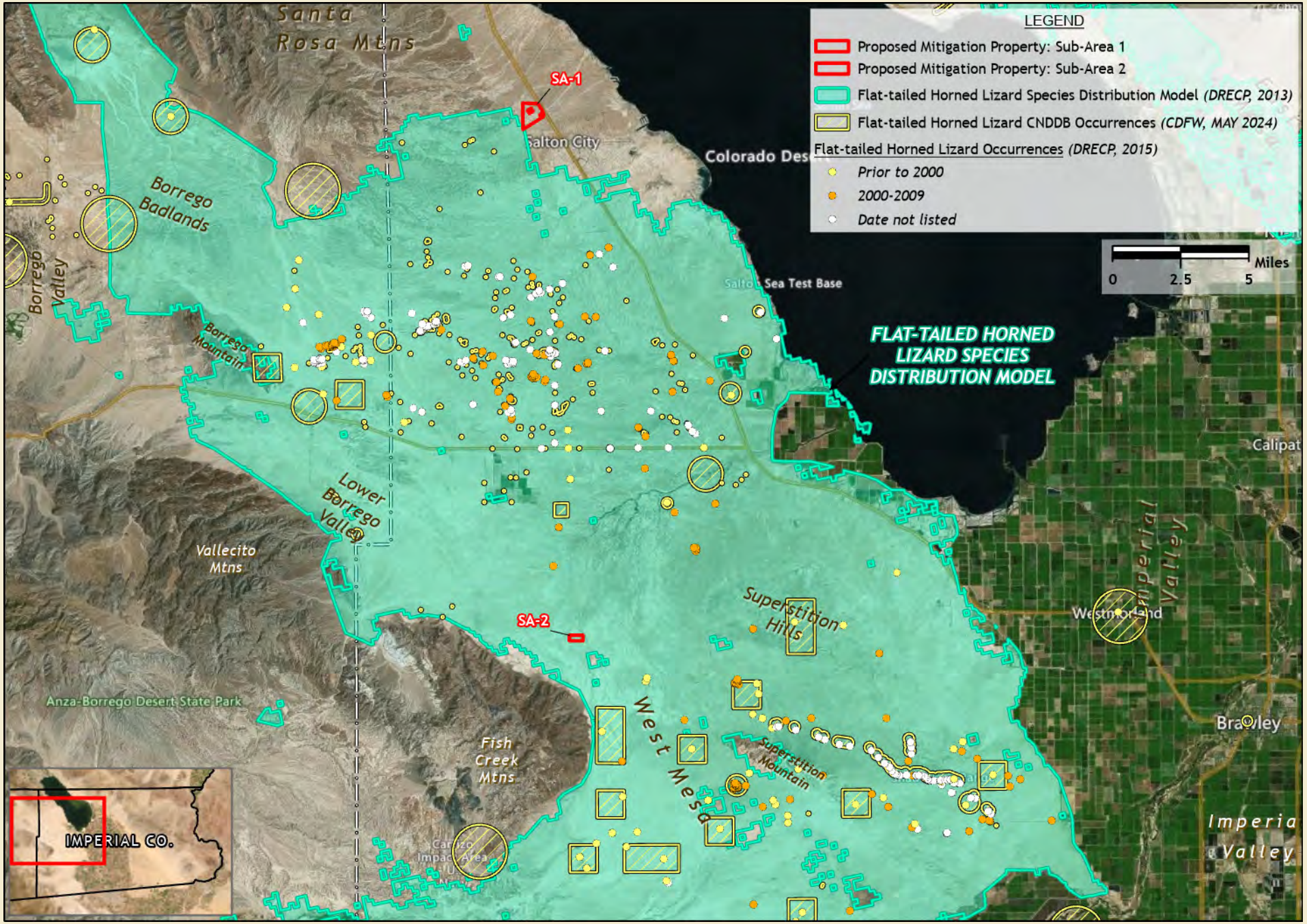

Figure 8a - DRECP Flat-tailed Horned Lizard Distribution Model, Sub-Areas 1 & 2
Proposed Mitigation Conservation Analysis

WILDLANDS

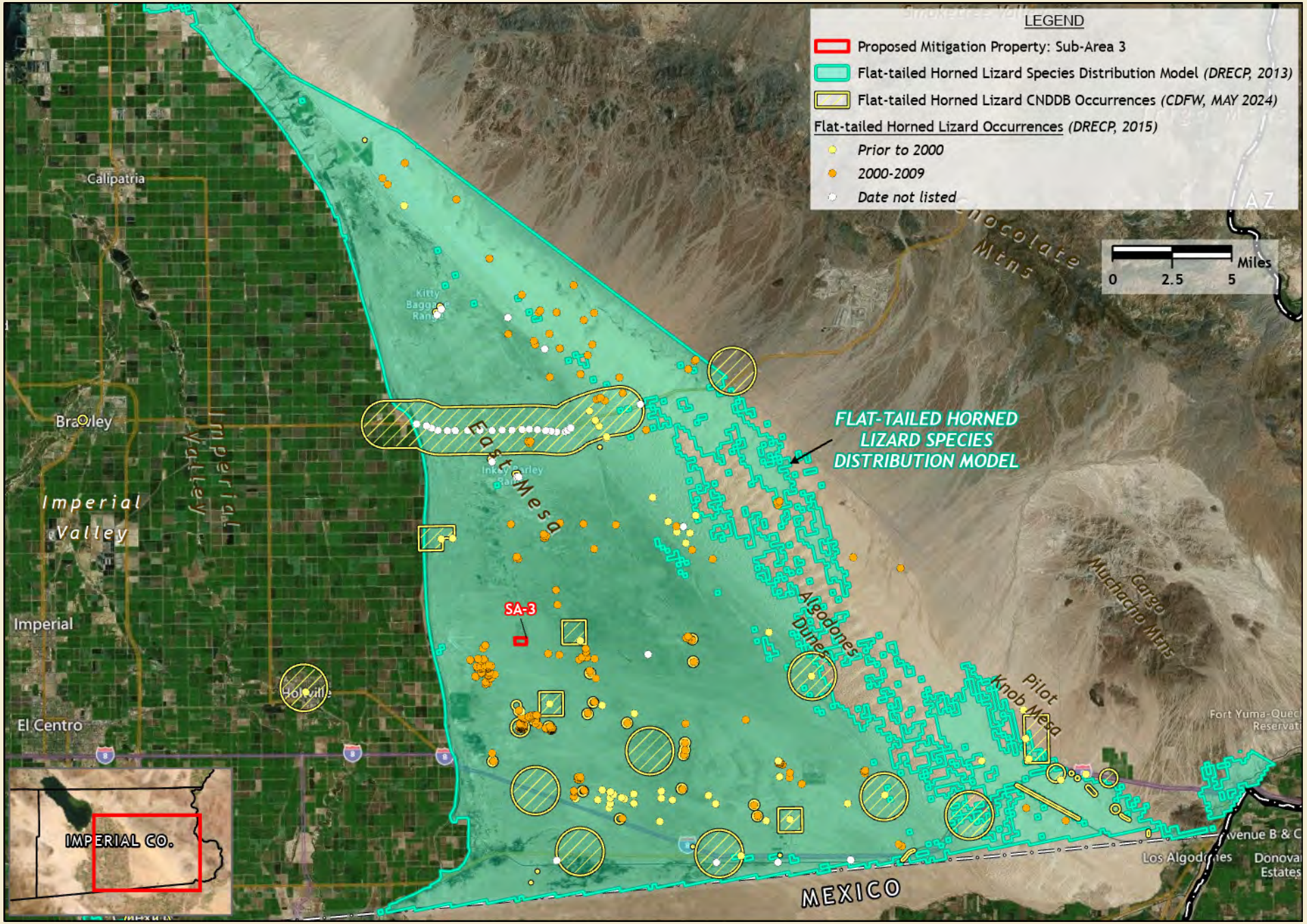

Figure 8b - DRECP Flat-tailed Horned Lizard Distribution Model, Sub-Area 3
Proposed Mitigation Conservation Analysis

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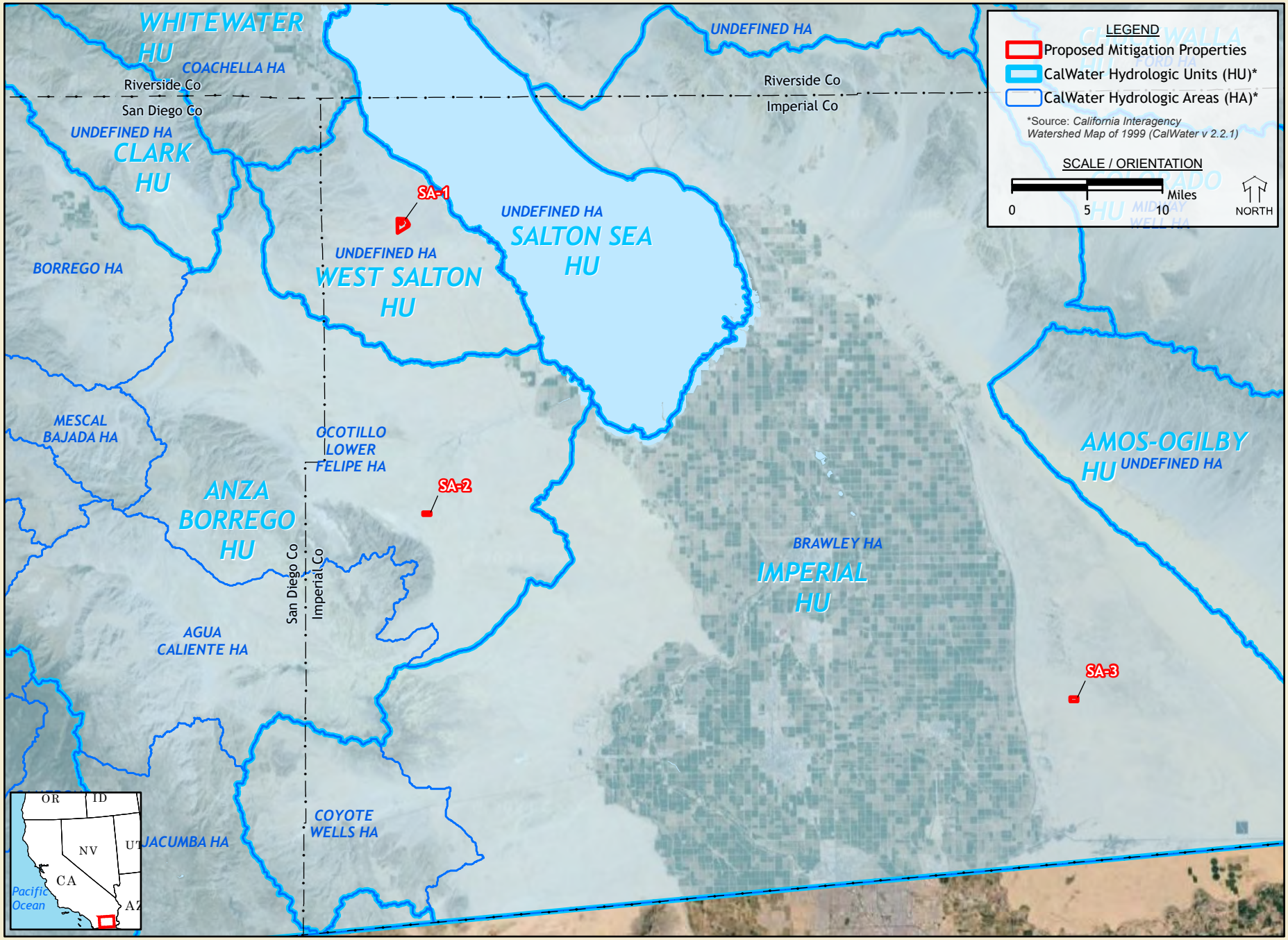

Figure 9 - Watersheds
Proposed Mitigation Conservation Analysis

WILDLANDS

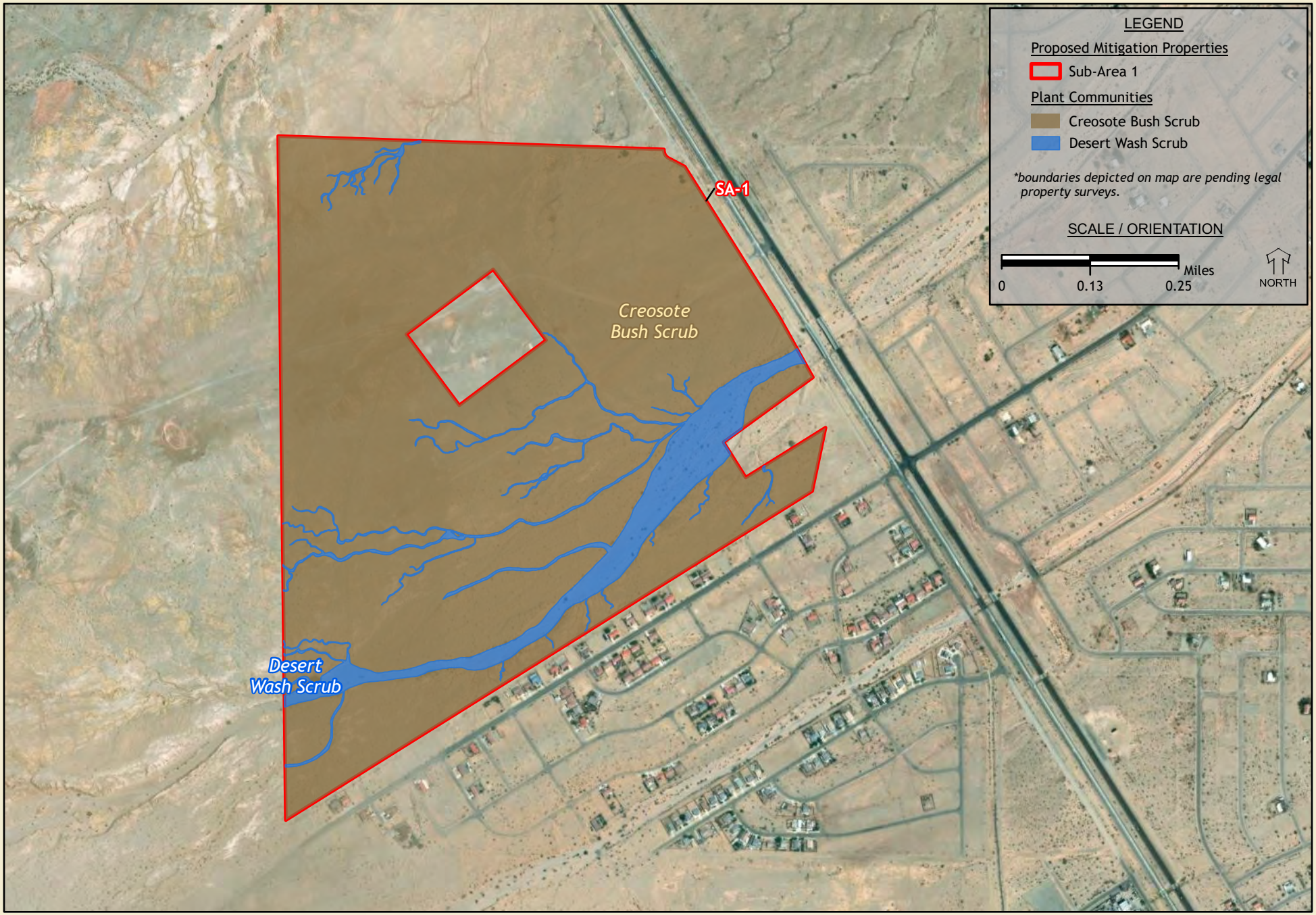

Figure 10a - Plant Communities, Sub-Area 1
Proposed Mitigation Conservation Analysis

WILDLANDS

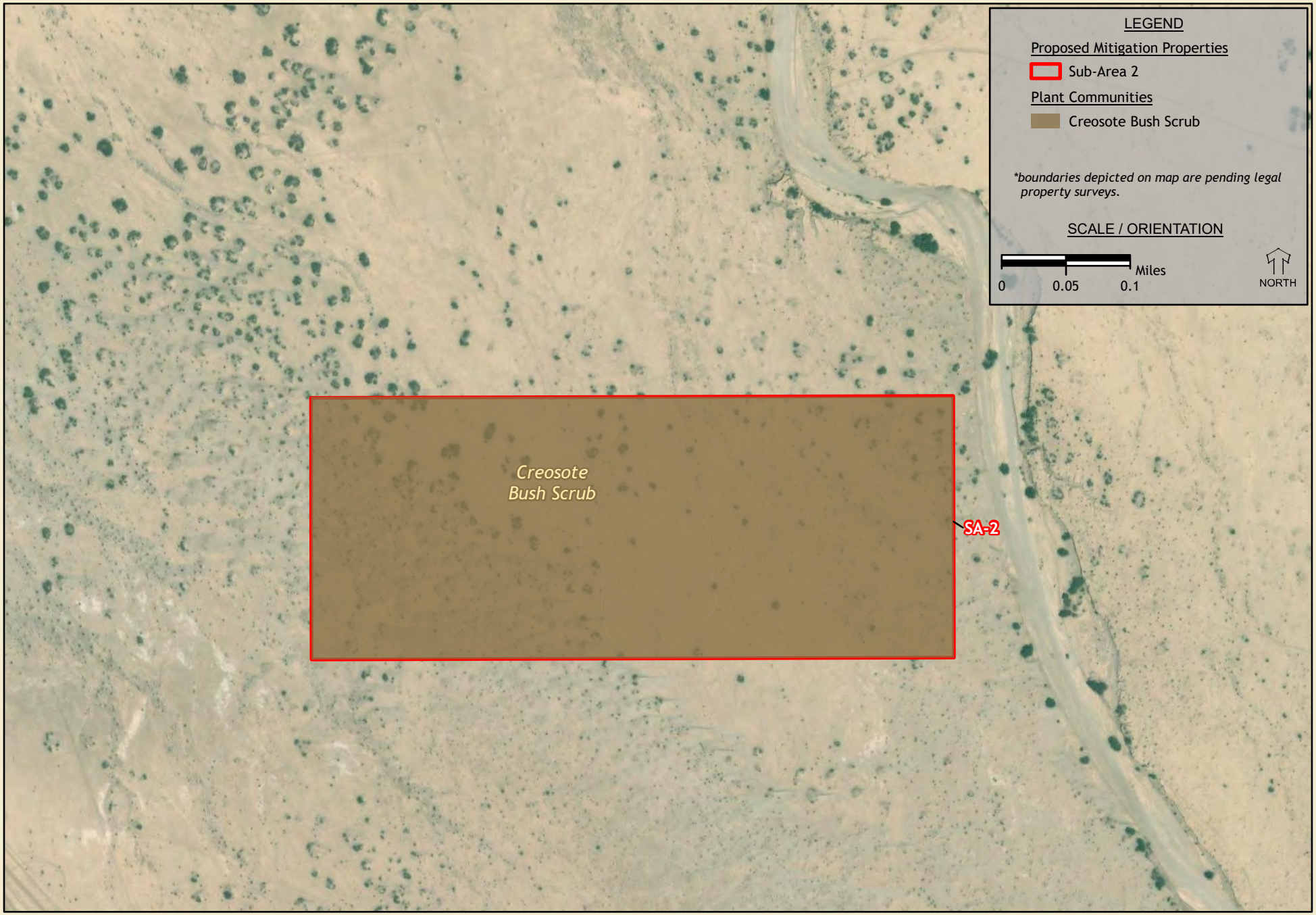

Figure 10b - Plant Communities, Sub-Area 2
Proposed Mitigation Conservation Analysis

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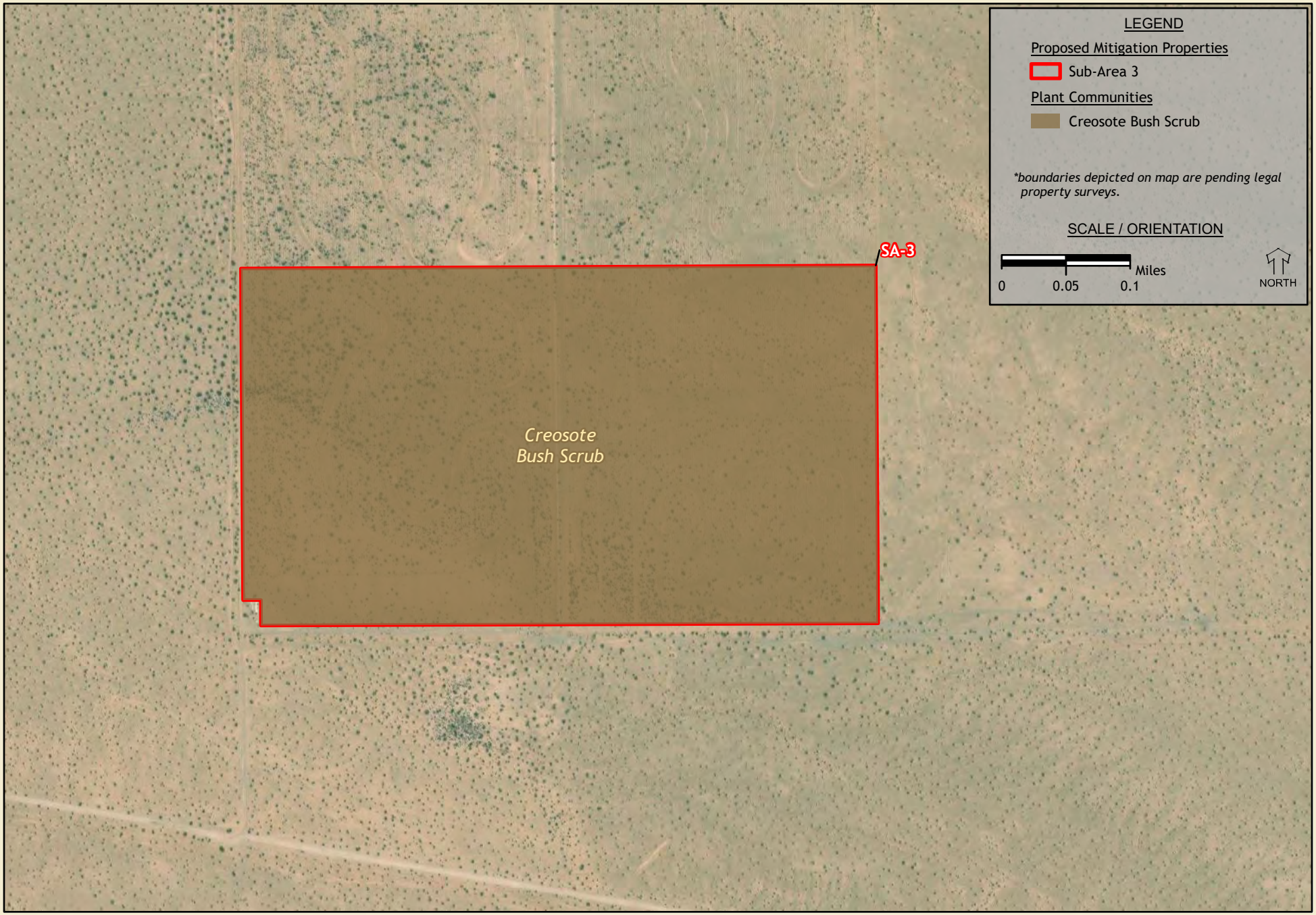


Figure 10c - Plant Communities, Sub-Area 3
Proposed Mitigation Conservation Analysis

WILDLANDS

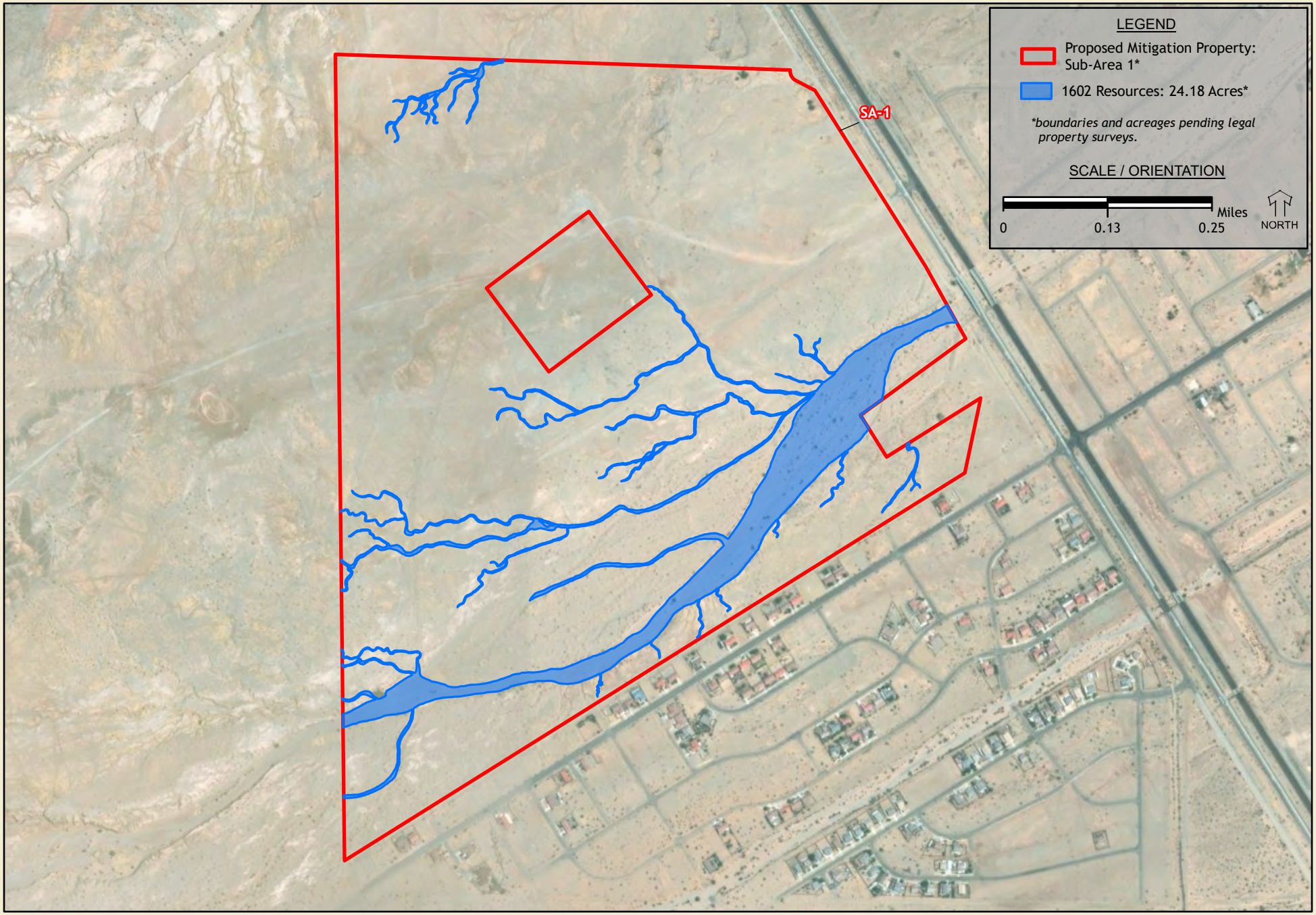


Figure 11 - 1602 Resources, Sub-Area 1
Proposed Mitigation Conservation Analysis

WILDLANDS

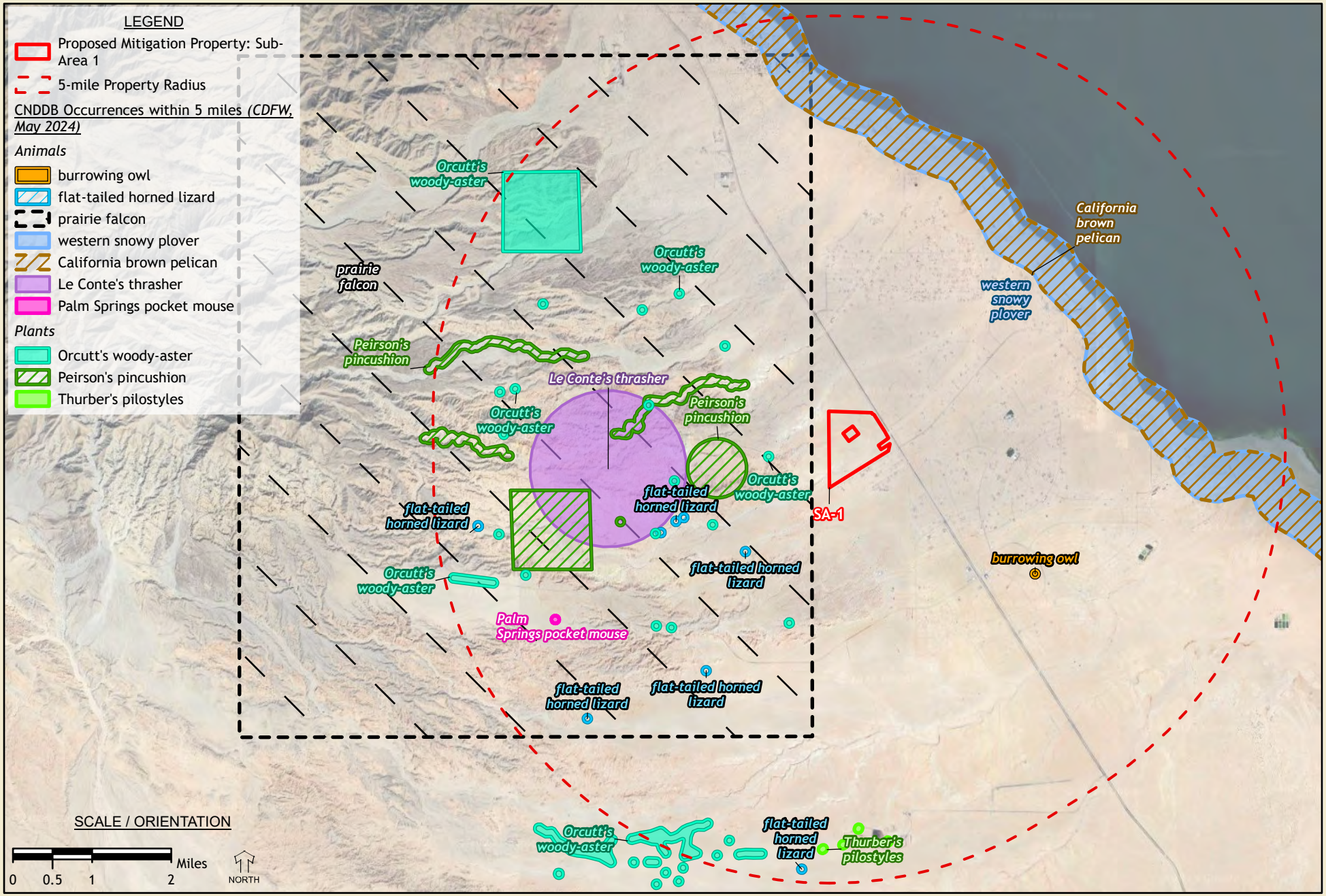


Figure 12a - CNDDB Occurrences, Sub-Area 1
Proposed Mitigation Conservation Analysis

WILDLANDS

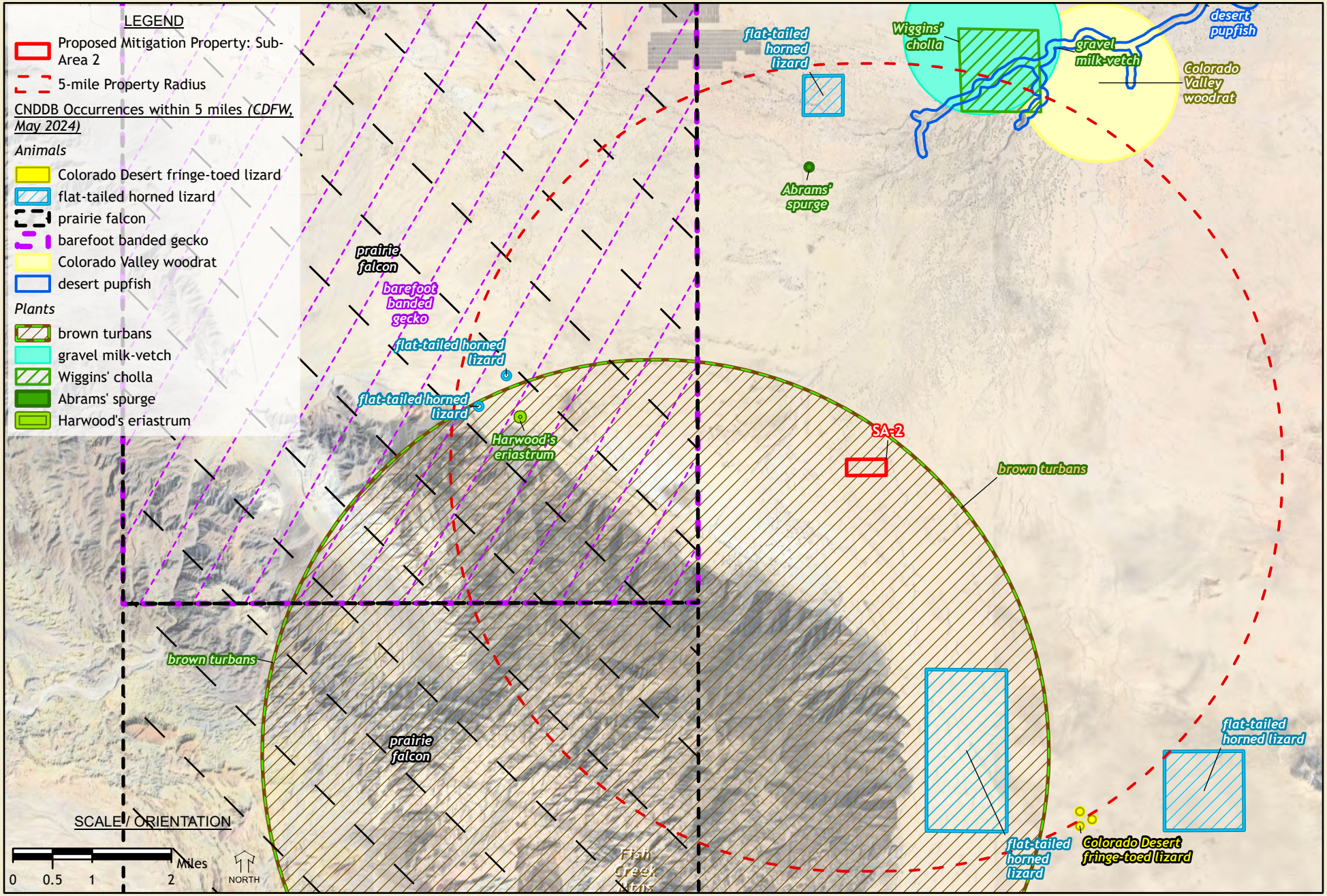


Figure 12b - CNDDB Occurrences, Sub-Area 2
Proposed Mitigation Conservation Analysis

WILDLANDS

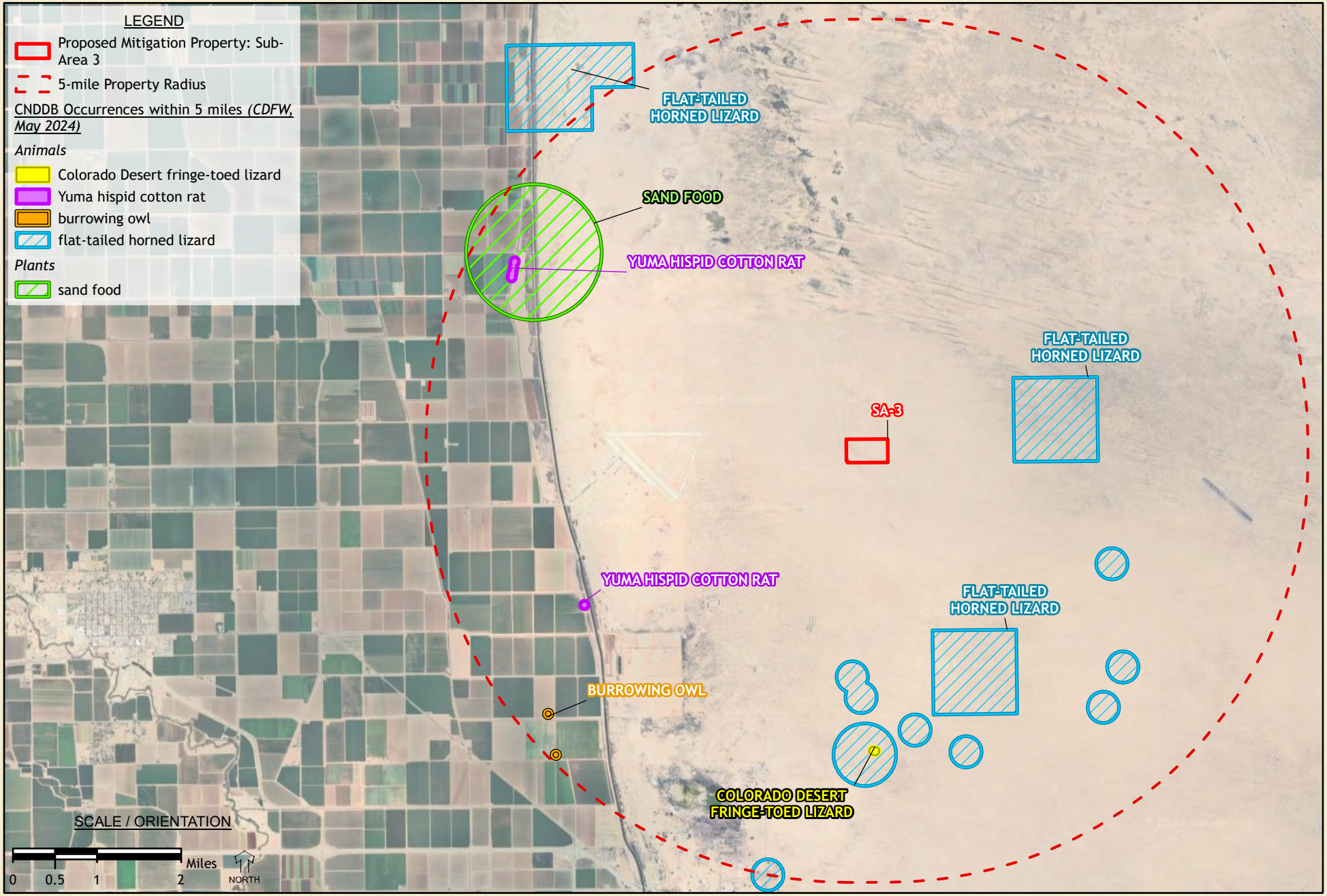


Figure 12c - CNDDB Occurrences, Sub-Area 3
Proposed Mitigation Conservation Analysis

WILDLANDS

Application: Discharges of Dredged or Fill Material to Waters of the State

The State Water Resource Control Board (State Board) or Regional Water Quality Control Boards (collectively, Water Boards) have the authority to regulate the discharge of dredged or fill material under section 401 of the Clean Water Act (CWA) and the Porter-Cologne Water Quality Control Act (Porter-Cologne). Dischargers that obtain a federal permit or license that authorizes impacts to waters of the U.S. (i.e., waters that are within federal jurisdiction), such as section 404 of the CWA and section 10 of the Safe Rivers and Harbors Act, must obtain certification from the Water Boards to ensure that the discharge does not violate state water quality standards or any other appropriate requirement of State law. When a discharge is proposed to waters outside of federal jurisdiction, the Water Boards regulate the discharge under Porter-Cologne through the issuance of Waste Discharge Requirements (WDRs). CWA section 401 Water Quality Certifications, WDRs, and waivers of WDRs are referred to as orders or permits.

The State Wetland Definition and Procedures for the Regulation of Discharges of Dredged or Fill Material to Waters of the State (Procedures) and the California Code of Regulations, title 23, section 3856 identify items that are required for a complete application in all cases. Additionally, the Procedures identify items that may be required for a complete application on a case-by-case or conditional basis. The State Water Board webpage links to the Procedures (https://www.waterboards.ca.gov/water_issues/programs/cwa401/docs/procedures_conformed.pdf).

Water Board staff will review an application within 30 days of receipt and provide a completeness determination to the applicant. A completeness determination may include a request for additional information for a complete application. Application fees must be paid before an application is determined complete. See Application Section Thirteen for options on how to make a payment.

For more information on how applications will be processed, refer to the Implementation Guidance for the Procedures (https://www.waterboards.ca.gov/water_issues/programs/cwa401/docs/dredge_fill/revised_guidance.pdf).

This application form outlines a broad range of items that may be required; however, as noted above, not all items are required in all cases. Use of this form is not required. Applicants may submit information that was submitted for a different federal or state permit to reduce duplicative submittals. In such cases, applicants should use the text boxes in this form to indicate the name, relevant section, and page number where relevant information is located. Finally, the level of detail submitted with this application should be commensurate with the size and the scope of the proposed discharge.

Applicants are encouraged to contact the appropriate Water Board to discuss the applicability of this application form, items required for a complete application, and/or the appropriate level of detail needed to obtain authorizations.

Applications for projects that cross regional board boundaries should be submitted to the State Board. All other applications should be submitted to the appropriate regional water quality control board.

A staff directory for the Water Board's Water Quality Certification Program is located on the program webpage (https://www.waterboards.ca.gov/water_issues/programs/cwa401/docs/wqc_staffdir.pdf).

STOP: If you answer 'yes' to any of the following questions, do not complete this application. Instead, please contact the State Water Board's Division of Water Rights to obtain a copy of their water quality certification application:

- Does the project require a Federal Energy Regulatory Commission (FERC) license or amendment to a FERC license? **Yes** ☐ **No** ☒
- Does this project involve an appropriation of water? **Yes** ☐ **No** ☒
- Does this project involve a diversion of water for domestic, irrigation, power, municipal, industrial, or other beneficial use? **Yes** ☐ **No** ☒

Screening Criteria:

Check the box next to the category(ies) that applies to your project. Check all that apply.

Your project:

☐ Requires an individual permit (standard or letter of permission) from the U.S. Army Corps of Engineers.

☐ Requires preparation of an Environmental Impact Statement under NEPA.

☐ Requires preparation of an Initial Study and Negative Declaration or Mitigated Negative Declaration under CEQA and it is not yet complete, or the Water Board will be lead agency for the Initial Study.

☒ Requires preparation of an Environmental Impact Report (EIR) under CEQA and it is not yet complete.

☐ Permanently impacts 1.0 or more acres of waters of the U.S.

☐ Discharges into a water body of special designation, including designated critical resource waters and wetlands adjacent to such waters, Outstanding National Resource Waters (Lake Tahoe, Mono Lake), or State Water Board designated Areas of Special Biological Significance (ASBS).

☐ Discharges into a water body that provides habitat for state listed rare, threatened, or endangered species.

☐ Requires completion of a Tier 3 alternatives analysis per the Dredge or Fill Procedures (section IV.A.2.h).

☐ Involves new (not maintenance) dredging or deepening of a navigation channel or dredging and disposal of contaminated sediments.

Section One: Contact Information

Review **Section Twelve** Legally Responsible Person (LRP) eligibility and signature requirements before completing this application.

Applicant (Organization and Legally Responsible Person) Information:

Organization Name:	IP Perkins, LLC
LRP Name:	Todd Johansen
Title:	Chief Commercial Officer
Street Address:	9450 Southwest Gemeni Drive, PMB #68743
City:	Beaverton
State:	Oregon

County:	
Zip Code:	97008
Telephone:	(510) 398-2547
Email:	tjohansen@ipxpower.com

The LRP may assign a Duly Authorized Representative (DAR) to make decisions on their behalf and provide application information. If a DAR is assigned to this project, provide the assigned person's contact information below and assign the DAR in Section Twelve.

Duly Authorized Representative Information (Optional):

Organization Name:	IP Perkins, LLC
DAR Name:	Charity Wagner
Title:	Project Manager
Street Address:	9450 Southwest Gemeni Drive, PMB #68743
City:	Beaverton
State:	OR
County:	
Zip Code:	97008
Telephone:	(415) 730-6718
Email:	cwagner@ipxpower.com

Section Two: Project Information

Project Name or Title: *Project Name should match all other agency permits and correspondence.*

Perkins Renewable Energy Project

Project Street Address: *Provide the project's physical location, not the mailing address.*

State Route 98, 3.32 miles east of Holdridge Road.

City:	
State:	California
County:	Imperial County
Zip Code:	
Latitude:	See Attachment A
Longitude:	See Attachment A
Assessor's Parcel Number(s):	056-170-022, 056-170-015, 056-170-025
Section, Township, Range:	S33 16S 17E, S28 16S 17E, S34 16S 17E

Directions to the Project Site:

From Colorado Regional Water Quality Control Board office, follow Fred Waring Drive East to Washington Street, turn left on Washington Street and take Washington Street north to the I-10 freeway E. Follow the I-10 East for approximately 7 miles to the 86 South. Continue on 86 South towards Brawley/El Centro for 66.6 miles to the I-8 East. Take I-8 East for 22 miles to Exit 143 for CA-98 West. Exit at CA-98W. The Project is located north of CA 98W approximately 3 miles from the exit.

Project Purpose and Overall Goal of Entire Activity:

- Deliver 1,150 MW of clean, renewable solar energy to California ratepayers.
- Install 1,150 MW of 2-hour and/or 4-hour energy storage capacity, which would generally be charged by the solar PV facility and dispatched in the late afternoon evening, once the sun goes down and solar production declines. This would help to alleviate the disparity in electricity demand and the amount of available solar energy throughout the day (known as the "duck curve" power production problem).
- Assist with achieving California's renewable energy generation goals under the Clean Energy and Pollution Reduction Act of 2015 (Senate Bill 350) and the 100 Percent Clean Energy Act of 2018 (Senate Bill 100), as well as greenhouse gas (GHG) emissions reduction goals of the California Global Warming Solutions Act of 2006 (AB 32), as amended by Senate Bill 32 in 2016;
- Minimize environmental impacts and land disturbance associated with solar energy development by siting the facility on relatively flat, contiguous lands with high solar insolation in close proximity to established utility corridors, existing transmission lines with available capacity to facilitate interconnection, and road access.
- Bring living wage jobs to Imperial County
- Bring sales tax revenues to Imperial County by establishing a point of sale in the County for the procurement of most major Project services and equipment.

Project Description: *Provide a full, technically accurate description of the entire project.*

Please see attached project description.

Project Size: Total size of the entire project area for all work/activities/construction that will be performed to meet the final goal: 5,999.1 **acres**

Is this a linear project (for example a powerline, pipeline, highway, etc.)? Yes ☐ **No** ☒

If yes, indicate length of project from end-to-end in feet: _____ feet

Anticipated Project Start and End Dates: _____

Construction Start Date: January 2028

Construction End Date: December 2030

Estimated Construction Duration: 24 **months**

Will any ground disturbance take place during the wet season months? Yes ☒ **No** ☐

Additional Information: *Additional information may include documentation relevant to pre-application consultations which may help inform application processing.*

Map Requirements:

In addition to responding to the questions above, provide a project map with a scale of at least 1:24000 (1" = 2000') and of sufficient detail to show:

- The boundaries of the lands owned or to be utilized by the applicant in carrying out the proposed activity, including grading limits, proposed land uses, and the location, dimensions and type of any structures erected (if known) or to be erected.
- All aquatic resources that may qualify as waters of the state, within the boundaries of a project, and all aquatic resources that may qualify as waters of the state outside of the boundary of the project that could be impacted by the project.

A map verified by the Corps may satisfy this requirement if it includes all potential waters of the state. Note that a map in electronic format (e.g., GIS shapefiles) may be required.

Section Three: Agency Contact Information

Attach copies of any final and signed federal, state, and local licenses, permits, and agreements (or copies of the draft documents or submitted application, if not finalized) associated with construction, operation, maintenance, or other actions relevant to the project. If a draft or final document is not available, a list of all remaining agency regulatory approvals being sought should be included. (CCR § 3856 (e).)

Federal Permit(s) or Completed Federal Applications

U.S. Army Corps of Engineers:

☒ Not Applicable

District: ☐ Los Angeles ☐ Sacramento ☐ San Francisco

☐ Individual Permit

☐ Letter of Permission

☐ Which Nationwide Permit Number has been applied for, if any? _____

For Nationwide Permits, select one of the following: ☐ Non-Reporting, or ☐ Reporting

☐ Corps File No.: _____

☐ Regional General Permit / Number: _____

☐ Other Permit Name: _____

Corps Contact Information:

Name: _____

Telephone: _____

Email: _____

U.S. Fish and Wildlife Service:

☒ N/A ☐ Biological Opinion ☐ Biological Assessment ☐ Incidental Take Permit

Contact Information:

Name: _____

Telephone: _____

Email: _____

National Marine Fisheries Service:

☒ N/A ☐ Biological Assessment ☐ Biological Opinion

Contact Information:

Name: _____

Telephone: _____

Email: _____

State Permit(s) or Completed State Application(s)

List permits for activities related to waters whether applied for or approved, e.g., California Department of Fish and Wildlife (CDFW) Lake or Streambed Alteration Agreement (Fish and Game Code sections 1600-1608), CESA section 2081 Incidental Take Permit, Construction Stormwater Enrollment, Coastal Development Permit, etc.

State or Local Permit Number	File Date	Tracking Number
CDFW Lake and Streambed Alteration Agreement (Fish and Game Code section 1600)	February 9, 2024; revised April 2026	
CDFW Incidental Take Permit (Fish and Game Code section 2081)	March 2025; revised April 2026	
CDFW Consistency Determination (Fish and Game Code section 2080)		
State Water Board Construction Stormwater General Permit Enrollment	Expected 2027	
California Coastal Commission (Development Permit)		
California Coastal Commission (Consistency Determination)		
Bay Conservation and Development Commission (Development Permit)		
Bay Conservation and Development Commission (Consistency Determination)		

Central Valley Flood Protection Board		
Other: California Energy Commission Application for Certification	Filed February 9, 2024	

State or Local Agency Contact Information: *Provide additional contacts, as needed:*

Agency Name:	California Energy Commission
Contact Name:	Eric Knight
Telephone:	(916) 591-9931
Email:	Eric.Knight@energy.ca.gov

Agency Name:	
Contact Name:	
Telephone:	
Email:	

Section Four: Special Status Species

If known, provide information about the presence of species identified as rare, threatened, or endangered under state or federal law. Attach all biological assessments, surveys, formal consultation determination letters, and mitigation proposals, as applicable.

Are you aware of any rare, threatened, or endangered species at this site? Yes ☒ No ☐

Species Habitat and/or Name	Biological Assessment Prepared?	Survey Conducted? (Yes/No)	Dates Survey Conducted
Sonoran creosote bush scrub	**Yes** ☐ **No** ☒	**Yes** ☒ **No** ☐	Refer to Appendix A of Batch 3 Data Responses for the CEC Opt-in Application
Alkali goldenbush desert scrub	**Yes** ☐ **No** ☒	**Yes** ☒ **No** ☐	Refer to Appendix A of Batch 3 Data Responses for the CEC Opt-in Application
	Yes ☐ **No** ☐	**Yes** ☐ **No** ☐	

Was the project planned in accordance with an approved Habitat Conservation Plan (HCP) or Natural Community Conservation Plan (NCCP)? Yes ☐ **No** ☒

If yes, list the HCP or NCCP name: _____

Section Five: California Environmental Quality Act and/or National Environmental Policy Act Compliance

Unless an exemption applies, the Water Boards must comply with the California Environmental Quality Act (CEQA). Although not required for a complete application, final CEQA documentation must be provided to the Water Board with ample time to properly review before an Order may be issued. (CCR § 3856 (f).)

The Water Boards will determine whether a project qualifies for a CEQA exemption during review of the project information. Identify below if applicable the relevant categorical or statutory exemption number you believe applies.

If you do not know whether a CEQA exemption applies to the proposed project, submit the application with as much information as possible.

Document Type	Status (In Preparation, Complete, or Under Revision)	Date Completed or Expected Completion Date	Lead Agency
Scoping Document	To be prepared		California Energy Commission
Initial Study			
Negative Declaration			
Notice of Preparation			
Mitigated Negative Declaration			
Environmental Impact Report	To be prepared		California Energy Commission
Environmental Document			

Does the project meet a statutory or categorical CEQA exemption?

No ☒

Yes, proposed statutory exemption number: _____

Yes, proposed categorical exemption number: _____

Section Six: Aquatic Resource Information

Attach any aquatic resource delineation reports and maps for all aquatic resources that may qualify as waters of the state, including those outside of federal jurisdiction. Water Board staff will verify the presence or absence of waters of the state outside of federal jurisdiction during the application review process. (CCR § 3856 (h)(7).) The Water Boards may require supplemental field data from the wet season to substantiate dry season delineations (Procedures section IV.A.2.a).

Aquatic Resource Delineation Report Information:

Was an aquatic resource delineation report prepared?	**Yes** ☒ **No** ☐
Report Title:	Aquatics Resources Report and Aquatics Resources Report Addendum
Delineation Date(s):	January 2024, updated July 2024 and November 2024
Name of Person who Prepared the Report:	
Title of Person who Prepared the Report:	
Organization/Company who Prepared the Report:	Ironwood Consulting
Was the report verified by the U.S. Army Corps of Engineers? If yes, enter verification date and submit a copy of the verification with this application:	**Yes** ☒ **No** ☐ Date: 10/28/24 site visit
Are there waters outside of federal jurisdiction?	**Yes** ☒ **No** ☐

Receiving waters and groundwater potentially impacted by any project are protected in accordance with the applicable water quality control plans (https://www.waterboards.ca.gov/plans_policies/#plans) (Basin Plans) for the regions and other plans and policies (http://www.waterboards.ca.gov/plans_policies). If known, list impacted hydrologic unit(s) in the impacted Regional Water Quality Control Board's Basin Plan. The Basin Plans include water quality standards, which consist of existing and potential beneficial uses of waters of the state, water quality objectives to protect those uses, and the state and federal antidegradation policies.

The Lahontan Regional Water Quality Control Board prohibits discharge to lands within the Walker, Carson, Lake Tahoe, Little Truckee, and Truckee River Hydrologic Basins unless specific prohibition exemption criteria are met. For projects in this region, in addition to this application, complete the applicable prohibition criteria form for projects discharging to the Lake Tahoe Hydrologic Basin (https://www.waterboards.ca.gov/lahontan/water_issues/programs/clean_water_act_401/docs/att3.doc) or the Little Truckee or Truckee River (https://www.waterboards.ca.gov/lahontan/water_issues/programs/clean_water_act_401/docs/att4.doc) Hydrologic Basins.

Hydrologic Information:

Was the project developed in accordance with a watershed plan? Yes ☐ **No** ☒
If yes, what is the name of the watershed plan name? Attach the plan, or a link to the plan, if feasible:

How many waterbodies would be impacted by the project activity? 12

If the project impacts more than one waterbody, attach the information below for each impacted waterbody; an excel spreadsheet or table may be used for projects with multiple impact sites.

(see Attachment A)

Does the impacted waterbody have a name? Yes ☐ No ☒

Name of the impacted waterbody; if unnamed, name of the nearest downstream named waterbody:

Alamo River, which drains to Salton Sea

Basin plan hydrologic unit(s), and if included in a basin plan, the hydrologic area and hydrologic subarea, if known:

Salton Sea Transboundary Watershed (USGS Hydrologic Unit 18100200)

Does the project discharge to a waterbody listed as impaired on the Clean Water Act 303(d) list? Yes ☐ No ☒

Does the project discharge to a waterbody with a total maximum daily load (TMDL)? Yes ☐ No ☒

Section Seven: Impact Quantities and Classification

List temporary and permanent **fill/excavation** impacts to waters of the state according to the aquatic resource type in the tables below. Round acres to at least the hundredth place (0.01); round cubic yards and linear feet to the nearest whole number**.**

Fill/Excavation Temporary Impacts

Lake/Reservoir

Acres	0
Cubic Yards	0
Linear Feet	0

Stream Channel

Acres	0
Cubic Yards	0
Linear Feet	0

Ocean/Bay/Estuary

Acres	0
Cubic Yards	0
Linear Feet	0

Vernal Pool

Acres	0
Cubic Yards	0
Linear Feet	0

Riparian Zone

Acres	0
Cubic Yards	0
Linear Feet	0

Wetland

Acres	0
Cubic Yards	0
Linear Feet	0

Classification System Name (if known):	N/A
Classification(s):	N/A

Fill/Excavation Permanent Impacts

Lake/Reservoir

Acres	0
Cubic Yards	0
Linear Feet	0

Stream Channel

Acres	0.38
Cubic Yards	3,758
Linear Feet	7,535

Ocean/Bay/Estuary

Acres	0
Cubic Yards	0
Linear Feet	0

Vernal Pool

Acres	0
Cubic Yards	0
Linear Feet	0

Riparian Zone

Acres	0
Cubic Yards	0
Linear Feet	0

Wetland

Acres	0
Cubic Yards	0
Linear Feet	0

Classification System Name (if known):	Cowardin
Classification(s):	Riverine ephemeral (R6)

List temporary and permanent **dredge/extraction** impacts to waters of the state according to the aquatic resource type in the tables below. Round acres to at least the hundredth place (0.01); round cubic yards and linear feet to the nearest whole number.

Dredge/Extraction Temporary Impacts

Lake/Reservoir

Acres	0
Cubic Yards	0
Linear Feet	0

Stream Channel

Acres	0
Cubic Yards	0
Linear Feet	0

Ocean/Bay/Estuary

Acres	0
Cubic Yards	0
Linear Feet	0

Vernal Pool

Acres	0
Cubic Yards	0
Linear Feet	0

Riparian Zone

Acres	0
Cubic Yards	0
Linear Feet	0

Wetland

Acres	0
Cubic Yards	0
Linear Feet	0

Classification System Name (if known):	
Classification(s):	

Dredge/Extraction Permanent Impacts

Lake/Reservoir

Acres	0
Cubic Yards	0
Linear Feet	0

Stream Channel

Acres	0
Cubic Yards	0
Linear Feet	0

Ocean/Bay/Estuary

Acres	0
Cubic Yards	0
Linear Feet	0

Vernal Pool

Acres	0
Cubic Yards	0
Linear Feet	0

Riparian Zone

Acres	0
Cubic Yards	0
Linear Feet	0

Wetland

Acres	0
Cubic Yards	0
Linear Feet	0

Classification System Name (if known):	
Classification(s):	

Additional Direct and Indirect Impact Information

Direct Impact Description: *Describe the nature and extent of temporary and permanent impacts to waters of the state. Attach map(s) that clearly depict the anticipated area of direct impact.*

See Attachment A.

Indirect Impact Description: *Indirect impacts could be those that are reasonably foreseeable outside of the direct impact area, or that occur later in time, that may have an adverse effect on water quality. Examples of indirect impacts could include fluctuating or disturbed water levels, climate change adaptation, and disturbed habitat connectivity corridors.*

Describe potential impacts to water quality from the project discharge. For example, describe increased turbidity, settleable matter, or other pollutants that may affect beneficial uses associated with the proposed project area. Attach map(s) that clearly depict the anticipated area of indirect impact, as feasible.

See Attachment A.

Cumulative Impacts: *Provide a brief list/description, including estimated adverse impacts, of any projects implemented by the applicant within the last five years or planned for implementation by the applicant within the next five years that are in any way related to the proposed activity or that may impact the same receiving water body(ies) as the proposed activity. For purposes of this item, the water body extends to a named source or stream segment identified in the relevant Basin Plan. (CCR § 3856(h)(8).)*

See attachment A.

Depending on the quantity of new or replaced impervious surface area resulting from the project, a post-construction stormwater control plan and/or an operations and maintenance plan may be required to mitigate potential post-construction stormwater impacts. The plan may include drainage maps, detailed designs for Low Impact Development or other post-construction stormwater treatment and control measures, and design calculations. Contact Water Board staff for specific criteria.

Does the proposed project create or replace impervious surface? Yes ☒ **No** ☐

If yes, provide the total impervious surface area created or replaced in square feet:4,792,000

Section Eight: Avoidance and Minimization Measures

Applicants must describe actions that have been taken (or will be taken) to avoid and minimize impacts to waters of the state (Procedures section IV.B.a.). Unless an exemption applies, an applicant must submit an alternatives analysis to demonstrate that the proposed project is the least environmentally damaging practicable alternative (LEDPA; Procedures section IV.A.1.h. and IV.B.). In cases where the Corps requires an alternatives analysis, the Water Boards will defer to the Corps' determination except in certain circumstances. For guidance on how to prepare an alternatives analysis or to determine if an exemption may apply, reference the Procedures Implementation Guidance (https://www.waterboards.ca.gov/water_issues/programs/cwa401/docs/dredge_fill/revised_guidance.pdf).

Alternatives Analysis:

Has an alternatives analysis been prepared? Yes ☐ No ☒

Does the U.S. Army Corps of Engineers require an alternatives analysis for this project? Yes ☐ No ☒
If yes, submit alternatives analysis documentation consistent with that provided to the Corps.

If an alternatives analysis is not provided, indicate which Procedures section IV.A.1.g exemption applies and include any relevant supporting information, if needed (e.g., watershed plan, relevant permit number, etc**.): ** The solar facility would meet the terms and conditions of Corps General Permit, specifically Nationwide Permit (NWP) 51- Land Based Renewable Energy Facilities. NWP 51 allows for discharges of dredged or fill materials for construction, expansion, or modification of land-based renewable energy production facilities including solar projects. NWP 51 allows for up to ½ acre of impact to waters and non-tidal wetlands. Because the entire Project would meet the terms and conditions of one or more Corps General Permits, including the regional terms and conditions if all discharges were to waters of the U.S., the Project meets the exemption from preparation of an alternatives analysis under the State Wetland Definition and Procedures for Discharge of Dredged or Fill Material to Waters of the State.

See also Attachment A for more details.

Check which Procedures section IV.A.1.h alternatives analysis tier applies to the project:
Water Board staff will evaluate the project information to verify the appropriate alternatives analysis tier:

Tier 1: ☐
Tier 2: ☐
Tier 3: ☒

Avoidance and Minimization Measures

Describe the efforts to avoid and minimize direct impacts to waters of the state including actions/BMPs to be implemented during construction to avoid and minimize impacts including, but not limited to, preservation of habitats, erosion control measures, project scheduling, flow diversions, etc.

A description may include actions or methods proposed for erosion control, including winterization strategies to stabilize bare soils and revegetation proposals. A map may be included to indicate the approximate location and area of soil, land, and vegetation disturbance, and proposed erosion and sediment control best management practices.

Reference the Procedures' state supplemental Dredge or Fill Guidelines, subpart H for potential actions to minimize adverse impacts to waters of the state.

Direct Impact Avoidance and Minimization:

Refer to Attachment A.

Indirect Impact Avoidance and Minimization:

Refer to Attachment A.

Water Quality Monitoring, Diversions and Dewatering

Does the proposed project include any dewatering, work in standing or flowing water, and/or constructing diversions of water?
Yes ☐ **No** ☒

If yes, a water quality monitoring plan to monitor compliance with water quality objectives of the applicable water quality control plan may be required.

Describe the water diversion and dewatering plan, or indicate where information is located within an attachment (Procedures section IV.A.2.c):
If there are proposed discharges of water to surface waters, include receiving water body name, estimated volume, flow rates and proposed management measures; if there are discharges to detention ponds or upland treatment facilities (such as temporary settling basins, filters bags, storage and/or treatment containers, etc.) then include their location and indicate if detention pond or treatment facility is on-site or off-site; if there are stream-channel diversions, include estimated flow rates, diversion system capacity, location, including upstream diversion points and downstream discharge point, and a diversion plan that provides measures to prevent erosion and turbidity, maintain fish passage, etc.

Section Nine: Ecological Restoration and Enhancement Projects (EREPs)

Is this application for a project that meets the definition of an Ecological Restoration and Enhancement Project (Procedures section V)?
Yes ☐ **No** ☒

If the project qualifies as an EREP, list the type and quantity of aquatic resources being restored:

Type:

☐ Lake/Reservoir
☐ Stream Channel
☐ Ocean/Bay/Estuary
☐ Riparian Zone
☐ Vernal Pool
☐ Wetlands

Quantity in **acres:**_____ and **linear feet:**_____

If more than one type of resource is being restored, include that information in the space below:

Applications for Ecological Restoration and Enhancement Projects require an assessment plan with the following information (Procedures section IV.A.2.e):

☐ Project objectives
☐ Description of performance standards used to evaluate attainment of objectives
☐ Protocols for condition assessment
☐ The timeframe and responsible party for performing condition assessment
☐ Assessment schedule
☐ A draft restoration plan for restoring temporarily impacted areas to pre-project conditions, if a draft restoration plan is not provided as part of a binding stream or wetland enhancement or restoration agreement

Section Ten: Restoration of Temporary Impacts

If temporary impacts are proposed, applicants are required to submit a draft restoration plan for a complete application. Temporary impact restoration includes activities that are undertaken to restore the temporarily impacted area to pre-project conditions. A draft restoration plan should outline design, implementation, assessment, and maintenance activities. When active restoration is proposed, components of a draft restoration plan should include project objectives, plans for grading impacted areas to pre-project contours, a planting palette with plant species native to the area, seed collection locations, an invasive species management plan. Maintenance and assessment components of a draft restoration plan often includes performance measures, performance standard descriptions, attainment objectives, and timing proposed to reach attainment objectives. When passive restoration is proposed, a draft restoration plan should include an explanation of how passive restoration will

restore the area to pre-project conditions, assessment components, and an estimated date for expected restoration.

If the draft restoration plan is part of a larger document, identify the specific section and page number where the requested information may be found in the attached document in the text box provided. If restoration of temporary impacts will occur through natural ecological processes, provide that information in the text box below.

Restoration Plan:

Is a restoration plan attached? Yes ☐ No ☒
Describe the restoration plan and/or indicate where information is located within an attachment: No temporary impacts are anticipated. However, refer to Restoration and Integrated Weed Management Plan (Appendix M.5 of Opt-in Application) for general restoration for the Project.

Section Eleven: Compensatory Mitigation

Compensatory mitigation means the restoration, establishment, enhancement, and/or in certain circumstances preservation of aquatic resources for the purposes of offsetting unavoidable adverse impacts which remain after all appropriate and practicable avoidance and minimization has been achieved (Procedures Appendix A, Subpart J § 230.92). **When compensatory mitigation is required, a draft compensatory mitigation plan is required for a complete application.**

Proposed Compensatory Mitigation. *Complete the table below for each aquatic resource type proposed as compensatory mitigation; if more than two aquatic resource types will be provided, attach additional tables to your application.*

Proposed Compensatory Mitigation Type:	☐ Mitigation Bank ☐ In-Lieu Fee Program ☒ Permittee Responsible	
Aquatic Resource Type:	☐ Lake/Reservoir ☒ Stream Channel ☐ Ocean/Bay/Estuary	☐ Riparian Zone ☐ Vernal Pool ☐ Wetlands
Mitigation Method:	☐ Establishment ☐ Re-establishment ☐ Rehabilitation	☐ Enhancement ☒ Preservation ☐ Unknown
Quantity for the Selected Mitigation and Resource Type:	Acres: **0.38 acres** Linear Feet: 7,535	

[Extra table below.]

Proposed Compensatory Mitigation Type:	☐ Mitigation Bank ☐ In-Lieu Fee Program ☐ Permittee Responsible	
Aquatic Resource Type:	☐ Lake/Reservoir ☐ Stream Channel ☐ Ocean/Bay/Estuary	☐ Riparian Zone ☐ Vernal Pool ☐ Wetlands

Mitigation Method:	☐ Establishment ☐ Re-establishment ☐ Rehabilitation	☐ Enhancement ☐ Preservation ☐ Unknown
Quantity for the Selected Mitigation and Resource Type:	Acres: _____ Linear Feet: _____	

Draft Compensatory Mitigation Plan

Using a watershed approach, a draft compensatory mitigation plan should be provided and be consistent with the requirements listed in Procedures Appendix A, Subpart J, and contain the items listed in section IV.A.2.b of the Procedures.

For mitigation bank or in-lieu fee program proposals, only the first three items below are required (i, ii, and iii). For permittee responsible mitigation, items one through seven are required. Item eight (climate change assessment) is required on a case-by-case basis; you may contact Water Board staff to determine if a climate change assessment will be required for your proposed mitigation project.

Indicate the attached document name and page number where each draft compensatory mitigation plan item may be found:

The draft compensatory mitigation proposal is provided in Attachment B.

i. A watershed profile for the project evaluation area for both the project activity and the proposed compensatory mitigation location (section IV.A.2.b.i). ***Include document name and page number.***

To be provided at a later date.

ii. An assessment of the overall condition of aquatic resources proposed to be impacted by the project and their likely stressors, using an assessment method approved by the Water Boards (section IV.A.2.b.ii). ***Include document name and page number.***

To be provided at a later date.

iii. A description of how the project impacts and compensatory mitigation would not cause a net loss of the overall abundance, diversity, and condition of aquatic resources, based on the watershed profile. If the compensatory mitigation is located in the same watershed as the project, no net loss will be determined on a watershed basis. If the compensatory mitigation and project impacts are located in multiple watersheds, no net loss will be determined considering all affected watershed collectively. The level of detail in the plan shall be sufficient to accurately evaluate whether compensatory mitigation offsets the adverse impacts attributed to the project (section IV.A.2.b.iii). ***Include document name and page number.***

To be provided at a later date.

iv. Preliminary information about ecological performance standards, monitoring, and long-term protection and management, as described in the state supplemental dredge or fill guidelines (section IV.A.2.b.iv). ***Include document name and page number.***

To be provided at a later date.

v. A timetable for implementing the compensatory mitigation plan (section IV.A.2.b.v.). ***Include document name and page number.***

To be provided at a later date.

vi. If the compensatory mitigation plan includes buffers, design criteria and monitoring requirements for those buffers (section IV.A.2.b.vi). ***Include document name and page number.***

To be provided at a later date.

vii. If compensatory mitigation involves restoration or establishment as the form of mitigation, applicants shall notify, as applicable, state and federal land management agencies, airport land use commission, fore control districts, flood control districts, local mosquito-vector control district(s), and any other interested local entities prior to initial site selection. These entities should be notified as early as possible during the initial compensatory mitigation project design stage (section IV.A.2.b.vii).

(Applicants are not required to submit documentation for this requirement.)

viii. If applicable, an assessment of reasonably foreseeable impacts to the compensatory mitigation associated with climate change, and any measures to avoid or minimize those potential impacts (section IV.A.2.b.viii). ***Include document name and page number.***

To be provided at a later date.

Compensatory Mitigation Contact Information:

Name of Mitigation Bank or In-Lieu Fee Program:	Wildlands (Wildheron Holdings, LLC)
Service Area:	Various
Contact Name:	Jacob Robinson
Contact Phone:	(530) 370-5888
Contact Email:	jrobinson@heronpacific.com
Mitigation Location County:	To be provided at a later date
Mitigation Site Latitude:	Various - to be provided at a later date
Mitigation Site Longitude:	Various - to be provided at a later date

Section Twelve: Legally Responsible Person Attestation and Optional Duly Authorized Representative Assignment

The attestation below must be signed by the Legally Responsible Person (LRP).

1) **LRP eligibility is as follows:**

   a. For a corporation: by a responsible corporate officer. For the purpose of this section, a responsible corporate officer means:
      i. A president, secretary, treasurer, or vice-president of the corporation in charge of a principal business function; or
      ii. The manager of one or more manufacturing, production, or operating facilities, provided, the manager is authorized to make management decisions which govern the operation of the regulated facility including having the explicit or implicit duty of making major capital investment recommendations, and initiating and directing other comprehensive measures to assure long term environmental compliance with environmental laws and regulations; the manager can ensure that the necessary systems are established or actions taken to gather complete and accurate information for permit application requirements; and where authority to sign documents has been assigned or delegated to the manager in accordance with corporate procedures.

   b. For a partnership or sole proprietorship: by a general partner or the proprietor, respectively.

   c. For a municipality, state, federal, or other public agency: by either a principal executive officer or ranking elected official. This includes the chief executive officer of the agency or the senior executive officer having responsibility for the overall operations of a principal geographic unit of the agency (e.g., Regional Administrators of the U.S. EPA).

Legally Responsible Person Attestation
I certify under penalty of law that this application and all attachments were prepared under my direction or supervision in accordance with a process designed to assure that qualified personnel properly gather and evaluate the information submitted. The information submitted is, to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information, including the possibility of fine and imprisonment for knowing violations. Print Legally Responsible Person Name (Not the DAR) Todd Johansen Legally Responsible Person's Signature

2) **DAR assignment is as follows (optional):**

   a. The authorization shall specify that a person designated as a DAR has responsibility for the overall operation of the regulated facility or activity, such as a person that is a manager, operator, superintendent, or another position of equivalent responsibility, or is an individual who has overall responsibility for environmental matters for the company.

Optional Duly Authorized Representative (DAR) Assignment
I hereby authorize **Charity Wagner** to act on my behalf as the DAR in the processing of this application, and to furnish upon request, supplemental information in support of this permit application. Print Legally Responsible Person Name (not the DAR)
Todd Johansen Legally Responsible Person's Signature

Section Thirteen: Fee Information

Fee amounts are determined according to the Cal. Code Regs., tit. 23, § 2200(a)(2) fee schedule (https://govt.westlaw.com/calregs/Document/IEEE14760D45A11DEA95CA4428EC25FA0?viewType=FullText&originationContext=documenttoc&transitionType=CategoryPageItem&contextData=(sc.DefaDef) and are subject to change.

Submit the Application Fee based on the activity type and according to the appropriate fee category. Application fees are required to determine an application complete. Additional Project and/or Annual Fees may be imposed upon application review.

An excel fee calculator (https://www.waterboards.ca.gov/resources/fees/water_quality/docs/dredgefillcalculator.xlsm) may be used to estimate fees for budgeting purposes only.

Fees may be paid online or by check. Information on how to make an online payment is available at the State Water Board's webpage (https://www.waterboards.ca.gov/make_a_payment/). If fees are paid online prior to application submission, attach payment receipt to this application. Make checks, money orders, and cashier checks payable to the State Water Resources Control Board. Mailed payments should be attached to the application and remitted to the appropriate Water Board. See the Staff Directory (https://www.waterboards.ca.gov/water_issues/programs/cwa401/docs/wqc_staffdir.pdf) for a list of State and Regional Water Board addresses.

Table for Internal Use Only	
Date Received	**Reg Measure ID**
WDID No.	**ECM Handle**
Check No.	**Check Amount**
Place ID	

Section 2: Project Information

Project Location

The Project is located in Imperial County, approximately 37 miles southeast of the Salton Sea. Imperial County is in southern California, in the southwestern portion of the Colorado Desert. The Project Application Area is located approximately 1.2 miles north of the U.S.–Mexico border, in a region characterized by undeveloped desert and agricultural uses. The Imperial Valley, which is dominated by agricultural land, is located an estimated 2.5 miles west of the Project Application Area. The Imperial Sand Dunes, the largest mass of sand dunes in California, is located approximately 9 miles east of the Project Application Area. A regional location map is provided in Figure 1 and vicinity map is provided in Figure 2.

Figure 1 Regional Setting

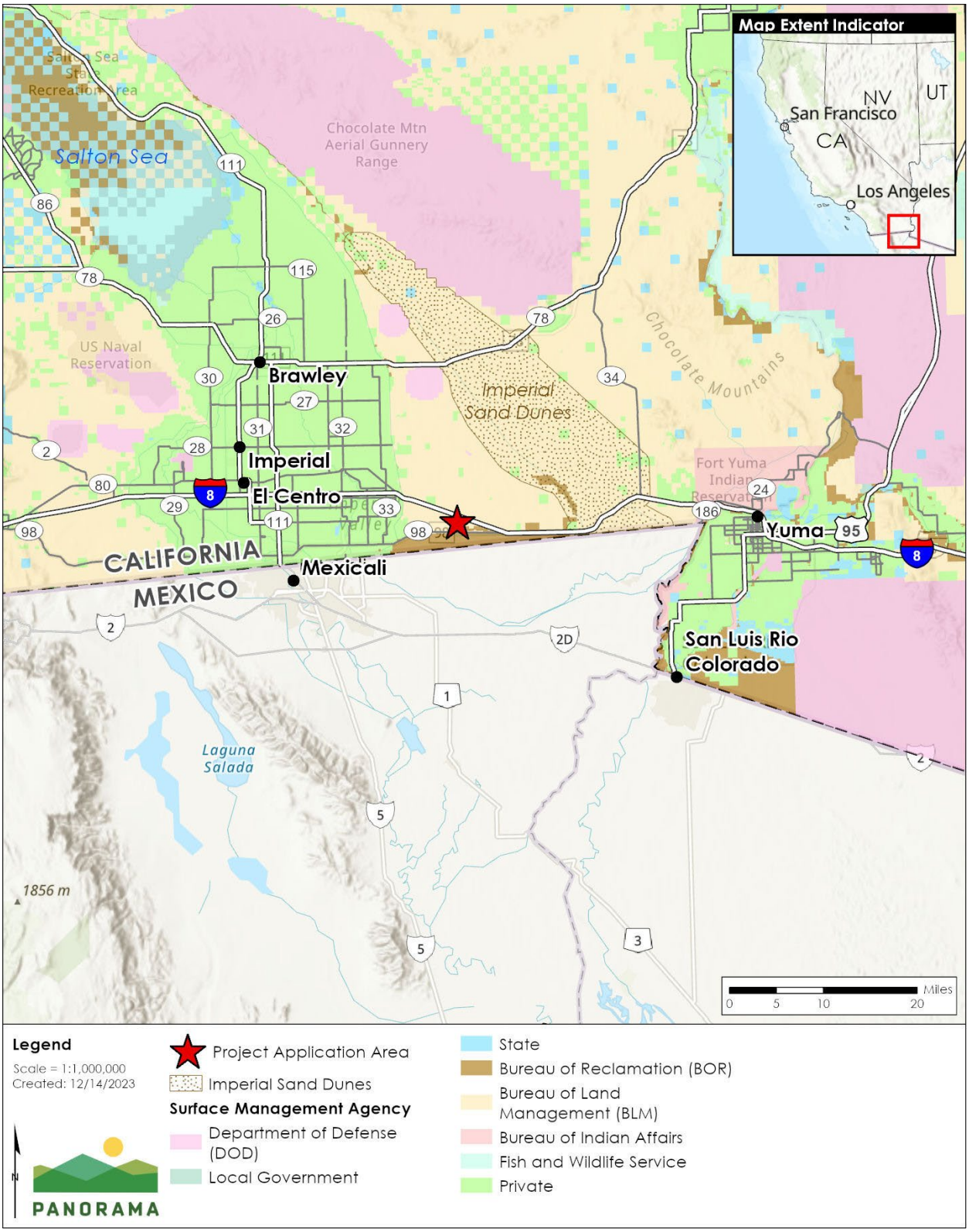
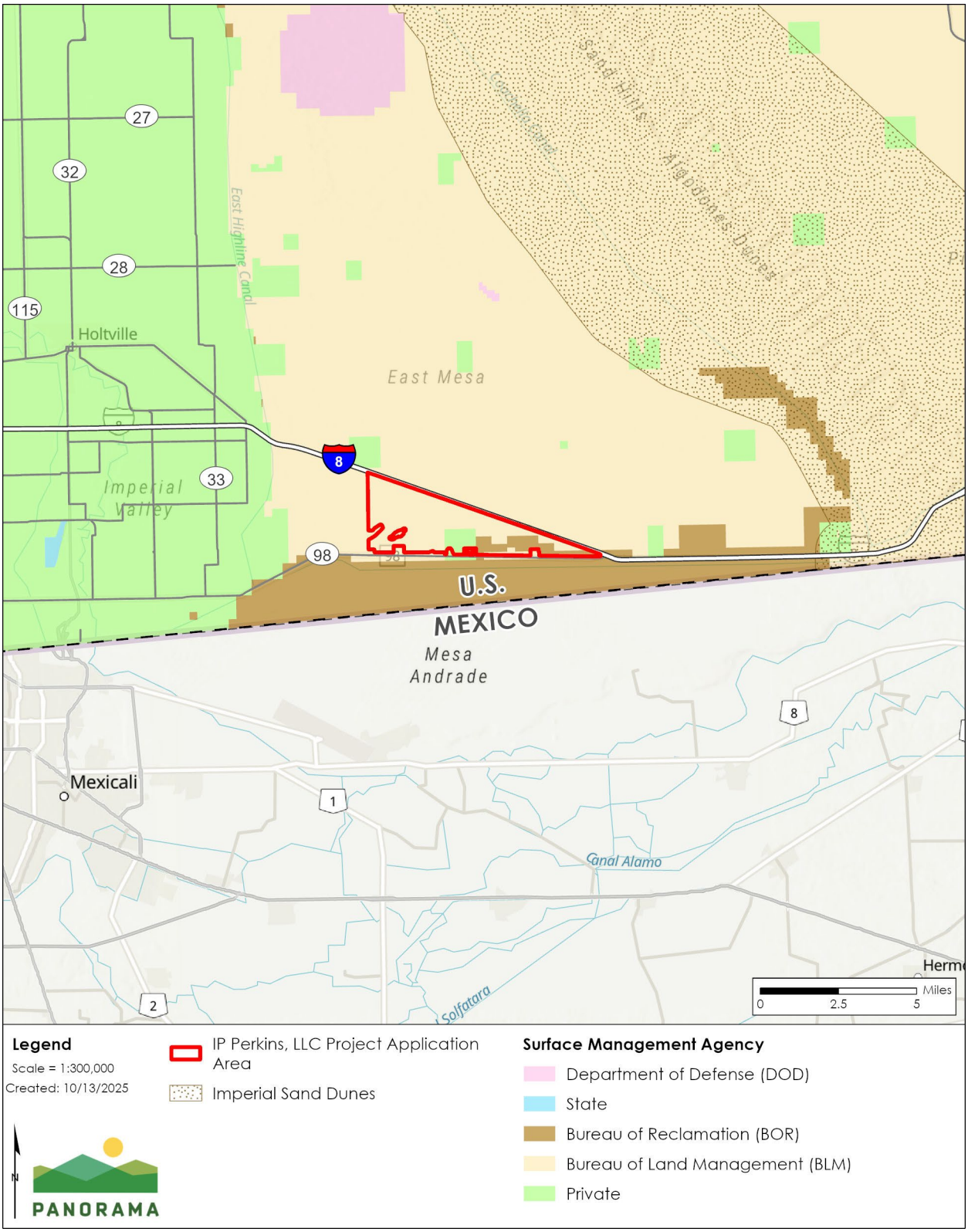


Figure 2 Project Vicinity



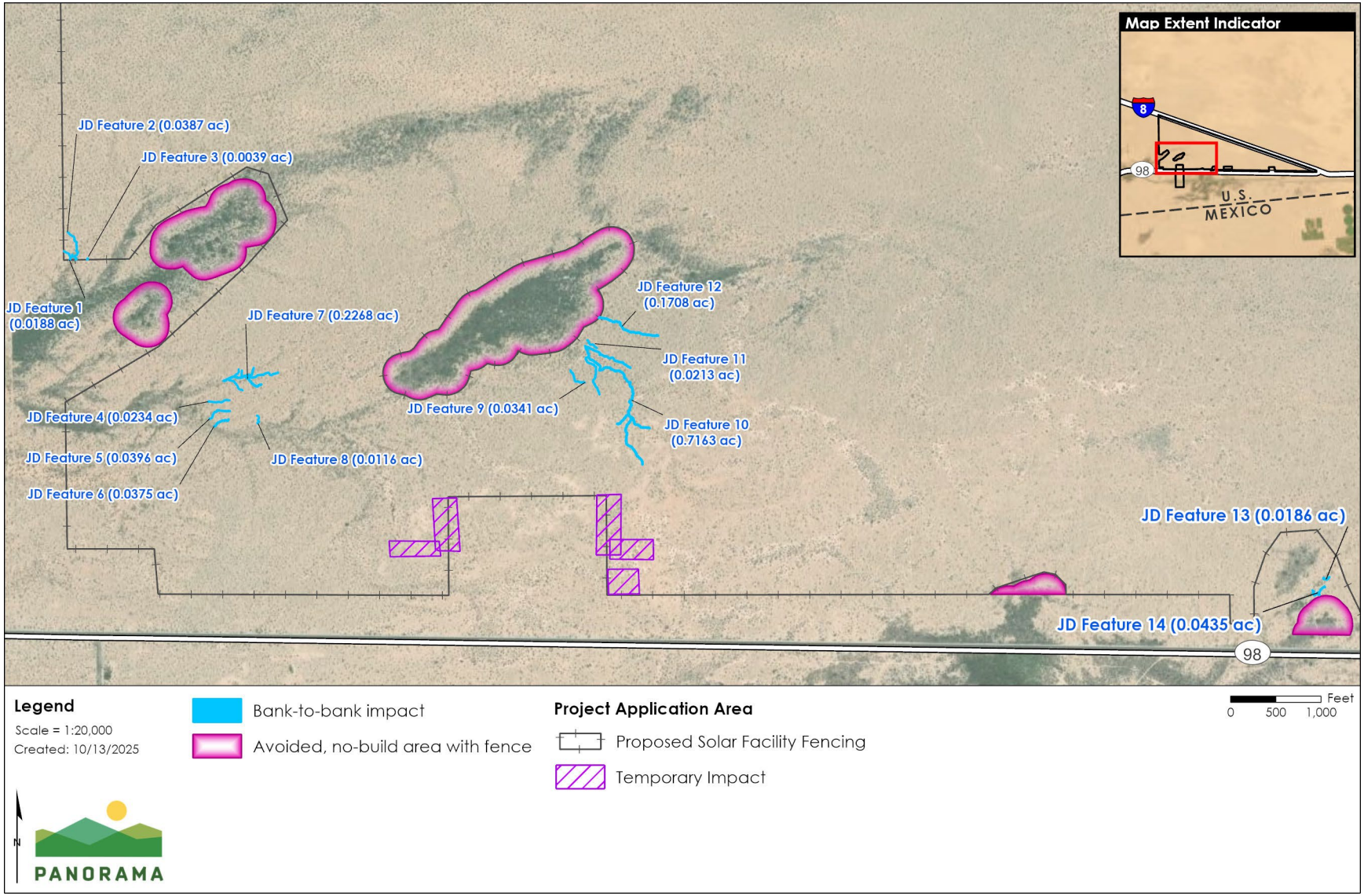
Geographic Coordinates

The latitude and longitude for each water resource are provided below. These jurisdictional water and vegetation resources are shown on the map in Figure 3. Resources impacted by the Project area listed in Table 1.

Table 1 Geographic Coordinates of Waters

Water Number	Latitude	Longitude
1	32.723639°	-115.219161°
2	32.724273°	-115.219085°
3	32.723575°	-115.21858°
4	32.719173°	-115.213937°
5	32.718912°	-115.213913°
6	32.718589°	-115.213859°
7	32.719879°	-115.212891°
8	32.718522°	-115.212542°
9	32.719746°	-115.201149°
10	32.719949°	-115.200161°
11	32.720722°	-115.200478°
12	32.72111°	-115.199159°

Figure 3 Impacts to Waters of the State



Project Description

IP Perkins, LLC, and any related affiliates (collectively, "Applicant"), subsidiaries of IPX Power USA, LLC, proposes to construct, operate, maintain, and decommission a 1,150 megawatt (MW) solar photovoltaic (PV) facility and battery energy storage system (BESS) on public lands administered by the U.S. Bureau of Land Management (BLM) and Bureau of Reclamation (BOR), as well as private lands located southeast of El Centro in Imperial County, California.

A fenced area referred to in this notification as the "Project Application Area" would contain the solar plant, BESS, Project interconnection generation tie (gen-tie) line, Project substation, and operations and maintenance (O&M) yard and facility (refer to Figure 4). The Project would interconnect to the existing San Diego Gas and Electric (SDG&E) Southwest Power Link (SWPL) 500 kV transmission line that traverses east–west to the south of the Project Application Area via a proposed high-voltage breaker-and-a-half switchyard (BAAH switchyard) and two 500 kilovolt (kV) loop-in transmission lines that would be located south of the Project, which would be operated by SDG&E. While the entire Project is 1,150 MW, a portion of the overall Project would be constructed within waters of the State subject to Regional Water Quality Control Board jurisdiction. The specific structures that could be located within waters of the State are described below.

Solar Arrays Panel Supports

Structures supporting the PV panels would consist of steel piles (e.g., cylindrical pipes, H-beams, helical screws, or similar). The piles would typically be spaced 18 feet apart. The height of the piles above the ground would vary based on the racking configuration specified in the final design. For a single-axis tracking system, piles typically would be installed to a reveal height of approximately 4 to 6 feet above grade (minimum 1 foot clearance between bottom edge of panel and ground but could be higher to compensate for terrain variations and clearance for overland flow during stormwater events). For a fixed-tilt system, the reveal height would vary based on the racking configuration specified in the final design. Fixed-tilt arrays would be oriented along an east–west axis, with panels facing generally south. Tracking arrays would be oriented along a north–south axis, with panels tracking east to west to follow the movement of the sun. For fixed-tilt systems, the panels would be fixed at an approximate 20- to 60-degree angle or as otherwise determined necessary during final Project design. Refer to Figure 5 for an elevation of an example solar PV technology that may be selected. Refer to Figure 6 for a visual representation of an example solar PV technology.

Figure 4 Project Layout

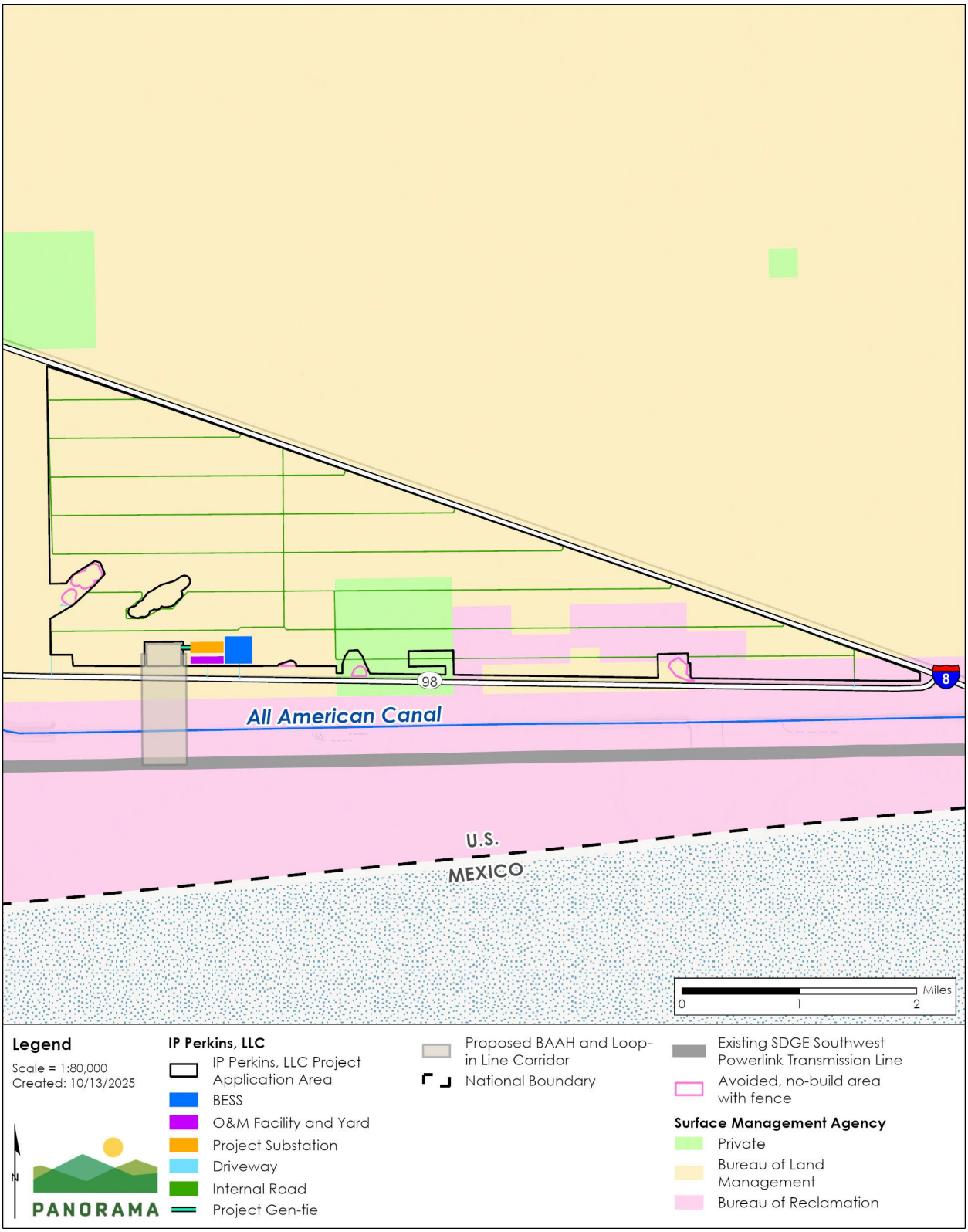


Figure 5 Solar PV Example Technology

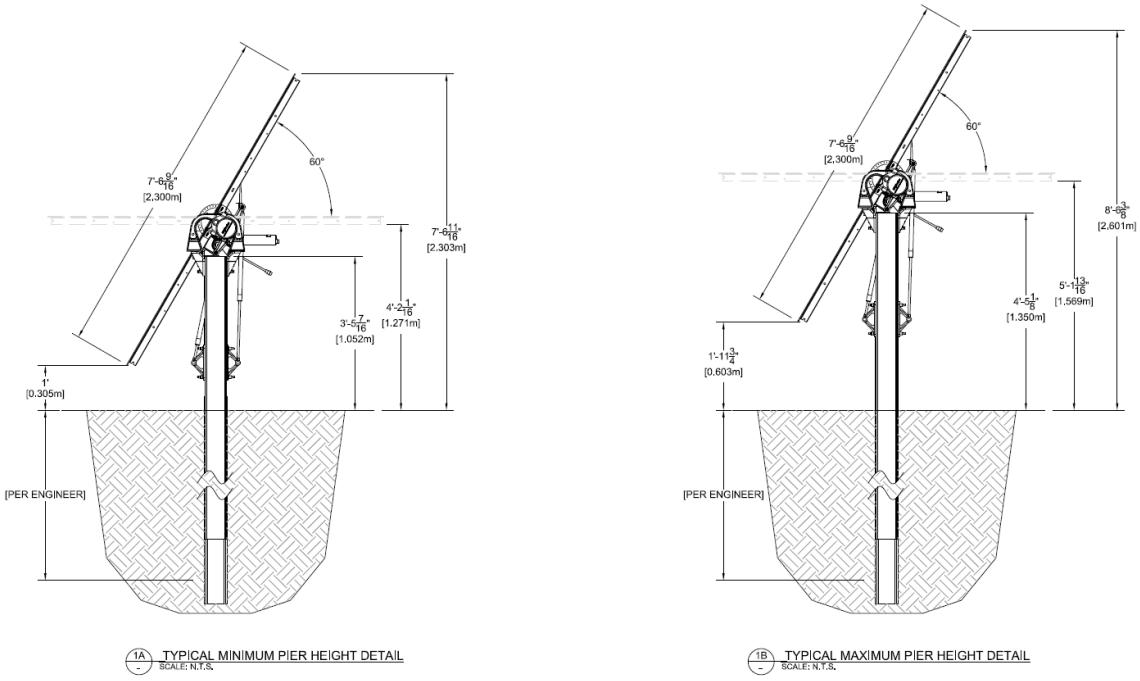


Figure 6 Visual Representation of Solar PV Example Technology

Electrical Collection System

The 34.5 kV collection cables would be either buried underground or installed overhead on wood poles. An underground 34.5 kV line would be buried in a trench 4 feet below grade but could go as deep as 6 feet and include horizontal drilling if needed to avoid utility constraints. Thermal specifications require 10 feet of spacing between the medium voltage lines.

Solar Facility Roads

A 20-foot-wide perimeter road (16 feet wide with 2-foot-wide shoulder on either side) would be built on the inside of the fence. A network of regularly spaced 20-foot-wide internal roads would be installed connecting to the perimeter road. Roads would be surfaced with compacted soil or another commercially available surface acceptable to regulatory agencies and would provide a fire buffer, accommodate Project operation and maintenance activities such as cleaning of solar panels, and facilitate on-site circulation for emergency vehicles. The roadway system would be designed to allow small wildlife passage across the site. If aggregate or gravel is used for road surfaces, such as to reduce dust or for low water crossings, portions of road lengths may remain free of gravel in strategic locations in order to facilitate wildlife movement. In addition, wildlife passage culverts may be placed at key locations along Project roads to allow wildlife to avoid the road.

Site Security and Fencing

The Project Application Area would be enclosed with fencing that meets National Electric and Safety Code (NESC) requirements for protective arrangements in electric supply stations. The boundary of the Project Application Area would be secured by up to 6-foot-high chain-link perimeter fences topped with 1 foot of three-strand barbed wire or other fencing as dictated by BLM and/or North American Electric Reliability Corporation (NERC) specifications. The fence would typically be installed approximately 100 feet from the edge of the solar arrays.

Solar Facility Construction

Site Preparation and Grading

The majority of the Project Application Area would be mowed rather than cleared of vegetation. Mass grading of the Project Application Area would not be needed for site preparation due to the relatively flat terrain. Spot grading would be employed for select solar array and storage facility components. Best management practices (BMPs) identified in the Fugitive Dust Control Plan would be implemented during all grading, vegetation removal, and construction activities.

The roads would require vegetation clearing, grading, and compaction. Inverter-transformer station locations would require light grubbing. Due to undulations within the Project Application Area, some areas of grading would be needed within the solar arrays. Where solar site grading is necessary for discrete facilities or within the solar arrays, cut and fill would be balanced to the extent feasible. Some import and export of material would be necessary (refer to

Table 2). Trenching for the collector lines would extend up to 6 feet in depth and collector poles may reach depths of 45 feet or more.

Within the solar arrays that do not require grading, mowing and grubbing would be conducted to allow for construction access and installation. Mowing and grubbing involves surface removal of vegetation, including mechanical mowing and removal of larger vegetation by hand cutting/trimming to the ground surface. The intent is to leave root balls and seeds in place to allow for regrowth of native vegetation after construction. During mowing, collection of mowed vegetation would be considered for future mulching to minimize dust and soil erosion on portions of the site and enhance restoration. A qualified restoration biologist would determine where the collected mulching material should be applied.

Non-native vegetation would be removed to the extent feasible during the construction phase via manual and mechanical methods and herbicide application. Any non-native species found in the Project Application Area that has not been evaluated for its potential to invade or alter surrounding natural lands would be considered a "weed" for purposes of the Restoration and Integrated Weed Management Plan implementation. Cutting, damaging, or uprooting microphyll woodland tree species would be avoided by Project design and BMPs, in accordance with the DRECP Conservation Management Actions (CMAs).

Table 2 Solar Facility Disturbance Details

Project component	Cut/fill quantity	Type of disturbance
Fenced solar facility with arrays and access roads	Balanced	Solar array areas to be mowed and grubbed to provide for construction access and installation
Inverter-transformer stations and electrical collection system	Balanced	Graded and backfilled to an elevation above surrounding grade to avoid flooding for inverter-transformer stations

Note:

[a] Estimated base for the areas requiring import of material is assumed to require a 12-inch depth.

Access Roads

The existing surface area of the access roads would be cleared and compacted using on-site, native materials and may be covered in aggregate for dust or erosion control. The design standard for the access roads within the solar arrays would be consistent with the amount and type of use they will receive.

Solar Array Installation

The steel piles (i.e., cylindrical pipes, H-beams, or similar) supporting the PV panels would be driven into the soil using pneumatic techniques, similar to a hydraulic rock hammer attachment

on the boom of a rubber-tired backhoe excavator. The piles typically are spaced 10 feet apart and would be driven into the ground to a depth of 9 to 15 feet.

Electrical Collection System

The Project Application Area electrical collection system would involve installation of inverter-transformer stations from which the medium voltage cabling collection system would lead to the Project substation.

Medium-voltage cabling would be installed either underground. Cables, if underground, would be installed using direct bury equipment and/or typical trenching techniques, which involves use of a rubber-tired backhoe excavator, trencher, or a "one-pass" machine that digs the trench and lays the cable in a single action to minimize construction activity. Shields or trench shoring would be temporarily installed for safety to brace the walls of the trench if required based on the trench depth. After the excavation, cable rated for direct burial would be installed in the trench, and the excavated soil would be used to fill the trench and compressed to 90- to 95-percent maximum dry density or in accordance with final engineering.

Equipment and Machinery

The following equipment would be used to construct the Project:

- Forklift
- Grader
- Pile drivers
- Roller
- Rubber tired loaders
- Rubber tired dozer
- Skid steer loaders
- Tractor/loader/backhoe
- Trencher
- Welders
- One-pass

Section 7: Impact Quantities

Impacts to waters of the State would occur from trenching of buried collector cables, pile driving of solar pile supports, concrete pads for inverters/transformers, wood poles for overhead collector cables, access road grading, vehicle travel during solar array installation, and fence post installation along the solar facility fence line. The exact impacts and quantity of each type of impact is dependent on the final design. For the purpose of quantifying impacts on waters of the State, it was conservatively assumed that the entirety of water resources that area not fenced for avoidance would be permanently impacted.

No temporary impacts to waters of the State would occur. Permanent impacts to waters of the State are summarized in Table 3. All waters that would be impacted by the Project are classified as riverine or ephemeral (streams that only persist for a short period of time). The locations of permanent impacts to waters are shown on

Table 3 Permanent Impact to Waters of the State

No.	Length of Impact (Feet)	Area of Impact (Acres)	Type of Impact/Facility	Material	Volume of Material (cy)
1	185	0.008	Fence	Fence and Native Fill, Aggregate	77
2	421	0.01	PV Array	Native Fill, Steel, Aggregate	97
3	13	0.0006	PV Array	Native Fill, Steel, Aggregate	2
4	253	0.006	PV Array	Native Fill, Steel, Aggregate	58
5	283	0.026	PV Array	Native Fill, Steel, Aggregate	252
6	198	0.009	PV Array	Native Fill, Steel, Aggregate	87
7	1,444	0.051	PV Array	Native Fill, Steel, Aggregate	494
8	124	0.006	PV Array	Native Fill, Steel, Aggregate	58
9	243	0.011	PV Array	Native Fill, Steel, Aggregate	106
10	3479	0.22	PV Array	Native Fill, Steel, Aggregate	2,130
11	150	0.007	PV Array	Native Fill, Steel, Aggregate	68

No.	Length of Impact (Feet)	Area of Impact (Acres)	Type of Impact/Facility	Material	Volume of Material (cy)
12	741	0.034	PV Array	Native Fill, Steel, Aggregate	329
Total	**7,535**	**0.384**	**N/A**	**N/A**	**3,758**

Additional Direct and Indirect Impact Information

Direct Impact Description

The roads would require vegetation clearing, grading, and compaction. Inverter-transformer station locations would require light grubbing. Solar PV panels would potentially also require light grubbing. Where excavation is required, most construction activities would be limited to less than 6 feet in depth within the Project Application Area; however, some excavations, such as those undertaken for the installation of gen-tie poles and dead-end structures, may reach depths of 45 feet or more. Temporary areas of disturbance would be restored in accordance with the Restoration and Integrated Weed Management Plan (Appendix M.5).

Construction activities would also involve the handling, use, and storage of limited quantities of hazardous materials, which would be limited to waste oil, oil filters, oil rags, solvents, fuels, welding materials, empty hazardous materials containers, spent batteries, and controlled substances. As regulated hazardous materials would be present on site, storage procedures would be dictated by the Hazardous Materials Business Plan (HMBP) and Spill Prevention Control and Countermeasures (SPCC) Plan that would be developed prior to construction in compliance with State and federal regulations for management of hazardous materials (California Health and Safety Code, Division 20, Chapter 6.95, Article 1, Sections 2550 to 25519; California Code of Regulations, Title 19, Division 2, Chapter 4, Article 4, Sections 2620 to 2671; Clean Water Act §311). The HMBP and SPCC Plan would specify safe handling and emergency response procedures should an unintended lead or release of hazardous materials occur. Implementation of safety and response measures during Project construction would minimize the potential for hazardous materials to be released into the environment such that water resources would not be substantially degraded.

Indirect Impact Description

The Project Application Area drains into the Alamo River, which is on the 303(d) list with 20 TMDLs, as defined in the Basin Plan (SWRCB 2022). The Alamo River is on the 303(d) list and has a TMDL for sediment in addition to multiple pesticides and chemicals in agricultural runoff. The TMDL for sediment focuses on controlling sediment in agricultural runoff. The Project would not release any pesticides or pollutants that are listed on the 303(d) list but has the potential to result in increased erosion and sedimentation as a result of ground disturbance.

The Applicant would be required to apply for coverage under a National Pollution Discharge Elimination System (NPDES) General Permit for Storm Water Discharges Associated with Construction and Land Disturbance Activities, Order numbers WQ 2022-0057-DWQ and CAS000002 (Construction General Permit), and any following versions applicable at the time of construction. The Construction General Permit was developed to ensure that stormwater is managed and erosion is controlled on construction sites. The Construction General Permit requires preparation and implementation of a Storm Water Pollution Prevention Plan (SWPPP), which requires implementation of best management practices (BMPs) to control stormwater run-on and runoff from construction work sites. BMPs may include, but would not be limited to, physical barriers to prevent erosion and sedimentation, construction of sedimentation basins, limitations on work periods during storm events, use of infiltration swales, protection of stockpiled materials, and a variety of other measures to be identified by a qualified SWPPP developer that would substantially reduce or prevent erosion during construction.

The Applicant has also proposed to implement a Drainage, Erosion, and Sediment Control Plan (DESCP) to reduce the impact of run-off during construction, operation, and maintenance (see PDF HWQ-1). The DESCP would ensure proper protection of water quality and soil resources, address disturbed soil stabilization treatments in the Project area for both road and non-road surfaces, and identify all methods used for temporary and final stabilization of inactive areas. The Plan would cover all Project component areas subject to disturbance. The DESCP would cover site mobilization, excavation, construction, and post-construction (i.e., operation and maintenance) activities. Site monitoring would involve inspections to ensure that the BMPs required by the Project-specific SWPPP and DESCP are properly maintained and reducing the risk of run-off to an adequate level. Implementation of the Project-specific SWPPP and DESCP would ensure that downstream water bodies are not affected by sediment transport.

Cumulative Impacts

A list of closely related past, present, and reasonably foreseeable future projects is provided in Table 4-1 and shown in Figure 4-1 in Chapter 4: Environmental Analysis of the Opt-in Application.

Degrade Surface or Groundwater Quality

The cumulative projects in the Alamo River watershed have created a significant impact on water quality, as evidenced by the 303(d) listing and established TMDLs on the Alamo River and All-American Canal. The cumulative impact on water quality is generally due to the historic and existing agricultural operations, which have resulted in pesticides, sediment, and other chemicals present in agricultural runoff. The proposed projects within the Alamo River watershed would involve ground disturbance and, in combination with the Project, could contribute additional sediment load to the Alamo River. Increased sediment loading to the Alamo River would be a significant cumulative impact as the Alamo River is already impaired for sediment.

The Project would comply with the requirements of the Construction General Permit and would implement BMPs, PDFs, and CMAs to protect water quality and control sediment in

runoff. Because the Project would implement BMPs to control sediment during construction and operation and maintenance, the Project's contribution to a cumulatively considerable impact on water quality would be less than significant.

Erosion, Flooding, or Risk Release of Pollutants

The cumulative projects within 6 miles of the Project include a number of operational geothermal projects, several operational transmission lines, an IID reservoir, two proposed solar facilities, and a proposed transmission line. The existing operational projects are part of the baseline hydrologic and drainage conditions in the area that were analyzed as part of the Project baseline analysis. The proposed solar projects would be located northwest of the Project and within the same watershed as the Project. The solar projects have a potential to result in cumulative impacts on erosion and flooding and risk release of pollutants in combination with the Project because the cumulative projects would require ground disturbance, including some degree of grading, and would install additional impervious surfaces similar to those of the Project. The proposed solar projects and the Project are all required to comply with the State of California Construction General Permit and to implement stormwater management BMPs and pollution prevention BMPs. The proposed solar projects would also be required to comply with State and federal laws for management of hazardous materials, including preparing any applicable HMBP and SPCC. Because the Project and the cumulative projects would need to comply with State and federal laws, which define specific requirements for reduction of erosion and procedures to offset post-project changes in runoff to avoid flooding or release of pollutants, the cumulative impact would be less than significant.

Section 8: Alternatives Analysis

Section IV.A.1.g of the State Wetland Definition and Procedures for Discharge of Dredged or Fill Material to Waters of the State includes the following exemption from preparation of a Tier 3 alternatives analysis;

> *i. The project includes discharges to waters of the state outside of federal jurisdiction, but the entire project would meet the terms and conditions of one or more Water Board-certified Corps' General Permits, including any Corps District's regional terms and conditions, if all discharges were to waters of the U.S. The permitting authority will verify that the entire project would meet the terms and conditions of the Corps' General Permit(s) if all discharges, including discharges to waters of the state outside of federal jurisdiction, were to waters of the U.S. based on information supplied by the applicant.*

The solar facility would meet the terms and conditions of Corps General Permit, specifically Nationwide Permit (NWP) 51- Land Based Renewable Energy Facilities. NWP 51 allows for discharges of dredged or fill materials for construction, expansion, or modification of land-based renewable energy production facilities including solar projects. NWP 51 allows for up to ½ acre of impact to waters and non-tidal wetlands. The solar project would impact 0.38 acre of waters of the state and would not exceed the acreage threshold. All impacts to waters within the solar facility would meet the conditions of NWP 51, including the regional conditions. Because the entire Project would meet the terms and conditions of one or more Corps General Permits, including the regional terms and conditions if all discharges were to waters of the U.S., the Project meets the exemption from preparation of an alternatives analysis under the State Wetland Definition and Procedures for Discharge of Dredged or Fill Material to Waters of the State.

Even though the Project is exempt from completing an alternatives analysis, Section IV.A.1.g of the State Wetland Definition and Procedures for Discharge of Dredged or Fill Material to Waters of the State states, "The exemption from the alternatives analysis requirement does not preclude a permitting authority from requiring the applicant to demonstrate in its application that the project complies with section IV.B.1.a." Section IV.B.1.a requires an applicant to demonstrate that actions have been taken to "first avoid, then to minimize, and lastly compensate for adverse impacts that cannot be practicably avoided or minimized to waters of the state". The following procedures were implemented in the Project siting and design process to first avoid, then minimize, and lastly compensate for impacts to water of the State:

1. The Project design and fence line was modified to avoid waters of the State. The Project design includes several fenced avoidance areas within the fenceline that were specifically excluded from solar development to avoid impacts on waters of the State. These fenced avoidance areas include microphyll woodland. The waters within the solar facility fence that would be impacted by the Project include small

swales that due to their location and linear nature could not be fully avoided in the Project design.

2. The Loop-in transmission work areas and BAAH location were sited to avoid impacts on waters of the State/wetlands. Alternative loop-in transmission corridor locations were initially evaluated in the Project siting process. The proposed Loop-in Transmission Corridor and specific work areas were selected as to avoid areas of wetlands that occur to the west of the proposed Loop-in transmission corridor.
3. The Project will provide compensatory mitigation for all impacts on waters of the State at a 1:1 ratio.

Section 9: Avoidance and Minimization Measures

As part of the Project, the Applicant is committed to implementing BMPs, PDFs, and CMAs. The Applicant has also prepared mitigation plans as required by the BLM.

Best Management Practices and Project Design Features
The Project would implement the following BMPs and PDFs related to biological resources:

Direct Impact Avoidance and Minimization

- **BMP-17**
  - **Staging Areas.** As practical, staging and parking areas shall be located within the Project Application Area to minimize habitat disturbance in areas adjacent to the site.
- **BMP-18**
  - **Construction Activities.** Before beginning construction, delineate the boundaries of areas to be disturbed including roads, borings, soil testing sites, and pull and tensioning areas prior to any ground disturbance, and confine disturbances, project vehicles, and equipment to the delineated project areas.
- **BMP-19**
  - **Construction.** To the extent practicable, work personnel shall stay within the ROW and/or easements.
- **BMP-21**
  - **Traffic.** Existing access roads, utility corridors, and other infrastructure shall be used to the maximum extent feasible.
- **BMP-24**
  - **Habitat.** To reduce the extent of habitat disturbance during construction and operation, existing access roads, utility corridors, and other infrastructure shall be used to the maximum extent feasible and foot and vehicle traffic through undisturbed areas shall be minimized.
- **BMP-26**
  - **Habitat.** Areas left in a natural condition during construction (e.g., wildlife crossings) shall be maintained in as natural a condition as possible within safety and operational constraints.
- **BMP-32**
  - **Vegetation.** Project-specific vegetation management plans shall investigate possibilities of revegetating parts of the Project Area.
- **BMP-33**
  - **Noxious Weeds.** The establishment and spread of invasive species and noxious weeds within the Project Area and loop-in transmission line corridors shall be

prevented. The areas shall be monitored regularly, and invasive species should be eradicated immediately.

- **BMP-34**
  - **Herbicide Use.** Only herbicides with low toxicity to wildlife and nontarget native plant species shall be used, as determined in consultation with the BLM, BOR, CEC, and USFWS. The typical herbicide application rate shall be used rather than the maximum application rate, where effective. All herbicides shall be applied in a manner consistent with their label requirements and in accordance with guidance provided in the Final PEIS on vegetation treatments using herbicides (BLM 2007c).
- **BMP-35**
  - **Waste.** Construction debris, especially treated wood, shall not be stored or disposed of in areas where it could come in contact with aquatic habitats.
- **BMP-36**
  - **Reclamation.** Access roads shall be reclaimed when they are no longer needed.
- **BMP-37**
  - **Reclamation.** All holes and ruts created by removal of structures and access roads shall be filled or graded.
- **BMP-38**
  - **Reclamation.** While structures are being dismantled, care shall be taken to avoid leaving debris on the ground in areas in which wildlife regularly move.
- **BMP-39**

  Reclamation. The facility fence shall remain in place for several years following decommissioning to help reclamation (e.g., would preclude large mammals and vehicles from disturbing revegetation efforts)
- **PDF BIO-3**
  - **Minimization of Vegetation and Habitat Impacts.** Prior to construction, operation and maintenance, or decommissioning activities, authorized work areas shall be clearly delineated by the contractor. These areas shall include, but not be limited to, staging areas, access roads, and sites for temporary placement of construction materials and spoils. Delineation may be implemented with "fencing" or staking to clearly identify the limits of work and will be verified by the Lead Biologist. No paint or permanent discoloring agents shall be applied to rocks or vegetation (to indicate surveyor construction activity limits or for any other purpose). Fencing/staking shall remain in place for the duration of work activities. Spoils shall be stockpiled in disturbed areas. All disturbances, vehicles, and equipment shall be confined to the fenced/flagged areas.

    Construction activities shall minimize soil and vegetation disturbance to minimize impacts to soil and root systems. Upon completion of construction

activities in any given area, all unused materials, equipment, staking and flagging, and refuse shall be removed and properly disposed of, including wrapping material, cables, cords, wire, boxes, rope, broken equipment parts, twine, strapping, buckets, and metal or plastic containers. Any unused or leftover hazardous products shall be properly disposed of off site. Hazardous materials shall be handled and spills or leaks promptly corrected and cleaned up according to applicable requirements. Vehicles shall be properly maintained to prevent spills or leaks. Hazardous materials, including motor oil, fuel, antifreeze, hydraulic fluid, grease, shall not be allowed to enter drainage channels.

  - **Low-impact site preparation.** Native vegetation shall be allowed to recover from rootstocks and seed bank wherever facilities do not require permanent vegetation removal (e.g., access roads, foundations, paved areas, fire clearance requirements) within the perimeter fenceline of the Project solar site and under solar arrays. Vegetation height and density shall be managed as needed for operation and maintenance and fire safety, but vegetation management shall otherwise focus on maintaining habitat and soil conditions.

- **PDF BIO-4**

  Integrated Weed Management Plan. The Applicant shall prepare and implement an Integrated Weed Management Plan (IWMP) to minimize or prevent invasive weeds from infesting the site or spreading into surrounding habitat. The IWMP must comply with existing BLM plans and permits, including the Vegetation Treatments Using Herbicides and Vegetation Treatment Using Aminopyralid, Fluroxypyr, and Rimsulfuron PEISs (BLM 2007; 2016a), including requiring a Pesticide Use Permit approved by the BLM and BOR. The IWMP shall identify weed species occurring or potentially occurring in the Project area, means to prevent their introduction or spread (e.g., vehicle cleaning and inspections), monitoring methods to identify infestations, and timely implementation of manual or chemical (as appropriate) suppression and containment measures to control or eradicate invasive weeds. The IWMP shall identify herbicides that may be used for control or eradication, and avoid herbicide use in or around any environmentally sensitive areas. The IWMP shall also include a reporting schedule, to be implemented by the Lead Biologist.

Indirect Impact Avoidance and Minimization

- **PDF BIO-8**
  - **Streambed and watershed protection.** Prior to construction activities in jurisdictional waters of the State, the Applicant will obtain a Lake and Streambed Alteration Agreement (LSAA) from the CDFW. A Stormwater Pollution Prevention Plan (SWPPP) or SWPPP-equivalent document may also

be required and shall be prepared by a qualified engineer or qualified individual and shall be implemented before and during construction. The SWPPP shall include BMPs for stormwater runoff quality control measures, management for concrete waste, stormwater detention, watering for dust control, and construction of perimeter sediment controls, as needed.

The Applicant will implement BMPs identified below to minimize adverse impacts to streambeds and watersheds.

- Vehicles and equipment will not be operated in ponded or flowing water except as specified by resource agencies.
- The Applicant will minimize road building, construction activities, and vegetation clearing within ephemeral drainages.
- The Applicant will prevent water containing mud, silt, or other pollutants from grading or other activities from entering ephemeral drainages or being placed in locations that may be subjected to high storm flows.
- Spoil sites will not be located within 30 feet from the boundaries of drainages or in locations that may be subjected to high storm flows, where spoils might be washed back into drainages.
- Raw cement/concrete or washings thereof, asphalt, paint or other coating material, oil or other petroleum products, unapproved herbicides, or any other substances that could be hazardous to vegetation or wildlife resources resulting from Project-related activities will be prevented from contaminating the soil and/or entering ephemeral drainages. The Applicant shall ensure that safety precautions specified by this measure, as well as all other safety requirements of other measures and permit conditions, are followed during all phases of the Project.
- When operations are completed, any excess materials or debris will be removed from the work area. No rubbish will be deposited within 150 feet of the high-water mark of any drainage during construction, operation and maintenance, and decommissioning the Project.
- No equipment maintenance will occur within 150 feet of any qualifying jurisdictional waterway (waterway to be avoided during construction). No petroleum products or other pollutants from the equipment will be allowed to enter these areas or enter any off-site state jurisdictional waters under any flow.
- With the exception of the drainage control system installed for the Project, the installation of bridges, culverts, or other structures will be such that water flow (velocity and low flow channel width) is not impaired. Bottoms of temporary culverts will be placed at or below stream channel grade.
- No broken concrete, debris, soil, silt, sand, bark, slash, sawdust, rubbish, or other organic or earthen material from any construction or associated activity of whatever nature will be allowed to enter into, or be placed where it may be washed by rainfall or runoff into, off-site State jurisdictional waters.

- Stationary equipment such as motors, pumps, generators, and welders located within or adjacent to a drainage will be positioned over drip pans. Stationary heavy equipment will have suitable containment to handle a catastrophic spill/leak. Clean up equipment such as brooms, absorbent pads, and skimmers will be on site prior to the start of construction.
- The cleanup of all spills will begin immediately. BLM, BOR, CEC, and CDFW will be notified immediately by the Applicant of any spills and will be consulted regarding clean-up procedures if these spills occurred in a qualifying jurisdictional waterway.

IP Perkins, LLC

Perkins Renewable Energy Project CDFW Incidental Take Permit Application

April 2026

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San Francisco, CA 94103
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PANORAMA ENVIRONMENTAL, INC.

IP Perkins, LLC

Perkins Renewable Energy Project CDFW Incidental Take Permit Application

April 2026

Prepared for:
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c/o IPX Power USA, LLC
9450 SW Gemini Drive, PMB #68743
Beaverton, OR 97008

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PANORAMA ENVIRONMENTAL, INC.

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1 Introduction

1.1 Applicant

(2) Applicant's full name, mailing address, and telephone number(s).

IP Perkins, LLC, 9450 SW Gemini Drive, PMB #68743, Beaverton, OR 97008.

Applicant's Officer: Todd Johansen, Chief Commercial Officer, IP Perkins, LLC, 9450 SW Gemini Drive, PMB #68743, Beaverton, OR 97008. Tel. (510) 398-2547, Email. tjohansen@ipxpower.com

Applicant's Agent: Charity Wagner, Consultant Project Manager, IP Perkins, LLC, 9450 SW Gemini Drive, PMB #68743, Beaverton, OR 97008. Tel. 415-730-6718, Email. cwagner@ipxpower.com

Application prepared by: Emily Capello, Panorama Environmental, Inc., 717 Market Street, Suite 400 San Francisco, CA 94103 Contact: Emily Capello, (415) 312-8074, Email. emily.capello@panoramaenv.com

1.2 Species to be Covered

(3) The common and scientific names of the species to be covered by the permit and the species' status under CESA

Western burrowing owl (*Athene cunicularia hypugaea*). On October 10, 2024, the western burrowing owl was approved as a candidate for listing as a protected species under the California Endangered Species Act (CESA). Candidates for listing are afforded the same protections as state-listed endangered or threatened species. CDFW will undertake a one-year review of the species' status before the California Fish and Game Commission makes a final decision on the listing.

1.3 Permit Coverage Period

Permit coverage is requested for a period of 52 to 54 years, or the total of construction, operations and maintenance, and decommissioning phases of the Project.

- Construction of the Project is anticipated to begin as early as January 2028 and extend to December 2030 for a duration of 24 months.
- Operations and Maintenance is expected to last for 50 years as that is the anticipated useful life of the facilities. Operations and Maintenance will start as soon as construction is complete.
- Decommissioning will commence at the end of the Project's useful life and last for two years, approximately December 2077 to December 2079, if the power

from the facility is not sold to another buyer and/or repowered to increase plant efficiency. If the power is sold to another buyer and/or repowered to increase plant efficiency and the facilities continue to operate, then the permit term will not cover decommissioning and will end following the end of Operations and Maintenance.

1.4 Coverage Area

The area covered by the permit includes the area contained within the IP Perkins, LLC, project boundary as shown below in Section 2 – Project Description.

1.5 Covered Activities

The activities requested for permit coverage include all activities associated with the construction, operations and maintenance, and decommissioning of the Project elements contained within the IP Perkins, LLC, project boundary, as described in Section 2 – Project Description. These activities include the Project's solar panels, substation, Battery Energy Storage System (BESS), operations and maintenance facility, and other infrastructure.

1.6 Guide to the Permit Application

This application is filed for the proposed Perkins Renewable Energy Project (Project) in compliance with the requirements of the California Code of Regulations (CCR) Title 14 Section 783.4 and Section 2081(b) of California Fish and Game Code (FGC). The proposed Project has the potential to result in the incidental take of the state candidate western burrowing owl. The activity meets the following criteria for take of the western burrowing owl (FGC Section 2081[b]):

1. The take would be incidental to the otherwise lawful activity of project construction and/or operation (see Section 2 and Section 4 of this application)
2. Impacts to western burrowing owl would be minimized and fully mitigated as described in this application (see Section 6 of this application)
3. The measures required to minimize and fully mitigate the impacts of the take:
    a. Are roughly proportional in extent to the impact of the taking on the species (see Section 6 of this application)
    b. Maintain project objectives to the greatest extent possible; and
    c. Can be successfully implemented by the applicant (see Section 6 of this application)
4. Adequate funding will be provided to implement the required minimization and mitigation measures and monitoring compliance with and effectiveness of the measures (see Section 6 of this application)
5. Issuance of the permit will not jeopardize the continued existence of the western burrowing owl (see Section 6 of this application).

This application contains all the required contents of an ITP application as defined in CCR Title 14 Section 783.2. This application also follows guidance obtained from CDFW through recent coordination with

CDFW staff. References to specific requirements for ITP applications are provided throughout this document, as appropriate. Table 1.6-1 provides a reader's guide to this permit application.

Table 1.6-1 Guide to Perkins Renewable Energy Project Incidental Take Permit Application

Application Requirement §783.2 (a)	Page
(1) The appropriate application fee.	N/A (CEC Opt-in Process)
(2) Applicant's full name, mailing address, and telephone number(s). If the applicant is a corporation, firm, partnership, association, institution, or public or private agency, the name and address of the person responsible for the project or activity requiring the permit, the president or principal officer, and the registered agent for the service of process.	
(3) The common and scientific names of the species to be covered by the permit and the species' status under CESA.	
(4) A complete description of the project or activity for which the permit is sought.	
(5) The location where the project or activity is to occur or to be conducted.	
(6) An analysis of whether and to what extent the project or activity for which the permit is sought could result in the taking of species to be covered by the permit.	
(7) An analysis of the impacts of the proposed taking on the species.	33
(8) An analysis of whether issuance of the incidental take permit would jeopardize the continued existence of a species. A complete, responsive jeopardy analysis shall include consideration of the species' capability to survive and reproduce, and any adverse impacts of the taking on those abilities in light of: i. Known population trends; ii. Known threats to the species; and iii. Reasonably foreseeable impacts on the species from other related projects and activities.	35
(9) Proposed measures to minimize and fully mitigate the impacts of the proposed taking.	36
(10) A proposed plan to monitor compliance with the minimization and mitigation measures and the effectiveness of the measures.	

Application Requirement §783.2 (a)	Page
(11) A description of the funding source and the level of funding available for implementation of the minimization and mitigation measures.	
(12) Certification in the following language: I certify that the information submitted in this application is complete and accurate to the best of my knowledge and belief. I understand that any false statement herein may subject me to suspension or revocation of this permit and to civil and criminal penalties under the laws of the State of California.	4
(13) Documentation of CEQA compliance.	Will be provided after CEQA is complete

1.7 Certification

(12) Certification in the following language:

I certify that the information submitted in this application is complete and accurate to the best of my knowledge and belief. I understand that any false statement herein may subject me to suspension or revocation of this permit and to civil and criminal penalties under the laws of the State of California.

I certify that the information submitted in this application is complete and accurate to the best of my knowledge and belief. I understand that any false statement herein may subject me to suspension or revocation of this permit and to civil and criminal penalties under the laws of the State of California.

Signed by:
Todd Johansen
C87A999C752A4DE...
Signature

4/9/2026
Date

Name of Representative: Todd Johansen

Title: Chief Commercial Officer

IP Perkins, LLC

2 Project Description

(4) A complete description of the project or activity for which the permit is sought.

IP Perkins, LLC, proposes to construct, operate, and maintain the proposed Project. This section summarizes the proposed Project location, facilities, and construction, operations, and decommissioning activities for which permit coverage is being sought.

2.1 Project Overview

2.1.1 Purpose and Design

IP Perkins, LLC, a subsidiary of IPX Power USA, LLC, proposes to construct, operate, maintain, and decommission the Perkins Renewable Energy Project on public lands administered by the U.S. Bureau of Land Management (BLM) and Bureau of Reclamation (BOR), as well as private lands located southeast of El Centro in Imperial County, California (Figure 1). The proposed Project consists of utility-scale solar photovoltaic (PV) electrical generating and storage facility, including associated infrastructure, to generate and deliver renewable electricity to the statewide electricity transmission grid. The project will include a new project substation, operations and maintenance yard and facility, and 500 kV generation tie (gen-tie) line. The Project will interconnect to the existing San Diego Gas and Electric (SDG&E) Southwest Power Link (SWPL) 500 kV transmission line that traverses east–west 0.84 mile south of the Project site. The Project is expected to generate up to 1,150 megawatts (MW) of renewable energy using photovoltaic (PV) panels with up to 1,150 MW of storage.

The Project would be analyzed under California Environmental Quality Act (CEQA) and National Environmental Quality Act (NEPA). An Environmental Impact Report would be prepared with CEC as the CEQA lead agency under the CEC Opt-in Process expected to be published in 2025. The BLM is preparing an Environmental Assessment (EA) under NEPA also expected to be published in 2025. The Project will be consistent with the Desert Renewable Energy Conservation Plan (DRECP) Land Use Plan Amendment, and is undergoing federal ESA Section 7 consultation between the BLM and US Fish and Wildlife Service (USFWS). The BLM is seeking USFWS concurrence that the Project is covered under the DRECP Biological Opinion (USWFS 2016). The USFWS has developed an Activity Form for the streamlined DRECP concurrence process. BLM will submit the completed form to confirm USFWS concurrence.

The proposed Project site consists of a fenced area containing the solar plant, BESS, Project interconnection generation tie (gen-tie) line, Project substation, and operations and maintenance yard and facility. The Project would disturb up to approximately 5,999 acres of federal and private lands in Imperial County (Project footprint). The boundaries of the Project footprint's disturbance area are designed to meet the BLM California Desert Conservation Area (CDCA) Plan, as Amended[1].

[1] The Desert Renewable Energy and Conservation Plan amendment to the CDCA Plan includes conservation and management actions that require avoidance of some special plant species and certain types of habitat.

2.1.2 Project Elements

Figure 2 shows the components for the entire Perkins Renewable Energy Project (i.e., including both the IP Perkins, LLC, Project components [covered by this application] and the IP Perkins BAAH, LLC, project components [covered under a separate application]). The main Project elements are discussed in the following subsections.

Solar Arrays

The solar facility would include approximately 3,100,000 solar panels. It is anticipated that the panels selected for the Project would be First Solar Series 7. The Series 7 panel utilizes First Solar's thin film technology. However, the ultimate decision for the panel types and racking systems would depend on market conditions at the time of procurement and environmental factors, including the recycling potential of the panels at the end of their useful lives. The chief fuel source for a solar energy field is solar energy.

Figure 1 Project Location and Surface Management Agency

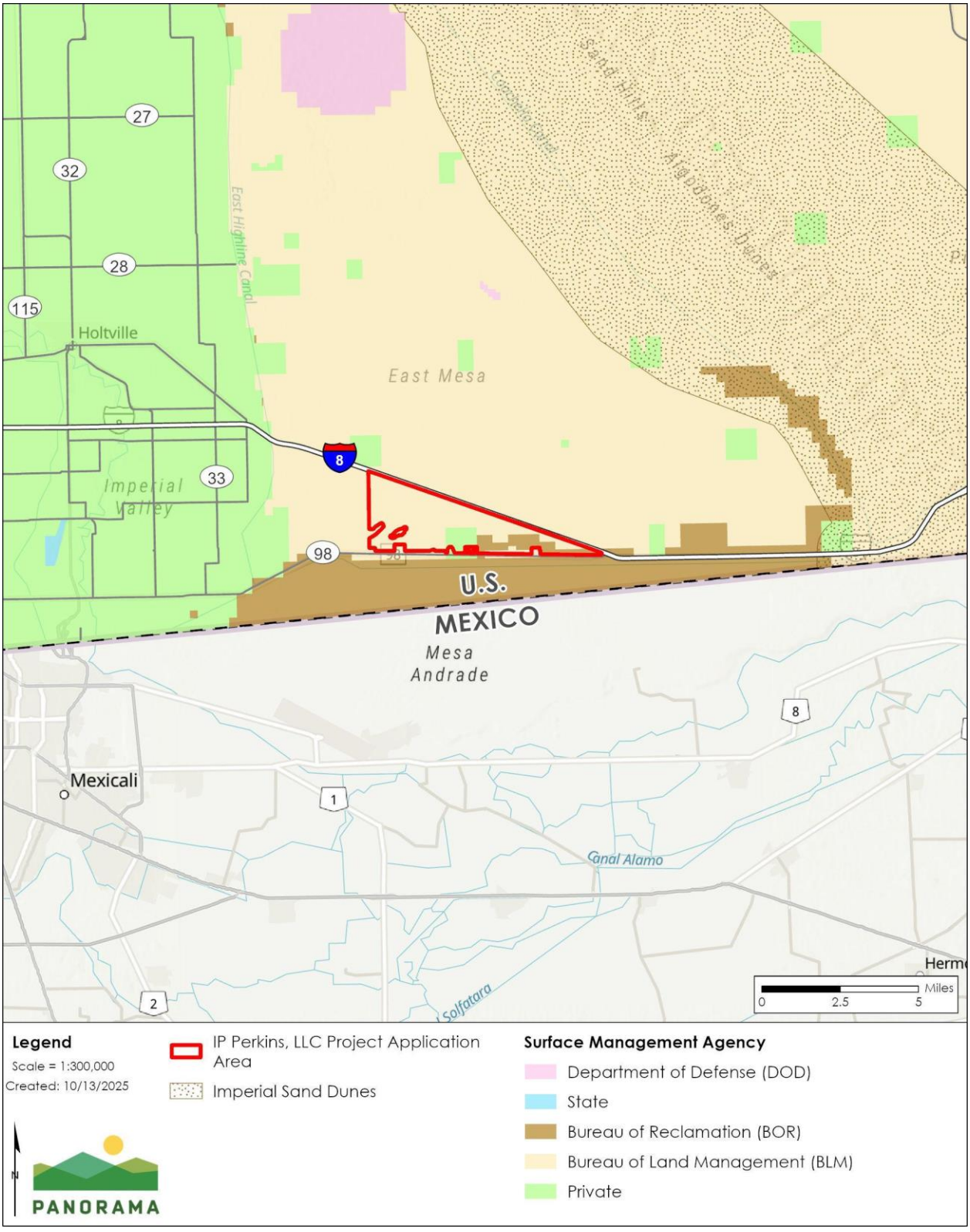
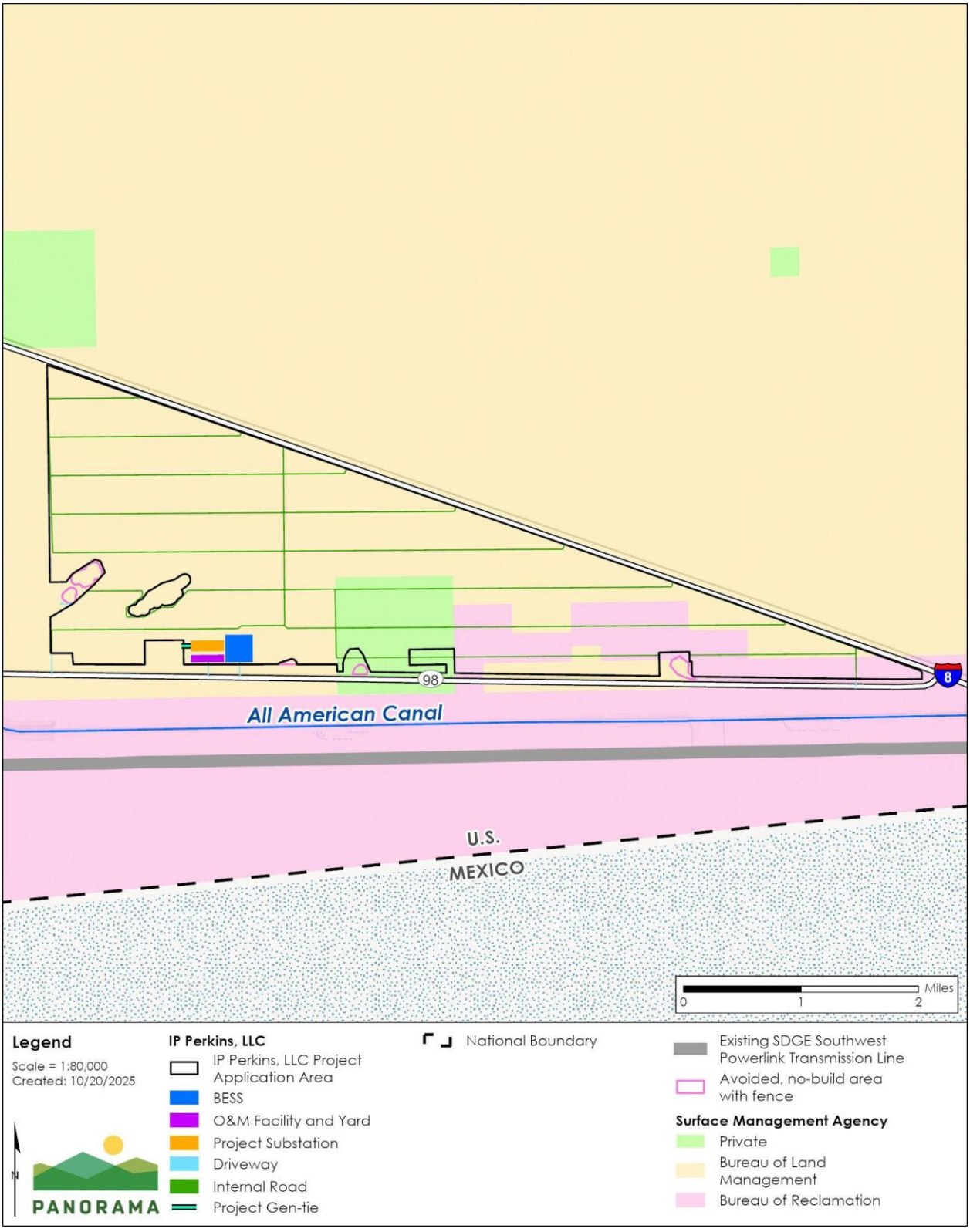


Figure 2 Project Elements



Either mono-facial or bi-facial modules would be used, with a maximum height of approximately 10 feet at full tilt depending on topography and hydrology. Panel mounting systems that may be installed include either fixed-tilt or single-axis tracking technology, depending on the PV panels ultimately selected. Panels would be either mounted in a portrait orientation as single panels or mounted in a landscape orientation and stacked two high on a north–south oriented single-axis tracking system that would track the sun from east to west during the day. Panel faces would be minimally reflective, dark in color, and highly absorptive.

Structures supporting the PV panels would consist of steel piles (i.e., cylindrical pipes, H-beams, helical screws, or similar). The piles would typically be spaced 18 feet apart. The height of the piles above the ground would vary based on the racking configuration specified in the final design. For a single-axis tracking system, piles would typically be installed to a reveal height of approximately 4 to 6 feet above grade (minimum 1 foot clearance between bottom edge of panel and ground but could be higher to compensate for terrain variations and clearance for overland flow during stormwater events). For a fixed-tilt system, the reveal height would vary based on the racking configuration specified in the final design. Fixed-tilt arrays would be oriented along an east–west axis, with panels facing generally south. Tracking arrays would be oriented along a north–south axis, with panels tracking east to west to follow the movement of the sun. For fixed-tilt systems, the panels would be fixed at an approximate 20- to 60-degree angle or as otherwise determined necessary during final Project design.

Project Substation

The Project substation would transform or "step up" the voltage from 34.5 kV used in the medium voltage collector system throughout the site to 500 kV, the Project's interconnecting voltage. The Project substation would collect consolidated intermediate voltage cables from the medium-voltage collector system. Electrical transformers, switchgear, and related substation facilities would be designed and constructed to transform medium-voltage power from the Project's delivery system to the 500 kV SDG&E SWPL transmission system. The Project substation would be located either adjacent to the BAAH switchyard or at an optional location on the private land.

The Project substation would consist of up to eight large transformers, associated medium-voltage bus work and circuit breakers, and associated high-voltage circuit breakers and bus work. The substation would be surrounded by an up to 7-foot-high chain link fence topped with 1 foot of barbed wire. Transformers within the Project substation would be up to 45 feet tall by 40 feet wide on the longest side. The high-voltage circuit breakers would be approximately 25 feet tall by 20 feet wide on the longest side.

Operation and Maintenance Facilities

The operations and maintenance facilities would be designed for Project security, employee offices, and parts storage. The operations and maintenance facility would cover an area of approximately 11.5 acres and include the following components: two operations and maintenance office buildings (which may share a wall) each approximately 3,000 square feet and 15 feet at the tallest point, up to 16 storage connex boxes for spare parts covering a total area of approximately 7,500 square feet, laydown yards, and a parking area. The operations and maintenance office building would have a septic system and would be constructed on a concrete foundation. The water supply for the operations and maintenance facility is anticipated to be from an on-site groundwater well.

Battery Energy Storage System

The Project BESS would be capable of storing up to 1,150 MW of electricity for up to 4 hours and would be housed in electrical enclosures and buried electrical conduit. The BESS would either be located near the BAAH switchyard or on the private land.

Up to 5,000 individual BESS electrical enclosures measuring approximately 40 feet or 52 feet by 8 feet by 8.5 feet high would be installed on concrete foundations. The Project could use any commercially available battery technology, including but not limited to lithium-ion, lithium iron phosphate (LFP), nickel manganese cobalt (NMC), or nickel cobalt aluminum (NCA) batteries.

Battery systems would require air conditioners or heat exchangers and inverters. In addition, a water tank for emergency use is anticipated for each BESS unit/area. The size, final number, and location of water tanks for emergency use would be determined in accordance with California Fire Code (CFC) and in consultation with the local or State fire authorities.

The BESS would comply with the current CFC, which governs the code requirements to minimize the risk of fire and life safety hazards specific to BESS used for load shedding, load sharing, and other grid services (Chapter 12 section 1206 of the 2019 CFC). In accordance with the CFC, the battery enclosure and the site installation design are all required to be approved by the State fire authorities. State law also requires the preparation of a battery storage system-specific emergency response plan under SB 38 prior to operations.

A backup generator is expected to be required in case of an outage in substation distribution power. Fuel sources for these generators are anticipated to be either propane or diesel fuel.

Project Gen-tie Line and Route

The Project gen-tie line would connect the Project substation to the BAAH switchyard and would consist of steel structures. Steel support structures (H-frames and A-frames) for the gen-tie line would be up to 199 feet in height and would connect to and support high voltage aluminum bus duct and the high voltage transmission lines.

2.1.3 Construction

Solar Facility Construction

Site Preparation and Grading

The majority of the Project site would be mowed rather than cleared of vegetation. Mass grading of the Project site would not be needed for site preparation due to the relatively flat terrain. Spot grading would be employed for select solar array and storage facility components, including the BESS, and substation. Best management practices (BMPs), Project Design Features (PDFs), and DRECP Conservation and Management Actions (CMAs) (see Section 7) would be implemented during all grading, vegetation removal, and construction activities.

The BESS, operation and maintenance facility, and roads would require vegetation clearing, grading, and compaction. Inverter-transformer station locations would require light grubbing. Due to undulations within the Project site, some areas of grading would be needed within the solar arrays. Where solar site grading is necessary for discrete facilities or within the solar arrays, cut and fill would be balanced to the extent feasible. Some import and export of material would be necessary (refer to Table 2.1-1). Where excavation is required, most construction activities, including excavation for the PV arrays, transformer pads, and operations and maintenance facilities, would be limited to less than 6 feet in depth within the Project Site. However, some excavations, such as those undertaken for the installation of collector poles and substation piers may reach depths of 45 feet or more. The BESS foundation would require excavation up to a depth of 16 feet for piers.

Within the solar arrays that do not require grading, mowing and grubbing would be conducted to allow for construction access and installation. Mowing and grubbing involves surface removal of vegetation, including mechanical mowing and removal of larger vegetation by hand cutting/trimming to the ground surface. The intent is to leave root balls and seeds in place to allow for regrowth of native vegetation after construction. During mowing, collection of mowed vegetation would be considered for future mulching to minimize dust and soil erosion on portions of the site and enhance restoration. A qualified restoration biologist would determine where the collected mulching material should be applied.

Non-native vegetation would be removed to the extent feasible during the construction phase via manual and mechanical methods and herbicide application. Any non-native species found in the Project site that has not been evaluated for its potential to invade or alter surrounding natural lands would be considered a "weed" for purposes of the Restoration and Integrated Weed Management Plan implementation. Cutting, damaging, or uprooting microphyll woodland tree species would be avoided by Project design and BMPs, in accordance with the CMAs.

Table 2.1-1 Solar Facility Disturbance Details

Project Component	Cut/Fill Quantity	Type of Disturbance	Acreage
Fenced solar facility with arrays and access roads	Balanced	Solar array areas to be mowed and grubbed to provide for construction access and installation	5,999[a]
Inverter-transformer stations and electrical collection system	Balanced	Graded and backfilled to an elevation above surrounding grade to avoid flooding for inverter-transformer stations	Included within fenced solar facility with arrays and access roads acreages
BESS	54,466 cubic yards of import[b] material; excess soils from storm water basin excavations, if needed, to also be used	Graded and backfilled to an elevation above surrounding grade to avoid flooding	35
Operation and maintenance yard and facility	Balanced	Operation and maintenance site to be graded and compacted	11.5
Temporary parking and laydown	Balanced	Temporary parking and laydown areas to be graded and compacted	≤25

[a] The Project site includes an approximately 52-acre fenced area (for a total of approximately 6,052 acres) containing microphyll woodland that would be avoided. The 52 acres is not included within the "Fenced solar facility with arrays and access roads" acres.

[b] Estimated base for the areas requiring import of material is assumed to require a 12-inch depth.

Temporary Materials Laydown, Staging, and Storage

Temporary parking, staging, and laydown areas needed during construction would be graded and compacted. Several staging areas would be established within the Project site boundaries for storing materials, construction equipment, and vehicles. The staging areas would be surveyed and monitored by qualified biologists, archaeologists, and tribal monitors, as appropriate.

Access Roads

The existing surface area of the access roads would be cleared and compacted using on-site, native materials and may be covered in aggregate for dust or erosion control. The design standard for the access roads within the solar arrays would be consistent with the amount and type of use they will receive.

Solar Array Installation

The steel piles (i.e., cylindrical pipes, H-beams, or similar) supporting the PV panels would be driven into the soil using pneumatic techniques, similar to a hydraulic rock hammer attachment on the boom of a rubber-tired backhoe excavator. The piles typically are spaced 10 feet apart and would be driven into the ground to a depth of 9 to 15 feet.

For single-axis tracking systems, following pile installation, the associated motors, torque tubes, and drivelines (if applicable) would be placed and secured. Some designs allow for PV panels to be secured directly to the torque tubes using appropriate panel clamps. For some single-axis tracking systems and for all fixed-tilt systems, a galvanized metal racking system, which secures the PV panels to the installed foundations, would then be field-assembled and attached according to the manufacturer's guidelines. A portion of the PV panel racking and modules may be assembled at staging areas.

Inverters, Transformers, Substation, and Electrical Collection System

The Project site electrical collection system would involve installation of inverter-transformer stations from which the medium voltage cabling collection system would lead to the Project substation. Electrical inverter-transformer stations would be delivered to locations around the Project site and placed on concrete pads or steel skids, which would be elevated as necessary with steel piles to allow for stormwater flow beneath the inverter structures. Concrete for foundations of the inverter-transformer stations and other electrical collection facilities would be brought on site from a regional batching plant.

Medium-voltage cabling would be installed either underground or, for the low-impact design portion of the Project, overhead along panel strings in a cable management system to avoid the need for underground cabling and trenching. Cables, if underground, would be installed using direct bury equipment and/or typical trenching techniques, which involves use of a rubber-tired backhoe excavator, trencher, or a "one-pass" machine that digs the trench and lays the cable in a single action to minimize construction activity. Shields or trench shoring would be temporarily installed for safety to brace the walls of the trench if required based on the trench depth. After the excavation, cable rated for direct burial would be installed in the trench, and the excavated soil would be used to fill the trench and compressed to 90- to 95-percent maximum dry density or in accordance with final engineering.

Battery Energy Storage System
The enclosures for the BESS would be delivered to the Project site and installed on concrete foundations designed for secondary containment, as appropriate.

Operation and Maintenance Facility
The operation and maintenance buildings would be placed on a concrete foundation. The operations and maintenance area would include storage connex boxes, a septic system, laydown area, parking, and a water tank(s). The parking area would be scraped, compacted, and graveled, where needed.

Groundwater Well Drilling
The new groundwater well(s), if installed, would be drilled via a drill rig. The type of drill rig would depend upon the soil and subsurface conditions.

Construction Traffic, Equipment, and Workforce Requirements
All equipment and materials for the Project's construction would be delivered by flatbed trailers and trucks. Typical equipment that would be used to construct the Project includes front loaders, graders, scrapers, backhoes, and drill rigs.

Truck traffic would travel on designated truck routes and major streets, ultimately accessing the Project site from driveways off SR 98. Project components would be assembled on site. Traffic congestion resulting from construction activities would be temporary and could occur along area roadways as workers commute and materials move to and from the Project site. Materials deliveries during construction would travel up to 150 miles one way from sources to the Project site. The peak and average truck equipment and workforce are included in the assumptions for the Air Quality Technical Report.

The on-site workforce would consist of laborers, craftsmen, supervisory personnel, supply personnel, and construction management personnel. The on-site workforce is expected to reach a peak of approximately 1,000 individuals, with an average construction-related on-site workforce of 700 individuals. In addition, an estimated 80 individuals would be required to deliver materials and equipment to the Project site. The workforce is anticipated to come primarily from Imperial County, CA and Yuma County, AZ.

Drones may be periodically used during construction to monitor construction progress and assist in construction management. The maximum drone operation height would be restricted to 300 feet. A Federal Aviation Administration (FAA) approved and Unmanned Aircraft System certified pilot would operate the drones. The drones used would be battery-powered Matrice 300 RTK or Matrice 200 series drones or similar and would perform the inspections between approximately 76 to 300 feet above ground level. Operating hours for inspections would be between the hours of 10:00 a.m. and 3:00 p.m.

Construction Schedule and Work Hours
Construction of the Project is anticipated to begin as early as January 2028 and extend to December 2030 for a duration of 24 months. Construction would occur in several phases starting with mobilization, site preparation, solar array assembly, installation of electrical collection systems and, finally, testing and commissioning. After pre-construction surveys have been completed, the solar facility construction would begin with site preparation and construction of the Project solar site access roads, security fencing, temporary laydown yards, operation and maintenance building, parking area, and pad mounts for the transformers. Construction would continue with installation of on-site roads, construction of the Project substation, and assembly and installation of solar arrays and wiring. Commissioning of equipment would include testing, calibration of equipment, and troubleshooting. The Project substation equipment,

inverters-transmission station, collector system, and solar arrays would be tested in advance of commercial operations. Upon completion of successful testing, the equipment would be energized.

Construction equipment would typically operate during daylight hours between the hours of 7:00 a.m. and 7:00 p.m. Monday through Friday for a maximum of 8 hours per day per piece of equipment, daily. Given daytime heat conditions, a portion of PV panel installation could occur at night during the summer, extending construction up to 24 hours per day. Night work can improve working conditions for construction personnel by reducing exposure to extreme heat and is a common practice in Imperial County. Night work may also occur when necessary to interconnect the Project with minimal outages (e.g. when necessary to complete transmission line stringing over existing power lines, it may be preferable to complete at night when the grid impacts of de-energizing existing power lines are lesser). Weekend construction work is not expected to be required but may occur on occasion, depending on scheduling considerations.

Stormwater Pollution Prevention, Erosion, and Sediment Control

A Stormwater Pollution Prevention Plan (SWPPP) would be prepared by a qualified engineer or erosion control specialist and, once approved by the State Water Resources Control Board and a BLM hydrologist, would be implemented before and during construction. The SWPPP would reduce potential impacts related to erosion and surface water quality during construction activities and throughout the lifespan of the Project. The SWPPP would include Project information and erosion and sediment control BMPs. The BMPs would include stormwater runoff quality control measures, management for concrete waste, fugitive dust control, and construction of perimeter silt fences, as needed. The SWPPP would include types and locations of erosion control BMPs to be implemented.

Construction Site Stabilization, Restoration, and Wildlife Monitoring

Following the completion of major construction, temporarily stockpiled topsoils would be spread within disturbed areas to be revegetated with native plant species for the operations phase pursuant to an approved Restoration and Integrated Weed Management Plan. This plan would describe the Applicant's strategy to minimize adverse effects on native vegetation, soils, and habitat. Where necessary, native re-seeding or vertical mulching techniques would be used; however, it is anticipated that many species would regenerate post-construction due to preservation of desert vegetation during the construction phase. The Project Restoration and Integrated Weed Management Plan would be implemented during construction to ensure the control of non-native plant species under an approved Pesticide Use Proposal.

At the conclusion of restoration activities, and if determined beneficial by the U.S. Fish and Wildlife Service (USFWS), the California Department of Fish and Wildlife (CDFW), and the BLM biologists, previously relocated plants and wildlife would be reintroduced to the Project site and monitored for safety and health.

Construction Water Supply and Use

During the 24-month construction timeframe, it is anticipated that a total of up to 1,000 acre-feet would be used for dust control and suppression (including truck wheel washing) and other construction activities during. Soil binders (e.g., FSB-100, Plas-Tex, Soil Sement, SRB-1000) would also be used along Project roadways to minimize water usage. During construction, restroom facilities would be provided by portable units to be serviced by licensed providers.

Water for dust control during construction would be sourced from up to four on-site groundwater wells. If on-site wells are not able to supply the full water quantity required for construction, the water supply

would be supplemented from off-site local water purveyor(s) and trucked in from an off-site location up to 80 miles from the Project site (30 roundtrips per day maximum).[2]

Groundwater usage, both on and off site, would be metered daily and well testing conducted quarterly. Quarterly well testing would include wells dedicated to Project use, both on and off site, and selected monitoring wells.

Construction Waste Management

Disposal

No on-site waste disposal sites would be constructed. The Project would generate over an estimated 35 tons of solid waste (mostly concrete and scrap metal) during construction. Waste would be disposed of or recycled at the proper facilities, depending upon the type of waste. There are 11 active, permitted solid waste disposal and recycling facilities within a 50-mile radius of the Project site with a collective remaining capacity of over 15 million cubic yards.

Non-hazardous Waste

Non-hazardous construction waste generated by the Project would include excess concrete, excavated soil, scrap metal, wood, incidental office waste (e.g., paper, plastics), solar modules (i.e., glass, plastic, and metal), sanitary waste, and potable water. Construction sites would be kept in an orderly condition throughout the construction period by using approved enclosed refuse containers. Waste would be stored in a locked container within a fenced and secure temporary staging area. All refuse and trash would be removed from the site and disposed of in accordance with regulations. No open burning of construction trash would occur.

Construction materials would be sorted on-site throughout construction and transported to appropriate waste management facilities. Trucks and construction vehicles would be serviced at off-site facilities. Recyclable materials would be separated from non-recyclable items and stored until they could be transported to a designated recycling facility. Recycling would be completed in accordance with application California state requirements.[3] Wooden construction waste (such as wood from wood pallets) would be sold, recycled, or chipped and composted off site. Other compostable materials, such as vegetation, might also be composted off site if not maintained as mulch on site. Non-hazardous construction materials that cannot be reused or recycled would be disposed of at municipal or county landfills. All contractors and workers would be educated about waste sorting, appropriate recycling storage areas, and how to reduce landfill waste.

Hazardous Waste

Hazardous construction waste generated by the Project would include waste oil, oil filters, oil rags, solvents, fuels, welding materials, empty hazardous materials containers, spent batteries, and controlled substances. As regulated hazardous materials would be present on site, storage procedures would be dictated by the Hazardous Materials Management Plan and Spill Prevention Control and Countermeasures (SPCC) Plan that would be developed prior to construction. Spill prevention measures and secondary containment would be implemented as part of the Project where warranted; however, strict compliance

[2] 30 roundtrips assumes that all water supply would come from a(n) offsite source(s).

[3] As of January 1, 2020, CALGreen requires covered projects to recycle and/or salvage for reuse a minimum 65 percent of the non-hazardous construction and demolition waste or meet a local construction and demolition waste management ordinance, whichever is more stringent.

under 40 CFR 112 or CWA Section 311 would not be required because there would be no discharges to waters of the U.S.

The use, storage, transport, and disposal of hazardous materials used in construction of the facility would be carried out in accordance with federal, State, and County regulations. No extremely hazardous substances (i.e., those governed pursuant to Title 40, Part 355 CFR are anticipated to be produced, used, stored, transported, or legally disposed of as a result of Project construction. Material Safety Data Sheets for all applicable materials present on-site would be made readily available to on-site personnel.

Hazardous waste and electronic waste would not be placed in a landfill but, rather, would be transported to a hazardous waste handling facility (e.g., electronic-waste recycling). Battery waste from construction vehicles and equipment would be recycled or disposed of in accordance with regulations.

Construction vehicles and equipment would be refueled on the Project site in designated refueling areas. Liquids would be stored in secured areas (fenced or locked buildings on the Project site). During construction, aboveground storage tanks would be used, monitored, and maintained in accordance with regulations to minimize risk of pollution from spills. During construction, all construction pickup trucks would be equipped with spill kits to clean up any accidental spills of fuels or lubricants. Should a spill of greater than 1 gallon occur on BLM or BOR lands, the El Centro Field Office or the Southern California Area Office, respectively, would be notified within 24 hours. All incidents would be properly recorded and addressed in accordance with relevant regulations and landowner requirements.

Construction Fire Prevention

Fire extinguishers and other portable fire-fighting equipment would be available on site as well as additional water that would be available for fire suppression at the primary construction staging area. Workers would receive training regarding fire suppression equipment available on site and what to do in the event of a fire ignition as part of the WEAP.

Locations of portable fire extinguishers would include, but not be limited to, hot work areas, flammable storage areas, and mobile equipment such as work trucks and other vehicles. Fire-fighting equipment would be marked conspicuously and be accessible. Portable equipment would be routinely inspected, as required by local and federal laws, ordinances, regulations, and standards, and replaced immediately if defective or needing charge.

During construction, standard defensible space requirements would be maintained surrounding any welding or digging operations.

Construction Power

Power would be supplied from temporary generators during construction.

Project Gen-tie Transmission Construction

Overview

The Project gen-tie transmission system components would require grading and excavation for installation and construction. Import of soil would be needed for several of the components, as detailed in Table 2.1-2.

Table 2.1-2 Transmission Facility Disturbance Details

Project Component	Cut/Fill Quantity	Type of Disturbance
Project Substation	32,266 cubic yards of import[a] material; excess soils from storm water basin excavations to also be used	Graded and backfilled to an elevation above surrounding grade to avoid flooding

[a] Estimated base for the areas requiring import of material is assumed to require a 12-inch depth.

Project Substation
The substation area would be excavated for the transformer equipment as well as the control building foundation and oil containment area. Because each of the substation transformers would contain mineral oil, the substation would be designed to accommodate an accidental spill of transformer fluid by the use of containment-style mounting. The site area for the substation would be graded and compacted to approximately level grade.

Foundation designs for the Project substation and Project dead end structures would likely consist of drilled piers, concrete slabs, pedestals with footers, and/or directly embedded poles. Foundations for the substation would likely be formed with plywood and reinforced with structural rebar depending upon the foundation type. Loading and design assumptions for foundations would be consistent with industry standards and County/State/federal design codes. Each of the dead-end structures within the fenced substation would require foundations excavated to a depth of 20 feet or more. The remaining area within the fenced substation area would be graveled to a maximum depth of approximately 12 inches.

2.1.4 Operation and Maintenance

Solar Facility Operation and Maintenance

Activities
Upon commissioning, the Project would enter the operational phase. The solar modules at the site would operate during daylight 365 days a year. Operational activities at the Project site would include the following:

- Maintaining safe and reliable solar generation
- Wildlife monitoring as required
- Security
- Responding to automated electronic alerts based on monitored data, including actual versus expected tolerances for system output and other key performance metrics
- Communicating with the BLM, CEC, customers, transmission system operators, and other entities involved in facility operations

The Project site maintenance program would be largely conducted on-site during daytime hours. Equipment repairs could take place in the early morning or early evening when the plant would be producing the least amount of energy. Maintenance activities would originate from the on-site operation and maintenance facility and yard.

Maintenance activities would include panel repairs; panel washing; maintenance of transformers, inverters, BESS, and other electrical equipment as needed; road and fence repairs; and vegetation and pest management. The Applicant would recondition roads up to approximately once per year, such as after a heavy storm event that may cause destabilization or erosion. Revegetation would be the primary strategy to control dust across the Project site. Soil binders would be used to control dust on roads and elsewhere on the solar facility site, as needed. On-site vegetation would be managed to ensure access to all areas of the site and reduce fire risk. On-site vegetation may be trimmed approximately once every 3 years, as needed. Weed management and control in accordance with an approved Restoration and Integrated Weed Management Plan would be performed quarterly.

Solar arrays would be washed as needed (up to four times each year) using light utility vehicles with tow-behind water trailers, as needed, to maintain modules for optimal electricity production. Periodic rainfall may be sufficient to remove light dust layers, which would reduce the manual washing of panels. No chemical agents would be used for typical panel washing; potential non-toxic cleaning solutions may be occasionally used. Guidance from the panel manufacturer would be followed.

No heavy equipment would be used during normal operation. Operation and maintenance vehicles would include trucks (pickup and flatbed), forklifts, and loaders for routine and unscheduled maintenance, and water trucks for solar panel washing. Large heavy-haul transport equipment may be brought to the solar facility infrequently for equipment repair or replacement.

Long-term maintenance schedules would be developed to arrange periodic maintenance and equipment replacement in accordance with manufacturer recommendations. PV panels are warrantied for 35 years or longer and are expected to have a life of 50 or more years, with a degradation rate of 0.5 percent per year. Moving parts, such as motors and tracking module drive equipment, motorized circuit breakers and disconnects, and inverter ventilation equipment, would be serviced on a regular basis, and unscheduled maintenance would be performed as necessary.

Drones may be used to perform annual thermal and visual inspections of the overhead medium voltage collector line structures. The maximum drone operation height would be restricted to 300 feet. For further detail on drone use, see Section 2.4.5 Transmission Facility Operation and Maintenance.

Operation and Maintenance Workforce and Equipment

Commercial operation of the Project is anticipated from December 2028 to December 2058. During operation and maintenance of the Project, up to 24 permanent staff could be on site at any one time for ongoing facility maintenance and repairs and would be supported by up to 5 additional office staff. On average, approximately 18 permanent staff would be on-site daily, up to 14 associated with PV and BESS operation. Security personnel would be available on call. The operation and maintenance staff would be sourced from nearby communities in Imperial County. The operation and maintenance buildings would house the on-site security monitoring equipment, including security camera feeds for monitoring the project 24 hours per day although these feeds can be monitored remotely as well. Drones could be used during operations for inspection purposes. Helicopters could be used during operations only for emergency maintenance purposes.

A Bird and Bat Conservation Strategy (Appendix B) has been prepared and provides methods and timing for monitoring of bird and bat injuries and mortalities at the solar facility. Drones with artificial intelligence-enabled computer vision may be used for bird and bat monitoring, with the approval of the wildlife agencies.

Non-native and Invasive Species Management

Based on the aridity of the Project site, the overall low densities of vegetation present, use of a seed mix conducive to site conditions[4] and on-site vegetation management during operation and maintenance, it is not likely that vegetation would encroach upon structures so that access would become impaired. However, noxious weeds and other non-native invasive plant species could create a fire hazard if allowed to become established, and invasive weeds could also become problematic from an ecological perspective. Weed control activities would be implemented within the Project limits consistent with the project Restoration and Integrated Weed Management Plan.

Weed control activities would include both mechanical and targeted herbicide control methods, as necessary. Mechanical control activities would include hand trimming with a chainsaw. Non-motorized trimmers would be used in the vicinity of sensitive wildlife.

Following construction, use of herbicides may be necessary as part of an integrated pest management strategy to control the spread of invasive weeds. Herbicide control on the Project would involve the targeted use of BLM-approved herbicides to control weed populations when manual control methods are not successful in managing the spread of invasive plants, but only as reviewed and approved by USFWS and BLM biologists. County regulations regarding weed control would also be reviewed and any specific requirements would be incorporated into the weed control plan. All weed control using herbicides and adjuvants would be conducted with chemicals approved by BLM in California (including manufacturer application rates and use). The process for treatments would be characterized in the Restoration and Integrated Weed Management Plan, followed by a Pesticide Use Proposal (PUP) for specific chemical treatments, both approved by the BLM. On private lands, County regulations would be met for any use of herbicides. Herbicides would be applied using backpack sprayers and foliar application. Aerial spraying and truck-mounted spray rigs would not be utilized.

Additional procedures and precautions would be taken for herbicide application as follows:

- Application dates would be intended to cover the lifetime of the Project, beginning during the construction phase, if needed.
- Treatments would be as needed, upon emergence of the target weed species during the growing season. Growing seasons are typically during the winter months (November to April) but may include the summer months (July to September) if summer rainfall is sufficient to germinate target weed species during those months.
- The total number of applications is dependent upon the extent of invasive plants within the Project site, but it is expected that early- and late-season emergence of invasive plant species would require two or more treatment periods. Treatment periods are defined as one round of treatment coverage for all sites.
- The primary invasive plant species to be targeted include Mediterranean grass, Saharan mustard, Russian thistle, and saltcedar. If additional invasive plant species are identified during monitoring, these would also be targeted for control efforts.

[4] In accordance with the Restoration and Integrated Weed Management Plan to be prepared for the Project and reviewed and approved by the BLM, a restoration seed mix would be developed for the Project site that promotes local native plant species consistent with surrounding vegetation types. The seed mix would also be developed in consideration of operational constraints such as ground clearance at full panel tilt.

- Crew members who conduct weed treatment in the Project site would have extensive experience working around sensitive habitats and species. In addition, crews would be monitored by a restoration ecologist. Herbicides for weed control would be specifically applied to individual plants and not sprayed broadly across the Project site.
- Crews would work under the direct supervision of a licensed Certified Pesticide Applicator.
- Crews would adhere to strict application guidelines when applying herbicide during windy conditions to minimize drift and chemical contact with non-target vegetation or wildlife. Herbicide application would be suspended if winds are in excess of 10 miles per hour or if precipitation is occurring or imminent (predicted within the next 24 hours).

Operational Water Supply and Use

During the operation and maintenance phase, water would be required for panel washing and maintenance as well as for workforce facilities. During operation, the Project would require the use of approximately 50 acre-feet annually for panel washing (up to 4 times per year) and other uses. No wastewater would be generated during panel washing as water would be absorbed into the surrounding soil or would evaporate. Alternatively, waterless panel washing options would also be explored in coordination with regulatory agencies including the CEC, BLM, BOR, and Imperial County. Water for operations would be sourced from one of the up to four on-site groundwater wells near I-8 on the northern side of the Project site or from an off-site local water purveyor (maximum of 275 roundtrip truck trips per washing event).[5] Limited water would also be used for the operation and maintenance facility staff, including restrooms.

Groundwater usage would be monitored as described above.

Operational Waste Management

Disposal

The Project would generate over an estimated 35 tons of solid waste during operations and maintenance. Waste would be disposed of or recycled at one or more of the 11 facilities within 50 miles of the Project site, depending upon the type of waste.

Non-hazardous Waste

Non-hazardous operational waste generated by the Project during operation would include concrete, general operation waste (e.g., paper, wood, glass, insulation, plastics, solid waste), potable water, sanitary waste, scrap metal, spent solar panels, spent transformer components, and spent switchyard equipment. All refuse and trash would be removed from the sites and disposed of in accordance with regulations.

Operational materials would be sorted on-site and transported to appropriate waste management facilities. Recyclable materials would be separated from non-recyclable items and stored until they could be transported to a designated recycling facility. The Project would employ third parties to manage appropriate handling and disposal of nonhazardous solid waste during operations and maintenance. Recycling would be completed in accordance with application California state requirements.

[5] Assumes that each washing event requires ~10 acre-feet, each water truck holds 12,000 gallons and all water would come from an off-site source(s).

Hazardous Waste

Hazardous operational waste generated by the Project would include waste oil, oil filters, oily rags, solvents, empty hazardous materials containers, fuels, welding materials, spent solar panels, spent lead batteries, and controlled substances. The use, storage, transport, and disposal of hazardous materials used in operation and maintenance of the facility would be carried out in accordance with federal, State, and County regulations. No extremely hazardous substances (i.e., those governed pursuant to Title 40, Part 355 CFR) are anticipated to be produced, used, stored, transported, or legally disposed of as a result of Project operations.

Hazardous waste and electronic waste would not be placed in a landfill but, rather, would be transported to a hazardous waste handling facility (e.g., electronic-waste recycling). Battery waste from construction vehicles and equipment would be recycled or disposed of in accordance with regulations.

Operation Fire Prevention

Fire protection would be provided to limit risk of personnel injury, property loss, and possible disruption of the electricity generated by the Project. Fire protection would include minimizing flammable materials in the solar field through proper vegetation management.

Solar arrays and PV modules are fire-resistant as they are constructed largely out of steel, glass, aluminum, or components housed within steel enclosures. As the tops and sides of the panels are constructed from glass and aluminum, PV modules are not vulnerable to ignition from firebrands or from wildland fires. In a wildfire situation, the panels would be rotated and stowed in a panel-up position. The rotation of the tracker rows would be controlled remotely via a wireless local area network. All trackers could be rotated simultaneously in a hazard situation. Fire safety and suppression measures, such as smoke detectors and extinguishers, would be installed and available at the operations and maintenance facility, if required.

A Fire Management and Prevention Plan was prepared in coordination with the BLM to identify the fire hazards and response scenarios that may be required during operation of the solar facility. This includes information on response to accidents involving downed power lines or accidents involving damage to solar arrays and facilities. The plan includes measures to safeguard human life, prevent personnel injury, preserve property, and minimize downtime due to fire or explosion. Of concern would be fire-safe construction, reduction of ignition sources, control of fuel sources, availability of water, and proper maintenance of firefighting systems. This plan will be updated with any additional engineering and technology-specific requirements as the Project continues.

The Tesla megapack is an example of a battery storage technology that may be selected for the Project. The Tesla megapack does not include a built-in smoke, gas, or fire detection or suppression devices. Tesla products test to standards, including UL 1973, that ensure the battery modules are resistant to single cell thermal runaway propagation or otherwise must prove that a failed cell inside would not cause a fire outside the system. Each megapack battery module includes individually fused cells and dedicated power electronics that electrically and galvanically isolate the batteries from the common DC bus. The battery modules arrive pre-installed and do not connect live high voltage DC elements on site. Each battery module includes a built-in isolated DC-DC converter and an active fuse that provides protection in case of hazardous conditions. These features are controlled by the module's dedicated battery management system, as required by the California Fire Code, which ensures that the cells are operated within the approved limits. The battery management system monitors and balances cell voltages, currants, and temperatures. The system must transmit an alarm signal if potentially hazardous temperatures or other conditions such as short circuits, over voltage, or under voltage, are detected. If required by the relevant

authority having jurisdiction, third-party multi-spectrum IR heat or flame detectors can be installed externally at the site-level.

Fire detection drawings for the BESS would be developed as detailed engineering continues. The BESS yard will have thermal detection cameras installed external to battery containers, strategically placed to detect fires. These cameras will be remotely monitored 24 x 7. The BESS equipment to be used shall be tested and proven to not need built-in smoke, gas or fire detection or suppression devices. The BESS equipment will be designed to mitigate an over-pressure event and deflagration through the use of over-pressure vents and a sparker system. These safety features will be tested to demonstrate effectiveness in protecting against deflagrations in a UL9540A large-scale fire testing where no explosion hazards should be observed (flying debris or explosive discharge of gases). The applicant will also prepare an emergency response plan for the BESS facility in compliance with SB 38.

Operational Power
Power would be supplied from an existing 12 kV IID transmission line approximately 725 feet (0.15 mile) south of the Project site.

Substation and Gen-Tie Line
IP Perkins, LLC, would operate and maintain the Project substation and gen-tie line. Drones could be used during operations for inspection purposes in accordance with the Flight Operations Plan. Regular helicopter use is not expected during routine operations.

Drones may be used to perform annual thermal and visual inspections of the gen-tie line and overhead medium voltage collector line structures. The maximum drone operation heights would be restricted to 300 feet, which is higher than the maximum height of the gen-tie line structures. Annual visual inspections are required by the North American Electric Reliability Corporation FAC003-4 Transmission Vegetation Management and utilized for preventative maintenance to reduce risk of equipment malfunction or failure. Drone inspections would be performed once per year between September and November to avoid bird nesting season. A team of two Federal Aviation Administration (FAA) approved and Unmanned Aircraft System certified pilots would drive a truck on the gen-tie access roads as close to the inspection sites as is safe and feasible, park on the road, and begin the inspection. The drones used would be battery-powered Matrice 300 RTK or Matrice 200 series drones or similar and would perform the inspections between approximately 76 to 300 feet above ground level. Operating hours for inspections would be between the hours of 10:00 a.m. and 3:00 p.m. The drone pilots would work in pairs with one flying and one spotting for safety. The use of drones for gen-tie line infrastructure inspections would minimize the need for larger vehicles, such as bucket trucks. No ground disturbance would occur during drone use.

2.1.5 Project Termination, Rehabilitation, and Decommissioning

As the facility's equipment has a useful life estimated to be 50 years, at the end of the initial power purchase agreements' contract terms of approximately 10 to 25 years, the power from the facility would likely be sold to another buyer and/or repowered to increase plant efficiency. If the Project continues to operate, the long-term operations would be the same as described above.

At the end of the Project's useful life, the solar arrays, and appurtenant facilities would be decommissioned and dismantled. The Project's decommissioning phase is anticipated to occur from December 2077 to December 2079. Upon ultimate decommissioning, most Project components would be suitable for recycling or reuse, and Project decommissioning would be designed to optimize such salvage as circumstances allow and in compliance with all County, State, and federal laws and regulations as they

exist at the time of decommissioning. Following removal of the aboveground and buried Project components, the site would be restored to pre-solar facility conditions, or such condition as appropriate in accordance with CEC, BLM, and BOR policy after decommissioning.

Decommissioning activities would require similar equipment and workforce as construction but would be less intensive. The following activities would be involved:

- Dismantling and removal of all above-ground equipment (i.e., PV panels, track units, transformers, inverters, Project substation, operations and maintenance buildings, etc.)
- Excavation and removal of all above-ground cables
- Removal of solar array posts
- Removal of primary roads (decompaction and removal of aggregate or gravel, if used)
- Break-up and removal of concrete pads and foundations
- Abandonment of groundwater well(s), if installed
- Removal of septic system and leach field
- Removal of 34.5 kV distribution lines
- Scarification of compacted areas
- Restoration of Project disturbance areas

Once removal of all Project equipment is completed, disturbed areas would be prepared for revegetation with the intent to minimize dust, erosion, and weed infestations. These measures are fully described in the Project's Decommissioning and Revegetation Plan and are summarized here. Successful revegetation of the site would involve returning vegetation and soils to their preconstruction conditions to the extent practicable. Revegetation would include restoring total vegetative cover and relative cover of native and nonnative plant species to levels observed in reference, undisturbed areas in the immediate site vicinity. Additionally, the soil surface would be stabilized to reduce dust and erosion to a degree at or below natural background levels and reduce cover of nonnative plants. A monitoring and maintenance plan would be implemented to evaluate the success of revegetated areas associated with the Project facilities, identify the need for adaptive management measures, and make a final determination regarding revegetation success to release IP Perkins, LLC, and IP Perkins BAAH, LLC, from further monitoring and revegetation actions. The plan would include quarterly and annual reporting for up to five years. The details of the monitoring and maintenance plan are included in the Project's Decommissioning and Revegetation Plan.

2.2 Project Location

(5) The location where the project or activity is to occur or to be conducted.

The Project site is located within BLM-administered land, private lands, and U.S. Bureau of Reclamation-administered lands in unincorporated Imperial County, California (Figure 1). Imperial County is located in southern California, in the southwestern portion of the Colorado Desert. The site is bounded by Interstate 8 (I-8) to the north and State Route 98 (SR 98) to the south. The area immediately to the west of the Project site is vacant natural land with farmland located 2.5 miles west of the Project site. The center of El Centro, California, is approximately 20 miles to the west and Mexicali, Mexico, is approximately 15 miles to the southwest. The All-American Canal is directly south of the Project site, parallel with SR 98.

The site is located in a region characterized by undeveloped desert and agricultural uses. The Imperial Valley, which is dominated by agricultural land, is located an estimated 2.5 miles west of the Project site. The Imperial Sand Dunes, the largest mass of sand dunes in California, is located approximately 9 miles east of the Project site. The entirety of the Project footprint within BLM-administered public land is designated Development Focus Area (DFA) under the DRECP and its associated Record of Decision (ROD). The private land within the Project site is designated Recreation/Open Space by the Imperial County General Plan and zoned Open Space/Preservation by the Land Use Ordinance of the County of Imperial, Division 5.

3 Listed Species Status in the Project Site

3.1 Western Burrowing Owl Natural History, Distribution, and Habitat Requirements

The Western burrowing owl (*Athene cunicularia hypugaea*) inhabits arid lands throughout much of the western United States and southern interior of western Canada (Haug, Millsap, and Martell 1993). Suitable habitat for western burrowing owl includes open habitat with available burrowing opportunities, including agricultural fields (active and fallow), desert saltbush, ephemeral washes, ruderal areas, and creosote scrub.

Burrowing owls are unique among the North American owls in that they nest and roost in abandoned burrows, especially those created by ground squirrels, kit fox, desert tortoise, and other wildlife. Burrowing owls have a strong affinity for previously occupied nesting and wintering sites and will often return to previously used burrows, particularly if they had successful reproduction in previous years (Gervais, Rosenberg, and Comrack 2008). They generally depend on other species to dig suitable burrows for use but may also use anthropogenic surrogate burrows such as rubble piles or drainage pipes. If formerly occupied burrows are badly damaged or collapsed, burrowing owls cannot repair them and must seek alternate sites. The southern California breeding season (defined as the time from pair bonding of adults to fledging of the offspring) generally occurs from February to August, with peak breeding activity from April through July (Haug, Millsap, and Martell 1993).

In the Colorado Desert, burrowing owls generally occur at low densities in scattered locations, but they can be found in much higher densities near agricultural lands where rodent and insect prey tend to be more abundant (Gervais, Rosenberg, and Comrack 2008). Burrowing owls tend to be opportunistic feeders, and a large portion of their diet consists of beetles, grasshoppers, and other large arthropods. The consumption of insects increases during the breeding season (Haug, Millsap, and Martell 1993). Small mammals, especially mice and voles (*Microtus* and *Peromyscus* spp.) are important food items. Other prey animals include herpetofauna, young cottontail rabbits, bats, and birds such as sparrows and horned larks.

3.2 Habitat Conditions in the Project Site

The Project site is within the range of the western burrowing owl and provides abundant breeding, foraging, and overwintering habitat for the species. Burrowing owls commonly occupy desert scrub habitats, which cover the entirety of the Project site. The presence of burrows and several burrowing owl and sign within the Project site indicates that the habitat is suitable for burrowing owl. The site is far enough south in the western burrowing owl's range to have a climate warm enough to support overwintering as well as breeding. The remote nature of the site also lends itself to burrowing owl occupancy. Roads are present within and around the site, but burrowing owls are tolerant to roads and can be found occupying burrows located within road berms. Because of the presence of scrub vegetation

and soils that are suitable for burrowing, the site should provide an appropriate food base for burrowing owl, including insects and small mammals and reptiles.

3.2.1 Vegetation Communities

The primary vegetation community within the Project site, making up nearly 99 percent of the site, is Mojave creosote bush scrub. The rest of the site is made up of alkali goldenbrush desert scrub. Both of these community types are appropriate habitat for burrowing owl, as described above. The vegetation communities in the Project site and their acreage are listed in Table 3.2-1 and are described in further detail below. Mapped vegetation communities are shown on Figure 3.

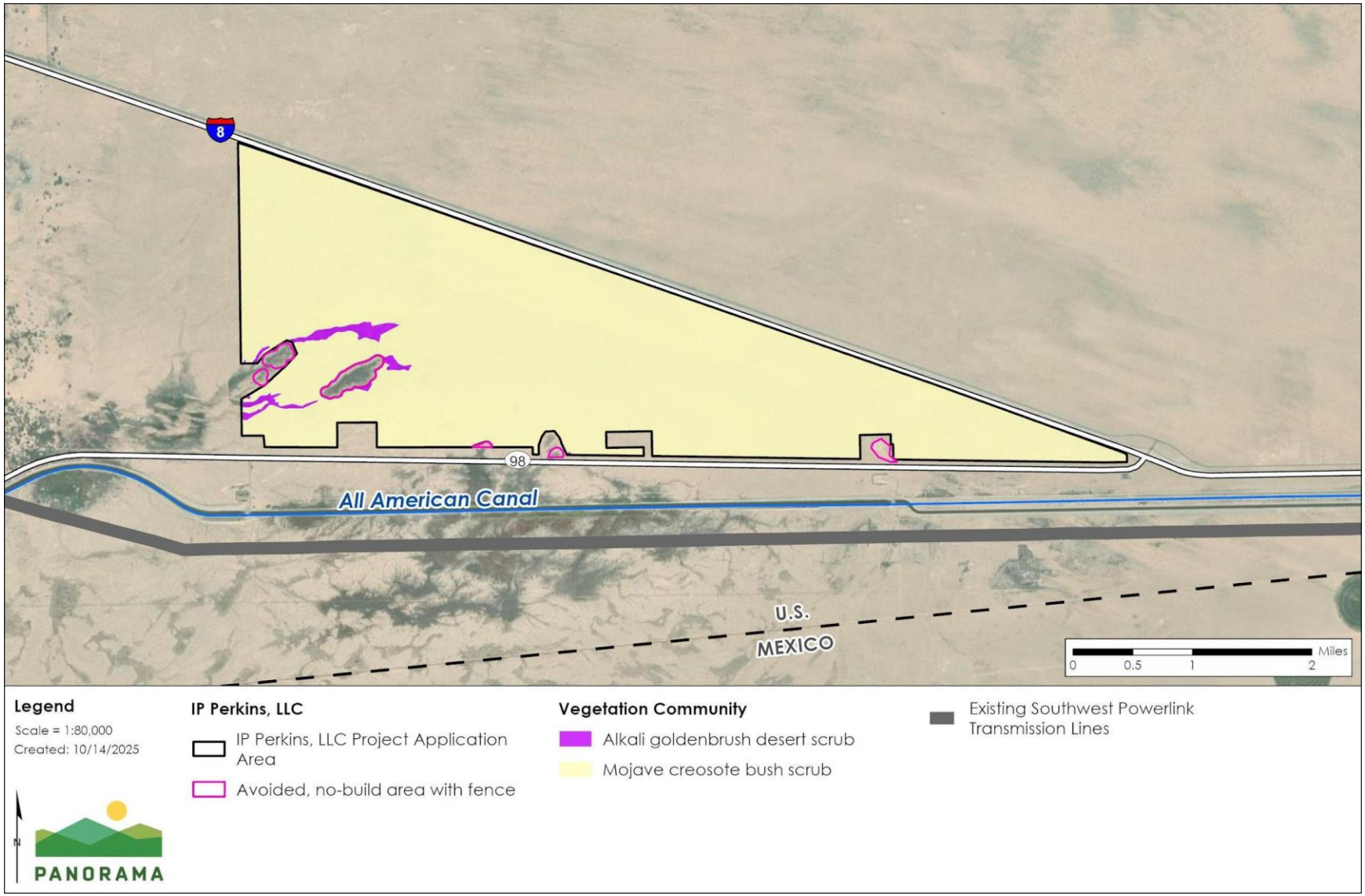
Table 3.2-1 Vegetation Communities Present in the Project Site

Vegetation/Land Cover Type	Acreage within Project Site
Alkali goldenbrush desert scrub	81
Mojave creosote bush scrub	5,918

Mojave creosote bush scrub. This vegetation community is the dominant vegetation community in the Project site and is suitable burrowing owl breeding, foraging, and overwintering habitat. It occurs on well-drained, secondary soils of slopes, fans, and valleys and is the basic creosote bush scrub habitat of the Colorado Desert (Holland 1986). On the Project site, shrubs are sparsely distributed and creosote either dominates the shrub canopy or co-dominates with white bursage. Emory's indigo (*Psorothmanus emoryi*), white bursage (*Ambrosia dumosa*), cheesebush (*Ambrosia salsola*), and ephedra (*Ephedra* spp.) occur in some areas with primarily an understory of annual plants.

Alkali goldenbush desert scrub (Mesquite thickets). Within the Project site, alkali goldenbush forms an open shrub layer (up to 35% cover). The tree layer, consisting of mesquite, is mostly sparse if present. Stands generally have low vegetation cover and may be sparse (<10% total vegetation). Sites are moist or seasonally dry flats and margins of intermittently saturated vegetated swales. Soils are variable and derived from alluvium and dune sand; textures include sand and loamy sand but include sites with finer-textured soil. Because the tree cover is sparse, this desert scrub community remains suitable habitat for burrowing owl.

Figure 3 Vegetation Communities



3.3 Western Burrowing Owl Occurrence in the Project Site

Focused surveys for burrowing owl were conducted in the spring of 2023 and 2024 (breeding season) and fall/winter of 2024 (non-breeding season). Individuals and active burrows were observed in locations spread throughout the majority of the Project site. Breeding season observations, shown on Figure 4, included seven live individuals (three of which were at a burrow) and 13 burrows with sign (pellets, whitewash, or feathers). Two carcasses were also found on-site. Non-breeding season observations, shown on Figure 5, included two live individuals, 47 burrows with sign, and two non-burrow locations with sign. Detailed survey methods and results are contained in the Project's Biological Resources Technical Report, which is provided in Appendix A.

Figure 4 Burrowing Owl Observations – Breeding Season Results

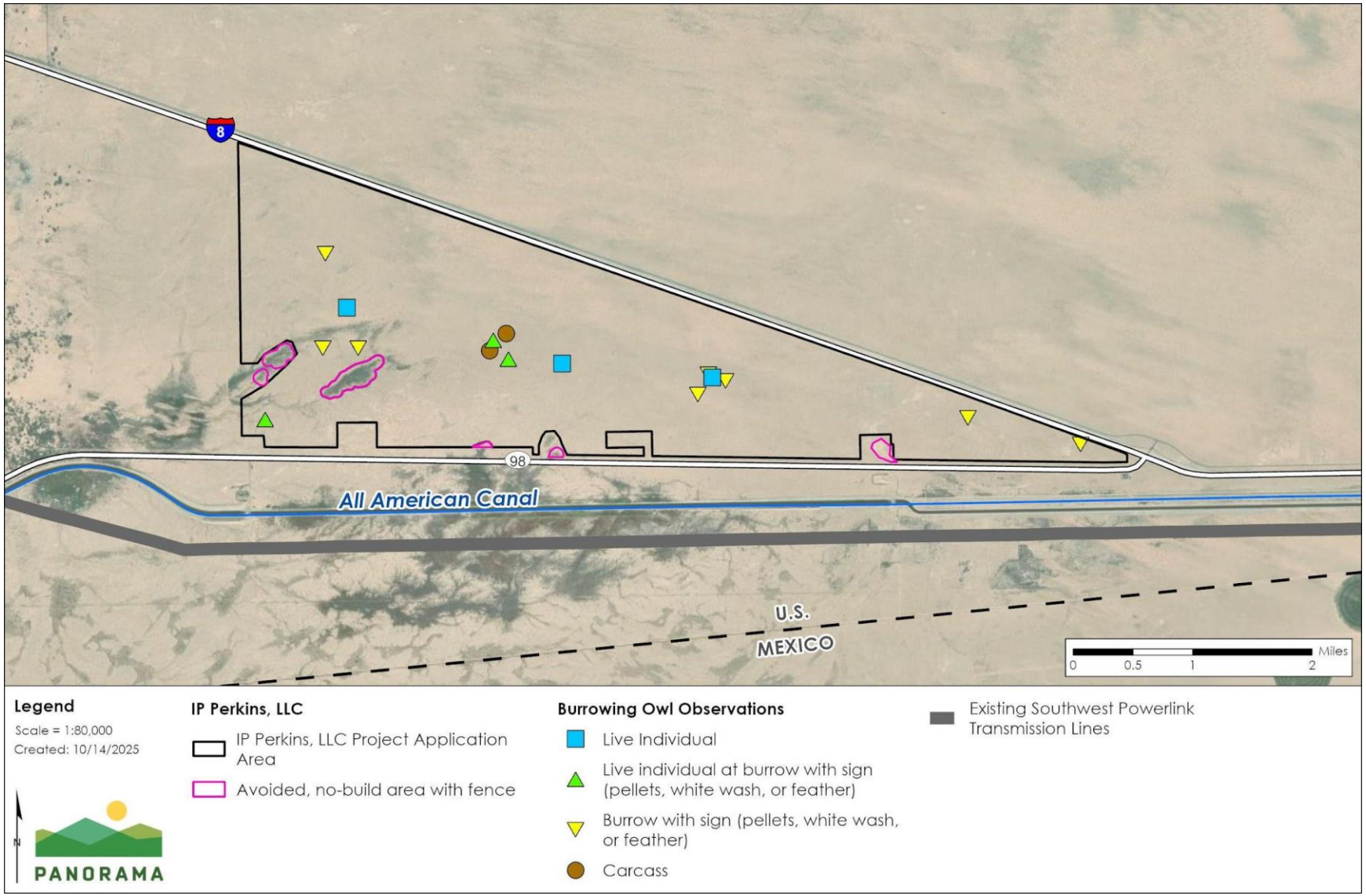
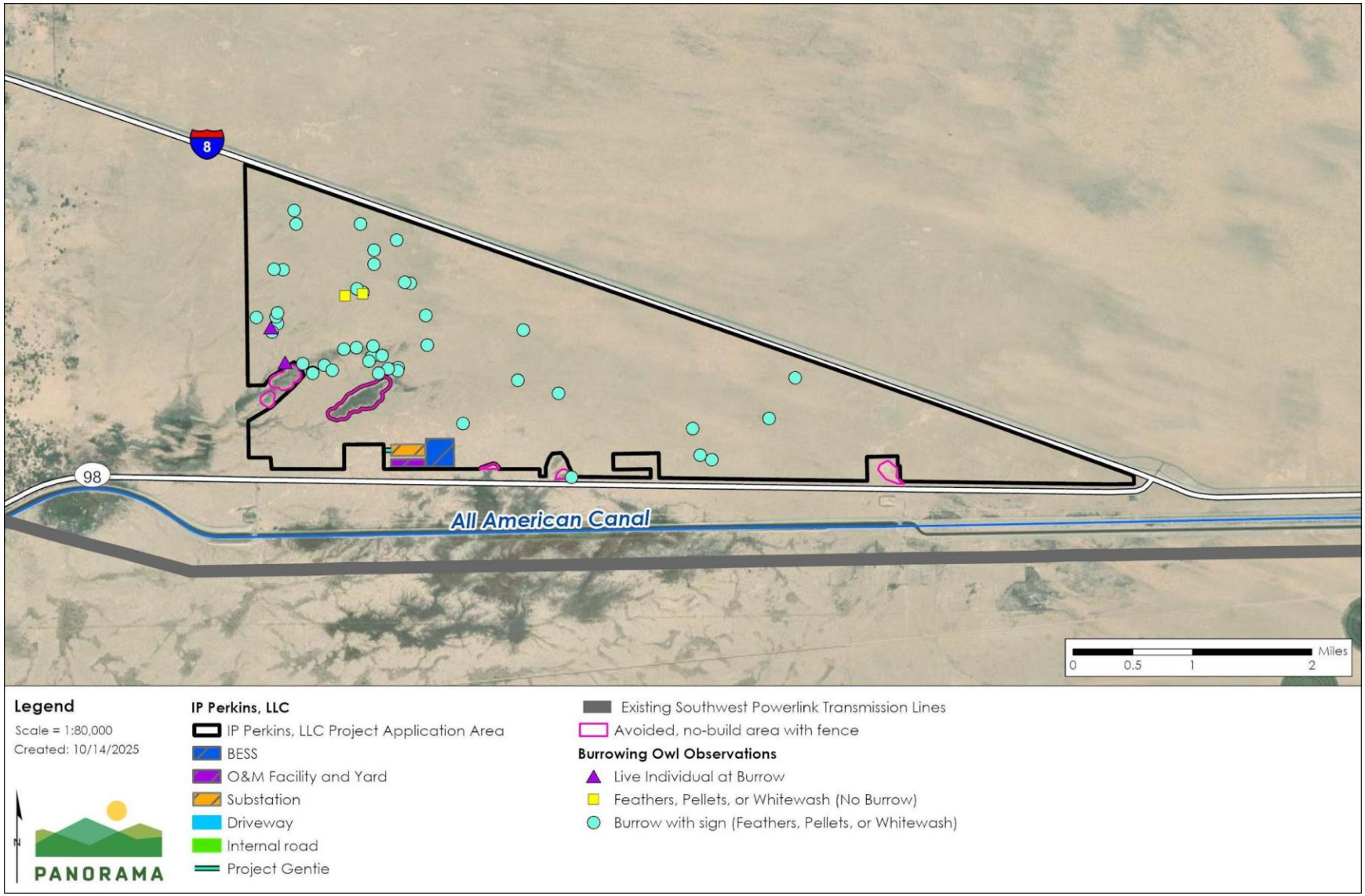


Figure 5 Burrowing Owl Observations – Non-Breeding Season Results



4 Anticipated Western Burrowing Owl Take

(6) An analysis of whether and to what extent the project or activity for which the permit is sought could result in the taking of species to be covered by the permit.

"Take," as defined in the California Fish and Game Code Section 86, is to "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill." To date, a minimum of nine western burrowing owls and 47 burrowing owl burrows have been documented on the Project site. Construction would occur in occupied burrowing owl habitat and could lead to take of these individuals. Desert burrowing owls or their burrows (nests) could be harmed during clearing or grading activities. Project activities could also cause direct mortality, injury, or harassment of burrowing owls or their burrows because of vehicle strikes. Other direct effects could include disruption of western burrowing owl behavior during construction or operation of facilities, disturbance by noise or vibrations from the heavy equipment, and injury or mortality from encounters with workers' or visitors' pets. Operation and maintenance of the facility would require panel washing approximately four times per year, and vegetation management, road maintenance, and erosion repair as needed. Maintenance workers driving to and from the Project site have the potential to injure or kill western burrowing owl if one were to occur on Project access roads.

The Applicant would implement measures to reduce the potential for incidental take of western burrowing owl during construction, operation, and decommissioning of the Project. A biological monitor would be on-site during construction to avoid direct injury or mortality of western burrowing owls, but it may become necessary to relocate one or more individuals from harm's way during construction. Relocation would become necessary if an occupied burrow is found within the active construction zone. Burrowing owl relocation would be conducted in accordance with the Project's Wildlife Protection and Translocation Plan, which is provided with this application as Appendix C. The method for relocation would be passive relocation, wherein a one-way door would be installed on the occupied burrow to evict the burrowing owl(s) without handling it. Biologists would ensure that enough suitable, unoccupied natural burrows are available in the off-site area for the evicted owl(s) to occupy. If there are not enough suitable burrows, artificial burrows would be constructed such that there would be a total of two suitable burrows for each burrowing owl evicted. Although this passive relocation method of evicting burrowing owls does not involve capture or handling of the owls, this eviction method still constitutes take. Therefore, the Applicant requests authorization to take western burrowing owl for the purpose of constructing the Project within burrowing owl habitat, which would require evicting burrowing owl from the Project site and out of harm's way during construction and decommissioning activities. In addition, the Project has the potential for operation of the facility to require eviction of burrowing owl if one were occurring in an area where maintenance activities were required and there is the potential for operation to cause collisions with Project facilities.

Pre-construction surveys for burrowing owls, possible burrows, and sign of owls (e.g., pellets, feathers, whitewash) will be conducted throughout each work area no more than 30 days prior to construction. If burrowing owls or active burrows are found within the solar facility, avoidance and setback distances will be implemented within the solar facility. Disturbance of owls or occupied burrows during the breeding season from February 1 through August 31 will be avoided. Unoccupied burrows will be excavated and

filled in under the supervision of the Lead Biologist prior to site preparation. Passive relocation will occur only during the non-breeding season, generally September 1 to February 1, but will be adjusted during the late summer months (August and September) if breeding activities are not observed at any occupied burrows and as detailed in the Wildlife Protection and Translocation Plan (Appendix C).

Avoidance and minimization measures would be put into place to reduce potential for direct injury or mortality of western burrowing owl, including working outside of breeding and nesting season, having an on-site biological monitor during construction, limiting construction work to daylight hours, and maintaining slow vehicle speed limits (e.g., 25 miles per hour) on access roads and within the Project site. Wildlife protection measures and monitoring requirements that will be identified in detail in Section 7 (Minimization and Mitigation Measures) will minimize potential take of western burrowing owl. The Applicant does not anticipate lethal take during any phase of the Project. However, take due to eviction of burrowing owls from burrows is anticipated due to the presence of burrowing owl in the area. Because 47 burrows were observed with sign of western burrowing owl and the Project would occur over a period of 50 years, it is assumed that up to 94 western burrowing owl could be evicted from the Project site during construction, operation, and decommissioning.

5 Impacts Analysis

(7) An analysis of the impacts of the proposed taking on the species.

Without mitigation or avoidance measures (presented in Section 7 [Minimization and Mitigation Measures]), development of the Project could cause mortality or injury to western burrowing owl present during construction or operations and maintenance (see discussion of take in Section 4). To date, nine individuals have been found on-site during biological surveys in areas planned for Project develop, suggesting that a minimum of nine individuals have the potential to experience take from the Project. The Project would involve the modification and/or removal of suitable and potentially occupied burrowing owl habitat, including potentially occupied nest burrows, overwintering burrows, and satellite burrows (shown on Figure 4).

Direct impacts to burrowing owl during construction could include injury or mortality from collisions with construction equipment and vehicles when individuals are flushed from cover during construction disturbance. Displaced individuals may then be unable to find adequate cover from predation or forage effectively in new, unfamiliar places. Additionally, there is potential for nests containing eggs or nestlings to be lost either due to crushing from construction machinery or from nest abandonment when parents flee the area. There is also potential for adults to be crushed within burrows since adults often flee to underground burrows for safety.

Individuals encountered during construction may be evicted from the Project site using one-way doors and burrow excavation to avoid direct mortality from the Project. There is abundant suitable habitat surrounding the Project site for relocation, and biologists will assess the availability of suitable natural replacement burrows in the off-site habitat area prior to eviction. If not enough natural burrows are present, then artificial burrows will be constructed. Studies have shown that adults can be successfully relocated, but nests have a high probability of failing in the first year following relocation if careful timing of the relocation is not taken into account (Doublet et al. 2023). So, while direct mortality of burrowing owl would be avoided through eviction from the site, the Project could result in lower reproductive success in the burrowing owl population during and in the year following construction. However, as shown by California Natural Diversity Database (CNDDB) occurrence records from the area (CNDDB 2023), the local population surrounding the Project site is strong and alternative habitat options are available. Therefore, a temporary reduction in reproductive success from a few mating pairs would have a minimal effect on the ability of the overall local population to survive and reproduce.

During operations and maintenance, Project facilities could cause direct impacts to burrowing owl through collisions with tall vertical structures and overhead electrical lines. Vertical open pipes or tubing could attract burrowing owl, which could become trapped inside. Uncovered water tanks or other water holding structures could attract burrowing owls that could subsequently become trapped within the water and drown. However, this risk would be minimized by covering exposed pipes and water sources and providing escape ramps when covering is not possible. Additionally, all transmission lines and above ground collection and distribution lines would be constructed according to Avian Power Line Interaction Committee (APLIC) guidelines to minimize the risk of burrowing owl collision with power line equipment.

This may include anti-perching devices to discourage birds from perching or nesting on poles and permanent markers or bird flight diverters to visually warn birds of the presence of power lines. With mitigation, the impact of the proposed taking by the Project would not have a significant impact on the overall species population.

In addition to direct impacts, the Project would indirectly impact burrowing owl through a reduction of habitat. The Project would impact 5,745.6 acres of natural habitat, as shown in Table 3.3-1, all of which is burrowing owl habitat. The Project would mitigate for impacts to native vegetation and habitat at a 1:1 ratio. Therefore, indirect impacts to burrowing owl from the loss of habitat would not have a significant impact on the overall species population.

Table 3.3-1 Vegetation Communities and Land Cover Impacted by the Project

Vegetation/Land Cover Type	Amount Impacted by Project (acres)
Alkali goldenbrush desert scrub	81
Mojave creosote bush scrub	5918
Total	**5,999**

6 Jeopardy Analysis

(8) An analysis of whether issuance of the incidental take permit would jeopardize the continued existence of a species. A complete, responsive jeopardy analysis shall include consideration of the species' capability to survive and reproduce, and any adverse impacts of the taking on those abilities in light of: (i) Known population trends; (ii) Known threats to the species; and (iii) Reasonably foreseeable impacts on the species from other related projects and activities.

Threats to burrowing owl include habitat loss due to development and agriculture, habitat becoming less suitable as burrow-digging mammals are lost and as disturbance by humans and domestic animals increases, pesticide exposure, invasive predators, and collisions with man-made objects. Population declines and range contractions have been documented in the United States and Canada since at least the late 1960s. In California, the species has been declining for decades and is nearly extirpated from all of coastal southern California (NatureServe 2024).

Project construction, operations and maintenance, and decommissioning could affect western burrowing owl in the Project site. Cumulative projects would have the potential to similarly impact the species where those projects' activities occur in its presence or habitat. The cumulative impact from the renewable energy projects proposed in the region is potentially significant. The Project's implementation of best management practices (BMPs), project design features (PDFs), and Conservation and Management Actions (CMAs), as detailed in Section 1 – Minimization and Mitigation Measures, and management plans and inclusion of compensatory habitat mitigation would avoid, minimize, or mitigate the Project's contribution to cumulatively significant impacts on western burrowing owl to less than considerable. Based on the current status, environmental baseline for the Project site, effects of the proposed Project, and cumulative effects on borrowing owl, the proposed Project is not likely to jeopardize the continued existence of burrowing owl for the following reasons:

- The Applicant will implement numerous measures (see Section 7, Proposed Mitigation) to ensure that most burrowing owl are relocated out of the Project footprint and that injury and death of burrowing owl is minimized (i.e., clearance surveys, relocation, translocation, and employing qualified biologists).
- The Applicant will implement weed management and soil stabilization techniques to reduce the spread of invasive nonnative plants in the Project site.
- Given the small number of burrowing owl potentially affected by the Project, there is no information to indicate that development of the Project would appreciably reduce the burrowing owl population levels in the region.
- Few, if any, burrowing owl are likely to be injured or killed as a result of relocation.
- Though the Project would reduce the amount of available burrowing owl habitat, suitable habitat is available adjacent to the Project.

7 Minimization and Mitigation Measures

(9) Proposed measures to minimize and fully mitigate the impacts of the proposed taking.

This section lists the type of avoidance, minimization, and mitigation (i.e., biological resource protection) measures that would be included as part of the Perkins Renewable Energy Project. Implementation of these types of measures would be expected to minimize and offset potential adverse effects to western burrowing owl.

Mitigation measures are proposed to fully mitigate the project's impacts to western burrowing owls and their habitat, including any potential burrowing owl take, and compensate for habitat loss. Mitigation measures would also minimize the likelihood of harm or mortality to burrowing owls and other wildlife, and minimize, mitigate, or offset adverse habitat impacts such as erosion or weed infestations.

7.1 Avoidance and Minimization Measures

Project avoidance and minimization measures were developed as part of the Project's CEC Opt-In Application (Appendix D), Bird and Bat Conservation Strategy (Appendix B), and Wildlife Protection and Translocation Plan (Appendix C). The Project will also comply with the Conservation and Management Actions (CMAs) contained within the Land Use Plan Amendment (LUPA) for the Desert Renewable Energy Conservation Plan (DRECP); these measures are attached as Appendix E. The following mitigation measures will be implemented to avoid or minimize impacts to western burrowing owl. Mitigation measure titles match the titles in the Opt-In Application and the other plans.

7.1.1 Project Design Features

The following are the Project Design Features (PDFs) for Biological Resources from the CEC Opt-In Application. PDFs that apply to general biological resources and to western burrowing owl specifically are summarized below. Text not related to burrowing owl has been omitted. The full text of these measures may be found in the CEC Opt-In Application's Preliminary Best Management Practices and Project Design Features, which are attached to this application as Appendix D.

PDF BIO-1 Biological Monitoring

Monitoring to ensure conformance with conditions of approval, including effective protection and avoidance of biological resources, shall be implemented by the Applicant. During construction and decommissioning, the Applicant shall employ a biological monitoring team to oversee Project activities. Any activity that may impact vegetation, wildlife, and sensitive resources shall be monitored to ensure compliance with all mitigation measures for biological resources. The biological monitoring team will be approved by the BLM, BOR, CEC, CDFW, and USFWS and shall consist of a lead biologist and one or more biological monitor. The Lead Biologist, or during operations and maintenance, the Applicant's compliance manager, shall report regularly to the BLM, BOR, CEC, CDFW, and USFWS to document the status of compliance with biological mitigation measures.

PDF BIO-2 Worker Environmental Awareness Training

The Lead Biologist shall prepare and implement a Worker Environmental Awareness Program (WEAP). The Applicant shall be responsible for ensuring that all workers at the site receive WEAP training prior to beginning work on the Project and throughout construction and operations. The WEAP will include discussions of biological resources and their identification and protection as well as safety guidelines.

PDF BIO-3 Minimization of Vegetation and Habitat Impacts

Prior to construction activities, operations and maintenance, or decommissioning, authorized work areas shall be clearly delineated by the contractor. Construction activities shall minimize soil and vegetation disturbance to minimize impacts to soil and root systems. Upon completion of construction activities in any given area, all unused materials, equipment, staking and flagging, and refuse shall be removed and properly disposed of. Hazardous materials shall be handled, and spills or leaks shall be promptly corrected and cleaned up according to applicable requirements. Vehicles shall be properly maintained to prevent spills or leaks.

Low-Impact Site Preparation. Native vegetation shall be allowed to recover from rootstocks and seed bank wherever facilities do not require permanent vegetation removal within the perimeter fenceline of the solar facilities and under solar arrays. Vegetation height and density shall be managed as needed for operations and maintenance and fire safety, but vegetation management shall otherwise focus on maintaining habitat and soil conditions.

PDF BIO-5 Wildlife Protection

The Applicant shall undertake measures during construction and operations and maintenance to avoid or minimize impacts to wildlife. Implementation of all measures will be approved by BLM, BOR, CEC, CDFW, and USFWS. Measures will include wildlife avoidance, minimizing traffic impacts, minimizing lighting impacts, avoidance of toxic substances, minimization of noise and vibration impacts, prevention of entrapment and/or drowning of wildlife in water sources, excavations, or pipes, maintaining trash to reduce attraction to predators, avoiding bringing pets or firearms on-site, using wildlife exclusion materials to keep sensitive wildlife from entering worksites, restricting use of certain pesticides, and reporting dead or injured wildlife to USFWS and/or CDFW.

PDF BIO-6 Bird and Bat Conservation Strategy

The Applicant will implement the final Bird and Bat Conservation Strategy (Appendix B), developed in accordance with guidelines recommended by the USFWS, to avoid or minimize take of migratory birds that may nest on the site or may be vulnerable to collision with Project components. It describes the proposed Project components, summarizes baseline data regarding birds and bats in the Project vicinity; assesses potential risks to those species that could result from Project construction, operation, and decommissioning; and describes conservation measures to be implemented in order to minimize those risks.

PDF BIO-7 Loop-In Transmission and Gen-tie Lines

Loop-in transmission and gen-tie line support structures and other facility structures shall be designed in compliance with current standards and practices to discourage their use by raptors for perching or nesting. Mechanisms to visually warn birds shall be placed on loop-in transmission and gen-tie lines at regular intervals to prevent birds from colliding with the lines. To the extent practicable, the use of guy wires shall be avoided because they pose a collision hazard for birds and bats. Necessary guy wires shall be clearly marked with bird flight diverters to reduce the probability of collision. Shield wires shall be marked with devices that have been scientifically tested and found to significantly reduce the potential

for bird collisions. Loop-in transmission and gen-tie lines shall maintain sufficient distance between all conductors and grounded components to prevent potential for electrocution of the largest birds that may occur in the area (e.g., golden eagle and turkey vulture). They shall utilize non-specular conductors and non-reflective coatings on insulators.

7.1.2 Wildlife Protection and Translocation Plan Measures

The following are the measures from the Project's Wildlife Protection and Translocation Plan (Appendix C) that apply to burrowing owl. Measures are summarized below; the full text of these measures may be found in the Wildlife Protection and Translocation Plan.

Burrow Monitoring and Excavation

Potentially occupied burrows or occupied burrows will be monitored prior to relocation efforts. Methods for monitoring potentially occupied burrows will include: noting and removing burrowing owl sign (feathers, whitewash, pellets); twice daily visits for 48 hours to check for new sign; and use of motion-activated game cameras to determine burrow occupancy. If a burrow is determined to be occupied, the appropriate exclusion buffer (see Table 7.1-1 below) will be used and passive relocation methods will be employed if timing is suitable. Burrows determined to be unoccupied will be excavated.

Only burrowing owl burrows (unoccupied and occupied) that will be directly impacted by construction activities will be excavated. Any unoccupied burrows located outside the construction activity zones will be left in their current condition. If there is an occupied burrow outside the Project footprint area but within the buffer distance, monitoring and avoidance of the burrow will be managed on a case-by-case basis in coordination with CDFW and USFWS, depending on the season, nature of nearby construction activities, and whether the construction site is fenced. If monitoring determines that the burrowing owl has left the site, then the burrow will be excavated and collapsed.

Exclusion Buffer

If an active burrowing owl burrow is detected within any Project disturbance area, or within a 150-meter buffer of the disturbance area, a 150-meter (500-foot) exclusion buffer will be maintained while the burrow remains active or occupied. The buffer may be reduced to 50 meters (160 feet) during the non-breeding season (September 1 to January 31). The size of the buffer may be adjusted based on the time-of-year, and level of disturbance in the area, after consultation with CDFW. Table 7.1-1 provides exclusion buffer guidelines for nesting sites (CDFW 2012); which may be adjusted in the field by the Lead Biologist, in consultation with agency personnel. The southern California breeding season (defined as the time from pair bonding of adults to fledging of the offspring) generally occurs from February to August, with peak breeding activity from April through July (Haug, Millsap, and Martell 1993).

Table 7.1-1 Buffer Distance (m) for Occupied Burrowing Owl Burrows Based on Time of Year and Level of Disturbance

	Buffer Distance (m) and Level of Disturbance[a]		
Time of Year	Low	Medium	High
4/1–8/15	200	500	500
8/16–10/15	200	200	500
10/16–3/31	50	100	500

[a] Levels of disturbance: Low =drive by, low use, once per week; Medium = 15 minutes to 2 hours of activity, less than 49 decibels, one or two passes per day; High = more than 2 hours of activity, more than 49 decibels. Source: Based on CDFW (2012); Scobie and Faminow (2000).

Passive Relocation

Passive relocation will occur only during the non-breeding season, generally September 1 to February 1, but will be adjusted during the late summer months (August and September) if breeding activities are not observed at any occupied burrows. Passive relocation is a technique to exclude burrowing owls from a project site by first, providing replacement burrows off site (if needed); collapsing all unoccupied burrows within the construction site; and finally installing a one-way door on the occupied burrow to evict the burrowing owl without handling it.

Artificial Burrows. Artificial burrows may be constructed off site to replace on-site burrows that may be removed for Project construction. Biologists will survey nearby public lands and private lands with site control to identify and inventory suitable unoccupied natural burrows that may be available. If two or more natural burrows are available for each burrowing owl to be evicted, no artificial burrows will be constructed. If fewer suitable natural burrows are available, then new artificial burrows will be constructed to provide a total of two suitable burrows for each burrowing owl to be evicted. All artificial burrows and mapped natural burrows will be monitored for burrowing owl use at least once per quarter throughout the construction phase of the Project; artificial burrows will be maintained or replaced as needed.

7.1.3 Best Management Practices

The following are the Ecological Best Management Practices (BMPs) from the Project's CEC Opt-In Application (Appendix D).

Staging Areas

- As practical, staging and parking areas shall be located within the Project site to minimize habitat disturbance in areas adjacent to the site. The project will comply with Land Use Plan Amendment (LUPA)-BIO-13.

Construction Activities

- Before beginning construction, delineate the boundaries of areas to be disturbed including roads, borings, soil testing sites, and pull and tensioning areas prior to any ground disturbance, and confine disturbances, project vehicles, and equipment to the delineated project areas. The project will comply with LUPA-BIO-13.

Construction

- To the extent practicable, work personnel shall stay within the ROW and/or easements. The project will comply with LUPA-BIO-13.

Traffic

- Existing access roads, utility corridors, and other infrastructure shall be used to the maximum extent feasible. The project will comply with LUPA-BIO-13.

Noise

- Noise reduction devices (e.g., mufflers) shall be employed to minimize the impacts on wildlife and special status species populations. Operators shall ensure that all equipment is adequately muffled and maintained in order to minimize disturbance to wildlife. The project will comply with LUPA-BIO-12.

Power lines

- Place low and medium voltage connecting power lines underground whenever possible. In certain circumstances, burial of the lines may be prohibitively expensive (for example in shallow bedrock areas) or may cause unacceptable impacts to wetland habitats and dependent species. Overhead lines may be acceptable:

- if sited away from high bird crossing locations, such as between roosting and feeding areas or between lakes, rivers, and nesting areas; and/or
- when the structures parallel tree lines or are otherwise screened so that collision risk is reduced. The project will comply with LUPA-BIO-16 and LUPA-TRANS-BIO-1.

Habitat

- To reduce the extent of habitat disturbance during construction and operation, existing access roads, utility corridors, and other infrastructure shall be used to the maximum extent feasible and foot and vehicle traffic through undisturbed areas shall be minimized. The project will comply with LUPA-BIO-13.
- Areas left in a natural condition during construction (e.g., wildlife crossings) shall be maintained in as natural a condition as possible within safety and operational constraints. The project will comply with LUPA-BIO-13.
- All pits and trenched shall contain wildlife escape ramps. All uncovered pipes shall be capped and/or covered at the end of each workday to prevent animals from entering the pipes. If a special status species is discovered inside a component, that component must not be moved or, if necessary, moved only to remove the animal from the path of activity, until the animal has escaped. The project will comply with LUPA-BIO-14.

Birds

- The Project should establish buffer zones and protection, mitigation, and monitoring plans for active nests detected during surveys. The project will comply with LUPA-BIO-IFS-2.

General Wildlife protection

- Implement general standards practices to protect federal and state special-status species. The project will comply with LUPA-BIO-14.
- Prior to any ground-disturbing activity, seasonally appropriate surveys shall be conducted by qualified biologists to ensure that important or sensitive species or habitats are not present in or near project areas. Habitats or locations to be avoided (with appropriately sized buffers) shall be clearly marked. The project will comply with LUPA-BIO-1.

Vegetation

- Project-specific vegetation management plans shall investigate possibilities of revegetating parts of the Project site. The project will comply with LUPA-BIO-7.

Herbicide Use

- Only herbicides with low toxicity to wildlife and nontarget native plant species shall be used, as determined in consultation with the BLM, BOR, CEC, and USFWS. The typical herbicide application rate shall be used rather than the maximum application rate, where effective. All herbicides shall be applied in a manner consistent with their label requirements and in accordance with guidance provided in the Final PEIS on vegetation treatments using herbicides (BLM 2007c). The project will comply with LUPA-BIO-11.

Reclamation

- Access roads shall be reclaimed when they are no longer needed. The project will comply with LUPA-BIO-7.
- All holes and ruts created by removal of structures and access roads shall be filled or graded. The project will comply with LUPA-BIO-7.
- While structures are being dismantled, care shall be taken to avoid leaving debris on the ground in areas in which wildlife regularly move. The project will comply with LUPA-BIO-13.
- The facility fence shall remain in place for several years to help reclamation (e.g., would preclude large mammals and vehicles from disturbing revegetation efforts). The project will comply with LUPA-BIO-7.

7.1.4 Desert Renewable Energy Conservation Plan Land Use Plan Amendment Consistency

In addition to the mitigation measures and BMPs listed above, the Project will comply with the CMAs contained within the LUPA for the DRECP. CMAs that apply to general biological resources and to western burrowing owl specifically are summarized below. Text not related to burrowing owl has been omitted. The full text of these measures may be found in the DRECP LUPA, which is attached as Appendix E.

LUPA-BIO-2 Biological Resources

Designated biologist(s) will conduct and oversee activity-specific required biological monitoring during pre-construction, construction, and decommissioning to ensure that avoidance and minimization measures are appropriately implemented and are effective.

LUPA-BIO-4 Seasonal Restrictions

For activities that may impact Focus and BLM Special Status Species, implement all required species-specific seasonal restrictions on preconstruction, construction, operations, and decommissioning activities.

LUPA-BIO-5 Worker Education

A worker education program will be provided to all workers for all activities, as determined appropriate on an activity-by-activity basis, during all phases of the project. The program will provide information on biological resources and their protection measures, reporting requirements, and legal implications.

LUPA-BIO-7 Restoration of Areas Disturbed by Construction Activities But Not Converted by Long-Term Disturbance

Restore areas affected by ground disturbance and/or vegetation removal that are not converted by long-term ground disturbance according to standards approved by BLM.

LUPA-BIO-8 General Closure and Decommissioning Standards

All activities that are required to close and decommission the site will specify and implement project-specific closure and decommissioning actions that meet the approval of BLM.

LUPA-BIO-12 Noise

Minimize noise impacts on Focus or BLM Special Status Species, using noise controls on equipment and minimizing activities that create noise above ambient levels in close proximity to those species and their suitable habitat.

LUPA-BIO-13 General Siting and Design

To the maximum extent practicable, site and design projects to avoid impacts to vegetation types, unique plant assemblages, climate refugia as well as occupied habitat and suitable habitat for Focus and BLM Special Status Species. Minimize the extent of project impacts, including the project footprint and light pollution.

LUPA-BIO-14 Biology: General Standard Practices

Implement general standard practices to protect Focus and BLM Special Status Species, such as avoiding feeding or harassing wildlife, avoiding bringing domestic pets on-site, checking construction materials for the presence of wildlife prior to use, using covers to prevent wildlife entrapment in trenches or excavations, and minimizing vegetation removal.

LUPA-BIO-15 Biology: General Standard Practices

Use state-of-the-art construction and installation techniques approved by BLM that minimize new site disturbance, soil erosion and deposition, soil compaction, disturbance to topography, and removal of vegetation.

LUPA-BIO-16 Activity-Specific Bird and Bat CMAs

For activities that may impact Focus and BLM sensitive birds, birds protected by the ESA and/or Migratory Bird Treaty Act of 1918, and bat species, implement appropriate measures as per the most up-to-date BLM state and national policy and guidance and data on birds and bats to avoid and minimize direct mortality of birds and bats.

LUPA-BIO-17 Activity-Specific Bird and Bat CMAs

For activities that may result in mortality to Focus and BLM Special–Status bird and bat species, a Bird and Bat Conservation Strategy (Appendix B) will be prepared with the goal of assessing operational impacts to bird and bat species and incorporating methods to reduce documented mortality. The strategy shall be approved by BLM in coordination with USFWS, and CDFW as appropriate.

LUPA-BIO-IFS-12 Burrowing Owl

If burrowing owls are present, a designated biologist will conduct appropriate activity-specific biological monitoring to ensure avoidance of occupied burrows and establishment of the 656 feet (200 meter) setback to sufficiently minimize disturbance during the nesting period on all activity sites, when practical.

LUPA-BIO-IFS-13 Burrowing Owl

If burrows cannot be avoided on-site, passive burrow exclusion by a designated biologist through the use of one-way doors or the most up-to-date agency BLM or CDFW specifications. Before exclusion, there must be verification that burrows are empty or the most up-to-date BLM or CDFW protocols. Confirmation that the burrow is not currently supporting nesting or fledgling activities is required prior to any burrow exclusions or excavations.

LUPA-BIO-IFS-14 Burrowing Owl

Activity-specific active translocation of burrowing owls may be considered, in coordination with CDFW.

LUPA-BIO-COMP-1 Compensation

Impacts to biological resources will be compensated using the standard biological resources compensation ratios specified elsewhere in the Plan. Compensation acreage requirements may be fulfilled through non-acquisition (i.e., restoration and enhancement), land acquisition (i.e., preserve), or a combination of these options.

LUPA-BIO-COMP-2 Compensation

Birds and Bats – The compensation for the mortality impacts to bird and bat Focus and BLM Special Status Species from activities will be determined based on monitoring of bird and bat mortality and a fee re-assessed every 5 years to fund compensatory mitigation. Compensation will be satisfied by restoring, protecting, or otherwise improving habitat or by non-restoration actions that reduce mortality risks to birds and bats.

7.2 Habitat Compensation

This section shows how the Applicant intends to fulfill the BLM DRECP and anticipated CDFW ITP requirements for compensatory mitigation associated with Project impacts to burrowing owl. Because the Project is located on lands designated as Development Focus Area (DFA) under the DRECP, it is subject to applicable DRECP CMAs (see section 7.1.4). The Project will comply with all applicable CMAs on both the public and private lands within the Project and will provide compensatory mitigation in accordance with the mitigation rations included in CMA LUPA-BIO-COMP-1. The Project will also comply with LUPA-BIO-SVF-6 and avoid desert dry wash woodland with a 200-foot buffer except for minor incursions or where there is existing, intervening infrastructure. Table 7.2-1 shows the Project's impacts, required mitigation ratios, and compensatory mitigation acreage. Any other resources for which compensatory mitigation is required will be included in other Project documents.

Table 7.2-1 Compensatory Mitigation

Vegetation/Habitat Type	Project Impact (acres or occupied owl burrows)	Mitigation Ratio	Compensatory Mitigation (acres)
Alkali goldenbrush desert scrub	81	1:1	81
Arrowweed scrub	0	1:1	0
Mojave creosote bush scrub	5,918	1:1	5,918

Tamarisk thickets	0	1:1	0
Displacement of owls from occupied burrows	Up to 94 burrows (2x the number of burrows with sign observed on the Project site)	1.5 times 6.5 (9.75) acres per occupied burrow displaced by Project	Up to 916.5 acres[a]
Total	**5,999**	**-**	**5,999**

Notes:

[a] The acreage for displacement of occupied burrows is nested within the total compensation acreage.

8 Mitigation Monitoring Plan

(10) A proposed plan to monitor compliance with the minimization and mitigation measures and the effectiveness of the measures.

A Mitigation Monitoring and Reporting Program would be prepared and implemented for the Perkins Renewable Energy Project as part of the CEC Decision.

9 Mitigation Funding Sources

(11) A description of the funding source and the level of funding available for implementation of the minimization and mitigation measures.

It is the financial obligation of IP Perkins, LLC to fund all mitigation that would be identified in the ITP. Additionally, DRECP CMA LUPA-COMP-1 requires compensation activities to be initiated or completed within 12 months from the time the resource impact occurs. The BLM will determine the activity or project-level timing of the compensation (i.e., initiated, completed, or a combination) based on the specific resources being impacted and the scope and content of the activity. A six-month extension may be authorized depending on the resources impacted and compensation due diligence of the Project developer.

10CEQA Documentation

The EIR will be prepared by the CEC and is anticipated to be published in 2027.

11 References

California Department of Fish and Wildlife. 2012. "Staff Report on Burrowing Owl Mitigation." State of California Natural Resources Agency.

———. 2023. "CNDDB - Plants and Animals." 2023. https://wildlife.ca.gov/Data/CNDDB/Plants-and-Animals.

Doublet, Dejeanne, David H. Johnson, Fitsum Abadi, and Martha J. Desmond. 2023. "Nest Survival and Productivity of Translocated and Resident Burrowing Owls in Arizona." *The Journal of Wildlife Management* 87 (1): e22339. https://doi.org/10.1002/jwmg.22339.

Gervais, J.A., D.K. Rosenberg, and L. Comrack. 2008. "Burrowing Owl (Athene Cunicularia)." In *California Bird Species of Special Concern: A Ranked Assessment of Species, Subspecies, and Distinct Populations of Birds of Immediate Conservation Concern in California*, edited by W.D. Shuford and T. Gardali. Studies of Western Birds I. Western Field Ornithologists, Camarillo, California, and California Department of Fish and Game, Sacramento. https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=10405&inline.

Haug, E.A., B.A. Millsap, and M.S. Martell. 1993. "Burrowing Owl (Speotyto Cunicularia)." In *The Birds of North America*, edited by A. Poole and F. Gill. Philadelphia: The Academy of Natural Sciences; Washington D.C.: The American Ornithologists' Union.

Holland, R.F. 1986. "Preliminary Descriptions of the Terrestrial Natural Communities of California." The Resources Agency, Department of Fish and Game (State of California). Available at: https://www.cal-ipc.org/docs/ip/inventory/pdf/HollandReport.pdf.

NatureServe Explorer. 2024. "Athene Cunicularia Burrowing Owl." October 1, 2024. https://explorer.natureserve.org/Taxon/ELEMENT_GLOBAL.2.106553/Athene_cunicularia.

Scobie, D., and C. Faminow. 2000. "Development of Standardized Guidelines for Petroleum Industry Activities That Affect COSEWIC Prairie and Northern Region Vertebrate Species at Risk."

APPENDIX A

Biological Resources Technical Report

The Biological Resources Technical Report was uploaded as Attachment B to the Data Response Set #3 (Docket number 262219) for the Perkins Renewable Energy Project in March 2025.

APPENDIX B

Bird and Bat Conservation Strategy

The Bird and Bat Conservation Strategy was uploaded as Attachment C.7 to the Data Response Set #2 for the Perkins Renewable Energy Project in October 2024.

APPENDIX C

Wildlife Protection and Translocation Plan

The Wildlife Protection and Translocation Plan was uploaded as Appendix M.4 to the Opt-in Application for the Perkins Renewable Energy Project in February 2024.

APPENDIX D

Preliminary Best Management Practices and Project Design Features

The Preliminary Best Management Practices and Project Design Features were uploaded as Appendix D.1 to the Opt-in Application for the Perkins Renewable Energy Project in February 2024.

APPENDIX E

Desert Renewable Energy Conservation Plan Land Use Plan Amendment Conservation and Management Actions

The Desert Renewable Energy Conservation Plan Land Use Plan Amendment Conservation and Management Actions was uploaded as Appendix D.2 to the Opt-in Application for the Perkins Renewable Energy Project in February 2024.

APPENDIX F

Compensation Plan

The Compensation Plan was uploaded as Attachment C.9 to the Data Response Set #2 for the Perkins Renewable Energy Project in October 2024.

IP Perkins BAAH, LLC

Perkins Renewable Energy Project Breaker-and-a-Half CDFW Incidental Take Permit

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PANORAMA ENVIRONMENTAL, INC.

IP Perkins BAAH, LLC

Perkins Renewable Energy Project Breaker-and-a-Half

CDFW Incidental Take Permit Application

April 2026

Prepared for:
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1 Introduction

1.1 Applicant

(2) Applicant's full name, mailing address, and telephone number(s).

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Applicant's Officer: Todd Johansen, Chief Commercial Officer, IP Perkins BAAH, LLC, 9450 SW Gemini Drive, PMB #68743, Beaverton, OR 97008. Tel. (510) 398-2547, Email. tjohansen@ipxpower.com

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Application prepared by: Emily Capello, Panorama Environmental, Inc., 717 Market Street, Suite 400 San Francisco, CA 94103 Contact: Emily Capello, (415) 312-8074, Email. emily.capello@panoramaenv.com

1.2 Species to be Covered

(3) The common and scientific names of the species to be covered by the permit and the species' status under CESA

Western burrowing owl (*Athene cunicularia hypugaea*). On October 10, 2024, the western burrowing owl was approved as a candidate for potential listing as a protected species under the California Endangered Species Act (CESA). Candidates for listing are afforded the same protections as state-listed endangered or threatened species. CDFW will undertake a one-year review of the species' status before the California Fish and Game Commission makes a final decision on the listing.

1.3 Permit Coverage Period

Permit coverage is requested for a period of 2 years, or the total of the phase of the Project construction. Construction of the BAAH substation is anticipated to take 2 months at some point between January 2028 and December 2030. After completion of construction, ownership of the project facilities will be transferred to San Diego Gas & Electric (SDG&E), who will then be responsible for incidental take of burrowing owl in association with operations and maintenance of the facilities.

1.4 Coverage Area

The area covered by the permit includes the area contained within the IP Perkins BAAH, LLC, project boundary as shown below in Section 2 – Project Description.

1.5 Covered Activities

The activities requested for permit coverage include all activities associated with the construction of the Project elements contained within the IP Perkins BAAH, LLC, project boundary, as described in Section 2 – Project Description. These activities only include construction of a breaker-and-a-half (BAAH) switchyard.

1.6 Guide to the Permit Application

This application is filed for the proposed Perkins Renewable Energy Project (Project) in compliance with the requirements of the California Code of Regulations (CCR) Title 14 Section 783.4 and Section 2081(b) of California Fish and Game Code (FGC). The proposed Project has the potential to result in the incidental take of the state candidate western burrowing owl. The activity meets the following criteria for take of the western burrowing owl (FGC Section 2081[b]):

1. The take would be incidental to the otherwise lawful activity of project construction and/or operation (see Section 2 and Section 4 of this application)
2. Impacts to western burrowing owl would be minimized and fully mitigated as described in this application (see Section 6 of this application)
3. The measures required to minimize and fully mitigate the impacts of the take:
    a. Are roughly proportional in extent to the impact of the taking on the species (see Section 6 of this application)
    b. Maintain project objectives to the greatest extent possible; and
    c. Can be successfully implemented by the applicant (see Section 6 of this application)
4. Adequate funding will be provided to implement the required minimization and mitigation measures and monitoring compliance with and effectiveness of the measures (see Section 6 of this application)
5. Issuance of the permit will not jeopardize the continued existence of the western burrowing owl (see Section 6 of this application).

This application contains all the required contents of an ITP application as defined in CCR Title 14 Section 783.2. This application also follows guidance obtained from CDFW through recent coordination with CDFW staff. References to specific requirements for ITP applications are provided throughout this document, as appropriate. Table 1.6-1 provides a reader's guide to this permit application.

Table 1.6-1 Guide to Perkins BAAH Renewable Energy Project Incidental Take Permit Application

Application Requirement §783.2 (a)	Page
(1) The appropriate application fee.	N/A (CEC Opt-in Process)

Application Requirement §783.2 (a)	Page
(2) Applicant's full name, mailing address, and telephone number(s). If the applicant is a corporation, firm, partnership, association, institution, or public or private agency, the name and address of the person responsible for the project or activity requiring the permit, the president or principal officer, and the registered agent for the service of process.	
(3) The common and scientific names of the species to be covered by the permit and the species' status under CESA.	
(4) A complete description of the project or activity for which the permit is sought.	
(5) The location where the project or activity is to occur or to be conducted.	
(6) An analysis of whether and to what extent the project or activity for which the permit is sought could result in the taking of species to be covered by the permit.	
(7) An analysis of the impacts of the proposed taking on the species.	17
(8) An analysis of whether issuance of the incidental take permit would jeopardize the continued existence of a species. A complete, responsive jeopardy analysis shall include consideration of the species' capability to survive and reproduce, and any adverse impacts of the taking on those abilities in light of: i. Known population trends; ii. Known threats to the species; and iii. Reasonably foreseeable impacts on the species from other related projects and activities.	
(9) Proposed measures to minimize and fully mitigate the impacts of the proposed taking.	19
(10) A proposed plan to monitor compliance with the minimization and mitigation measures and the effectiveness of the measures.	
(11) A description of the funding source and the level of funding available for implementation of the minimization and mitigation measures.	
(12) Certification in the following language: I certify that the information submitted in this application is complete and accurate to the best of my knowledge and belief. I understand that any false statement herein may subject me to	

Application Requirement §783.2 (a)	Page
suspension or revocation of this permit and to civil and criminal penalties under the laws of the State of California.	
(13) Documentation of CEQA compliance.	Will be provided after CEQA is complete

1.7 Certification

(12) Certification in the following language:

I certify that the information submitted in this application is complete and accurate to the best of my knowledge and belief. I understand that any false statement herein may subject me to suspension or revocation of this permit and to civil and criminal penalties under the laws of the State of California.

I certify that the information submitted in this application is complete and accurate to the best of my knowledge and belief. I understand that any false statement herein may subject me to suspension or revocation of this permit and to civil and criminal penalties under the laws of the State of California.

Signed by:
Todd Johansen
C87A999C752A4DE...
Signature

4/9/2026
Date

Name of Representative: Todd Johansen

Title: Chief Commercial Officer

IP Perkins BAAH, LLC

2 Project Description

(4) A complete description of the project or activity for which the permit is sought.

IP Perkins BAAH, LLC, proposes to construct the proposed Project. This section summarizes the proposed Project location, facilities, and construction activities for which permit coverage is being sought.

2.1 Project Overview

2.1.1 Purpose and Design

IP Perkins BAAH, LLC, a subsidiary of IPX Power USA, LLC, proposes to construct the Perkins BAAH facilities on public lands administered by the U.S. Bureau of Land Management (BLM) located southeast of El Centro in Imperial County, California (Figure 1). The proposed Project consists of a high-voltage BAAH switchyard that would be required to interconnect a proposed solar facility to the existing San Diego Gas and Electric (SDG&E) Southwest Power Link (SWPL) 500 kV transmission line that traverses east–west 0.84 mile south of the Project site.

The Project would be analyzed under California Environmental Quality Act (CEQA) and National Environmental Quality Act (NEPA). An Environmental Impact Report would be prepared with CEC as the CEQA lead agency under the CEC Opt-in Process expected to be published in 2025. The BLM is preparing an Environmental Assessment (EA) under NEPA also expected to be published in 2026. The Project will be consistent with the Desert Renewable Energy Conservation Plan (DRECP) Land Use Plan Amendment, which is undergoing federal ESA Section 7 consultation between the BLM and US Fish and Wildlife Service (USFWS). The BLM is seeking USFWS concurrence that the Project is covered under the DRECP Biological Opinion (USWFS 2016). The USFWS has developed an Activity Form for the streamlined DRECP concurrence process. BLM will submit the completed form to confirm USFWS concurrence.

2.1.2 Project Elements

Figure 2 shows the components for the Project that are covered under this application.

Breaker-and-a-Half Switchyard

A BAAH switchyard would be constructed to facilitate interconnection to the SDG&E SWPL 500 kV transmission line, which runs parallel to SR 98 just south of the Project site. A short gen-tie line would be constructed to connect the Project substation(s) to the BAAH switchyard. The BAAH switchyard would consist of five 500 kV circuit breakers and associated disconnect switches, control shelters, and steel structural support. The BAAH switchyard would be surrounded by a chain link fence up to 7 feet high, topped with 1 foot of barbed wire. The BAAH switchyard would ultimately be owned and operated by SDG&E.

Figure 1 Project Location and Surface Management Agency

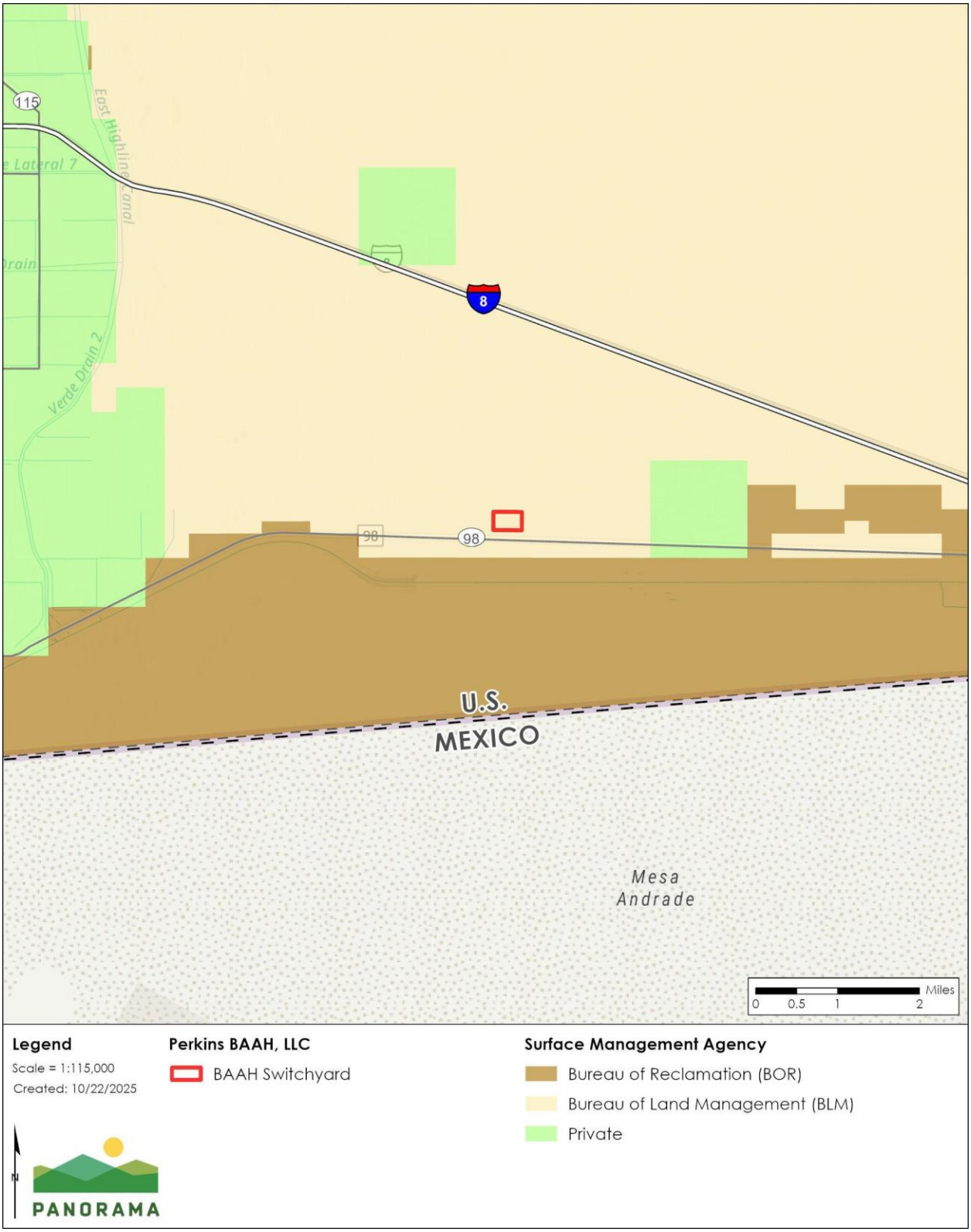
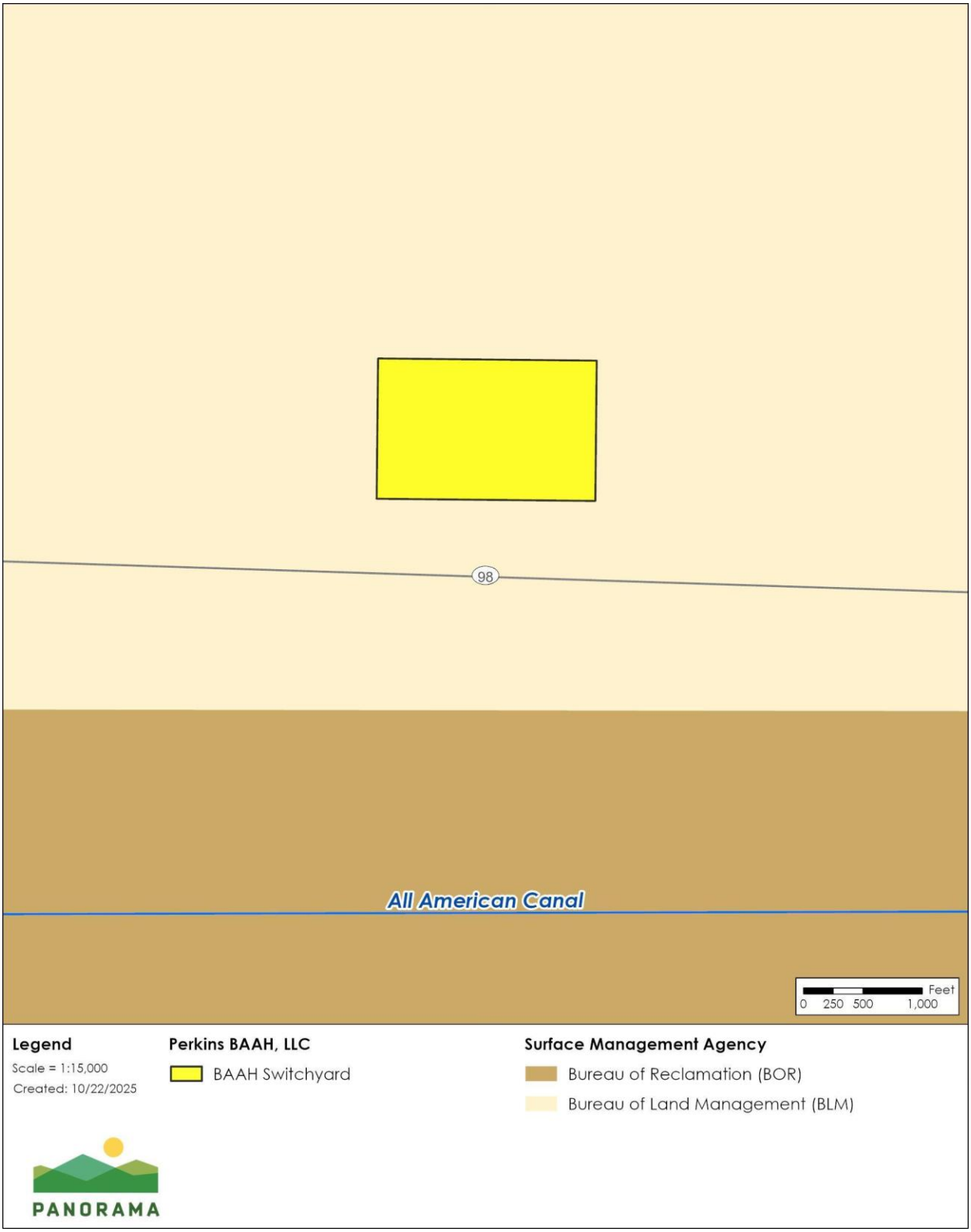


Figure 2 Project Elements



2.1.3 Construction

The BAAH switchyard would be graded and compacted to an approximately level grade. Concrete pads would be constructed on site as foundations for BAAH switchyard equipment, and the remaining area would be graveled to a maximum depth of approximately 12 inches. Foundation designs of the BAAH switchyard would likely consist of drilled piers, concrete slabs, pedestals with footers, and/or directly embedded poles. Loading and design assumptions would be consistent with industry standards and County/State/federal design codes. A workforce of approximately 50 individuals would be involved in construction of the BAAH switchyard.

2.2 Project Location

(5) The location where the project or activity is to occur or to be conducted.

The Project site is located within BLM-administered land in unincorporated Imperial County, California (Figure 1). Imperial County is located in southern California, in the southwestern portion of the Colorado Desert. The site is bounded by Interstate 8 (I-8) to the north and State Route 98 (SR 98) to the south. The area immediately to the west of the Project site is vacant natural land with farmland located 2.5 miles west of the Project site. The center of El Centro, California, is approximately 20 miles to the west and Mexicali, Mexico, is approximately 15 miles to the southwest. The All-American Canal is south of the Project site, parallel with SR 98.

The site is located in a region characterized by undeveloped desert and agricultural uses. The Imperial Valley, which is dominated by agricultural land, is located an estimated 2.5 miles west of the site. The Imperial Sand Dunes, the largest mass of sand dunes in California, is located approximately 12 miles east of the Project site. There is no private land located within the Project site.

3 Listed Species Status in the Project Site

3.1 Western Burrowing Owl Natural History, Distribution, and Habitat Requirements

The Western burrowing owl (*Athene cunicularia hypugaea*) inhabits arid lands throughout much of the western United States and southern interior of western Canada (Haug, Millsap, and Martell 1993). Suitable habitat for western burrowing owl includes open habitat with available burrowing opportunities, including agricultural fields (active and fallow), desert saltbush, ephemeral washes, ruderal areas, and creosote scrub.

Burrowing owls are unique among the North American owls in that they nest and roost in abandoned burrows, especially those created by ground squirrels, kit fox, desert tortoise, and other wildlife. Burrowing owls have a strong affinity for previously occupied nesting and wintering sites and will often return to previously used burrows, particularly if they had successful reproduction in previous years (Gervais, Rosenberg, and Comrack 2008). They generally depend on other species to dig suitable burrows for use but may also use anthropogenic surrogate burrows such as rubble piles or drainage pipes. If formerly occupied burrows are badly damaged or collapsed, burrowing owls cannot repair them and must seek alternate sites. The southern California breeding season (defined as the time from pair bonding of adults to fledging of the offspring) generally occurs from February to August, with peak breeding activity from April through July (Haug, Millsap, and Martell 1993).

In the Colorado Desert, burrowing owls generally occur at low densities in scattered locations, but they can be found in much higher densities near agricultural lands where rodent and insect prey tend to be more abundant (Gervais, Rosenberg, and Comrack 2008). Burrowing owls tend to be opportunistic feeders, and a large portion of their diet consists of beetles, grasshoppers, and other large arthropods. The consumption of insects increases during the breeding season (Haug, Millsap, and Martell 1993). Small mammals, especially mice and voles (*Microtus* and *Peromyscus* spp.) are important food items. Other prey animals include herpetofauna, young cottontail rabbits, bats, and birds such as sparrows and horned larks.

3.2 Habitat Conditions in the Project Site

The Project site is within the range of the western burrowing owl and provides breeding, foraging, and overwintering habitat for the species. Burrowing owls commonly occupy desert scrub habitats, which occurs throughout the Project area. Various sizes of mammal burrows have been documented on-site, indicating the soil in the Project site is suitable for burrow construction and occupied by burrowing mammals, an essential feature for burrowing owl breeding habitat. The site is far enough south in the western burrowing owl's range to have a climate warm enough to support overwintering. The remote nature of the site also lends itself to burrowing owl occupancy. Roads are present near the site, but burrowing owls are tolerant to roads and can be found occupying burrows located within road berms.

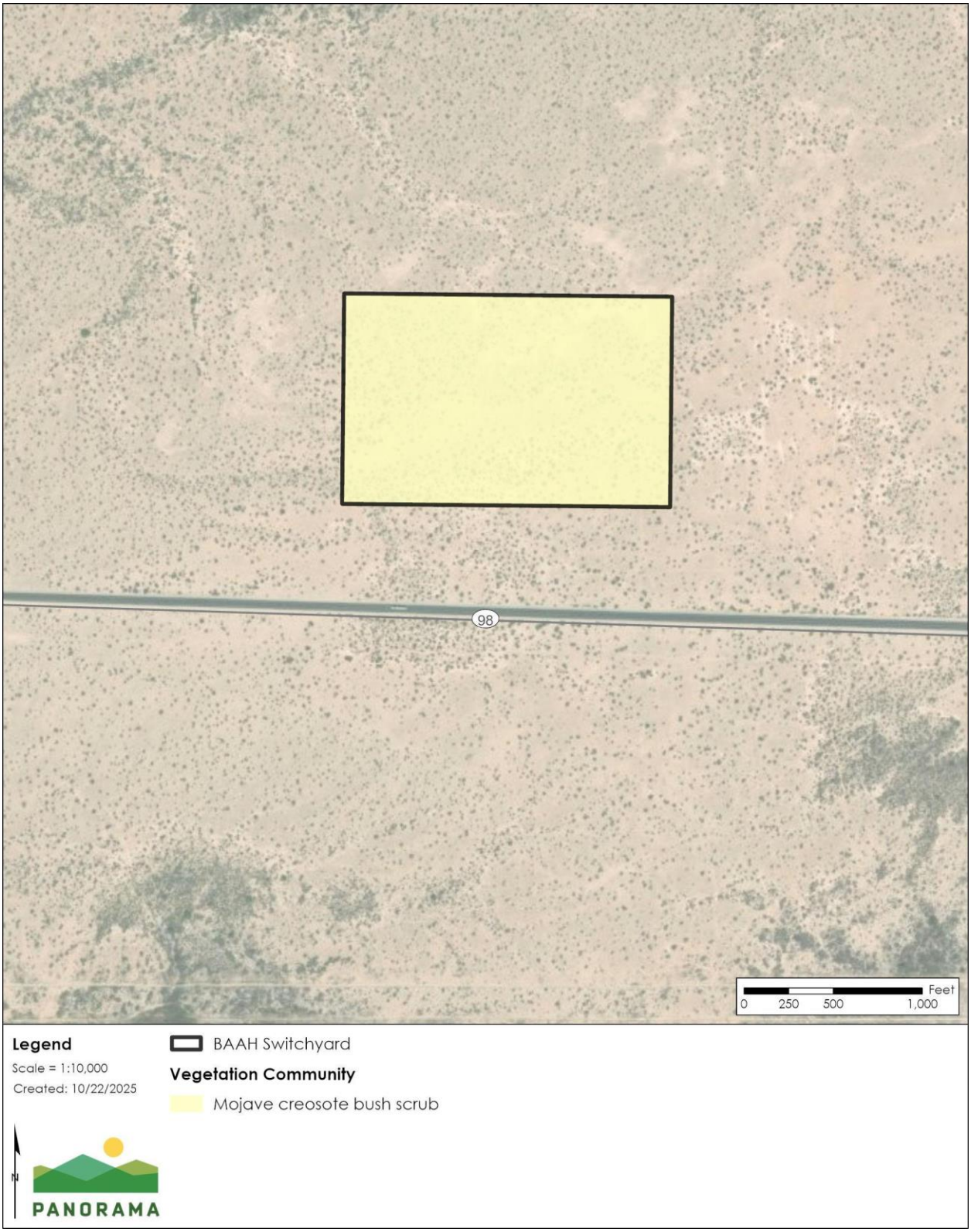
Because of the presence of scrub vegetation and soils that are suitable for burrowing, the site should provide an appropriate food base for burrowing owl, including insects and small mammals and reptiles.

3.2.1 Vegetation Communities

There is one vegetation community within the Project's impact area – Mojave creosote bush scrub. There are 35.2 acres of this vegetation community within the BAAH switchyard. Mojave creosote bush scrub provides suitable burrowing owl breeding, foraging, and overwintering habitat. It occurs on well-drained, secondary soils of slopes, fans, and valleys and is the basic creosote bush scrub habitat of the Colorado Desert (Holland 1986). On the Project site, shrubs are sparsely distributed and creosote either dominates the shrub canopy or co-dominates with white bursage. Emory's indigo (*Psorothmanus emoryi*), white bursage (*Ambrosia dumosa*), cheesebush (*Ambrosia salsola*), and ephedra (*Ephedra* spp.) occur in some areas with primarily an understory of annual plants.

Impacts to vegetation will only occur in the area of the BAAH switchyard, as shown on Figure 3.

Figure 3 Vegetation Communities



3.3 Western Burrowing Owl Occurrence in the Project Site

Focused surveys for burrowing owl were conducted in the spring of 2023 and 2024 (breeding season) and fall/winter of 2024 (non-breeding season). No evidence of burrowing owl presence, which includes individual owls, burrows with sign (pellets, whitewash, or feathers), or sign in a non-burrow location, was found on the Project site in either season. However, several burrowing owl occurrences were observed within 1 mile of the Project site in both the breeding (Figure 4) and non-breeding (Figure 5) seasons. The observations within 1 mile included live individuals and numerous burrows with sign. Detailed survey methods and results are contained in the Project's Biological Resources Technical Report, which is provided in Appendix A.

Figure 4 Burrowing Owl Observations – Breeding Season Results

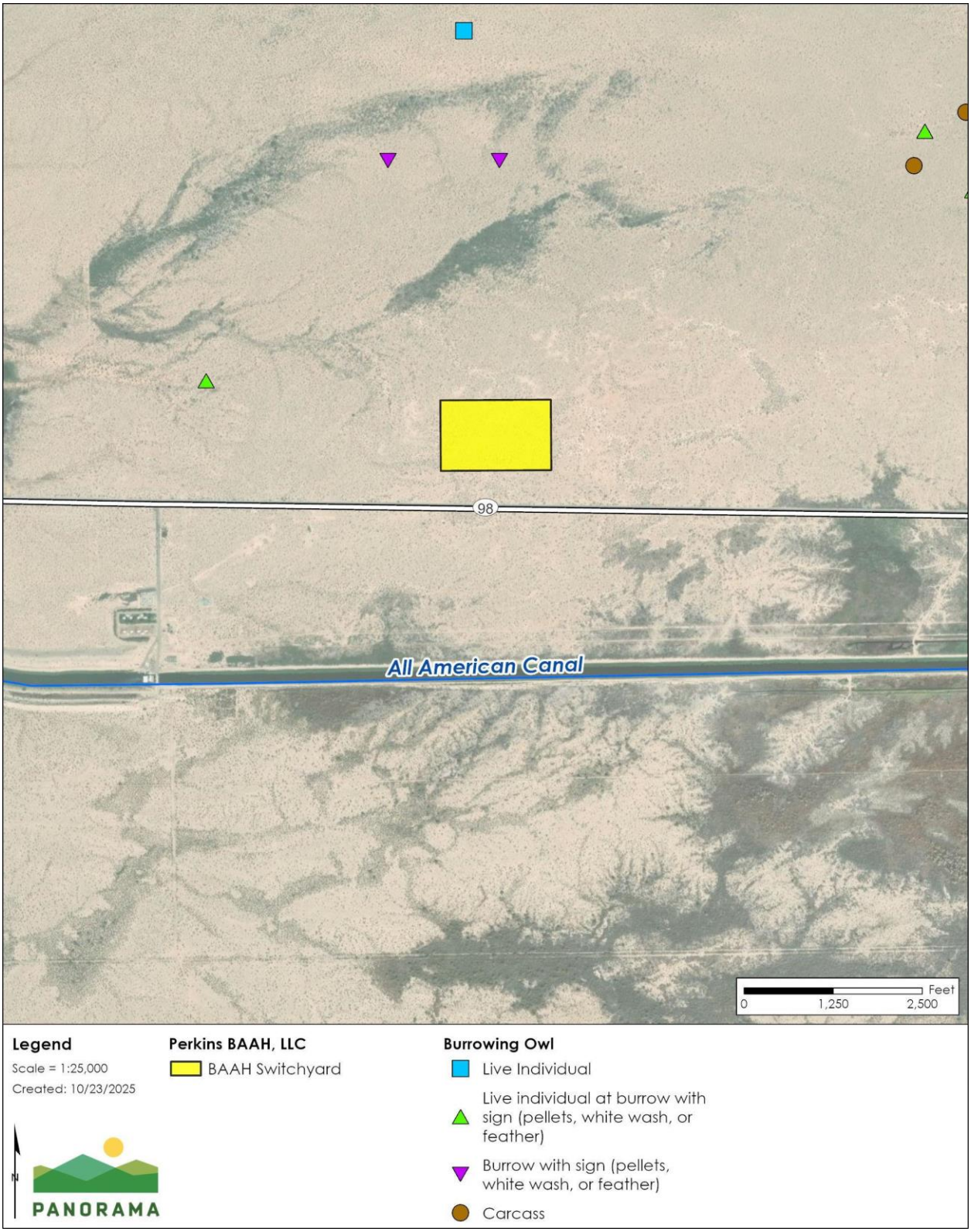
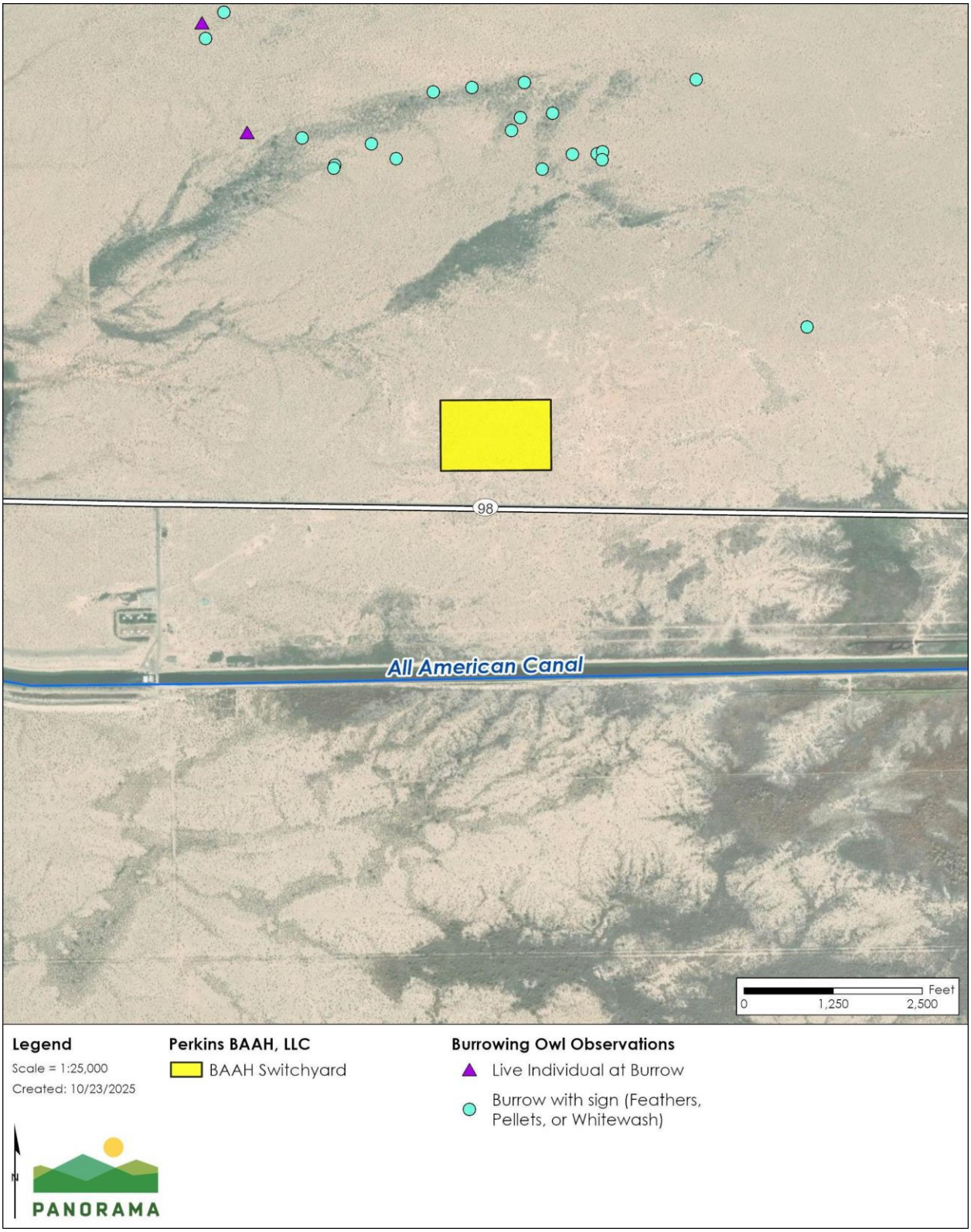


Figure 5 Burrowing Owl Observations – Non-Breeding Season Results



4 Anticipated Western Burrowing Owl Take

(6) An analysis of whether and to what extent the project or activity for which the permit is sought could result in the taking of species to be covered by the permit.

"Take," as defined in the California Fish and Game Code Section 86, is to "hunt, pursue, catch, capture, or kill, or attempt to hunt, pursue, catch, capture, or kill." To date, no western burrowing owls or their burrows or other sign have been documented on the Project site. However, the Project site is located in suitable burrowing owl habitat and burrowing owls and occupied burrows were documented in adjacent areas; therefore, it is possible that burrowing owls could move into the site prior to construction. If this happens, burrowing owls or their burrows (nests) could be harmed during clearing or grading activities. Project activities could also cause direct mortality, injury, or harassment of burrowing owls or their burrows because of vehicle strikes. Other direct effects could include disruption of western burrowing owl behavior during construction or operation of facilities, disturbance by noise or vibrations from the heavy equipment, and injury or mortality from encounters with workers' or visitors' pets.

The Applicant would implement measures to reduce the potential for incidental take of western burrowing owl during construction of the Project. A biological monitor would be on-site during construction to avoid direct injury or mortality of western burrowing owls, but it may become necessary to relocate one or more individuals from harm's way during construction. Relocation would become necessary if an occupied burrow is found within the active construction zone. Burrowing owl relocation would be conducted in accordance with the Project's Wildlife Protection and Translocation Plan, which is provided with this application as Appendix C. The method for relocation would be passive relocation, wherein a one-way door would be installed on the occupied burrow to evict the burrowing owl(s) without handling it. Biologists would ensure that enough suitable, unoccupied natural burrows are available in the off-site area for the evicted owl(s) to occupy. If there are not enough suitable burrows, artificial burrows would be constructed such that there would be a total of two suitable burrows for each burrowing owl evicted. Although this passive relocation method of evicting burrowing owls does not involve capture or handling of the owls, this eviction method still constitutes take. Therefore, the Applicant requests authorization to take western burrowing owl for the purpose of constructing the Project within burrowing owl habitat, which would require evicting burrowing owl from the Project site and out of harm's way during construction activities.

Pre-construction surveys for burrowing owls, possible burrows, and sign of owls (e.g., pellets, feathers, whitewash) will be conducted throughout each work area no more than 30 days prior to construction. If burrowing owls or active burrows are found within the solar facility, avoidance and setback distances will be implemented within the solar facility. Disturbance of owls or occupied burrows during the breeding season from February 1 through August 31 will be avoided. Unoccupied burrows will be excavated and filled in under the supervision of the Lead Biologist prior to site preparation. Passive relocation will occur only during the non-breeding season, generally September 1 to February 1, but will be adjusted during the late summer months (August and September) if breeding activities are not observed at any occupied burrows and as detailed in the Wildlife Protection and Translocation Plan (Appendix C).

4 ANTICIPATED BURROWING OWL TAKE

Avoidance and minimization measures would be put into place to reduce potential for direct injury or mortality of western burrowing owl, including working outside of breeding and nesting season, having an on-site biological monitor during construction, limiting construction work to daylight hours, and maintaining slow vehicle speed limits (e.g., 25 miles per hour) on access roads and within the Project site. Wildlife protection measures and monitoring requirements that will be identified in detail in Section 7 (Proposed Minimization and Mitigation Measures) will minimize potential take of western burrowing owl. The Applicant does not anticipate lethal take during any phase of the Project. However, it is possible that accidental take may occur. Therefore, the Applicant requests authorization for incidental take of two (2) western burrowing owl during construction.

5 Impacts Analysis

(7) An analysis of the impacts of the proposed taking on the species.

Without mitigation or avoidance measures (presented in Section 7 [Minimization and Mitigation Measures]), development of the Project could cause mortality or injury to western burrowing owl present during construction (see discussion of take in Section 4). To date, no individuals have been found on-site during biological surveys in areas planned for Project develop, but the site contains suitable habitat and burrowing owls and occupied burrows were documented in adjacent areas; therefore, it is possible for burrowing owls to move into the site prior to construction. The Project would involve the modification and/or removal of suitable burrowing owl habitat and potentially burrowing owl burrows if owls moved into the site prior to construction.

Direct impacts to burrowing owl during construction could include injury or mortality from collisions with construction equipment and vehicles when individuals are flushed from cover during construction disturbance. Displaced individuals may then be unable to find adequate cover from predation or forage effectively in new, unfamiliar places. Additionally, there is potential for nests containing eggs or nestlings to be lost either due to crushing from construction machinery or from nest abandonment when parents flee the area. There is also potential for adults to be crushed within burrows since adults often flee to underground burrows for safety.

Individuals encountered during construction may be evicted from the Project site using one-way doors and burrow excavation to avoid direct mortality from the Project. There is abundant suitable habitat surrounding the Project site for relocation, and biologists will assess the availability of suitable natural replacement burrows in the off-site habitat prior to eviction. If not enough natural burrows are present, then artificial burrows would be constructed. Studies have shown that adults can be successfully relocated, but nests have a high probability of failing in the first year following relocation if careful timing of the relocation is not taken into account (Doublet et al. 2023). So, while direct mortality of burrowing owl would be avoided through eviction from the site, the Project could result in lower reproductive success in the burrowing owl population during and in the year following construction. As shown by California Natural Diversity Database (CNDDB) occurrence records from the area (CNDDB 2023), the local population surrounding the Project site is strong and alternative habitat options are available. Therefore, a temporary reduction in reproductive success from a few mating pairs would have a minimal effect on the ability of the overall local population to survive and reproduce. With mitigation, the impact of the proposed taking by the Project would not have a significant impact on the overall species population.

In addition to direct impacts, the Project would indirectly impact burrowing owl through a reduction of habitat. The Project would impact 35.2 acres of natural habitat, all of which is Mojave creosote bush scrub and provides habitat for burrowing owl. The Project would mitigate for impacts to native vegetation and habitat at a 1:1 ratio. Therefore, indirect impacts to burrowing owl from the loss of habitat would not have a significant impact on the overall species population.

6 Jeopardy Analysis

(8) An analysis of whether issuance of the incidental take permit would jeopardize the continued existence of a species. A complete, responsive jeopardy analysis shall include consideration of the species' capability to survive and reproduce, and any adverse impacts of the taking on those abilities in light of: (i) Known population trends; (ii) Known threats to the species; and (iii) Reasonably foreseeable impacts on the species from other related projects and activities.

Threats to burrowing owl include habitat loss due to development and agriculture, habitat becoming less suitable as burrow-digging mammals are lost and as disturbance by humans and domestic animals increases, pesticide exposure, invasive predators, and collisions with man-made objects. Population declines and range contractions have been documented in the United States and Canada since at least the late 1960s. In California, the species has been declining for decades and is nearly extirpated from all of coastal southern California (NatureServe 2024).

Project construction could affect western burrowing owl in the Project site. Cumulative projects would have the potential to similarly impact the species where those projects' activities occur in its presence or habitat. The cumulative impact from the renewable energy projects proposed in the region is potentially significant. The Project's implementation of best management practices (BMPs), project design features (PDFs), and Conservation and Management Actions (CMAs), as detailed in Section 1 – Minimization and Mitigation Measures, and management plans and inclusion of compensatory habitat mitigation would avoid, minimize, or mitigate the Project's contribution to cumulatively significant impacts on western burrowing owl to less than considerable. Based on the current status, environmental baseline for the Project site, effects of the proposed Project, and cumulative effects on borrowing owl, the proposed Project is not likely to jeopardize the continued existence of burrowing owl for the following reasons:

- The Applicant will implement numerous measures (see Section 7, Proposed Mitigation) to ensure that most burrowing owl are relocated out of the Project footprint and that injury and death of burrowing owl is minimized (i.e., clearance surveys, relocation, translocation, and employing qualified biologists).
- The Applicant will implement weed management and soil stabilization techniques to reduce the spread of invasive nonnative plants in the Project site.
- Given the small number of burrowing owl potentially affected by the Project, there is no information to indicate that development of the Project would appreciably reduce the burrowing owl population levels in the region.
- Few, if any, burrowing owl are likely to be injured or killed as a result of relocation.
- Though the Project would reduce the amount of available burrowing owl habitat, suitable habitat is available adjacent to the Project.

7 Minimization and Mitigation Measures

(9) Proposed measures to minimize and fully mitigate the impacts of the proposed taking.

This section lists the type of avoidance, minimization, and mitigation (i.e., biological resource protection) measures that would be included as part of the Perkins Renewable Energy Project. Implementation of these types of measures would be expected to minimize and offset potential adverse effects to western burrowing owl.

Mitigation measures are proposed to fully mitigate the project's impacts to western burrowing owls and their habitat, including any potential burrowing owl take, and compensate for habitat loss. Mitigation measures would also minimize the likelihood of harm or mortality to burrowing owls and other wildlife, and minimize, mitigate, or offset adverse habitat impacts such as erosion or weed infestations.

7.1 Avoidance and Minimization Measures

Project avoidance and minimization measures were developed as part of the Project's CEC Opt-In Application (Appendix D), Bird and Bat Conservation Strategy (Appendix B), and Wildlife Protection and Translocation Plan (Appendix C). The Project will also comply with the Conservation and Management Actions (CMAs) contained within the Land Use Plan Amendment (LUPA) for the Desert Renewable Energy Conservation Plan (DRECP); these measures are attached as Appendix E. The following mitigation measures will be implemented to avoid or minimize impacts to western burrowing owl. Mitigation measure titles match the titles in the Opt-In Application and the other plans.

7.1.1 Project Design Features

The following are the Project Design Features (PDFs) for Biological Resources from the CEC Opt-In Application. PDFs that apply to general biological resources and to western burrowing owl specifically are summarized below. Text not related to burrowing owl has been omitted. The full text of these measures may be found in the CEC Opt-In Application's Preliminary Best Management Practices and Project Design Features, which are attached to this application as Appendix D.

PDF BIO-1 Biological Monitoring

Monitoring to ensure conformance with conditions of approval, including effective protection and avoidance of biological resources, shall be implemented by the Applicant. During construction and decommissioning, the Applicant shall employ a biological monitoring team to oversee Project activities. Any activity that may impact vegetation, wildlife, and sensitive resources shall be monitored to ensure compliance with all mitigation measures for biological resources. The biological monitoring team will be approved by the BLM, BOR, CEC, CDFW, and USFWS and shall consist of a lead biologist and one or more biological monitor. The Lead Biologist, or during operations and maintenance, the Applicant's compliance manager, shall report regularly to the BLM, BOR, CEC, CDFW, and USFWS to document the status of compliance with biological mitigation measures.

PDF BIO-2 Worker Environmental Awareness Training

The Lead Biologist shall prepare and implement a Worker Environmental Awareness Program (WEAP). The Applicant shall be responsible for ensuring that all workers at the site receive WEAP training prior to beginning work on the Project and throughout construction and operations. The WEAP will include discussions of biological resources and their identification and protection as well as safety guidelines.

PDF BIO-3 Minimization of Vegetation and Habitat Impacts

Prior to construction activities, operations and maintenance, or decommissioning, authorized work areas shall be clearly delineated by the contractor. Construction activities shall minimize soil and vegetation disturbance to minimize impacts to soil and root systems. Upon completion of construction activities in any given area, all unused materials, equipment, staking and flagging, and refuse shall be removed and properly disposed of. Hazardous materials shall be handled, and spills or leaks shall be promptly corrected and cleaned up according to applicable requirements. Vehicles shall be properly maintained to prevent spills or leaks.

Low-Impact Site Preparation. Native vegetation shall be allowed to recover from rootstocks and seed bank wherever facilities do not require permanent vegetation removal within the perimeter fenceline of the solar facilities and under solar arrays. Vegetation height and density shall be managed as needed for operations and maintenance and fire safety, but vegetation management shall otherwise focus on maintaining habitat and soil conditions.

PDF BIO-5 Wildlife Protection

The Applicant shall undertake measures during construction and operations and maintenance to avoid or minimize impacts to wildlife. Implementation of all measures will be approved by BLM, BOR, CEC, CDFW, and USFWS. Measures will include wildlife avoidance, minimizing traffic impacts, minimizing lighting impacts, avoidance of toxic substances, minimization of noise and vibration impacts, prevention of entrapment and/or drowning of wildlife in water sources, excavations, or pipes, maintaining trash to reduce attraction to predators, avoiding bringing pets or firearms on-site, using wildlife exclusion materials to keep sensitive wildlife from entering worksites, restricting use of certain pesticides, and reporting dead or injured wildlife to USFWS and/or CDFW.

PDF BIO-6 Bird and Bat Conservation Strategy

The Applicant will implement the final Bird and Bat Conservation Strategy (Appendix B), developed in accordance with guidelines recommended by the USFWS, to avoid or minimize take of migratory birds that may nest on the site or may be vulnerable to collision with Project components. It describes the proposed Project components, summarizes baseline data regarding birds and bats in the Project vicinity; assesses potential risks to those species that could result from Project construction, operation, and decommissioning; and describes conservation measures to be implemented in order to minimize those risks.

PDF BIO-8 Streambed and Watershed Protection

Prior to construction activities in jurisdictional waters of the State, the Applicant will obtain a Lake and Streambed Alteration Agreement (LSAA) from the CDFW. A Stormwater Pollution Prevention Plan (SWPPP) or SWPPP-equivalent document may also be required and shall be prepared by a qualified engineer or qualified individual, and shall be implemented before and during construction. The SWPPP shall include BMPs for stormwater runoff quality control measures, management for concrete waste, stormwater detention, watering for dust control, and construction of perimeter sediment controls, as needed.

7.1.2 Wildlife Protection and Translocation Plan Measures

The following are the measures from the Project's Wildlife Protection and Translocation Plan (Appendix C) that apply to burrowing owl. Measures are summarized below; the full text of these measures may be found in the Wildlife Protection and Translocation Plan.

Burrow Monitoring and Excavation

Potentially occupied burrows or occupied burrows will be monitored prior to relocation efforts. Methods for monitoring potentially occupied burrows will include: noting and removing burrowing owl sign (feathers, whitewash, pellets); twice daily visits for 48 hours to check for new sign; and use of motion-activated game cameras to determine burrow occupancy. If a burrow is determined to be occupied, the appropriate exclusion buffer (see Table 7.1-1 below) will be used and passive relocation methods will be employed if timing is suitable. Burrows determined to be unoccupied will be excavated.

Only burrowing owl burrows (unoccupied and occupied) that will be directly impacted by construction activities will be excavated. Any unoccupied burrows located outside the construction activity zones will be left in their current condition. If there is an occupied burrow outside the Project footprint area but within the buffer distance, monitoring and avoidance of the burrow will be managed on a case-by-case basis in coordination with CDFW and USFWS, depending on the season, nature of nearby construction activities, and whether the construction site is fenced. If monitoring determines that the burrowing owl has left the site, then the burrow will be excavated and collapsed.

Exclusion Buffer

If an active burrowing owl burrow is detected within any Project disturbance area, or within a 150-meter buffer of the disturbance area, a 150-meter (500-foot) exclusion buffer will be maintained while the burrow remains active or occupied. The buffer may be reduced to 50 meters (160 feet) during the non-breeding season (September 1 to January 31). The size of the buffer may be adjusted based on the time-of-year, and level of disturbance in the area, after consultation with CDFW. Table 7.1-1 provides exclusion buffer guidelines for nesting sites (CDFW 2012); which may be adjusted in the field by the Lead Biologist, in consultation with agency personnel. The southern California breeding season (defined as the time from pair bonding of adults to fledging of the offspring) generally occurs from February to August, with peak breeding activity from April through July (Haug, Millsap, and Martell 1993).

Table 7.1-1 Buffer Distance (m) for Occupied Burrowing Owl Burrows Based on Time of Year and Level of Disturbance

	Buffer Distance (m) and Level of Disturbance[a]		
Time of Year	Low	Medium	High
4/1–8/15	200	500	500
8/16–10/15	200	200	500
10/16–3/31	50	100	500

[a] Levels of disturbance: Low =drive by, low use, once per week; Medium = 15 minutes to 2 hours of activity, less than 49 decibels, one or two passes per day; High = more than 2 hours of activity, more than 49 decibels. Source: Based on CDFW (2012); Scobie and Faminow (2000).

Passive Relocation

Passive relocation will occur only during the non-breeding season, generally September 1 to February 1, but will be adjusted during the late summer months (August and September) if breeding activities are not observed at any occupied burrows. Passive relocation is a technique to exclude burrowing owls from a project site by first, providing replacement burrows off site (if needed); collapsing all unoccupied burrows within the construction site; and finally installing a one-way door on the occupied burrow to evict the burrowing owl without handling it.

Artificial Burrows. Artificial burrows may be constructed off site to replace on-site burrows that may be removed for Project construction. Biologists will survey nearby public lands and private lands with site control to identify and inventory suitable unoccupied natural burrows that may be available. If two or more natural burrows are available for each burrowing owl to be evicted, no artificial burrows will be constructed. If fewer suitable natural burrows are available, then new artificial burrows will be constructed to provide a total of two suitable burrows for each burrowing owl to be evicted. All artificial burrows and mapped natural burrows will be monitored for burrowing owl use at least once per quarter throughout the construction phase of the Project; artificial burrows will be maintained or replaced as needed.

7.1.3 Best Management Practices

The following are the Ecological Best Management Practices (BMPs) from the Project's CEC Opt-In Application (Appendix D).

Staging Areas

- As practical, staging and parking areas shall be located within the Project site to minimize habitat disturbance in areas adjacent to the site. The project will comply with Land Use Plan Amendment (LUPA)-BIO-13.

Construction Activities

- Before beginning construction, delineate the boundaries of areas to be disturbed including roads, borings, soil testing sites, and pull and tensioning areas prior to any ground disturbance, and confine disturbances, project vehicles, and equipment to the delineated project areas. The project will comply with LUPA-BIO-13.

Construction

- To the extent practicable, work personnel shall stay within the ROW and/or easements. The project will comply with LUPA-BIO-13.

Traffic

- Existing access roads, utility corridors, and other infrastructure shall be used to the maximum extent feasible. The project will comply with LUPA-BIO-13.

Noise

- Noise reduction devices (e.g., mufflers) shall be employed to minimize the impacts on wildlife and special status species populations. Operators shall ensure that all equipment is adequately muffled and maintained in order to minimize disturbance to wildlife. The project will comply with LUPA-BIO-12.

-

Habitat

- To reduce the extent of habitat disturbance during construction and operation, existing access roads, utility corridors, and other infrastructure shall be used to the maximum extent feasible and foot and vehicle traffic through undisturbed areas shall be minimized. The project will comply with LUPA-BIO-13.
- Areas left in a natural condition during construction (e.g., wildlife crossings) shall be maintained in as natural a condition as possible within safety and operational constraints. The project will comply with LUPA-BIO-13.
- All pits and trenched shall contain wildlife escape ramps. All uncovered pipes shall be capped and/or covered at the end of each workday to prevent animals from entering the pipes. If a special status species is discovered inside a component, that component must not be moved or, if necessary, moved only to remove the animal from the path of activity, until the animal has escaped. The project will comply with LUPA-BIO-14.

Birds

- The Project should establish buffer zones and protection, mitigation, and monitoring plans for active nests detected during surveys. The project will comply with LUPA-BIO-IFS-2.

General Wildlife protection

- Implement general standards practices to protect federal and state special-status species. The project will comply with LUPA-BIO-14.
- Prior to any ground-disturbing activity, seasonally appropriate surveys shall be conducted by qualified biologists to ensure that important or sensitive species or habitats are not present in or near project areas. Habitats or locations to be avoided (with appropriately sized buffers) shall be clearly marked. The project will comply with LUPA-BIO-1.

Vegetation

- Project-specific vegetation management plans shall investigate possibilities of revegetating parts of the Project site. The project will comply with LUPA-BIO-7.

Herbicide Use

- Only herbicides with low toxicity to wildlife and nontarget native plant species shall be used, as determined in consultation with the BLM, BOR, CEC, and USFWS. The typical herbicide application rate shall be used rather than the maximum application rate, where effective. All herbicides shall be applied in a manner consistent with their label requirements and in accordance with guidance provided in the Final PEIS on vegetation treatments using herbicides (BLM 2007c). The project will comply with LUPA-BIO-11.

Reclamation

- Access roads shall be reclaimed when they are no longer needed. The project will comply with LUPA-BIO-7.

- All holes and ruts created by removal of structures and access roads shall be filled or graded. The project will comply with LUPA-BIO-7.
- While structures are being dismantled, care shall be taken to avoid leaving debris on the ground in areas in which wildlife regularly move. The project will comply with LUPA-BIO-13.
- The facility fence shall remain in place for several years to help reclamation (e.g., would preclude large mammals and vehicles from disturbing revegetation efforts). The project will comply with LUPA-BIO-7.

7.1.4 Desert Renewable Energy Conservation Plan Land Use Plan Amendment Consistency

In addition to the mitigation measures and BMPs listed above, the Project will comply with the CMAs contained within the LUPA for the DRECP. CMAs that apply to general biological resources and to western burrowing owl specifically are summarized below. Text not related to burrowing owl has been omitted. The full text of these measures may be found in the DRECP LUPA, which is attached as Appendix E.

LUPA-BIO-2 Biological Resources

Designated biologist(s) will conduct and oversee activity-specific required biological monitoring during pre-construction, construction, and decommissioning to ensure that avoidance and minimization measures are appropriately implemented and are effective.

LUPA-BIO-4 Seasonal Restrictions

For activities that may impact Focus and BLM Special Status Species, implement all required species-specific seasonal restrictions on preconstruction, construction, operations, and decommissioning activities.

LUPA-BIO-5 Worker Education

A worker education program will be provided to all workers for all activities, as determined appropriate on an activity-by-activity basis, during all phases of the project. The program will provide information on biological resources and their protection measures, reporting requirements, and legal implications.

LUPA-BIO-7 Restoration of Areas Disturbed by Construction Activities But Not Converted by Long-Term Disturbance

Restore areas affected by ground disturbance and/or vegetation removal that are not converted by long-term ground disturbance according to standards approved by BLM.

LUPA-BIO-8 General Closure and Decommissioning Standards

All activities that are required to close and decommission the site will specify and implement project-specific closure and decommissioning actions that meet the approval of BLM.

LUPA-BIO-12 Noise

Minimize noise impacts on Focus or BLM Special Status Species, using noise controls on equipment and minimizing activities that create noise above ambient levels in close proximity to those species and their suitable habitat.

LUPA-BIO-13 General Siting and Design

To the maximum extent practicable, site and design projects to avoid impacts to vegetation types, unique plant assemblages, climate refugia as well as occupied habitat and suitable habitat for Focus and BLM Special Status Species. Minimize the extent of project impacts, including the project footprint and light pollution.

LUPA-BIO-14 Biology: General Standard Practices

Implement general standard practices to protect Focus and BLM Special Status Species, such as avoiding feeding or harassing wildlife, avoiding bringing domestic pets on-site, checking construction materials for the presence of wildlife prior to use, using covers to prevent wildlife entrapment in trenches or excavations, and minimizing vegetation removal.

LUPA-BIO-15 Biology: General Standard Practices

Use state-of-the-art construction and installation techniques approved by BLM that minimize new site disturbance, soil erosion and deposition, soil compaction, disturbance to topography, and removal of vegetation.

LUPA-BIO-16 Activity-Specific Bird and Bat CMAs

For activities that may impact Focus and BLM sensitive birds, birds protected by the ESA and/or Migratory Bird Treaty Act of 1918, and bat species, implement appropriate measures as per the most up-to-date BLM state and national policy and guidance and data on birds and bats to avoid and minimize direct mortality of birds and bats.

LUPA-BIO-17 Activity-Specific Bird and Bat CMAs

For activities that may result in mortality to Focus and BLM Special–Status bird and bat species, a Bird and Bat Conservation Strategy (Appendix B) will be prepared with the goal of assessing operational impacts to bird and bat species and incorporating methods to reduce documented mortality. The strategy shall be approved by BLM in coordination with USFWS, and CDFW as appropriate.

LUPA-BIO-IFS-12 Burrowing Owl

If burrowing owls are present, a designated biologist will conduct appropriate activity-specific biological monitoring to ensure avoidance of occupied burrows and establishment of the 656 feet (200 meter) setback to sufficiently minimize disturbance during the nesting period on all activity sites, when practical.

LUPA-BIO-IFS-13 Burrowing Owl

If burrows cannot be avoided on-site, passive burrow exclusion by a designated biologist through the use of one-way doors or the most up-to-date agency BLM or CDFW specifications. Before exclusion, there must be verification that burrows are empty or the most up-to-date BLM or CDFW protocols. Confirmation that the burrow is not currently supporting nesting or fledgling activities is required prior to any burrow exclusions or excavations.

LUPA-BIO-IFS-14 Burrowing Owl

Activity-specific active translocation of burrowing owls may be considered, in coordination with CDFW.

LUPA-BIO-SVC-6 Special Vegetation Features

Microphyll woodland will be avoided, except for minor incursions (defined as actions that cumulatively do not impact the conservation strategy of the DRECP). The Project would comply with this CMA, because the panel layout has been designated to avoid desert dry wash woodland (DDWW) with the exception of

minor incursions or where there is existing inter¬vening infrastructure. See also LUPA-BIO-RIPWET-1, below.

LUPA-BIO-COMP-1 Compensation
Impacts to biological resources will be compensated using the standard biological resources compensation ratios specified elsewhere in the Plan. Compensation acreage requirements may be fulfilled through non-acquisition (i.e., restoration and enhancement), land acquisition (i.e., preserve), or a combination of these options.

LUPA-BIO-COMP-2 Compensation
Birds and Bats – The compensation for the mortality impacts to bird and bat Focus and BLM Special Status Species from activities will be determined based on monitoring of bird and bat mortality and a fee re-assessed every 5 years to fund compensatory mitigation. Compensation will be satisfied by restoring, protecting, or otherwise improving habitat or by non-restoration actions that reduce mortality risks to birds and bats.

7.2 Habitat Compensation

This section shows how the Applicant intends to fulfill the BLM DRECP and anticipated CDFW ITP requirements for compensatory mitigation associated with Project impacts to burrowing owl. Because the Project is located on lands designated as Development Focus Area (DFA) under the DRECP, it is subject to applicable DRECP CMAs (see section 7.1.4). The Project will comply with all applicable CMAs on both the public and private lands within the Project and will provide compensatory mitigation in accordance with the mitigation rations included in CMA LUPA-BIO-COMP-1. The Project will also comply with LUPA-BIO-SVF-6 and avoid desert dry wash woodland with a 200-foot buffer except for minor incursions or where there is existing, intervening infrastructure. The desert dry wash woodland impacts shown below in Table 7.2-1 represents the total of minor incursions made into this habitat type. Table 7.2-1 shows the Project's impacts, required mitigation ratios, and compensatory mitigation acreage. Any other resources for which compensatory mitigation is required will be included in other Project documents.

Table 7.2-1 Compensatory Mitigation

Vegetation/Habitat Type	Project Impact (acres or occupied owl burrows)	Mitigation Ratio	Compensatory Mitigation (acres)
Mojave creosote bush scrub	35.2	1:1	35.2
Displacement of owls from occupied burrows	2	1.5 times 6.5 (9.75) acres per occupied burrow displaced by Project	19.5[a]
Total	**35.2**	**-**	**35.2**

Notes:

[a] The acreage for displacement of occupied burrows is nested within the larger mitigation acreage.

8 Mitigation Monitoring Plan

(10) A proposed plan to monitor compliance with the minimization and mitigation measures and the effectiveness of the measures.

A Mitigation Monitoring and Reporting Program would be prepared and implemented for the Perkins Renewable Energy Project as part of the CEC Decision.

9 Mitigation Funding Sources

(11) A description of the funding source and the level of funding available for implementation of the minimization and mitigation measures.

It is the financial obligation of IP Perkins BAAH, LLC, to fund all mitigation that would be identified in the ITP. Additionally, DRECP CMA LUPA-COMP-1 requires compensation activities to be initiated or completed within 12 months from the time the resource impact occurs. The BLM will determine the activity or project-level timing of the compensation (i.e., initiated, completed, or a combination) based on the specific resources being impacted and the scope and content of the activity. A six-month extension may be authorized depending on the resources impacted and compensation due diligence of the Project developer.

10 CEQA Documentation

The EIR will be prepared by the CEC and is anticipated to be published in 2027.

11 References

California Department of Fish and Wildlife. 2012. "Staff Report on Burrowing Owl Mitigation." State of California Natural Resources Agency.

———. 2023. "CNDDB - Plants and Animals." 2023. https://wildlife.ca.gov/Data/CNDDB/Plants-and-Animals.

Doublet, Dejeanne, David H. Johnson, Fitsum Abadi, and Martha J. Desmond. 2023. "Nest Survival and Productivity of Translocated and Resident Burrowing Owls in Arizona." *The Journal of Wildlife Management* 87 (1): e22339. https://doi.org/10.1002/jwmg.22339.

Gervais, J.A., D.K. Rosenberg, and L. Comrack. 2008. "Burrowing Owl (Athene Cunicularia)." In *California Bird Species of Special Concern: A Ranked Assessment of Species, Subspecies, and Distinct Populations of Birds of Immediate Conservation Concern in California*, edited by W.D. Shuford and T. Gardali. Studies of Western Birds I. Western Field Ornithologists, Camarillo, California, and California Department of Fish and Game, Sacramento. https://nrm.dfg.ca.gov/FileHandler.ashx?DocumentID=10405&inline.

Haug, E.A., B.A. Millsap, and M.S. Martell. 1993. "Burrowing Owl (Speotyto Cunicularia)." In *The Birds of North America*, edited by A. Poole and F. Gill. Philadelphia: The Academy of Natural Sciences; Washington D.C.: The American Ornithologists' Union.

Holland, R.F. 1986. "Preliminary Descriptions of the Terrestrial Natural Communities of California." The Resources Agency, Department of Fish and Game (State of California). Available at: https://www.cal-ipc.org/docs/ip/inventory/pdf/HollandReport.pdf.

NatureServe Explorer. 2024. "Athene Cunicularia Burrowing Owl." October 1, 2024. https://explorer.natureserve.org/Taxon/ELEMENT_GLOBAL.2.106553/Athene_cunicularia.

Scobie, D., and C. Faminow. 2000. "Development of Standardized Guidelines for Petroleum Industry Activities That Affect COSEWIC Prairie and Northern Region Vertebrate Species at Risk."

APPENDIX A

Biological Resources Technical Report

The Biological Resources Technical Report was uploaded as Attachment B to the Data Response Set #3 (Docket number 262219) for the Perkins Renewable Energy Project in March 2025.

APPENDIX B

Bird and Bat Conservation Strategy

The Bird and Bat Conservation Strategy was uploaded as Attachment C.7 to the Data Response Set #2 for the Perkins Renewable Energy Project in October 2024.

APPENDIX C

Wildlife Protection and Translocation Plan

The Wildlife Protection and Translocation Plan was uploaded as Appendix M.4 to the Opt-in Application for the Perkins Renewable Energy Project in February 2024.

APPENDIX D

Preliminary Best Management Practices and Project Design Features

The Preliminary Best Management Practices and Project Design Features were uploaded as Appendix D.1 to the Opt-in Application for the Perkins Renewable Energy Project in February 2024.

APPENDIX E

Desert Renewable Energy Conservation Plan Land Use Plan Amendment Conservation and Management Actions

The Desert Renewable Energy Conservation Plan Land Use Plan Amendment Conservation and Management Actions was uploaded as Appendix D.2 to the Opt-in Application for the Perkins Renewable Energy Project in February 2024.

APPENDIX F

Compensation Plan

The Compensation Plan was uploaded as Attachment C.9 to the Data Response Set #2 for the Perkins Renewable Energy Project in October 2024.

Attachment C Revised Figure 4.10-8 and Figure 4.10-11 of Section 4.10 Socioeconomics of the Opt-in Application

Attachment C Revised Figure 4.10-8 and 4.10-11 of Section 4.10 Socioeconomics of the Opt-in Application

Figure 4.10-8 Imperial County Unemployment

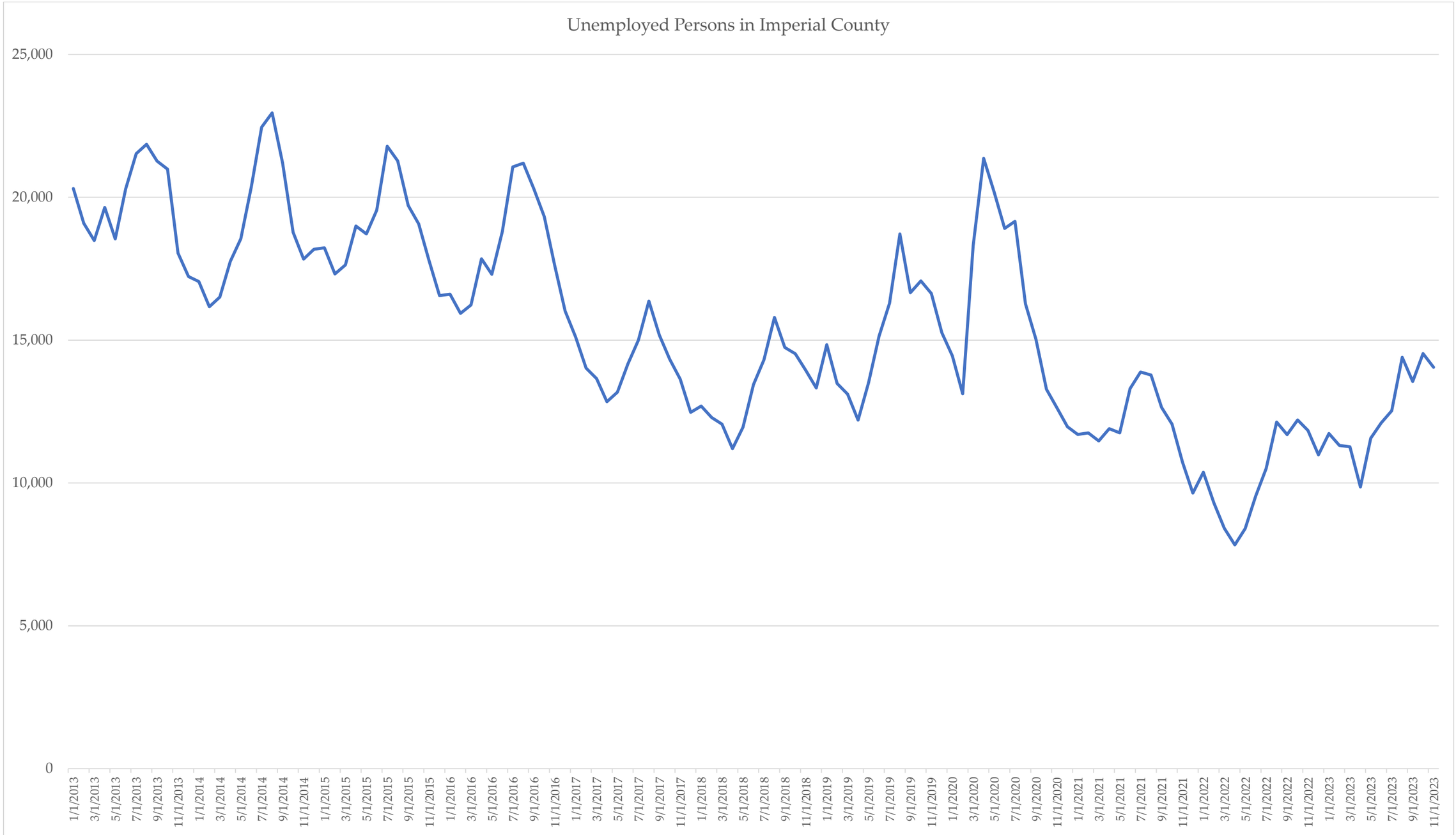
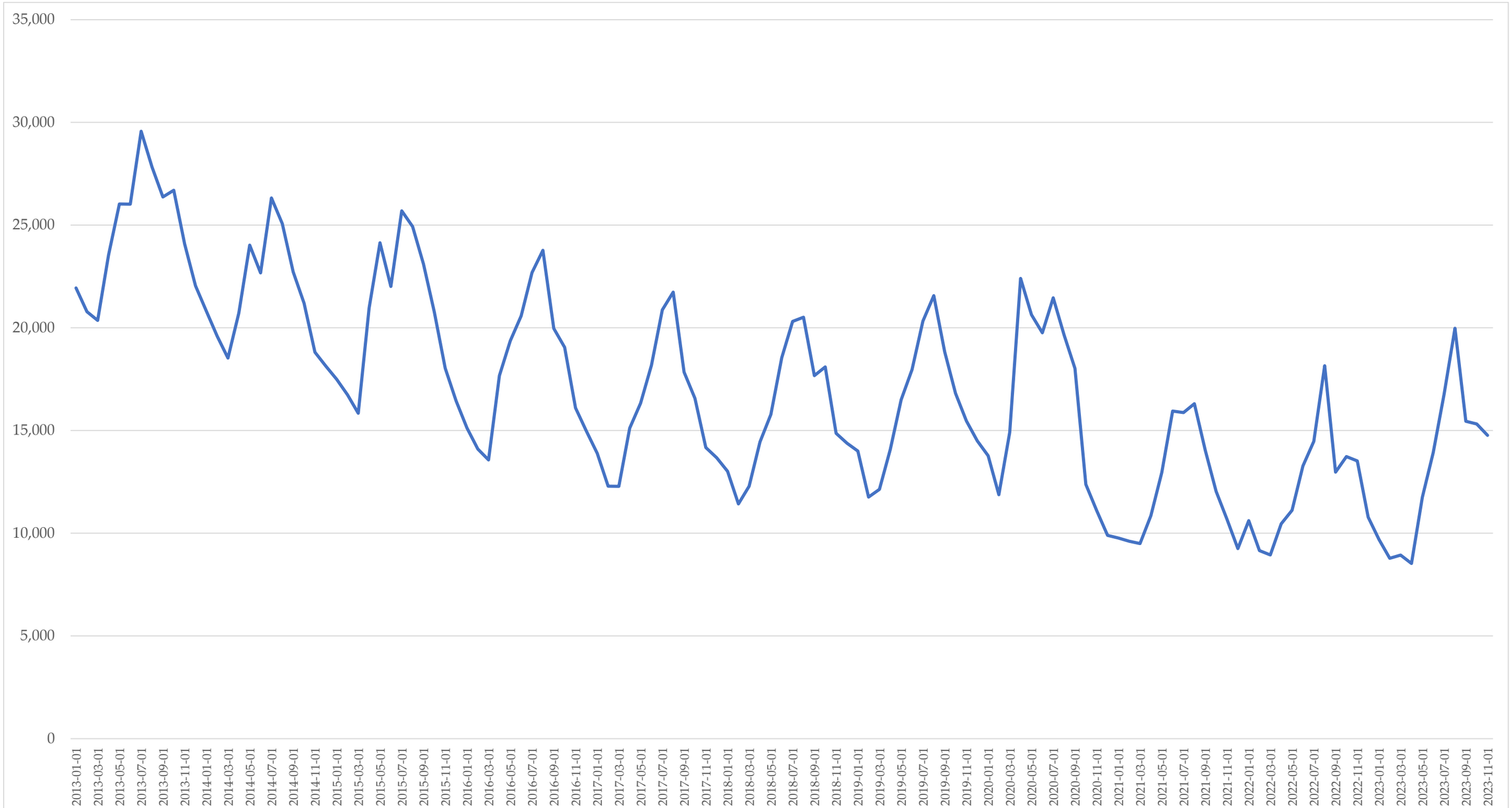


Figure 4.10-11 Yuma County Unemployment



Attachment D Revised Opt-in Application Project Description

2 Project Description

2.1 Introduction

This section discusses the Perkins Renewable Energy Project (Project), including the Project components, location, and site selection, preliminary site investigations and design, and Project closure as well as efficiency and reliability of the Project. The information contained in this section and organization of information conforms with the requirements of the California Energy Commission (CEC) California Code of Regulations (CCR) Title 20, Appendix B.

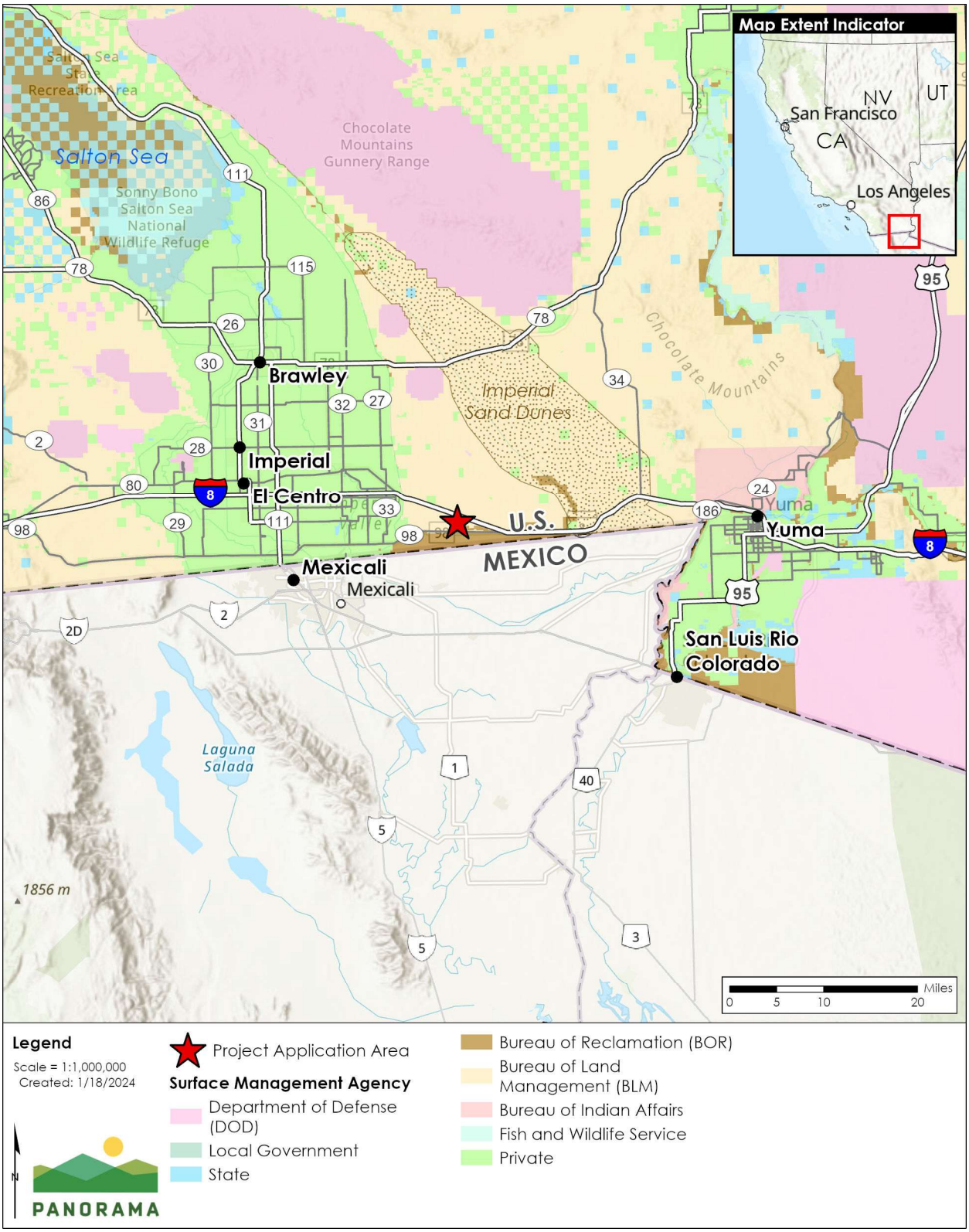
2.1.1 Project Summary

IP Perkins, LLC, IP Perkins BAAH, LLC, and any related affiliates (collectively, "Applicant"), subsidiaries of Intersect Power, LLC, propose to construct, operate, maintain, and decommission a 1,150 megawatt (MW) solar photovoltaic (PV) facility and battery energy storage system (BESS) on public lands administered by the U.S. Bureau of Land Management (BLM) and Bureau of Reclamation (BOR), as well as private lands located southeast of El Centro in Imperial County, California (refer to Figure 2.1-1).

A fenced area referred to as the "Project site" would contain the solar plant, BESS, Project interconnection generation tie (gen-tie) line, Project substation, and operations and maintenance (O&M) yard and facility. The Project would also include a high-voltage breaker-and-a-half switchyard (BAAH switchyard) and two 500 kilovolt (kV) loop-in transmission lines, each within a 2,000-foot-wide loop-in transmission corridor, that would be required to interconnect to the existing San Diego Gas and Electric (SDG&E) Southwest Power Link (SWPL) 500 kV transmission line that traverses east–west to the south of the Project site. A 12.5 kV IID distribution line extension and a 34.5 kV IID distribution line extension are required by the Project to connect to and service the Glamis substation and the Project substation. Together the Project site, the BAAH switchyard, and the 500 kV loop-in transmission corridors are referred to as the "Project Application Area" in these application materials (refer to Figure 2.1-2). The two IID distribution lines are referred to separately in these application materials (refer to Figure 2.1-2).

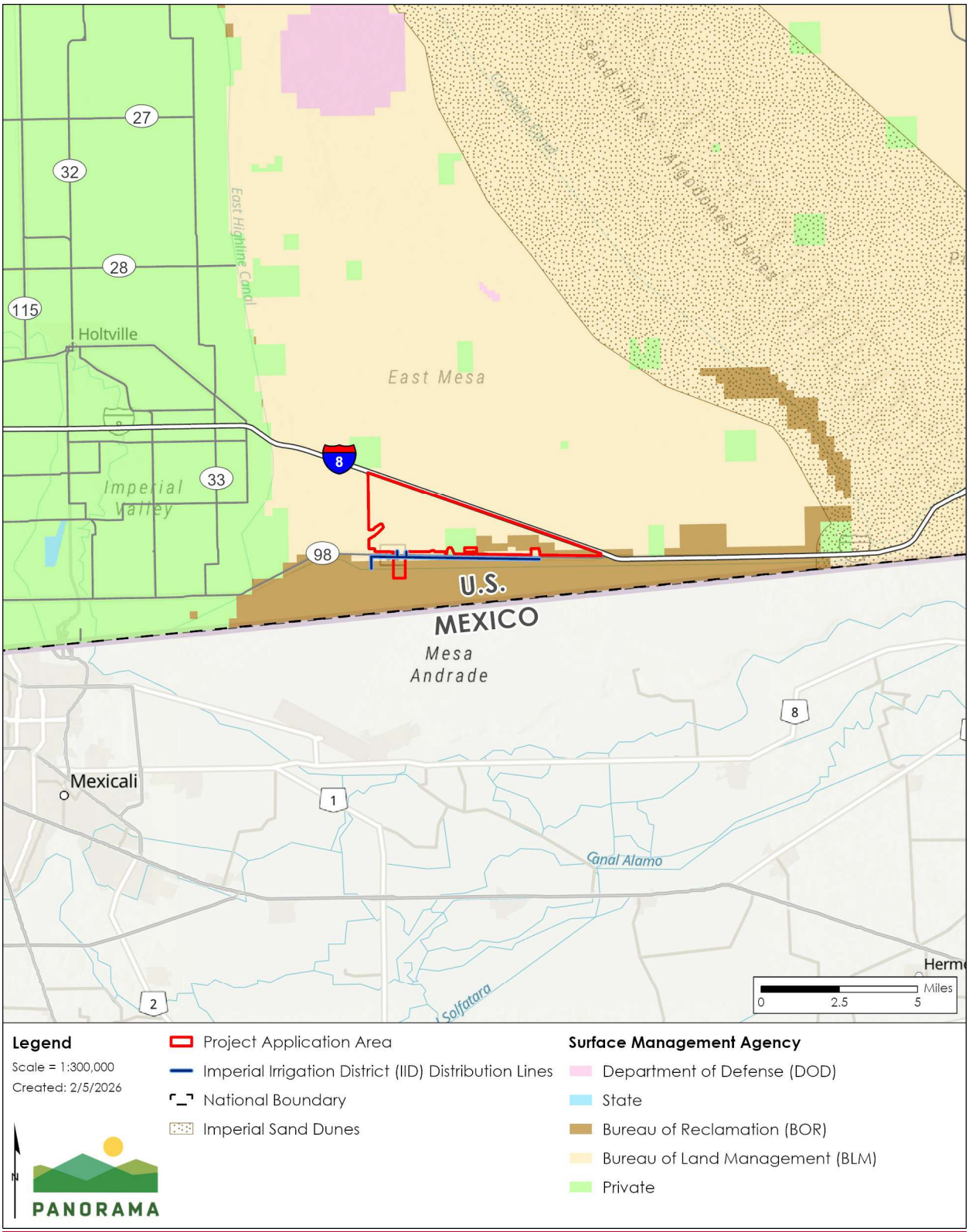
Details regarding the Project site components can be found in Section 2.3.2. Details regarding the two 500kV loop-in transmission lines and the two IID distribution line extensions can be found in Section 2.4. These components have been separated in this Opt-in Application due to the various entities involved which are described further in Section 2.1.3. IID distribution line would be permitted separately.

Figure 2.1-1 Regional Setting



Source: (Bureau of Land Management (BLM) 2012; Intersect Power 2023; Panorama 2026)

Figure 2.1-2~~2.1-2~~~~2.1-2~~ Project Vicinity



Source: (BLM 2012)

2.1.2 Project Objectives

The Applicant's objectives for the Project include the following:

- Design, construct, and operate the facility in a manner that respects the local community, its values, and its economy.
- Operate the facility in a manner that protects the safety of on-site staff and off-site members of the public.
- Generate sales tax revenues for Imperial County by establishing a point of sale in the County for the procurement of most major Project services and equipment.
- Create temporary and permanent living-wage, union jobs for local and regional residents.
- Generate affordable wholesale electric power to serve the ratepayers of the Imperial County region and the State of California.
- Contribute to addressing the climate crisis by generating renewable energy to displace climate-warming fossil fuel-based generation, and in so doing, helping to create a global climate that is hospitable to future generations and wild places.
- Contribute to meeting the State of California's renewable energy policy objectives as described by the interim targets in Senate Bill (SB) 1020 to require renewable energy and zero-carbon resources to supply 90 percent of all retail electricity sales by 2035 and 95 percent of all retail electricity sales by 2040.
- ~~Assist the nation in meeting its Nationally Determined Contribution commitments under Article 4 of the Paris Climate Agreement to achieve a 50 to 52 percent reduction in United States (U.S.) greenhouse gas pollution from 2005 levels by 2030, and to achieve 100 percent carbon pollution-free production in the electricity sector by 2035.~~
- Minimize environmental impacts and land disturbance associated with solar energy development by siting the facility on relatively flat, contiguous lands with low quality habitat, high solar insolation in close proximity to existing roads and established utility corridors.
- Create a new point of interconnection in the Imperial Valley along California's backbone transmission infrastructure to facilitate this Project and future generationsors helping meet the state's renewable energy goals.
- Develop a project that is economically feasible and which can attract commercial financing.
- Deliver 1,150 MW of clean, renewable solar energy to California ratepayers.
- Install 1,150 MW of 2-hour and/or 4-hour energy storage capacity, which would generally be charged by the solar PV facility and dispatched in the late afternoon/ evening, once the sun goes down and solar production declines.

2.1.3 Applicant and Other Responsible Entities

The solar facility, BESS, Project substation, and gen-tie line would be constructed, owned, and operated by IP Perkins, LLC and Affiliates (refer to Figure 2.2-1). IP Perkins BAAH, LLC would construct the BAAH switchyard, which, upon commissioning, would be owned and operated by SDG&E in coordination with IID. The two 500 kV loop-in transmission lines that are

included within the IP Perkins BAAH, LLC portion of the Project Application Area, would be constructed by SDG&E and, upon commissioning, owned and operated by SDG&E in coordination with IID (refer to Figure 2.2-2). IP Perkins, LLC, has a fully executed Engineering and Procurement (E&P) agreement with SDG&E and has filed for an interconnection position of 1,150 MW on SDG&E's SWPL line. IP Perkins, LLC is in the process of negotiating and, upon completion of interconnection studies, will execute an interconnection agreement with SDG&E to carry up to 1,150 MW of energy. The two IID distribution lines not included within the Project Application Area would be constructed by IID prior to Project operations. IID would permit, own, and operate the two IID distribution lines.

2.2 Project Location

2.2.1 Regional Setting

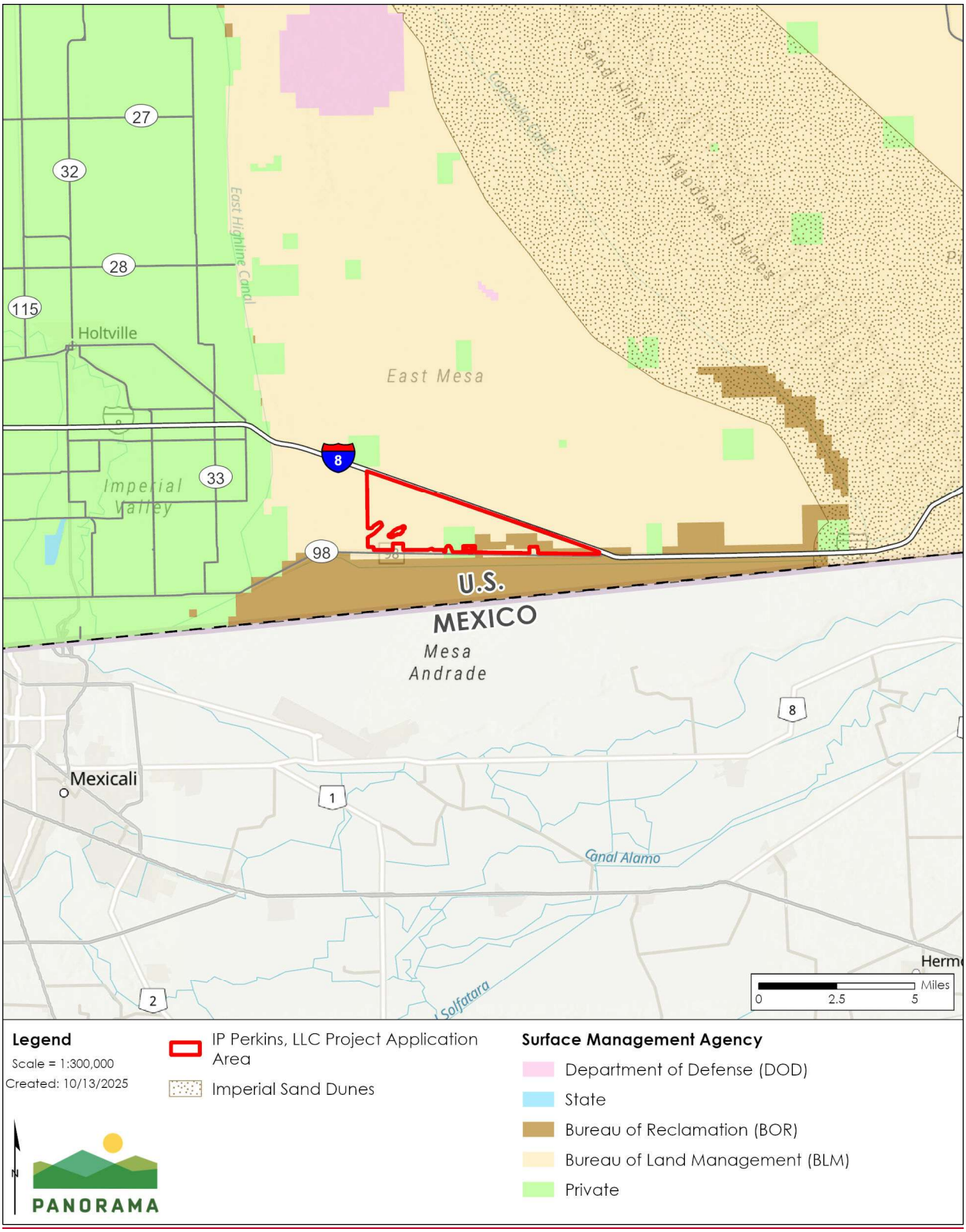
The Project Application Area is in Imperial County, approximately 37 miles southeast of the Salton Sea. Imperial County is located in southern California, in the southwestern portion of the Colorado Desert. The Project Application Area is located approximately 1.2 miles north of the U.S.–Mexico border, in a region characterized by undeveloped desert and agricultural uses. The Imperial Valley, which is dominated by agricultural land, is located an estimated 2.5 miles west of the Project Application Area. The Imperial Sand Dunes, the largest mass of sand dunes in California, is located approximately 9 miles east of the Project Application Area.

2.2.2 Project Application Area and Vicinity

The Project site and BAAH switchyard would be located on BLM- and BOR-administered public lands as well as private lands. The 500 kV loop-in transmission lines would be located on public lands administered by BLM and BOR and would connect the BAAH switchyard to the SWPL transmission line, 0.84 mile south of the Project site. The IID distribution lines would be located on public lands administered by BLM and BOR as well as private lands. Table 2.2-1 lists the Project site acreages and Project Application Area acreages, listed by land management category. The entirety of the Project Application Area within BLM -administered public land is designated Development Focus Area (DFA) under the Desert Renewable Energy Conservation Plan (DRECP) and its associated Record of Decision (ROD).[1] The private land within the Project Application Area is designated Recreation/Open Space by the Imperial County General Plan and zoned Open Space/Preservation by the Land Use Ordinance of the County of Imperial, Division 5.

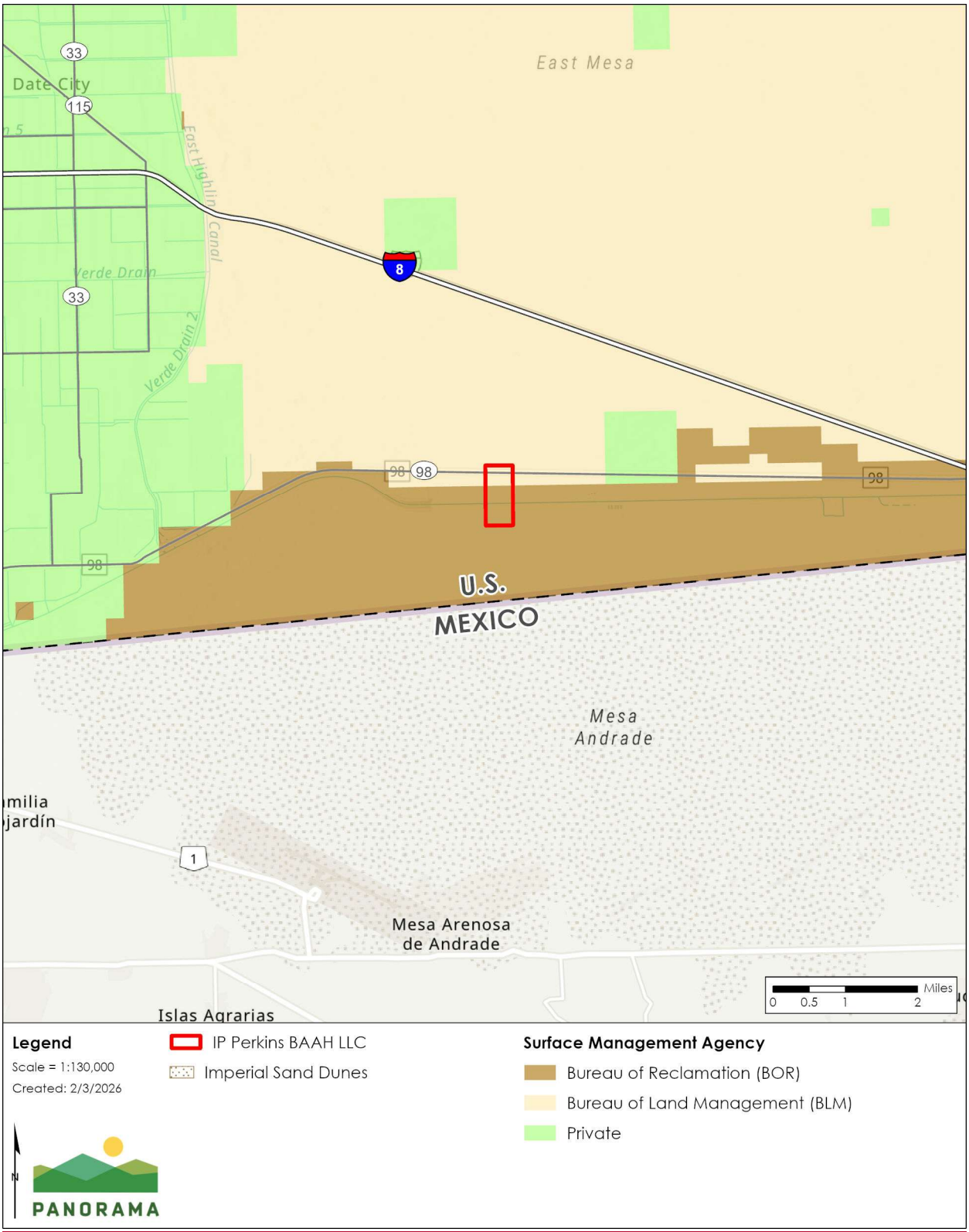
[1] The DRECP was developed to advance federal and state natural resource conservation goals and other state laws while facilitating a timely and streamlined permit process for renewable energy projects (BLM 2015). Areas designated as DFAs are considered areas suitable for renewable energy development under the DRECP.

Figure 2.2-1~~2.2-1~~ IP Perkins, LLC and Affiliates Portion of the Project Application Area



Source: (Intersect Power 2023; Panorama 2026)

Figure 2.2-22.2-2 IP Perkins BAAH, LLC Portion of the Project Application Area



Source: (Intersect Power 2023; Panorama 2026)

The Applicant coordinated with BLM to design the Project fenceline such that the Project preserves a portion of the BLM/368 energy utility corridor- that traverses partially through the Project site. Refer to Figure 4.6-1, 4.6-2, and 4.6-3 in Section 4.6 Land Use, for a visual representation of the land use designations and corridors within and adjacent to the Project Application Area.

Table 2.2-12.2-1 Project Application Area and Project Site Acreages by Land Manager/ Administrator

Land manager/administrator	Project Application Area acreages	Project site acreages	IID distribution line miles
Bureau of Land Management	4,872763	4,76008[a]	4.7
Bureau of Reclamation	963848	8278	0.4
Private Land	465515	465515	1
Total	**6,3006,126**	**6,0526,051**	**6.2**

Note: Totals may not add due to rounding.

a This acreage includes the ~52-acre microphyll woodland area that is within the Project site but is avoided by development.

The Project site is bounded by Interstate 8 (I-8) to the north and State Route 98 (SR 98) to the south. The immediate area to the west of the Project site is vacant natural land with farmland located 2.5 miles west of the Project site. The center of El Centro, California is approximately 20 miles to the west and Mexicali, Mexico is approximately 15 miles to the southwest. The All-American Canal is directly south of the Project site, parallel with SR 98. The Project vicinity is shown in Figure 2.1-2. Existing conditions within the Project site and 500 kV loop-in transmission corridor are shown in Figure 4.13-2 through 4.13-5 of Section 4.13 Visual Resources.

2.2.3 Legal Description, ROW and Leaseholds

The Project Application Area is located in unincorporated Imperial County in Township 16 South, Ranges 17E and 18E, San Bernardino Meridian. The Project Application Area legal description, including a map at a scale of 1:24,000 (1" =2000') and the identification of the location of the Project site, related facilities, and leaseholds by section, township, range, county, and assessor's parcel numbers (APNs), is provided in Appendix A.

2.2.4 Parcel Notification

A parcel notification package was completed and provided in Appendix B which includes all APNs and owners' names and addresses for parcels within 500 feet of the 500 kV loop-in transmission lines and IID distribution lines and 1,000 feet of the Project site. Direct mailing addresses for owners and occupants of properties contiguous to the Project Application Area and IID distribution lines are included in the parcel notification list.

2.3 Generation Facility Description, Design, and Operation

2.3.1 Facility Design Considerations

Site Selection

The Project site was selected through review of available BLM-administered lands with DFA designations located adjacent to existing transmission infrastructure. The portions of the Project site on BLM-administered lands are located within a DFA, and a high voltage transmission line is located 0.8 mile from the Project site. Other factors that were considered include sensitive resources, solar insolation, slope, meteorological conditions, and hydrology. The private and BOR-managed lands included in the proposed Project also demonstrate these characteristics that make them suitable for solar development. Existing roads and highways including I-8 and SR 98, Imperial Irrigation District (IID) rights of way and infrastructure (e.g., distribution lines), and other utilities were also considered in the Project design/layout. The site investigations performed to verify the site conditions as part of the site selection and design process are described below. A detailed discussion of site selection is included in Section 5.1, Alternatives.

Engineering Evaluations

Solar Insolation and Slope

Insolation is a measure of solar radiation energy received on a given surface in a given time. It is commonly expressed as an average irradiance in watts per square meter (W/m^2) or kilowatt-hours per square meter per day ($kWh/m^2/day$). The region in which the Project site is located receives greater than 7 $kWh/m^2/day$ of solar radiation energy, giving it a higher degree of insolation than almost anywhere else in the United States (National Renewable Energy Laboratory 2018).

Solar PV projects require the land to be minimally sloped for development. The Project site slopes gradually from east to west, and the slope within the site ranges from 0 to 2.5 percent.

Sensitive Resources

Sensitive resources, including swales dominated by microphyll woodlands, are located adjacent and within the Project site. The original Project layout encompassed a larger area that has since been reduced to avoid the microphyll woodland areas. The approximately 52-acre area that contains microphyll woodland ~~area that~~ remains within the Project site boundaries near the solar PV would be avoided and left undisturbed by the Project design. Refer to Section 4.2: Biological Resources for additional information on the microphyll woodland areas.

Preliminary Geotechnical Evaluation

The Applicant ~~is~~ conducted~~ing~~ a geotechnical evaluation to gather information on the physical properties of the soil and rock for incorporation into the design of the facility. Further g~~G~~eotechnical testing and analysis would include survey work, geotechnical borings, soil sampling, use of ground-penetrating radar, and prototype pile testing along existing disturbed routes within the Project site. A preliminary g~~G~~eotechnical engineering report, covering a portion of the private lands included in the Project site, and an updated preliminary

geotechnical engineering report, covering a portion of the private lands and Project site, haves been completed February 2024 and July 2024, respectively (see Section 4.4). Additional geotechnical investigations will be conducted on the BLM and BOR managed lands once the federal Right of Way (ROW) Grant for those lands is received.

As an input to Project design, the Applicant would conduct a comprehensive geotechnical and engineering geologic investigation that covers the entirety of the Project Application Areasite. The resulting report would provide recommendations to address surface fault rupture potential; seismic groundshaking/seismic loading; seismically induced ground failure/instability, included but not limited to liquefaction; slope instability and failure, including but not limited to seismically induced slope failures and stability of cut and fill slopes; and site soil conditions, including but not limited to potential for expansive soils. The reports would be prepared by California state-licensed engineering and geologic staff (California Geotechnical Engineer/GE and Certified Engineering Geologist/CEG).

Hydrologic Modeling

A 2-D hydraulic study was conducted for the Project site in 2021. Updated hydraulic studies were conducted in January and April 2024. The studiesy determined that the Project site has a generally low maximum floodplain inundation depth of 1 foot or less, with velocity of 1 foot per second (fps) or less. The Project site has a low flood risk, which is consistent with the hydrologic characteristics of the area given the dry and mostly flat topography of the Project site (WRMA Engineering 2024a; 2024b)(WRMA Engineering 2021).

Measures Proposed to Improve Adverse Site Conditions

Potential risks from adverse site conditions to the solar facility would be addressed through engineering. Adverse site conditions could include ground shaking from seismic activity, arc hazards, or corrosive soils. Project construction would adhere to the requirements and specifications contained in the final geotechnical report and final design plans, which would be fully compliant with the seismic recommendations provided by a California-registered professional engineer in accordance with the California Building Code requirements. Grounding wires would be installed where needed along the gen-tie. A ground grid composed of copper wire would be installed at the substation. Depending upon the results of the geotechnical report, if cathodic protection is recommended due to the presence of corrosive soils, a sacrificial anode type cathodic protection system would be provided. Galvanized metal posts and epoxy-coated rebar may be utilized in lieu of cathodic protection if supported by soil conditions.

2.3.2 Solar Facility Description

Components

The solar facility includes the following components:

- Solar PV arrays
- Inverter-transformer stations and electrical collector lines
- BESS

- Operation and maintenance facilities
- Monitoring and telecommunication facilities
- Access roads
- Security fencing and lighting
- Septic system
- Emergency and auxiliary facilities, including a permanent back-up generator

The Project also includes the Project substation, BAAH switchyard, and two 500 kV loop-in lines, described within Section 2.4. Table 2.3-1 lists the approximate acreages associated with each Project component for the Project site.

Project Site Layout

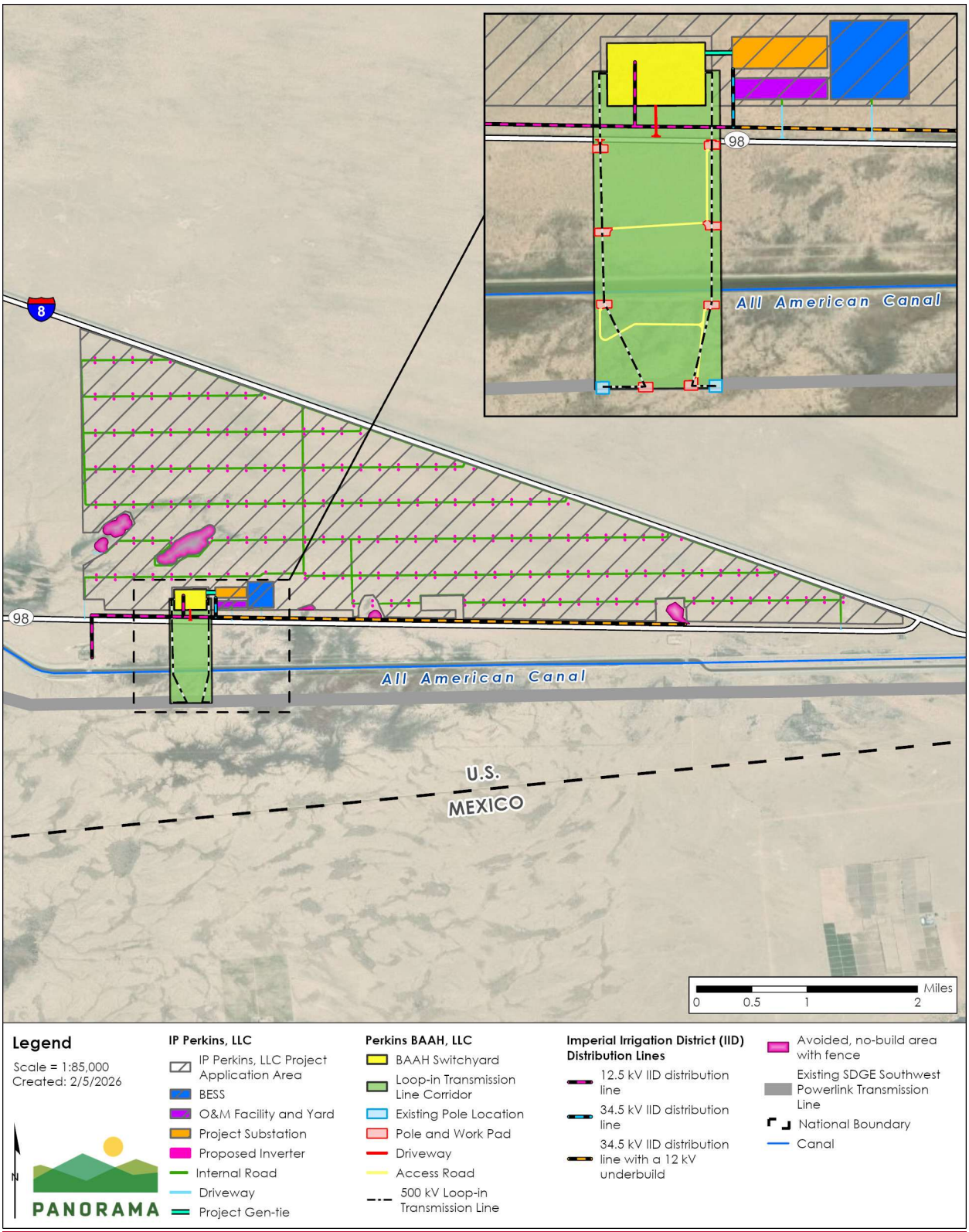
The Project site layout options, including the solar PV facility, BESS, substation, and transmission facilities are shown in Figure 2.3-1 and Figure 2.3-2. The Project would be outside the CalTrans ROW at I-8 and would be located north of the SR 98 ROW. New access roads and driveways would require an encroachment permit from CalTrans for connection to SR 98. The Project would also require an encroachment permit from IID for the crossing of the All-American Canal. Figures Section 4.14 Visual Resources will depict full-page color photographic reproduction depicting the visual appearance of the site prior to construction and a full-page color simulation of the Project site after construction.

Table 2.3-12~~.3-1~~ Estimated Development Area for the Solar Site Permanent Components

Project site component(s)	Approximate acreage
Fenced solar PV facility with arrays, inverters, transformers, and internal access roads	6,0525~~,985~~[a]
BESS	35
Operation and maintenance yard and facility	11.50~~~~
Temporary parking and laydown areas	≤25 acres

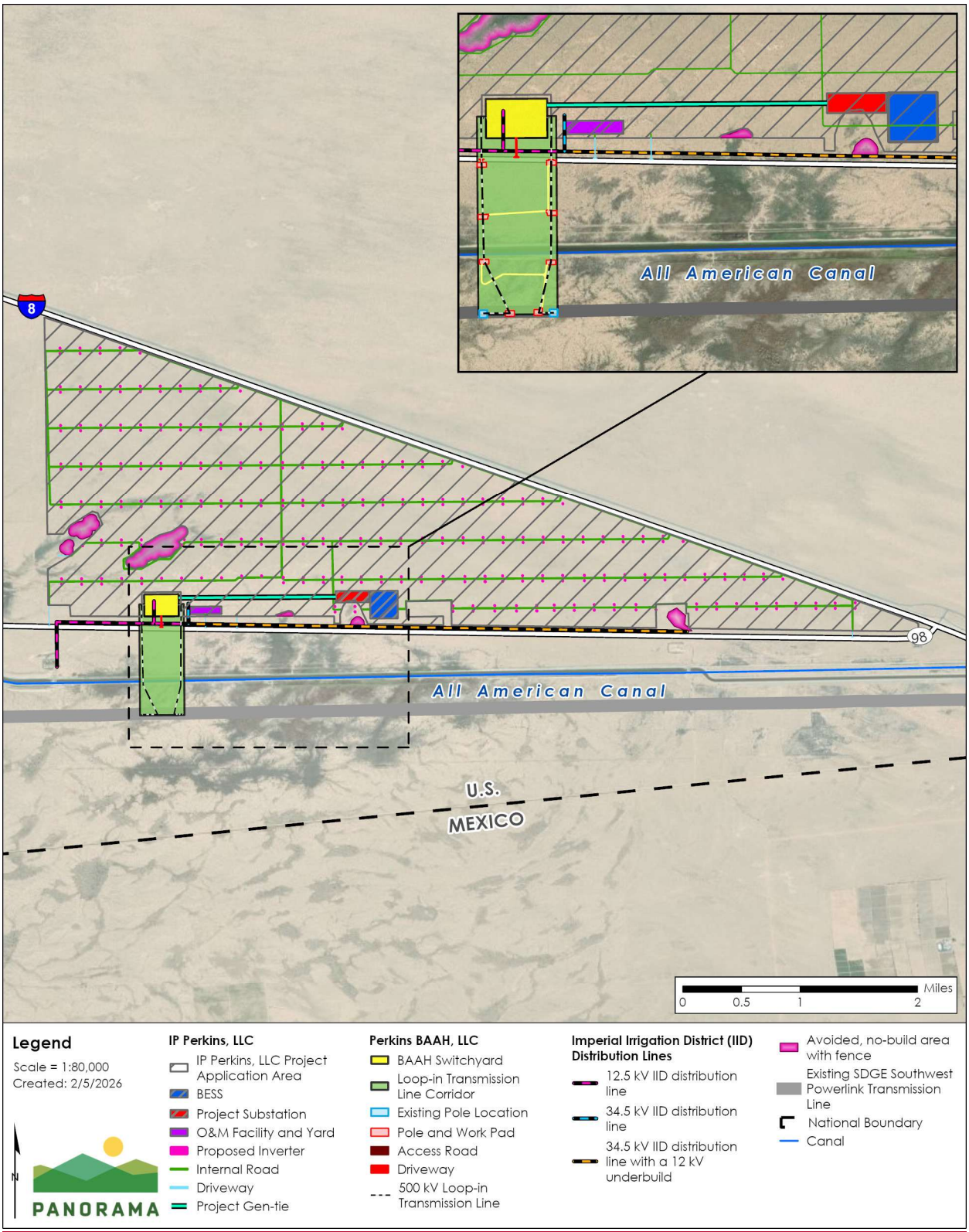
[a] Acreage includes the 52-acre microphyll woodland area that would be fenced and avoided.

Figure 2.3-12.3-12.3-1 Project Layout Option 1



Source: (Intersect Power 2023; Panorama 2026) ~~**(Intersect Power 2023a)**~~

Figure 2.3-22.3-22.3-2 Project Layout Option 2



Source: (Intersect Power 2023; Panorama 2026)

Solar Arrays

The solar facility would include approximately 3,100,000 solar panels; the precise panel count would depend on the technology ultimately selected at the time of procurement and efficiency of the technology at the time. It is anticipated that the panels selected for the Project would be First Solar Series 7. The Series 7 panel utilizes First Solar's thin film technology. However, the ultimate decision for panel types and racking systems would depend on market conditions at the time of procurement and environmental factors, including the recycling potential of the panels at the end of their useful lives.

Either mono-facial or bi-facial modules could be used, with a maximum height of approximately 10 feet at full tilt depending on topography and hydrology. Panel mounting systems that may be installed include either fixed-tilt or single-axis tracking technology, depending on the PV panels ultimately selected. Panels would either be mounted in a portrait orientation as single panels or mounted in a landscape orientation and stacked two high on a north-south oriented single-axis tracking system that would track the sun from east to west during the day. Panel faces would be minimally reflective, dark in color, and highly absorptive. Refer to Figure 2.3-3 for an elevation of an example solar PV technology that may be selected. Refer to Figure 2.3-4 for a visual representation of an example solar PV technology.

The PV panels would be manufactured at an off-site location and transported to the Project site. Panels would be arranged on the site in solar arrays. For single-axis tracking systems, the length of each row of panels would be approximately 350 feet along the north–south axis. For fixed-tilt systems, a row would consist of multiple tables four panels high by 10 panels wide (contingent on final design), each table being approximately 65 feet along the east–west axis, with 1-foot spacing between each table. Spacing between each row would be a minimum of 4 feet. Electricity would be generated directly from sunlight by the solar arrays and collected to the Project substation.

Structures supporting the PV panels would consist of steel piles (e.g., cylindrical pipes, H-beams, helical screws, or similar). The piles would typically be spaced 18 feet apart. The height of the piles above the ground would vary based on the racking configuration specified in the final design. For a single-axis tracking system, piles typically would be installed to a reveal height of approximately 4 to 6 feet above grade (minimum 1 foot clearance between bottom edge of panel and ground but could be higher to compensate for terrain variations and clearance for overland flow during stormwater events). For a fixed-tilt system, the reveal height would vary based on the racking configuration specified in the final design. Fixed-tilt arrays would be oriented along an east–west axis, with panels facing generally south. Tracking arrays would be oriented along a north–south axis, with panels tracking east to west to follow the movement of the sun. For fixed-tilt systems, the panels would be fixed at an approximate 20- to 60-degree angle or as otherwise determined necessary during final Project design.

Figure 2.3-3~~2.3-3~~ ~~2.3-3~~ Elevation of Solar PV Example Technology

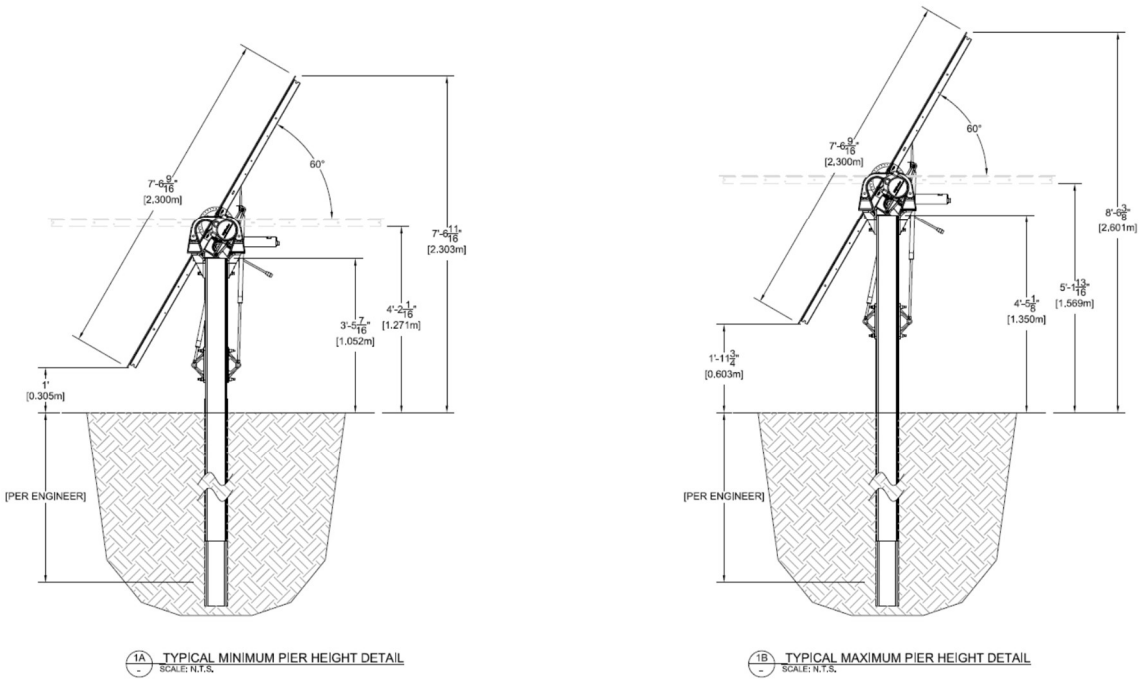


Figure 2.3-4~~2.3-4~~ ~~2.3-4~~ Visual Representation of Solar PV Example Technology

Inverters, Transformers, and Electrical Collection System

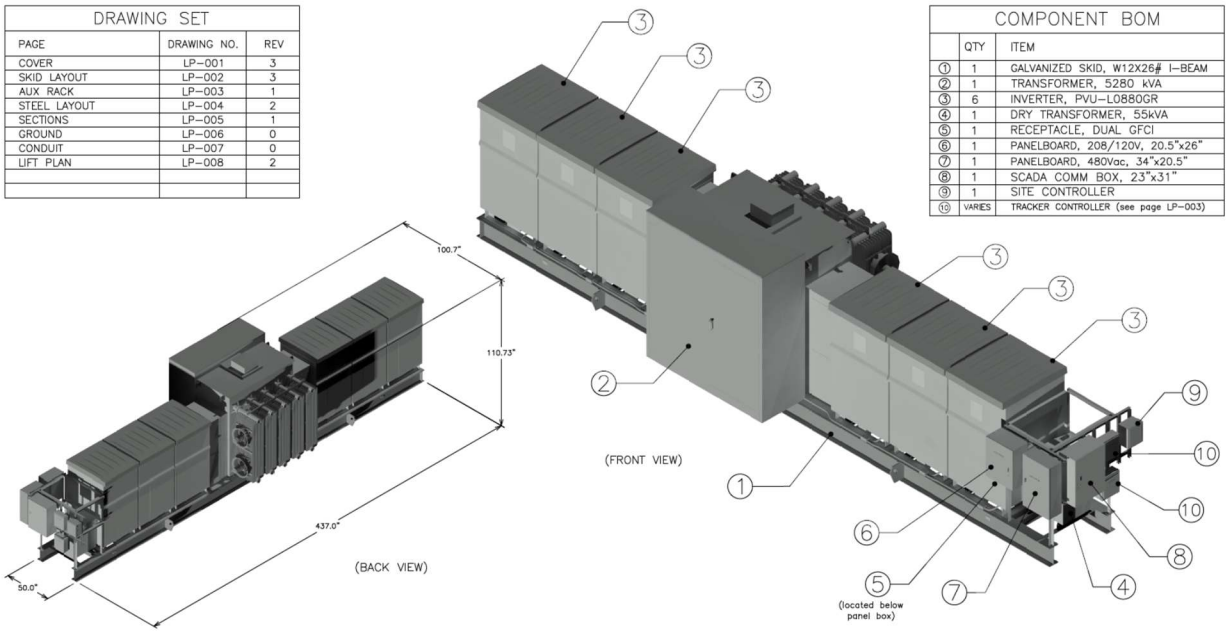
The Project would be designed and laid out primarily in sub-arrays of installed rows of panels, ranging in capacity from 4 to 7 MW. Non-conforming module blocks would be designed and sized as appropriate to accommodate the irregular shape of the Project site where necessary to avoid identified sensitive environmental resources.

Each 4 to 7 MW solar array would include a direct current (DC) to AC inverter and medium voltage transformer equipment area (i.e., inverter-transformer station) measuring 40 feet by 25 feet and approximately 10 feet tall, constructed on a concrete pad or steel skid and centrally located within the PV arrays (refer to Figure 2.3-5). The color of the inverter equipment would be light colored or neutral, depending on thermal requirements and availability from the manufacturer. Each inverter-transformer station would contain up to six inverters, a transformer, a battery enclosure, and a switchboard 8 to 11 feet high. The battery would provide an uninterruptible power supply as emergency back-up power for the inverter-transformer station. Each pad would have a security camera at the top of an approximately 20-foot-tall wood or metal pole. If required based on site meteorological conditions, an inverter shade structure would be installed at each pad. The shade structures, if needed, would consist of wood or metal supports and a durable outdoor material shade structure (metal, vinyl, or similar). The shade structure would extend up to 10 feet above the ground surface.

PV panels would be electrically connected into panel strings using wiring secured to the panel racking system. Cables would be installed to convey the DC electricity from the panels via combiner boxes or combiner harnesses with a trunk bus system located throughout the solar arrays to inverters to convert the DC to AC electricity. The output voltage of the inverters would be stepped up to the collection system voltage via transformers located near the inverters. The 34.5 kV collection cables would be either buried underground or installed overhead on wood poles. An underground 34.5 kV line would likely be buried in a trench 4 feet below grade but could go as deep as 6 feet and include horizontal drilling to avoid environmental resources and constraints. Thermal specifications require 10 feet of spacing between the medium voltage lines. In some locations closer to the step-up substation, more than 20 medium voltage AC lines may run in parallel.

In locations where the collection system crosses a road or pipeline overhead, wood poles spaced at intervals between 150 to 250 feet would be installed across the Project site. The typical height of the poles would be approximately 60 to 100 feet, with an embedment depth of 10 to 15 feet depending on the type of crossing, and diameters varying from 12 to 20 inches. Due to potential for operations and maintenance challenges, as well as for security purposes, the intent is to install the 34.5 kV collection lines underground; however, overhead installation could be used in the event sensitive resources need to be avoided.

Figure 2.3-52.3-52.3-5 Inverters, Transformers and Electrical Collection System



Battery Energy Storage System

The Project would include a BESS capable of storing 1,150 MW of electricity for up to 4 hours and would be housed in electrical enclosures and buried electrical conduit. The BESS would be located near one of the two optional sites shown in Figure 2.3-1 and Figure 2.3-2.

Up to 5,000 individual BESS electrical enclosures measuring approximately 40 feet or 52 feet by 8 feet by 8.5 feet high would be installed on concrete foundations. The Project could use any commercially available battery technology, including but not limited to lithium ion, LFP (lithium iron phosphate), NMC (nickel manganese cobalt), or NCA (nickel cobalt aluminum) batteries. Color treatment of the BESS enclosures would be RAL 9016 Traffic White.

Battery systems would require air conditioners or heat exchangers and inverters. In addition, a water tank for emergency use is anticipated for each BESS unit/area. The size, final number, and location of water tanks for emergency use would be determined in accordance with California Fire Code (CFC) during the final design process and would be reviewed/approved by the local or State Fire Marshal.

The BESS would comply with the current CFC, which governs the code requirements to minimize the risk of fire and life safety hazards specific to BESS used for load shedding, load sharing, and other grid services (Chapter 12 Section 1206 of the 2019 CFC). In accordance with the CFC, the battery enclosure and the site installation design are all required to be approved by the relevant fire authorities.

Figure 2.3-62.3-62.3-6 Battery Energy Storage System Example Technology

Operation and Maintenance Facilities

Operation and maintenance facilities would be constructed on the Project site. The O&M facility would cover an area of approximately 10 acres and include the following components: two O&M office buildings (which may share a wall) each approximately 3,000 square feet and 15 feet at the tallest point, up to 16 storage connex boxes for spare parts covering a total area of approximately 7,500 square feet, laydown yards, and a parking area. The O&M office building will have a septic system and will be constructed on a concrete foundation. The coloring of the operation and maintenance building would be tan, grey, or another neutral color. Energy would be supplied to the operation and maintenance building from the existing IID distribution lines south of the Project site. Standard medium voltage 12kV electrical poles would be installed to support the connection. The O&M facilities are shown on the site plan in Appendix F and a typical O&M facility is shown in Figure 2.3-7.

Figure 2.3-72.3-72.3-7 Operation and Maintenance Facilities

Monitoring and Telecommunications Facilities

The Project would be designed with a comprehensive *supervisory control and data acquisition* (SCADA) system to allow remote monitoring of facility operation and/or remote control of critical components. The fiber optic or other cabling required for the monitoring system typically would be installed in buried conduit within the access roads or planned trenching, leading to a SCADA system cabinet at the Project substation or a series of appropriately located SCADA system cabinets constructed within the operation and maintenance building. External telecommunications connections to the SCADA system cabinets could be provided through wireless or hard-wired connections to locally available commercial service providers. The Project's SCADA system would interconnect to the fiber optic network at the BAAH switchyard (described in Section 2.4), and no additional disturbance associated with telecommunications is anticipated.

Permanent Meteorological Data Collection System

The Project would include a meteorological data collection system (met system), such as a Soil Climate Analysis Network (SCAN) station or other applicable technology, for the life of the Project. Each met station (up to three) would be approximately 10 feet tall and have multiple weather sensors: a pyranometer for measuring solar irradiance, a thermometer to measure air temperature, a barometric pressure sensor, and wind sensors to measure speed and direction. The 4-foot horizontal cross-arm of each met station would include the pyranometer mounted on the left-hand side and the two wind sensors installed on a vertical mast to the right. The temperature sensor would be mounted inside the solar shield behind the main mast. Each sensor would be connected by cable to a data logger inside the enclosure. The met stations are preassembled units that are brought on and positioned on the Project site.

Solar Facility Access Driveways and Roads

The Project's roadway system would include a perimeter road, access roads and driveways from SR 98, and internal roads. Up to five access roads and driveways from SR 98 would be constructed for access to the Project site. The access roads and driveways would be 24 feet wide (20 feet wide with a 2-foot shoulder on each side) and constructed to achieve facility maintenance requirements and Imperial County standards. The access roads and driveways would be surfaced with gravel, compacted soil, or another commercially available surface, depending upon site conditions and constraints. Shoulders would be of the same material albeit less compacted and would allow vehicles to pass one another.

A 20-foot-wide perimeter road (16 feet wide with 2-foot-wide shoulders on each side) would be built on the inside of the fence. A network of regularly spaced 20-foot-wide internal roads would be installed connecting to the perimeter road. Roads would be surfaced with compacted soil or another commercially available surface acceptable to regulatory agencies and would provide a fire buffer, accommodate Project operation and maintenance activities such as cleaning of solar panels, and facilitate on-site circulation for emergency vehicles. If aggregate or gravel is used for road surfaces, such as to reduce dust or for low water crossings, portions of road lengths may remain free of gravel in strategic locations in order to facilitate wildlife

movement. In addition, wildlife passage culverts may be placed at key locations along Project roads to allow wildlife to avoid the road.

Site Security, Fencing, and Lighting

Controlled Access

Ingress/egress locations would be accessed via locked gates along the Project fenceline located at up to five points connecting to SR 98. The exact locations of the access points would be determined in coordination with CalTrans and based on resource survey results. The Project site would not be accessed from I-8.

Fencing

The Project site would be enclosed with fencing that meets National Electric and Safety Code (NESC) requirements for protective arrangements in electric supply stations. The boundary of the Project site would be secured by up to 6-foot-high chain-link perimeter fences topped with 1 foot of three-strand barbed wire or other fencing as dictated by BLM and/or North American Electric Reliability Corporation (NERC) specifications. The fence would typically be installed approximately 100 feet from the edge of the solar arrays.

Lighting

Motion sensitive, directional security lights would be installed to provide adequate illumination around the Project substation and BAAH switchyard areas, each inverter-transformer station, at gates, and along perimeter fencing. All lighting would be shielded and directed downward to minimize the potential for glare or spillover onto adjacent properties. Security lights would use motion sensor technology that would be triggered by movement at a human's height. Once activity has ceased, the motion sensors would be set to turn off lighting within 10 minutes.

All structures would be below the 200-foot height standard that triggers Federal Aviation Administration Part 77 Obstruction Evaluation Consultation, so no aviation lighting on power poles or other facilities is required.

Security Monitoring

Nighttime activities are anticipated to be minimal during Project operations and would be limited to occasional operational and maintenance activities at the Project substation, BAAH switchyard, and BESS as well as for panel repair required during de-energization. Additionally, off-site security personnel could be dispatched during nighttime hours or could be on site, depending on security risks, emergency maintenance requirements, and operating needs. Infrared security cameras, motion detectors, and/or other similar technology would be installed to allow for monitoring of the site through review of live footage 24 hours per day, 7 days per week. Such cameras or other equipment would be placed along the perimeter of the facility and/or at the inverters. Security cameras located at the inverters would be posted on poles approximately 20 feet high.

Water Supply Wells

Water supply for the Project ~~would~~ may be obtained from several potential sources, including an on-site groundwater well, off-site groundwater wells, trucked from an off-site water purveyor, and/or through a water wheeling agreement. ~~come from a combination of up to four new on-site groundwater wells and/or would be trucked in from off-site.~~ If needed, t~~T~~he new on-site groundwater well~~s~~ would be installed near I-8 in the northeastern~~ern~~ portion of the Project site. The~~Each~~ proposed groundwater well for the site would include a robust well casing, a screened or perforated pipe for water flow, and a pump system, with the wellhead positioned at ground level for accessibility and a meter to track usage. Power for the well would either be generated by on-site generators or a temporary service line dropped by the local utility. The well's depth could be approximately 430 to 530 feet below ground surface based on preliminary evaluation to reduce potential of capturing canal seepage water. ~~would be determined through a hydrogeological study, ensuring reliable access to groundwater.~~ However, it is possible for the depth to vary based unforeseen subsurface conditions. Permission to drill the wells is sought as part of the opt-in application to the CEC in lieu of local permits. A Water Supply Assessment and a Focused Water Supply Feasibility Study have been prepared for the Project (Aspen Environmental Group 2024b; 2024a).

Septic System

A septic system would be installed for restrooms to be used by O&M facility staff. If the septic system is not self-contained, an associated leach field would be required. The septic system and leach field would be permitted by the CEC in lieu of local permits and would not be located within 0.25 mile of any drinking water well. For a 750-gallon septic facility, the leach field would consist of two compartments, each 20 feet long, 2 feet high, and 4 feet wide, with 10 feet of separation between the compartments. The precise design of the septic system would be determined based on final Project design. The Applicant would engage a California state-licensed engineering or geologic staff to prepare a septic design study evaluating site suitability and constraints and providing recommendations for septic design consistent with applicable codes and standards and suitable to site conditions.

Emergency and Auxiliary Systems

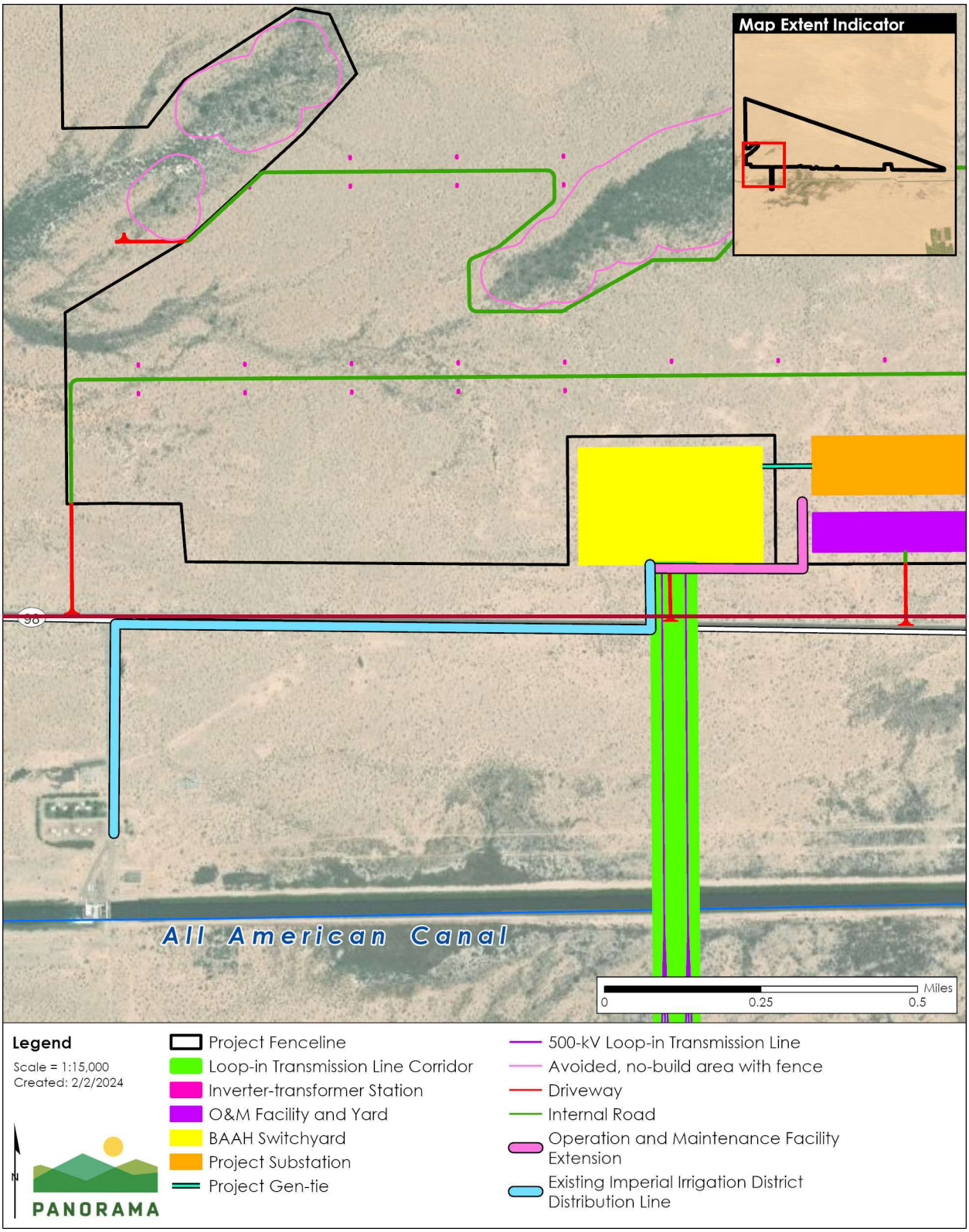
A backup liquified petroleum gas~~diesel~~ generator[2] would be used for the control room of the SCADA system and Project substation controls in the event of a power outage. It is not intended for use during normal operations. Under normal operating conditions, the SCADA system and Project substation controls would rely on electricity supplied from ~~an~~ existing 12.5 kV and 34.5 kV IID distribution line~~s~~.

[2] Diesel is no longer being considered for the emergency generator. The Air Quality Technical Report assumed the use of a diesel generator, which provides a conservative emissions scenario.

~~Distribution Line~~

~~The Project would tap into the existing IID 12 kV distribution line. Poles would be standard medium voltage poles and would run from the existing line which parallels SR 98 to the substation area. The IID distribution line would traverse the utility corridor just south of the Project site and connect into the substation, see Figure 2.3-8.~~

~~Figure 2.3-8 IID Distribution Line and Interconnection Route~~



~~Source: (Intersect Power 2023a)~~

2.3.3 Solar Facility Construction

Site Preparation and Grading

The majority of the Project site would be mowed rather than cleared of vegetation. Mass grading of the Project site would not be needed for site preparation due to the relatively flat terrain. Spot grading would be employed for select solar array and storage facility components, including the BESS, substation, and BAAH foundations. Best management practices (BMPs), Project Design Features, and DRECP Conservation and Management Actions (CMAs) (refer to Appendix D.1 and D.2) would be implemented during all grading, vegetation removal, and construction activities.

The BESS, operation and maintenance facility, and roads would require vegetation clearing, grading, and compaction. Inverter-transformer station locations would require light grubbing. Due to undulations within the Project site, some areas of grading would be needed within the solar arrays. Where solar site grading is necessary for discrete facilities or within the solar arrays, cut and fill would be balanced to the extent feasible. Some import and export of material would be necessary (refer to Table 2.3-2). Where excavation is required, most construction activities, including excavation for the PV arrays, transformer pads, and O&M facilities, would be limited to less than 6 feet in depth within the Project Site. However, some excavations, such as those undertaken for the installation of collector poles, loop-in transmission line structures, substation piers, and switchyard structures may reach depths of 45 feet or more. The BESS foundation would require excavation up to a depth of 16 feet for piers.

Within the solar arrays that do not require grading, mowing and grubbing would be conducted to allow for construction access and installation. Mowing and grubbing involves surface removal of vegetation, including mechanical mowing and removal of larger vegetation by hand cutting/trimming to the ground surface. The intent is to leave root balls and seeds in place to allow for regrowth of native vegetation after construction. During mowing, collection of mowed vegetation would be considered for future mulching to minimize dust and soil erosion on portions of the site and enhance restoration. A qualified restoration biologist would determine where the collected mulching material should be applied.

Non-native vegetation would be removed to the extent feasible during the construction phase via manual and mechanical methods and herbicide application. Any non-native species found in the Project Application Area that has not been evaluated for its potential to invade or alter surrounding natural lands would be considered a “weed” for purposes of the Restoration and Integrated Weed Management Plan implementation. Cutting, damaging, or uprooting microphyll woodland tree species would be avoided by Project design and BMPs, in accordance with the CMAs.

Table 2.3-22.3-2 Solar Facility Disturbance Details

Project component	Cut/fill quantity	Type of disturbance
Fenced solar facility with arrays and access roads	Balanced	Solar array areas to be mowed and grubbed to provide for construction access and installation
Inverter-transformer stations and electrical collection system	Balanced	Graded and backfilled to an elevation above surrounding grade to avoid flooding for inverter-transformer stations
BESS	54,466 cubic yards of import [a] material; excess soils from storm water basin excavations, if needed, to also be used	Graded and backfilled to an elevation above surrounding grade to avoid flooding
Operation and maintenance yard and facility	Balanced	Operation and maintenance site to be graded and compacted
Temporary parking and laydown	Balanced	Temporary parking and laydown areas to be graded and compacted

Note:

[ab] Estimated base for the areas requiring import of material is assumed to require a 12-inch depth.

Temporary Materials Laydown, Staging, and Storage

Temporary parking, staging, and laydown areas needed during construction would be graded and compacted. Several staging areas would be established within the Project site boundaries for storing materials, construction equipment, and vehicles. The staging areas would be surveyed and monitored by qualified biologists, archaeologists, and tribal monitors, as appropriate.

Access Roads

The existing surface area of the access roads would be cleared and compacted using on-site, native materials and may be covered in aggregate for dust or erosion control. The design standard for the access roads within the solar arrays would be consistent with the amount and type of use they will receive.

Solar Array Installation

The steel piles (i.e., cylindrical pipes, H-beams, or similar) supporting the PV panels would be driven into the soil using pneumatic techniques, similar to a hydraulic rock hammer attachment on the boom of a rubber-tired backhoe excavator. The piles typically are spaced 10 feet apart and would be driven into the ground to a depth of 9 to 15 feet.

For single-axis tracking systems, following pile installation, the associated motors, torque tubes, and drivelines (if applicable) would be placed and secured. Some designs allow for PV panels to

be secured directly to the torque tubes using appropriate panel clamps. For some single-axis tracking systems and for all fixed-tilt systems, a galvanized metal racking system, which secures the PV panels to the installed foundations, would then be field-assembled and attached according to the manufacturer's guidelines. A portion of the PV panel racking and modules may be assembled at staging areas.

Inverters, Transformers, Substation, and Electrical Collection System

The Project site electrical collection system would involve installation of inverter-transformer stations from which the medium voltage cabling collection system would lead to the Project substation. Electrical inverter-transformer stations would be delivered to locations around the Project site and placed on concrete pads or steel skids, which would be elevated as necessary with steel piles to allow for stormwater flow beneath the inverter structures. Concrete for foundations of the inverter-transformer stations and other electrical collection facilities would be brought on site from a regional batching plant or would be produced by a portable batch plant on site.

Medium-voltage cabling would be installed either underground or, for the low-impact design portion of the Project, overhead along panel strings in a cable management system to avoid the need for underground cabling and trenching. Cables, if underground, would be installed using direct bury equipment and/or typical trenching techniques, which involves use of a rubber-tired backhoe excavator, trencher, or a "one-pass" machine that digs the trench and lays the cable in a single action to minimize construction activity. Shields or trench shoring would be temporarily installed for safety to brace the walls of the trench if required based on the trench depth. After the excavation, cable rated for direct burial would be installed in the trench, and the excavated soil would be used to fill the trench and compressed to 90- to 95-percent maximum dry density or in accordance with final engineering.

Battery Energy Storage System

The enclosures for the BESS would be delivered to the Project site and installed on concrete foundations designed for secondary containment, as appropriate.

Operation and Maintenance Facility

The operation and maintenance buildings would be placed on a concrete foundation. The operations and maintenance area would include storage connex boxes, a septic system, laydown area, parking, and a water tank(s). The parking area would be scraped, compacted, and graveled, where needed.

Groundwater Well Drilling

The new groundwater well~~(s)~~, if installed, would be drilled via a drill rig. The type of drill rig would depend upon the soil and subsurface conditions.

Construction Traffic, Equipment, and Workforce Requirements

All equipment and materials for the Project's construction would be delivered by flatbed trailers and trucks. Typical equipment that would be used to construct the Project includes front loaders, graders, scrapers, backhoes, and drill rigs.

Truck traffic would travel on designated truck routes and major streets, ultimately accessing the Project site from driveways off SR 98. Project components would be assembled on site. Traffic congestion resulting from construction activities would be temporary and could occur along area roadways as workers commute and materials move to and from the Project site. Materials deliveries during construction would travel up to 150 miles one way from sources to the Project site. The peak and average truck equipment and workforce are included in the assumptions for the Air Quality Technical Report.

The on-site workforce would consist of laborers, craftsmen, supervisory personnel, supply personnel, and construction management personnel. The on-site workforce is expected to reach a peak of approximately 1,000 individuals, with an average construction-related on-site workforce of 700 individuals. In addition, an estimated 80 individuals would be required to deliver materials and equipment to the Project site. The workforce is anticipated to come primarily from Imperial County, CA and Yuma County, AZ.

Drones may be periodically used during construction to monitor construction progress and assist in construction management. The maximum drone operation height would be restricted to 300 feet. A Federal Aviation Administration (FAA) approved and Unmanned Aircraft System certified pilot would operate the drones. The drones used would be battery-powered Matrice 300 RTK or Matrice 200 series drones or similar and would perform the inspections between approximately 76 to 300 feet above ground level. Operating hours for inspections would be between the hours of 10:00 a.m. and 3:00 p.m.

Construction Schedule and Work Hours

Construction of the Project is anticipated to begin as early as January 2028~~6~~ and extend to December 2023~~07~~ for a duration of 24 months. Construction would occur in several phases starting with mobilization, site preparation, solar array assembly, installation of electrical collection systems and, finally, testing and commissioning. After pre-construction surveys have been completed, the solar facility construction would begin with site preparation and construction of the Project solar site access roads, security fencing, temporary laydown yards, operation and maintenance building, parking area, and pad mounts for the transformers. Construction would continue with installation of on-site roads, construction of the Project substation, BAAH switchyard, 500kV loop-in transmission lines, and assembly and installation of solar arrays and wiring. Commissioning of equipment would include testing, calibration of equipment, and troubleshooting. The Project substation equipment, inverters-transmission station, collector system, and solar arrays would be tested in advance of commercial operations. Upon completion of successful testing, the equipment would be energized.

Construction equipment would typically operate during daylight hours between the hours of 7:00 a.m. and 7:00 p.m. Monday through Friday for a maximum of 8 hours per day per piece of equipment, daily. Given daytime heat conditions, a portion of PV panel installation could occur at night during the summer, extending construction up to 24 hours per day. Night work can improve working conditions for construction personnel by reducing exposure to extreme heat and is a common practice in Imperial County. Night work may also occur when necessary to

interconnect the Project with minimal outages (e.g. when necessary to complete transmission line stringing over existing power lines, it may be preferable to complete at night when the grid impacts of de-energizing existing power lines are lesser). Weekend construction work is not expected to be required but may occur on occasion, depending on scheduling considerations.

Pollution Prevention, Erosion and Sediment Control

A Stormwater Pollution Prevention Plan (SWPPP) would be prepared by a qualified engineer or erosion control specialist and, once approved by the State Water Resources Control Board and a BLM hydrologist, would be implemented before and during construction. The SWPPP would reduce potential impacts related to erosion and surface water quality during construction activities and throughout the lifespan of the Project. The SWPPP would include Project information and erosion and sediment control BMPs. The BMPs would include stormwater runoff quality control measures, management for concrete waste, fugitive dust control, and construction of perimeter silt fences, as needed. The SWPPP would include types and locations of erosion control BMPs to be implemented.

Construction Site Stabilization, Restoration, and Wildlife Monitoring

Following the completion of major construction, temporarily stockpiled topsoils would be spread within disturbed areas to be revegetated with native plant species for the operations phase pursuant to an approved Restoration and Integrated Weed Management Plan. This plan would describe the Applicant's strategy to minimize adverse effects on native vegetation, soils, and habitat. Where necessary, native re-seeding or vertical mulching techniques would be used; however, it is anticipated that many species would regenerate post-construction due to preservation of desert vegetation during the construction phase. The Project Restoration and Integrated Weed Management Plan would be implemented during construction to ensure the control of non-native plant species under an approved Pesticide Use Proposal.

At the conclusion of restoration activities, and if determined beneficial by the U.S. Fish and Wildlife Service (USFWS), the California Department of Fish and Wildlife (CDFW), and the BLM biologists, previously relocated plants and wildlife would be reintroduced to the Project site and monitored for safety and health.

Construction Water Supply and Use

During the 24-month construction timeframe, it is anticipated that a total of up to 1,000 acre-feet would be used for dust control and suppression (including truck wheel washing) and other construction activities during. Soil binders (e.g., FSB-100, Plas-Tex, Soil Sement, SRB-1000) would also be used along Project roadways to minimize water usage. During construction, restroom facilities would be provided by portable units to be serviced by licensed providers.

Water for dust control during construction would be sourced from up to four on-site groundwater wells. If on-site wells are not able to supply the full water quantity required for construction, the water supply would be supplemented from off-site local water purveyor(s)

and trucked in from an off-site location up to 80 miles from the Project site (30 roundtrips per day maximum).[3]

Groundwater usage, both on and off site, would be metered daily and well testing conducted quarterly. Quarterly well testing would include wells dedicated to Project use, both on and off site, and selected monitoring wells.

Construction Waste Management

Disposal

No on-site waste disposal sites would be constructed. The Project would generate over an estimated 35 tons of solid waste (mostly concrete and scrap metal) during construction. Waste would be disposed of or recycled at the proper facilities, depending upon the type of waste. There are 11 active, permitted solid waste disposal and recycling facilities within a 50-mile radius of the Application Area with a collective remaining capacity of over 15 million cubic yards.

Non-hazardous Waste

Non-hazardous construction waste generated by the Project would include excess concrete, excavated soil, scrap metal, wood, incidental office waste (e.g., paper, plastics), solar modules (i.e., glass, plastic, and metal), sanitary waste, and potable water. Construction sites would be kept in an orderly condition throughout the construction period by using approved enclosed refuse containers. Waste would be stored in a locked container within a fenced and secure temporary staging area. All refuse and trash would be removed from the site and disposed of in accordance with regulations. No open burning of construction trash would occur.

Construction materials would be sorted on-site throughout construction and transported to appropriate waste management facilities. Trucks and construction vehicles would be serviced at off-site facilities. Recyclable materials would be separated from non-recyclable items and stored until they could be transported to a designated recycling facility. Recycling would be completed in accordance with application California state requirements.[4] Wooden construction waste (such as wood from wood pallets) would be sold, recycled, or chipped and composted off site. Other compostable materials, such as vegetation, might also be composted off site if not maintained as mulch on site. Non-hazardous construction materials that cannot be reused or recycled would be disposed of at municipal or county landfills. All contractors and workers would be educated about waste sorting, appropriate recycling storage areas, and how to reduce landfill waste.

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[3] 30 roundtrips assumes that all water supply would come from a(n) offsite source(s).

[4] As of January 1, 2020, CALGreen requires covered projects to recycle and/or salvage for reuse a minimum 65 percent of the non-hazardous construction and demolition waste or meet a local construction and demolition waste management ordinance, whichever is more stringent.

Hazardous Waste

Hazardous construction waste generated by the Project would include waste oil, oil filters, oil rags, solvents, fuels, welding materials, empty hazardous materials containers, spent batteries, and controlled substances. As regulated hazardous materials would be present on site, storage procedures would be dictated by the Hazardous Materials Management Plan and Spill Prevention Control and Countermeasures (SPCC) Plan that would be developed prior to construction. Spill prevention measures and secondary containment would be implemented as part of the Project where warranted; however, strict compliance under 40 CFR 112 or CWA Section 311 would not be required because there would be no discharges to waters of the U.S.

The use, storage, transport, and disposal of hazardous materials used in construction of the facility would be carried out in accordance with federal, State, and County regulations. No extremely hazardous substances (i.e., those governed pursuant to Title 40, Part 355 CFR are anticipated to be produced, used, stored, transported, or legally disposed of as a result of Project construction. Material Safety Data Sheets for all applicable materials present on-site would be made readily available to on-site personnel.

Hazardous waste and electronic waste would not be placed in a landfill but, rather, would be transported to a hazardous waste handling facility (e.g., electronic-waste recycling). Battery waste from construction vehicles and equipment would be recycled or disposed of in accordance with regulations.

Construction vehicles and equipment would be refueled on the Project site in designated refueling areas. Liquids would be stored in secured areas (fenced or locked buildings on the Project site). During construction, aboveground storage tanks would be used, monitored, and maintained in accordance with regulations to minimize risk of pollution from spills. During construction, all construction pickup trucks would be equipped with spill kits to clean up any accidental spills of fuels or lubricants. Should a spill of greater than 1 gallon occur on BLM or BOR lands, the El Centro Field Office or the Southern California Area Office, respectively, would be notified within 24 hours. All incidents would be properly recorded and addressed in accordance with relevant regulations and landowner requirements.

Construction Fire Prevention

Fire extinguishers and other portable fire-fighting equipment would be available on site as well as additional water that would be available for fire suppression at the primary construction staging area. Workers would receive training regarding fire suppression equipment available on site and what to do in the event of a fire ignition as part of the WEAP.

Locations of portable fire extinguishers would include, but not be limited to, hot work areas, flammable storage areas, and mobile equipment such as work trucks and other vehicles. Fire-fighting equipment would be marked conspicuously and be accessible. Portable equipment would be routinely inspected, as required by local and federal laws, ordinances, regulations, and standards, and replaced immediately if defective or needing charge.

During construction, standard defensible space requirements would be maintained surrounding any welding or digging operations.

Construction Power
Power would be supplied from temporary generators during construction.

2.3.4 Solar Facility Operation and Maintenance

Activities
Upon commissioning, the Project would enter the operational phase. The solar modules at the site would operate during daylight 365 days a year. Operational activities at the Project site would include the following:

- Maintaining safe and reliable solar generation
- Wildlife monitoring as required
- Security
- Responding to automated electronic alerts based on monitored data, including actual versus expected tolerances for system output and other key performance metrics
- Communicating with the BLM, CEC, customers, transmission system operators, and other entities involved in facility operations

The Project site maintenance program would be largely conducted on-site during daytime hours. Equipment repairs could take place in the early morning or early evening when the plant would be producing the least amount of energy. Maintenance activities would originate from the on-site operation and maintenance facility and yard.

Maintenance activities would include panel repairs; panel washing; maintenance of transformers, inverters, BESS, and other electrical equipment as needed; road and fence repairs; and vegetation and pest management. The Applicant would recondition roads up to approximately once per year, such as after a heavy storm event that may cause destabilization or erosion. Revegetation would be the primary strategy to control dust across the Project site. Soil binders would be used to control dust on roads and elsewhere on the solar facility site, as needed. On-site vegetation would be managed to ensure access to all areas of the site and reduce fire risk. On-site vegetation may be trimmed approximately once every 3 years, as needed. Weed management and control in accordance with an approved Restoration and Integrated Weed Management Plan would be performed quarterly.

Solar arrays would be washed as needed (up to four times each year) using light utility vehicles with tow-behind water trailers, as needed, to maintain modules for optimal electricity production. Periodic rainfall may be sufficient to remove light dust layers, which would reduce the manual washing of panels. No chemical agents would be used for typical panel washing; potential non-toxic cleaning solutions may be occasionally used. Guidance from the panel manufacturer would be followed.

No heavy equipment would be used during normal operation. Operation and maintenance vehicles would include trucks (pickup and flatbed), forklifts, and loaders for routine and unscheduled maintenance, and water trucks for solar panel washing. Large heavy-haul transport equipment may be brought to the solar facility infrequently for equipment repair or replacement.

Long-term maintenance schedules would be developed to arrange periodic maintenance and equipment replacement in accordance with manufacturer recommendations. PV panels are warrantied for 35 years or longer and are expected to have a life of 50 or more years, with a degradation rate of 0.5 percent per year. Moving parts, such as motors and tracking module drive equipment, motorized circuit breakers and disconnects, and inverter ventilation equipment, would be serviced on a regular basis, and unscheduled maintenance would be performed as necessary.

Drones may be used to perform annual thermal and visual inspections of the overhead medium voltage collector line structures. The maximum drone operation height would be restricted to 300 feet. For further detail on drone use, see Section 2.4.5 Transmission Facility Operation and Maintenance.

Operation and Maintenance Workforce and Equipment

Commercial operation of the Project is anticipated from December 2027 to December 2057. During operation and maintenance of the Project, up to 24 permanent staff could be on site at any one time for ongoing facility maintenance and repairs and would be supported by up to 5 additional office staff. On average, approximately 18 permanent staff would be on-site daily, up to 14 associated with PV and BESS operation and up to 2 for each the BAAH switchyard and loop-in transmission line operation. Security personnel would be available on call. The operation and maintenance staff would be sourced from nearby communities in Imperial County. The operation and maintenance buildings would house the on-site security monitoring equipment, including security camera feeds for monitoring the project 24 hours per day although these feeds can be monitored remotely as well. Drones could be used during operations for inspection purposes. Helicopters could be used during operations only for emergency maintenance purposes.

A Bird and Bat Conservation Strategy would be prepared and would provide methods and timing for monitoring of bird and bat injuries and mortalities at the solar facility. Drones with artificial intelligence-enabled computer vision may be used for bird and bat monitoring, with the approval of the wildlife agencies.

Non-native and Invasive Species Management

Based on the aridity of the Project site, the overall low densities of vegetation present, use of a seed mix conducive to site conditions[5] and on-site vegetation management during operation and maintenance, it is not likely that vegetation would encroach upon structures so that access would become impaired. However, noxious weeds and other non-native invasive plant species could create a fire hazard if allowed to become established, and invasive weeds could also become problematic from an ecological perspective. Weed control activities would be implemented within the Project limits consistent with the project Restoration and Integrated Weed Management Plan.

Weed control activities would include both mechanical and targeted herbicide control methods, as necessary. Mechanical control activities would include hand trimming with a chainsaw. Non-motorized trimmers would be used in the vicinity of sensitive wildlife.

Following construction, use of herbicides may be necessary as part of an integrated pest management strategy to control the spread of invasive weeds. Herbicide control on the Project would involve the targeted use of BLM-approved herbicides to control weed populations when manual control methods are not successful in managing the spread of invasive plants, but only as reviewed and approved by USFWS and BLM biologists. County regulations regarding weed control would also be reviewed and any specific requirements would be incorporated into the weed control plan. All weed control using herbicides and adjuvants would be conducted with chemicals approved by BLM in California (including manufacturer application rates and use). The process for treatments would be characterized in the Restoration and Integrated Weed Management Plan, followed by a Pesticide Use Proposal (PUP) for specific chemical treatments, both approved by the BLM. On private lands, County regulations would be met for any use of herbicides. Herbicides would be applied using backpack sprayers and foliar application. Aerial spraying and truck-mounted spray rigs would not be utilized.

Additional procedures and precautions would be taken for herbicide application as follows:

- Application dates would be intended to cover the lifetime of the Project, beginning during the construction phase, if needed.
- Treatments would be as needed, upon emergence of the target weed species during the growing season. Growing seasons are typically during the winter months (November to April) but may include the summer months (July to

[5] In accordance with the Restoration and Integrated Weed Management Plan to be prepared for the Project and reviewed and approved by the BLM, a restoration seed mix would be developed for the Project site that promotes local native plant species consistent with surrounding vegetation types. The seed mix would also be developed in consideration of operational constraints such as ground clearance at full panel tilt.

September) if summer rainfall is sufficient to germinate target weed species during those months.

- The total number of applications is dependent upon the extent of invasive plants within the Project site, but it is expected that early- and late-season emergence of invasive plant species would require two or more treatment periods. Treatment periods are defined as one round of treatment coverage for all sites.
- The primary invasive plant species to be targeted include Mediterranean grass, Saharan mustard, Russian thistle, and saltcedar. If additional invasive plant species are identified during monitoring, these would also be targeted for control efforts.
- Crew members who conduct weed treatment in the Project area would have extensive experience working around sensitive habitats and species. In addition, crews would be monitored by a restoration ecologist. Herbicides for weed control would be specifically applied to individual plants and not sprayed broadly across the Project site.
- Crews would work under the direct supervision of a licensed Certified Pesticide Applicator.
- Crews would adhere to strict application guidelines when applying herbicide during windy conditions to minimize drift and chemical contact with non-target vegetation or wildlife. Herbicide application would be suspended if winds are in excess of 10 miles per hour or if precipitation is occurring or imminent (predicted within the next 24 hours).

Operational Water Supply and Use

During the operation and maintenance phase, water would be required for panel washing and maintenance as well as for workforce facilities. During operation, the Project would require the use of approximately 50 acre-feet annually for panel washing (up to 4 times per year) and other uses. No wastewater would be generated during panel washing as water would be absorbed into the surrounding soil or would evaporate. Alternatively, waterless panel washing options would also be explored in coordination with regulatory agencies including the CEC, BLM, BOR, and Imperial County. Water for operations would be sourced from one of the up to four on-site groundwater wells near I-8 on the northern side of the Project site or from an off-site local water purveyor (maximum of 275 roundtrip truck trips per washing event).[6] Limited water would also be used for the operation and maintenance facility staff, including restrooms.

Groundwater usage would be monitored as described above.

[6]Assumes that each washing event requires ~10 acre-feet, each water truck holds 12,000 gallons and all water would come from an off-site source(s).

Operational Waste Management

Disposal

The Project would generate over an estimated 35 tons of solid waste during operations and maintenance. Waste would be disposed of or recycled at one or more of the 11 facilities within 50 miles of the Application Area, depending upon the type of waste.

Non-hazardous Waste

Non-hazardous operational waste generated by the Project during operation would include concrete, general operation waste (e.g., paper, wood, glass, insulation, plastics, solid waste), potable water, sanitary waste, scrap metal, spent solar panels, spent transformer components, and spent switchyard equipment. All refuse and trash would be removed from the sites and disposed of in accordance with regulations.

Operational materials would be sorted on-site and transported to appropriate waste management facilities. Recyclable materials would be separated from non-recyclable items and stored until they could be transported to a designated recycling facility. The Project would employ third parties to manage appropriate handling and disposal of nonhazardous solid waste during operations and maintenance. Recycling would be completed in accordance with application California state requirements.

Hazardous Waste

Hazardous operational waste generated by the Project would include waste oil, oil filters, oily rags, solvents, empty hazardous materials containers, fuels, welding materials, spent solar panels, spent lead batteries, and controlled substances. The use, storage, transport, and disposal of hazardous materials used in operation and maintenance of the facility would be carried out in accordance with federal, State, and County regulations. No extremely hazardous substances (i.e., those governed pursuant to Title 40, Part 355 CFR) are anticipated to be produced, used, stored, transported, or legally disposed of as a result of Project operations.

Hazardous waste and electronic waste would not be placed in a landfill but, rather, would be transported to a hazardous waste handling facility (e.g., electronic-waste recycling). Battery waste from construction vehicles and equipment would be recycled or disposed of in accordance with regulations.

Operational Fire Prevention

Fire protection would be provided to limit risk of personnel injury, property loss, and possible disruption of the electricity generated by the Project. Fire protection would include minimizing flammable materials in the solar field through proper vegetation management.

Solar arrays and PV modules are fire-resistant as they are constructed largely out of steel, glass, aluminum, or components housed within steel enclosures. As the tops and sides of the panels are constructed from glass and aluminum, PV modules are not vulnerable to ignition from firebrands or from wildland fires. In a wildfire situation, the panels would be rotated and stowed in a panel-up position. The rotation of the tracker rows would be controlled remotely

via a wireless local area network. All trackers could be rotated simultaneously in a hazard situation. Fire safety and suppression measures, such as smoke detectors and extinguishers, would be installed and available at the O&M facility, if required.

A Fire Management and Prevention Plan was prepared in coordination with the BLM to identify the fire hazards and response scenarios that may be required during operation of the solar facility. This includes information on response to accidents involving downed power lines or accidents involving damage to solar arrays and facilities. The plan includes measures to safeguard human life, prevent personnel injury, preserve property, and minimize downtime due to fire or explosion. Of concern would be fire-safe construction, reduction of ignition sources, control of fuel sources, availability of water, and proper maintenance of firefighting systems. This plan will be updated with any additional engineering and technology-specific requirements as the Project continues.

The Tesla megapack is an example of a battery storage technology that may be selected for the Project. The Tesla megapack does not include a built-in smoke, gas, or fire detection or suppression devices. Tesla products test to standards, including UL 1973, that ensure the battery modules are resistant to single cell thermal runaway propagation or otherwise must prove that a failed cell inside would not cause a fire outside the system. Each megapack battery module includes individually fused cells and dedicated power electronics that electrically and galvanically isolate the batteries from the common DC bus. The battery modules arrive pre-installed and do not connect live high voltage DC elements on site. Each battery module includes a built-in isolated DC-DC converter and an active fuse that provides protection in case of hazardous conditions. These features are controlled by the module's dedicated battery management system, as required by the California Fire Code, which ensures that the cells are operated within the approved limits. The battery management system monitors and balances cell voltages, currants, and temperatures. The system must transmit an alarm signal if potentially hazardous temperatures or other conditions such as short circuits, over voltage, or under voltage, are detected. If required by the relevant authority having jurisdiction, third-party multi-spectrum IR heat or flame detectors can be installed externally at the site-level.

Fire detection drawings for the BESS would be developed as detailed engineering continues. The BESS yard will have thermal detection cameras installed external to battery containers, strategically placed to detect fires. These cameras will be remotely monitored 24 x 7. The BESS equipment to be used shall be tested and proven to not need built-in smoke, gas or fire detection or suppression devices. The BESS equipment will be designed to mitigate an over-pressure event and deflagration through the use of over-pressure vents and a sparker system. These safety features will be tested to demonstrate effectiveness in protecting against deflagrations in a UL9540A large-scale fire testing where no explosion hazards should be observed (flying debris or explosive discharge of gases). The applicant will also prepare an emergency response plan for the BESS facility in compliance with SB 38.

Operational Power

Power would be supplied from an existing 12.5 kV IID ~~transmission~~distribution line approximately 725 feet (0.15 mile) south of the Project site, see- Figure 2.4-3, below~~Figure 2.3-8~~.

2.4 Transmission System and Distribution Lines Description, Design, and Operation

2.4.1 Transmission and Distribution System Description

Components

The transmission and distribution system would include the following components:

- Project substation
- Project gen-tie lines
- BAAH switchyard
- 500 kV loop-in transmission lines
- 12.5 kV IID distribution line extension
- 34.5 kV IID distribution line extension

Table 2.4-1 lists the acreages associated with each Project component for the transmission system and lines.

Table 2.4-12.4-1 Estimated Development Area for the Transmission System Permanent Components

Proposed component	Approximate acreage
Project substation	2017.2
Project gen-tie lines	≤5
BAAH switchyard	35.240
500 kV loop-in transmission lines [a]	≤359.6
12.5 kV IID distribution line extension	2 miles
34.5 kV IID distribution line extension	0.2 mile
34.5 kV IID distribution line extension with a 12 kV underbuild	5 miles

Note:

[a] Construction would occur within the 500 kV loop-in transmission line corridors and would be limited to the area needed for the transmission structures, work areas, access roads, and tensioning sites.

Project Gen-tie Line and Route

The Project gen-tie line would connect the Project substation to the BAAH switchyard and would consist of steel structures. Steel support structures (H-frames and A-frames) for the gen-tie line would be up to 199 feet in height and would connect to and support high voltage aluminum bus duct and the high voltage transmission lines. A maximum of 10 poles would be

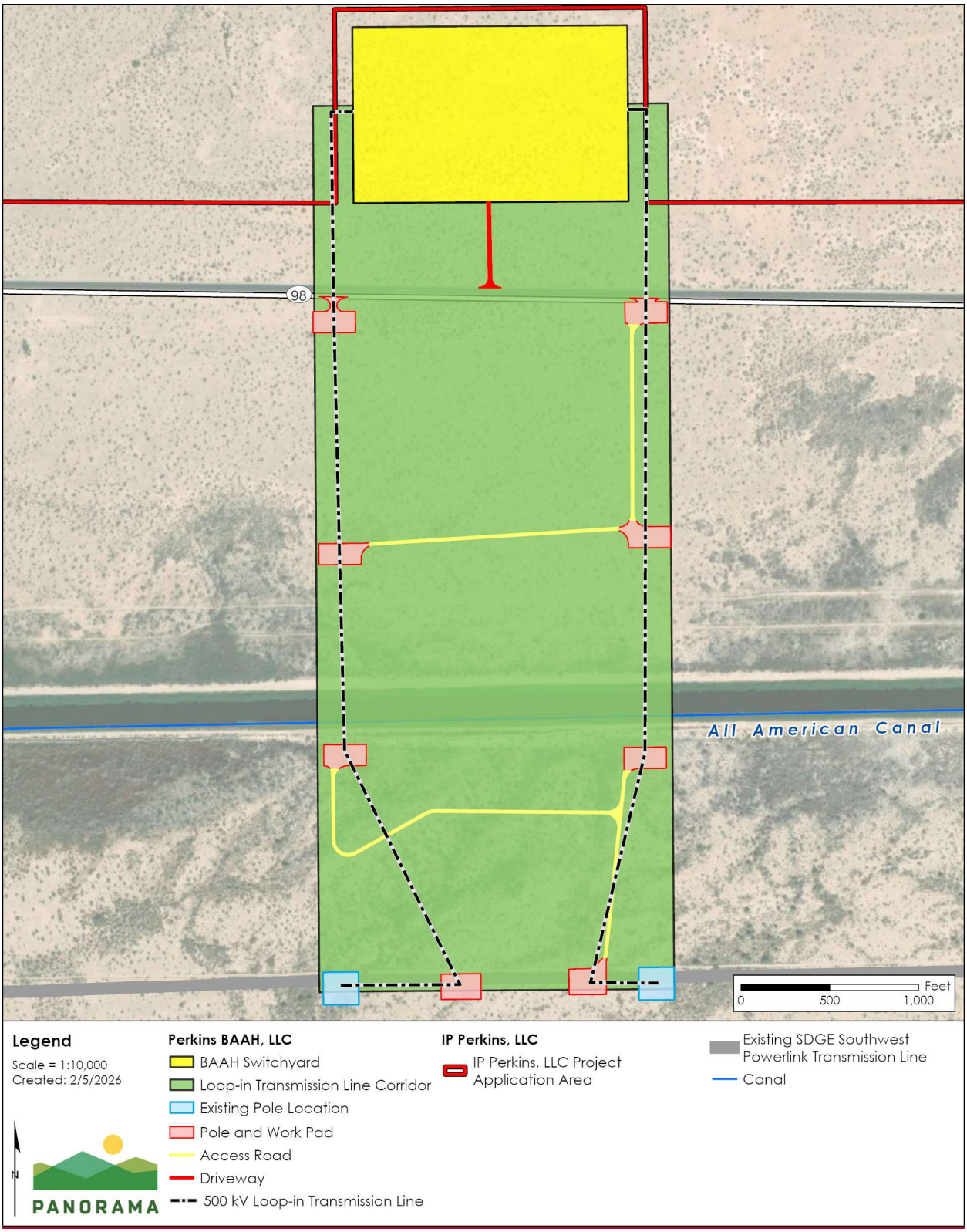
needed for gen-tie option 1 and a maximum of 20 poles would be needed for gen-tie option 2 (refer to Figure 2.3-1 and Figure 2.3-2, respectively).

500 kV Loop-in Transmission Lines and Corridors

The Project would include two approximately 1.20.8-mile-long single-circuit 500 kV loop-in transmission lines located within two 2,000-foot-wide loop-in transmission corridors that connect the solar Project site to the SDG&E SWPL 500 kV transmission line. Each 500 kV loop-in transmission line would originate from the BAAH switchyard and continue south, with each phase of each transmission line terminating on a separate monopole (tensix total) to connect to the SDG&E SWPL 500 kV transmission line. The exact location of the 500 kV loop-in transmission lines and the associated corridors within the 2,000-foot-wide survey corridor would be determined based on engineering, resources, and existing utility corridor constraints in coordination with SDG&E, IID, BOR, BLM, and California Public Utilities Commission (CPUC). The placement of the pole and work pads within the 2,000-foot-wide survey corridor is not final and subject to final engineering review; the survey corridor- allows for flexibility of placement within the corridor based on once additional resource surveys and constraints analysis that have been or will be completed.

The 500 kV loop-in transmission line structures would be monopole, lattice, or H-frame with an average height of 150 feet and a maximum height of up to 199 feet. The 500 kV loop-in transmission line structures would have a weathered finish to minimize visual impacts. A total of approximately 2016 support structures would be required for each 500 kV loop-in transmission line in addition to the dead-end structures, with the exact number of structures to be determined by the final alignment and design of the transmission lines. A three-phase, 500 kV bundled set of conductors would be strung along the structures, and the line would be equipped with a ground wire and a telecommunications fiber-optic cable. Access to the 500 kV loop-in transmission line poles and work pads would be from SR 98 or from an existing dirt access road south of the All-American Canal (refer to Figure 2.4-1). A new access road parallel to each 500 kV loop-in transmission line would be constructed. A spur road off the new access road would be constructed to access each of the 500 kV loop-in transmission line support structure sites.

Figure 2.4-12.4-1 Loop-in Lines Poles, Work Pads, and Access Roads



Source: (Intersect Power 2023; Panorama 2026)

Project Substation

One Project substation would transform, or "step up," the voltage from 34.5 kV used in the medium voltage collector system throughout the site to 500 kV, the Project's interconnecting voltage. The Project substation would collect consolidated intermediate voltage cables from the medium-voltage collector system. Electrical transformers, switchgear, and related substation facilities would be designed and constructed to transform medium-voltage power from the Project's delivery system to the 500 kV SDG&E SWPL transmission system. The Project substation would be located either adjacent to the BAAH substation or at an optional location on the private land parcels, see Figure 2.3-1 and Figure 2.3-2.

The internal arrangement of the Project substation would include the following:

- Power and auxiliary transformers with foundations
- Prefabricated control buildings to enclose the protection and control equipment, including relays and low voltage switchgear (each building is approximately 20 feet by 40 feet, and 10 to 20 feet high
- Metering stand
- Capacity bank(s)
- Circuit breakers and disconnect switches
- One microwave tower adjacent the control building comprising a monopole structure up to 100 feet in height mounted with an antenna up to 5 feet in diameter
- Dead-end structure(s) up to 199 feet in height to connect the BAAH switchyard to the loop-in transmission lines
- Control building(s)

The Project substation would consist of up to eight large transformers, associated medium-voltage bus work and circuit breakers, and associated high-voltage circuit breakers and bus work. The Project substation equipment would either be galvanized steel (non-painted) or painted American National Standards Institute (ANSI) 61 gray. The substation would be surrounded by an up to 7-foot-high chain link fence topped with 1 foot of barbed wire. Transformers within the Project substation would be up to 45 feet tall by 40 feet wide on the longest side. The high-voltage circuit breakers would be approximately 25 feet tall by 20 feet wide on the longest side. A typical substation is shown in Figure 2.4-1 with a BESS and PV panels in the background. The substation is shown on the site plan in Appendix F.

Figure 2.4-22.4-22.4-1 Substation Example

Breaker-and-a-Half Switchyard

A BAAH switchyard would be constructed to facilitate interconnection to the SDG&E SWPL 500 kV transmission line, which runs parallel to SR 98 just south of the Project site. A short gen-tie line would be constructed to connect the Project substation to the BAAH switchyard. The utility switchyard would utilize high-voltage circuit breakers, switches, and series capacitor line compensation equipment in a BAAH configuration and would be designed and constructed in alignment with the interconnecting utility's standards.

Structural components in the switchyard area would include:

- One free-standing digital microwave antenna (radio tower) up to 199 feet tall to support SCADA communication between the switchyard and the off-site SDG&E Operations Center
- Series capacitor banks (sizing to be determined by utility requirements)
- Ten 500 kV steel A-frame dead-end poles up to 199 feet in height with foundations up to 20 feet deep or more
- Ten 500 kV steel H-frame dead-ends poles up to 199 feet in height with foundations up to 20 feet deep or more
- Busbar (a conducting bar that carries heavy currents to supply several electric circuits)

- Control Shelter(s) approximately 150 feet by 40 feet by 12 feet tall for SDG&E's substation control and protection equipment; MPAC building would be installed on a concrete foundation
- Switchyard battery enclosure area(s) approximately 40 feet by 20 feet by 12 feet tall
- Five 500 kV circuit breakers and air disconnect switches
- On-site stormwater retention pond (approximately 1,000 feet by 100 feet) for temporary runoff storage during rainfall events, if needed
- Chain-link or similar security fencing up to 8 feet tall and two separate access gates plus one personnel gate

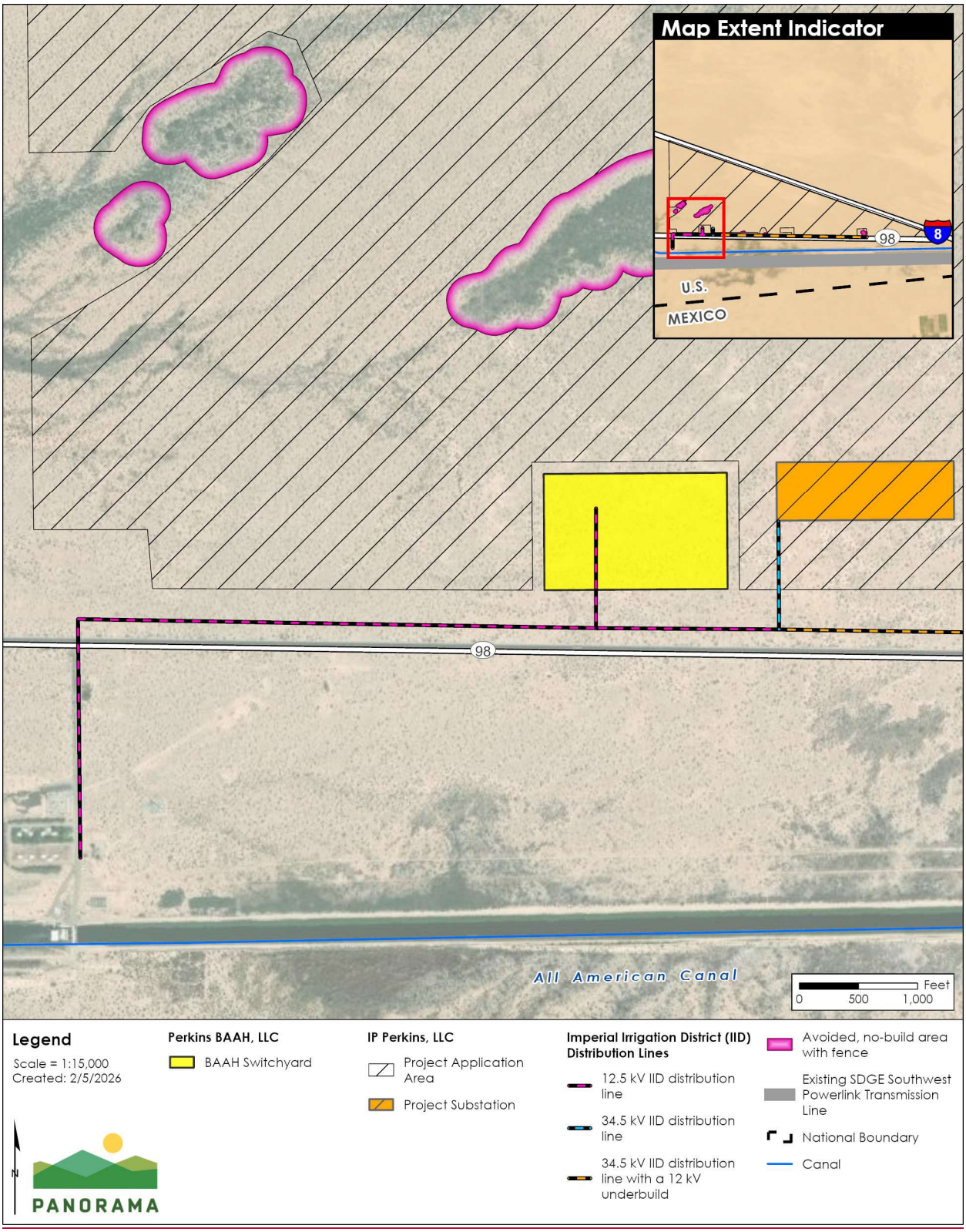
The BAAH switchyard equipment would be either galvanized steel (non-painted) or painted ANSI 61 gray. The BAAH switchyard that connects to the 500 kV loop-in transmission lines would ultimately be owned and operated by SDG&E.

Imperial Irrigation District Distribution Lines

The Project would tap into the existing 12.5 kV IID distribution line south of the Project site via a 12.5 kV IID extension distribution line. The 12.5 kV IID distribution line would cross Highway 98 and turn east to traverse the utility corridor just south of the Project site and connect into the Project substation. The 12.5 kV IID line would then continue east as an underbuild distribution line[7] along the poles of -a 34.5 kV IID distribution line extension. The 34.5 kV IID distribution line extension would connect the BAAH substation to an existing 34.5 kV IID distribution line near the eastern boundary of the solar project. The poles would be 50-feet tall, standard medium voltage poles, except for when the poles cross highway 98 requiring a taller height at 55 feet. The average span of the poles would be approximately 250 feet and would require approximately 36 poles for the 12.5 kV IID distribution line, 4 poles for the 34.5 kV distribution line, and 90 poles for the 34.5 kV IID distribution line with 12.5 kV underbuild, for a total of 130 poles. Refer to Figure 2.4-3 for the layout of the IID distribution line extensions.

[7] An underbuild distribution line typically consists of a lower-voltage distribution circuit installed on the same poles underneath a higher voltage transmission or distribution line.

Figure 2.4-3~~2.4-3~~ IID Distribution Lines and Interconnection Route



Source: (Intersect Power 2023; Panorama 2026)

2.4.2 Transmission Line Design Considerations

Engineering constraints considered for the BAAH switchyard and 500 kV loop-in transmission line placement include the crossing of the All-American Canal and existing transmission lines in the area. The loop-in transmission line construction will follow the BOR *Engineering and O&M Guidelines for Crossings* for the All-American Canal. Consideration was also given to the existing radio tower located southwest of the Project site near the All-American Canal. The loop-in transmission lines were sited to avoid this radio tower. The loop-in transmission corridors were also sited to avoid existing riparian vegetation located around the All-American Canal in order to reduce vegetation disturbance and avoid impacts to biological resources. The loop-in transmission line corridors also avoid the BLM Area of Critical Environmental Concern located southwest of All-American Canal in this area.

2.4.3 Transmission Line Need and Capacity

Project Components

The Project site was selected based on a constraints analysis (see Section 2.3.1) and does not contain any existing high voltage infrastructure. In order for the Project to be feasible, transmission lines and a new breaker-and-a-half switchyard must be constructed to interconnect the Project in order for the energy generated by the project to be transmitted onto the state-wide electricity grid.

The Project substation is required for operation of the Project as it converts the 34.5 kV power generated from Project PV panels and transmitted via the Project collection system to the 500 kV power at the point of interconnection.

The 500 kV loop-in transmission lines, BAAH switchyard, gen-tie lines, and Project substation work together to facilitate transfer of electric power generated at the Project to the utility grid for consumption and offtake.

BAAH Switchyard and Loop-In transmission lines

The 500 kV loop-in transmission line interconnection was chosen to maximize the power transfer available to the Project and to allow for interconnection to the adjacent SWPL transmission line. Additionally, to interconnect to the SDG&E 500 kV transmission network, the existing SWPL 500 kV line requires construction of a new BAAH switchyard. The creation of the new BAAH switchyard is necessary to maintain the reliability, control, and operability of the SDG&E 500 kV transmission network. The BAAH switchyard also would facilitate future transmission and potential clean energy (solar and geothermal) buildout and interconnection in this area.

The proposed electric transmission facilities have been routed and planned such that the facilities represent the shortest-length option while minimizing impacts on biological resources. The proposed transmission facilities also minimize the cost to the project, material requirements, land use impacts, and design complexity.

System Impact Study

The Project will interconnect to SDG&E's transmission system within the California Independent System Operator (CAISO) system. CAISO identified four potential Affected Systems from the Queue Cluster (QC14) Phase I Interconnection Study: Salt River Project (SRP), Arizona Public Service (APS), El Centro Nacional de Control de Energía (CENACE), and ~~Imperial Irrigation District (~~IID~~)~~.

The California ISO cluster study phase I and phase II have been provided to the CEC under confidential cover. Both APS and CENACE determined they are not an affected system for this Project [Umbriel Project (Q2166)], see letters submitted by both entities under confidential cover. Downstream effects were identified in California ISO Phase 2 Interconnection Study. Subsequent to the Phase II interconnection, the 2024 Generator Interconnection Reassessment Report (Q2166) was issued. Table 3 lists the network upgrades associated with the Project based on the reassessment.

Table 2.4-2 Downstream Network Upgrades

Upgrade	Description	Project Cost Allocation	CEQA Analysis
BAAH and line to Point of Interconnection	See Project Description	100%	Included as part of the CEC Opt-in Application
GRNU			
Cost of interconnection	Engineering, Design, Land Management, Administration, Project Management for upgrades to circuits breakers	100%	This work does not involve disturbance as it is all pre-construction engineering, design, land management, and administration or project management for the remaining work.
CA Network Upgrades – PNU			
Imperial Valley Substation	Upgrade circuit breakers 230 kV – 11S, IV BK81 15N, IV BK81 15S, IV BK81 15T, IV BK82 18N, IV BK82 18S, IV BK82 18T, IV23030 61, IV23043 14S, IV23043 17N, IV23043 17T, IV23045 12S, IV23045 12T, IV23046 13N, IV23046 13T, IV23047 13S, IV23066 11N, IV23066 11T, IV230BT 16N, IV230BT 16S, IV230S 14N, IV230S 14T, 10N, 10S	28.63%	Work will occur within the fence line of the Imperial Valley Substation. SDG&E standard Construction Measures will be implemented to ensure impacts are less than significant.

~~The Applicant contacted all four potential affected systems in August 2023. APS confirmed no impact. SRP has completed its initial study determining the Project's contribution to SRP's~~

~~required system upgrades. The Applicant is engaged in discussions on next steps, which will ultimately include executing a funding agreement. CENACE and IID both indicated that they require Phase II Interconnection study results, which the Applicant has provided upon receipt in January 2024, to determine next steps. The Applicant is awaiting their feedback from IID following review of the Phase II results.~~

~~The SWPL is co-owned by IID (in partnership with SDG&E), and the Applicant has submitted an interconnection filing with them separately, to be formally studied as an Affected System. The Applicant continues to be in close communication with IID regarding the Project.~~

~~The Project received its Phase II Interconnection Study results in January 2024 and Applicant is in the process of reviewing the results.~~

2.4.4 Transmission Facility Construction

Overview

The transmission system components would require grading and excavation for installation and construction. Import of soil would be needed for several of the components, as detailed in Table 2.4-2.

500 kV Loop-in Transmission Lines

The overhead 500 kV loop-in transmission line structure foundations would be excavated to a depth of 35 feet or more and may include concrete supports, depending on final engineering design. Disturbance within the two 2,000-foot loop-in transmission corridors would be limited to access roads and tower and work pads, which include ~~access roads, and~~ temporary pull and tensioning sites and laydown yards (refer to Figure 2.4-1). The remainder of the corridors would not be disturbed. Location and disturbance calculations are provided based on the most up-to-date information of this Opt-in Application; exact locations and disturbances are subject to change due to completion of final engineering~~, with the exact disturbance to be determined based on the location of the two 500 kV loop-in transmission lines within the 2,000-foot survey corridor~~. ~~The remainder of the corridors would not be disturbed.~~ The 500 kV loop-in transmission lines would be constructed with monopoles, lattice towers, or H-frames and the dead-end structures using a three-pole design. Construction of the loop-in transmission line is anticipated to take up to 2 months. Helicopters may be used for the purpose of stringing and hanging bird diverters during the second half of construction for no more than a few days. A workforce of approximately 50 individuals would be involved in construction of the 500 kV loop-in transmission lines.

Table 2.4-3~~2.4-2~~ Transmission System Disturbance Details

Project component	Cut/fill quantity	Type of disturbance
Project substation	32,266 cubic yards of import [a] material; excess soils from storm water basin excavations to also be used	Graded and backfilled to an elevation above surrounding grade to avoid flooding

Project component	Cut/fill quantity	Type of disturbance
BAAH switchyard	88,732 cubic yards of import [a] material on BLM land; excess soils from storm water basin excavations to also be used; balanced, on BOR land	Graded and backfilled to an elevation above surrounding grade to avoid flooding
500 kV loop-in transmission lines	Balanced	Excavation for structure installation; grading for access roads

Note:

[a] Estimated base for the areas requiring import of material is assumed to require a 12-inch depth.

Project Substation

The substation area would be excavated for the transformer equipment as well as the control building foundation and oil containment area. Because each of the substation transformers would contain mineral oil, the substation would be designed to accommodate an accidental spill of transformer fluid by the use of containment-style mounting. The site area for the substation would be graded and compacted to approximately level grade.

Foundation designs for the Project substation and Project dead end structures would likely consist of drilled piers, concrete slabs, pedestals with footers, and/or directly embedded poles. Foundations for the substation would likely be formed with plywood and reinforced with structural rebar depending upon the foundation type. Loading and design assumptions for foundations would be consistent with industry standards and County/State/federal design codes. Each of the dead-end structures within the fenced substation would require foundations excavated to a depth of 20 feet or more. The remaining area within the fenced substation area would be graveled to a maximum depth of approximately 12 inches.

Breaker-and-a-Half Switchyard

The BAAH switchyard would be graded and compacted to an approximately level grade. Concrete pads would be constructed on site as foundations for BAAH switchyard equipment, and the remaining area would be graveled to a maximum depth of approximately 12 inches. Foundation designs of the BAAH switchyard would likely consist of drilled piers, concrete slabs, pedestals with footers, and/or directly embedded poles. Loading and design assumptions would be consistent with industry standards and County/State/federal design codes. A workforce of approximately 50 individuals would be involved in construction of the BAAH switchyard.

2.4.5 Transmission Facility Operation and Maintenance

IP Perkins, LLC, would operate and maintain the Project substation and gen-tie line. Drones could be used during operations for inspection purposes in accordance with the Flight Operations Plan. Regular helicopter use is not expected during routine operations although

they may be used for emergency maintenance or repair activities associated with the loop-in line.

Drones may be used to perform annual thermal and visual inspections of the gen-tie line, 500kV loop-in transmission lines, and overhead medium voltage collector line structures. The maximum drone operation heights would be restricted to 300 feet, which is higher than the maximum height of the gen-tie line and 500kV loop-in transmission line structures. ~~-~~Annual visual inspections are required by the North American Electric Reliability Corporation FAC003-4 Transmission Vegetation Management and utilized for preventative maintenance to reduce risk of equipment malfunction or failure. Drone inspections would be performed once per year between September and November to avoid bird nesting season. A team of two ~~Federal Aviation Administration (~~FAA~~)~~ approved and Unmanned Aircraft System certified pilots would drive a truck on the gen-tie access roads as close to the inspection sites as is safe and feasible, park on the road, and begin the inspection. The drones used would be battery-powered Matrice 300 RTK or Matrice 200 series drones or similar and would perform the inspections between approximately 76 to 300 feet above ground level. Operating hours for inspections would be between the hours of 10:00 a.m. and 3:00 p.m. The drone pilots would work in pairs with one flying and one spotting for safety. The use of drones for gen-tie line infrastructure inspections would minimize the need for larger vehicles, such as bucket trucks. No ground disturbance would occur during drone use.

SDG&E would operate and maintain the BAAH switchyard and loop-in transmission line using the same methods it currently uses to maintain the existing SWPL transmission line, including drone and helicopter use as described above for the gen-tie line. An average of up to two full-time workers would be involved in BAAH switchyard operations and an average of up to two full-time workers would be involved in operation of the 500 kV loop-in transmission line.

2.5 Project Termination, Rehabilitation, and Decommissioning

As the facility's equipment has a useful life estimated to be 50 years, at the end of the initial power purchase agreements' contract terms of approximately 10 to 25 years, the power from the facility would likely be sold to another buyer and/or repowered to increase plant efficiency. If the Project continues to operate, the long-term operations would be the same as described above.

At the end of the Project's useful life, the solar arrays, appurtenant facilities, and 500 kV loop-in transmission lines would be decommissioned and dismantled. The Project's decommissioning phase is anticipated to occur from December 2057 to December 2059. Upon ultimate decommissioning, most Project components would be suitable for recycling or reuse, and Project decommissioning would be designed to optimize such salvage as circumstances allow and in compliance with all County, State, and federal laws and regulations as they exist at the time of decommissioning. Following removal of the aboveground and buried Project

components, the site would be restored to pre-solar facility conditions, or such condition as appropriate in accordance with CEC, BLM, and BOR policy after decommissioning.

Decommissioning activities would require similar equipment and workforce as construction but would be less intensive. The following activities would be involved:

- Dismantling and removal of all above-ground equipment (i.e., PV panels, track units, transformers, inverters, Project substation, BAAH switchyard, O&M buildings, etc.)
- Excavation and removal of all above-ground cables
- Removal of solar array posts
- Removal of primary roads (decompaction and removal of aggregate or gravel, if used)
- Break-up and removal of concrete pads and foundations
- Abandonment of groundwater well(s), if installed
- Removal of septic system and leach field
- Removal of the 12.5 kV and 34.5 kV IID distribution lines
- Dismantling of 500 kV loop-in transmission lines
- Scarification of compacted areas
- Restoration of Project disturbance areas

The panels could be sold into a secondary PV panel market for recycling or reuse, including recycling up to 95 percent of the semiconductor material and reusing 90 percent of the glass. It is expected that a robust market for used PV panels will exist in the future because the panels can be used in various configurations and at various scales. Electricity demand is expected to continue to rise, and electricity prices are projected to continue their steady increase. Demand for solar energy is rapidly accelerating and is expected to grow for decades to come.

The module's component materials are free from toxic metals including mercury and lead, and the majority of the components of the solar installation are made of materials that can be readily recycled. If modules containing Cadmium Telluride (Cad-Tel) are ultimately used, they will be recycled in accordance with the manufacturer's recycling program. If the panels can no longer be used in a solar array, the silicon can be recovered, the aluminum resold, and the glass recycled. Other components of the solar installation, such as the tracker structures and mechanical assemblies, could be recycled as they are made from galvanized steel. Equipment such as drive controllers, inverters, transformers, and switchgear could be either reused or their components recycled. The equipment pads, which would be made from concrete, could be crushed and recycled. Underground conduit and wire could be removed by uncovering trenches and backfilling when done. The electrical wiring would be made from copper and/or aluminum and could be reused or recycled, as well. The BESS components, including batteries, would be shipped to a universal waste handler or authorized recycling facility as described in the decommissioning protocol provided by the batteries' original equipment manufacturer.

2.6 Efficiency

The annual net electrical energy produced for each mode of operation, including starts and shutdowns would be approximately 3,530,000 MWh. The number of hours the Project would be operated in each design condition each year would be the following:

- Solar: 4,200 operational hours, annually
- BESS:
  - Charge: 1,570 hours annually
  - Discharge: 1,460 hours annually

The single-axis trackers used for the Project would track the path of the sun throughout daytime hours (approximately 4,200 hours per year) from east to west without deviation (known as "true tracking") unless the tracker controllers specify a stow command for the tracker rows. Because the electrical configuration of the solar modules reduce the susceptibility of the PV panels to shading losses when shadows are along the length of the panel, this mode of tracking would typically lead to higher yields than the "back tracking" approach, sometimes utilized in other PV solar power generating facilities, whereby the modules deviate from a perpendicular angle with the sun's position in order to avoid shadows along the length of the panel from the adjacent tracker row.

Once the specific type of single-axis tracker is selected and high resolution on site meteorological measurements are taken, the specifics of the tracker operation can be better understood as it pertains to proportion of time spent in other tracking modes such as wind stow and diffuse light capture stow (both of which would result in the tracker rotating to an angle such that the panels are parallel to the ground). It is expected, however, that the proportion of time spent in these tracking modes would be minimal relative to the time spent in the default true tracking mode.

2.7 Reliability

The anticipated availability of the BAAH switchyard, loop-in transmission lines, the Project gen-tie line, and Project substation should approach 99 percent, with the exception of maintenance outages and planned outages. An annual availability factor of 99 percent is anticipated. A lifetime capacity factor of 20 percent to 40 percent is anticipated. See Section 3.4 for more details.

The types of solar power generating equipment that would be used for the Project have a proven track record of reliability based on multiple approved and existing power plants across America that rely on the same technology, which have already been permitted, financed, and installed.

2.8 Plans, Best Management Practices, Project Design Features, and Conservation and Management Actions

In conjunction with this AFC, the Applicant submitted a right-of-way (ROW) application to the BLM. The SF-299 application for the ROW grant was originally submitted on December 1, 2020, and revised applications have been subsequently submitted. The latest application, amended to incorporate the BOR and private lands, was submitted to the BLM in November 2023. The Applicant also submitted an application to the BOR for the 500kV transmission line crossing on April 21, 2023. This application was deemed complete by BOR on May 10, 2023. An amended application, incorporating BOR lands into the solar facility, was submitted to BOR on December 5, 2023. Since the original filings, the Applicant has continued coordination efforts with the BLM, BOR, Imperial County, IID, and other stakeholders, including the pre-application meeting held with the BLM, BOR, responsible agencies, and other stakeholders on August 30, 2023.

The Applicant has prepared multiple construction and operation plans as required by the BLM. The completed plans are included as appendices to this opt-in application, as called out in each of the resource sections. Some plans and technical studies, listed in Table 2.8-1, below, are currently in preparation and will be prepared to support Project permitting, construction, operation and maintenance, and decommissioning activities. These plans will be submitted as a supplement to the opt-in application when they are available.

The Applicant has drafted best management practices (BMPs) and project design features (PDFs) that would be included as part of the Project. The full text of the BMPs and PDFs are provided in Appendix D.1.

Consistent with the DRECP, CMAs would be applied to the Project in order to develop within the DFA. The full text of the DRECP CMAs is provided in Appendix D.2.

Table 2.8-12.8-1 Construction and Operation Plans Preparation and Timing

Mitigation plan	Timing of preparation
Fire Management and Prevention Plan	Prepared
Flight Operations Plan	First quarter, 2024
Fugitive Dust Control Plan	Prepared
Hazardous Materials Management & Oil Spill Response Plan	Prepared
Health, Safety and Noise Plan	Prepared
Operations and Maintenance Plan	Prepared
Bird and Bat Conservation Strategy	Prepared
Decommissioning & Revegetation Plan	Prepared

Nesting Bird Management Plan	Prepared
Raven Management Plan	Prepared
Restoration & Integrated Weed Management Plan	Prepared
Security and Emergency Preparedness Plan	Prepared
Wildlife Protection and Translocation Plan	Prepared
Cultural Resources Monitoring & Discovery Plan	~~Fourth quarter, 2024~~Prior to construction
Paleontological Resources Monitoring & Mitigation Plan	~~Fourth quarter, 2024~~Prior to construction
Tribal Participation Plan for Monitoring	~~Fourth quarter, 2024~~Prior to construction
Groundwater Monitoring, Reporting, and Mitigation Plan	2025
Surface Treatment Plan	2025
Night Lighting Plan	2025
Emergency Response Plan (per SB 38)	Prior to operations

2.9 Project Compliance with Laws, Ordinances, Regulations and Standards

The Project would comply with laws, ordinances, regulations, and standards (LORS), as indicated. Additional information on conformance to LORS applicable to the Project is provided in the associated resource analysis sections, Section 4.1 through Section 4.18 of this Opt-in Application.

2.10 Agencies and Agency Contacts

Appendix E provides a list of agencies and agency contacts as appropriate for the Project.

2.11 Permit and Permit Schedule

Appendix F provides a table with the appropriate permits and permit schedules for the Project. The Streambed Alteration Agreement application and Waste Discharge Requirement application are discussed in Section 4.2, Biological Resources, and included as appendices.